CHAPTER I

INTRODUCTION AND DESIGN OF THE STUDY

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2.1 INTRODUCTION

The available literature in the field of quality management is extensive and keeping track of all of them and making a review is a formidable job. But efforts
are made to bring an evaluation of the earlier studies and research works done relating to the present study. It is divided into sections and a sequence is followed to present the discussions and at the end of the review, the gaps in the research works are discussed and the purpose of the present study is stated.

2.2 THESES AND DISSERTATIONS

A. Ollila\(^1\) in her study set out to determine which types of quality improvement have been achieved in those companies using certified ISO 9000 quality systems and the main results of the study were: ISO 9000 certification has improved the quality perceived by customers; and the three categories of business-to-business companies - product, product-service and service - were approved by target companies, could describe the essential features of companies and revealed different results in analyses.

Samuel Kwesi Amegatse\(^2\) in his thesis examines the methodology for a safety management system that is similar in principle to TQM and suggested that a proactive safety management program is required for construction employees at all levels to create an organisational setting in which workers will be trained and motivated to perform safe and productive construction work. Such a program would have to be supplemented by the required technical competence, knowledge of prevailing rules and total commitment from the highest to the lowest level of employees of the organisation.

G. Vancheswaran\(^3\) looked into the practice of the TQM philosophy across six organisations, two each from Multinational, private and public sectors. The study found certain variables of TQM amongst the three broad dimensions of culture,
customer quality and tools and techniques to be of particular importance in the Indian context. It also showed certain differences in the TQM dimensions across the three sectors - MNC, private and public.

Berry and Roger William\(^4\) investigated the components of world-class quality systems and the relationship exist between world-class quality system components and improved organisational performance and find out which world-class quality system components contribute most to changes in performance. The results indicated that management’s involvement and employees’ involvement are positively correlated with change in performance and it also shows that a positive relationship exits between the use of world-class quality system components and change in performance.

Park and Byeounggone\(^5\) investigated the possible factors affecting successful TQM operation as a means of organisational performance improvement in three different government organisation types—federal, state, and military and found that there is no significant difference in terms of the utilisation of managerial activities between the private and public sector and suggested that the institutional barriers must be eliminated to improve public organisations’ performance and to achieve a streamlined TQM operation.

Sushil Kumar Agarwal\(^6\) conducted a research among 50 ISO 9000 certified companies to evaluate the depth of TQM practices in India and revealed that the Indian industry implementing quality management practices were facing what Deming defined as ‘deadly diseases’ such as- resource limitations, short term benefit attitude, difficulty
in measuring quality improvement, lack of commitment from senior managers and inefficient performance appraisal system. However it was observed that there is enough scope for some cautious optimism about the Indian quality initiatives of 1990s.

Stephen Mathews\textsuperscript{7} conducted a study based on two surveys one among the certified companies and the other among the industrial buyers of the certified companies to assess the impact made on the marketing due to the implementation of ISO 9000 standards. It is concluded that the buyers from the certified companies find that ISO certification has made a considerable improvement in the case of response to complaints, customer relationship and product quality and the gains of the certification are intangible and of non monetary in nature.

George\textsuperscript{8} in his thesis observed that top management commitment and leadership holds the key to induce a change in the organisational culture and the whole system should operate in an environment of continuous improvement and it is concluded that there is a significant and prominent presence of TQM factors in certified companies when compared to non-certified firms and quality certified firms have better quality management practices.

Mayuri Duggirala\textsuperscript{9} in her study identified the operating elements of TQM in hospitals and suggests that those instruments can be used for benchmarking the levels of different dimensions of hospitals with other competing hospitals or with the health care industry as a whole. It also suggests that systemising the process of an organisation improve its performance.

\textbf{2.3 RESEARCH/SURVEY REPORTS}
Anon\textsuperscript{10} compared the demand for the two quality assurance systems namely HACCP and ISO 9000 for food safety in North America, Malaysia, Scandinavia, Europe and Asia by food companies and outlined the benefits of HACCP. It also states that ISO 9000 certification assures customers that safety standards are high and is accepted worldwide.

