The objective of the research work is to study the level of existence of the quality dimensions such as Top Management Commitment, Employee Involvement, Team Working, Continual Improvement, Internal Communication and Customer Satisfaction in ISO 9001:2000 certified organizations, and compare these dimensions with those in organizations which are not certified by ISO 9001:2000. The review of the literature is undertaken to learn from the experience of the previous researchers in this specific and related areas of quality. Publications by them in the various areas of quality management practices in respect of organizations which are certified and not certified by ISO 9001:2000, methods of evaluation of quality dimensions and their attributes and analytical tools used have been referred to as part of literature review.

Carmines and Zeller (1979) have given an account of the establishment of reliability and validity of the tool used for research. Measurement becomes valid, when what is expected to be measured is actually obtained from the data. Reliability is assured if the measurement produces the same result consistently. Measurement can be reliable even if it is not valid (if consistently wrong results are obtained). However there cannot be a valid measurement if there is no reliability.

Crosby (1979) has asserted that the following wrong assumptions may be removed from the minds of the quality practitioners: Quality is not goodness or luxury, or shininess; it is not intangible and therefore not measurable; it is
not unaffordable, not originated by the workers, not something that originates in
the quality department; and quality is not conformity to requirements. He
further adds that quality is the responsibility of everyone in the organisation and
that quality is measurable. The process of instilling quality improvement is a
never-ending phenomenon.

Deming (1986) has commented that globalisation of the market
economies has urged corporates in all the sectors to concentrate on maintaining
a sustainable competitive edge, which is directly related to the upkeep of
quality, both in terms of the services as well the products. An effective model
of such a visible success is the quality management system which is
Customer-Centric in its nature. Well-defined management policies which help
to deliver quality products and services ensure the participation of employees as
well as that of the management. It is a management strategy to generate the
awareness of practice of quality in all organisational processes.

QMS encompasses quality circles, which ensure togetherness through the
concerted effort of the workforce from different departments, in order to
improve the production and reduce the wastage.

Crosby (1991) has proposed a 14-step, zero-defect quality improvement
programme, for the overall uplift of quality. The main emphasis of this pioneer
in quality studies is on top management leadership, supplier quality
management, process design and control, employee training and employee
involvement.

Main (1991) has reported about the restructuring of Florida Power and
Light, a Deming prize winner, on account of financial problems.
Garvin (1991) has described three MBNQA (Malcolm Balridge National Quality Award) winners - Motorola, Cadillac and Federal Express - which had been under temporary financial pressure after receiving the award.

Zurier (1992) mentions the present negative financial reports of the MBaqn award winner, Wallace Co, which had fallen into bankruptcy.

Henricks(1992) has also referred to the financial difficulties faced by Wallace Co.

Lampreht (1992) has opined that ISO registration does not guarantee quality and it attests the quality practice of the company.

Richard (1992) views that with the advent of total quality management (TQM), seeds of change have been sown in the traditional roles of the top executives. Facilitating the team members to take appropriate decisions is as important as setting unique strategies, aiming at high-level numerical goals and monitoring the performance achieved vis-a-vis the goals set. The unique exercise of adopting a strategic leadership programme in a TQM environment requires facilitating the implementation of the right decisions by the subordinates in the direction of accompany-wide total quality improvement.

Lu and Sohal (1993), based on their study on Australian organizations, have listed the factors that are likely to contribute to the success of QMS implementation. Identification of the strategic direction of the business, i.e., of the senior management having a clear and uniform understanding of the mission, vision and policies of the organization, is very important. Understanding the customers' expectations and communicating the same throughout the organization is essential to achieve customer satisfaction and eventually customer delight. A well-defined plan for the implementation of a Quality Management System, in terms of the time frame, resources, training...
and supportive organisational structure, is necessary to achieve success. The infrastructure for this system will consist of a steering committee, strengthened by one or more layers of improvement teams. This committee has the responsibility to plan the implementation and monitor its progress. The teams carry out the improvements and report the results. It is seen that some organizations encourage participation from the lower levels of management, especially from the shop floor, to enhance employee involvement. Each improvement team has to have a sponsor, usually a senior manager. This linkage assures senior management commitment and provides ownership to the improvement teams. These organisations lay their focus on “train the trainer concept” which requires participants to train their own staff eventually. Adopting quality assurance systems like ISO 9001: 2000 and the use of external consultancy wherever required, give an impetus to the implementation of quality systems.

Easton (1993), in an article, has assessed the current state of the American quality management based on the author's experience in evaluating 22 companies as an examiner for the Malcolm Baldrige National Quality Award during the past four years. The companies that apply for the award possess much strength and foster substantial improvement in customer satisfaction, employee involvement, and operational results. However, they also have many identifiable areas which need improvement.

Goh and Ridgway (1994) present the results of a study which examines the implementation of total quality management in small, and medium-sized manufacturing companies. The study is based on personal, structured interviews with the senior managers responsible for quality in 30 manufacturing companies in the Sheffield area. It identifies five major components of TQM
and assesses the performance of the companies with respect to these components.

