Total Quality Management in Indian SMEs: Challenges, Drivers, and Outcomes

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Abstract- Total Quality Management (TQM) has emerged as a critical strategy for enhancing competitiveness, customer satisfaction, and operational efficiency across industries. While large organizations have widely adopted TQM practices, the implementation in Small and Medium Enterprises (SMEs) presents unique challenges and opportunities, particularly in the Indian context. This study investigates the extent, effectiveness, and barriers of TQM adoption among Indian SMEs. Using a mixed-method approach, including surveys and case studies, the research explores key quality dimensions such as leadership commitment, employee involvement, continuous improvement, and customer focus. Findings reveal that although awareness of TQM is growing among Indian SMEs, its application remains inconsistent due to constraints such as limited resources, lack of training, and inadequate infrastructure. However, successful case examples demonstrate that with tailored strategies and government support, SMEs can significantly benefit from TQM implementation. The study offers practical insights and recommendations for SMEs aiming to embed quality management into their organizational culture.

Keywords: Total Quality Management (TQM), Small and Medium Enterprises, quality management

1. INTRODUCTION

A TQM system makes it possible for corporations to combine all their quality systems into a single, unified strategy, which can lead to benefits that correspond with both profitability and regulatory compliance. In order to get the most of it, the whole organization must fully accept the basic guidelines of quality and the way they apply to each and every individual. A TQM system ought to incorporate various tools which can help corporations sustain their standards of quality and compliance with any industry regulations. When all these tools are brought together in a single solution, it can be very simple for a company to enhance productivity and harmonize the relationship between productivity and quality.

SME plays an important role in developing any particular sector, economy of any country, alleviating poverty, and increasing employment. Within the last few years many developed and developing countries have realized the importance of this sector. Fast decision making due to less staff and more control of an entrepreneur, availability of raw material at your door step, as many SME's have been started in the area where availability of raw material is not a hindrance, innovative products which cater to the needs of a particular region and its vicinity, are certain key factors making SME's significant. Furthermore, economic factors which constitutes to the development of the sectors are, addition of output of goods and services to economy, low capital cost for establishment, reduction in income disparities, and admirable propagation ground for entrepreneurial talent.

The existing TQM model provides a useful framework for study of the applicability of TQM in SMEs. It can also be used to identify the aspect of the environment required for successful implementation of TQM and few of them overcomes some of the existing problems in the study of TQM. This thesis attempts to understand both qualitative tools (such as SWOT analysis, Interview, Brainstorming sessions, Situation analysis) and quantitative tools (such as Pair- wise Comparison Method (PCM), Analytic Hierarchy Process (AHP)) to developed the TQM model which is suitable for SMEs.

Considering the factor discussed above, it is proposed to: i. Investigate the present status of quality systems in SMEs; ii. Identify the quality approaches adopted by SMEs; iii. Identify factors affecting quality and quality management; iv. Assess

the imperatives for quality improvements; v. Know the barriers in adoption of TQM in SMEs; vi. Identify thrusts area for SMEs; vii. Make a comparative evaluation of various International and National Quality Award Models; viii. Develop a "TQM Model" applicable for SMEs.

The focus of the work is for SMEs in Indian context for selective target segment. The result obtained from here can be applicable to the rest of Indian SMEs subject to further test. However no claim of generalisability can be made beyond that. This study has been limited to the manufacturing sector of Indian industries. This was done because TQM started in manufacturing sector and has largely been used in manufacturing units.

2. LITERATURE REVIEW

The liberalization of economic policies in the last two decades and intensifying market competition tends to be a cause of policy concern for the survival of SMEs in emerging economies like India as these firms accounts for the largest chunk of industrial units and employment. Given their limited financial and intangible resources, the promotion of R and D among SMEs has become a very important policy parameter. The study report show that Indian SMEs have lowest incidence of doing in-house R and D and their R and D intensities have fallen in the last decade (Pradhan, 2010).

