

## **An Empirical Study on Implementation of TQM Practices in Small & Medium Enterprises (SMEs) of North Karnataka Region in India**

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### **ABSTRACT**

*TQM is an approach to management for an enterprise focused on quality, based on the involvement of all the employees with an intend of achieving enduring success through customer satisfaction and benefits to all stakeholders of organization. There is little research work has been carried on effect of TQM implementation in performance of small & medium enterprises in India. Literature review attract the importance of quality management practices for SMEs in order to improve their current business practices as well as quality of products and services to ensure long-term survival in increasing global competition. On the other hand, there are several constraints to successful implementation of TQM practices for example lack of awareness & training program relating to TQM, commitment by top management, customer focus, financial and human resources in SMEs. In particular, the study reveals the results of questionnaire survey of 1030 small & medium enterprises of north Karnataka region of India This research work is an extensive empirical research study on implementation of total quality management practices that examine the rationale of TQM implementation and impact on organizational performance. The present research study focused on examining TQM implementation practices that are most appropriate to the small and medium enterprises in India.*

**Keywords:** Total quality management, Small & medium Enterprises, Companywide quality control, Organization performance, TQM factors, Customer focus, Continuous quality improvement, Employee involvement & teamwork.

### **INTRODUCTION:**

In the early 20<sup>th</sup> century, Fredrick Winslow Taylor, the father of scientific management emphasized on quality by including product inspection and quality control process listed as the primary areas of shop floor management. In 1924, W. Shewhart introduced statistical control charts to monitor production process. World War II caused a dramatic increase in emphasis on quality control and use of statistical sampling techniques. During 1950s, quality movement evolved into quality assurance. By 1970s & 1980s, the idea of total quality started surfacing. In this approach, all the employees (from topmost level to lowest level) were supposed to take responsibility of implementing quality processes for their respective functional areas. Accordingly, methods of quality management were developed and utilized to encourage the design, production, marketing, sales & service of quality products/services. This integrated approach involves all departments in an organization in providing a quality product/service became known as total quality management. Thus, TQM is a management approach that places emphasis on continuous system improvement as a means of achieving customer satisfaction to ensure long-term success of an organization. Although many researchers have made substantial contributions to the theory & practice of quality management. The key contributors of total quality management, are regarded as quality gurus, W. Edwards Deming (1986)<sup>[8]</sup>, Dr. Joseph M. Juan (1989)<sup>[14]</sup>, Philip B. Crosby (1979)<sup>[5]</sup>, Armand Feigenbaum (1991)<sup>[9]</sup> and Kaoru Ishikawa (1985)<sup>[13]</sup> in the quality revolution. They have led the development of the current set management tools within the total quality

management, which have accepted significantly by the corporate throughout the world. Their contributions and propositions have provided a good understanding of the total quality management philosophy, approach, fundamental principles and tools. After analysis of their work, it was found that there are some of the similarities and few differences in the viewpoints about total quality management. A number of quality awards are given by various agencies to encourage companywide quality control systems throughout the world. There are various award models, such as the Deming's Prize in Japan given by JUSE, the European Quality Award (EQA) in Europe conferred by the European Foundation for Quality Management, the Malcolm Baldrige National Quality Award (MBANQA) govern by USA Government, and the Rajiv Gandhi National Quality Award (RGNQA) in India by Bureau of Indian Standards. These models help organization to stimulate and improve quality through self- assessment, and are helpful in defining TQM in a way that management can more easily understand.