Hauser et al. (1994), while introducing incentive schemes for enhancing customer satisfaction, have given explanations as to how and when this is profitable and offer several recommendations for improving upon the current practices. Employee groups (including managers) may have shorter time horizons than the organization itself, and the systems enable an organization to use customer feed-back, to monitor implicitly how employees could allocate their efforts for meeting the short-term and long-term goals. These systems can be used to encourage employees to make tradeoffs that are in the best interests of the firm.

Recommendations for revamping the current practices included: measuring the satisfaction of the present customers, former customers, and potential customers; measuring the satisfaction with competitors' products; better the performance of employee groups. When different customer segments have different switching costs or these vary in the precision with which their satisfaction can be measured, the segments are measured separately and different weights are assigned in the incentive plan.

Lakhe and Mohanty (1994) identify some of the major factors of a good quality management system as team work and participation, statistical methods and analysis, problem solving, communication, behavioural and cultural change, customer care, motivation for timely implementation, responsibility and accountability, and real time information system. Many authors have emphasised different sets of organisational requirements as imperatives for the successful implementation of quality. However, these prescriptions are not based on organisational diagnosis; these are empirical findings on the other hand, founded upon judgments, conjectures and practical experiences.
Anderson and Shoal (1999) have given a detailed account of the relationship between quality management practices and business performance in small business.

Zairi (1994) has identified process flexibility, workplace design, user-supplier chain and management control system as the pillars on which the quality system is built.

Litwin (1995) explains improving the accuracy of a survey is explained and the treatise dwells on how to assess and interpret the quality of the survey data thoroughly by examining the instrument used. He explains how to code and pilot-test the new and established surveys. In addition, he covers issues such as: how to measure reliability (including test-retest, alternate form, and internal consistency, inter-observer and intra-observer reliability); how to measure validity (including content, criterion and construct validity); how to address cross-cultural issues in survey research; and how to scale and score a survey.

Lam (1995) reports on the results of a survey of 220 frontline supervisors in Hong Kong using the job descriptive index (JDI) to investigate the perceived impact of total quality management (TQM) programmes on job satisfaction. The results indicate that the respondents were much less satisfied with the work dimension than with factors such as supervision and co-working. TQM programmes are found to have had no impact on pay and promotion. The respondents perceived that the TQM programmes had led to a variety of changes which made their jobs more demanding, requiring greater individual skill and accuracy, but did not make their jobs more interesting and important. The significance of these findings is discussed in the context of the need to provide employee satisfaction in total quality management.
Mann and Kehoe (1995) have pointed out that quality management is always tailored to the specific needs of any organization. Their paper discusses the findings of a research programme that investigated the organisational factors which are important to be considered while implementing TQM. Questionnaires and structured interviews, involving the participation of over 200 companies, were used as the main tools for the investigation. Seven prime factors are identified as influencing the implementation of TQM: process factors, type of employees, shared values, management style, organizational structure, number of employees and industrial relations. They recommend that organizations should specially consider these factors, while developing the quality management approaches and the research paper provides an insight into the factors, which are likely to affect the implementation of TQM.

Naumann and Giel (1995) stress that customer-driven quality demands that organizations focus on core competencies, where they have distinct competence in creating a customer value. A customer-driven company is significantly different from one which is market-driven. While the latter is poised towards market growth and target markets, the former identifies the customer to be the judge of the value-added processes of the company. The ultimate index of the performance of a customer-driven company is customer satisfaction and eventually customer delight.

Harrington (1996) explains out that many of the improvement tools are chosen without really understanding their impact on the performance of the organisation. Some of these do challenge the basic principles on which quality management systems are built. Presentation of the data from the International Quality Study performed over a three-year period by Ernst and Young and the American Quality Foundation, with over two million pieces of information in its data base, is the largest benchmark resource in the world today.
This highlights the similarities and differences between the practices followed in USA. It also defines the best practices undertaken, based on the statistical analysis of the business results achieved internationally.

Thiagarajan and Zairi (1997), in the third part of a three-part series which represents a comprehensive review of the literature, discuss the critical factors of TQM in the key areas often stressed in the implementation of case studies, and supported by quality gurus and writers. Such factors are considered as being conducive to the success of TQM implementation. These cover issues related to the implementation aspects such as the role of culture, reasons for failures of quality management programmes, gestation period, etc.

Hesan and Samuel (1997) highlight the importance of QMS for small and medium enterprises (SMEs) to improve their current business practices as well as quality of products and services, to ensure long-term success. However, there are several barriers to the effective implementation of QMS in such organizations, like the apparent lack of business experience and knowledge, and limitation of financial as well as human resources.

Mohanty (1997) proposes a research agenda in the field of QMS, which according to him, is to arrive at an integration of the structure and process, theory of empiricism, top-down and bottom-up management approaches and technologies. This research is primarily an end initiative in that direction to facilitate organisational learning and embedded knowledge of QMS.


