Chapter 2

REVIEW OF LITERATURE

Review of literature provides information about previous research work carried out by different researches related to any field of study and research methodology explains the path followed for carrying out the research process. So, this chapter helps the researcher to understand the research contribution made by academician in the field of ISO 9000.

It is universally acknowledged fact that effective research cannot be accomplished without critically studying what already exists in relation to it in the form of general literature; therefore it is considered as an important prerequisite to execute the planning of any research project. It helps to eliminate the duplication of what has been done and provides useful hypothesis and suggestions for significant investigation. Citing studies that show substantial agreement and those seems to presents conflicting conclusions help to sharpen and define understanding of existing knowledge in the problem area, provide a background for the research project and makes the researcher aware of the status of the issue.

So, for the fuller and better understanding of the problem, the research scholar has made her sincere effort to review the related literature regarding the research problem taken. All the possible related books, journals, periodicals, research papers, thesis and dissertations available from different sources were glanced through for this purpose. This explores the work that has been done in relation to international quality standard that is ISO 9000 and focused to ISO 9001.

Gravin (1984) conducted a research on “What does a product quality really mean?” found that improve reliability or conformance to standards leads to increased productivity and efficiency and decreased scrap or rework costs and product liability costs, resulting to decreased manufacturing service costs. These then leads to higher profits.

Deming (1986) “Out of crises: Quality, productivity and competitive position” found that improvements in quality create corresponding improvement in productivity by reducing costs, errors, reworks and delays. The TQM claim that effective implementation of TQM can offer
many benefits including improved products and services, reduced costs, more satisfied customers and employees and improved bottom line financial performance.

Capon et al. (1990) identifies 20 service studies that find a positive relationship between quality and business performance. Flynn et al. (1995) found that a link exists between quality and financial returns. Foker (1996) study of 131 UK service firms suggests that better quality does have a positive effect on the overall performance of the firm, relative to its competitors. The association between ISO 9000 certification and financial performance is mainly concerned with impact on sales and profitability. Most companies have witnessed an increase in the overall sales after certification. Supporting this, Gupta (2000) reported that ISO 9000 certified companies have better rates of return than non-certified ones, largely due to increased sales.

Ragthaman and Korte (1999) “The ISO 9000 international quality registration: an empirical analysis of implication for business firms” explored a study to know the managerial perceptions about the ISO 9000. The sample size for the research was 212 plant managers. The self administered survey instrument was designed to elicit information. Univariate test has been used for mean difference in responses of two groups based on annual sales. It was found that ISO 9000 seen as a positive marketing tool but no improvement in public relation status. Overall respondent agreed that ISO 9000 implementation improved export potential.

Capmany et al. (2000) conducted a research on “ISO 9000- A marketing tool for U.S agribusiness” to know the relevance of the ISO 9000 series of quality management systems (QMS) for US agribusiness is analyzed. Sample size was taken as 197 for the survey. Self structured questionnaire has been used. T test and Mann- Whitney-Wilcoxon rank sum test were used for the analysis. No significant difference has been found between the means of the two groups of the firms’ i.e., agriculture industry and other industries at 10% level of significance.

Dissanayaka et al. (2001) studied on “Evaluating outcomes from ISO 9000 certified quality systems of Hong Kong constructors” proposed the relationship between the ISO 9000 and performance of organization. The data was collected from 33 organizations and it was observed that major benefits of ISO 9000 certified quality systems to Hong Kong constructors (by percentage method) are seems to be more systematic record keeping(97% strongly agree/agree)
improvement in internal communication (91%), improvement in internal performance appraisal system (82%) and continual improvement of operation (81%). On other hand, the major drawback of ISO 9000 certified quality systems are seen to be more paperwork (100% strongly agree/agree), more time spend in management (85%), increased bureaucracy (63%) and higher overall project cost (58%).

**Inaki et al. (2002a)** studied “**ISO 9000 registration’s impact on sales and profitability: A longitudinal analyses of performance before and after accreditation**” to know the ISO 9000 quality management systems and their association with business success. The study has been limited to the 5 years period of financial statements. T-test was used as a research tool to depict the change in mean value of pre and post period of certification. It was observed that profitability of certified firms was consistently better than non certified firms.

