

Total Quality Management: An Indian Approach for Organizational Financial Growth

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Abstract : Total Quality Management (TQM) implementation can lead to significant improvements in quality, efficiency, and customer satisfaction, all of which are crucial for sustainable financial growth. This paper explores how TQM serves as a tool for financial growth by improving operational efficiency, reducing costs, enhancing customer satisfaction. Literature survey shows that be it any sector like hospital, banking or manufacturing industry, improving quality has positive impact on financial growth. TQM has been successfully implemented in various industries, each with its unique challenges and opportunities for financial growth. Several companies like Motorola, GE, Toyota have successfully utilized TQM to drive financial growth.

Through an analysis of key TQM principles, empirical data and case studies, the paper argues that the implementation of TQM can lead to sustained profitability and competitive advantage in a highly dynamic business environment. Despite benefits, the paper also explores few challenges in implementation of TQM. TQM implementation score was measured based on instrument¹³.

Total quality management (TQM) is considered important as many services organizations have given considerable attention to the attempts to increase the quality of their services to customers to increase its market share and then increase profitability; no longer quality is limited to the quality of goods only, but also to satisfy the wishes of the customers. The concept of quality of services provided to the consumer include operations, improvement, and continuous developments on customer satisfaction, and has become an indicator to the success or failure of the business. The study examines the relationship between the adoption of the philosophy of total quality management and its impact on improving the financial performance.

Keywords: TQM, Business Strategy, Financial Growth, Management, Customer Focus

INTRODUCTION

The global competitive environment has pushed businesses to focus on strategies that ensure both quality and profitability. Total Quality Management (TQM) has emerged as a popular management approach that integrates quality-driven processes into all aspects of organizational operations. This paper aims to investigate that implementing TQM principles influence financial growth, looking into how they help organizations achieve cost efficiency, customer satisfaction, and sustainable profitability.

Significance of Quality

- Good quality of products and aid provides an institution with cutting edge.
- Good quality minimizes costs because of product returns, rework as well as scrap (Gupta et al, 2001).
- Good quality enhances outputs, emoluments along with other ways of success that include a brand image, product image, and company goodwill.
- Crucially, good quality creates happy and contented clients today as well as tomorrow.

- Good quality makes an environment for boosting the confidence of the employee, which actually enhances productivity (Sageer et al, 2012)

Meaning of Words of Total Quality Management

- Total-Comprised of the Whole
- Quality -Level of Excellence of a product/service
- Management - Process of dealing, controlling, coordination"

TQM is viewed as a procedure to meet or surpass customer's prerequisites and desires (Jager et al, 2005). TQM looks for perfection taking all things together parts of business through association.

Total Quality Management (TQM) leads to a higher rate of return by driving operational efficiency, reducing costs, and enhancing customer satisfaction. Through streamlined processes, waste elimination, and defect reduction, TQM minimizes production costs while improving product quality. This results in fewer warranty claims, lower inspection expenses, and reduced rework, directly impacting profitability. Additionally, TQM fosters stronger customer loyalty and retention by delivering consistent quality, which boosts repeat business and strengthens market share. By empowering employees and promoting innovation, TQM creates a culture of continuous improvement, ensuring sustainable financial performance and a competitive edge, ultimately increasing the return on investment.

The current hypercompetitive nature of the global economy market requires that organizations go beyond the conventional profit maximization approaches and adopt holistic approaches to ensuring long term sustainability. One such philosophy is the Total Quality Management (TQM) which is based on the principles of continuous improvement, customer focus, employee involvement, and optimization of processes at all levels within the organization. In as much as previous studies have established the role of TQM in improving its own operations, there is still need to critically look at the impact it has on financial growth in both emerging and developed economies. The purpose of the present paper is to address the latter gap and investigate both direct and indirect correlations between TQM and financial performance, in Indian manufacturing industries vs. international case studies.

Research Question, Research Gaps and Objectives.

Research studies are built on the clarity with which they present the main research question, their objectives and the gaps in the literature that they aim to fill. When considering this research, which focuses on the financial consequences of Total Quality Management (TQM), it is vital not only to define the purpose but also to point out why an investigation of this kind is even needed in the contemporary dynamic and competitive business world.

Research Question

The major study question is as follows:

The question is as follows: What is the impact of applying Total Quality Management (TQM) practices on the financial development and competitiveness of Indian and global organizations?

This would be done in light of the realization that despite the fact that the TQM as a quality improvement philosophy has received considerable research attention, its direct and measurable relationship with financial returns such as profitability, return of investment (ROI), market share and long term competitiveness has not been explored much especially in developing economies like India.

Even the formulation of such a question, notes still further that there is a reason to delve deeper and consider the possibility that it is indeed TQM that is a strategic force worth the financial strength to the solvent.

Research Objectives

In order to respond in a systematic way to the research question, the following objectives have been developed:

- To test how TQM implementation is related to the financial growth of manufacturing companies.