Raghunathan et al. (1997) compare the quality management practices in three different countries namely, USA, India and China. In this research work, various constructs representing quality management practices and quality
results have been conceptualized. A survey instrument has been developed, pre-tested and the final version of the questionnaire incorporates the results of pre-testing.

Gilbert and Sia, 2001, in the article, “ISO 9000: The answer for total quality management implementation? The Malaysian case” has elaborated the findings from a survey conducted on a sample of 100 Malaysian companies that had gained ISO 9001: 2000 certification. The survey mainly focused on whether achieving this quality status has been perceived as having contributed to the implementation of total quality management in these companies. Besides this, the perceived benefits of seeking certification, both for the different industrial sectors and for individual companies, were identified.

Thawatchai and Subba Rao (2007) have provided a deeper understanding of current quality measures and recommendations for appropriate TQM practices. Their article adopts a meta-analysis approach to study issues concerning reliability of TQM measures and find the consensus on the relationship between TQM practices and organizational performance, across studies.

Forza and Filippini (1998) discuss a causal model which was formulated to investigate the relationship of total quality management (TQM) practices with two aspects of quality performance, conformance to quality and Customer Satisfaction. The model aims to enhance the formulation of TQM theory and to indirectly establish that the tool can be used to promote quality awareness in the industrial system. Application of the model on the data obtained on a stratified random sample of manufacturing plants revealed the presence of two different paths of direct influences that could result in Customer Satisfaction and quality maintenance.
Easton and Jarrel (1998) in their article, examine the impact of total quality management on the performance of 108 firms that began TQM implementation between 1981 and 1991. The impact of TQM is measured by comparing each firm's performance to a controlled benchmark designed to capture what the performance would have been there without TQM. The findings indicate that performance measured through accounting variables and stock returns is better for the firms adopting TQM. The improvement is consistently stronger for firms with more advanced TQM systems.

Angel et al. (1998) have attempted to trace the origins of the term TQM and clarify the different definitions employed by academicians and practitioners. Feigenbaum and Ishikawa are perhaps the greatest contributors to the development of this term. Other well-known quality management researchers such as Crosby, Deming and Juran have shaped the dimensions, practices and mechanisms which underlie the concept, but it is noted that none of these three actually used the term TQM. It started to be used in the mid 1980s and only became a recognised part of the quality-related language in the late 1980s. They also analysed the key dimensions of TQM and traced their origins.

Mohanty and Lakhe (1998) attempt to identify the critical factors for QMS implementation, through a survey-based research carried out in Indian industries. Meanings and operational measures of such critical factors are articulated and developed by involving the industry managers as the appropriate subjects. Internal consistency and reliability tests are applied to these measures. A model has been evolved which could facilitate the articulation of global perspectives, understand business imperatives, and undertake strategic initiatives to implement quality programmes across the different industrial
sectors. Besides a framework for subsequent research and for evaluation of QMS programmes by the industrial practitioners has been proposed.

Zhou et al. (1999) assert that quality is a fundamental assurance towards enterprises’ survival and growth. The design and development of a quality system in the environment of a continuous information and monitoring system (CIMS) is a very important task during the process of its implementation. This paper addresses the task of development of a quality system and its implementation methodology in the environment of CIMS in China. The quality system is one of the subsystems in CIMS, which generally includes a management information subsystem (MIS), an engineering information subsystem (EIS), a production information subsystem (PIS), a quality information subsystem (QIS), and database and network support subsystems (DNSS). This paper introduces a model of the quality system and its detailed functions as the first step and later expounds the methodology and strategy of implementing it in a CIMS factory in China, and lastly examines the commonly encountered problems in its implementation, and suggests ways to resolve these.

Janak (1999) gives an account of quality movement in India, during the 35 years after her becoming independent. The slow rate of economic growth and its high cost during this period are elaborated. Periods 83-94 and 94 till date exemplify the introduction of quality movements such as TQM. This has helped to develop at least 5% of the Indian organizations to come on par with those of the developed nations. Essentially, processes like improvement of vendor quality, process standardization, training, JIT (Just in Time) have been adopted to upgrade the quality of products, process capability, involvement of people and flexibility.
Shari and Elaine (1999) explain the role of critical success factors (CSFs) in the implementation of quality of small and medium industries. Defining and measuring these factors have been a challenge as per Zairi (1996). The study of CSFs has been further pursued by Saraph et al. (1989), Ahire et al. (1996), Porter and Parker (1993) etc. The article gives a birds-eye view of the various researchers including the above-mentioned ones, on CSFs. A number of methods including the one used in Malcolm Baldrige Award criterion are touched upon. The focus areas discussed present systematically the factors with in TQM and thereafter the factors critical to implementation. The paper concentrates on the studies of large companies while very few are related to small businesses. Ten critical factors have been proposed and these too are more suitable for the industries in the large and medium sector.