BT-IMRB Survey\textsuperscript{11} this survey covered 58 CEOs and 199 working people from middle and high-income households to assimilate the Indian ‘Perceptions of Quality’. A large majority of the CEOs (88 per-cent) found the Indian quality to be lower than the world standard. However the 68 per-cent of the consumers believe that the made in India quality is same, or even superior to the foreign quality. Nearly two-third of the CEOs and one third of the consumers said that the Indian textiles and garments are of world-class. 60 per-cent of the CEOs interviewed had not applied for ISO 9000 certification and the two principal reasons are it has no relevance to the company’s business and no significant gains foreseen from the certification.

S. Al-Ghamdi\textsuperscript{12} in a survey amongst 78 managers at ISO 9000 registered firms in Saudi Arabia to determine the advantages to such companies of ISO 9000 registration showed that Saudi Arabian firms experienced comparable advantages through ISO registration to those found by foreign companies. The part played by customer requirements as a motive for registration is noted. No drawbacks specific to the Saudi Arabian context were identified. Both internal and external benefits were found.

H. Koo, L.C. Koo and F.K.C. Tao\textsuperscript{13} conducted a survey and explored the employee reactions to the introduction of the ISO 9000 standard, which comprised of
three surveys conducted at the beginning, during and at the end of ISO acquisition. Research findings demonstrated the comparative stability of staff attitudes throughout the process, other than for perceived gaps in performance, and for those factors driving quality success.

Y.C. Jeng\textsuperscript{14} conducted a study amongst 226 Taiwanese firms, which have attained ISO 9000 registration to examine the business performance subsequent to ISO 9000 approval and suggest that: the performance dimensions are not significantly influenced by variations in location and discriminate analysis shows that the performance of around 70 percent of those firms attaining ISO 9000 registration is in accordance with their initial evaluation.

Gupta Atul \textsuperscript{15} in his empirical study, made an attempt to find the differences between ISO and non-ISO organisations in India which included technology management, causes of poor quality, participation in the quality improvement programs and quality control techniques. The results of the study indicate that statistically significant differences do exist between ISO and non-ISO organisations under all the four categories specifically in training, using quality in the strategic planning, product design and team building.

BT-IMC Survey\textsuperscript{16} This survey of 2000 brings out clearly the shift in the Indian perception of quality. Fewer CEOs (80% compared to 88% in 1995) stated that the Indian products’ quality is lower than world standard. Computers and software overtook the textiles in CEOs rating the Indian products as world class, whereas the textiles remained at the top according to the consumer rating. Considerable shift in quality
perception of the CEOs is evident as more executives (71% versus 57% in 1995) accept the fact that quality is important in the day-to-day running of their company.

R. Gustaffson, B. Klefsjo, E. Berggren, and U. Granfors-Wellemets\textsuperscript{17} in their research conducted amongst the chief executive officers (CEOs) of 403 small enterprises in Sweden showed that the costs of ISO 9000 implementation were slightly higher for larger organisations compared to smaller and that 70 per cent of respondents reported fewer claims subsequent to quality system implementation.

R. McAdam and N. Canning\textsuperscript{18} in their quantitative and qualitative research carried out amongst 52 quantity-surveying firms in Northern Ireland examining their adoption of the ISO 9000 standards, the two main reasons for ISO 9000 registration were market image and pressure from public sector clients. According to 53 per cent of respondents the advantages of ISO 9000 exceeded its costs and 65 per cent of respondents identified that employee performance improves as a result of ISO 9000.

S. Solis Louis, S. Subba Rao and T. S. Ragunathan\textsuperscript{19} conducted a survey based research in five countries (USA, India, China, Mexico and Taiwan) to assess the quality management practices in small and medium size companies. Findings reveal that very high levels of common quality practices exist in terms of top management support, strategic quality planning, customer orientation and quality citizenship and there were common weaknesses among the top quality companies exist in relation to the human resources aspects of quality management.

Gavin P.M. Dick, Inaki Heras and Marti Casadesus\textsuperscript{20} through a comparison against a group of the actual sales and profitability of 400 certified companies pre and
post registration, find that although the performance of certified companies is superior to that of 400 non-certified firms, there is no evidence of improved performance after registration in the 400 certified firms studied. It is concluded from these findings, that the superior performance of certified firms is due to firms with superior performance, having a greater propensity to pursue ISO 9000 registration.