## **REVIEW OF LITERATURE:**

The TQM concept is still gradually evolving concept and it has developed in different propositions by different researchers. Companies in almost all the countries across the world have adopted quality management concept & practices globally. In present scenario, companies are confident that effective implementation of quality management can gain sustainable competitive advantage and improve abilities to achieve market superiority in the marketplace. (Anderson et al., 1994)<sup>(12)</sup> Many of the research studies have concluded that the implementation of quality management practices can permit companies to compete effectively across the globe and contribute to the success of the business. Various researchers have found that the implementation of total quality management approach has led in enhanced quality, profitability, competitive position, productivity in about one fourth of the organizations who have implemented it (Benson 1993<sup>(3)</sup><sup>(23)</sup>; Schonberger, 1994<sup>(26)</sup>) Another research study conducted by Rahman S. (2001)<sup>(21)</sup> confirmed that a higher level of improvement rate in satisfaction of customers, relationship with employees, procedures of operations, and financial performance is accomplished by implementation of TQM practices. However, some of the studies have shown that negative impact on organization performance and higher failure rate while initiated TQM practices & activities in the companies (Taylor & Wright, 2003)<sup>(27)</sup>. (Mahadevappa & Kotreshwar, 2004)<sup>(17)</sup> indicated that Top management commitment & support play vital role in achieving high product quality and success of the implementation of TQM programs. In contrast to this research study, (Motwani Jaideep, 2001)<sup>(18)</sup> revealed that no relationship exists between top level management commitment on quality and the high achievement of product quality level. Many of the researchers recommended that good and systematic product design can direct to the achievement of improved product quality (Joseph Juran, 1989)<sup>(14)</sup>. However, (Motwani et al. 2001)<sup>(18)</sup> found that no association be present between good product design system and product quality level is achieved. Likewise, there are conflicting researches findings have been reported in the recent research studies done on the effect of implementation of quality management practices on overall business performance in organizations located in various countries. It was exciting to find that the results of the research between the two similar kinds of replication studies conducted are considerably different. Such illusory conflicting results were reported in one of the recent study conducted by the researcher for the Indian companies with respect to effects of TQM implementation in the small & medium enterprises. Therefore, it can be said that the rate of implementation of practices of quality management and techniques in the manufacturing organizations is gradually increasing in India. Nevertheless, Yosuf et al. (2000)<sup>(30)</sup> confirmed that the effectiveness of the deployment of quality management policy in manufacturing organizations is a challenging and risky job. Due to the lack of awareness and expertise knowledge, some of the principles of quality management and recent techniques have not been widely used by Indian organizations. It can be concluded that, based on the observation and quality inspection, the quality of the Indian products are at low level in comparison to the high standards of world class products produced by the TQM organizations. According to the review of existing literature, no empirical study has been scientifically conducted on the implementation of quality management practices and their effects on overall organizational performance in Indian small & medium enterprises. In accordance with bridging the research gap, a research study on the quality management factors contributing to the organization success and the impact of implementation of quality management practices in small and medium enterprises is required to stimulate organizations to increase quality efforts and find out solutions to the problem related issues raised during the implementation. Total quality management is a philosophy gradually evolved from the traditional management theories such as scientific management, management by objectives, quality circle movement, strategic management etc. After review of literature based on the total quality management era, it has been understood that much research has been conducted in the field of TQM implementation throughout world. In addition, it has