Mike et al. (1999) speak about Benchmarking (BM) as a tool of TQM, which has attracted the attention of practitioners of quality. Typically, BM originated in the USA, while the European companies have been lagging behind in adopting this technique. This went on till the institution of the quality award in 1992 and UK quality award in 1994. Business process reengineering, otherwise called as BPR, was conceived and developed since 1980 as a way of radically changing the process adopted by the organisations. The paper also highlights the reason for replacing BM by BPR. A case study on Boots Company (BTC), Nottingham, has been referred to in this. In conclusion, it is mentioned that Top Management Commitment is better present in BPR companies than in those practising BM.

Zhiwei and Larry (1999) make a clear and distinct comparison of the two quality management programmes, (TQM) and ISO 9001:2000 in their research paper. The successes and failures of quality implementation as referred to in the literature are elaborated in this. While discussing the failures and
successes of TQM, it has been reported that lack of Top Management Commitment has been the major barrier to success. However, it gives adequate importance to SPC, employee participation, leadership, training, and team work as well. But individualism, overdoing measurement of Customer Satisfaction, over confidence due to winning of awards, linear thinking, etc., have led to its failure too. The experiences in Ericson Inc, Champion International, etc., have been quoted. Mention is also made of the fact that ISO 9001:2000 registration does not guarantee the quality of the product; on the other hand, it does only attest the quality practices followed in the company. The advantages of ISO 9001:2000 implementation mentioned here are competitive advantage, higher perceived quality, increased market share, greater quality awareness achieved by the employees, etc. By way of conclusion, it is said that the influence of TQM is getting reduced, and popularity of ISO 9001:2000 is becoming more evident and strong, as seen from the literature.

Shannon et al. (1999) have undertaken a systematic research study of the important question why firms seek ISO 9001:2000-certification: regulatory compliance, or competitive advantage? The hypothesis tested here is that firms obtain ISO 9001:2000 certification in order to comply with the Government and customer demands. The proponents of ISO 9001:2000 certification and its critics have naturally opposing views. The former claim that the foundation of ISO 9001:2000 is the prelude to any TQM effort. The critics conclude that ISO 9001:2000 is only a bureaucratic waste and does not give any added advantage to TQM. The findings of the study indicate that companies obtain ISO 9001:2000 certification as a credible public signal of effective quality management practices. There is no evidence of regulatory requirements being imposed on Government suppliers. At the end, it is stressed that customer compliance and regulatory compliance are inadequate justifications for

Guangming Cao (2000) concludes that while total quality management systems (TQM) have been widely applied in the management for change, and are likely to spill over to the next century, failure rates above 75 per cent at times cause concern. Their study has reviewed QMS and TQM as logical approaches to change management. Four interrelated classifications of organizational changes are presented: change as a structure, a process, a source of value or power distribution. Of these, it is contended, TQM adequately addresses process change alone, with the incidences of failure closely correlated to the application of process-based techniques in the change contexts characterised by structure, values or power. This study also suggests that, for successful application of TQM, either an approach is required which adequately addresses all types of change contexts (also called "systemic" approach), or its application needs to be restricted to those contexts where processes dominate.

Selladurai (2000), clarifies that QMS interventions or activities must be guided by four change principles, namely, work processes, variability, analysis, and continuous improvement. Product design and production processes must be improved; variance must be controlled to ensure high quality; data must be systematically collated and analysed with the help of a problem solving cycle; and commitment must be made to implement continuous learning by the employees about their work.

Larsen and Haversjo (2000) have indicated that the revision of ISO 9001:2000 Standard for changes was completed in February 1999. The ISO 9001:2000 standard has been revised from a technical practical tool to a management tool. Four problems with ISO 9001:2000 standard development are discussed, such as: some of the demands on the management; the
comparative strength of the ISO 9001:2000 standard concept; the changed role of the certifying bodies, and the implied paradigm of the management. The consequence of these problems may be that the standard turns into a legitimacy seeking management concept alongside other popular “three-letter acronyms” and thereby adds to the growing amount of hypocrisy in management.

Atul’s empirical study (2000) is the first attempt to find out the differences between organizations in India which are certified by ISO 9001:2000 and which are not certified. The areas of study included technology management, causes for poor quality, participation in the quality improvement programmes, and quality control techniques used. The results of this study indicate that there existed a significant difference between ISO 9001:2000-certified organisations and those which were not certified for quality, under all the four categories, specifically in training, applying quality in strategic planning, product design and team building, which have been statistically proved.

Mohsen (2001) presents an analogy between Total Quality Management and Systems Engineering (SE), and demonstrates that TQM has the characteristics of a system such as elements, components, function, hierarchy, and environment. Further, the author shows that approaches of SE such as, clear definition of requirements, team approach, top-down and bottom-up approach, and life cycle orientation are inherent in TQM. The utility of the analogy between these two philosophies was demonstrated by contrasting attempts that succeeded and those that failed in implementing TQM. The contrast suggests that adhering to the concepts and approaches of SE could enhance the implementation of TQM.

Naceur (2001) states that increased global competition, wherein high quality and low cost are at a premium, leads to increased interest in continuous improvement. The success of continuous improvement initiatives is dependent on many factors that include leadership, structure, and shared organisational
values. This paper identifies two sets of values that underlie continuous improvement. The first set comprises driving values; the second set, the enabling values. The paper also presents a few measures for infusing these values, for the benefit of the organizations.