Mike Stone reports that the purpose of the survey was to investigate the potential impact that ISO 9001:2000 is likely to have upon small and medium sized companies and the main focus concerns the appropriateness of the revised standard to SME's, the likelihood of continued or new registration, difficulties the SME's are likely to experience with the changes, the type of support they will need and the support packages which would be most effective. It is concluded that 72 per cent of respondents were motivated to implement ISO 9000 to achieve quality improvement and 74 per cent of respondents expect support to implement ISO 9001:2000 from their certification body in the form additional material.

ISO survey Annual surveys are conducted by ISO in order to give public information on the number of certificates. International Organisation for Standardisation, popularly known as ISO, the originator of the standard ISO 9000, does not perform certification to its standards and does not issue certificates to individual companies. The certificates are issued by certifying agencies/registrars. In order to keep a constant tab on certification, ISO conducts this regular surveys annually on a global level as an information service. It has completed the thirteenth edition of survey, which shows worldwide panorama of certifications of ISO management system standards as at the end of December. The worldwide total of ISO 9001:2000 certificates as on December 2005 was
7,76,608, an increase of 18 per cent over the previous year covering 154 economies worldwide. The survey report also shows ISO’s environment management system standard with 1,11,162 ISO14001 certificates, an increase of 24 per cent in 127 economies.

N. Usha Devi reports the main findings based on the survey of ISO 9000 certified manufacturing companies practicing TQM for the last five years. The results indicate that the quality of work life alone influenced the business performance to the extent of 30 per cent and the overall impact of TQM practices on business performance is 79 per cent, which confirms the expectation that good quality system supported and supplemented by excellent HR practices enhances business performance.

2.4 PROJECT REPORTS

Rajanna in his project aimed to create innovations i.e. collection of ideas from the customers, employees of the organisation at all stages of TQFD and development of DSS (Decision Support System) for successfully implementing the TQFD programmes in manufacturing enterprises.

V. Ramesh compared the major software quality management frameworks that are used by software organisations in their effort to achieve and sustain continuous process improvement and studied the similarities and differences among the frameworks and facilitated the evolution and implementation of an integrated quality management framework based on the core aspects of quality models.

T. Annamalai in a study based on the Quality Management System designed for RAM E and I Systems identified the processes needed for the QMS and their
application throughout the organisation. He also determined the sequence and interaction of these processes. It is concluded that the QMS not only helps in systemising the processes and documenting them, but also prepares the organisation for ISO 9001: 2000.

Anubhav Agnidotri discussed about the quality initiatives taken by Sundaram Clayton that help in the improvement of quality and cleanliness levels of the components during the various stages of fabrication.

K. Kannan anticipated that quality circle programme would receive its authentic appreciation if it is accounted using the existing accounting procedure. A framework of the quality circle accounting system was designed and tested with software using Oracle with developer 2000. It is concluded that designing and developing quality circle accounting system would enable the management to assess the performance of QC from the viewpoint of financial investment.

Ashish Arora and Jai Asundi in a study based on 95 Indian software firms and drawing upon site visits and interviews with Indian software firms and their US clients made to articulate the different ways in which ISO certification can affect firm’s profits. It is concluded that ISO certification enhances firm’s growth and the results provide partial support for the proposition that ISO certification also enhances revenue for a given size and the quality of output. The field studies confirm that although most firms see ISO certification as a marketing ploy, some of them do proceed to institute more systematic and better-defined processes for software development.

2.5 JOURNALS
S.C. Arora and E. Sierra discuss the organisational framework involved in India’s export quality control system, and the roles of each of the particular inspection bodies. Details are provided on areas such as: the selection of products; export standards; methods of inspection; certification of conforming products; documentation; auditing; and technical support. Some suggested improvements to the scheme are also mentioned.

Deighton and John developed a vocabulary to describe the management of performances and the nature of consumer judgments of staged performances of quality.

H. Lal in a theoretical study says that recent series of international standards can help export companies meet quality requirements in major markets. These are the International Organisation for Standardisation ISO 9000 standards, which provide guidelines for producing goods at an internationally agreed requirement for quality. To implement these standards, a company needs to take definite steps, which are described. These should be revised at intervals, and should be fully documented. The preparation of a quality manual is described in detail, and an example of a quality record is shown.