been found that different researchers have defined TQM in their unique ways and its frameworks were based on their own understanding of TQM and research objectives. Total quality management is a management system for a customer driven organization that involves all employees in continuous improvement of the organization. In the late 1980s, customer satisfaction has become the definite objective of all the business organizations. At the end of 20<sup>th</sup> century, business organizations were involved in various quality management practices that later called as quality revolution. It has initiated in Japan and extended over to other countries of the world. It involves an entirely new thinking about quality and dealing with quality that cover throughout the organization. TQM can be defined as a set of techniques and procedures used to reduce or eliminate variation from a production process or service-delivery system in order to improve efficiency, reliability and quality. TQM is a philosophy that involves everyone in an organization in a continual effort to improve quality and achieve customer satisfaction. There are two key philosophies in TQM. One is a continual effort to quality improvement and other is an customer satisfaction, which involves meeting or greater than customer expectations. As per Kanji and Asher (1996)<sup>(15)</sup>, TQM is a process of continuous improvement for every employee, groups of employees and organization as a whole, it focus on four principles (delighting the customer, management by fact & figures, people-orientation and continuous process improvement) and eight core concepts (customer satisfaction, employee satisfaction, process management, measurement & feedback, teamwork, recognition & reward for quality, continuous improvement and prevention better than cure). According to ISO 8402-1994, TQM is defined as a approach to management of an organization, focused on achieving quality, based on the involvement of all organizational members and intend to achieve long lasting success through customer satisfaction and benefits to all it's stakeholders. Flynn et al. (1994)<sup>(10)</sup> defined TQM as an integrated approach to management for accomplishing and sustaining high quality production, stressing on the continuous improvement of processes and defect free output from all the depart ments of the organization, in order to conform customer requirements and specifications. Hackman and Wageman (1995)<sup>(12)</sup> comprehensively reviewed the philosophies TQM three quality guru's about TQM.(i.e. W. E. Deming, Joseph Juran, and Kaoru Ishikawa). According to their assessment and analysis results, the five core concepts of TQM have been identified : recognition and dimensions of customer needs & specifications; supplier relationship management; cross-functional approach to discover and solve quality related problems; use of statistical methods & techniques to appraise performance and attempt for performance improvement; strong and increased teamwork. According to Dean and Bowen (1994)<sup>(7)</sup>, TQM is defined as a philosophy of management that is characterized by its principles, practices, tools and techniques. Its three principles are customer orientation, continuous quality improvement and dedicated teamwork. Each principle is implemented through a set of tools and practices; a wide range of techniques in turn, supports these practices. Black and Porter (1996)<sup>(25)</sup> have proposed ten significant factors of TQM: Internal & external customer management, supplier relationship management, Internal communication of improvement, customer satisfaction, external public relationship management, strategic management, cross functional teamwork structure, operational planning process, continuous improvement of quality, measurement & feedback system, and quality culture. According to Powell's (1995)<sup>(19)</sup> study, various elements have been recognized for TQM framework: Top management commitment, quality philosophy consideration, customers relationship, suppliers relationship, benchmarking, quality education and training, open internal communication, employee participation and empowerment, zero-defects, flexible manufacturing system, continuous quality improvement, and measurement & feedback system. Waldman (1994)<sup>(29)</sup> stated eight TQM elements such as top management commitment to set quality as a top priority, a broader definition of quality as delighting customers by meeting or exceeding customer expectations, TQM values, mission and vision statement, quality culture development, involvement and empowerment of all employees in achieving continuous quality improvements, management based on facts and figures, educating and training to improve employee skills and abilities and process benchmarking, building strong relationship with customers and suppliers in executing quality efforts. Mann R et al. (1994)<sup>(16)</sup> categorized ten elements of TQM. They are supplier partnership, quality control and improvement, internal and external customer orientation, measurement and feedback, leadership style, quality management system, employee participation, recognition & reward system, and education & training of employees. However, much research has been conducted in the field of TQM implementation throughout the world, no universally accepted TQM definition presently exists. Actually, different researchers have different ideas about TQM concept and practices. However, many of the researchers and practitioners have the same opinion that TQM is a modern philosophy or approach or new way of thinking to management, which requires a set of practices mainly stressing on continuous quality improvement, customer orientation, process management system, supplier relationship management, employee involvement and teamwork. In the era of total quality management, three authors such

as Saraph et al. (1989)<sup>[23]</sup>, Flynn et al. (1994)<sup>[10]</sup>, and Ahire et al. (1996)<sup>[1]</sup>, respectively. Ahire et al. (1996)<sup>[1]</sup> have strongly suggested that a combination of their TQM frameworks be considered for conducting future research study in the field of TQM implementation. Indeed, the current study considered this suggestion, tried to attempt the integrating TQM factors proposed by these authors.

- **Customer Focus:** It is the primary element of TQM to identify and understand the needs and specifications of customers and build close relationship with them to obtain the feedback once their requirements are being met and confirmed. Both internal and external customer should be thought to be partners of business.
- **Continuous Improvement:** It is the basic and essential requirement of total quality management system. Continuous quality improvement can be achieved by the various quality practices like kaizen, kanban system, QC circles, cross functional teamwork structure, rewarding best suggestions, poka-yoke, in-depth investigation of quality related problems etc.
- **Team Work & Employee Involvement:** To ensure and maintain high level team spirit and complete involvement of employees in the quality management process the clear definition of duties and responsibilities of the every employee, delegation of authority and empowerment plays crucial role, hence top management should put efforts in bringing those practices in organization.
- **Top Management Commitment and Recognition:** The top management must commit for setting quality as their top priority and ensure their presence in the decision-making process and their involvement in the process would encourage the entire organization people. At the same time, they must establish appropriate recognition and reward system in the organization.
- **Training & Development:** Without proper training & development programs in the organization, no organization will have growth and survival in this competitive world in near future. Education and training is considered as one the pillar of achieving TQM. Skill enhancement based training, use of statistical tools and techniques, positive attitude, change management, team management and leadership are to be the main areas of training and development.
- **Communication In Company:** Sound internal communication needs a healthy and pleasant environment in an organization. An open and truthful communication is an essence of quality management process throughout organization. Every employee of an organization is supposed to carry out his assigned task in a given time framework, where the internal communication (formal & Informal) needs to be fostered.
- **Measurement & Feedback:** After reviewing & measuring the performance of employees, they should be given proper performance feedback and providing them opportunity of undergoing training program to the required employees to develop their skills and abilities.