**Hesan et al. (2002)** conducted a research on “**Impact of ISO 9000 certification on quality management practices**”. It examined the relationship between ISO 9000 certification and quality management practices. A standardized questionnaire was used to collect the data from selected manufacturing, service and construction industries in Singapore. Data was analyzed by employing one way ANOVA to explore the relationship between the ISO 9000 certification and quality management practices. Both ISO 9000 registered and non registered firms are included in the survey. The results revealed that ISO 9000 registration does not have any significant impact on quality management practices.

**Inaki et al. (2002b)** conducted a comparative study of the profitability of Basque region companies to examine “**ISO 9000 certification and the bottom line: An analysis of profitability**”. The data was collected from 400 certified and 400 non certified companies simultaneously. It was observed that average profitability of the certified firms was superior. The result of T test revealed that there is an association between the ISO 9000 certification and superior financial position at 5 % level of significance.

**Terziovski et al. (2003)** A Cross sectional study has been conducted on “**The longitudinal effects of the ISO 9000 certification process on business performance**” in Australia. The sample size was taken as 126 quality auditors from different companies. Factor analysis and multiple regression were used as a statistical tool. It was found that motive for adopting ISO 9000
certification and quality culture are significant predictors of the benefits derived from ISO 9000 certification. But auditing was taken as one of the practices shows no significant and positive effect on business performance.

**Ghanim (2003)** made an investigation on “The impact of implementing quality management principles of ISO 9000 on business effectiveness”. This study has been conducted in Palestine to know the impact of implementing ISO 9000 system on organizational performance indicators which included employees’ satisfaction, quality and productivity that represents business effectiveness. The data was collected through the questionnaire. T test and multiple regression were used for the analysis. It was found that no significant difference in the organizational effectiveness due to an ISO 9000 certification.

**Sharma (2005)** on “The association between ISO 9000 certification and financial performance” studied a sample of 70 companies listed in the Singapore stock exchange over the period of 6 years. Three parameters have been taken to measure the overall financial position such as profit margin, growth in sales and earning per share. Through multivariate analysis it was found that ISO 9000 certification is associated with the improvement in financial performance. The significant improvement has been observed in profit margin, sales growth and earning per share.

**Casadesus and Karapetrovic (2005)** conducted a longitudinal impact study on “Has ISO 9000 lost some of its luster?” as to analyzed change in the perceived benefits and cost of ISO 9000 implementation over a period of time by conducting two surveys performed in 1998 and 2002, with 283 and 399 firms compared and analyzed. Questionnaire was used as an instrument in the survey. It was revealed that there has been a significant decrease in the perception of ISO 9000 implementation benefits from 1998 to 2002. It was also found that ISO 9000 implementation and maintenance cost have substantially decreased in the same four year period.

**Hong and Phitayawejiwat (2005)** conducted a study the “Impact of 9000 certification on quality management practices in Thailand” to investigate the effects of ISO 9000 on quality management practices in Thailand industry. The survey instruments were mailed directly to top and middle level management who are responsible for quality management practices. For the purpose of the analysis one way ANOVA has been used. It was found that there was a significant difference between ISO 9000 certified organization and uncertified organization in respect of
seven selected quality management practices such as leadership, information and analysis, strategic quality planning, human resource development, quality assurance, supplier’s relationship and customer orientation at 5 % level of significance.

Corbett et al. (2005) conducted an empirical research on “The financial impact of ISO 9000 certification in the United States”. Study period has been taken from 1987 to 1997 of all publicly traded ISO 9000 certified manufacturing firms in the United States and to know whether ISO 9000 leads to productivity improvements, market benefits and improved financial performance. To know the growth and trends of productivity due to an ISO certification t-test, sign test and WSR test have been used. It was explored that after deciding to seek their first ISO 9000 certification, publicly traded manufacturing firms in the United States experience significant abnormal improvements in financial performance.