T. Kawasakiya elaborates that quality control is the most important element for a manufacturer seeking to increase its exports to the markets of the free economies. In Japan, export and import of almost all commodities are free; Japanese importers can buy commodities from any country in the world in the most effective way and Japanese companies commonly adopt an online quality control system.
R.M. Blythe, H. Rao and N. Shahani\textsuperscript{34} note on the design and implementation of Glaxo Wellcome India’s Total Quality Management system, called the Glaxo Excellence Process. The objectives of GEP are outlined, and a review on the company’s approach to its implementation is made. The aspects examined include setting up the planning team, stages of the implementation process, training, benefits, improvements, and key features and the critical success factors identified are senior management involvement, customisation, an integrated structure, speed of implementation and communications.

M.Y. Ismail, M.E. Baradie and M.S.J. Hashmi\textsuperscript{35} examined the quality management practices in the manufacturing industry in Ireland on the performance of companies. It is found that companies accredited with ISO 9000 (66\% of respondents) and or had implemented TQM (19\% of respondents) exhibit a wide range of performance and statistically are significantly different than those without and firms that have larger export markets have better quality management practices.

J. Groocock\textsuperscript{36} explains the importance of supplier and customer relationship to both quality improvement and quality assurance systems. The capacity of powerful customers to ensure that their suppliers adopt quality control systems is identified. The attributes of such customers include their commercial power, and individual purchasers being seen as weak customers. The origins and attributes of quality assurance programmes are examined including specification, ensuring conformance and deliveries, which are right first time.
B.G. Dale, R.T. Williams and T. Van Der Wiele\textsuperscript{37} outlines signs such as the move from quality and total quality management (TQM) to excellence, and process control to process management and points out that they can lead to a marginalisation of quality. However, through major trends such as business-to-business, e-commerce and six sigma, there are clear indications that old style quality is coming back into the business arena because of the savings it can bring. These trends and their implications are examined in this article.

Boje Larsen and Tord Haversjo\textsuperscript{38} discusses the sum of demands on management; the comparative strength of the ISO 9000 standard concept; the changed role of the certifying bodies and the implied paradigm of management. The consequences of this 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. This is the year 2000 problem for the ISO 9000 standards and the standard is changing from a technical-practical tool to a management tool.

P. Mandal, P.E.D. Love, A.S. Sohal and B. Bhadury\textsuperscript{39} present the findings from a study that investigated the propagation of quality management practices among Indian manufacturing companies over a period of 16 years from 1980 to 1996. The extent to which quality management practices have been implemented is reported and the obstacles to adoption are identified. The spread of quality initiatives in various functional areas is analysed and discussed.

J.C.P. Prado\textsuperscript{40} analysed a benchmarking initiative developed by a group of companies operating in Galicia in north-western Spain under the auspices of a Business Network for Experience Sharing in Quality and showed how companies with differing
sizes, sectors and cultures could benefit from sharing quality management experiences and a benchmarking network is developed by bringing companies together to solve problems, exchange specific points, attend lectures, undergo training, visit each other’s premises and read quality management articles.

Brian Fynes and Chris Voss\textsuperscript{41} developed and tested a path model incorporating quality practices, design quality, conformance quality, external quality-in-use, product cost, time-to-market, customer satisfaction and business performance to find what extent do quality practices impact upon the various dimensions of quality performance, manufacturing performance, and, in turn, business performance. The findings show that higher levels of product quality can reduce unit manufacturing cost which leads to customer satisfaction.

G. Dick, K. Gallimore and J.C. Brown\textsuperscript{42} have stated that the increase in take up of the international quality assurance standard ISO 9000 by UK service industry firms demonstrates the relevance of ISO 9000 to service quality firms and concludes that service sector companies can benefit from taking a balanced approach to issues of service quality which the ISO 9000 accreditation process provides.

Shashi Sareen\textsuperscript{43} argues that one of the major factors for low exports have been the quality and safety aspects and consumers all over the world have become quality conscious and preferential towards quality products. It is said that WTO has given an impetus to adopt international standards by member countries both for product quality as well as conformity assessment procedures.
Rust and Oliver\textsuperscript{44} studied the actual level of service quality in nine selected banks from public, private and foreign banks and concluded that foreign banks operating in Delhi provide better quality than the public and private sector banks. The factors studied were customer employee interaction - functional quality, service environment-environmental quality and the service product-technical quality.

