

The Relevance of Total Quality Management in Indian Companies

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Abstract

Total quality management (TQM) has been widely considered as the strategic, tactical and operational tool in the quality management research field. It is one of the most applied and well accepted approaches for business excellence besides Continuous Quality Improvement (CQI), Six Sigma, Just-in-Time (JIT), and Supply Chain Management (SCM) approaches. There is a great enthusiasm among manufacturing and service industries in adopting and implementing this strategy in order to maintain their sustainable competitive advantage. The aim of this study is to develop and propose the conceptual framework and research model of TQM implementation in relation to company performance particularly in context with the companies. It examines the relationships between TQM and company's performance by measuring the quality performance as performance indicator. A comprehensive review of literature on TQM and quality performance was carried out to accomplish the objectives of this study and a research model and hypotheses were generated.

Keywords: Strategy, Business Excellence, Performance Indicator, Quality Performance, TQM

Introduction

While being the second largest democracy in the world, India is also categorized as a Newly Industrialized Country, being a member of the elite G8+ 5 Group of countries. The 'International Yearbook of Industrial Statistics-2011' Report by the UNIDO has declared India to be among the top 10 industrial nations in the world (Business Standard, March 30, 2011). Although India has emerged as an important economic powerhouse in the post 1991 period, the surge in globalisation has led to increased competition. In this increasingly competitive environment, quality has become a critical success factor. The need of the hour is for Indian industry to chart its own Total Quality Management (TQM) pathway so that TQM can take firm roots in the Indian soil and can nourish the Indian industry for years to come. This will help India to emerge as a global economic super power. Japan, the most industrialized country globally in terms of Manufacturing Value Added (MVA) per capita criterion, first implemented the philosophy of TQM successfully and is now reaping the rich harvests from it. To pose a serious challenge to the economic supremacy of the United States, China and Japan, India needs to follow the pathway of TQM.

Literature Review

There are several noteworthy Research Studies on Total Quality Management abroad but till now no notable research study on the subject of Total Quality Management Practices in Indian Companies have been found. The notable existing works on this subject that helped building the conceptual framework in the present research includes the study by Shewhart (1931) who had established independency of quality standards, expressed in terms of physical, quantitatively measurable product characteristics, by stressing on both subjective and objective sides to quality. He had developed Control Charts and introduced the term 'Quality Assurance'.¹ Juran(1988) had established statistical quality planning. He had showed how cost of poor quality could be controlled by learning lessons to ultimately improve quality and moving to a new zone of quality control through his Juran's Trilogy diagram.² Crosby (1979) had emphasised that cost of poor quality far outweighs the cost of preventing poor quality. He had defined absolutes of quality management- conformance to requirements, prevention and "zero defects".³ Ishikawa (1985) had suggested a fusion of American management style with Japanese management style to bring back craftsmanship to groups. Ishikawa had introduced Quality Circles and had developed the Fishbone Diagram.⁴

Methodology

This paper analyses the different elements of TQM, examines the TQM practices in Indian companies, identifies the reasons for adoption of TQM practices in India and assesses the impact of foreign collaboration on quality management practices in Indian companies.

For this purpose, primary data, which have been collected by administering a structured questionnaire from 95 Indian companies during the 2008-2010 period, are analysed using appropriate statistical tools and inferences have been drawn accordingly. Different research hypotheses have been framed whenever needed and have been tested using appropriate statistical tools.

TQM - A Conceptual Framework

The very notion of quality is very basic to human nature. 'Quality is a funny thing, everyone talks about it, everyone lives with it, and everyone thinks that he knows what

1 W. A. Shewhart, *Economic Control of Quality of Manufactured Product*, New York, D. Van Nostrand, 1931.

2 J.M. Juran, *Juran On Planning for Quality*, New York, Free Press, 1988.

3 P. B. Crosby, *Quality is free*, New York, McGraw Hill, 1979.

4 K. Ishikawa, *What is Total quality Control? The Japaneses Way*, Englewood Cliffs, New Jersey, Prentice Hall, 1985.

it is'.⁵ The amazing thing about quality is that one can readily distinguish between good and bad quality. Quality always attracts everyone to it and is very difficult to resist. But, at the same time the perception of quality varies from individual to individual, from organization to organization, from company to company, from industry to industry and from country to country. Different companies practice quality as they perceive it. Thus in this age of globalization, where Indian multinational companies are increasingly being active on foreign shores, there is an urgent need for them to understand and practice these different concepts which will raise their quality level and lower costs, which is an important requirement for facing the global competition.

The modern concept of quality carries much significance for the management of a company. The management significance is that quality does not happen on its own, quality requires proper planning and management, quality is everyone's responsibility throughout the company.

Therefore, Implementation of quality needs a systematic approach for continuous improvement in making small improvements which will ultimately result in large improvement. Based upon this new concept of quality, the concept of Total Quality Management is based. Accordingly, Total Quality Management is an integrated organizational approach in delighting customers (both external and internal) by meeting their expectations on continuous basis through everyone involved with the organization working on continuous improvement in all products and processes along with proper problem solving methodology. The journey of Total Quality Management is a never-ending journey embodying⁶ cultural change requiring time, resources, involvement, persistence and discipline continuously.

Customer orientation calls for a belief that people are whole and not hands, belief in change starts with me and not they, involving lots of introspection and mind set shift. The measurement and monitoring of improvement includes switching to learning mode and openness in communication, through value based management.

The important elements of Total Quality Management are people, appropriate technology, problem solving tools and procedures through continuous improvement.

Though Total Quality Management is being increasingly taught as an academic subject, the body of research in the area is still developing and the definitions of Total Quality Management are still diverse, with a set of common themes defining the broad philosophy of Total Quality Management. In short, there exists a gap between the principles and practices of Total Quality Management.

5 E. Aksoy, Managing knowledge for business Excellence: Knowledge Focussed Six Sigma, Unpublished doctoral dissertation, Istanbul, Istanbul Technical University, Institute of Science, 2007.

6 U. H. Acharya and S. Ray, ISO-9000 Survey findings, SQC & OR Division news letter, 2(3), Bangalore, Indian Statistical Institute, 1997.

Profile of Respondents

The very premise upon which the responses were solicited from the companies was confidentiality regarding the names of the management personnel (respondent) and the companies. The companies have been very strict against disclosure of their names in any manner anywhere. Even though the names of the respondent companies cannot be revealed, profile of the respondents in terms of their gender, age, qualifications, position held and experience of the management personnel and the type of companies are shown in Tables 1 to 4.

Table 1: Gender Profile of Responding Managerial Personnel

Category	Number	Percentage (%)
Female	3	3.2
Male	92	96.8
Total	95	100

Source: Primary Survey

It is apparent from Table 1 that there exists a gender bias in Indian companies that is tilted heavily in favour of males. It is surprising, that even when the big companies worldwide are giving more representation to females in important managerial positions, Indian companies remain trapped in the age-old customs of male domination of important positions in their business. Females are given only a token representation. Obviously, Indian companies require to let their female rank and file come through from lower down the management hierarchy and rise to the top to hold important management positions and key portfolios.