Torre et al. (2001) comment that in this changing business environment, there are many developing organisations that go in for ISO 9001:2000 certification, in order to continue to be competitive. This certification process initiates certain changes in the organisation which affect the diverse functional areas. The article presents the results obtained from a study of a set of certified companies in a specific geographical area, and makes an attempt to test diverse hypotheses related to the influence of this process of certification with respect to human resources and post-certification processes. The study was able to corroborate the existence of quality in more than 50 per cent of the certified companies under consideration.

Amar and Zain (2002) have brought out the barriers faced by Indonesian manufacturing organizations in the implementation of QMS. Out of a total sample size of 364 selected organizations identified for a multi response survey, 78 organizations responded. The analysis identifies eleven pertinent factors acting as barriers, which the local organizations come across mostly. These are issues related to the human resource management, attitude towards quality, organizational culture, interdepartmental relations, raw materials, machines and equipment, information, training etc.

Jha and Joshi (2002), have studied the importance of quality management philosophy and business excellence models in strategy implementation for adopting ERP within the organisations. There is very little research done where-in the concept of QMS as a philosophy or a business excellence strategy is integrated into the concept of ERP implementation. They have attempted to integrate this
concept within a broader perspective of QMS, as a part of corporate strategy in an organization. They also have built upon the foundation of the major researches done in the area of QMS and BE (Business Excellence). The concerns and issues of both the elements are discussed in detail. A short case study on the first company in India to get the coveted Deming Prize (Sundaram Clayton) based on the integrated Japanese model for business, is done in this paper. The authors also attempt to project a holistic perspective of ERP implementation as a part of QMS or business excellence strategy implementation.

Yang et al. (2003) discuss some aspects of quality management in semiconductor industry in Taiwan. This industry is in the limelight of the manufacturing firms across the globe. Quality management is strategically and tactically important for gaining competitive advantage, in this case. Since this industry is one of the major suppliers of semiconductor products, to the nooks and corners of the world, its quality management practices have a global acceptance. This research was conducted with the help of a proven measuring instrument for quality management practices, which contained eight critical factors and 63 related parameters. Data were analyzed with respect to their reliability, mean rank, consistency, and correlation. The results of analysis revealed the insights into managers' perception of quality management practices in the semiconductor industries.

Wali et al. (2003) have made an attempt to synthesize various critical factors given by the authors, in the form of a table. Although the factors and the approach may vary from author to author, eventually they lead to the same goal: continuous improvement. The authors mention that some of the critical factors discussed by researchers are, top management leadership for quality, supply chain management, process management, employee training, and employee involvement. QMS implementation involves a blend of hard and soft quality
factors. Soft quality factors are intangible and difficult to measure, and are primarily related to the leadership and employee involvement. Hard quality factors, on the other hand, refer to the systems, tools and techniques, such as those which influence the internal efficiency (e.g. quality management systems, cost of quality and statistical process control) and external effectiveness (e.g. benchmarking and Customer Satisfaction surveys).

Sila and Ebrahimpouri (2003) have analysed and compared 76 empirically validated quality factors and their impact on various performance measures across the countries. The findings show that Top Management Commitment and leadership, customer focus, information and analysis, training, supplier management, strategic planning, employee involvement, human resource management, process management, teamwork, product design and service design, process control, benchmarking, continuous improvement, employee empowerment, quality assurance, social responsibility, and employee satisfaction were the most commonly extracted factors among the 76 empirically related ones.

Magd and Curry (2003) observe that the ISO 9001:2000 series of standards have formalized the systems for evaluating the capability of the organisations to consistently design, produce and deliver quality products and services. QMS has been seen as a relatively newly formed concept and a way for the organisations to improve the quality of their products and services. But it could very well be the key to survival and the tool for achieving competitive advantage in today's turbulent business environment. However, there were mixed views in the literature as to whether ISO 9001:2000 and TQM complement or contradict each other. The primary objective of the authors was to address the competing views of both the concepts, in an attempt to show that
both concepts complement each other and that ISO 9001:2000 should be used in association with TQM to secure organizational success.

Sadiq and Teo (2003) examine and compare the quality management practices and organisational performances of small to medium enterprises (SMEs) with and without ISO 9001:2000 certification in Malaysia. A quality measurement framework has been developed based on the critical success factors of the QMS programme. Empirical research was carried out to identify the differences, in the QMS implementation and organizational performances of SMEs in both categories of quality compliance. The quality measurement framework provides a benchmark of QMS practices for SMEs, which are in the early stage of implementation of the quality programme and this is proposed as a quality checklist for these to improve and focus on the specific areas of their respective quality programme. The findings of the research indicate that there are significant differences in performance between certified and non-certified firms, supporting the hypothesis that ISO 9001:2000 certification contributes to a higher organisational performance.