T. Gourishankar and S. Ganapathy\textsuperscript{45} evaluated the change of QMS focus in ISO 9001:1994 and ISO 9001:2000 and assessed the focus on the aspects like continuous improvement, customer satisfaction, top management’s commitment, documented procedures and processes. It is observed that one of the objectives of the revision process was to make the new ISO 9000 user friendly to smaller organisations.

George; Rajendran Chandrasekharan and R.N. Anantharaman\textsuperscript{46} discuss the results of an empirical study conducted in India and found that although the relationship between quality management practices and operational performance has not been well established, it has become the focus of attention among software developers and critical factors of software quality management have a significant positive relationship with operational performance indicators. Additionally, it was shown that quality-certified firms in general, and CMM highly rated firms in particular, have superior operational performance over the non certified firms.

Johannes Freiesleben\textsuperscript{47} discusses an interesting question whether better quality can have a positive effect on a company’s pricing options. Companies with high defect rates must reimburse customers by lowering the price of the products and better quality increases the maximum potential price and decreases unit production costs. Customers
are lost when poor quality producers can’t lower the price enough because wasted material increases the variable costs.

S. Subramaniam\textsuperscript{48} attempts to map the existing quality management practices in three major process industries namely chemical and petrochemical sector, food processing sector and the Pharmaceutical sector. The results suggest that the Indian companies have made slow but a steady start towards implementing TQM practices. The increased competition and the need for customer focus are driving the TQM movement, but industry feels that the top management commitment is very much important for the success of TQM movement.

H.R. Subramanya and J. Made Gowda\textsuperscript{49} discuss the objective of benchmarking that is to find examples of superior performance and to understand the processes and practices driving those performances, which enables an organisation to improve their performance by applying those best identified and demonstrated practices to their operations in everyday life.

D. Aravazhi\textsuperscript{50} consolidated the Deming philosophy into 14 points of management which talks about adopting new philosophy, consistent improvement, no dependence on mass inspection, training, self improvement, transformation and a total commitment of all personnel in the organisation towards exploring all possibilities for improvement at all levels.

V. Sampath and K. Alagar\textsuperscript{51} in their paper, made an attempt to analyse the basic aspects of TQM such as the management, customer satisfaction, employee involvement, continuous improvement, supplier partnerships and performance
measures. They have stated that TQM is an enhancement to the traditional way of doing business and the purpose is to provide quality product to customers.

Suresh Rajpal and Raviraj Sagar\textsuperscript{52} explored the Indian scenario, where it is mainly MNCs that driving the business excellence and the same culture need to focus on innovation and responsiveness to change, quality and process improvement, adoption of sound values and management by facts and feedback. TQM has made impressive in roads in the manufacturing and service sector and organisations have finally realized the difference between seeking an ISO certification and launching a process to improve continuously.

Harbhajan Bansal\textsuperscript{53} examined that services are activities, experiences and deeds and are experimental in nature. He said that the quality assessment takes place in customer’s mind simultaneously as services are created and delivered and the prerequisites for achieving service quality are a visionary leader, management’s commitment and support setting high performance standards, system for addressing customer complaints and a system for service quality.

N. Rengasamy\textsuperscript{54} argues that the challenges for deploying knowledge assets are, the competitive market place, the rising rate of innovations, changing customer expectations and requirements, change in demand and supply ratio, quality awareness and cost economy. TQM initiatives focus more on people management and system management. QMS, PSP, (Problem solving processes), SQC, SPC, Quality circles, relate to mind-boggling activities which is the base for knowledge creation.
A. Rao\textsuperscript{55} elaborates that TQM measures are not merely confined to the traditional rejects, reworks, downgrades and the like. But the approach touches every operation, every individual and every activity. Its main focus is on quality, delivery, cost, service and morale as all these affect customers. Its approach is equally applicable and very effective for environmental management system implementation and improvement resulting into the satisfaction of its stakeholders.

Jai W. Hong and Satit Phitayawe\textsuperscript{ji}\textsuperscript{w}i\textsuperscript{w}at\textsuperscript{56} investigates the effects of ISO 9000 on quality management practices in Thai industry and concluded that the requirements of ISO 9000 standardisation made a particular impact on 1) leadership, 2) document and data control impinge on information and analysis, 3) quality goals and quality plans that influence strategic quality planning, 4) human resource development and 5) new product design.