The aspect of culture has been emphasized by the founding fathers of TQM. TQM de-emphasizes status distinctions and empowers employees to make decisions and use their own intelligence (Crosby 1984; Tata and Prasad 1998). The aspect of culture has been emphasized by other authors also (Chin and Pun 2002; Lakhe and Mohanty, 1994; Pun, 2001; Sahay and Walsham, 1997). Sila and Ebrahimpour (2002) are recognized that the criteria relating to the implementation of TQM are country dependent (e.g. culture) and firm specific (e.g. size and type of firms). Tata and Prasad (1998) have reasoned that one of the reasons for failure of TQM implementation is that culturally many organizations were unprepared to change.

In a similar vein, it been reported that implementation of TQM is one of the most complex activities that any company can attempt, due to the fact that it involves a change in the working culture and impacts on people (Mani et al., 2003). In the Chinese context, the successful adoption of TQM depended largely on the management of cultural dynamics and organizational complexities of the enterprise (Pun, 2001). Emphasizing the need of cultural change during TQM implementation, it has been argued that TQM calls for a new way of managing business, requiring a new thinking style-the thinking for quality (Yusof and Aspinwall, 2000). According to them this is the basic reason for the success of TQM in Japan.

System thinking suggests that instead of reductionism approaches to management, a holistic view should be adopted (Taiwo, 2001). Taiwo adds that while there is no single model which can capture an organizational situation fully, some of the methodologies which can be used to capture the inter-relationship and intra relationship of an organization are classified as 'hard', 'soft', 'cybernetic' or 'emanicipatory' depending on the effectiveness of their feedback loop. These methodologies, if used adequately, complement the customer focus, process improvement and employee involvement principles of TQM.

Bauer et al., (2000) has developed a model from system dynamics point of view for understanding of TQM. System dynamics is a tool which can capture the interactions among a range of system variables and predict the implication of each over a period of time (Khanna, 2003). Khanna et al, (2002) have quoted a study by Forrester wherein he used system dynamics to investigate how strategy, decision-making, structure and delay influence the growth and stability of organizations.

Use the priorities obtained from the comparisons to weigh the priorities in the level immediately below. Do this for every element. Then for each element in the level below add its weighed values and obtain its overall or global priority. Continue this process of weighing and adding until the final priorities of the alternatives in the bottom most level are obtained (Saaty, 2008).

3. RESEARCH DESIGN

Survey: Assessment of Organizational Policies and Quality Management Practices in SMEs

Survey sought to find an answer to the first research question: 'What are and what should be Indian SMEs' core values, style of management, growth strategies, competitive strategies and management system so as to transform Indian SMEs into an excellent organization?. One of the gaps which the

literature review had shown is that there has not been any organizational study of Indian SMEs of selected target segment. Thus there was no prior set of information available on which this research could build on or cross verify with.

Thus some known model which could help assesses Indian SMEs' organizational values and practices in the context of organizational excellence.

4.METHODOLOGY

A structured questionnaire survey and open ended interviews were used as techniques for data collection. The views about TQM are based on semi structured interviews with different actors (Proprietor, Manager) during the field visit and response to the structured questionnaire. Sampling units were selected on geographical basis. The questionnaire labeled 'Study of quality management practices in SMEs' is shown at Appendix-II and divided into seven sections

1. The companies background characteristics, i.e. year of establishment, total number of employees, main products, annual sales revenue, type of productions technology etc.
2. Status and structure of QC department, i.e. presence of QC department, relative size of quality units, reporting procedure, professional qualification of heads or manager, distribution of QC personnel by types of jobs etc.
3. Quality approaches: The quality approaches identified by the researchers (Crosby, 1980; Deming, 1982; Goldsmith and Clutterbuck, 1984; Juran, 1988; Blaw and During, 1990; Lascelles and Dale, 1990; Badiru, 1990; Feigenbaum, 1991; Agrawal et al., 1995) are considered for evaluation in this study.
4. Imperatives for quality improvement: It includes variables such as competition; need to reduce cost; green field venture; restart situation; customer's satisfaction and reputation (Lascelles and Dale, 1990).
5. Quality affecting parameters: The quality variables identified by researchers are considered for this study. For this study sixteen quality variables are considered which uses for the improvements of quality of product.
6. Variables in quality management: The quality literature (Crosby, 1980; Locker et al., 1981; Gravin, 1983; Barad, 1994; Saraph et al., 1989; Lascelles and Dale, 1990; Blaw and During, 1990) described many variables that may affect the practice of quality management. For this study fifteen variables are considered.
7. Barriers in the adoption of TQM: It includes the variables such as management commitment; employee co-operation; type of leadership; financial constraints, inadequate skill; poor information on TQM (Lascelles and Dale, 1990; Kays, 1991).