Table 2: Age Profile of Responding Managerial Personnel

Category (Years)	Frequency	Percentage
Less Than 25	2	2.1
25-30	6	6.3
30-35	10	10.5
35-40	12	12.6
40-45	16	16.8
45-50	13	13.7
50-55	21	22.1
Above 55	15	15.8
TOTAL	95	100.0

Source: Primary Survey

It is seen from Table 2 that the majority of the responding management personnel belong to the age group category of 50-55 years and has corresponding percentage of 22.1%. The third highest age group is above 55 years category which has a corresponding percentage of 15.8%. In total, 37.9% of the responding management personnel are 50 years or above. This shows that experience counts in Indian companies. Senior people are holding important management positions in Indian companies. They can give important inputs from their wisdom, knowledge and experience in the decision-making process in Indian companies. An important revelation is that the second highest age group category is 40-45 years and has corresponding percentage of 16.8%. The fourth highest age group category is 45-50 years and has corresponding percentage of 13.7%. In total, 30.5% of the responding management personnel are in the group category is 40-50. This shows that middle-age people also find place in important managerial positions in Indian companies. Thus, there is a useful blend of wisdom and youth in the management hierarchy in Indian companies. This augurs well for the future of Indian companies as relatively young managerial personnel can bring in fresh ideas to the job and be more flexible in imbibing new quality ideas and incorporating new quality initiatives under the guidance of senior management personnel.

Table 3: Qualifications of Responding Managerial Personnel

Category	Frequency	Percentage (%)
Graduate	50	52.6
Post Graduate	17	17.9
Graduate plus MBA	17	17.9
Graduate plus others	11	11.6
TOTAL	95	100

Source: Primary Survey

Table 3 discloses that an overwhelming percentage (52.6%) of the responding management personnel have completed their graduation (Bachelor of Arts, Bachelor of Science, Bachelor of Commerce or Bachelor of Technology) but have not added any further qualifications to their profile.. 17.9% of the responding management personnel are post-graduates. The post graduation category includes Masters of Arts, Masters of Science, Masters of Commerce and Masters of Technology. An equal number of respondents have completed their graduation and also achieved the degree of Masters in Business Administration (M.B.A.). 11.6% of the responding management personnel have completed their graduation and attained other professional qualifications. This shows that the qualification profile of the management personnel of Indian companies need to be upgraded as most of them have only graduation degree. Obviously, the graduation degree would suffice in case of jobs involving lesser managerial responsibilities, but for important managerial jobs, the attainment of higher qualification is essential. This is a pre-requisite, as attaining important qualifications, like M.B.A.

will go a long way to equip managerial personnel in discharging their managerial responsibilities.

Swami Vivekananda, had remarked about education being the harbinger of latent possibilities in every person (in His words, Education is the manifestation of the perfection already in man).⁷ The above-mentioned saying by the great Swamiji who had put India on the world map holds tremendous significance for Indian industries. Education will awaken the latent possibilities of every management personnel and will stir in them the motivation to achieve higher quality for themselves as well as for their companies and rouse them to achieve greater deeds, In this age of globalization, qualifications like an M.B.A. degree or other relevant professional degrees, are expected to help management personnel working in Indian companies to face the competitive challenges as well as make them aware about the latest management techniques and quality initiatives. The pathway of TQM is very arduous and grueling and the management personnel working in Indian companies must keep themselves abreast of the latest happenings in the world of quality. Therefore, it is imperative, that Indian personnel must enhance their qualification profile in order to equip themselves with the latest quality techniques to face the tough competition thrown at them by their foreign counterparts.

Table 4: Type of Companies

Category	Frequency	Percentage (%)
Manufacturing	86	90.5
Service	9	9.5
Total	95	100.0

Source: Primary Survey

Table 4 reveals that a vast majority (90.5%) of the respondents belongs to the manufacturing companies and only 9.5% belong to the service-oriented companies. Both manufacturing and service companies have their own quality systems.

Table 5 discloses the position held by the responding management personnel. 7.4% of the responding managerial personnel are officers or engineers. 30.5% of the responding managerial personnel are managers or senior executives. 12.6% of the responding managerial personnel are assistant managers or deputy managers. 26.3% of the responding managerial personnel are general managers or assistant general managers. 8.4% of the responding managerial personnel are heads of plants or factories. 14.7% of the responding managerial personnel are directors or chairmen. Thus, it is observed that the majority of the respondents are managers or senior executives. The

⁷ Swami Vivekananda addressing delegates of The World Conference on Religion in 1893 at Chicago, USA.

second highest category belongs to the general managers or assistant general managers. The third highest category belongs to the directors or chairmen.

Table 5: Position Held by Responding Managerial Personnel

Category	Frequency	Percentage (%)
Officer/Team/Leader/Engineer	7	7.4
Manager/Senior Executive	29	30.5
Assistant Manager/Deputy Manager	12	12.6
General Manager/Assistant Manager	25	26.3
Head of Plant/Factory	8	8.4
Director/Chairman	14	14.7
Total	95	100.0

TQM practices in India

Table 6 depicts the important criteria of the Mission Statement of the respondent companies. A Mission Statement is important as not only it is inspirational for the company as it provides the core values, principles and beliefs that are identified with the company but it also helps to communicate with the outside world to develop a clearer position about the company in the market place, for strategic planning and to orient new employees in their jobs. The Mission Statement of the respondent companies are further crystallized into a compacted Agreed response, shown in Table 6, since most of the responses are in the Agreed columns.

TABLE 6: Total Responses regarding Mission of Companies

Factors	Strongly Agree (%)	Agree (%)	Undecided (%)	Disagree (%)	Strongly Disagree (%)
Profit Maximisation	41.1	47.4	7.4	4.2	0
Training to Improve People Quality	44.2	50.5	5.3	0	0
Customer Satisfaction	83.2	14.7	2.1	0	0
Performance Beyond Expectations	40	48.4	10.5	1.1	0
Value for Money	40	55.8	4.2	0	0
Fulfillment of Social Objectives	28.4	58.9	9.5	3.2	0
Continual Improvement	75.8	20	4.2	0	0

Source: Primary Survey

From Table 7, it is seen that the majority (83.2%) of the respondents have Strongly Agreed that Customer Satisfaction is the Mission of the company while 75.8% of the respondents have Strongly Agreed that Continual Improvement is the Mission of the company. From Table 8, it is seen that the mean of the distribution of the Mission of

the company regarding Customer Satisfaction is 4.8105 and Continual Improvement is 4.7158. All these aspects point to the fact that both Customer Satisfaction and Continual Improvement are the most important criteria of the Mission Statement of the respondent companies.