Its first is to carry out an empirical analysis of the role of TQM in financial performance indicators in manufacturing organizations. The research will be of use in establishing an indisputable relationship

between quality efforts and financial growth since the relative changes initiated by quality efforts on the ROI, cut in costs, drop in defects, and increase in productivity will be quantified.

- To draw a comparison between TQM results at the Indian industries and the case study world. The industrial sector in India and specifically, micro, small and medium enterprises (MSMEs) have their own peculiar problems in setting large scale management philosophies. In fact, there are other foreign companies like Toyota, Motorola and General Electric (GE) who have a rich history of incorporating TQM in their operations. These contexts are where the study tries to offer similarities and differences in adoption tendencies, combination factors and measurable results.

- To determine what challenges and barriers exist in the implementation of TQM in small medium and large organizations.

When large organizations are more likely to have the resources to invest in training, new technologies, and cultural change, small organizations lack these financial resources and find culture as a barrier to complete adoption. This objective would significantly help in the understanding of why the TQM is an unevenly distributed good among the different sizes of organizations.

- To suggest an abstract model of association between TQM practices and financial performance. An academic research is an indispensable component of theoretical contributions. It is a sophisticated conceptual model based on which different characteristics of TQM, including, but not limited to customer focus, continuous improvement, employee involvement and process efficiency, can be transformed into actual financial gains.

- To offer policy and managerial advice to companies wanting to improve financial performance by using TQM.

In addition to theoretical explanations, this study will provide some practical advice. These findings can assist industry leaders and managers in coming up with measures that will help them to integrate TQM as an optional mechanism rather than as a compulsory requirement to remain competitive.

Research Gaps

Albeit the high volume of research on TQM, there are still some gaps in research. Firstly, operational or process benefits such as defect reduction, customer satisfaction and employee engagement are relatively well debated in the literature. These are significant outcomes, but not as many studies had explicitly focused on the effect of TQM on financial outcomes like ROI, profitability, or shareholder value, especially in the long term.

Secondly, no detailed research exists that places Indian organizations in an international comparative context. India is a country with a wide array of industries; the traditional manufacturing industries co-exist with the hi-tech IT services and so on. Staying descriptive, industry-focused with no need to go to extraordinary lengths and compare it with international standards like lean philosophy at Toyota or Six Sigma at Motorola has been the most Indian studies have done so far.

Thirdly, other empirical studies focused on large companies, excluding the major contribution of small and medium enterprises. The Indian economy relies on small and medium enterprises, which represent the majority of the economy but their implementation of TQM mechanisms is limited by factors including financial constraints, cultural inflexibility and ignorance. A thorough analysis of these obstacles could provide clues about the strategies of inclusive quality management that are greatly required.

Finally, a combination of theoretical framework and empirical financial analysis has not been well developed. Whereas the models have some theoretical foundations like 14 Points by Deming, Trilogy by Juran and EFQM Excellence model, there has been very little research work that specifically tested the implementation of the models in reality in relation to financial realization.

This study not only fills these gaps but also provides useful information on what practitioners should do. It not only defines TQM as a quality philosophy but it defines it as a general business strategy that has the potential to generate quantifiable financial profits.

LITERATURE REVIEW

Several literature studies in contemporary management have discussed the philosophy and methods of Total Quality Management (TQM), especially in relation to company performance. TQM was known as one of the prominent business strategies in the 1990s (Lee and Leung, 1999). The evolution of TQM into a prevalent management philosophy through the works of Philip B Crosby (1979), W Edward Deming (1986), Kaoru Ishikawa (1972), Joseph Juran (1988) and Genichi Taguchi (1982). Numerous studies have demonstrated the link between TQM and financial performance. For instance, a study by Hendricks and Singhal (2001) found that firms implementing TQM experienced significantly higher operating income and sales growth. The model to measure TQM implementation was described in literature by Joseph, I. & Rajendran, Chandrasekharan & Kamalanabhan, T.J.. (2010). An instrument for measuring total quality management implementation in manufacturing-based business units in India. *International Journal of Production Research*. 37. 2201-2215.

According to Robbins (1996): "TQM, a philosophy of management that is driven by the consistent attainment of customer satisfaction through the continuous improvement of all organizational processes". The opinions above show clearly that TQM activities are aimed at meeting customer expectations. Customer satisfaction to customer retention and widening of customer base which in turn leads to increased revenues and profits.

Total Quality Management (TQM) philosophy has gone through tremendous development in the last forty years, driven by the efforts of quality gurus and subsequently complemented by research and practical implementations of quality within the industry. W. Among them is Edwards Deming (1986) who developed his 14 Points which have been made famous and which emphasized a holistic approach to quality and no longer regard organization as one of its functions. His philosophy focused on the elements of leadership, training and constant improvement towards the achievement of organizational excellence. Similarly, Joseph Juran (1988) came up with the concept of the so called quality trilogy that focused on three factors that are mutually dependant i.e. planning, control and improvement. Juran in his work highlighted the idea that quality should be integrated in all the processes in organizations and it should not be a quality that is checked at the end of the production.