Y.H. Gharpure\textsuperscript{57} reviews that the aim of pharmaceutical manufacturers is to produce quality drugs and the importance and awareness of quality has been increased during the past decade. Though the government has paid greater attention to quality but there are problems such as inadequacy of men, testing facilities and funds. It is said that to monitor 16000 manufacturers the government has only 7800 inspectors and seven to eight laboratories. It is observed that 20 per cent of drugs drawn from the sample are of sub standard and considering the drugs being life saving, the alternative is to increase the number of inspectors and laboratories.

S. Gajendran and S. Sampathkumar\textsuperscript{58} analyses the present status of TQM industries through a structured questionnaire survey and the results indicates
improvement in the quality of goods and services, quick delivery time and reduction in waste are the foremost priorities of industries. Reduction in customer complaints and better teamwork are found to be the second priority. The obstacles found in the implementation are inability to change organisational culture, low worker morale and lack of interdepartmental relations and paying inadequate attention to internal and external customers.

Lata Chakravarthy\textsuperscript{59} evaluates the level of assimilation and the extent of effective exploitation of the concept of benchmarking by the manufacturing and software/services sectors and shows how these have translated into tiny islands of excellence, contributing to the steady increase in the nation’s GDP growth rate and foreign exchange reserves.

Sohrab\textsuperscript{60} observes that Indian industries taking cognizance of the imperatives of global markets, had taken initiatives to launch a vigorous programme for quality improvement and their basic aim is to implement and obtain a third party certification for ISO 9000 as a proof of adherence to Quality Management System. It is also revealed that certification has added value to companies neither in increasing quality status of their products and services nor in efficiency of their operation. It is said that industries’ interest in implementing ISO 9000 is declining and many smaller countries of the world have more certification to ISO 9000 than India.

Mile Terziovski\textsuperscript{61} in his study tested the strength of the relationship between quality management practices and two key operational performance measures namely productivity improvement and Customer satisfaction. It also identified the need on the value of quality practice and offers practical implications to managers and stimulates
further research on the relationship between quality practice and operational performance in non-manufacturing industries. The major finding of the paper is that multiple quality management practices when implemented simultaneously have a significant and positive effect on productivity improvement and customer satisfaction.

2.6 WORKING PAPERS

M.R. Gopalan\textsuperscript{62} in his paper stated the reasons for the ISO 9000 certification assuming importance in India and identified quality as one of the important factors for becoming competitive. He states that Globalisation has made it imperative for businesses to ensure quality performance and to gain entry into EC market. It is also said that Liberalisation process in India has made businesses to realise that to survive within or outside India they have to improve their performance in the quality front.

Deodhar Satish\textsuperscript{63} examines the costs of HACCP implementation and in what way the system benefits firms. While quality and production related factors motivate firms to employ HACCP, trade associations are not at all instrumental in promoting the system. Set-up cost and operating cost vary with the type of food sub-sector and the size of firm. Government and trade associations may facilitate sector specific concessional loans for HACCP implementation and initiate training programmes. Economies of scale are important in HACCP adoption; hence Indian firms may want to go for horizontal and/or vertical integration.
Subhashini Kaul explores the extent to which store service attributes having appeal for consumer self-image impacts store satisfaction and patronage intentions and discovers that this ‘expressiveness’ value has significant associations with both. By using the adapted RSQS for measuring service quality in the Indian apparel retail context, this paper finds that service expressiveness value is distinct from the performance value obtained from service delivery. This paper provides empirical evidence that the mediation effect of satisfaction varies depending on consumer perceived value from service and that it is neither as universal nor as strong as retailers and researchers tend to believe.

**2.7 SEMINAR/CONFERENCE REPORTS**

Michael V. Russo and Niran S. Harrison laid out some theoretical antecedents for improved environmental performance under ISO 14001, contrasting them with arguments that registration will not affect emissions. Using Toxic Release Inventory data for the years 1996 through 1998, there is enough information to ascertain the conditions under which ISO 14001 registration influenced toxic release performance.