Table 7: Agreed Responses regarding Mission of Companies

Factors	Strongly Agree (%)	Agree (%)	Total
Profit Maximisation	41.1	47.4	88.5
Training to Improve People Quality	44.2	50.5	94.7
Customer Satisfaction	83.2	14.7	97.9
Performance Beyond Expectations	40	48.4	88.4
Value for Money	40	55.8	95.8
Fulfillment of Social Objectives	28.4	58.9	87.3
Continual Improvement	75.8	20	95.8

Source: Primary Survey

Table 8: Mean, Median and Mode of Distribution of Mission of Companies

Factors	Mean	Median	Mode
Profit Maximisation	4.2526	4.0000	4.00
Training to Improve People Quality	4.3895	4.0000	4.00
Customer Satisfaction	4.8105	5.0000	5.00
Performance Beyond Expectations	4.2737	4.0000	4.00
Value for Money	4.3579	4.0000	4.00
Fulfillment of Social Objectives	4.1263	4.0000	4.00
Continual Improvement	4.7158	5.0000	5.00

Source: Primary Survey, results computed

To test the significance of the responses to the option of Customer Satisfaction and Continual Improvement in the mission statement of the company, the following hypotheses have been set.

Null Hypothesis: H01= All categories of responses to the Customer Satisfaction in the mission statement are equally probable.

Alternative Hypotheses: H11= All categories of responses to the Customer Satisfaction in the mission statement are not equally probable.

Null Hypothesis: H02= All categories of responses to Continual Improvement in the mission statement are equally probable.

Alternative Hypotheses: H12= All categories of responses to Continual Improvement in the mission statement are not equally probable

In respect of the above hypotheses, Frequency Chi Square test has been used and it has been found that the p value in both the cases is less than 0.001. Hence, H0 is rejected at 5% as well as at 1% level of significance. Therefore, it may be said that that all categories of responses to the Customer Satisfaction and also to the Continual Improvement in the mission statement are not equally probable, in other words, the respondents have a strong preference for Customer Satisfaction and Continual Improvement.

Table 9: Pearson Chi Square Values of the Different Factors of Mission against Qualification, Type and Location

Factors	Qualification	Type	Location
Profit Maximisation	0.045	0.034	0.408
Training to Improve People Quality	0.008	0.243	0.897
Customer Satisfaction	0.000	0.920	0.832
Performance Beyond Expectations	0.807	0.831	0.850
Value for Money	0.000	0.867	0.924
Fulfillment of Social Objectives	0.392	0.311	0.596
Continual Improvement	0.000	0.602	0.926

Source: Primary Survey, results computed

In the same way, the Pearson Chi-Square Test has been used to analyse the responses to the mission question according to Qualification of respondents, and Location and Type of company.

H03=Qualification of the respondent has no effect on the perception about the mission of the company.

H13=Qualification of the respondent has significant effect on the perception about the mission of the company.

Table 9 shows that at 5 % level of confidence, the Null Hypothesis has been rejected in respect of all the factors relating to mission of a company as p value is less than 0.05, except for performance beyond expectations and fulfillment of social objectives. Therefore, it may be said that Qualification of the respondent has significant impact on the perception of the respondents about Profit Maximisation, Training to Improve People Quality, Customer Satisfaction, Value for Money and Continual Improvement so far as the mission of company is concerned.

Similarly, the following hypotheses have been tested in relation to the type and location of the company and their effect on the mission of the company.

H04=Type of the company has no effect on the perception about the mission of the company.

H14=Type of the company has significant effect on the perception about the mission of the company.

At 5 % level of confidence, the Null Hypothesis is rejected only in case of Profit Maximisation.

H05=Location of the company does not alter the perception about the mission of the company.

H15=Location of the company has significant effect on the perception about the mission of the company.

At 5 % level of confidence, null hypotheses cannot be rejected as p value is more than 0.05 in all cases. Hence, it may be said that in the opinion of the respondents, there is no significant effect of the location of the company on the mission of the company so far as different factors are concerned.

The Corporate Objectives of the respondent companies are crystallized into a compact Agreed Response given in Table 11, since most of the responses are in the Agreed columns. From Table-11, the Corporate Objective Score Card of the respondent companies reveal that the majority (81.1%) of the respondents have Strongly Agreed that Quality of products/services as a key strategy behind corporate objective and 76.8% of the respondents have Strongly Agreed that Customer Satisfaction as a key strategy behind corporate objective. From Table 12, it is seen that the mean of the distribution of the Corporate Objective of the respondent companies regarding Quality of Company's Goods and Services and Customer Satisfaction are both 4.7579, which is the highest mean figure. All these point to the fact that both Customer Satisfaction and Quality of products/services are the two most important criteria of the Corporate Objective of the respondent companies.

Table 10: Total Responses Regarding Corporate Objectives

Factors	Strongly Agree (%)	Agree (%)	Undecided (%)	Disagree (%)	Strongly Disagree (%)
Profitability	48.4	43.2	6.3	2.1	0
Market Share	55.8	33.7	6.3	3.2	1.1

Growth	56.8	41.1	2.1	0	0
Cash Flow	41.1	51.6	5.3	2.1	0
Customer Satisfaction	76.8	22.1	1.1	0	0
Quality of Products/Services	81.1	13.7	5.3	0	0
Industrial Relations	34.7	52.6	12.6	0	0
Added Value	51.6	40.0	7.4	1.1	0
Total Quality Management	43.2	55.8	1.1	0	0
Production as per Customers' Specifications	47.4	40.0	9.5	3.2	0

Source: Primary Survey

Table 11: Agreed Responses Regarding Corporate Objectives

Factors	Strongly Agree (%)	Agree (%)	Total
Profitability	48.4	43.2	91.6
Market Share	55.8	33.7	89.5
Growth	56.8	41.1	97.9
Cash Flow	41.1	51.6	92.7
Customer Satisfaction	76.8	22.1	98.9
Quality of Products/Services	81.1	13.7	94.8
Industrial Relations	34.7	52.6	87.3
Added Value	51.6	40.0	91.6
Total Quality Management	43.2	55.8	99
Production as per Customers' Specifications	47.4	40.0	87.4
Others	4.2	3.2	7.4

Source: Primary Survey

Table 12: Mean, Median and Mode of Distribution of Corporate Objectives

Factors	Mean	Median	Mode
Profitability	4.3789	4.0000	5.00
Market Share	4.4000	5.0000	5.00
Growth	4.5474	5.0000	5.00
Cash Flow	4.3158	4.0000	4.00
Customer Satisfaction	4.7579	5.0000	5.00
Quality of Products/Services	4.7579	5.0000	5.00
Industrial Relations	4.2211	4.0000	4.00
Added Value	4.4211	5.0000	5.00

Total Quality Management	4.4211	4.0000	4.00
Production as per Customers' Specifications	4.3158	4.0000	5.00

Source: Primary Survey, results computed

To test the probability of the responses to the option of Quality as a key strategy behind corporate objective, the following hypotheses are taken.

H06= All categories of responses to the option of Quality as a key strategy behind corporate objective are equally probable.