To add another powerful input, Philip Crosby (1979) also introduced the term zero defects, which states the idea that an organization must aim to eliminate errors within its operations, instead of perceiving them as a normal aspect of the production. What was notable about Crosby is that he not only worked on the question of how to reduce the errors but avoid them since it must serve the purpose of reducing the costs and customer satisfaction. In-between, Kaoru Ishikawa (1972) contributed to the field with enduring contributions including quality control instruments like the cause-and-effect (fishbone) diagram. This tool came to the forefront in the process of determining the root causes of quality issues and it remains common in a wide variety of industries today. Genichi Taguchi (1982) advanced the quantitative aspect of quality management by introducing the statistical design of experiments and robust design methods that enabled companies to reduce variation and provide greater reliability in the provision of products and services. All this input was gathered to create the modern TQM that combined the philosophical, practical and the statistical components as a whole of the management approach.

Empirical studies have provided reasonable evidence of monetary awards that can be linked with adoption of TQM. As part of their long-term analysis Hendricks and Singhal (2001) demonstrated that operating income of companies that embraced TQM initiatives were higher, sales growth more rapid and stock price performance, improved compared to companies that did not embrace the initiative. Their results confirmed that TQM is not a short-term strategy to improve operational performance, but a long-term financial performance driver. Likewise, Douglas and Judge (2001) have also noted structural control and exploration as another instrument of ensuring implementation of TQM is a feasible competitive advantage in the long run. Their study also emphasized that quality programmes need management discipline as well as organizational flexibility to bring about outcome.

Research conducted by Gupta (2000) revealed that, in the Indian context, ISO-certified and non-ISO firms showed that the implementation of organized quality management practices led to improved financial and operation performance. Further publications by Islam and Haque (2012) were demonstrating the way in which manufacturing firms in India which embraced the key pillars of TQM, such as leadership, employee and customer involvement and focus, attained greater efficiency, cost savings and profitability in the long-term. The researches have shown that TQM used in a planned manner has a positive and measurable effect even in a new market where the issue of resources is generally a serious matter.

In addition to the financial consideration of the concept, TQM also has a significant role in providing strategic benefits to organizations. It means that companies will be able to gain the confidence of their customers as they will have confidence in the spirit of continuous improvement, more employees will stay longer with the company and the company will gain sustainable competitive advantage. Not only can there be cost reduction and increased effectiveness, but also better brand reputation and positioning in the market. The EFQM Excellence Model in Europe and the Malcolm Baldrige National Quality Award in the United States are two widely known models that are based on these principles. These two model provide systematic rules that can be applied by organizations to assess and refine their quality practices at different levels, including leadership, strategy, people, processes and results. The standards highlight the importance of the collectivism of TQM concepts to the objective not only of operational excellence, but also sustainable operational of the organization.

All in all it can be seen that literature indicates TQM is a philosophy and practical strategy that can directly lead to financial expansion and at the same time provide strategic benefits. Quality pioneers had a solid conceptual base, and empirical research has demonstrated its practical value in a wide range of situations. This two-sided conceptualisation that has introduced TQM as a powerful force in organisations in the sense that it is not only tailored towards achievement of short-term efficiencies, but long-term financial sustainability and international competitiveness.

Overview of TQM Principles

- **Customer Focus:** Emphasizes the importance of understanding and meeting customer needs and its effect on financial outcomes.
- **Continuous Improvement:** Discusses how the Kaizen philosophy promotes innovation and cost reduction.
- **Employee Involvement:** Explores how empowered employees contribute to productivity and financial savings.
- **Process Approach:** Analyzes how streamlined processes reduce wastage and improve cost efficiency.
- **Leadership Commitment:** Highlights the role of strong leadership in driving TQM initiatives that lead to profitability.

Several mechanisms enable TQM to drive financial performance:

- **Cost Reduction:** TQM reduces scrap, rework, and warranty claims, which significantly cuts operating expenses.
- **Revenue Growth:** High-quality products result in repeat business, customer loyalty, and premium pricing, which leads to increased revenue.
- **Market Share Expansion:** Companies that build a reputation for quality attract new customers, often expanding into new markets.
- **Employee Efficiency:** TQM fosters a culture of engagement where employees take ownership of processes, leading to greater innovation and productivity gains.

RESEARCH METHODOLOGY

Research Objective

To examine the relationship between the implementation of Total Quality Management practices and Return on Investment (ROI) in manufacturing companies. To investigate the relationship of implementation of TQM and financial growth of companies, empirical studies are conducted.

The companies were tested for **implementation of TQM based on a model** described in a literature¹³ “An instrument for measuring total quality management implementation in manufacturing-based business units in India” by Joseph, I. & Rajendran, Chandrasekharan & Kamalanabhan, T.J.. (2010). The instrument describes a model that uses questionnaire to quantify the various elements of TQM and arrives at overall score. By this procedure, practitioners can have an evaluation on the current extent of TQM implementation in their respective business units. The units having score more than 3 are considered to have successfully implemented TQM.