Palo and Padhi (2003), hold that Quality Management System (QMS) is a never-ending journey of the improvement of work processes. It operates according to the premise that organizations cannot rest comfortably without continuously improving whatever is being done. There has to be a culture of continuous improvement and everyone in the organization must strive for it. This could be accomplished only by continuous training. Their present study seeks to examine the role of training as well as the need for measuring its effectiveness for successful implementation of QMS. The authors have found that training creates awareness, enhances employees' commitment to quality policy and strategy, facilitates teamwork, upgrades performance standards, and bolsters the skills and abilities of the employees. However, any organisation
needs to focus more on improving communication competencies as well as multiple skill development, and imparting customer value training. Organising training in the quality management systems needs more budgetary allocation, commitment and support of, and enthusiasm from, the top management.

Ayoop et al. (2003), are of the opinion that in the context of QMS, it is essential for the organizations to identify a few key critical success factors, which should be given special attention for ensuring successful implementation of this programme. The concept of Critical Success Factors (CSFs) and their use in supporting planning efforts, originated from the approach associated with the development and implementation of management information systems. The authors present a review of the literature on CSFs, supported by various philosophies of QMS. Such factors are considered as conducive to the success of the quality implementation. Based on an exploratory study of Indian organizations engaged in manufacturing and services, CSFs have been identified.

Salaheldin’s study (2003) aims to explore the critical resisting and driving forces that detract or promote the implementation of quality management strategy in Egypt, in an attempt to find out whether QMS can be implemented effectively in this developing country. The field of survey of this empirical study is the Egyptian ex-public manufacturing organisations. A mail questionnaire was used to collect the requisite data. Force field analysis was used for identifying the salient factors affecting QMS implementation in Egypt. Surprisingly, the findings indicated that forces that promote or detract quality implementation seen in one developing country could very well be applicable to a less developed country also. Some driving forces that promoted implementation of quality strategy and a few roadblocks that detracted the implementation of QMS in these organizations are located, during this study. Managerial implications for the successful
implementation of quality are provided, and finally avenues for further research are recommended.

The empirical study conducted by John and Philip (2003), states that consumers evaluate product quality with information signals such as brand name which gives an advantage to the established organisations over others, even while introducing a new product. Another signal is ‘country of origin’; as rich nations focus more seriously on maintaining better quality, there is a tendency for consumers to associate quality with the country’s per capita income. Thus new organizations from developing countries face severe problems in the export markets. Standardization at an international level offers a potential solution to their problems. However, an analysis of the functioning of ISO 9001:2000 indicates that it is difficult to eliminate the informational asymmetry.

Mahadevappa and Kotreshwar (2004), view that meeting the requisite quality is one of the challenges Indian companies have been facing during the post-liberalization era. The ISO 9001:2000 certification undergone by companies reflects the strategy to meet this challenge. The authors’ study encompasses the quality management practices in sixteen ISO 9001:2000-certified companies in India. They evaluate the level of implementation of eight critical factors of quality management, and their impact on quality. The authors conclude that ISO 9001:2000 certification has helped the companies in improving their product quality only marginally. They further opine that ISO 9001:2000-certified organizations need further improvement, and that ISO 9001:2000 quality management systems are to be integrated with TQM for continuous improvement of quality.

Sandeep et al. (2004) have observed that different quality management environments may be suggested to an organization for improving the quality of
their products, bettering Customer Satisfaction, enhancing competitiveness and increasing profitability by the specialists in quality management practices. The factors responsible for a good quality environment have been identified by the authors. All these factors interact with each other in varying proportions. An attempt has been made to develop a mathematical model of the QMS environment from these interacting factors, using a graph theoretic approach.

Jha (2005) in his doctoral thesis demonstrates the case study methodology of research for selected Indian companies, which have been applying the concept of QMS, as a part of their corporate strategy through various popular business excellence models available for QMS strategy implementation. ERP implementation becomes an inherent part of management, like the leadership process, strategic planning or policy framework and process management for any business excellence model, for gaining competitive advantage.

Seth and Tripathi (2005) have studied the strategic implications of QMS and TPM in an Indian manufacturing set-up, and detailed literature reviews have been mentioned to highlight the gaps. The authors identify two sets of factors which are critical for the effectiveness of QMS and TPM: universally significant factors like leadership, process management and strategic planning; and approach-specific factors like equipment management and focus on Customer Satisfaction. Their study also highlights the complexities involved in implementing QMS and TPM together. This study is equally important in a global context also, as companies across the globe are striving to achieve synergy of both. The preparedness and the status of the Indian manufacturing industry for the implementation of these have become critical, as India is becoming a major sourcing base for the whole world. Such research studies are far and few, and there have not been many investigations on the quality
management practices followed in the developing countries. Such studies are equally important in a global context too.

Barbiroli (2005) asserts that enterprises are used to manage quality together with productivity but neglecting environmental management, on the other hand. This involves higher costs and lower benefits than if they were managed jointly. Therefore, efforts must be made to link all of the main aspects of global performance and efficiency. In recent years, several methodologies have been developed and implemented to consider and sort out all the aspects of performance (concurrent engineering, quality function deployment, rapid prototyping, lean production, design for assembly and disassembly, and total quality management) and seek to propose a technique to attain such a result, within the ambit of continuous improvement.