Overall Framework Of Research

The AHP devised is a powerful technique in solving complex decision problems. The process can be used to make trade-off and determine priorities among factors and subfactors that are critical to making sound decisions with TQM implementation. In order to investigate the managerial views on the critical factors that will affect the implementation of TQM, the authors have conducted a study using the AHP approach. In total, sixteen SMEs were chosen in the manufacturing sector. The AHP study has gone through three phases, including: (1) structuring the problem and building the AHP model; (2) Collecting data from questionnaire and expert interviews; and (3) determining the normalized priority weights of individual factors and subfactors.

5. DATA COLLECTION AND DATA ANALYSIS

5.1 Data Collection

SWOT is the combination of four major terms as strength, opportunity, weakness and threats. Strength refers to inherent abilities to complete and grow strong. Weaknesses are the inherent deficiencies that cripple one's growth and survival. Strength and weakness are mostly internal. Opportunities are the good chances and openings available for growth. These are environmental and external. Threats are extremely wielded challenges, which might suppress inherent strength, accelerate weakness and stifle with opportunities being exploited. These are again posed due to the external environment (Foong, 2007; Directors' Briefing, 2006) The SWOT analysis is one of the effective analytical tools to evaluate a situation. The situation may be strategic related or capabilities related. SWOT analysis is often used along with strategic planning and it forms one of the key CSF in strategic planning process (Foong, 2007).

The aim of SWOT analysis is to identify the extent to which the current strategy of an organization and its more specify strength and weakness are relevant

to, and capable of dealing with the change taking place in the business environment. Every unit must be aware of their SWOT. It is commonly classified an external and internal factors. For the external factor, it consists to the opportunities and threats, whereas the internal factors are strengths and weaknesses. The low quality of product, rise in competition in the market, sickness due to reduction of loanable fund by financial institution results in reduction of the velocity of SMEs success. To stand in the market, it is necessary for SMEs to face new challenges by adopting proper strategy (Ana Paula et al., 2000). SWOT analysis is one of the techniques to undertake a more structural analysis to formulate the best strategy. The data obtained on the dimensions of SWOT and environment of studied SMEs has tabulated in this section. Table 4.8 shows the rankings of strength and weakness factors and Table 4.9 shows the ranking of opportunity, threats and environmental factor. It indicate lower the score higher the measure tendency.

The threat 'rise in competition from large and multinational organization' and weakness 'lack of quality consciousness' and factor related 'financial strength and stringency' has lower score and ranked one and focused on the new challenges for performance improvement.

The threat 'negligence towards industrial training' and weakness 'high absenteeism' has ranked third and fourth in their category respectively. As mentioned in T3 most of the organizations spent least amount on the training (Reid and Harries, 2002) and training is contextual factors for TQM implementation (Palo and Padhi, 2003). To maintain the regularity and discipline for on time reporting of staff is highly important for smooth and effective conduction of training programmes. Since mindset of managements and high of absenteeism of worker was found to be having strong negative influence on TQM implementation. Survey-B attempted to assess the strengths and weakness of Indian SMEs. By an increased utilization of qualitative techniques, and by doing inquiry in more natural settings, collecting more situational information, the post-posivist attempts to get closer to the reality.