These companies are MSME in manufacturing domain. The primary data for the analysis were collected using survey.

Conceptual Framework

In this paper, a conceptual framework is put forward to indicate the relationship between Total Quality Management (TQM) practices and financial performance. The framework singles out four key ways in which TQM will lead to financial growth. Firstly, there is cost reduction through the removal of waste, reduction of defects, and processes which directly benefits profitability. Second, TQM leads to growth in revenues through customer loyalty because of the regular quality and excellence of services leading to repeat business and customer relationships. Third, firms that successfully implement TQM will experience an increase in market share as a result of their quality image attracting new customers and expanding their markets. Fourth, TQM does encourage efficiency by encouraging innovation, as employee engagement construct together with continuous improvement ideals encourage innovative approaches to problems and innovative procedures. These channels are supported with the direction of the leadership to provide vision, as well as, to provide resources and involvement of employees in the efforts to deliver quality at every level of an organization.

Research Design

The paper studies that there is a significant positive relationship between TQM practices and operational performance in Indian manufacturing industries.

Qualitative Analysis: Examination of case studies from industries that have successfully implemented TQM.

Quantitative Analysis: Statistical analysis of financial performance indicator (ROI) in relation to TQM practices.

The dataset consists of financial performance data from 20 companies. Based on the model¹³ the overall score was calculated to see the implementation of TQM. Ten of these companies have implemented TQM principles, while the other ten have not.

- **TQM Group (Group A)** (score ≥ 3) : Companies that have implemented TQM principles.
- **Non-TQM Group (Group B)** (score < 3): Companies that have not implemented TQM principles.

The financial performance metrics considered include:

- Return on Investment (ROI): A measure of the profitability of an investment relative to the cost of the investment.

ROI Data

- Group A (TQM companies): [12.5, 14.8, 13.7, 15.1, 14.0, 16.3, 15.6, 14.5, 13.9, 14.7]
- Group B (Non-TQM companies): [10.3, 11.2, 9.5, 10.9, 11.1, 9.8, 10.0, 10.6, 11.4, 10.8]

Hypothesis Formulation

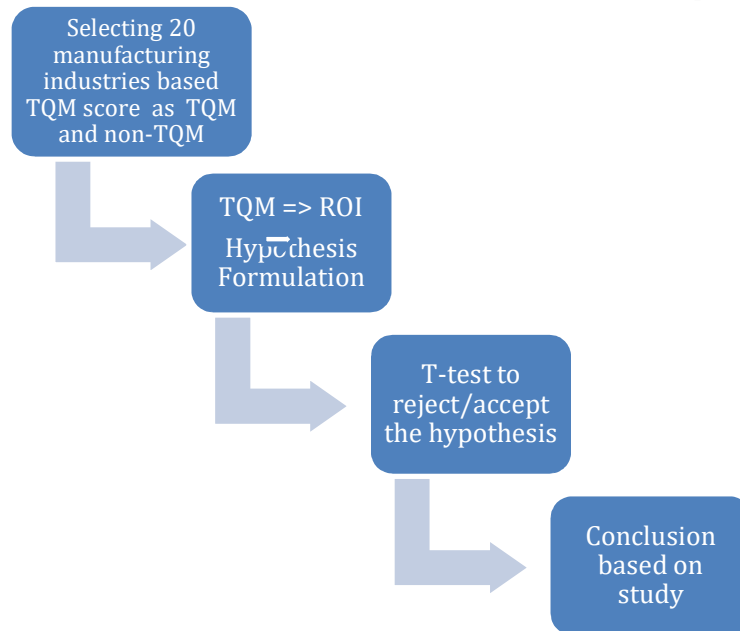
Conduct a t-test for TQM implementation against financial metrics and following hypotheses is formulated:

- **Null Hypothesis (H_0)** : There is no significant difference in financial performance between organizations that adopt a TQM dimension and those that do not.
- **Alternative Hypothesis (H_1)** : There is a significant difference in financial performance between organizations that adopt a TQM and those that do not.

T-Test Analysis

The purpose of conducting the t-test is to:

- Compare means of financial performance metrics between companies that implement TQM principles and those that do not.
- Test hypothesis to assess whether there is a significant difference in financial outcomes based on TQM implementation.



RESULT AND DISCUSSIONS

ROI Data

- Group A (TQM companies): [12.5, 14.8, 13.7, 15.1, 14.0, 16.3, 15.6, 14.5, 13.9, 14.7]
- Group B (Non-TQM companies): [10.3, 11.2, 9.5, 10.9, 11.1, 9.8, 10.0, 10.6, 11.4, 10.8]

We will calculate the t-test for the ROI of Group A (TQM) and Group B (Non-TQM) (Table 1).