The analysis of the study is based on the correlation between 12 aspects of performance and efficiency in the production processes, general specifications of the project, detailed specifications for the subsystems, and production modalities. The major finding is that this can be done by constructing specific matrices, by utilising both technical and economic data, which permit to identify the modifications to be introduced in the processes and products so as to improve the various aspects of the performance. The study emphasises the way to follow the adoption of the methodologies capable of integrating all the aspects, to achieve increased efficiency.

Harman (2006) observes that quality management system is the process of embedding quality awareness, at every step of production or service, while targeting the end customer. We represent it, based on the five cardinal principles of top management conviction, customer-centric advancement of the processes, benchmarking, relentless improvement and strengthening of the employee base. Locked in the backdrop of increasing awareness for
benefit realization through the synergy between Information Systems (IS) and QMS, this paper reviews the readiness of an information system in India for adopting QMS. He concludes that Indian IS managers have a fair understanding of QMS and this shows an upward trend. Top management support is the single most important factor needed for implementation of QMS for IS, and better quality of services are presumed to be the most important benefit realised by the organisation.

Mukherjee (2006) presents a comprehensive view of the concepts, principles and practices of the quality management system from the basics through advanced tools and techniques for practical implementation. It is well known that the 'Total Organization Involvement' in understanding and implementing QMS, along with the integrated business strategy, provided the Japanese organisations poised as a strong platform for the meteoric rise to a world class level of leadership in every sphere of their operations. Hence the success of QMS depends a lot on the strong foundation and infrastructure of an organisation and helps to create a world-class management system for performance excellence and global leadership. The author has provided a wide cover for all areas related to QMS and integrates all its processes, tools and techniques under one umbrella to help the business to grow and excel.

Olszak and Ziemba (2006) have stated that, today the effort of the top management in improving business standards and Customer Satisfaction, through executive decision making, is mandatory to reach out to higher levels of excellence.

Rajbir et al. (2006) comment that in the post-liberalisation era of the Indian economy, many Indian organisations adopted quality programmes such as ISO 9001:2000 This was done to match the international standards of processes, product quality and standardisation. A majority of these
organisations eventually discontinued these programmes. The authors conducted a study of the small and medium enterprises (SMEs) of Punjab to ascertain the problems faced in the process of implementation of ISO 9001:2000. Older organisations faced the problems of unwilling middle managers and perceived the complexities of the process of administering QMS, more acutely than in newer organisations. The problem of sustaining employee interest and involvement was more pronounced in the smaller ones than in the medium type organisations. In older SMEs, the problem of centralised decision making did not come up as a significant impediment to the successful implementation of ISO 9001:2000. The authors conclude that organizations which did give benefits to its employees for participating in such quality-related programmes had higher levels of sustained employee participation.

Singh and Singla (2006) state that quality management has assumed great importance in today's highly competitive manufacturing industry. QMS has been widely implemented throughout the world. Many firms have arrived at the conclusion that effective QMS implementation can improve their competitive abilities and provide strategic advantages in the marketplace. There are many approaches used for the implementation of QMS in industries. These include division of tasks into subtasks, addressing the human and social aspects of implementation and education of the top management. It is, however, observed that there is a great degree of diversity within the organisations with regard to products, processes; types of resources used, education level and background of employees, and so on. Therefore, it is recommended that a flexible approach for implementation be used which takes into account the factors and forces prevalent in the industry. The paper presents a study using a flexible systems methodology for the implementation of QMS in the
manufacturing industry. The framework involved the management of industrial ‘situation’ by the ‘actor’ (industrial unit) through a management ‘process’ in a flexible manner; actor, situation and the process are the three inseparable components of flexibility.

Lakhal et al. (2006) aim to explore the relationship between quality management practices and their impact on the performance. First, critical quality management practices are identified and classified into three main categories: management, infrastructure, and core practices. Thereafter, a model linking these practices and performance is proposed and empirically tested. The empirical data were obtained from a survey of 133 Tunisian companies from the plastic transforming sector.

The findings reveal a positive relationship between quality management practices and organizational performance. Moreover, these show a significant connection between management and infrastructure practices. The results also illustrate a direct effect of infrastructure practices on the operational performance and core practices on product quality respectively.

Singh et al. (2007) comment that in the globalised scenario, there has been a tough competition between the manufacturing as well as the service sectors for achieving better quality in their outputs. However, the firms have to struggle with growing trade deficits and outsourced operations, as stronger competitors have emerged in the market. They deploy superior manufacturing practices and have taken up continuous process improvement, as a matter of routine. The small and medium enterprises are also being stressed by their customers to adopt quality management systems. The present work is an exploratory study of the impact of ISO 9001:2000 certification on output parameters. The parameters incorporated for the study are manpower, assets utilization, inventory management, quality aspects, cost aspects and purchasing
procedure. A comprehensive questionnaire was framed; different firms were selected in and around Jalandhar in India and data were collected through personal interviews. On the basis of the literature review and preliminary survey of the industry, hypotheses were formulated, data were processed and analysed. Hypotheses were validated using correlation analysis.