## RESEARCH METHODOLOGY:

Current research study has used both quantitative as well as qualitative research methods to determine the current state of the art of techniques used in the organizations and to cover my research objectives with a well-structured questionnaire, structured interviews, participatory observations and review of literature to collect the required data and its analysis. A sample is selected by using combination of random stratified sampling and convenience sampling methods. Because of the original nature of the data required, primary sources of manufacturing and production sector is considered for the study. Sample size was chosen as 1030 participants including employees, managers and supervisors. Areas covered for conducting research study are the industrial units located in Bidar, Gulbarga, Bijapur, Bagalkot, Yadgiri, Raichur, Hubli-Dharwad, Belgaum, Koppal and Ballari districts of North Karnataka region. Initially, 1560 participants from both small & medium scale organizations were approached for the survey, out of which only 1245 participants have positively involved in the survey. Hence response rate was calculated approximately 80%. From the data obtained from these participants, some of the data was found incomplete and not appropriate to interpret, such data have been removed and finally data from 1030 participants were considered for this research study. The survey was conducted during the period between September 2013 to December 2015. In the total sample of 1030 enterprises, 140 enterprises belong to medium category and rests of 890 are from small enterprise category. The researcher collected the information from all the district level of DICs in person, 5<sup>th</sup> & 6<sup>th</sup> economic census reports and data from the annual reports of MSME. The primary data collection method was structured questionnaire survey of industrial units and service business units acknowledged from database of Hyderabad Karnataka association of industries, Hubli, visiting the popular industrial estates in North Karnataka region and District industrial centers of all the districts of North Karnataka region. The organizations for the data collection were selected to cover both the industrial and service business units of North Karnataka region. The data

collection was done through a insights of the participants in the survey questions from these small & medium enterprises/organizations. In first part, fourteen (14) questions were framed related to implementation of quality management practices. In the second part, the main seven (7) factors, which are responsible for successful implementation of total quality management practices, have been considered. The participants are asked to give rank preference based on the level of importance they give in the implementation. Apart from this they are asked to give their opinion regarding the agreement/disagreement on how each factor has been operationalize in their organization with the five statements, which have been placed on the Likert's scale (five points). In the third part, twenty (20) parameters of the organizational performance related opinion have been sought on the Likert's scale (five points). The responses are given codes from 5 to 1, in order to evaluate the levels of agreement or disagreement. Last part of the survey questionnaire includes the demographic profile of the participants and the organization surveyed. Before reporting data, a small exercise was done with the group of 2 to 4 employees from few organizations and explained them the questions presented in the questionnaire. This was done to test the questionnaire and validate it. During this process, the understanding of the terms used by them in the questionnaire was ensured. After that some of the questions have been modified and made them to understand the kinds of practices they are adopting are related to the quality improvement. All the questions were explained them to avoid bias. The data analysis was carried out with the responses of participants from both small & medium scale organizations. The levels of agreement or disagreement for each of the questions were examined by calculating mean scores of the answers sought. To check whether there was significant difference or not for the means, t - test values were calculated. The significance/confidence level was considered to be at 5%. In order to find out whether any relationship exist between the variables in the factors factor analysis (PCA) was conducted and coefficient of correlation was calculated. Based on its value in comparison to the table value at 5% level of significance, it would be concluded whether the hypothesis can be accepted. After testing of the hypothesis, conclusions were made on the effects of implementing TQM practices in the organizations. The questions, which related to each quality dimension, were grouped later and the responses analyzed with the help of SPSS 20.0 software. The statistical techniques used for this research study were Cronbach's alpha test (reliability & validity), t-test, coefficient of correlation matrix and factor analysis.

### **Research Objectives:**

Considering the current TQM implementation in small & medium enterprises in North Karnataka region of India, this research study have set following research objectives:

1. To ascertain the quality practices implemented by SMEs in North Karnataka region and to understand the rationale behind the implementation of these practices.
2. To study the impact of past profits and future profitability potential on the implementation of quality improvements practices of SMEs in North Karnataka region.
3. To know the perception of the owners and/or managers of select SMEs in North Karnataka region about the quality improvement practices and to identify the reasons for the differences in opinion, if any.
4. To suggest quality improvements practices suitable for SMEs in North Karnataka region.