Steps for Conducting the T-Test:

1. Calculate the means of both groups.
2. Calculate the standard deviation for each group.
3. Calculation of the t-value.

Label:	With TQM		Without TQM	
	Group 1	Group 2		
1	12.5	10.3		
2	14.8	11.2		
3	13.7	9.5		
4	15.1	10.9		
5	14.0	11.1		
6	16.3	9.8		
7	15.6	10.0		
8	14.5	10.6		
9	13.9	11.4		
10	14.7	10.8		
11				
12				
13				
14				
15				

Table 1: ROI of Group A (TQM) and Group B (Non-TQM)

Calculations

Group		A		(		TQM)	
N_1 :						10	
df_1	=	N	-	1	=	10	- 1 = 9
M_1 :						14.51	
SS_1 :						10.19	
s^2_1	=	$SS_1/(N$	-	1)	=	$10.19/(10-1)$	= 1.13
Group		B		(		Non	
N_2 :						10	
df_2	=	N	-	1	=	10	- 1 = 9
M_2 :						10.56	
SS_2 :						3.66	
$s^2_2 = SS_2/(N - 1) = 3.66/(10-1) = 0.41$							

T-value**Calculation**

$$s^2_p = ((df_1/(df_1 + df_2)) s^2_1) + ((df_2/(df_1 + df_2)) s^2_2)$$

$$= ((9/18) 1.13) + ((9/18) 0.41)$$

$$= 0.77$$

$$s^2_{M1} = s^2_p/N_1 = 0.77/10 = 0.08$$

$$s^2_{M2} = s^2_p/N_2 = 0.77/10 = 0.08$$

$$t = (M_1 - M_2)/\sqrt{(s^2_{M1} + s^2_{M2})} = 3.95/\sqrt{0.15} = 10.06808$$

The t-value is 10.06808. The p-value is < .00001 (where alpha is 0.05)

So we reject null hypothesis and difference is considered to be statistically significant.

The difference in ROI between companies implementing TQM and those not implementing TQM is statistically significant.

Challenges

Even though the positive outcomes of the Total Quality management (TQM) concept are reported in many sectors and settings, the practical application of this concept is often not that simple. There are often major hurdles in organizations that impede or even halt the integration of quality-first strategies. Such obstacles are culturally determined, economically driven, organizationally oriented and resource based. Not only the managers, who may be interested in the effective application of TQM, but also the researchers, who may be interested in exploring the actual effectiveness of TQM in different settings, may find this information on these problems important.

- **Cultural Resistance**

Cultural resistance is one of the most frequently mentioned issues in implementation of TQM. Such a transition to quality-oriented philosophy as opposed to the traditional management practices needs to be accompanied by a change of attitudes at every level of an organization. Employees more used to making decisions top-down might be opposed to practices that focus on empowerment, collaboration, and communication. With family-owned companies or existing in a hierarchical structure, the cultural transition can be particularly challenging. To take one such case, the supervisors and workers of most of the Indian-based manufacturing firms may not be willing to institute such forms of continuous improvement like Kaizen because they feel that it will disturb their well-established routine. Another resistance arises when employees feel TQM initiatives and projects are additions to their work but not improvement mechanisms. That is why leaders should explain the meaning of TQM to the employees and engage them at the outset.

- **Primary expenditure and Resources constraint**

The other obstacle is the high initial cost of successful implementation of TQM. TQM also involves extensive investment in training, process redesign, technological improvement and quality audit compared to quality control programs with short durations. In the case of large multinational companies, these costs can be covered. But in the case of small and medium enterprises (SMEs), especially in an emerging economy such as India, these costs are a big burden. This can be costly to the

company with a small margin such as the case of imparting statistical process control to employees or, indeed, even investing in new quality monitoring software. Also, SMEs may not have good consultants or benchmark data hence making designing and implementation of good TQM systems difficult. That is why the incremental approach of SMEs consists of starting with low cost quality projects, but gradually progressing to improved systems.

- **LTEs vs STEs**

TQM is a long-term approach per se. The advantages of integrating quality in all organizational processes often find their way to tangible financial rewards that the organization may realize after several years. However, many companies, especially those with pressure to perform on a quarterly basis or shareholder demands, are not typically at ease with the concept of waiting to realize such long-term returns.

Lack of sufficient time to achieve long term gains, cost savings or growth that TQM generates, may put pressure on managers to make short-term decisions or make short-term gains. This short term financial orientation entails lack of commitment and consequently leads to organizations dumping TQM programs before they become effective. One would be where organizations may abandon training programs or quality circles that do not bring visible results in a year, but would bring in the long-run in 3 or five years.

- **Deficiency in Leadership commitment**

Leadership is very crucial to the success of TQM efforts. In the absence of a firm top management commitment, employees tend to see quality programs as a non-priority or temporary initiative. Leaders must not only allocate resources but should also be involved in marketing the quality culture. In most organizations, however, leadership support is only superficial. Other managers may endorse TQM as a compulsory requirement or because they are trying to create the impression of success such as winning awards but do not go as far as to provide inspiration and direction to the strategy. This kind of inconsistency in leadership does not only kill employee trust, but also reduce adoption process.