H16= All categories of responses to the option of Quality as a key strategy behind corporate objective are not equally probable.

The p value using the Frequency Chi Square is less than 0.001. Hence, H0 is rejected to claim that all categories of responses to the option of Quality as a key strategy behind corporate objective are not equally probable.

Also, from the Table-12, it is evident that 81.1% of the respondents are strongly agreeing with Quality as a key strategy behind corporate objective. Hence, there is a strong preference for Quality as a key strategy behind corporate objective.

Similarly, to test the statistical significance of the responses to the option of Customer Satisfaction as the key strategy behind the corporate Objective, the following hypotheses have been tested.

H07= All categories of responses to Customer Satisfaction as a key strategy behind corporate objective are equally probable.

H17= All categories of responses to option of Customer Satisfaction as a key strategy behind corporate objective are not equally probable.

The p value using the Frequency Chi Square is less than 0.001. Hence, H0 is rejected to claim that all categories of responses to Customer Satisfaction as the key strategy behind corporate objective are not equally probable.

Also, from the Table-10, it is evident that 76.8% of the respondents are strongly agreeing with Customer Satisfaction as the key strategy behind corporate objective. Hence, there is a strong preference for Customer Satisfaction as the key strategy behind corporate objective.

Table 13: Pearson Chi Square Values of the Different Factors of Corporate Objectives Against Qualification, Type And Location.

Factors	Qualification	Type	Location
Profitability	0.001	0.707	0.053
Market Share	0.404	0.532	0.1340
Growth	0.000	0.104	0.094
Cash Flow	0.006	0.954	0.709
Customer Satisfaction	0.000	0.264	0.284
Quality of Products/Services	0.000	0.666	0.485
Industrial Relations	0.025	0.074	0.264
Added Value	0.561	0.716	0.880
Total Quality Management	0.008	0.012	0.082
Production as per Customers' Specifications	0.925	0.259	0.114
Others	0.707	0.090	0.665

Source: Primary Survey, results computed

The Pearson Chi-Square Test is conducted for testing the preference for answering the question on the different Factors in the Corporate Strategy against the Qualification of the respondents.

H08=Qualification of the respondent does not alter the perception about the strategy of the company.

H18=Qualification of the respondent has significant effect on the perception about the strategy of the company.

At 5 % level of confidence, we will reject the Null Hypothesis for Profitability, Growth, Cash Flow, Customer Satisfaction, Quality of Company's Products/Services, Industrial Relation and TQM. In those cases, we accept the Alternate Hypothesis that All the Categories are not equally likely for all types of qualified people.

Similarly, the hypotheses relating to respondents' perception as to the Type and Location of the company have been set as follows.

H09=Type of the company does not alter the perception about the strategy of the company.

H19=Type of the company has significant effect on the perception about the strategy of the company.

At 5 % level of confidence, the Null Hypothesis relating to the Type of the company is rejected only in case of TQM. In all other cases, null hypotheses cannot be rejected as p value is more than 0.05 (Table 14).

H010=Location of the company does not alter the perception about the strategy of the company.

H110=Location of the company has significant effect on the perception about the strategy of the company.

At 5 % level of confidence, all the Categories are equally probable for all responses, irrespective of their Locations.

The mission, corporate objective and non-financial objective of a company must translate itself fully into corporate goals of the company to justify the very purpose for which the company came into existence. It has been seen from the above analysis that the missions, corporate objectives and non-financial objectives of the respondent companies are oriented towards quality. The respondents have a strong preference towards Customer Satisfaction and Continual Improvement in their missions. Similarly, the respondents have a strong tendency to include Customer Satisfaction and Quality of Company's product(s)/service(s) as part of their corporate objectives. Likewise, the respondents have a strong preference towards including the interests of their Customers and Employees in their non-financial objectives. Table 14 reveals the different dimensions of the corporate goals of the respondents. From Table 14, it is seen that maximum 81.1% of the respondent companies have Strongly Agreed to include Productivity as their corporate goal. In total, 98.9% of the respondents have agreed with this concept of including productivity as part of their corporate goal. From Table-28, it is seen that 63.2% of the respondents have Strongly Agreed with including Employee Development a part of their corporate goal. In total, 95.8% of the respondents have agreed with this concept of including Productivity as part of their corporate goal. Furthermore, from Table-14, it is seen that 58.9% of the respondents have Strongly Agreed with including Profitability a part of their corporate goal. In total, 97.9% of the respondents have agreed with this concept of including Profitability as part of their corporate goal. Also, from Table 14, it is seen that 51.6% of the respondents have Strongly Agreed with including Competitive Position a part of their corporate goal. In total, 97.9% of the respondents have agreed with this concept of including Competitive Position as part of their corporate goal.

Table 14: Dimensions of Corporate Goals

	Strongly Agree (%)	Agree (%)	Undecided (%)	Disagree (%)	Strongly Disagree (%)
Profitability	58.9	39	0	2.1	0
Productivity	81.1	17.8	1.1	0	0
Competitive Position	51.6	46.3	0	2.1	0

Employee Position	49.5	48.4	1.0	0	1.1
Employee Development	63.2	32.6	1.0	3.2	0
Public Responsibility	35.8	58.9	5.3	0	0

Source: Primary Survey

Table 15 shows the Mean Median and Mode of the distribution of the different dimensions of the corporate goals of the respondents. The highest mean value is 4.8000 in relation to Productivity. This corroborates the findings of Table 14. Then, Employee Development has the second largest mean value of 4.5579. Profitability comes in the third position with a mean value of 4.5474. The mean value of Competitive Position is 4.4737. The findings from Table 15 highlight the important dimensions of Corporate Goal of the respondents, starting from Productivity in at the top-most rung in the hierarchical order, to Employee Development, Profitability and Competitive Position, in a decreasing importance. It is a heartening sign to see that the respondents have placed Productivity and Employee Development ahead of Profitability and Competitive Position as a part of their corporate goals. Both, Productivity and Employee Development, are not possible without TQM. By following the path of TQM, a company will be able to attain high Productivity and Employee Development. The other two dimensions of corporate goal that is Profitability and Competitive Position will follow automatically.