Sven Beholz and Wolfgang Konertz reports that the implementation of a quality management system (QMS) according to EN ISO 9001:2000 has proven to be possible for cardiac surgery departments. It is also said that customer satisfaction could be increased efficiently with respect to accessibility and postoperative communication. By the introduction of a process based QMS, efficient control of the costs of medical goods and laboratory investigations could be achieved and once a
year repeat evaluation of satisfaction of advising physicians has proven to be a valuable tool in the process of continuous improvement.

2.8 WEB BASED PUBLISHED REPORTS

E. Soltani, J. Gennard, R. Van Der Meer, and T. Williams investigated the main issues of the current HR performance evaluation systems in over 150 UK-based quality-focused organisations. The study identified the main characteristics of HR performance evaluation systems currently practiced in TQM-based organisations and the data point to an increase in performance evaluation usage amongst the UK-based organisations,

Tony Schellinck and Philip Rosson examine why some export companies have pursued ISO 9000-series registration while others have not, and whether export companies pursue ISO 9000-series registration perform differently from companies whose market scope is exclusively domestic. The results show that registered exporters are perhaps more pre-disposed to seek ISO 9000 registration and these companies are more substantial in size and scope, more international in their operations, and have more corporate experience with ISO 9000.

Savas Alpay, Ismet Yalcin and Turker Dolekoglu analyses the impact of food quality and safety standards of the European market on the export performance of food companies based in Turkey. Export of food products, for which the European Union is the largest market, has an important share in total exports of Turkey. The five sub sectors of the Turkish food industry, shows that the vertical integration,
environmental performance and quality indices have significant positive impact on the export performance of firms.

Francis Chittenden, Panikkos Poutziouris and Syeda-Masooda Muhktar\textsuperscript{70} provides insights into SMEs' attitudes and experience of ISO9000 based upon a major survey of quality practices adopted by SMEs and seeks to identify the generic types of small firms for which a formal quality system is appropriate. Recommendations are made for policy initiatives, which will enable small organisations to embark upon alternative approaches to quality management.

Paul C. Hong and S. Subba Rao\textsuperscript{71} reports suppliers’ quality practices in four countries—USA, Korea, Taiwan and Mexico. The practices include suppliers’ education, technical assistances, involvement in product development and long-term relationships. In all four countries, supplier quality is shown as a significant predictor of internal quality results. However, supplier quality is a significant predictor in USA, Taiwan and Mexico for external quality practices and not in Korea. A possible reason may be the highly integrated nature of supplier-manufacturer relationship in Korea and this needs further investigation. Taiwan is much more export-oriented than the other countries.

Tigineh Mersha and Berhanu Mengistu\textsuperscript{72} proposes two inter-related approaches to enhance quality and service excellence that will have a positive impact on Ethiopia’s export performance. The first is the establishment of a national quality award program through a joint public-private partnership and the second approach is the creation of an enabling environment for export oriented Ethiopian enterprises to actively seek and
obtain ISO certification for key products. It is argued that improving product quality and attaining service excellence will help increase access to international markets and strengthen the competitiveness of Ethiopian products in the global market thereby contributing to national development.

2.9 NEWS PAPER ARTICLES

Anurag Priyadarshini\textsuperscript{73} in her article stated that quality management assumes significance in promoting economic growth, especially in export markets and Globalisation, Liberalisation and Privatisation have implications for quality management. Export-oriented units and MNCs have strived to blend India’s competitive edge with quality management tools and techniques.

Preeti Mehra and Ratna Bhushan\textsuperscript{74} brief about the initiative taken by the Cotton Gold Alliance (CGA) promoted by US-based non-profit organisations, Cotton Council International (CCI) and Cotton Incorporated to assure consumers that they are buying a 100 per cent cotton, high quality product with a ‘Seal of Cotton’, the ISI of cotton and says that the Seal of Cotton is an official benchmark which is internationally recognised, and the leading brands would like to have that.

V. Rishi Kumar\textsuperscript{75} says that the traditional network management systems fail to detect customer problems. With advanced tools, it is possible to track and analyse every call transaction in real time. Service providers can now monitor and devise systems that can give an insight into the quality of service (QOS) experienced by a particular customer. In a competitive market, customer demands keep going up and measuring and benchmarking performance against the changing needs is essential. The challenge
is to manage the demands of increasing new customers, while retaining existing customers through a level of service that acts as a competitive differentiator.