- **Lack of Employee Participation and Training**

The participation of employees is a very important pillar of TQM, but it is not so easy to engage workers in every level of participation. Workers could be poorly trained in problem solving techniques, quality tools or group work methods. Training is yet another challenge in developing nations where the levels of literacy and technical skills differ widely among the workforce. Also, the employees may not be interested in sharing ideas due to the fear of punishment, no interest, or distrust towards the management intentions. As long as organizations do not invest in extensive training facilities and establish a psychologically safe environment TQM will only be confined to the top of the management hierarchy rather than being felt all through the organization.

- **The Metric and Metrics Problems**

The other significant problem is the inability to measure the effectiveness of TQM practices. The quality improvement lacks a tangible effect (in the form of financial indicators) such as customer satisfaction, employee morale, or brand reputation.

Most organizations find it difficult to develop distinct measures that can tie quality practices directly to financial results. An example is the reduction in the number of faults will lower the costs, but its impact on the profitability may not be evident in the short-term. In the absence of strong measurement systems, managers are likely to struggle to justify their continued investments in TQM, which is another driver of short-termism.

- **Globalization and Competitive Pressures**

TQM can provide an organisation with a competitive advantage over the competition but what matters is the rate of change and the dynamic need to continually innovate, which demands organisations to keep updating and refining their quality systems. Nowadays, in the globalized economy, companies

are increasingly experiencing competition, both locally and internationally. Though TQM can provide an organisation with a competitive advantage over others, the most important aspect is the pace of change and the constantly changing need to innovate, which means organisations must constantly update and improve their quality systems. This poses another problem: TQM cannot be frozen. Those companies that embrace it once and cannot evolve may fall behind. Furthermore, global supply chains make TQM more of a challenge to implement, because the company has to make sure that its suppliers and partners in various countries also maintain the same quality standards.

Recommendations for Overcoming Challenges

Although organizations have recognized the benefits of Total Quality Management (TQM), implementation between theory and practice is not always smooth. Cultural resistance, early high cost, disruption of leadership, difficulty in measurement are all likely to retard the adoption process. To overcome these obstacles a number of strategies can be employed so that TQM is not just exercised well but it is also maintained over time.

- **Foster a Culture of Continuous Learning and Improvement**

Development of a culture that embraces continuous learning and improvement is one of the first steps towards overcoming resistance to TQM. Change will not be embraced easily, especially when staff members are accustomed to the status quo. The management can enable creation of awareness campaigns and workshops so as to enable the employees to understand that TQM does not mean working more but working smarter and more effectively.

Even the small setbacks like the teams who have taken the right steps of stopping the malfunction or even customer satisfaction are reinforced and rewarded as a good step. Improvement of ownership and reduction of resistance that accompany the involvement of employees in the decision making processes are also there. Individuals would be more accepting of change when they believe that their voices are being heard instead of objecting to the change.

- **Invest in Leadership Development Programmes**

Perhaps the most crucial element in making TQM successful in the long run is leadership commitment. Quality initiatives lose steam unless there is committed leadership. This must then be provided as quality leadership development programs in which managers and executives are mentored to be champions of quality within organizations. Such leaders need to lead by example by acting consistently and in a transparent and accountable manner. In order to illustrate this, the leaders must visit quality circles, conduct employee trainings in addition to providing their perceptions on the strategic importance of TQM. The allocation of resources like budgetary funds towards training, tools and technologies should also show commitment. Managers can also ensure employees are motivated to engage in quality efforts by setting an example themselves.

- **Compare TQM to Financial Results by Developing Measures of Intelligibility**

The other obstacle to implementation of TQM is the challenge of showing its financial benefit. The organizations must reach quantifiable and objective measures to solve it, which is implemented in the attempt to correlate quality work and financial results. The sample will lead to lower after-sales services costs by lowering lower warranty claims and future revenue by retaining customers. Profitability can also be linked to product improvements in terms of a lower cycle time or fewer defects. As the monitoring of such indicators is ongoing, the managers will have a good case to proceed with investing in TQM. Such results must be reported transparently to build confidence among employees, as well as reassure stakeholders and shareholders that quality initiatives will help the company create long-term value.

- **Collaborate with Industry Association and Academic Institutions**

Lack of resources and expertise to apply TQM to their own is one of the largest obstacles that many small and medium enterprises (SMEs) face. In that instance, cooperative efforts with industry associations, governmental institutions, and educational establishments may be essential. Teaching is normally offered through associations and often benchmarks data and case studies, which SMEs can easily embrace at relatively low cost. Academic alliances can also help organizations establish and test customized quality models. By pooling resources and experience SMEs can overcome the barrier of knowledge which so often discourages them to venture into TQM. Moreover, such alliances can make learning the trial and error process cheaper and the adoption process fast.