Table 15: Mean, Median and Mode of Distribution of Different Dimensions of Corporate Goals

	Mean	Median	Mode
Profitability	4.5474	5.0000	5.00
Productivity	4.8000	5.0000	5.00
Competitive Position	4.4737	5.0000	5.00
Employee Position	5.4526	4.0000	5.00
Employee Development	4.5579	5.0000	5.00
Public Responsibility	4.3053	4.0000	4.00

Source: Primary Survey, results computed

Table 16: Activities Carried Out by Companies

	Always (%)	Generally (%)	Sometimes (%)	Rarely (%)	Never (%)
Design and Development	63.2	18.9	2.1	2.1	13.7
Vendor's Control	73.7	20.0	1.0	0	5.3
Control of Purchased Material	82.1	13.7	1.0	0	3.2
Process Engineering, Verification and Analysis	62.1	21.1	3.2	1.0	12.6

Process Control	80.0	13.7	1.1	1.0	4.2
Maintenance of Production and Auxillary Facilities	71.6	13.7	3.1	1.1	10.5
Measurement Assurance, Inspection, Testing and Calibration	70.5	18.9	0	0	10.5
Non-Conformity Analysis and Control	68.4	20.0	3.2	0	8.4
Post-Production Functions	62.1	20.0	5.3	6.3	6.3
Product Installation and Servicing	63.2	9.5	8.4	0	18.9
Customer Feedback, Servicing, Satisfaction, Product Liability and Quality Costs	68.4	16.8	6.3	0	8.4
Quality Documentation, Records and Audits	82.1	11.6	3.1	2.1	1.1
Strategic Planning, Commitment and Leadership for Quality	66.3	25.3	5.2	0	3.2
Training and Humanistic Aspects of TQM	58.9	28.4	5.2	5.3	2.1
Any Other	22.1	1.1	21.1	0	55.8

Source: Primary Survey, results computed

Table 16 shows the various activities carried out by the respondent companies. All these activities are important from the view-point of TQM. From the Table 16, it is seen that 63.2 % of the respondent companies always carry out Design and Development activities, 73.7 % of the respondent companies always carry out Vendor's Control activities, 82.1 % of the respondent companies always carry out Control of Purchased Material activities, 62.1 % of the respondent companies always carry out Process Engineering, Verification and Analysis activities, 80.0 % of the respondent companies always carry out Process Control activities, 71.6 % of the respondent companies always have Maintenance of Production and Auxiliary Facilities, 70.5 % of the respondent companies always carry out Measurement Assurance, Inspection, Testing and Calibration activities, 68.4 % of the respondent companies always carry out Non-Conformity Analysis and Control activities, 62.1 % of the respondent companies always carry out Post-Production functions activities, 63.2 % of the respondent companies always carry out Product Installation and Servicing activities, 68.4 % of the respondent companies always carry out Customer Feedback, Servicing, Satisfaction, Product Liability and Quality Costs activities, 82.1 % of the respondent companies always carry out Quality Documentation, Records and Audits activities, 66.3 % of the respondent companies always carry out Strategic Planning, Commitment and Leadership for Quality activities and 63.2% of the respondent companies always carry out Training and Humanistic Aspects of TQM activities. All these figures reflect a satisfactory percentage of respondent companies carrying out the important activities mentioned in Table 16.

Table 17 shows the values of the Means, Medians and Modes of the various activities carried out by the respondent companies. From the Table 17, it is seen that the mean value of the Design and Development activities is 4.1579, the mean value of the Vendor's Control activities is 4.5684, the mean value of the Control of Purchased Material activities is 4.7158, the mean value of the Process Engineering, Verification and Analysis activities is 4.1895, the mean value of the Process Control activities is 4.6421, the mean value of the Maintenance of Production and Auxiliary Facilities is 4.3474, the mean value of the Measurement Assurance, Inspection, Testing and Calibration activities is 4.3895, the mean value of the Non-Conformity Analysis and Control activities is 4.4000, the mean value of the Post-Production functions activities is 4.2526, the mean value of the Product Installation and Servicing activities is 3.9789, the mean value of the Customer Feedback, Servicing, Satisfaction, Product Liability and Quality Costs activities is 4.3684, the mean value of the Quality Documentation, Records and Audits activities, the mean value of the Strategic Planning, Commitment and Leadership for Quality activities is 4.5158 and the mean value of the Training and Humanistic Aspects of TQM activities is 4.3684. All these figures of

Table 17: Mean, Median and Mode of Distribution of Activities Carried Out by Companies

	Mean	Median	Mode
Design and Development	4.1579		
Vendor's Control	4.5684		
Control of Purchased Material	4.7158		
Process Engineering, Verification and Analysis	4.1895		
Process Control	4.6421		
Maintenance of Production and Auxillary Facilities	4.3474		
Measurement Assurance, Inspection, Testing and Calibration	4.3895		
Non-Conformity Analysis and Control	4.4000		
Post-Production Functions	4.2526		
Product Installation and Servicing	3.9789		
Customer Feedback, Servicing, Satisfaction, Product Liability and Quality Costs	4.3684		
Quality Documentation, Records and Audits	4.7158		
Strategic Planning, Commitment and Leadership for Quality	4.5158		
Training and Humanistic Aspects of TQM	4.3684		
Any Other	2.3368		

Source: Primary Survey, results computed

The need for Cost of Quality information arises in Enterprise Resources Planning, Activity Based Costing System and Target Costing Process, in short it improves performance. Cost of Quality can be divided into four categories, which are Prevention

Costs, Appraisal Costs, Internal Failure Costs and External Failure Costs. From the TQM view, improvements in quality, as defined by customers, always result in improved organizational performance because improving quality improves efficiency as problems are identified and eliminated. Furthermore, in the TQM context, the quest for improved quality never finishes. TQM experts inspired by Deming (1991) argue that customers seek the highest quality products and are willing to pay a premium for them.⁸ Thus, TQM experts have claimed that quality is free as improving quality more than pays itself by creating higher profits. The TQM philosophy envisages that quality can and should always be improved, even exceeding customers' quality expectations. The terms customer defined quality, customer satisfaction and product or service quality are all closely linked. Quite naturally, adopting TQM will lead to increased customer satisfaction and product or service quality, which will serve as lead indicators of improved productivity. Horngren, Foster and Juran and Gryna, quoting from Datar (1991) had described customers as becoming more intolerant of poor quality and long delivery time.⁹

Table 18: Companies Computing, Analysing and Reporting Quality Cost for Management Control

Category	Frequency	Percentage (%)
No	5	5.3
Yes	90	94.7
Total	95	100.0

Source: Primary Survey

Table 18 reveals that 94.7% of the respondent companies compute, analyse and report quality cost and use those data for management control purposes. This figure is a very high figure and points out to the fact that Indian companies have a very healthy habit of computing, analyzing and reporting quality cost data for management control purposes. This will help in the extension of TQM activities in Indian companies.

Table 19: Cost of Quality Reporting Practices In Companies

Opinioin	Reporting Cost of Quality	Not Reporting Cost of Quality	TOTAL
Type of Companies			
Manufacturing	82 (95%)	4 (5%)	86 (100%)
Service	8 (89%)	1 (11%)	9 (100%)
Total	90 (95%)	5 (5%)	95 (100%)

8 W.E. Deming, *Out of the Crisis*, Cambridge, M. A., Massachusetts Institute of Technology, Center for Advanced Engineering Study, 1986, Reprinted 1991.