Ali et al. (2006) conducted an exploratory study on “Quality HR – TQM model for higher education institutions” to diagnose the relationship between human resource management in continuous improvement system in manufacturing and service environment. Factor analysis and chi square were used to conduct a survey on 281 usable questionnaires. It was found that critical success factor of human resource and quality working climate are positively correlated. And it causes a significant impact on organization performance.

Tari and Sabater (2006) conducted a research on “Human aspects in a quality management context and their effects on performance” to examined the relationship between quality management and human aspects such as empowerment, recognition and personnel policies in Spanish companies. Sample size was taken as 106. Correlation, t test, and regression were used for the analysis. It was found that the TQM success depend on leadership, human resource management and learning factor. It was also revealed from managerial point of view that there were differences between certified firms, both in practice for quality management and in the importance of staff commitment in order to improve the level of TQM.

Singh and Sareen (2006) done empirical investigation on “Effectiveness of ISO 9000 standards in Indian institutions: A survey”. The study explored the contribution of ISO 9000 standards in Indian educational institutions. The study revealed the motive of implementing ISO 9000 standards in educational institutions and its benefits to organization. These benefits were
segregated into four different parts as benefit to system, faculty, students, and external benefits to organization. The sample size was 21 educational institutes, and primary data was collected through questionnaire. T-Test has been used on selected variables for the analysis. The study explored that the most important motive of the institutions is documentation of the systems of the institute and better maintenance of records.

**Shenawy et al. (2007)** “A meta-analysis of the effect of TQM on competitive advantage” used the random effect Meta analysis for studying the effects of TQM. Their results show that a model for the TQM incorporated five major components; top management commitments and leadership, teamwork, culture, training & education, and process efficiency. According to their study results each of these components led to competitive advantages. When effectively implemented, TQM practices significantly improve the financial performance.

**Costa and Lorente (2007)** “A triple analysis of ISO 9000 effects on company performance” longitudinal study has been conducted for the comparison of certified and non-certified companies. The results suggest that, instead of improving the results of companies, certification actually worsened it. ISO 9000 actually reduces benefits and profitability, no differences in sales were noted and costs remained unchanged. In fact, certified companies were the group with the worse performance. These results support the findings of Singels et al. (2001) that certified companies had worse average cost savings and rate of sales, market share and net benefit growth as compared to non-certified ones.

**Piskar (2007)** empirically conducted a research on “The impact of the quality management system ISO 9000 on customer satisfaction of Slovenian companies”. Simple random sampling method was used to select the sample of 250 customers of certified companies. Analysis has been done on the basis of structural questionnaires gathered from 212 responses of Slovenian companies that had already acquired the ISO 9000. The research quality standard’s impact on better satisfying customer’s needs and demand, but not the direct impact over the business success.

**Costa and Lorente (2007)** conducted an empirical research on the Spanish companies to diagnose the “Impact of TQM and ISO 9000 on financial performance” for the purpose of the study 713 companies has been randomly selected. ANOVA and t-test has been used for analysis.
to know the difference in the averaged results 2 years after ISO 9000 implementation and 2 years before (related samples). It was found that there is no significant difference between pre and post period on selected variables such as return on assets and productivity.

**Lo et al. (2007)**, “Impact of ISO 9000 on time-based performance” undertook a study of 695 publicly listed manufacturing firms and they found that ISO 9000 certified companies shortened their operating cycle time by 5.28 days one year after implementation. Certified firms showed continuous improvement in time-based efficiency in the long run, and experienced a shorter operating cycle time of 11 days. ISO certified firms gained an average of 6.5% improvement in operating cycle time and thus both inventory days and account receivable days improved similarly. They also found that the abnormal performance of shortened account receivable days improved. It means that the certified firms could offer better customer service and product quality.