A structured questionnaire survey-B and open-ended interviews are used as a technique for data collection. Out of 80 questionnaires sent, 48 responses were received which made the response rate very high i.e. 60%. The structure questionnaires consist of strength, weakness, opportunities, threat and environment factors. For identifying the rank of various factors considered under SWOT and environment, Likert type five point scales were used. In which, 1 indicates most favorable response. The sum of the responses for each factor was calculated. The factor having lowest sum has given first rank, and the factor having highest sum has ranked as last. The factors considered for SWOT and environmental analysis are shown in Table 1. The meaning of various factors identified under SWOT is explained below.

Strengths

S_1- Flexibility- Ability to make quick adjustment to changing economic and trading scenario. SMEs can well adopt new technology, new design, new processes and the like. The cost of such switch over should be minimal (Selvan et al., 2002; McAdam and McKeown, 1999). It is based on the appropriate technology with low cost automation and process flexibility.

S_2- Owners Management- The quick decision making is possible because ownership lies with the individual(s), who is owner as well as decision maker. There is no passing the buck, no red-tapism and no committee type sitting on decision issues. Personal commitment really gets transformed into economic dynamism interfacing local, national and global economics (Selvan et al., 2002; Arun, 1999).

S_3- Inexpensive labour-The bulk of problems of large businesses is the huge and escalating wage bill. Allowance of sort, complete neutralization of rise in cost of living etc. make many industries sick. SMEs can build its strength taking advantages of cheap labour (Selvan et al., 2002).

S_4- Less overhead- No expensive investment in land and building, less capital intensive production process and the like can reduce overhead. This means low breakeven level of sales. Through SMEs suffer from lack of scale advantages; it gains from low breakeven point (Eilon, 1994; Selvan et al., 2002).

S_5- Favorable capital output ratio- SMEs are labour intensive. By properly utilizing the local reserves, i.e. raw materials, labours etc. SMEs can keep low level of capital investment per unit of output.

S_6- Flat Management structure- SMEs being small units have generally less number of employees, so more responsibilities are concentrated at one places.

Therefore instead of line management structure, flat management is preferred.

S_7- Co-operation from employees- Acceptance to change in process/product by employees.

S_8- Closeness to market- Most of SMEs sales their product in local market and take the advantage of closeness by saving transportation cost.

Weakness

W_1- Lack of quality consciousness- The design quality, the performance quality, and the aesthetic quality are major aspects of quality conscious consumers look for in products (Derric et al., 1989; Selvan et al., 2002). Number of SMEs does not organize either quality awareness programs or involve their employees in quality management process, so they do not understand the importance of quality product.

W_2- Underutilization of capacity- Sandesara (1993) observes that overall capacity utilization in small industry sector is merely 48%. According to Chadha (1995) level of productivity in SSI sector in India is very low.

W_3- Lack of financial strength-SMEs depends largely on the banking industry for finance. They do not have corporate image, nor brand image, without which it is difficult to raise the money from other avenues such as market. They somehow meet in the requirement of capital.

W_4- High absenteeism- SMEs of this region are labour intensive. As the region is industrially backward, there is no industrial work culture. Labour gives more weightage to their personal work and do not maintain the regularity, discipline in reporting on time. They do not understand or care the loss incurred due to such absenteeism.

W_5- Lack of proper work culture- As the target segment Vidarbha and Khandesh is industrially backward region of Maharashtra. Approximately only 20 % SMEs of Maharashtra and only 1% SMEs of India are located in this region. So there is no industrial work culture.

W_6- Lack of trained worker- The trained workers of this region prefer to stay at Western Maharashtra (Mumbai or Pune), where they get more salary and job security. Getting and continuing the services of the trained workers and fulfilling their demand are the problems to SMEs of this region.

W_7- Lack of technological superiority- Technology is invisible input in all our avocations. Technology is not cost escalative nor capital intensive as is normally through to be so. Information technology has amply proved this. Also technology does not mean adding electronic gadgets or automation only. Intricately designed sculptures and artistic goods of our ancestors testimony that technology is not mere machines and doing. It is need based adoption. It is being energy efficient. It is getting the most out of the least. Technology is not production confined. There is production technology, organizational technology and so on. SMEs are somewhat less oriented to advance their technological capabilities due to lack of creativity and innovation (Chadha, 1995; Selvan et al., 2002; Arun, 1999).