9 J.M. Juran & F.M. Gryna, *Quality Planning and Analysis*, 3rd ed., New York, McGraw Hill, 1993.

Source: Primary Survey

Table 19 indicates that Cost of Quality technique has gained appreciable acceptance among all types of companies, both manufacturing and service. The majority of the respondents (95%) cite that Cost of Quality is very much applicable in India. The same has been found in reference to the study by Kaur (2009) where an encouraging response from 78.5% of the respondent Indian companies was found who adopted Cost of Quality. Furthermore, Kaur (2009) found no significant difference in public sector and private sectors in tracking Cost of Quality.¹⁰

Table 20: Cost of Quality Measures used by Companies

	Strongly Agree (%)	Agree (%)	Undecided (%)	Disagree (%)	Strongly Disagree (%)
Manufacturing Cost	29.5	43.2	11.6	13.7	2.1
Labour/Wages	10.5	46.3	15.8	24.2	3.2
Total Cost	45.3	35.8	7.4	9.5	2.1
Sales	31.6	23.2	27.4	15.8	2.1
Profit	15.8	30.5	28.4	22.1	3.2
Number of Units Produced	4.2	29.5	38.9	24.2	3.2
Any Other	3.2	2.1	93.7	0	1.1

Source: Primary Survey

Table 20 is very important from the point of view of this research. Table 20 reveals the basis on which the Quality Cost is measured in Indian companies. A majority of 45.3% of the Indian companies have Strongly Agreed with measuring Quality Cost based on Total Cost. In total, 81.1% of the respondent companies have agreed with measuring Quality Cost based on Total Cost. From Table 20, it is seen that 29.5% of the respondent companies have Strongly Agreed to measuring Quality Cost as a percentage of Manufacturing Cost. In total, 72.7% of the respondent companies have agreed with the view, that Quality Cost should be measured as percentage of Manufacturing Cost. Furthermore, it is seen that 31.6% of the respondents have Strongly Agreed with the view that Quality Cost should be measured as a percentage of Sales. A total of 54.8% of the respondents have subscribed to this view. 10.5% of the respondents have Strongly Agreed with measuring Quality Cost as a percentage of Labour or Wages. A total of 56.8% of the respondents have subscribed to this view. It is further observed that 15.8% of the respondents have Strongly Agreed with the view that Quality Cost should be measured as percentage of Profit. A total of 46.3% of the respondents have agreed with this view.

¹⁰ P. Kaur, Current Cost of Quality Management Practices in India in the Era of Globalization: An Empirical Study of Selected Companies. *Decision*, 36(1), 73- 99, 2009.

Table 21: Companies Investing In Market Research

Categories (%)	Frequency	Percentage
NEVER	30	31.6
RARELY	11	11.6
SOMETIMES	12	12.6
GENERALLY	16	16.8
ALWAYS	26	27.4
TOTAL	95	100.0

Source: Primary Survey

Table 21 shows that 26% of the respondent companies are always investing in market research. 30% of the respondent companies are never investing in market research.

Table 22: Pearson Correlation between Quality Cost Control and Market Research

		Quality Cost Control	Market Research
Quality Cost Control	Pearson Correlation	1	.227(*)
	Sig. (2-tailed)	.	.027
	N	95	95
Market Research	Pearson Correlation	.227(*)	1
	Sig. (2-tailed)	.027	.
	N	95	95

Source: Primary Survey

The sample correlation is only 0.227, which indicates that a weak relationship exists between Quality Cost Control and Market Research in the sample.

The Chi-Square Test is done to bring about the independence of attributes and the following hypotheses have been set.

H011: There is no significant correlation between Quality Cost Control and Market Research; and

H111: There is significant correlation between Quality Cost Control and Market Research.

Table 23: Quality Cost Control and Market Research Cross Tabulation

		Market Research					Total
		Never	Rarely	Sometimes	Generally	Always	
QUALITY	No	3	2	0	0	0	5
COST CONTROL	Yes	27	9	12	16	26	90
Total		30	11	12	16	26	95

Source: Primary Survey, results computed

Table 24: Chi-Square Test between Quality Cost Control and Market Research

	Value	Df	Asymp. Sig. (2-sided)
Pearson Chi-Square	8.032	4	.090

Source: Primary Survey, results computed

From table 24, we see that the probability under Pearson's Chi Square is 0.090 which is greater than 0.05. So, under 5% level of significance, we accept the null hypothesis and claim that there is no significant association between the two variables, namely Quality Cost Control and Market research in the sample. We accept the Chi-square result as Chi-Square is the better test, since we are dealing with categorical variables.

Table 25: Activities by Companies to Reduce Consumer Complaints

Activities	Always (%)	Generally (%)	Sometimes (%)	Rarely (%)	Never (%)
Investing in Market Research	27.4	16.8	12.6	11.6	31.6
Monitoring Customer Perception	43.2	33.7	7.4	6.3	9.5
Monitoring Product and Process Improvement in Relation to Customer Perception	51.6	27.4	9.5	3.2	8.4
Quality Training	76.8	17.9	4.2	0	1.1
Taking Corrective Action From Customer Feedback and Complaints Report	87.4	10.5	1.1	0	1.1

Source: Primary Survey

Table 25 shows the Activities by Companies to Reduce Consumer Complaints. From this table it is seen that 87.4% of the respondents always take corrective action from

customer feedback and complaints reports and 76.8% of the respondents always has quality training. This is a good sign. Only a small portion of 27.4% of the respondents always invests in market research. In fact, 31.6% of the respondents never invest in market research. In this age of cut-throat competition, it is always prudent for any company to invest in market research to understand the changing trend in customer habits, tastes and preferences as well as to gain knowledge about their competitors. But, this has been found lacking in the respondents. The findings of Table 25 support the findings of Table 21 that a large portion of the respondent companies do not conduct market research.

Table 26: Management Values, Tools and Principles of Companies

Focus	Always (%)	Generally (%)	Sometimes (%)	Rarely (%)	Never (%)
Customer-Driven Quality	71.6	25.3	2.1	0	1.1
Leadership	64.2	29.5	6.3	0	0
Continuous Improvement of all Processes	83.2	14.7	2.1	0	0
Employee Participation and development	50.5	41.1	4.2	3.2	1.1
Fast response	62.1	34.7	2.1	1.1	0
Design Quality and Prevention	41.1	45.3	9.5	2.1	2.1
Long-Range Outlook	29.5	53.7	12.6	3.2	1.1
Management by Fact	22.1	61.1	13.7	2.1	1.1
Partnership Development	13.7	64.2	10.5	8.4	3.2
Corporate Responsibility and Citizenship	22.1	57.9	12.6	4.2	3.2

Source: Primary Survey

Table 26 reveals the management values, tools and techniques followed by the respondents. A majority of 83.2% of the respondents have Strongly Agreed with Continuous Improvement of all Processes. In total, 97.9% of the respondents have subscribed to this view. 71.6% of the respondents have Strongly Agreed with Customer-Driven Quality. In total, 96.9% of the respondents have agreed with this view. These findings corroborate with the analysis of the mission of the respondents, where the focus was on Customer Satisfaction and Continual Improvement. Both Customer Satisfaction and Continual Improvement are the main pillars of TQM. It can be said like the mission of the respondents, the management values, tools and principles of the respondents also focus on Customer Satisfaction and Continual Improvement - the main pillars of TQM.