Mahnaz Fatima\textsuperscript{76} emphasises quality as being by all to be able to compete in a liberalising international trade environment. Quality is not mere quality of the product but it encompasses the concept of the quality of the firm defined by the quality of variables. Quality of a firm is further gauged by its ability to produce products that are affordable and safe and by the firm’s ability to make a timely response to the changing market needs without which too the firm might lose competitiveness. A quality-seeking firm first needs to assess the quality of its HR processes and by building on the sound HR practices already in place. It is this company-wide way of thought and way of life that alone can continue to deliver the much-desired quality we need for competitiveness in domestic and international markets alike.

R.C. Acharya\textsuperscript{77} reports that quality certification is to be regarded as a first step towards the ultimate ‘total quality’ concept and it is only an assurance to any prospective buyer that the manufacturer has a system in place to ensure that the product is being manufactured to the standards specified by the purchaser. ISO 9000 series certification does not guarantee that a supplier will be able to deliver a product for a precise purpose and a large number of firms in the US that have the required technical and managerial capability are doing well even without ISO certification.

Joe C Mathew\textsuperscript{78} discusses in his report that the active brand promotion by the drug companies contributes to the development of quality concepts among the users and opined that the present situation is favoring only those companies that
have the financial muscle to build adequate brand equity. Therefore the suggestion, to institute a method of quality certification similar to ISI or Agmark approvals, so as to ensure that all good drugs enjoy the same consumer loyalty, irrespective of the size of the manufacturer. The task force has also said that the quality symbol could be a combination of the existing Indian Pharmacopoeia (IP) mark and GMP certification.

2.10 CASE STUDY REPORTS

Shashi Sareen in her study evaluated the food safety measures, standards, the role of organisations like Codex, EIC and ISO and the initiatives taken include upgrading of laboratories, training and technical assistance and establishing a database on importing country’s requirements. It is concluded that the safety measures described here have led to increased export of food products and fewer inspections and rejections.

2.11 OBSERVATIONS/RESEARCH GAPS FROM THE LITERATURE REVIEW

There are innumerable literatures available on the subject of quality, quality control, quality management system and quality assurance. Many researchers have investigated the impact of quality, quality system, customer perceptions on quality, advantages through ISO registration, need of ISO registration in export markets and the relationships between quality management practices and business performances. Though a lot of research work is reported on quality management, research work on
quality system practices and export performance is still in growing stage and a comprehensive work is yet to be done.

From the review of the literature illustrated above, it is clear that literature in Quality Management is somewhat comprehensive and the various aspects of quality management systems such as identification of operating elements of TQM in different sectors, problems faced on implementation of QMS, relationships between quality management practices and organisational performance, dimensions of TQM philosophy, customer perceptions on quality, advantages through ISO registration, need of ISO registration in export markets, employees’ attitude towards ISO registration, service quality in service sector, impact of ISO on marketing, relationship exists between price and quality and comparison of ISO certified and non certified firms are systematically examined and discussed.

A thorough analysis of the review discloses that only few studies have been done with respect to the implication of QMS practices on export market and most of them are either theoretical in nature or limited to a few organisations. An extensive study is essential on impact of quality management practices on export performance. The study by Savas Alpay, Ismet Yalcin and Turker Dolekoglu seems to be the only attempt made in this direction, but appear to be very broad. Therefore, it is essential to identify the factors of QMS, affecting better export performance and whether issues like certification, employees’ attitude and the other quality initiatives contribute towards excellent performance.
2.12 INSPIRATIONAL ASPECTS OF THE PRESENT STUDY

The literature survey on QMS reveals that application of QMS techniques enabled the respective sectors to gain control over the manufacturing cost, improve customer satisfaction, building up their competitiveness and enhance their performance. But studies in this field are limited particularly in the export sector. It is also observed that top management commitment is the leading factor for the success of QMS in any organisation. Though the export firms approve the importance of QMS in their performance assessment and customers’ perception of quality playing a vital role, still the implementation process is in the preliminary stage for many firms. Despite the fact that there are many research works done relating to this topic, still an exclusive study relating QMS and export performance has not been done so far. So it is observed that a study in this direction is the need of the hour to know the impact of QMS on export performance.

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