W_8- Management deficiency- Making quality happen in a company requires that the management understand and act on a few basic things that are policy and education (Crosby, 1980). Many entrepreneurs start their business with small units. Being new in the field of business, they do not possess the sufficient managerial experience and so face lot of problems (Shah, 1997).

W_9- High turnover of the key personnel- Many companies diminish their economic potential through human resource policies that ensures high employee turnover, in part because, they can't quantify the retaining employees. The longest employees stay with the companies, the more familiar they become with the business, the more they learn and the more valuable they can be (McAdam and McKeown, 1999).

W_{10}- Lack of planning- Planning is of two type, short term and long term. Lack of planning is leads to poor utilization of resources and consequently less operational and financial performance.

W_{11}- Lack of long term strategic focus- Lack of organizational mission, values, vision, strategic direction and the way in which organization achieve them.

W_{12}- Lack of infrastructure facilities- Non availability of the facility like space, building testing equipments, power etc.

W_{13}- Inadequate attention to research and development- For innovation in product and process, research and development is an important activity.

Opportunities

O_1- Export market- Export market is the big opportunity for SMEs. For instance, in Gujarat, hundreds of small dyes manufacturers export annually in the tune of Rs. 40 billion worth of dyes, meeting the tough quality standards of the western countries. The sickness with SMEs is a problem for those who concentrate on export market, there is all pleasure. But to enjoy that pleasure, painstaking production process, quality maintenance and improvement are called for (Selvan et al., 2002).

O_2- Government support- Under its programme of modernization of small industry units, the GOI aim to update the absolute technology, by identifying the input needed for small industry. The main objective of this programme for, to improve production technology; to improve product design and development; to promote utilization of appropriate technology for achieving optional results and higher quality product (STSMEs, 2007; Chadha, 1995). GOI, reserves few products and gives subsides to the SMEs interested in innovation and launched in the shape of a national movement (STSMEs, 2007).

O_3- Excise relief- Government of India has provided various concessions to SSI by granting full exemption from payment of central excise duty on a specified output and thereafter slab-wise concessions. The most important notification giving these concessions is the SSI units whose turnover is less than Rs. 4 Crore are eligible for the concessions. If SSI units does not avail Cenvat on input, turnover up to Rs. 150 Lakhs is fully exempt (http://business.gov.in/taxation/small_scale.php).

O_4- Increase in ceiling for SMEs- The investment ceiling for SSI has been raised upward to Rs. 5 Crore for 69 product of SSI. The upward move of the ceiling level helps SSI units to modernize to diversify and yet continue to enjoy concession given to SSI units (The Economic Times, 2005).

O_5- Ancillarisation to large business- For achieving better financial performance, large scale industries are concentrating on core activities and sub contracting some items with nearby SMEs.

O_6- Reservation of product items by Government- To protect and safeguard the SMEs, GOI has reserved some items for SMEs. Small scale units were given the reservation of over 800 products' exclusive production in the small-scale sector, reservation of some of the products produced in the sector for purchase preference by government agencies, supply of scarce materials, input price concessions like lower interest rates and numerous fiscal measures(STSMEs, 2007).

Threats

T_1- Competition from large and multinationals- At present, only 20 items are reserved for exclusive manufacture in micro and small enterprise sector. The policy of dereservation of products has resulted in tough competition from large and multinational companies (Selvan et al., 2002). In Oct. 2008, Fourteen items have been de-reserved and bringing down the total number of items reserved for exclusive manufacture in the small scale sector to 20 (Press Information Bureau, GOI, 2008).

T_2- Financial stringency- Access to quick and cheap credit is going to be a difficult task. SMEs have no easy access to other source of funds unlike the large sector which raise crores of rupees from public. Financially stringency for SMEs is therefore a very serious threat (Selvan et al., 2002).