### **Limitations of the Study:**

- This research study was limited to small & medium enterprises located only in North Karnataka region of India. Due to academic activities in the institution/place of work, setting up appointments with the managers/owners of the company and managing interview schedules with key industry personnel in the given timeframe was tough.
- As working in rural area, coverage of the proposed industrial units in the given period and topographical coverage of industries to match the objectives.
- Making realization and explanation of the questionnaire among the supervisory staff related with TQM practices and their practices in reality was challenging.
- The organizations were selected based on the awareness of the researcher with the key personnel & management people and with the help of DIC authorities & Industry association, willingness of the organization's participants to spare some time for participating in the research study.

### **DATA ANALYSIS AND SURVEY RESULTS:**

From the above table 1, it reveals that combined mean score of organizational performance is 3.67 and the standard deviation is 0.73 which is more than maximum mean score 2.5. It indicates the responses are quite satisfactory on the part the respondents that the implementation of total quality management has made

encouraging affect on the organizational performance of the small & medium enterprises of north Karnataka region. At the first place, they have opined that the profit level of the organization has been increased and the future profitability potential would be increased. Secondly they have stated that, because of the reduction in the customer complaints, the employee & customer satisfaction has been increased. Thirdly, they state that, due to the increased involvement of the employees in the quality process, the cost of quality has been decreased. Apart from this, the other performance dimensions have been ranked such as increase in reputation/ image, increase in efficiency in operation, reduction in product defects/errors, improved productivity, increase in sales turnover, reduction in waste, increase in ability of work force, decrease in machine breakdown, increase in overall market share, improved market competitive position, improved information sharing & dissemination, decrease in product lead time and employee/labor turnover.

**Table 1: Summary results of Organizational Performance**

Sl. No.	Particulars	Strongly Agree	Agree	Neutral	Dis agree	Strongly Disagree	Mean	SD	Rank
1	Increase in involvement of no. of employees	532	214	31	105	148	3.85	0.77	6
2	Increase in employee satisfaction	489	327	22	114	78	4.00	0.80	3
3	Decrease in labor turnover	273	147	107	281	222	2.97	0.59	20
4	Increase in information sharing & dissemination	299	312	91	215	113	3.45	0.69	18
5	Reduction in the number of product /service defects	353	417	64	85	111	3.79	0.76	9
6	Decrease in product lead time	153	328	72	316	161	2.99	0.60	19
7	Decrease in cost of quality	517	235	46	117	115	3.89	0.78	5
8	Reduction in the industrial waste	389	312	57	106	166	3.63	0.72	13
9	Improvement in the productivity	421	285	41	157	126	3.70	0.74	10
10	Improvement in the operation efficiency	533	148	52	193	104	3.80	0.76	8
11	Reduction in customer complaints	612	134	38	119	127	3.95	0.79	4
12	Increase in external customer satisfaction	405	237	135	156	97	3.67	0.73	12
13	Strengthening of the competitive position in the market	311	327	68	132	192	3.42	0.68	17
14	Increase in the profit of the company	641	223	21	96	49	4.27	0.85	1
15	Increase in the sales turnover / revenue	463	227	61	118	161	3.69	0.74	11
16	Increase in the company's overall market share	318	293	72	195	152	3.43	0.68	16
17	Improvement in the co's reputation / brand image	473	241	53	189	74	3.82	0.76	7
18	Decrease in machine breakdown	292	381	79	135	143	3.53	0.70	15
19	Future profitability potential would be increased	456	378	39	86	71	4.03	0.80	2
20	Enhancement in ability of work force	341	364	63	118	144	3.62	0.72	14
	<b>Overall Result (Nos.)</b>	<b>8271</b>	<b>5530</b>	<b>1212</b>	<b>3033</b>	<b>2554</b>			
	<b>Overall Percentage (%)</b>	<b>40.15</b>	<b>26.85</b>	<b>5.88</b>	<b>14.72</b>	<b>12.40</b>	<b>3.67</b>	<b>0.73</b>	

From the above Table 2, it reveals that commitment by top management and recognition of the employee services is foremost important factors influencing on the successful implementation of the quality management practices in the small & medium enterprises of north Karnataka region. Employees have opined that the top management should support continuous quality improvement process be adopted on long-term basis and they should recognize the contribution of the employees on the quality improvement. Secondly, the internal communication and co-operation between employees the functional departments needs to be open & honest. Thirdly, emphasis must be given on monitoring of group/ team performance for the continuous improvement instead of individual performance, monitoring of systems & processes in the organization and provide the scope to the employees for identification of opportunities for continuous improvement. At the fourth place, customer focus strategy to be formulated by considering the specifications of all internal customers/employee's requirements and determining the satisfaction criteria of the external customers. Next important factor affecting the success of implementation of total quality management practices is the measurement of performance and providing employee feedback based on the performance achieved by them. They opined that training and development programs to be conducted and made availability of the resources required it to foster team spirit among the employees. All the employees should be trained and educated in the statistical methods, tools and techniques for quality improvement. Study reveals that the teamwork and involvement of employee in the decision making and problem solving process is less important factor among the other six factors. They opined that the process improvement is possible through the teamwork structure along with the motivation through the team rewards system and conducting quality awareness programs at all levels of the organization.