**Capistrano (2008)** “ISO 9000 certification and business performance of selected Philippine companies,” conducted a study to determine whether ISO 9000 certification has a significant effect on financial performance in Philippine. Study considered three years pre and post certification to measure the impact of ISO 9000 on operating efficiency, asset use efficiency, and financial leverage. The results revealed improvements in some performance measures, although not statistically significant, some showed declining performance and the majority witnessed a fall in the variance of their performance measures. The study concluded ISO 9000 certification is not fully implemented in Philippine.

**Benner and Veloso (2008)** “ISO 9000 practices and financial performance” conducted an empirical research on US registered public companies. F test and regression analysis were used as a statistical tool for the survey. ROA and ROS have been taken as the performance measures. It was found that adoption of ISO 9000 has best prospects for performance improvement.

**Feng et al. (2008)** through “Relationship of ISO 9001-2000 quality systems certification with operational and business performance” tried to resolve the contradiction between some researchers who argue that the ISO 9000 certification prevents the development of innovation through the analyses of the impact of ISO 9000 certification in innovational performance conducted at a large number of Australian organizations. The study concluded that ISO 9000
certification has a significant negative effect on performance in product innovation, and a significant positive effect on performance and dimension related to the innovation process. The results are consistent with previous studies. The implication revealed from the study was that managers need to exercise care in selecting the appropriate procedure for certification.

According to Agus et al. (2009) “An empirical investigation on the impact of quality management on productivity and profitability” explored Quality management has a significant impact on the productivity and profitability of Malaysian electronics and electrical industry. Researcher has used a likert scale for quality management variables, especially quality measurement, benchmarking and training. It was revealed there was a significant impact of quality management practices on productivity.

Almeida et al. (2009) conducted an empirical study on “Evaluating ISO 9001 certified and non certified organizations in Brazilian leather- footwear chain” to identify possible differences in performance between them and to determine the motivation construct that led these organizations to attain the certification. Sample size was taken as 130. Correlation and Kruskal Wallis test were used for the analysis. It was found that there is a positive and significant correlation among certified organizations with better management practices to reveal the superior financial results in certified organization.

Tehet al. (2009) “Does Total Quality Management Reduce Employees’ Role Conflict” to know the role conflict among employees Questionnaires were distributed to 433 employees from 98 different firms from manufacturing and service industries in Malaysia. The findings reveal significant negative correlation among all TQM practices (i.e. leadership, strategic planning, customer focus, human resource focus, and process management and information analyses) with role conflicts. It was also found from multiple regression analysis that there is a negative relationship between leadership process management and information analysis with role conflict. Study suggests that Human resource need to be focused to avoid the problem of role conflict in an organization.

evaluated the impact on business performance on a sample of 713 Spanish industrial companies and also analyzed whether the ISO version is more similar to the implementation of TQM. They concluded that the companies certified with ISO 9001/2000 have noticeably better performance than companies certified by ISO 9000/1994 or uncertified firms. However the authors found that the ISO 9001/2000 certified companies apply a much higher of TQM than the certified firms by ISO 9000/1994, but they have a less or clear position on increased performance.

Mahanti and Jiju (2009) conducted a research on “Six sigma in the Indian software industry”. Questionnaire has been used to collect the data from the employees of the companies who actively applying Six Sigma. This study was proposed critical success factors which are essential for the successful deployment of Six Sigma in organizations.

Bewoor and Pawar (2010) conducted an empirical research on “The impact of QMS/ISO implementation on productivity/ performance of Indian SMEs” this study was focused on eleven functional areas/ departments of SMEs viz R&D, design engineering, production engineering, tool engineering, quality assurance/inspection, maintenance and servicing, purchasing, sales store marketing and HRD. Structured questionnaire has been used for the data collection sample size was taken as 220. T test and factor analysis has been used for the analysis. It was found that impact of ISO 9000 implementation in SMEs was marginal. Hence, ISO/QMS implementation in SMEs should not be considered as the only tool to improve the productivity/ performance.

Lamport et al. (2010) conducted a study on “The association between ISO 9000 certification and financial position”. A sample of Mauritian incorporated companies listed on a stock exchange of Mauritius was chosen for the study. Sample consisted 10 certified and 10 uncertified companies. Study period was taken as 12 years (1997-2008). Data was analyzed by multiple regression in which EPS was taken as dependent variable and sales, size, operating expenses, age status were taken as independent variables. It was revealed that ISO 9000 is associated with improvements in overall financial performance.