Table 27: Companies Investing in R&D Activities

Category (%)	Frequency	Percentage
No	21	22.1
Yes	74	77.9
Total	95	100.0

Source: Primary Survey

Table 27 table shows a major portion of the respondent companies investing in R&D activities. Nearly four-fifths of the respondent companies are investing in R&D activities, which is very healthy sign for raising the quality of a company's products or services.

Table 28: Companies Investing in In-House R&D Activities

Category (%)	Frequency	Percentage
No	32	33.7
Yes	63	66.3
Total	95	100.0

Source: Primary Survey

Table 28 shows a high percentage of the respondent companies investing in In-house R&D activities. Nearly two-thirds of the respondent companies are investing in In-house R&D activities, which is very healthy sign for enhancing the quality of a company's products or services.

Table 29: Companies Sharing Their R&D Activities

Category (%)	Frequency	Percentage
No	60	63.2
Yes	35	36.8
Total	95	100.0

Source: Primary Survey

Table 29 shows a high percentage of the respondent companies sharing their R&D facilities. 63.2% of the respondent companies sharing their R&D facilities to enhance quality measurement and product development.

Table 30: Type of Workers' Participation In Management

Type of Workers' Participation	ALWAYS (%)	GENERALLY (%)	SOMETIMES (%)	RARELY (%)	NEVER (%)
Consultative Supervision	10.5	21.1	10.5	10.5	47.4
Democratic Supervision	5.3	20.0	7.4	18.9	48.4
Multiple Management	12.6	23.2	14.7	5.3	44.2
Labour/Management Co-operation	23.2	26.3	12.6	3.2	34.7
Suggestion Program/Plans	26.3	25.3	8.4	10.5	29.5
Employee Director	5.3	8.4	8.4	11.6	66.3
Any Other	3.2	0	4.2	3.1	89.5

Source: Primary Survey

Table 30 presents a very bleak picture of Worker's Participation in the Management of the respondent companies. Only Suggestion Programme/ Plans and Labour Management /Cooperation have percentage of 26.3% and 23.2% for response to Always Category, respectively. Otherwise, only 10.5% of the respondents always have Consultative Supervision, 5.3% of the respondents always have Democratic supervision, 12.6% of the respondents always have Multiple Management, 5.3% of the respondents always have Employee Directors and 3.2% of the respondents always have some other form of Workers' participation in Management of company.

Foreign Collaboration has a big impact on TQM practices in Indian companies. Now-a-days, Indian companies are going for Foreign Collaboration in a big way. In this age of globalization, Indian companies have no other option than to go for Foreign Collaboration; as such collaborations offer multiple benefits to Indian companies. Foreign Collaboration can be of different types; ranging from Equity Participation, whereby Foreign Collaborators have ownership of the Indian companies to Technical Tie-Ups, whereby Foreign Collaborators transfer technical know-how to the Indian companies. Table 31 discloses the different types of Foreign Collaboration undertaken by the respondent Indian companies.

Table 31: Types of Foreign Collaboration

Types of Foreign Collaboration	Frequency	Percentage of Respondents
Equity Participation	35	36.8
Preference Shares	9	9.5
Joint Venture	27	28.4
Partnerships	10	10.5
Technical Tie-ups	65	68.4

Source: Primary Survey

From the Table 31, it can be seen that 68.4% of the respondent companies are opting for Technical Tie-ups. 36.8% of the respondent companies have Equity Participation of Foreign Collaborators. Another favourite mode of Foreign Collaboration is Joint Ventures. From the responses, it is seen that 28.4% of the companies have entered into Joint Ventures with Foreign Collaboration. Just 10.5% of the respondent companies have entered into Partnerships with Foreign Collaboration. From Table 31, it is seen that the least favourite type of Foreign Collaboration is in the nature of Preference Shares. The findings from the table reveals that most of the respondent Indian companies want to reap the benefits from the latest, most modern technology available in order to be able to be more competitive. The relevant question that arises is whether these Technical Tie-Ups have a positive impact on the TQM Practices of the respondent Indian companies?

Table 32: Pearson Correlation between Technical Tie-Ups and Positive Impact on TQM

		Quality Cost Control	Market Research
Technical Tie-ups	Pearson Correlation	1	.753(**)
	Sig. (2-tailed)	.	.000
	N	95	95
Positive Impact on TQM	Pearson Correlation	.753(**)	1
	Sig. (2-tailed)	.000	.
	N	95	95

Source: Primary Survey, results computed

Table 32 gives the Pearson Correlation between Technical Tie-Ups and Technical Tie-Ups having a Positive Impact on TQM. The Pearson Correlation of 0.753 for one-tailed and two-tailed tests show a high degree of positive correlation between Technical Tie-ups with Foreign Companies and Positive Impact of Foreign Collaboration on Indian companies by way of change in their Management Practices and TQM implementation. P value <0.001 indicates a high degree of correlation between the two variables.

The Chi-Square Test is done to bring about the dependence of attributes.

H012= There is no significant association between Foreign Technical Tie-ups and Foreign Technical Collaboration having a Positive Impact on Indian companies by way of change in their Management Practices and Total Quality Management.

H112= There is significant association between Foreign Technical Tie-ups and Foreign Technical Collaboration having a Positive Impact on Indian companies by way of change in their Management Practices and Total Quality Management.

Table 33: Technical Tie-Ups and Positive Impact on TQM Cross Tabulation

		Positive Impact on TQM		Total
		NO	YES	
Technical Tie-Ups	NO	24	6	30
	YES	4	61	65
Total		28	67	95

Source: Primary Survey, results computed

Table 33 gives the Cross Tabulation of the Technical Tie-Ups and Technical Tie-Ups having a Positive Impact on TQM. It is seen that out of 65 respondents having Technical Tie-Ups with Foreign Collaborators, as much as 61 respondents are of the view that the Technical Tie-Ups with Foreign Collaborators have a Positive Impact on Indian companies by way of change in their Management Practices and Total Quality Management. In case of no Foreign Collaboration, out of 30 respondents, only 6 respondents are of the view that Foreign Collaborators have a Positive Impact on Indian companies by way of change in their Management Practices and Total Quality Management.

Table 34: Chi-Square Test between Technical Tie-Ups and Positive Impact on TQM

	Value	Df	Asymp. Sig. (2-sided)
Pearson Chi-Square	53.849	1	<0.001

Source: Primary Survey, results computed

Table 34 gives the Chi-Square Test between Technical Tie-Ups and Positive Impact on TQM. The probability under Pearson's Chi Square is less than 0.001. So under 1% level of significance, we reject the null hypothesis and claim that there is a significant association between Technical Tie-ups with Foreign Companies and Positive Impact of Foreign Collaboration on Indian companies by way of change in their Management practices and TQM implementation. This follows that if a company has Foreign Technical Tie-ups there will be a Positive Impact of Foreign Collaboration on Indian companies by way of change in their Management practices and TQM implementation.