T_3- Negligence towards industrial training- SPC is integral part of maintaining and improving quality in industry. Failure to implement and operate SPC effectively can significantly impede a company's ability to meet product specification limit waste, reduce production cost and improve quality (Goetsch and Davis, 2009). Survey report of Cheng and Dawson (1998) shows that training in problem solving and decision making is needed across all levels of staff using SPC. He also found that there is no established mechanism for the identification of training needs or for the evaluation of any training given in SMEs. Training for acquiring new skills as well as upgrading of existing skills is constantly needed at all levels. An analysis of the industrial society found that 64.6% of the organization spent less than 0.5% of their annual turnover on training their employees. (Reid and Harris, 2002).

T_4- Technological obsolescence- Sandesara (1993) observes that due to technological obsolescence, overall capacity utilization in the small industry sector is merely 48%. Small industrial sector is found to be extremely inefficient technically as reflected in low productivities. The fundamental reason of the technical inefficiency of the sector lies in the use of outdated capital equipment and a low level of knowledge of productive techniques (Chadha, 1995).

The use of outdated technologies in the small industries in India, does not allow them to exploit optimum potential of labour, capital, skills and capital productivity and underutilized capacities. The most critical constraint on the growth and modernization of small industries is the use of obsolete technology by this sector (Chadha, 1995).

T_5- Increase in the price of inputs- Price of input like raw material; power are increasing at tremendous rate. It also leads to rise in production cost and affecting the marketing performance of SMEs.

T_6- Lack of political peace and stability- The change in Government policies affect the performance of SMEs. So stability of Government is important for better performance in SMEs.

Environmental factors

The main environmental factors affecting the performance of the SMEs were found to be competitive from large and multinationals, rise in expectation of customer, Government supports (financial/ non financial), export market, increase in price in input, ancillarization to large industry and political will and stability. Table 4.8 showed the ranking of strength and weakness factors and Table 4.9 showed the ranking of opportunity, threat and environmental factor for studied SMEs.

SWOT analysis can be performed in a variety of application or situation. It can be used as a situation analysis as an input into a strategic planning process at corporate of company level. It can also apply to evaluate the situation in terms of its capabilities.

5.3 Data Analysis: Situational Analysis of SMEs

For the data analysis, the scores obtained on the dimensions of SWOT and environment of Indian SMEs. The ranking of SWOT and environmental factor showed in Table 4.8 and Table 4.9 and indicate lower the scores, higher the measured tendency. The situation analysis a strategic planning process tool was used to analyze the data. The objective is to build a foundation for good decision making on program priorities and the use of limited resources. Data were collected on common platform from stake holders and care has been taken for maintaining the uniformity. Data of entrepreneur, managers and supervisors is taken from different units and compared accordingly, so as to maintain the uniformity.

Situation analysis is a planning step which helps to examine the current situation of organization and external environment so that one can identify and agree on major issues (IFUW, 2007). In this analysis, the statement was examined one against another on the lines suggested by Johnson and Scholes (1994). The analysis of the outcomes would basically be gap analysis; i.e. comparing the actual situation with the planning standards or other norms. Analysis of the time series would show whether the situation is improving or deteriorating. The main strength and weakness are in the left hand column, and are examined in terms of the key environmental issues. The selection grid, which shows the scores of '+' or '-' or '0' is shown in Table 2. The detail explanation of score marking is as:

1. Marking '+' if there was a benefit to SMEs, i.e. if: -
   - A strength enabled to take advantage of or counteract a problem arising from environmental change;
   - A weakness was likely to be offset by the change.
2. Marking '-' if there was an adverse effect on SMEs, i.e. if: -
   - A strength was likely to be reduced by the change,
   - A weakness prevented the organization from overcoming the problems associated with the change or was accentuated by that change.
3. Marking '0' if there was no effect on SMEs.