Sergio et al. (2010) “Performance measures and quality tools for in Portuguese small and medium enterprises” study conducted to know the level of knowledge of performance measures and their degree of implementation in small and medium enterprises in Portugal. For the purpose of data collection of data collection questionnaire has been used. Pearson’s product moment
correlation coefficient was used to assess the possible relationship (linear) between the four groups of measures based on balanced sure card. ANOVA also has been used to compare the mean of four groups at 5% level of significance. It was found that the general opinion of Portuguese in SMEs with regard to performance measurement is that the biggest obstacle to the introducing is “training of employees”.

Volmohammadi and Khodapanahi (2011) conducted a study on “The impact of ISO 9001:2000 implementation on employee’s job satisfaction” to examined employee’s perception of ISO 9001 practices and its impact on job satisfaction by considering the 4 variables such as customer focus, Training and education, Empowerment and teamwork, and customer focus. For the analysis the sample of 52 employees at different levels were selected. The multiple regression and one way ANOVA has been used. This research used self structured questionnaires has been distributed within these organizations. The results of the study show that customer focus, training and education, empowerment and teamwork and continuous improvement and problem prevention are all positively associated with employee’s job satisfaction. It means practices of ISO 9000 are positively related to job satisfaction.

Vesna et al. (2011) conducted an empirical research on “The relationship between effectiveness of quality management and total factor productivity” to know the role of quality management factors in total factor productivity. The stratified random sampling method was used. The data were collected for the period of 6 years(2004 to 2009).Stratified random sampling was used to draw a sample from Serbian industrial firms ISO certified. Multiple regression has been employed on the data for analysis. The central finding of this study was that QM factors provide a reliable and valid instrument for predicting total factor productivity. Two of the elements of QM, leadership support for quality programs and continuous quality improvement, proved to have a significantly positive effect on TFP. The results of the research were directed at showing companies with limited resources which QM elements they should pay more attention to in the aim of achieving higher productivity.

Singh et al. (2011) conducted research on “A resource dependence theory perspective of ISO 9000 in managing organizational environment” invoke the resource dependence theory(RDT) to purport that the standard is used by organizations as a tool to manage their organizational environment. RDT perspective has been used that was a model with three key constructs such as
internal processes, relationship with customers and relationship with supplier. The latter two were treated the part of the task environment to know the extent of customer relationship are based on ISO 9000 principles is positively related to operating performance. Empirical data has been collected from 416 ISO 9000 registered Australian manufacturing plants validated the RDT perspectives. This model and result suggested that RDT presents an appropriate organization-environment boundary spanning perspective of how the standard operates. The results were even consistent with the prior study conducted by Sroufe and Curkivoc (2008).

Sabah and Najjar (2011) on “The ISO 9001 implementation barriers and misconceptions” an empirical study has been conducted to examine the various barriers and misconceptions that impede ISO 9001 implementation in the service and manufacturing sectors in Iraq. In order to identify these factors a structured survey was conducted using a random sample of 50 directors in service and manufacturing organizations. The analysis of the survey revealed nine important factors that hinder the implementation of the standards; lack of top management commitment, Employee resistance, Difficulty of performing internal audits, Absence of consulting boards, SO 9001 requirements are unrealistic, Financial resources, Lack of human resources, insufficient employee training and Insufficient knowledge about quality programs. The study revealed the need to formulate a national strategy to meet the emerging ISO requirements which will enable Iraqi organizations to achieve superior quality of goods and services.

Durairatnam et al. (2011) “Impact of ISO 9001 core principles on work outcomes and customer satisfaction in Sri Lankan manufacturing organizations”. This study was conducted to know the relationship of ISO 9001 with work outcomes such as job satisfaction, work involvement, organizational commitment. Through stratified random sampling 546 employees has been selected from 18 manufacturing organizations of functional areas covered by the scope of ISO 9001. It was found from factor analysis that implementation of ISO 9001 has a positive relationship with work outcomes and negative relationship with job turnover intentions.