Findings and Suggestions

After analyzing the data by employing the necessary statistical tools, many inferences have been made. In the context of the prevailing TQM Practices in India, these inferences may be considered as very important, as they shed light on the subject. As mentioned

in the Introduction, India is a Newly Industrialized Country, but still lags behind other developed countries like Japan, according to the UNIDO Reports of 2010 and 2009. Japanese industries boast of achieving the highest MVA per capita globally. If Indian industries sincerely wish to realize its dreams of being the world leaders, they need to follow in the TQM footsteps of its Japanese counterparts. Indian industries need to re-visit their TQM practices and have a re-look at its TQM practices. Findings of the study are expected to help the Indian industries in unlocking their latent potential that have the inner strength and resolve to overtake the industries of Unites States, China and United Kingdom to become global leaders in quality. The major findings of this research work have been short listed below.

- The different elements of the TQM philosophy has been analyzed and it has been seen that the 'soft' side of the TQM is more prevalent in the business world today.
- The pervasiveness of the TQM philosophy owes lot to the contributions made by the different quality gurus over a period of time.
- TQM philosophy rests on the main pillars of Customer Satisfaction, Continual Improvement and Teamwork, to name a few.
- The development status of TQM in Indian companies can be gauged from the prevalence of the different elements of TQM in the Mission of the companies and whether they have been translated into actual Corporate Objectives.
- From the analysis of the respondents' profile, there are several interesting observations to be made. An overwhelming percentage of the responding managerial personnel are male (96.8%). Only 3.2% of the responding managerial personnel are female (3.2%), 37.9% of the responding management personnel are 50 years or above. On the other hand, 30.5% of the responding management personnel are in the agegroup of 40-50. Thus, there is a useful blend of wisdom and youth in the management hierarchy in Indian companies. Only, 17.9% of the responding management personnel are post-graduates and 11.6% of the responding management personnel have completed their graduation and attained other professional qualifications. This shows that the qualification profile of the management personnel of Indian companies need to be upgraded as most of them, that is 52.6 % of the responding managerial personnel (Table 3) have graduation degree only. 30.5% of the responding managerial personnel are managers or senior executives. Only 7.4% of the responding managerial personnel are either officers or team leaders or engineers.
- Qualifications have a distinct role to play in answering the Question on Profitability, Growth, Cash Flow, Customer Satisfaction, Quality of Company's Products/

Services, Industrial Relation and Total Quality Management in the Corporate Strategy of a company. Types of company have a distinct role to play in answering the Question on TQM being a Corporate Strategy of company. Locations of company do not have a distinct role to play in answering the Questions on Corporate Strategy of company.

- Cost of quality techniques is popular among both manufacturing and service companies.
- Another important fact is that the quality cost data is used for management control purposes usually on a monthly basis. This period should be brought down to 15 days so that the impact of Total Quality Management practices on the performance of the company is brought out more clearly and control exercised more stringently.

Based on the findings of the research study, some suggestions are offered to improve the TQM Practices in Indian companies. The suggestions are expected to help the companies to chart the future TQM road-map of Indian industries. TQM is essential for Indian industries as it offers a way for Indian companies to improve the quality of their products and services, and be the world leaders. These suggestions are also expected to serve as valuable reference for Indian government and the relevant department dealing with corporate affairs to frame the government guidelines regarding Indian industry. It is expected that the implementation of the suggestions will help transform India into the league of leading industrialized nations on earth in the twenty-first century.

- Companies should move forward and continually improve its quality and obtain higher quality standards. More opportunities for growth and development of female employees in Indian companies should be given by providing them with the necessary training and skill enhancement facilities so that they are equipped to handle more responsibilities and be promoted from the lower and middle management up the rank and file to the echelons of top management.
- The management personnel of Indian companies need to expand their qualification profile to include post-graduation degrees and other professional degrees, like M.B.A. degree, if they are to climb up the management ladder to the top management level. The Indian companies need to provide more adequate educational facilities, in the form of well furnished libraries and educational incentives like educational loans to their employees, so that they can pursue higher learning in their free time.
- The companies should focus more on Employee development, as the employees are the 'internal customers' of the companies, according to TQM. Employee Development helps to realise the latent possibilities of the employees and gives

rise to self-development and this will help in creating a conducive atmosphere that will foster team work, one of the basic pillars of TQM. The companies should focus more on Employee development, as the employees are the 'internal customers' of the companies, according to TQM.

- The respondent companies must attach a larger importance to Public Responsibility as an important dimension of their Corporate Goal, as companies are a part of society and they have an important public responsibility. Only by incorporating the interests the society as an important stakeholder in their Corporate Goals, the companies will be able to discharge the role envisaged for them through following the path of TQM.
- Indian companies should continue with the trend of attaching more importance to Productivity and Employee Development ahead of Profitability and Competitive Position as a part of their corporate goals.
- More frequent quality training is required for upgrading the knowledge and skill of the management personnel. In other words, the allocation of man-days devoted to the Training of Employees must be increased in order to make the Indian management personnel aware of the latest quality practices around the globe.
- Indian companies should adopt lean manufacturing by embracing the concept of JIT through the elimination of waste of resources. Since through this study, it was seen that most of the respondents were not fully aware of the benefits accruing from JIT, an awareness campaign amongst Indian companies for promoting JIT should be launched by the Government bodies and corporate associations.
- Top management commitment should be extended to the whole organization so that the quality drive succeeds.
- An Indian company must enter into a partnership with all its stakeholders. The most important stakeholder is the employee.
- The employees must be involved in the decision making process of the management for effective team-work, which is one of the basic pillars of Total Quality Management.
- Indian companies must enter into joint Research and Development Venture with Universities and Colleges, and promote industry-academic partnership and help develop engineering, technology, basic science, social science and management, and use the results of such developments in the industries.

- Indian companies need to be more aware of important TQM tools and concepts like implementation of JIT, Zero defects and Prevention rather than Detection. They need to implement these tools and concepts in their HRM activities.
- It is better to measure Cost of Quality as a part of sales, so that it becomes easier to make control decision as well as decision relating to its recovery from the customers and the company does not think it as an extra burden on their resources.
- Indian companies need to analyse their quality cost data on a more regular basis. According to the respondents, most of Indian companies analyse quality cost and use those data for management control purposes on a monthly basis. This period of one month should be brought down further, say to 15 days, so that the control of quality cost becomes more effective, with frequent feedback.
- Most Indian companies do not conduct market research, but without it monitoring customer perception becomes difficult. Therefore, companies should conduct market research periodically to have the clear idea about customer perception.

Conclusion

India's TQM practices are in the nascent stage and lag behind many developed countries. Indian companies need to rethink about their TQM practices in order to unlock their potential. A scientific and systematic plan to implement TQM in phases has to be worked out so that maximum advantage can be achieved for this wonderful technological application.