**Table 2: Summary of Results (Factors for successful implementation of TQM)**

Factor	Mean	Overall mean	SD	Overall SD	T test
1. Customer focus (Rank 4)					
Serious investigation and fixation of complaints of customer	3.40	3.512	0.68	0.70	1.4592
Needs & specifications of all external customer/consumer requirements	3.38		0.68		
Determination of satisfaction of external customer/consumer	3.56		0.71		
Needs & specifications of all internal customer/consumer requirements	3.55		0.73		
Determination of satisfaction of internal customer/employee	3.55		0.71		
2. Continuous Improvement (Rank 3)					
Monitoring the organization system & processes on continuous basis	3.45	3.608	0.69	0.72	2.5919
Monitor each employee performance regularly	3.61		0.72		
Supervise the group performance on continuous basis	3.67		0.73		
Regular periodic review of the quality improvement related issues	3.65		0.73		
Identification and evaluation of opportunities for quality improvement	3.66		0.73		
3. Teamwork and Involvement (Rank 7)					
Involvement of all the employees in quality improvement program activities	3.23	3.294	0.64	0.65	-11.5121
Use of QC circles, Cross functional teams for quality improvement or quality improvement tools	3.26		0.65		
Building of quality education & awareness among employees throughout organization	3.31		0.66		
Give incentives through team rewards & recognition system	3.07		0.61		

Factor	Mean	Overall mean	SD	Overall SD	T test
Process/Quality improvement through teamwork structures	3.60		0.71		
4. Commitment and Recognition by top Management (Rank 1)					
Quality/Process improvement as one of the main business objective	3.72	3.750	0.74	0.74	43.1644
Top management set quality as their first priority and agenda	3.74		0.74		
Top management bear long term oriented quality objective	3.91		0.78		
Appreciation and reward to employee for outstanding performance of Improvement	3.77		0.75		
Consistent and reasonable goals are set for employees	3.61		0.72		
5. Training and Development (Rank 6)					
Adequate resources are used for employee training in organization	3.51	3.492	0.70	0.70	-2.3176
Training is imparted on statistical process control tools & methods to employees	3.50		0.70		
Training is imparted on implementation of quality practices to employees	3.45		0.69		
Skill enhancement based training programs are designed to match future requirements	3.40		0.68		
Education and training programs are planned to build & foster team spirit in organization	3.60		0.72		
6. Internal communication (Rank 2)					
Collaboration between employees & departments	3.69	3.664	0.74	0.73	4.8740
Clear explanation of duties and responsibilities	3.58		0.71		
Functional departments have well-suited and reliable goals	3.51		0.70		
Cross functional approach to problem solving by employees	3.65		0.73		
Open & honest communication between different functional depts. & employees	3.89		0.78		
7. Performance Evaluation and Feedback (Rank 5)					
Evaluation of process performance and its relationship with business results	3.46	3.502	0.69	0.70	-1.8884
Evaluation on the monetary and non- monetary performance dimensions	3.55		0.71		
Evaluation of the quality improvement relatively than strict control	3.70		0.74		
Give the quality performance feedback to employees	3.60		0.72		
Outside agency intervention in employee performance measurement	3.20		0.64		
Overall Score		3.546		0.705	

Table 3 (Pearson's correlation matrix) indicates that all correlations are highly positive between total quality management factors and significantly related to each other factors. The table indicates the maximum positive correlation of 0.984 is for the co-relation among measurement & feedback and continuous improvement, whereas the lowest co-relation of 0.711, is for the positive co-relation among communication in company and



teamwork & involvement. The Pearson's coefficient of correlation is significant at the 1% level (two tailed). The level of implementation of TQM was measured by a set of 5 questions for each factor drawn on a Likert's scale of 5 points ranging from strongly disagree to strongly agree. The participants were explained statements to answer at what level they agreed or disagreed to the given statement. The level of difference was determined by  $5 - 1 = 4$ , i.e.  $4/5 = 0.80$  added to the codes of level of agreement then determines the upper limit for each cell. The overall conclusion regarding to the degree of implementation of TQM factors in the small and medium enterprises of north Karnataka region was found low, which was evident through the result obtained from the questionnaire survey.