Sachdeva et al. (2007) have stated that in today’s competitive and quality-conscious market, acquisition of ISO 9001:2000 certification has become a critical factor for the Indian companies for their existence. The purpose of this paper is to check whether the organisations are really benefitted by getting the certification and to what extent the various performances have got improved. Four major areas of measurement of organisational performance: quality and its cost, external quality, schedule of operations and purchasing were selected for studying the level of impact. It was observed that organizations have been able to improve their performance in all the four areas of study with the degree of improvement varying from marginal to significant.

James (2007) opines that ISO 9001:2000 certification yields visible and concrete benefits to the organizations in the form of sustainable product quality, enhanced market image, increased Customer Satisfaction and long-term profitability. However, the derivative impact of ISO 9001:2000 on the human side of the organisation, especially its impact on the internal human environment, has been only scantily researched. The purpose of this study is to explore how the process of ISO 9001:2000 implementation transforms the components of organizational climate, particularly the climate motives existing in an organisation. The methodology of the study states that ISO 9001:2000 system was the independent variable that could induce changes in the organizational climate which is the dependent variable. The climate was measured before and after the implementation of ISO 9001:2000, using
Pareek's MAO-C instrument. Based on the scores obtained for the constituent climate motives, the patterns of organizational climate that prevailed in an organisation prior to and after ISO 9001:2000 implementation were studied. The results of the study reveal that as a result of ISO 9001:2000 implementation, the dysfunctional organizational climate motives such as control, dependency, and affiliation undergo a u-turn transformation, giving way to the functional and conducive climate motives such as achievement, expert influence, and extension.

The study endeavours to throw light on the favorable impact that ISO 9001:2000 may have on the climate of the organisations. The findings tend to prognosticate that when implemented well, the ISO 9001:2000 system could function not only as a quality enhancement instrument, but also as a useful tool for strategic change management that could truly hold the potential for transforming both the character and the performance of the organisations.

Apte et al. (2007) are of the view that, although customer convenience should be rightly considered as a central element in field services, the customer experience suggests that service enterprises rarely take the customer's preferred time into account in making operational and scheduling decisions. This paper discusses the results of our exploratory research into two interrelated topics: the explicit inclusion of customer time in non-emergency field service delivery decisions and the analysis of the trade-off between the customer's convenience and the field service provider's cost. Based on prior research in service quality, they identified and illustrated two time-based performance metrics that are particularly appropriate for assessing service quality in such services: quality of performance and quality of conformance. To determine the vehicle routes, they developed a hybrid heuristic derived from the existing and proven heuristic methods. A numerical example, closely patterned after real-life data is
generated and used within a computational experiment to investigate alternate policies for promise time windows. Their experiments demonstrated that over a reasonable range of customer cost parameters, the policy of shorter promise time windows reduced the combined total cost incurred by the provider and the customers. This policy should be considered a preferred policy by the field service provider. Managerial implications of this result are discussed.

George and Sampath (2007) used a real options approach to analyse investments in the process improvement of a simple, stochastic model of a firm making decisions of this type. Their analysis offers several interesting insights into the investments in process improvement. First of all, an early investment in the process improvement results in valuable knowledge, which helps to increase the value of the option to invest in process improvement in future. This motivates a firm to invest in process improvements as early as possible. Secondly, it can be optimal for a firm to stop investing when such investments do not create enough value in the later stages of the investment horizon. Finally, although one would expect the state of a firm's process relative to that of other firms to impact a firm's decision to invest in process improvement, this study finds that the impetus is conditional and identifiable. Eventually, in such an environment, the delay of the investment in process improvement incurs an opportunity cost for a firm, and it is shown that the traditional net present value rule must incorporate this opportunity cost, and the knowledge-induced change in future option values should lead to a correct investment decision.

Mehra and Ranganathan (2008), examined the role of quality management system (QMS) in enhancing Customer Satisfaction. The authors used Meta analysis; existing research studies on quality management and Customer Satisfaction were quantified, summarized, and tested for moderators to verify the impact of QMS. The authors have found that implementation of
QMS substantially increased Customer Satisfaction across various industrial and cultural backgrounds. This research broadens the scope of QMS in all kinds of professional enterprises,

Bureau of Indian Standards, 2000, Quality Management System-Requirements, gives a total account of the mandatory requirements of ISO 9001:2000 and the processes to be followed, for obtaining the certification.


The elaborate review of studies reveals the significance of ISO 9001:2000 implementation and practices in an organization-wide scenario, and it has been found that the performance of the organisations does not depend on the quality certification alone. This is identified as one of the research findings in the current study as a result of the analysis of quality management practices existing in ISO 9001:2000-certified organizations and in those which are not qualified by ISO 9001:2000 standards, in the selected organizations in Kerala.

In addition to these, a good number of books and journals were also referred for obtaining more information, on similar works carried out by learned researchers. These are given under ‘References’ in the later part of the thesis.