- **Leverage Digital Technologies**

Lastly, computerization of organizational processes gives organizations a strong quality management tool. Artificial intelligence (AI), Internet of Things (IoT), and big data analytics are technologies that can be used to monitor processes in real-time, identify defects in advance, and make better decisions. One case is the application of IoT in production plants whereby anomalies of machines are detected by sensors before they cause errors and prevent unnecessary wastage and time losses. On the same note, big data analytics can identify trends in customer grievances that assist companies in product improvement initiatives. It is the quality performance that can be observed and measured in real time by the use of digitals which warrants the financial expenditure of TQM initiative by the managers. This openness can also be useful in the context of the long-term commitment case because it is possible to see that cost is reduced and revenue increases because they are directly connected with the improvement.

Future Scope for Research

Financial outcome and Total Quality management (TQM) practices in the manufacturing sector have been the major subjects of the current study. Although this can give helpful information, the future horizons of study in this field are enormous and multidimensional. A number of paths can be pursued to expand the knowledge base on the issue of role of TQM in industries, geographies, and organizational settings. But, unlike manufacturing, where quality is generally linked to the physical product quality and reduction of defects, services are greatly reliant on customer experience, responsiveness and quality.

The adoption of TQM within service-based sectors of the economy including healthcare, banking, education, and hospitality is one of the most promising future research directions. Using the medical sector as an example TQM practices could end up translating to less waiting time to patients, more accurate diagnoses and patient satisfaction. Similarly, TQM could enhance the efficiency of service provision, privacy of online transactions and consumer loyalty in the banking sector. Future studies can therefore measure effects of customer directed quality practices in services industries to customer profits, market share and their sustainability in the long-run. TQM can also be used to enhance the quality of education, delivery of the curriculum, satisfaction of the guests and efficiency in the hospitality industry. Nevertheless, the immediate financial benefits of this type of improvements are not studied.

The alternative research direction is comparative study on developed and emerging economies. Some developing economies such as India, Brazil or some other African countries are at an earlier stage of mass adoption. The developed world like Japan, United States, and the European countries, have a long history of imparting TQM into their business culture. They are diverse environments concerning cultural barriers, availability of resources and culture within the organization. The case in point would be the Japanese companies that tend to employ TQM into its management ethic default through the help of the focus on discipline and the overall improvement of the society. Comparative research can therefore facilitate the establishment of situation-specific enablers and obstacles that can contribute to successful implementation. Instead, Indian companies are likely to encounter opposition because of hierarchical work organisation and short-term financial interests. This may also serve to make sure that such studies inform policy makers to design enabling industrial policies and training schemes around local issues with international best practice.

Sustainability is a major issue to organizations around the world, especially in recent years. Customers, investors and governments are placing mounting expectations on firms to not only show financial

performance, but to be socially and environmentally responsible. TQM can, as an indicator, reduce wastage and optimize resource usage which can in turn directly translate to environmental sustainability and the goals of social responsibility are con-comitant with employee empowerment and fair labor practices. There are other conceptual frameworks that combine TQM and SDGs that can be proposed to be adopted in the course of investigation on this field to get the whole picture of business excellence in the twenty-first century.

Research could be done on whether organizations that integrate both dimensions of TQM and sustainability have better long term financial growth than those based on just one dimension. Future TQM Research.

Intelligence technologies, including artificial intelligence (AI), Internet of Things (IoT), and big data analytics can revolutionize quality management because they provide the opportunity to monitor quality in real-time, predict defects and enhanced understanding of customers.

Another potentially promising frontier is the rapid development of digital technologies. One of the areas that require further researches is how such technologies can be integrated into TQM systems to help enhance efficiency and the relationship between quality measures and financial results. To prove that, one can speak about an example of a healthcare industry and an example of a manufacturing industry that should help to achieve greater patient safety and reduce the expenses by predictive analytics, reduce the wastage and make the products more affordable and reliable with the help of the IoT-based systems. Longitudinal and Sector-Specific Research. The studies integrating TQM and Industry 4.0 technologies will prove essential in the context of learning about how companies can stay competitive in more digitalized markets.

The available research on TQM has been based on cross-sectional information hence cannot measure the long-term financial effects. Future studies should thus utilize longitudinal methods in order to follow organizations through time. This would give more insights into the dynamics of TQM initiatives development and financial gains accumulation in the long run. Also, industry-specific studies may illuminate industry-specific issues. These studies would ensure that practitioners participate in the development of sector-specific strategies and not generic strategies. What are the effects of generational differences on the workforce as adopted?

Last but not least, human and behavioral aspects of TQM should also be given more attention in future researches. It is generally accepted that employee involvement and leadership commitment are key success factors, however further studies are necessary on the psychological and cultural facets of quality adoption. What is the employee perception of the continuous improvement programs? Why should leaders be long-term committed to TQM?

What role do any generational differences in the workforce play in regards to adoption? The responses to these questions would provide more insight into TQM than the technical and financial aspects.