**Table 3 : Correlation with TQM factors/dimensions**

Factors	CF	CI	T & I	TMC & R	T & D	CIC	M & F
Customer Focus	1.000						
Continuous Improvement	0.936**	1.000					
	0.000						
Teamwork & Involvement	0.935**	0.894**	1.000				
	0.000	0.0000					
Top Management	0.937**	0.865**	0.900**	1.000			
Commitment & Recognition	0.000	0.000	0.000				
Training & Development	0.965**	0.894**	0.958**	0.889**	1.000		
	0.000	0.000	0.000	0.000			
Communication in Company	0.885**	0.871**	0.711*	0.820**	0.886**	1.000	
	0.000	0.000	0.000	0.000	0.000		
Measurement & Feedback	0.940**	0.984**	0.848**	0.900**	0.870**	0.886**	1.000
	0.000	0.000	0.000	0.000	0.000	0.000	

## FINDINGS & RECOMMENDATIONS:

Research study reveals that implementation of total quality management practices in the organizational processes are the present need of the hour for all kinds of the organization whether it is small, medium or large to sustain in this competitive world market and survive in the present dynamic market conditions. It is suggested that people who are qualified with their graduation or ITI /Diploma holder having more than ten years experience with the present organization & the earlier ones have the better understanding & knowledge of quality management techniques to be efficiently implemented in their processes to be employed in organization for the better results and improved performance. It is the responsibility of everyone member of the organization who are working in the capacity of either managers, supervisors, technicians or workers to implement effectively the quality practices adopted by the organization for achieving the quality objectives/goals. It is recommended that all the organizations in North Karnataka region who are not engaging quality practices in their processes they must adopt & implement quality techniques for the betterment their organizations, employees, customers & society as well. The main practices may includes customer focused processes, quality inspection & control, on-job training of employees, two bin system, teamwork & employee participation, reward system and just in time techniques etc. It reveals that the many small & medium enterprises are not aware about the benefits and wide scope of ISO certification. Most of the enterprises following the Indian quality/BS standards for their business activities hence it is suggested that they should seek the ISO certification to fit for survival in the global era. The majority of the enterprises are unaware that there are benefits to the organization by adopting continuous quality improvement programs/activities hence it is recommended that they must adopt techniques/activities, which ensure the gradual & continuous improvement in their organizational practices/processes. The top management people should take into confidence all the stakeholders that the quality practices being implemented by their organization are successful. In addition, they should involve all the