Table 2: Approaches used for Managing Quality- Selection Grid

	Competition from large and multinationals	Govt. Support (Financial/ non financial)	Rise in expectation of customer	Shortage of raw material	Export market	Increase in price in input	Total		
Strengths							0	+	-
Flexibility	+	+	+	+	+	+	-	6	-
Owners management	+	+	+	+	+	+	-	6	-

In-expensive labour	+	0	+	0	+	+	2	4	-
Less overheads	+	0	+	0	+	+	2	4	-
Favorable capital output ratio	0	0	0	0	+	0	5	1	-
Weakness									
Lack of quality consciousness	-	+	-	0	-	0	2	1	3
Under utilization of capacity	-	+	0	-	-	0	2	1	3
Lack of financial strength	-	+	-	0	-	-	1	1	4
High absenteeism	-	0	-	0	-	0	3	-	3
Lack of trained workers	-	+	-	0	-	0	2	1	3
Lack of technology superiority	-	+	-	0	-	0	2	1	3
0	1	4	2	8	-	6			
+	4	7	4	2	5	4			
-	6	-	5	1	6	1			

What this analysis yield is a much clearer view of the extent to which the environmental changes and influences provide opportunities or threats, given current strategies and organizational capabilities. The situation analysis carried out in this section and selection grid (see Table 4.10) focused on major issues which help for examination of current situation of SMEs and external environment. The major opportunities lie in the utilization of financial and non-financial support extended by government and gain vast export market. Owner management and flexibility are the some other areas, which provide opportunities for growth. Likewise, the '-ve' sign indicates the threats which is not permitted to overcome problem and reduces the strength of organization. The major external issues identified for the SMEs of this region are competition from large and multinational organization, export market and rise in expectation of customer, which has high score of '-ve' value. The major internal issues are lack of financial strength, lack of quality consciousness, under utilization of capacity, high absenteeism, lack of trained workers and lack of technology superiority. In the light of the above considerations, the need for quality initiatives in SMEs was felt.

6. CONCLUSION

The detail study of SMEs to identify SWOT factor and its situation analysis as an input into a strategic planning process at corporate of company level observed that the competition from large and multinational businesses and rise in expectation of customer are major external issues for the SMEs of this region. The major weaknesses are lack of financial strength and lack of quality consciousness. The other common problem observed by SMEs are under utilization of capacity, high absenteeism and negligence towards industrial training, lack of work culture due to low industrial development, technological obsolescence, non availability of trained workers, and high interest on loan. The availability international market for the product is biggest opportunity and ignorance of export market is a threat for the studied SMEs. It has observed that very few SMEs identified the importance of TQM and planning for TQM adoption. So the thrust areas for SMEs of this region are

1. Education and training to manager/ entrepreneur regarding the benefits and need of continuous improvement;
2. Education and training to employees on various aspects like quality and its need, use of SQC, importance of continuous improvement, use of data and understanding of processes;
3. Adoption of philosophy of continuous improvement (TQM) and
4. Development of competitiveness through use of better technology, use of improved equipment and testing facilities.

To succeed in any field, weakness must be overcome through strength and threats must be transferred into opportunities.

In spite of the various lacunas, it is felt that with the existing technology and manpower, SMEs can do miracle by adopting a philosophy of continuous improvement (TQM). Poor information on TQM, low level of awareness and understanding, and non availability of a specially developed TQM model which guides the TQM implementation are found to be the main barriers in the process of adoption of TQM philosophy in SMEs. On this background it is decided to develop a model of TQM to suit it to the needs of SMEs. Study of existing self assessment and quality awards model should be the first step in the development of 'Proposed TQM Model'.

The purpose of creating this model was to set a challenge for industry to scale new heights of quality

and leadership. It does this in part by creating 'role model' organizations, which exemplify the application of the TQM approach to the achievement of business success and business excellence.

This exercise is analytical in nature needs tremendous amount of efforts. The researcher feels that the QA should be analyzed to determine what constitutes for high degree of quality.

A listing of various criteria done by the researcher resulted in a very large number of such criteria. Therefore the researcher decided to carry out a ranking of the various criteria in descending order of their importance by using the paired comparison approach developed by T.L. Saaty and popularly known as AHP.

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