CONCLUSION

The aim of this research was to investigate the correlation between Total Quality Management (TQM) practices and financial development in manufacturing industries and especially to measure the payoff of TQM implementation in terms of Return on Investment (ROI). Through analysis of a sample of 20 manufacturing companies, categorized into the ones that had effectively implemented TQM and the ones that had not, this study aimed at verifying the hypothesis that TQM results in the best financial performance. The findings strongly reject the null hypothesis, and show that the ROI in organizations that adopt the principles of the TQM is far much higher than in organizations that do not adopt the

TQM principles. This means that TQM is not a management or a token practice, it is a business strategy, which can be important in producing competitiveness and profit.

The theoretical basis of TQM is in the efficiency, reduction of defects and customer satisfaction as the way of the sustainable development; the results of carried out practice are related to the theoretical model of TQM. TQM enables companies to reduce the cost of production by simplifying operations, removing waste, and integrating continuous improvement into organizational culture to provide increasingly higher quality products and services at the same time. The enhancement of financial performance, as well as improving brand reputation and market share. These customers will be more willing to remain with quality producing companies and such loyalty will translate to frequent business and continued revenues. TQM provides a method to achieve resilience and sustainable profitability in the present hypercompetitive environment ridden with inefficiencies capable of eliminating even the smallest of margins.

The paper also raises the strategic implication of implementing TQM. This firm is the one that would better respond to new customer need, technological shock and market volatile as a result of the concept of TQM installed in them. In this regard, engaging employees in activities and cross-functional teamwork promoted through TQM make a company more innovative and responsive to challenges. Leadership is the other critical element in TQM, in that quality is not an initiative that should be executed once after which decisions and actions become embedded in quality management. All or any of these attributes may give competitive advantage to those organizations that adopt TQM that goes beyond the financial parameters of long term sustainability.

Although these research findings are positive, the study is not without significant limitations. The small sample size of 20 firms is the most meaningful limitation. Despite the soundness of the statistical results, they may not accurately represent the diversity and the complexity of the bigger manufacturing sector. The findings would be more convincing with a larger sample size of firms in diverse regions, industries, and ownerships. Moreover, the analysis concentrates more on ROI as the financial measure. Even though ROI is a useful measurement, it is not representative of all financial performance impacts of TQM, such as cash flow stability, stock performance, cost of capital, or shareholder value. It is thus recommended that future research covered more financial indicators to enable a more thorough evaluation.

The other limitation is that the data is cross-sectional. TQM is a longterm approach, and its fruits are not likely to appear within the first few years of its implementation. A longitudinal study is more disclosure of both the changes in TQM practices and the accumulation of the financial impact of the practices over the years as the firms are tracked. The research would also help to determine issues such as learning curves among organisations, succession in leadership and evolving conditions in the market that a cross sectional study might fail to effectively capture.

It should also be found out by future research that there are variations in results of TQM depending on the sector. Although this paper concentrates on the manufacturing industry, other industries like healthcare, banking, education and hospitality are also embracing the practice of TQM.

Due to differences in customer expectations, operating processes, and regulatory environments, these industries can affect the effectiveness of TQM. Significantly, in the healthcare sector, patient satisfaction

and safety outcome may be a bigger TQM payoff compared to financial measures. By widening the range of industries studied, the researchers will be in a more advantageous position to paint a more holistic picture of how TQM has helped organizations perform in different situations.

The findings made in this study also have considerable practical implications. That TQM can make a significant positive contribution to ROI provides managers with an excellent incentive to invest in quality programs. The initial training, process redesigning and technology upgrades expenses may seem to be expensive, but in the long term the financial benefits of these solutions far outweigh the initial costs. This study may further inform the policymakers that they need to be motivated to adopt TQM, especially the small and medium enterprises (SMEs), which are typically confronted with the problems relating to resources. TQM can help SMEs overcome the challenges and can be useful in gaining the financial benefits of the approach through government subsidies, training in the industry, and partnership with academic institutions.

Lastly, this paper is also strong-willed in arguing that application of TQM is associated with financial development in production industries. The null hypothesis rejection justifies that TQM can be considered a strategic and not an operations enhancing tool, but rather a profit and competitiveness enhancing tool as well.

The larger number of research studies will contribute to the development of the argument in favour of TQM as one of the pillars of modern management by removing the limitations of smaller and more homogenized samples, longitudinal research designs, and industry specific reports. The message to organizations is quite simple TQM is not a nice to have but a strategy required to achieve financial success in an ever complex and competitive world.

ACKNOWLEDGEMENT

We wish to acknowledge the great support and cooperation that they received during this research course. The industries are highly appreciated as they provided their data and insights, without which this study could not have been conducted. The authors also owe their innumerable thanks to the members of the faculty of Lingaya Vidyapeeth, the administrative and research colleagues and staff members of the mentioned institution, who continued to provide encouragement, technical support and constructive criticism. This advice was very crucial in influencing quality and direction of this work.

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