employees of the organization irrespective of their position, department, age & experience in the implementation of quality practices. From the survey, it was understood that the most of the small & medium enterprises of North Karnataka region are not using quality techniques since from the establishment of their organizations due to the various reasons. Hence it was advised them that at least from now onwards they should focus on adopting the quality culture as a new way of work culture for the benefit of the organization. It was the myth of the top management authorities/owners of the enterprises that the implementation of TQM practices is the additional burden/cost on the part of the production but seeing increased sales & profits figures where these practices used are now changed their mind some extent. A systematic plan of devising TQM practice to be adopted by the enterprises so that they should be benefitted. It has been seen that most of the enterprises are only implementing the quality practices in the production dept but it should be implemented in all the departments for the overall development of the organization. Enterprises should involve their employees for the continuous training for bringing dramatic changes in the organization and they should ensure that their employees spend average training duration per season for more than ten days. The senior managers must involve in quality programs / practices when problem appear and all the primary & majority issues. Enterprises of the north Karnataka region must have proper periodic customer feedback mechanism to ascertain the opinion of customers after implementing quality practices. In most of the enterprises, the ascertainment of opinion of customers after implementing quality practices is not in the existence on periodic basis at least they should have customer feedback on quarterly basis. After seeking feedback from the customer's serious investigation to be undertaken for resolving the customer complaints and ensure that the problems being faced by the customers not to be repeated in the future course of time. The enterprises should take into consideration of specification of external as well as internal customer requirements and supply the products or services as per requirements of the customers. In today's scenario the customer's requirements are to be treated on priority basis instead of the company requirements because the present market is driven by the customers. The enterprises should determination of external & internal customer satisfaction, which would require them to formulate long-term strategy to be successful in their endeavors. In many enterprises proper monitoring system & process of the employee performance and team performance is not existence in the organization, hence it is advised that proper monitoring system & process to be deployed in the organization strategy which will ensure suitable corrective measures whenever the unexpected performance is sought after the measurement from the employees and respective team. Regular review of quality issues in organization should take place, which will help to find out further scope for improvement in organization & involvement of employees in quality program of the organization. Many enterprises are not utilizing of quality circles, QIT & other quality programs which making awareness building among employees regarding quality practices/techniques. Hence they should have the practicing quality circles, quality improvement techniques and other quality programs in their organizations. Rewards and recognition system for motivating employees and teamwork structure for continuous improvement in organization should be institutionalized for the overall development in the organizational performance. The quality improvement as part of business objective should be set and quality should be kept as top priority in organization by the top level management, which shall ensure the commitment and support by them in achieving the organizational objective and long term success. The enterprises should have gratitude for achievement of quality improvement to the employee in organization and make availability of adequate resources in organization. Training & education in statistical improvement techniques and quality related matters to be imparted. Further development of skills and teamwork for future organization needs in organization is the present need of the hour. Hence, the enterprises of north Karnataka region should materialize the training & development needs of the organization. There should be full co-operation between employees & department. In addition, the enterprises should prepare clear description of job responsibilities of each employee and specify their contribution towards the improvement of the department that in turn ensures the overall improvement of the organization. Every department should have compatible & consistent goals, cross-functional approach to problem solving and good communication between other departments. The strength of the organization depends on the cordial and pleasant inter relationship between the departments and employees. The financial & nonfinancial measurement of process performance & their relationship with results should be done and there should have measurement for improvement rather than strict control. Proper feedback system on quality performance to employees is to be provided and performance measurement through third party involvement should not be done on the normal course. Superior & subordinate relationship should be strengthened for proper execution of the organizational processes and quality practices.

## SUMMARY & CONCLUSION:

This research study is carried out with extensive work involving literature review, questionnaire survey, and interviews with key managers with respect to SMEs and their implementation of TQM practices. In the present research study, new knowledge is gathered from existing TQM knowledge incorporated with explicit characteristics of small & medium enterprises in North Karnataka region of India. This research study contributes to the understanding and development of total quality management principles and practices in the small & medium enterprises of north Karnataka region and impact of its practices on organization performance. Considering the relevant literature review, survey based empirical study and interviews with the key managers, it was concluded that the total quality management practices implemented in the enterprises have positive effect on the parameters of performance in the small & medium enterprises and it has been adopted as functional approach in a many enterprises of the north Karnataka region but still it has been observed that it has not been established as long term oriented integrated management approach in their business strategic management process as advised by the many earlier researchers. To facilitate achievement in the business success, customer focus, vital role of top management, employee participation, employee empowerment, cross functional approach to problem solving, stress on maximizing efficiency & productivity, employee training, teamwork & coordination, continuous quality improvement and establishing a new quality culture need to be built in organizational processes and systems. The top management people must realize the importance of total quality management philosophies and play crucial role in leadership and commitment. Quality education & training, sound internal communication and needs satisfaction of internal customers should be emphasized to increase employee involvement in decision making process and high degree of coordination between functional departments of an organization. They must pay attention to needs & expectations of in order to satisfy external customer's requirements, which is one of the most important aspect of the successful organization. All the techniques stated above are valuable considering the amount of evidence in contributing to attain gradually increased performance on successful implementation of total quality management practices in organizations. Using questionnaire survey method and data gathered on tangible & intangible benefits could reveal the scope of total quality management implementation in North Karnataka region and effects of TQM practices on small & medium enterprise performance. By means of TQM process implantation the enterprises shows better performance than before implementation of TQM. In addition, there are observations that if the extent of TQM implementation is widespread, the results would still improve. As a result, it can be concluded that total quality management have a direct relationship with the organization performance. To conclude, though this research study successfully achieves the set research objectives, there is further scope of carrying out research in this area. Additional in-depth exploration needed to examine the relationship between TQM implementation practices and culture of SMEs and its performance. There were many researches considered the importance of TQM, its achievements and the dimensions responsible to TQM success but there are very few research studies dealing with the problems faced by TQM implementation practices. Thus, current research study contributes to the body of research in this aspect of TQM, which has not previously studied in detail about small & medium enterprises of India.

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