Wali and Boujelbene (2011) conducted a research on “Cultural influences on TQM implementation and financial performance in Tunisian firms”. 130 firms have been taken as sample size that obtained a registration of quality management system (ISO 9000) questionnaire has been used to collect the information from quality managers responsible for quality and
financial managers for the financial information. Indicators to measure the performance are sales growth and growth in operating profit before depreciation. It was found from the discriminant analysis that there was a positive relationship between corporate culture and TQM implementation.

**Kumar and Balakrishnan (2011)** conducted a research on “A study on ISO 9001 quality management system (QMS) certifications” to identify the reasons behind the failure of the ISO certified organization. By using a stratified random sampling organization are selected on the basis of employees. Through the questionnaire data has been collected and it was found that implementation was failed due to the certain system gaps in majority of the ISO 9001 certified organizations. These gaps were classified as leadership related issues, strategy related issues, quality related issues and social responsibility related issues.

**Bikshapathi (2011)** conducted a research on “Impact of ISO 9000 certification on TQM practices in small and medium enterprises”. The study has been conducted in Hyderabad. 147 enterprises have been randomly selected. The study used various statistical tools such as percentiles, averages, standard deviation, t test and chi square to analyze the difference in the TQM practices in ISO certified and non certified organization. It was found that there is a significant difference between ISO certified and non certified organization. Thus, study suggest that proper implementation of ISO 9000 in SMEs enterprises is helpful for the success of TQM.

**Givliano and Morancini (2012)** “The ability of the ISO 9000 certified quality management system to detect cases of workplace harassment”. Conducted a descriptive study in which it was found that developed QMSs to satisfy the requirements of ISO 9001 standards are concentrated on the quality of the products and on the proper functions of the QMS as whole. It was also revealed that dysfunctions related to social aspects of the company’s activity, than to standards requirements in terms of personnel motivation.

**Feratiand Elsana (2012)** “Effects of application of standard ISO 9001 in profitability of SMEs in the republic of Macedonia” conducted an empirical research on 100 small and medium enterprises that operates in the Polog region to know the difference between the profitability of certified and uncertified companies. Average has been taken to know the difference between companies applied ISO 9001 and other not applied this standard. It was found that application of
ISO 9001 standards provides opportunities for the internationalization of the company, penetration of foreign markets and expands its market as a result we have increased sales and thus increased validity and profitability of enterprises but it does not affect the product quality.

**Conclusion of the review of literature:** The review of literature carried out in this chapter through a light on impact of ISO 9001 on different aspects of the businesses such as marketing, finance and human resource to know the possible areas of research regarding impact of ISO 9001. There we have several studies which proved that ISO 9001 having a positive impact on financial parameters of the companies such as return on assets, sales growth, net profitability and earning per share such studies conducted by Ragthaman and Korte (1999), Inaki et al. (2002a), Sharma (2005), Lo(2007), Almeida et al.(2009), Volmohammadi and Khodapanahi (2011).

On other counterpart, some studies reveal that ISO 9001 had a negative or insignificant impact over the productivity of companies such as study conducted by Capmany et al. (2000), Hesan et al. (2002), Terziovski (2003), Ghanim (2003), Costa et al. (2007). Employees’ behavior plays an important role in the productivity. They can predict the impact of ISO 9001 on productivity. It was revealed that there is need to make a distinction in the levels of the management of know the truth about the difference between the adoption and implementation. Few research works has been conducted in Indian scenario to know the relevance of the ISO 9001 certification in Indian market.

In above review of literature, certain gaps were identified need to be recognized for enhancing the better implementation of the ISO 9001 certification.

It was revealed from the review of literature that ISO 9001 having impact on finance, marketing and human resource. The bulk of existing research has not been in the context of the Indian scenario. Therefore, the present study has made humble attempt to explore the factors contributing the ISO 9001 implementation.
References:


