“TOTAL QUALITY MANAGEMENT IN LIBRARIES TO SUPPORT STUDENT AND FACILITY: A STUDY”

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CERTIFICATE

This is to certify that Dissertation entitled “Total quality management in libraries to support students and facility:A study” is a record of work submitted by **Master Rajat Rohidas Kamat** in partial fulfilment of the requirement of the degree of Master of Library & Information Science of Goa University is how own work carried out under the guidance and worthy of examination.

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DECLARATION

I declare that this dissertation entitled “Total quality management in libraries to support students and facility: A study” submitted by **Master Rajat Rohidas kamat** in partial fulfilment of the requirement of the degree of Master of Library & Information Science of Goa University, has been prepared by me and not previously formed the basis for the award of any degree or other similar titles.

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CHAPTER 1

Total quality management in libraries to support students and facility: A study

Introduction:-

The growing need of information make the librarian to think the logical way so as to satisfy the user at a large library is a center of any academic institution while classroom teaching provide for learning the libraries disseminate a wide range of knowledge required to excellent and intellectual height libraries supplement the instructional work of classrooms and carried forward the ideals of education thus the libraries provide the informal education guiding the learner to search vast range of material available.

Review of literature :

1) Astunkar (2016) [3] studied that total quality management library and information services. He have investigated application of TQM philosophy among different organization and especially in libraries. author is tried to get the information regarding the service sectors which applying this kind of management system. TQM changed the mindset of library professionals to bring changes in organizational structure. He also disclosed team work is the best combination of quality services of any services or organization sector.

2)Rani (2016) expressed that TQM provide users satisfaction and managed the services effectively. This will help library to fulfill the requirement of the users with the application of TQM. TQM help the library staffs to make library organization in better way. TQM will be the responsible for lower cost and high quality service to the library users.

3) Dash, J. (2008) studied the total Quality Management in Libraries-a Perspective approach. He has investigated the total quality management in library and information services. He also presented the benefits and challenges related to total quality management in library and information services. The author's added that TQM is the techniques and methods which provide a platform to make better services of an organization. He has pointed out some technical tolls which are very much crucial to make good quality services

Objective:-

- To identify the process involved in total quality management

- To understand the continuous improvement in process of total quality management
- To acquaint with latest trends in total quality management

Scope:-

- The scope of study will include the study of different aspect of total quality management and it will benefit the reader and library equally.

Hypothesis:-

- Total quality process needs awareness and confidence
- The library professional lacks initiative to implement total quality management
- Total quality management process need technological knowledge

Limitation:-

The study is limited to 50 libraries of South Goa district of Goa State.

Research Methodology :

- The researcher has browse all the literature available on the topic.
- Further the researcher has also visit all the websites related to the topic.
- The researcher has visit the different stakeholders and experts asserting the opinion.
- The researcher has conducted interview with all libraries regarding use of total quality management.
- The investigator has discussed with experts to analyse the functioning of the topic.
- The investigator has try to collect different information by using different tools such as questionnaire, interview and personal discussion.
- This investigator has made the use of suitable statistical techniques in finalizing the data with required charts and graphs in presentation to make the interpretation clear and precise.

Population to study:-

The study will include around 100 library professionals.

Organization of study:

- Chapter I : Introduction

- Chapter II : Review of Literature
- Chapter III : Total quality managements and its concepts
- Chapter IV : Total quality management at National and International level
- Chapter V : Data Analysis and Interpretation
- Chapter VI : Observation, Findings, Suggestions and Conclusion.

Conclusion:-

The concept of total quality management is emerging in libraries and study will highlight the modern concept of total quality management among library professional.

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Chapter 2 LITERATURE REVIEW

2.1 Introduction

The ultimate objective of design of a structure is to provide all information necessary for the construction. This objective is achived by the production of drawings, plans, showing what is to constructed, specifications starting what materials and equipment are to be incorporated in the building. A literature review is an overview of the previously published works on specific topics.

In our project we have referred some of the guidelines and codes for the design and total quality management in libraries to support student and facility a study

1. **U Hellsten, B Klefsjö** (**2000**)The interest in total quality management (TQM) has increased rapidly in recent years. Some people see TQM as something necessary to reach competitiveness but others claim TQM to be merely a management fad. We believe that there are several reasons for the different opinions about TQM. One is that the gurus, who often are seen as fathers of TQM, do not like the concept. Another one is that there are several similar names for roughly the same idea. A third one, which, maybe, is the most severe, is that there are many vague descriptions and few definitions of what TQM really is. In this paper we will discuss some of the problems with TQM and describe and discuss our own view of TQM as a management system consisting of the three interdependent components: values, techniques and tools. We strongly believe that this definition will help to understand and implement TQM.

2. **Ismail sail** (2007) Although much has been written about TQM, little attention has been paid to the potential effects of contextual factors on TQM and TQM–performance relationships. The use of organizational theory to formulate propositions regarding the effects of such factors is especially scarce in the TQM literature. This study uses institutional theory and contingency theory as the basis to test a number of such propositions. First, a model of TQM and organizational performance is developed. Then using survey data, the effects of five contextual

factors – three institutional factors and two contingency factors – on the implementation of TQM practices and on the impact of TQM on key organizational performance measures are analyzed within a TQM–performance relationships model framework. The three institutional factors include TQM implementation, ISO 9000 registration, and country of origin, and the two contingency factors include company size and scope of operations. The results show that the implementation of all TQM practices is similar across subgroups of companies within each contextual factor. In addition, the effects of TQM on four performance measures, as well as the relationships among these measures, are generally similar across subgroup companies. Thus, for the five contextual factors analyzed, the overall findings do not provide support for the argument that TQM and TQM–performance relationships are context-dependent. The implications of the study for managers and researchers, as well as study limitations, are also discussed

3. S Rahman**, P Bullock** (2005) TQM literature suggests that hard TQM has a profound impact on organisational performance. However, most empirical studies have examined the impact of each dimension of TQM on performance separately. We argue that it is more appropriate to investigate the direct impact of soft TQM on the diffusion of hard TQM, and then assess the direct impact of hard TQM on performance. Analysis of 261 Australian manufacturing companies revealed significant positive relationships between soft TQM and hard TQM elements. In addition to direct affects, soft TQM also has an indirect effect on performance through its effect on hard TQM.

4. **SA Black, LJ Porter (1996)** Current concepts in the field of Total Quality Management (TQM) are largely based upon case studies, anecdotal evidence and the prescriptions of leading "gurus." Consequently, there is little consensus on which factors are critical to the success of the approach. Few attempts have been made to scientifically synthesise frameworks for measuring quality management practices, and a methodology for examining the issue has yet to be established. This has meant that current TQM models, such as the Malcolm Baldrige Award, have not been constructed or validated by empirical means. This paper presents a research methodology that can be used to improve self-assessment frameworks, such as the Baldrige Award, to better inform organisations in the development of Total Quality Systems.The research extracts a series of items from the Baldrige model and established literature. These items formed the basis of a questionnaire sent to over 200 managers. Data was examined using several well-established analytical techniques that identified 10 critical factors of TQM. These factors were

shown to be reliable and valid, and offer new insights into our understanding of TQM.

5. **DI Prajogo, AS Sohal (2001)** This paper discusses the relationship between the implementation of Total Quality Management (TQM) and innovation performance. The discussion arises primarily based on the considerable controversy concerning this relationship that appears in the literature. As of interest to resolve this controversy, a research framework is developed preceded by a theoretical discussion of the multidimensionality of TQM when applied in different organizational contexts. The primary proposition of this framework is that the implementation of TQM practices will be influenced by the external and internal environment as well as the strategy adopted by the firm. The model of TQM implemented is then reflected in terms of different outcomes relating to quality performance and innovation performance.

6. **SL Ahire, DY Golhar, MA Waller** (1996) We empirically examine a mediational model of TQM, in which TQM practices have a direct impact on customer satisfaction and an indirect impact mediated through plant performance. We adopt a survey approach using the data from 339 manufacturing companies. We first establish convergent validity, discriminant validity, and reliability of the constructs. We then examine the model using LISREL 8.10. The results suggest paradoxical relations among TQM practices, plant performance, and customer satisfaction. TQM practices have a stronger impact on customer satisfaction than they do on plant performance. Further, the plant performance, as described in the mediational model, fails to show a significant impact on customer satisfaction. This observation is explained based on an institutional argument that states that loose coupling may occur between TQM practices designed for customer demands and the activities on the plant floor designed for plant performance.

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8. **Roger g. Schroeder (2001)** Research on Total Quality Management (TQM), Just-in-Time (JIT) and Total Productive Maintenance (TPM) generally investigates the implementation and impact of these manufacturing programs in isolation. However, many researchers believe and argue conceptually the value of understanding the joint implementation and effect of manufacturing programs. This study investigates the practices of the three programs simultaneously. We find that there is evidence supporting the compatibility of the practices in these programs and that manufacturing performance is associated with the level of implementation of both socially- and technically-oriented practices of the three programs.

9. **Barbara b. Flynn, S Sakakibara (2017) We** propose that the use of total quality management (TQM) practices wilt improve just-in-time (JIT) performance through process variance reduction and reduced rework time and that JIT practices will improve quality performance through problem exposure and improved process feedback. Using data on 42 plants in three U.S. industries, we found that common infrastructure practices formed a strong foundation for both types of performance; in addition, we demonstrated that TQM and JIT practices interacted. Some trade-offs were identified, indicating that JIT and TQM approaches can be customized to plants. Suggestions for further research are made.

10. **.Terziovski and Samson (1999)** "states an examination of authoritative execution in manufacturing organization about TQM .Later on results identified thirteen TQM practices took after by average manufacturing associations". They are: consumer loyalty; worker resolve; cost of value; conveyance in full; deformity rates; guarantee rates; profitability; capital; representative development; piece of the overall industry development; deals development; trade development; and advancement.

11. **Alongside this, Dow et al. (1999)** in their examination of manufacturing firms turns out with nine TQM factors which are in charge of fruitful execution of TQM: workforce duty; shared vision; client center; utilization of groups; faculty

preparing; agreeable provider connection; utilization of benchmarking; utilization of cutting edge producing frameworks; and utilization of JIT standards.

12. **Arumugam et al. (2008)** identified a relationship among the practices and quality execution on ISO 9001:2000 ensured fabricating associations. They highlighted eight TQM practices which were observed to be mostly connected with quality execution of the Malaysian ISO 9001:2000 guaranteed producing associations.

13. Finally, an investigation in (2006) by Lakhal et al. also identified a connection between the various TQM practices and their effect on performance and execution. Te results also identified various practices which would enhance the execution of the organization. Hence it would lead to successful implementation of TQM.

14. **M Terziovski, D Samson (2002)** The purpose of this study was to test the effects of company size on the strength of the relationship between TQM and organizational performance. Based on a cross-sectional study of manufacturing firms in Australia and New Zealand, the paper tests two hypotheses involving TQM and organizational performance. The central finding of the study is that TQM has a significant and positive relationship with most of the dimensions of organisational performance. The relationship weakened for defect rates and warranty costs when it was co-varied for company size. We conclude that company size impedes the implementation of TQM. Larger companies tend to gain greater benefits from TQM than smaller firms. These findings are consistent with some of the literature. Overall, the findings show that a typical manufacturing organization is more likely to achieve high organizational performance with TQM than without TQM. The findings have implications for managers wishing to formulate a business strategy based on TQM.

15. **KB Hendricks, VR Singhal** (1996) This study explores the hypotheses that implementing effective total quality management (TQM) programs improves the operating performance of firms. The winning of quality awards is used as a proxy for the effective implementation of TQM programs. Changes in various performance measures for a test sample of quality-award winners are compared against a sample of control firms. Our statistical tests provide strong evidence that firms that have won quality awards outperform the control firms on operating income-based measures. Over a 10-year period, from 6 years before to 3 years after the year of winning the first quality award, the mean (median) change in the operating income for the test sample is 107% (48%) higher than that of the control

sample. There is reasonably strong evidence that firms that have won quality awards do better on sales growth than the control firms. Over the 10-year period, the mean (median) change in sales for the test sample is 64% (24%) higher than that of the control sample. We also find weak evidence that firms in our test sample are more successful in controlling costs when compared with the firms in the control sample. In addition, the results indicate that firms in our test sample increased their capital expenditures more than the control sample over the time period prior to winning quality awards. Compared with the control sample, the test sample shows higher growth in both employment and total assets.

16. **KB Hendricks, VR Singhal (1997)** The study presented in this paper examines the fit of total quality management (TQM) practices in mediating the relationship between organization strategy and organization performance. By examining TQM in relation to organization strategy, the study seeks to advance the understanding of TQM in a broader context. It also resolves some controversies that appear in the literature concerning the relationship between TQM and differentiation and cost leadership strategies as well as quality and innovation performance. The empirical data for this study was drawn from a survey of 194 middle/senior managers from Australian firms. The analysis was conducted using structural equation modeling (SEM) technique by examining two competing models that represent full and partial mediation. The findings indicate that TQM is positively and significantly related to differentiation strategy, and it only partially mediates the relationship between differentiation strategy and three performance measures (product quality, product innovation, and process innovation). The implication is that TQM needs to be complemented by other resources to more effectively realize the strategy in achieving a high level of performance, particularly innovation

17. **DI Prajogo, AS Sohal (1994)** The study presented in this paper examines the fit of total quality management (TQM) practices in mediating the relationship between organization strategy and organization performance. By examining TQM in relation to organization strategy, the study seeks to advance the understanding of TQM in a broader context. It also resolves some controversies that appear in the literature concerning the relationship between TQM and differentiation and cost leadership strategies as well as quality and innovation performance. The empirical data for this study was drawn from a survey of 194 middle/senior managers from Australian firms. The analysis was conducted using structural equation modeling (SEM) technique by examining two competing models that represent full and partial mediation. The findings indicate that TQM is positively and significantly related to differentiation strategy, and it only partially mediates the relationship

between differentiation strategy and three performance measures (product quality, product innovation, and process innovation). The implication is that TQM needs to be complemented by other resources to more effectively realize the strategy in achieving a high level of performance, particularly innovation.

18. **DI Prajogo, AS Sohal – Omega (1996)** This paper presents an empirical study which examines the co-alignment between Total Quality Management (TQM) and technology/research and development (R&D) management in predicting organizational performance in terms of quality and innovation. This study improves our understanding of the relationship between TQM and innovation based on the following two major issues. First, this study contributes to the understanding of the co-alignment between TQM and technology management along with R&D management by bridging the gap between the two areas which are often addressed in a separate fashion. Second, this study also examines the impact of the integration between TQM and technology/R&D on quality and innovation performance which have been considered as the primary sources of a competitive advantage. The empirical data was drawn from 194 Australian organizations and analyzed using the Structural Equation Modeling (SEM) technique. The findings indicate that TQM shows a strong predictive power against quality performance but no significant relationship against innovation performance. On the other hand, technology and R&D management shows a significant relationship with quality performance but at a lower level than that of TQM, and shows much stronger relationship with innovation performance. In addition, there is strong and positive correlation between TQM and technology/R&D management. The major implication of this study is that technology/R&D management is an appropriate resource to be used in harmony with TQM to enhance organizational performance, particularly innovation.

19. **HC Lau, MA Idris (2000)** The literature review concludes that TQM is a proven systematic approach to the improvements of the organization's overall business process, including quality of products and services. Organizational lack of information and data on the critical success factors are an obstacle in implementing TQM effectively and successfully. This study has developed a TQM soft model which is fit for application. It has considered the needs and limitation of Malaysian industries and facilitates TQM activities. The study has examined the relationship between the soft elements of critical success factors on TQM tangible effects, influences by soft elements activities such as culture, trust, teamwork, employment continuity, education and training, top management leadership for quality and continuous improvement, employee involvement and customer satisfaction/

involvement. Three main research methods were adopted in developing the TQM soft model: a postal questionnaire survey, a structured interview and the practical implementation of the model at a manufacturing company. Multiple regression analysis and binomial testing are used to analyses the data.

20. **IO Ugboro, K Obeng** (2000) Top management leadership and employee empowerment are considered two of the most important principles of total quality management (TQM) because of their assumed relationship with customer satisfaction. As a result, many top management leadership and employee empowerment strategies and practices have been suggested in the management literature. However, few studies have been done to test this assumed relationship and determine which of these strategies and practices may be most effective in bringing about the intended results. This study surveyed organizations that have adopted TQM to determine the relationship between top management leadership, employees' empowerment, job satisfaction, and customers' satisfaction. The results reveal positive correlation between top management leadership, employee empowerment, job satisfaction, and customer satisfaction. Employee empowerment and improved levels of job satisfaction are facilitated by top management leadership and commitment to the TQM goal of customer satisfaction by creating an organizational climate that emphasizes total quality and customer satisfaction. Effective strategies for achieving employee empowerment and job satisfaction, together with top management leadership roles in a TQM environment, are identified and discussed.

21. **Alcina Augusta De Sena Portugal Dias (2013**) discusses three perspective of quality management namely Inspection, Assurance and Total Quality Management. The author also discusses the differences before and after introducing TQM as a paradigm shift. In general, quality has moved from quality department to everyone’s responsibility in any organization to bring out quality products in competitive world. The author also discusses ranges of quality, namely, low quality performers where focus is on teams, customer contacts, process simplification and inspection. In medium range performers, the focus is wide scale process improvement, training, supplier involvement, design of new products and a quality vision. In the high range performance the focus is on leadership, bench marking, total employee involvement, innovation, strategic quality, and highly visible quality vision.

22. **.Rahim Ajao Ganiya et. al., (2012)** have authored in their paper that TQM journey has a beginning but no end. Eight key elements are identified as trust, ethics, training, integrity, team work, leadership, recognition and communication for successful implementation of TQM. The paper discussed various organizations following TQM in order to achieve a better quality to get an edge over others. Tough competition, various audits, Just in Time(JIT), Total Quality Control (TQC), Total Quality Management (TQM) & Lean Six Sigma are all discussed. The paper tries to identify gaps in literature to contribute on quality management to evaluate TQM building blocks elements and how they are to be utilized. The entire analysis is done on basis on secondary data

23. **Authors Chun-Wei Wang et. al., (2012)** describes application of Lean Six Sigma in an NPO.The paper discusses an NPO which employees handicapped / disabled employees who make homemade bread cakes and cookies. The operation was performed in three shifts and employees would frequently forget item in operations. Movement of disabled employees would cause problems during working hours. By applying lean, Six Sigma in Define phases, tools like capturing voices of customer, understanding internal and external customers were used by the study team. In Measure phase, the team classified the bakery operation and divided into 1, 2 and 3 periods and problem areas were identified. In Analysis phase, the problem of packaging process was analyzed using tools like brain storming, Cause and Effect diagram, structure tree, Failure Mode Effect Analysis (FMEA). Risk Priority Numbers (RPN) considering the Severity (S), Frequency of Occurrence (O) and chance of detection (D) (RPN = SxOxD) was used in analysis phase. In improve phase, improvement was done in both bakery layout, cabinet design considering operation flow, usage of material and requirement of material in different periods 1, 2 and 3. In control phase the improvements were stabilized using labels, color marking, text photographs, color tapes etc. were used. This helped smooth functioning and prevented hazards and dangers in working of bakery. The Conclusions drawn are that by using lean six sigma it was possible to improve the work flow, reduced friction between employees, promoted smooth functioning and reduced time wastage.

24. **Muhammad Mubaraki (2011)** describes the application of TQM in Riyad city where 90% of enterprises are small and medium, enterprise. Stratified random sampling is used for the study. Pilot study is done using sample size of 30 and final study is done using 150 as sample size. The questionnaire had three parts one on demographics, 2 nd on TQM principles and 3rd on general questionnaires on

TQM. The opinions were assessed on Liker scale of 5 to 1. Reliability of data set was done using Cornbrash's alpha which showed a number between 72 & 93. Both descriptive & inferential statistics were used for data analysis. The relationship between personal data and application of TQM principles has been discussed. ANOVA test between each TQM principles and the effectiveness of TQM was done as part of analysis. The conclusion of the paper is that 50% believe in effectiveness of TQM. The degree of support from Top management, spreading TQM culture by training, more attention to customer's satisfaction and continuous improvement are all important contributors to TQM.

25. **Authors Bjarne Bergquist, (2011)** have discussed in their paper "TQM – Terrific quality marvel or tragic quality malpractice?" application of TQM to commercial public and non for profit organization. The paper raises concern whether TQM makes an impact for the continuous improvement of a product/service or not. TQM in a commercial organization is elaborated & concludes that implementation of TQM is profitable to a commercial organization. TQM in a non for profit organization could be applied where in systematic approach with preventive thinking, is followed. Example is seen in an NPO "A Seda" an NPO following TQM in southern Sweden. It followed continuous improvement work to support the societal development resulting in improved quality of life for everyone in the community. TQM is useful to everyone but it should be tailor made to a particular organization. The conclusion is that TQM generates benefits when used properly whether it is commercial, manufacturing industry, public sector educational organization or a not for profit organization.

26. **Arash Shahin (2011)** has done study done in Iran-a developing country in the Middle East. The study is done before implementing TQM in 1993-1997 and later ratios are studied to check the performance of the organization after introducing it. Major ratios studied are based on indicator of current ratio, quick ratio; return assets ratio, equity ratio, debt total assets ratio and total asset turnover ratio. These similar companies are compared for study. The main finding of study is that there is a positive influence on all various ratios mentioned above. The financial performance of this Boutan Industrial Corporation (BIC) has improved compared to what it was before implementation of TQM. The limitation of study is that findings are limited to BIC and cannot be generalized to other organizations. However, recommendation that organization would improve their performance by implementing quality systems which is reflected in a positive change in financial performance.

27. **David E Melcher and Susan M Bosco (2010)** brings out the leadership trait as a servant leadership model wherein the leader positions himself or herself as fellow workers and aims to fulfill needs of others. The research design used questionnaire to access mid-level position of servant to his/her fellow workers of three high performing automobiles dealership. The demographic variable like gender, age, education and length of services were used for study. There were 59 respondents covering all three dealerships. Two hypotheses were tested. Interviews were conducted to check servant-leader orientation.The response rate was 27% and result indicated that:1) Servant-leadership can provide a successful leadership compared to other leadership styles, 2) Followers need a leader who cares about them and the organization and 3) Servant-leadership increased business through customer loyalty. The limitations of study are that sample size is small (although statistically large i.e., more than 32) & it covers only one type of organization. The author discusses servant-leadership in achieving higher performance only in a profit organization and does not consider a Not for Profit Organization (NPO) for comparison

28. **Faisal Talib, (2010)** in their study identifies TQM critical Success Factors (CSFs) for benefit of researchers & service industry practitioners. Pareto analysis is used to arrange CSF in order of criticality. Various definitions of TQM quoted and essence of all definitions center around: 1) Customer as center of attention, 2) Top management commitment for success of TQM & 3) Cultural and organizational change. The methodology adopted is in-depth literature review of those studies focusing on QM/TQM CSFs /practices in service industries or manufacturing or both. Online research journal between 1994 and 2010 are searched for & analyzed. The ProQuest Advanced Search Database was used & thirty nine TQM studies were chosen for research. It was found that, on examination of thirty nine studies, sixty CSFs were sorted out as vital few (80%) in descending order of occurrences. Vital few were found to be key factors in almost all research studies. At same time remaining 20% (useful many) cannot, however, be ignored. The recommendation includes Top management support, & communication to internal employees & motivation, education & training, newer innovation methods to improve company responsiveness to customer complaints.

29. **Guangshu Chang (2009)** has discussed application of TQM in supply chain. The author discusses eight principles of TQM & of ISO 9000 in supply chain quality management. They are: “1) Customer focus, 2) Top leadership support, 3) Involvement of people, 4) Process management and process approach i.e. ISO 9004: 2000 etc.5) System management, 6) Continual improvement, 7) Factual approach to decision making and 8) Mutual beneficial supplier relationship”. The conclusion that application of eight quality principles of modern TQM & of ISO

9000 in supply chain quality management would promote improvement of entire operational efficiency of whole supply chain system

30. **Hesan AQuazi (2007)** looks into the analytical framework in application of TQM principles in the International Technology Transfer Process of Industrial Production Plants. This paper discusses customer driven approach to Quality, Technology Transfer Processes, and International Technology Transfer process. The Supplier Company may adopt technology transfer in one country & company receiving the technology & setting up its production may be in another country. It could be exogenous where all technological and techno-managerial input are drawn from country or in an endogenous model where only basic technology & general knowledge (R & D) is imported & remaining engineering & production is done at other country. Various processes of Technology Transfer like management of R & D, management of pre investment & feasibility study, management of design & engineering services, management of capital goods production, and management of installation and commissioning service are discussed. The necessity is felt of continuous improvement in productivity, quality & reduction in cost by the importing company after the Technology is transferred. Hence it necessitates the use of TQM principles to achieve higher levels of quality & hence efficiency. The author proposes a model called win-win-win model which could be adopted as an integrative model for technology transfer. It is suggested that international organization for standardization should come out with management of systems for International Technology Transfer for benefit of importing country selling company & the customer. However, this paper is not suggesting any methodology for implementing a complex system of applying TQM to Transfer of Technology (TOT).

31. **Marie Leticia (2007)** have developed instrument to measure relationship between TQM implementation practices & business performance. An empirical formula to establish this relation is evidenced following European Foundation Quality Management (EFQM) Excellence Model. The study is done with data collected from Spanish Manufacturing & Service Company. Confirmatory factor analysis is used to identify factors & for establishing relationship between TQM & company performance structural equation modeling is done. The findings are that following TQM, Company out performs its competitors. The paper provides bench marking data for firms as it substantiates the EFQM Enablers' contribution to attainment of competitive advantage.

32. **Alexandros and Constantinor (2007)** in their paper have done a qualitative research on manager's awareness of TQM in Greek service industry. Eighteen interviews were conducted with a questionnaire for managers from public and private sector to analyse the awareness of soft and hard sides of TQM. The study reveals that managers are aware of concepts of TQM which is hard side. The soft aspects of TQM are ideal management paradigms which are difficult to apply. The paper concludes that TQM has become a fashionable management concept and is most favored in Greek service organizations. Post graduates and PhDs from foreign countries favor TQM. Soft side of TQM is easily understood but hard side of TQM is more difficult to follow. More private organizations follow TQM compared to public sectors. The limitation of Study is that only managers from service sector are studied and more number of managers could have been interviewed.

33. **Bhimaraya A Metri (2005)** in his paper on TQM Critical Success Factors to construction firms, finds that construction companies have lagged manufacturing industry in application of TQM principles. The reviews of TQM applied in various countries are selected as basis of study. The critical success factors for construction industry are listed to make TQM a success in a construction industry. An analysis of TQM frame work with respect to Critical Success Factors (CSF) & prioritization of CSF is done. Frequency Analysis shows 13 out of 14 have process management, education & training and customer satisfaction are CSFs; followed by top management support, suppliers quality management, employee empowerment & involvement, information and analysis. After analysis, ten CSFs are identified for a construction company. They are: "1)Top management commitment,2)Quality culture,3)Strategic quality management,4)Design quality management,5)Process management,6)Supplier quality management,7) Education and training, 8)Empowerment and involvement,9)Information & analysis & 10) Customer satisfaction". The CSFs are listed based on only frequency of occurrence & prioritized rank. This paper acts as a guide for construction companies contemplating on TQM initiatives. However, no other instrument or statistical analysis is due to justify the CSF other than ranking & frequency of occurrence.

34. **Ali H Almansour (2005)** suggests that only those TQM principles suitable to a service sector to be followed in Financial Services. Differences between services & manufacturing system are compared. Intangibility in a service sector is difficult to measure as compared to tangible products which could be measured and standardized. In service firms, the delivery & consumption takes place

simultaneously, replacement of defective parts / service is not possible unlike a manufactured part. Based on certain studies, services firms use fewer quality management tools (SPC) & showed lower levels of TQM implementation. The Study also indicated that service industry applied TQM practices selectively. Certain studies also revealed that service firms showed people management a higher score than manufacturing. Basic requirements of service system are timely availability of service & responsiveness. HR management is emphasized as very important factor in terms of well-motivated & satisfied employees' team work to deliver quality service.In Financial Institutions like banks since they face a stiff competition, it is felt that TQM is being much required in achieving success. Training bank staffs, use of new technology, process innovation and good communication are areas banks should concentrate on.Few areas which need attention are timeliness, accuracy, customer complaint, friendliness & efficiency, promptness in services, lost customers & accounts. TQM techniques used in financial service organizations are Cycle Time Reduction (CTR), identifying defects as per ISO, evaluation of performance in terms of quality, service, cleanliness & "Value analysis". In a study done at England for 160 banks, revealed that communication and management style as most significant to enable effective TQM. The findings of study are that TQM implementation indicated a positive link between quality, profitability, cost effectiveness & team work. Major barriers are due to uncertainty in service industry as services cannot be stored & used later. Services are intangible which makes it difficult to set standards. These barriers could be overcome by management commitment, effective communication, and long term strategy & training programs. Team work, co-operation & motivation are identified as critical in delivering a quality service. Customer satisfaction could be achieved by friendly & courteous personnel & quality of financial products, credit facilities, bank charges & user friendly online systems.There is no primary data on the application of TQM in financial services.The study is on select banks in UK. Various barriers encountered by service sectors & ways to overcome the barriers are discussed.

35. **.Moayad Al-Salim Ammar Al-Alawneh & Adel Harhoosh (2005)** enumerates that use of QFD, understanding organizational goals, customer focus, process improvement, leadership, data measurement & model in software development are all important in application of TQM in software companies. The research questions dealt are,1)To what extent TQM is applied in Software Companies? 2) What is quality level of Software? 3) Will characteristics of Jordanian Software Company have impact on application of TQM? Two hypotheses are tested (at $\alpha = 0.05$) that: 1) There is a positive statistical relationship between TQM elements & level of software quality of the JSCs & 2)There is statistical difference between characteristics of companies & the application level of TQM elements. The methodology followed is by questionnaire which was divided into three sections:

section A, on personal & organizational, section B, on TQM & section C, on quality performance level of company. A four point scale was used to assess application of TQM. Reliability test was done using Cronbach's alpha which indicated that its value was 0.95 indicating high reliability of data collected. The study was done on 20 software companies in Jordan & 100 questionnaires were collected. Questions answered by respondents are as follows: Standard Deviation, Averages are calculated to know to what extent TQM elements are implemented in Jordanian Software Companies. Ten elements of TQM are evaluated for application on a four point scale. Second question asked on quality level of Software Testing of Hypothesis was done using Spearman correlation to check relationship between elements of TQM & quality level of software (at $\rho < 0.05$). Second hypothesis was tested using KrusKal –Wallis & Mann Whitney test to find differences between organization characteristics (No. of employees, age, capital, existence of quality unit) & implementation level of TQM elements. The research paper concludes that the organization studied applied all elements of TQM irrespective of size of company, capital amount with quality wing or not. However, the levels of implementation are different in different organizations. Top management should emphasize on application of TQM as an integral part of management philosophy for continuous improvement in quality of all processes, people, products & services of organization

36. **Benjamin Osayawe Ehigie and Elizabeth B Mc Andrew (2005)** describes innovation as originating from creativity leading to invention which leads to innovation thereby leads to products. Popularity with respect to TQM is measured with number of articles in press and research article in journal. Though there is a fall in journalistic paper on TQM the scholastic writing still continues in internal journals. The paper concludes that TQM could be an effective organizational technique to bring about organizational change. All sectors be it education, Government, healthcare could use TQM philosophy and for proper implementation: it needs flexible management technique for systematic changes in management practices. Many successful companies like GE, Ford, Allen Bradely etc., followed TQM. TQM, when suitably applied, there can be improvement in quality and reduce cost. The author thus suggests that TQM could be applied to any organization, but needs to apply appropriately considering organization type climate, cultural differences, demographic and psychological diversity of personnel. Japan International Co-operation Agency visiting Fellow Research Report ISBN4-903645- 57-6(2005) analyses developed countries like US, Europe and Japan etc. were far ahead in medical services than other developing countries. In 20th century there were many medical mishaps happening in these countries which led to doubting the reliability of these medical services. However, a study reveals that four Asian and one African country have come out with reports that

they have improved the quality of medical services.The study reviews TQM concepts in general.The study reveals how quality in manufacturing was expanded to services. Quality in health and medical care has caused a third revolution where evaluation and accountability are underlined. In Japan, the government has instituted quality control measures in terms of law and social security system. Other quality measures are 3rd party evaluation of organization, formation of clinical guidelines and analyzing clinical indices. Unlike products, service goods are intangible in separable, volatile and immediate. In Japan, TQM in medical services started after some mishaps. In 1999, TQM promotion committee was set up.TQM in medical safety and patient's safety demanded both clinical and managerial quality improvement, thus need Medical Quality Improvement (MQI). Serious challenges faced in developing countries are, shortage of resources, poor solvency, accessibility and low motivation of medical personnel. The study reflects why TQM is required & what triggered to start TQM in health sector. Some of factors which influence quality in health sector are leadership, process management, system approach and peer review for multiple group activities. These factors are considered as core competences for promoting TQM.

37. **Gurendra Gera & Wulong Gu (2004)** examine whether investment in Information and Communication Technology (ICT), organizational changes & work skills contribute to better performance in a Canadian firm. The finding of the study is that the firms that combine high levels of ICT and high levels of HRM practices have better firm performance.

38. **Samir Baidoun (2003)** in the paper on empirical study, of critical factors of TQM in Palestanian organizations, investigates the results of study done for 78 organizations in Palestine. The author has listed in the Review of literature 14 facts responsible for TQM. About 78, ISO certified companies selected were given questionnaire explicitly to identify the quality factors in terms of criticality i.e., absolutely essential, & important but not serious. The response rate for questionnaire was 100% as the country was small. The company selected included manufacturing service, construction companies etc. employing less than 500 employees. The study suggests 19 critical quality factors exist to increase the chance of success of any organization in Palestinian concept. Some of the important factors are top management commitment and involvement, employee involvement and empowerment continuous process improvement,customer focus selection of dependable suppliers, and having a system for measuring key indicators. The study also proves that TQM organization aims to excel in its

performance regardless of the place of incorporation. However, there is no mention of application of TQM in a nonprofit organization in Palestine.

39. **Shari MohdYusof & Elaine Aspin wall (2000)** in the paper TQM implementation issues: review and case study, discusses application of TQM philosophy in small business units. Most of small companies embark on TQM to increase in profit along with promotion of growth, customer satisfaction, employee empowerment, meeting changing customer expectation, making work enjoyable. The Strength & weakness, advantages and disadvantages of TQM implementation in small business units are analyzed. The lesson learnt is that in SME, TQM implementation should not be done at once, rather it should be done in more staggered & in a progressive way. The company selected is PT Ltd located at Birmingham UK which manufactures spring & wire shaped pressed springs. This is a company with 112 employees. Only six people are employed in quality activities and 15 are staff. The company has a triangular structure with CEO as head assisted by Directors, Managers as second level support.Top management believes in customer satisfaction & a Quick Response Concern Monitoring (QRCM) is set up to address customer complaint. The Company follows Quality monitoring & improvement using various quality tools, supplier quality improvement, promoting human resources and job satisfaction exists in company. Since in SME resource is limited, practical considerations are to be considered while applying TQM. The methodology used is questionnaire wherein interviews & observations were made during short plant visit to company. The results and outcome of study indicates there are tangible and intangible benefits to the company. However, the company faced problems in quality activities, quality implemented in only manufacturing area (& not in administration, marketing, purchase etc.) & was quickly trying to achieve too many things in a short span of time. This study provides an insight as to how TQM implementation could be carried out in a SME company. The company has centered on ISO 9000 & QS 9000 certification mainly in manufacturing area. Thus TQM as defined in large Manufacturing Enterprise need not necessarily be same as TQM for a Small Manufacturing Enterprise but it must fit the context in which it is used. The frame works suggested for SME are 1) Quality initiatives & tools, 2) General Methodology & 3) Management coordinating committee

40. **Author Reynaldo G Rivera (1999)** of Intermediate consulting discusses TQM and project management in Not for Profit Organization (NPO). The highlights of study are: there are no books in Google books database focused on applying TQM and lean transformation in NGO. There is no scientific problem analysis. U N and

also council of Europe strategy is designing 2012-15 strategy paper involving children in the functioning and decision making of NPO. The Euro child is trying to improve participation of children in decision and social program thereby giving voice to children in Europe.By doing this, poor children are empowered to take decision and which makes children flourish. The paper discusses youth participatory survey participation network of 101 participatory projects on strategy on Childs Right and euro child contribution. The draft strategy in Europe for right of child 2012-15 is also discussed. The council of Europe would strengthen NPO by facilitating advisory role, help in research and academic institutions, and promote data collection, bridge gap between donors and its implementation partners.

41. **Robert Cwinn and Roberts Green (1998)** have in their paper studied TQM in education process. Many a failing companies like Motorola, Federal Empress Etc. have turned them to profit making companies by applying TQM. TQM was tried at Organ State University, in US in energy system course of thermo dynamics. TQM needed in training employees and students. Employees and students are customers of education institution. Students "need" as part of TQM was identified as meeting their long term requirements rather than high grades. Deming's 14 points are applied to educational institution in all areas of the institution. The paper concludes that TQM is a powerful tool for improving an educational institution though it was used basically in a manufacturing industry. The points for successful implementation of TQM are: Gain support, Identify your customer and Focus in process. Use 14 Deming points as a guide as checklist for implementation effort. The steps mentioned above could be followed in an NPO for successful implementation of TQM.

42. **Roalind Taylor and Alan Pearson (1994)** have studied application of TQM in Research and Development (R&D) area. It is felt that when TQM is applied to R&D organization measuring defects is very difficult. However, there is a need to apply TQM in all areas/functions of Business operations. Ten perquisites for implanting TQM in R&D organization are identified. Late adoption of TQM in R&D is due to qualitative orientation and not easily transferable R&D activities. Four absolutes are identified widely as measures of quality in R&D organization & they are: 1) Convert/translate the R&D results to sustainable commercial advantage, 2) Organization should nurture creative and inventive people and 3) Organization should do state of Art R&D & 4) R&D should be responsive to business needs. Two R&D organizations which are complex in its function in UK are studied. Interview method was used for study. Scientist felt that they were

trapped in paper work for Quality documentation in planning and operating system. Successful TQM implementation in R&D is possible by managing organizational climate, people, and good communication. Thus integrating human system with TQM system is an easy fit for successful implementation. A new analytical approach to TQM in R&D is designed instead of modified general TQM principles used in manufacturing and marketing.

43. **Mac Dorman (1994)** and associates along with American quality group and Spire group (1994) have studied TQM in public and private sector in US public transportation. The main objectives of the study was to identify evaluate and recommend application of TQM principles to improve ridership in US public transport. Seven TQM principles are identified by Public transport industry, they are: 1) Customer first, ridership stability, new rider, cost reduction, knowing and responding to customer. 2) Managing and improving processes. i.e. customer satisfaction and continuous improvement. 3) Manage by facts, improving efficiency, effectiveness quality of service, benchmarking and use of information technology, 4)Cultivation of organizational learning, 5) Training empower and recognize employees, 6) Improve labour management team work and 7) Change in organizational culture. The paper claims that TQM fails when principles are not followed properly and succeeds when quality culture is championed, reward to employees, top down implementation and training to employees are followed. A book titled "TQM guide book for public transportation" was prepared. The paper however does not detail findings of the study.

44. **Adriah Wilkinson Mick Marchington and Barrie Dale (1994**) describe TQM as a successful innovation in management practice which looks at hard aspects i.e the production orientation. The Human Resources Management (HRM) is considered as softer aspect as less attention is given to supervisory style, team work and industrial relation. TQM is a business requirement and is all employers' responsibility. Cost reduction could be achieved by decline in failure rate, rectification warranty cost, return goods etc. The research programme included studying three different organizations. The first selected is a large Japanese owned multinational company – a sole producer of portable digital oscilloscope. The Second company is Photochemical a large US owned organization working on paper products i.e. monochrome photographic products and equipment. The third company chosen is Carcoin a supplier of automotive safety components located in Northern Ireland. The paper discusses following HR policies and practices in all the three above cases:1)Education &communication 2) Selection 3) Appraisal 4) Training 5) Recognition 6) Other personal policies 7) Employee involvement & 8) Industrial relation. The paper concludes that TQM cannot be achieved in any organization without explicit contribution of Human Resources Function. HR

functions to be followed are communication, change, organizational culture award and reward achievements, conducting attitude survey and analyzing results.

45. **Nusrah Samat (2006)** aims to explore relationship between TQM principles & service quality & TQM principles & market orientation. Six hypotheses were floated to establish relationship between TQM principles & service quality. Second set of six hypotheses were tested to establish relationship between TQM principles & market orientation. The study was conducted in Malaysia i.e. Northern region of West Malaysia. As many as 200 public service utility organizations were selected for the study, out of which 175 did practice TQM principles. Responses were obtained by sending Questionnaires by post & e-mail. The response rate was 57.71 percent. The respondents were asked 33 questions & respondents were to mark on a five point Likert scale ranging from 1 strongly disagree to 5 strongly agree. Reliability analysis was done to check reliability of data set and also factor analysis was also done, along with checking service quality & market orientation. The hypothesis testing was done for first set of data. Regression analysis was performed on TQM practices with service quality as dependent variables and seven elements of TQM practices as independent variables. For test of hypothesis-II, regression analysis was done on TQM practices as independent variables & market orientation as dependent variable. The limitation of Study & future research are: "1) It focuses on northern region of Malaysia, 2) Study focuses on service organizations only and 3)A comparison between service organizations & manufacturing companies could provide additional insights". Bias in reporting could be reduced with more responses from various individuals & various management levels & by including more and more TQM practices various results could be collected by study. TQM needs systematic approach and easy to practice. It needs full commitment from every individual in the organization by top down approach. It needs restructuring in the organization and also consumes lot of time. TQM application depends on management style and organization culture.

46. **Inaki Heras – Saizarbitoria (2013)** has aimed at the analysis of the process of dissemination of TQM Paradigm. The evolution of important model techniques and tools associated with TQM in academic journals and in general internet are discussed. The authors have observed that diffusion of TQM paradigm could be close to its maturity if indicators such as trends in the academic community and internet and EFQM model are considered. The author observes for declining trends in search for TQM. The critical countries of West Asia such as Spain have been

examined. The study is incomplete in as much as it has not covered two Asian countries India and China.

47. **Dossani & Murali (2008)** study M examines the mle of higher education in India's success in providing globally traded services. Assess the quality of software engineering education. We find that the institutional stiches has the capacity to produce a quality engineer suited to the count needs of the marketp18ct. This is a remarkable achievement, considering the rapid change in both job requirements and the role of private provision in higher education. While it is too early to assess whether the currently emergent needs, particularly in rwd, project management and entrepreneurship, will be met by the current structure, we argue that the state's role as regulator will be critical. While the state has so far demonstrated its capabilities of being an effective regulator, we argue that new regulatory capabilities will be needed of the state to address the evolving demands

48. **Manimala (2006)** reviews the status of Management Education in India and finds that most schools are trapped in a cost-quality vicious cycle, even though there are few institutions of excellence that are comparable to the best in the class. The constraints and opporhmities facing the different types of business schools in India are briefly discussed and recommendations are made for improving their performance through a variety of internationally bench-marked programs and activities

49. **Mishra (2000)** explains that increasing number of students are enrolled in management institutes. This surge in enrolment has led to a rapid increase in the number of private institutes to offer offering management courses. Supplement to this view Vijayakumar (2000)' says that sudden spurt in number of management colleges, has seen a steep deterioration in the quality of management education. Poor quality student intake, absence of competent faculty, poor infrastructure, mushrooming of management institutes are some of the reasons..

50. **Satsangi (1999)** delineates the mushrooming of management institutes in India which has created lots of confusion in the minds of the students. The author makes an effort to foresee what lies ahead, and what needs to be done to improve the status of management education contra ding to this.

51. **Sinha and Venkarao (2008)** says that the quality is a relative concept, closely linked to the level of user expectation and requirements. The relative nature of quality leads ultimately to excellence. Quality management includes effectiveness and efficiency rating cost control, service assessment, and user-oriented analysis. In the University set up, libraries are the backbone to support the concept of quality academic functions. Unless there is a quality approach in managing knowledge resources in the libraries, it is difficult to expect quality in academic activities in a university. In order to adapt to these new circumstances, universities are implementing new management procedures, and, for their part, university libraries are forced to make fundamental changes in order to conduct their business in line with managerial criteria

52. **Soltani, Pei-Chun and Philips (2008)**'hugest that Total Quality Management (TQM) effectiveness can be viewed as a direct function of the controlling mechanisms that senior managers created prior to TQM implementation. More importantly, control tools of TQM were not wed by non-managerial employees, with which they could reduce variability or achieve unifodtr, rather, they were regarded as a weapon wed by their managers against them.

53. **According to Kennel (1997)** discusses that Quality Management consist of three basic activities: quality planning; quality control; and quality improvement has been explained including Business Process Reengineering concept and the principal quality systems and self-assessment models by considering employee suggestion schemes as a means of achieving quality and discusses the importance of performance measurement of a quality service and identifies the service features that matter most to the client.

54. **Kovel (1996)** examines the literature of change, offering several major perspectives on effecting organizational change and yields insight that can be overlaid on the foundations of continuous improvement. Further suggests, the strategies by which adoption of quality improvement can be undertaken successfully in the libraries. Jain and Gupta (1996)24 also deals with total quality management with particular reference to its implementation in libraries.

55. **Harhai (1993)** compares Total Quality Management with traditional management techniques and provides a brief history of its development and examines its principles and vocabulary. It has been elucidated that new TQM can be applied to law libraries with respect to customer-first orientation, top management leadplrship, focus on continuous improvemmt, ~aspect her employs and their knowledge, provision of ongoing employee education 4 training, use of stated ~~, emphasis on prevention rather than detection, vendors as long term Pm, performance measures with consistent organizational goals, standardization,

cooperation and involvement of all orhtional functions, and substantial cult change.

56. **Franklin (1994)** examines the conceptual basis for the cost of quality in the context of Continuous Quality Improvement (CQI) or Total Quality Management programs, and its application to libraries. Awing (1994)~ study deals with the concept of total quality management and its basic issues in implementation in the public and private libraries in Malaysia

57. **Jurison (1994)** presents a conceptual model for describing the role of information systems in a total quality management, which is based on systems theory, provides a framework for understanding the principles of TQM and their effects on information systems. The TQM model is also used to analyze and compare TQM with business engineering

58. **.Reed (1993)** 3kal. Use Philip Crosby Associates model for the Lehigh Valley Hospital in terms of total quality management to identify, define and charting the various processes that a research project moves through conception to publication. The resulting charts and prows enable the research department

59. **Smith (1993)** mphrdza BS 5750 of the British sbndad for Quiddity systems and Total Quality management for the oqpizatioa rathar than defined prod-, describing issues of quality. Further, it attempts to demine &sir importance discussing what might happen if the standard is not adopted or TQM is not implemented and examines cost implications. In 1990, Fsdenl express 72.(19941~ a package delivery company awarded Malcolm Bald ridge National Quality Award, which deals with the quality improvement process and provides camples of where this has worked and the quality deployment plan.

60. **Brockman (1993)** examines models of total quality, and focuses upon the US Malcolm Baldridge Nation Quality Award model and demonstrates the effectiveness of organization information management practices, which is critical to achieve total quality by means of using the process of benchmarking

61. **Lohia (2010)** explains that TQM is an attitude and method for rapid improving the services landlord products offered to customers. New technology and ICT have replaced national economic systems with a global economy. The organization irrespective of size and type that do not practice TQM can become globally noncompetitive rather rapidly. This march towards non competitivmess can be

avoided if library staff is helped to become TQM practitioners. 'before, the potential benefits of TQM can be applied to libraries. TQM can help ~provide better services to primary customers.

62. **Ram's (2010)** study highlights the application of Total quality management in university libraries of Agra. The study reveals that majority of the libraria have opted (1) TQM recommends that user's request requisitions should be the base for the selection of documents in libraries as library meant for them. (2) In state university libraries only two JNL and ACJL are subscribing the e-journal in electronic form. (3) For application of TQM the state libraries should subscribe the e-journalese-resources also for facilitate the users. (4) Mostly libraries take more time in procurement of foreign published books and users fails to utilize these books in their courses. (5) TQM recommended that the libraries should take proper and timely initiatives to procure foreign books so that the students are benefited.

63. **Opara (2010)** discusses Nigerian libraries need to embrace philosophies and strategies for developing quality systems and providing quality services. How various aspects of library systems and services can be transformed and improved upon by applying the principles and strategies of total quality management (TQM). It also identifies and recommends strategies for surmounting some key challenges that may Conant library managers in Nigeria in their efforts to use TQM to improve their services.

64. **Prakash (2010)** conducted a comparative study on TQM in the university libraries. The study concludes that the TQM in librarias appears well suited for each other. The system is based on continuous improvement and centered on the needs of customers. Total Quality Management is a process, which focuses on understanding customer needs and improving customer service and satisfaction. 'The only job security is to be more talented tomorrow than you are today". Continuous improvement rests on the simple premise that a structured problem-solving processes produces better results that an unstructured one. Instead of just trying to "do better" in an undefined, initiative way, continuous improvement can enable libraries to set measurable goals based on quantitative performance indicators, and to monitor progress towards those goals.

65. **Sinha and Venkarao (2008)** opines that the quality is a relative concept, closely linked to the level of user expectation and requirements. The relative nature of quality leads ultimately to excellence. Quality management includes effectiveness and efficiency rating, cost control, service assessment, user-oriented analysis. In the University system, libraries are the backbone to support the concept of quality academic functions. Unless and until, there is a quality approach in managing

knowledge resources at library, it is difficult to expect quality in academic activities in a university. In order to adapt to these new circumstances, universities are implementing new managunmt forced to make fundamental changes in order to conduct the businnes in line with managerial criteria.

66. **Brophy (2008)** discussed the concept of quality in academic libraries which includes services and products, as well as the personnel, the equipment and the premises etc. According to the IS0 11620, quality in libraries is defined as "the totality of features and characteristics of a product or of service that bear on the library's ability to satis stated or implied needs".

67. **Talukder and Ghosh (2004)** discuss the different issues relating to TQM and its implication on library and information science. How this contemporary management theory is being reflected in the five laws of library science is the serious issue one has to deal. TQM integrates fundamental management techniques, existing improvements, and technical tools under a disciplined approach. The TQM tool that may be used to make this managerial approach more successful in $e library field

68. **Nissa Begum (2003)** conducted a study on Total Quality Management in the academic library. The primary purpose of an academic library is to support the teaching, research, and other academic programs of its parent organization. An academic library is part of a service organization which delivers products personally to the customer. All academic library staff must undergo training, including skill training; on the job guidance; retraining. Well-trained staff are the competitive weapon for better quality service in an academic library. Teamwork plays a vital role in giving better quality service. People have to develop a culture and commitment towards quality service in an academic library

69. **Rajan and Ravi (2001)** that the application of quality management in libraries should establish a culture of never ending improvement of quality of products and senices. Its implementation in libraries improves the image of the library staff and helps in public relations and marketing

70. **Dabas and (2000)** conducted a study to measure TQM application on the university libraries in the Punjab. 'The authors concludes that Punjab University Library, and Chandigarh is the highly used library. The unit cost and processing cost of each book acquired by purchase is lowest in Punjab University Library. The total library cost per user, staff salary cost per user and staff salary cost per

book is lowest in Punjab University Library, Chandigarh and highest in Punjab University Library. The cost of staff salary per book is highest in Punjab Agiculture University Library. The results of the users survey indicate that the Punjab University Library, Chandigarh scored 3.578 points md ranked first

position with regard to quality in products, services and consultation, while Guru Nanak Dev University Library, scored the lowest points.

71. **Mounissamy and Swaroop Rani (2004)** discs the Library and Information Centers in the present formation and Communication Technology (ICT) environment are also regarded as industries where the end users are the customers. It is the responsibility of the quality centers to keep on satisfying their customers using the available ICT and supported by TQM techniques. And also the quality management tools, techniques and their applications in the library and information

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Chapter 3 TOTAL QUALITY MANAGEMENTS AND ITS CONCEPT

3.1 Introduction

Total quality management (TQM) is the continual process of detecting and reducing or eliminating errors in manufacturing, streamlining supply chain management, improving the customer experience, and ensuring that employees are up to speed with training. Total quality management aims to hold all parties involved in the production

process accountable for the overall quality of the final product or service. An approach to the management of an organization that integrates the needs of customers with a deep understanding of the technical details, costs, and human-resource relationships of the organization

3.2 RATIONALE FOR TQM

Today's customers expects and accepts only high quality products and services. They Are ready to pay and even ready to change their supplier for high quality. The best way to produce quality is to continually improve people, processes, and environments – which is easily achievable through TQM.

3.3 Definition of Total Quality

Total Quality (TQ) consists of continuous improvement activities involving everyone in the organization—managers and workers—in a totally integrated effort toward improving performance at every level. This improved performance is directed toward satisfying such cross-functional goals as quality, cost, schedule, missing, need, and suitability. TQ integrates fundamental management techniques, existing improvement efforts, and technical tools under a disciplined approach focused on continued process improvement. The activities are ultimately focused on increasing customer/user satisfaction Total Quality Management is defined as a customer-oriented process and aims for continuous improvement of business operations. It ensures that all allied works (particularly work of employees) are toward the common goals of improving product quality or service quality, as well as enhancing the production process or process of rendering of services. However, the emphasis is put on fact-based decision making, with the use of performance metrics to monitor progress.

3.4 Features of Total Quality Management

There are many essential features of TQM, some of which are as listed below:

1. Target: the most important target to accomplish in TQM is Quality. It is crucial that the quality policy is set toward customers. Meeting customer's needs means satisfying every customer requirement but not that you are reaching the quality standards set before.
It is essential not to quit innovating, continue to do that as it is one of the important principles of the TQM system.

2. Scope: without extension of the production process to suppliers and sub-contractors, quality products and services can never be achieved in TQM. Setting up input materials standards is a good thing to do as it helps to put the quality of the inputs in check. The method of placing order needs to be made suitable, too, if you must do quality assurance.

3. Form: Another fantastic thing about the TQM system is that it controls the quality of the input even before the production process begins. It does not deal with finished products at all. There are set up plans and programs to supervise and prevent problems right before the production starts proper.
The tools are also used in supervising and analyzing the results and factors affecting the quality while taking notes of reasons for possible solutions.

4. Basis of the TQM system: the human is the basis of TQM no doubt about that. When we talk about quality, people usually think about the quality of the products. But in TQM, it is the quality of the resource persons that emphases are placed on. The basic principles for implementation of the TQM system are that the employee's qualification needs to be sound and developed fully through training, delegation, and assignment.

5. Organization: TQM is cross organized in order to manage integrated corporate with different activities of the system. Its implementation requires the participation of high and middle-level managers. If there is proper organization, duties are well assigned clearly with no hassles. This means that for the TQM system to function effectively, there is a need for a management model with different features from the past model.

6. Management skills and tools: the methods to be implemented have to do with the principle of doing correctly at the onset of the project. This is crucial to the attainment of quality improvement.

3.5 Characteristics of TQM

- Customer Focused. Quality begins and ends with the customer. ...
- Involved Employees. ...
- Process Oriented. ...
- Mutually Dependent Systems. ...

- Strategic Approach. ...
- Continuous Improvement. ...
- Data-Driven Decisions. ...
- Effective Communications.

Techniques and models in the field of quality TQM is a complete and efficient management philosophy that properly addresses the issues of quality and customer satisfaction. In the current world, with regard to the national, regional and international competitions, and also fast changes and developments in technology, market demand, etc., the analysis of correct cognition and proper use of topics such as TQM can be effective.

- TQM model in the field of quality management Trend towards quality has been recognized as a competitive advantage in recent years. According to the previous studies, companies need to focus on competitiveness to survive and stay in the market. One of the competitiveness edges is "quality" that is achievable through implementation of key components of TQM. Ismail Sila (2009) in his study proved that "TQM has a direct impact on financial performance and market outcomes, customer results, employee outcomes, organizational effectiveness, and performance".

- Analysis and evaluation of the efficiency of TQM model TQM is an important managerial style that focuses on continuous improvement of the quality of products and services to provide customers' needs. Quality and continuous improvement have a fundamental role in development. In order to achieve a superior level and excellent quality in the organization, an integrated management system is needed to put all the organizational factors on the basis of quality. Manufacturing organizations and industries Are the main pioneers in this field (Mustafa, Bon, 2014). Key aspects of TQM are prevention of waste and emphasis on design stage. Gopal kanji states the reasons of the necessity of implementation and establishment of TQM as follow:

- Today's competitive world
- Customer Satisfaction
- Improvement of staff morale
- Improved performance
- Continuous improvement
- Attracting more customers
- Encouraging teamwork
- Minimizing costs

- Overcoming weaknesses and solving current issues
- Competition to attract capital
- change management
- Promoting a positive culture (Gopal kanji)

3.6 Basic principles of Total Quality

1. Focus on the user: Meeting or exceeding user's needs

2. Participation and Teamwork: Participation through team work to get maximum output

. 3. Employee involvement and Empowerment: Empowering employees with some authority and responsibility to make them a vital force for achieving quality target.

4. Continuous Improvement and Learning: Improvement and learning is never ending process. 5. Senior Management Commitment: Librarian must be personally involved in activities such as planning, implementation of policies, reviewing quality performance and interacting with users etc.

6. Process Identity: Identifying the process and sub process, interrelating and sequencing them in proper way

7. Continuous Process Improvement:

• Reduce Resources

• Reduce Error

• Meet or exceed the user's requirement.

• Make the process safer

• Make the process more satisfying to the person doing

8. System approach: Operation should be defined by a system followed by subsystem.

9. Self-Assessment: To know the strength and weakness.

10. Prevention rather than defecting errors: By various tools and techniques such as statistical process control.

11. Strategic planning: It reveals “who are our users? What are their expectations? How do we achieve this goal? What workforce, machine and money are required? etc

12. Quality measurement: “To know what is our current quality level? And what quality level we aspire to achieve?

3.7Advantages of Total Quality Management | TQM

Some of the advantages of total quality management are:

1. Emphasizing the needs of the market

2. assures better quality performance in every sphere of activity

3. helps in checking non-productive activities and waste

4. helpful in meeting the competition

5. it helps in developing an adequate system of communication and 6. continuous review of progress.

1. Emphasizing the needs of the market:

TQM helps in highlighting the needs of the market. Its application is universal and helps the organization to identify and meet the needs the market in a better way.

2. Assures better quality performance in every sphere of activity:

Adverse and non-participative attitudes of the employees are the biggest obstacles in the organization’s success, growth and advancement. TQM stresses on bringing attitudinal changes and improvements in the performance of employees by promoting proper work culture and effective team work. It provides excellent opportunities for self development and increasing employee’s interest in the job.

3. Helps in checking non-productive activities and waste:

Every organization aims at improving productivity as well as reduction in cost so as to result in increase in profitability. Under TQM, quality improvement teams are constituted to reduce waste and inefficiency of every king by introducing systematic approach. Such efforts are helpful in achieving cost-effectiveness and safety in the organization.

4. Helpful in meeting the competition:

TQM techniques are greatly helpful in understanding the competition and also developing an effective combating strategy. Due to the cut throat competition, the very survival of many organizations has become very vital issue. TQM helps in understanding the customers as well as the market. It provides an opportunity to the organization to meet the competition by resorting to the techniques of TQM.

5. It helps in developing an adequate system of communication:

Faulty and inadequate communication and improper procedures act as stumbling blocks in the way of proper development of an organization. It results in misunderstanding, low- productivity, poor quality, duplication of efforts and low morale. TQM techniques bind together members of various related sections, departments and levels of management for effective communication and interaction.

6. Continuous review of progress:

TQM helps to review the process needed to develop the strategy of never ending improvement. Quality improvement efforts have to be undertaken continuously to meet the dynamic challenges. From the above, it can be concluded that TQM results in both tangible and intangible gains.

Tangible gains are in the form of better product quality, improvements in productivity, increased market share and profitability etc. Whereas intangible gains are, effective team work, enhancement of job interest, improvements in human relations,

participative culture, customer satisfaction, improved communication and building better image of the company

3.8 Disadvantages of Total quality management

The International Organization for Standardization defines total quality management, or TQM as "a management approach for an organization, centered on quality, based on the participation of all its members and aiming at the long-term success through customer satisfaction, and benefits to all members of the organization and to society." TQM has significant advantages in terms of quality improvement, increased productivity, greater financial yield and more customer loyalty. It also has several challenges and disadvantages.

TQM demands an organizational culture that focuses on continuous process improvement and customer satisfaction. It requires a change of attitude and a reprioritization of daily operations. TQM also requires a long-term management commitment and constant employee involvement. According to Forbes, changing an organization's culture is a difficult challenge, because culture amalgamates an interlocking set of values, processes, attitudes, communication practices, roles, goals and assumptions, and is often met with resistance by employees, who view it as a threat to their jobs.

1. Demands Planning, Time and Resources

A good TQM system often takes years to implement, and that occurs only after significant planning, time, long-term resource allocation and unwavering management commitment. Lack of proper planning can cause a TQM system to ultimately fail.

2. Quality is Expensive

TQM is expensive to implement. Implementation often comes with additional training costs, team-development costs, infrastructural improvement costs, consultant fees and the like. The system also requires continuous investment in the form of refresher trainings, process and machine inspections, and quality measurement. TQM is not suitable for very small companies, because its implementation, training and execution costs far supersede its financial gains.

3. Takes Years to Show Results

TQM is a long-term process that shows results only after years have passed. It requires perseverance, patience, dedication and motivation. Many organizations give up on it after failing to see tangible results quickly. Organizations that function in highly competitive environments cannot afford the luxury of time.

4. Discourages Creativity

TQM's focus on task standardization to ensure consistency discourages creativity and innovation. It also discourages new ideas that can possibly improve productivity.

5. Not a Quick-Fix Solution

Many companies, in their excessive focus on quality, end up losing financially. Both Xerox, the American document management company, and Federal Express, the cargo airline, suffered significant financial setbacks after winning the Baldrige Quality Awards -- awards that recognize quality performance. According to the book, "Corporate Transformation and Restructuring," two-thirds of companies that embrace TQM fail to experience major performance breakthroughs or improvements in customer satisfaction. According to an Arthur D. Little survey of 500 companies, only 36 percent felt that TQM improved their competitiveness:

3.9 Areas of Application of TQM in Library

The library and information centres are basically service organizations. They can effectively apply the TQM concept in each and every field. Some of the possible areas are

1 Laws of Library Science: Five laws of library science have so many implications similar to what is advocated in TQM that it is often advocated as are fined and modern version of five laws of library science. The first law advocated changing the conservative attitude of the LIS Personnel. The second law and third law indicate the marketing approach underlying in TQM. It advocated for the survey of and feedback from the user and to design and render library services so that it meets their actual need. Fourth law points out that information should be pin- pointed, exhaustive and expedition. Organization and retrieval of information is what the sum and substance of the TQM Approach is

.

2 Library Services: TQM can be effectively used in providing services to user. In rendering CAS, SDI, Interlibrary loan, access to national and international databases through internet or other network, attending reference queries and reference service over phone, fax or personal contact, etc.

3 Library Products: Library and information centres produce catalogue card indexing and abstracting periodicals, newsletter, database of their own collection, subject bibliographies etc. all of which can be enriched by TQM.

4 Marketing of Library Services and Products: TQM can be used in creating information awareness and consciousness among the user and reaching out to the potential user. It can be used in identification of the user group, determination of needs, wants and demand of each user group.

3.10 Way **of the Achieving the TQM**

1 Competence: The employees must possess the required skill and knowledge about the library facility and services.

2 Credibility: The organization and employees must be trustworthy.

3 Responsiveness: The employee must respond quickly and creatively to user request and problem. The employee should make an effort to understand the user need and provide individual attention.

4 Communication: library facility and services should be described accurately in user language.

5 Courtesy: The employees should be friendly, respectful and considerate.

6 Tangible: The service and facility should correctly project the quality on readers.

7 Reliable: The Services and facility should be reliable and performance should be consistence.

8 Security: The service and product should be free from danger risk and doubt.

9 Access: All library facility should be accessible. Effective Library Services with Total Quality Management

10 Feedback: There should be a continuous policy to collect the feedback from the users.

11 Evaluation: The service, facility and product should be evaluated time to time. (Gangrene)

3.11 THE CONCEPT OF QUALITY

Quality is a significant element of production or services in keeping the customers satisfied. There are different definitions and competing views of the term quality by different people and the common element of the business definitions is that the quality of a product or service refers to the perception of the degree to which the product or service meets the customer's expectations. Crosby, (1979) defined quality as the conformance to requirements or specifications and also suggested that to manage quality adequately; it must be able to be measured. ISO 9000: (2000) (cited in Vorley and Tickle, 2001) defined quality as the degree to which a set of inherent characteristics fulfill requirements. The American Society of Quality sees quality as being subjective, with different individuals having their own perception of it (www.asq.org, assessed 29/10/08). To them, quality can be seen as having two meanings – the characteristics of the product or service ability to satisfy a particular need or a product or service devoid of faults. It can be defined as a state of conformance to valid requirements where valid requirement are defined as conditions that meets the needs of customers, measurable and achievable. Peters, (1999) defined quality as a 'magic bullet' which provides lower cost, higher customer service, better products and higher margins. He also explained that 'quality is in the eyes of the beholder', this mean it is what the customer say it is. Kondo, (1997), defined quality as a source of employee's empowerment. To him, a major aim of a company is to make itself attractive to its employees and customers while making profits for its shareholders.

George Bernard cited in Stebbing, (1992) noted that two forms of qualities exist in the world, efficiency and inefficiency. To him, efficiency is what every senior manager should strive to achieve and the efficiency in service is what the customers expect to get. He explained that organizations are inefficient because of the inadequate trainings given to employees by the employers or the assignment of task to unqualified workers. Which ever way quality is defined, it is viewed as part of an organizational culture; this should be inclusive of all different facets of production.

3.12 QUALITY MANAGEMENT

Quality management involves the formulation of strategies, setting goals and objectives, planning and implementing the plans; and using control systems for monitoring feedback and taking corrective actions. An organisation's quality management implementations are of two folds- a) Satisfying customer's expectation and b) Improvement in the overall business efficiency (1994) According to Juran (1988), the basic goal of quality management is the elimination of failure; both in

the concept and in the reality of products, services and processes. This does not only mean that product, services and processes will fail in fulfilling their function but that their function was not what the customer desire. Failure must be prevented in quality management and to handle this there should be planning, organizing and controlling. Four stages of quality management was treated by Dale et al (1994), this include inspection, quality control (QC), quality assurance (QA) and total quality management (TQM).

3.13 INSPECTION

According to (ISO 8402, 1986) inspection can be defined as 'activities such as measuring, examining, testing, gauging one or more characteristics of a product or service and comparing these with specified requirements to determine conformity'. It involves the examination, measurement and testing of the characteristics of a product or service and the comparison to specified requirement and to access if the characteristics conform to specified requirement (Dale et al. (b) 1994). Inspection is an efficient and effective way of discovering defects in services and products. According to Deming (1986), 'inspection with the aim of finding bad product and throwing them out is too late, ineffective and costly'. Quality to him comes from the improvement in the process rather than inspection.

3.14 QUALITY CONTROL

Quality control is a conventional way that businesses have used to manage quality. Quality control is concerned with checking and reviewing work that has been done. This is mainly done by inspection of products and services (checking to make sure that what's being produced is meeting the required standard) take place during and at the end of the operations process. Juran (1988) defined quality control as the regulatory process through which we measure that actual quality performance, compare it with standards, and act on the difference. It is a more sophisticated management tool aims at preventing goods and services which do not conform to basic requirements from getting to the final consumer. Quality controls are operational techniques and activities that are used to fulfil quality requirement (ISO 8402, 1994). As a measure of quality, quality control however is costly when viewed in terms of tangible and intangible variable cost. It could also result in the production of substandard goods and services when conducted late in the process of production. Due to the problems associated with quality control, businesses now focus on other avenues or means through which quality could be managed effectively. Dale, Broaden and, Lascelles (1994), noted that the solving of a problem

after a non-conformance issue has been created is not an effective route towards eliminating the root cause of a problem.

3.15 QUALITY ASSURANCE

This is a principle based on the designing of the business process of production with a view of minimizing the chances of producing substandard goods. According to Dale et al, ((a) 1994), quality assurance is a prevention based system, which improves product and service quality with increased productivity by placing the emphasis on product, service and process design. Quality assurance emphasis on defect prevention, unlike quality control that focuses on defect detection once the item is produced. Quality assurance is focused on the prevention of the production of non-conforming product and much emphasis is placed on the activities involved in the process of production. Thus, it is a management design aimed at controlling quality at all stages of production to prevent quality problems from emerging. The quality assurance philosophy opined that quality is created in the design stage and not the control stage and that problems associated with quality are caused by poor process design. According to Lockwood et al, (1996), 'to be effective, quality assurance must involve the development of a new operating philosophy and approach that looks to be proactive rather than reactive, that includes motivating and involving people in the process across normal departmental barriers'. Oakland (1995) defined quality assurance as broadly prevention of quality problems through planned and systematic activities, which include documentation.

3.16 TOTAL QUALITY MANAGEMENT

This is the highest level of quality management. It is concerned with the management of quality principle in all the facets of a business including customers and suppliers (Dale et al, 1994, Lockwood et al, 1996). Total Quality Management (TQM) involves the application of quality management principles to all aspects of the organization, including customers and suppliers, and their integration with the key business processes. It is an approach which involves continuous improvement by everyone in the organization. TQM is a principle which involves the mutual cooperation of everyone that aids the business process of an organization and it involves all the stake holders of an organization. Dale et al, ((a) 1994) cites BS.4778; part 2(1991) where 'TQM is defined as a philosophy embracing all activities through which the needs and expectations of the customer and the community, and the objectives of the organization are satisfied in most efficient and cost effective way by maximizing the potentials of all employees in a continuing drive for improvement.' According to Mohammed (2006), TQM is an effective system for integrating the quality development, quality maintenance and quality improvement efforts of various aspects of a system so as to enable services at most economical level and derive full satisfaction. TQM is aimed at the satisfaction of customers

needs in an efficient, reliable and profitable way. It involves a radical direction through which an organization perform her day to day operations in other to ensure that quality is put at the top of mind of every employee and departments in which they operate. Vorley and Tickle (2001), defined TQM as the synthesis of the organizational, technical and cultural elements of a company. They opined that TQM is a heart and mind philosophy which recognizes that company culture affects behaviour which in turn affects quality Oakland (1989), describes TQM as an approach to improve competitiveness efficiently and flexibility for the whole organization. According to Hellene and Klefsjö (2000), TQM can be defined as a management system which consist of interdependent unit namely core values, techniques such as process management, benchmarking customer focused planning or improvement teams and tools such as control charts. Dahlgaurd, Kristiansen and Kanji (1999) saw TQM as a corporate culture that is characterised by increased customer satisfaction through continuous improvement involving all employees in the organization. Oakland (1989), noted that 'for an organization to be truly effective each part of it must work properly together towards the same goal, recognizing that each person and each activity affects and in turn is affected by each other – the methods and techniques used in TQM can be applied through out any organization.'

3.17 Evolution of TQM

Four stage can be identified in the evolution of TQM. They are

- Inspection –based system
- System of quality control
- Quality assurance
- Total quality management

Quality management start with simple inspection- based system, where a product where compared with a service standard by a team of inspectors. First revolutionary charge-system of quality control come along with II world war. At that time quality was achived through control system, product testing and documentation control.in the quality Assurance stage, there was a change from quality to system quality typical of this stage were quality manuals quality planning and advanced document control. Quality Assurance is prevention –based. The fourth stage of development was TQM. A clear and unambiguous vision, few interdepartmental barriers, staff training, excellent customer relations, emphasis on continues improvement, and quality of the company as a whole are typical in a TQM environment. In recent year the awareness of quality and recognition of the principles of quality management has grown remarkably. Also library and information services (LIS) sectors managers and staff are facing minor and major decision-making and quality management issues. Therefore a need of guidelines, self-appraisal tools, real-world experiences, etc. has emerged. The appearance of quality assurance standards, typified by ISO

9000 series has stimulated the interest in formal certification scheme, not only among companies but also in the LIS sectors. A basic features of ISO 9000 registration would tends to penetrate all business relationships between customers and suppliers of business information throughtout the information chain.

3.18 Why Libraries Should Adopt TQM

Libraries are among the most ancient social and cultural institutions in existence. Ancient libraries as well as modern ones have one thing in common: all of them have a body of information recorded on of them have a body of information could be retrieved when needed. The accessibility of information requires good organizational ability from those who are structure of the organization where desired information is retrieved and made accessible efficiently and in a timely manner to the users. Creation and maintenance of such a structure requires an effective management process that facilitates work towards the goal. Today technology has changed our social and economic life. In the workplace methodologies change people work at home or on the web with flexible time table, and more and more virtual communities are emerging in different fields. The most important stakeholders in the library are customers, providers of subsidies, staff and other libraries. These stakeholders are interested for various reasons, in the introduction of TQM. The introduction of TQM makes great demands on the staff. The following factors in particular need to be taken into account.

♦ TQM involves a process of change and therefore requires of staff that they be ready to play a constructive role in that process.

♦ TQM requires a basic re-orientation from the media stock towards customer and markets. For TQM a result oriented approach, not the input of resources, is of vital importance.

♦ A strongly hierarchical organization with fragmented responsibilities is not well suited to the introduction of TQM since all staff needs to feel a responsibility for influencing quality. ♦ The effort necessary for implementing TQM is at the same time rewarding for both staff and the institution: Improvement of the institution in which they work, a strengthening of that institutions position, and more opportunity of staff to influence their own work. The management of quality in libraries, as a management method that allows the improvement of performance, has been the object of interest

for the managers of these services. In this context, that permits the reality of the information service is essential to better adequate and quality proposals.

Concluding Comments- Quality can be described right time as well as doing it right the first time and doing it right each time. It requires continuous improvement. In this context of the library, it can be described as:-

Q– Quest for excellence of knowledge

U– Understanding the user's demand.

A- Attitude

L– Leadership quality for librarian.

I – Involving all staffs.

T– Team spirit for achieving common goal.

Y– Yardstick to measure progress. There are various aspects of dimensions of quality that are utilized by a user to evaluate library service

3.19 Stages of total quality management

- The process of implementing total quality management in an organization can br developed in following four stages
- Identification and preparation
- Identifying and collecting information about the organization in the prime areas where improvement will have most impact on the organization performance.
- Preparing the detailed basic work for the improvement of all the organization's activities management understanding and commitment
- To make sure that the management understands the objective and
- Methodology of total quality management and are prepared to adopt them all the time scheme for improvement
- Identify and resolve quality issues by involving all management and supervision in a proper scheme of training and communication. New initiative, new target and critical examinination

Start new initiative with new targets and take the complete improvement

3.20 TQM IN LIBRARY AND INFORMATION SERVICES (LIS)

Among the services industries such as airlines. Banking institutions**,** insurance companies and health care providers. Libraries are the last to adopt TQM practices. For a long time, libraries saw themselves as keepers of knowledge rather than actives

agents in information transfer. Thought the main aim objectives of libraries is to satisfy the users the library professionals often forget that. But today's libraries are pushed to a position where they have to provide quality services to its users, to justify theirs existence. So. Now libraries are also started adopting TQM practices following other kinds of service industries. In the context it had its origins in LIS as early as 1931 when Dr.S.R. Ranganathan gave to the world of librarianship, his famous five laws.it is the fourth law, **"SAVE THE TIME OF THE READER"** which has similar implications as are advocated in the TQM . his explanation for the term "documentation" as pin-pointed expeditious organization and retrieval of information is what is the sum and substance of the TQM approach in the library context the way he enunciate even his first three laws make the point amply clear that he had, way back in 1931, the element of "user satisfaction" in his mind while pleading for the establishment, growth and development of the library system and services. Since the beginning of 1990's quality management waves has reached the shores of the library and information services (LIS) community. After a period of growing awareness of the relevance of quality management methods in LIS sector contexts, an of quality management methods in LIS sectors context, an incursion number of libraries have actually started to practice quality management. To provide pinpointed exhaustive and expeditious organization and efficient access to information, TQM approach in library and information service is helpful.

3.21 TQM process in practice

The ARL spec kit provides a good deal or information on quality improvement programs in specific academic libraries. Duke university, the university of Minnesota, and the state university of New York at buffalo are some good models for libraries implementing TQM. , Academic libraries are following different approaches in their TQM process. Some academic libraries undertaking TQM or CQI (continuous quality improvement) as a library- wide effort address established library procedures on a step by step basis. Broader and more far-reaching approach as far as impact on the library as an organization. In some of the academic libraries they are concentrating on a quality improvement in specific services only such as Reference services, technical services and Access services. Special libraries quality improvement efforts have a longer history in special libraries in other types of libraries, as tof the he professional literatures indicates. Because quality assurance processes have been well-established in the health care field for some earliest library quality improvement efforts are seen in medical and the hospital libraries. Quality efforts in libraries in the corporate sectors, however, are not far behind

3.22 Public and school libraries

Although the literature on quality improvement in public or school libraries is not prevalent there is good evidence that these libraries are also undertaking quality efforts. In public libraries, current efforts that are taking a TQM approach are often, but not always, part of a city –wide quality improvement initiative. A good example is the fruits of thse efforts are seen in a financial support the library receives, with a budget that is a bit better than budget for most urban public libraries in the financially strained state. The st. paul public library is another library that is undertaking quality improvement as part of a city-wide effort. Evidence of other quality efforts in public libraries is seen in accounts of the use of quality circles in libraries including some Chicago public library branches, the Duluth public library, and the east Brunswick public library in new jersey .TQM efforts for school libraries often are part of the movement in education toward what some in the field call "total quality management "this has involved changing the management structure to provide educators including school library media specialists with the opportunity to becomes active participants in site –base management . this means empowering them" to make local decision on curriculum as well as management"

3.23 Possibilities of TQM in Libraries

The rapid growth of the library-focused TQM electronic discussion lists and TQM related articles in the library professional literature illustrates the interest of Library field in TQM and its various processes. A large number of libraries are at least considering if not actually implementing, this new-user oriented, teamwork-based process for continuous quality improvement. Let us discuss, how the quality of library operations and services will be improved by implementing TQM. For example, let us see how the quality of acquisition service can be improved by TQM. Acquisition is one of the basic activities of a library. The process of ordering and acquiring the selected materials are known as acquisition. How TQM will help in improving the quality of acquisition function? A total quality tool 'Flow chart' will considerably improve the quality of acquisition

3.24 Barriers, Potential Problems, and Opponents

A number of barriers to the implementation of TQM have been encountered in all types of organizations, including libraries. Some of them are listed below (Miller and Stearns).

1. The view that this is only another management fad of the day

2. Management's fear of the loss control

3. Employee reluctance to recommend changes because of fear of the management

4. Business and industrial background of TQM might not lend itself to the non-profit sector, including libraries.

5. TQM requires a long-term investment of time over several years as processes are analyzed and an organization's culture is changed. This can cause resistence and other difficulties in these days of increasing financial and other pressures. What are the problems in implementing TQM? Problems can exist in establishing a good relationship between management control and promoting employee empowerment. Another problem encountered is related to TQM statistical tools. An inappropriate emphasis on these tools in complex service organizations such as libraries may result in TQM and its goals being regarded as unattainable.

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Chapter 4 National and International

4.1Quality management in the Australian service industry: Progress or problems?

1. Customer Focused

Strategies The argument that improved quality leads to better servicing of customers ignores the ability of customers to make choices and to select goods and services based on their own perceived needs. Furthermore, production is envisaged as constantly adjusting to changing demands in a reactionary sense, whereas quality products and services should not only anticipate customer demand but should exceed the customers' expectations. Ken Omea, managing director of McKinsey's Tokyo office has criticised Australian fruit exporters for being 'preoccupied with tonnes of production not quality of production . . . Despite the taste and freshness of an apple, if it had scars on the skin it would be virtually unsaleable in Japan except for juice' (The Australian Financial Review 25 May 1993). This example illustrates the need for a user-based definition of 'quality' starting from the premise that quality 'lies in the eyes of the beholder' (Garvin, 1988:43) and encompasses an idiosyncratic and personal view of quality. A similar concept suggested by Porter (1985) where organisations should supply 'buyer perceived value' to secure a market recognises that customers vote with their orders in accordance with best perceived net customer value. Customers have the freedom to select the 'best' from various competitors. Therefore it would seem reasonable to assume that 'delivery of best net customer value will yield higher market share' (Stahl and Bounds, 1991) There is evidence that some Australian companies are

recognising that customer satisfaction is essential for gaining a market edge. For instance, a Perth computer accessories maker has made a strong entry into the tough Japanese market but found that changes to packaging were critical (TTie West Australian 9 March 199

2. A Total Quality Service Strategy

To provide customer value, a strategy that encompasses both the notion of service and quality is needed . After all, quality in the absence of service is worthless. This approach is equivalent to Samson's (1991) notion of stage two quality implementation, where companies focus on quality and service. While customers have intuitively recognised the importance of service, many Australian managers have realised only recently that to maintain market viability, the notion of quality should include quality assurance and service. A recent survey by Market Focusing found that '42 per cent of shoppers had walked out of a least one shop during the lead-up to Christmas without buying what they wanted because of poor service . . . More than two-thirds of shoppers in three states preferred better service compared to extended shopping hours' (The Age 19 January 1993). Another survey of 900 people conducted by AMR Quantum found that '.. . 64 per cent of people were more aware of the quality of customer service than they were five years ago, but only 25 per cent were more satisfied with the level of service now' (The Australian Financial Review 23 March 1993). Furthermore, John Snelson, Director of Performance Improvement at Ernst and Young stated that research shows 'customers are five times more likely to switch to another supplier because of poor service than because of poor product quality or price issues. Customers will pay up to 30 per cent more for an average product if they receive outstanding service from the company' (The Australian Financial Review 4 June 1993). Therefore the unsatisfied demand for service should provide an opportunity for organisations to gain a competitive advantage by offering superior customer service. Management now needs to recognise that maintaining existing customers and expanding the customer base is fundamental for market success. Such a strategy has been referred to as a "Customer Value Package" - a combination of tangibles, intangibles, experiences and outcomes designed to win the customer's approval and secure the right to survive and thrive in the marketplace (Albrecht, 1992:13).

4.2 Manufacturing best practice and UK productivity

1. Failure mode and effects analysis

Failure mode and effects analysis (FMEA) is a technique that is widely applied in the automotive sector. FMEAs help manufacturers to prevent defects, improve

safety and increase customer satisfaction. Most are conducted in the product design or process development stages (Johnson, 2002). FMEA acts as a mechanism to facilitate knowledge transfer between development teams (Frank and Echeveste, 2012). There is often reluctance amongst product engineering and manufacturing engineering personnel to take a leading role in the preparation of design and process FMEAs respectively. The main reasons for this relate to a perceived lack of time or lack of understanding of the technique's potential (Aldridge et al., 1991).

2.Quality Function Deployment Like FMEA, Quality Function Deployment (QFD) is widely applied in the automotive sector. Developed in the late 1960s to help design super tankers in Mitsubishi's shipyards in Kobe, Japan, the technique involves taking customer requirements and turning them into technical specifications for the finished product (Maire et al., 2005). QFD articulates and ranks customer requirements and defines the technical requirements needed to meet those requirements (Kinni, 1993). QFD is most likely to have a positive benefit when management support for QFD is prevalent and where customer data gathered for the project are used (Cristiano et al., 2001; Cauchick Miguel, 2005; Fegh-hi Farahmand, 2009). As with FMEA, QFD is a mechanism to share knowledge across sites or divisions (Jussel and Atherton, 2000). Despite much literature on the tools and techniques for applying QFD, there is little on how QFD can be introduced into the management system of an organization (Parkin et al., 2002).

3. New product development Creating a flow of innovative new products and reducing the time taken to design and market new products are key greatest challenges facing UK's manufacturing industry. Working collaboratively with suppliers is considered best practice in new product development. The importance of sharing knowledge between buyer and supplier in this context is well recognised, although comparatively little research exists on the intercompany socialisation mechanisms that facilitate it (Lawson et al., 2009). Adaptive leadership is used in successful new product development (NPD) environments where strong leaders are not necessary for successful outcomes (Olsson and Wass, 2001). Product lifecycle management (PLM) systems have the potential to improve the quality of design decisions and minimise manufacturing problems during new product development. However, providing a source of best practice is difficult due to the complexity of the viewpoint relationships between products and the processes and resources used to produce them (Gunendran and Young, 2010). There are differences between the specific practices that NPD practitioners from SMEs and large companies consider to be best practice. There is limited value in developing theories and models about best practice in managing NPD unless these models and theories are fully diffused and can be made useful to NPD practitioners (Nicholas et al., 2011).

4. Total Productive Maintenance

Total productive Maintenance (TPM) aims at providing the most efficient use of equipment. As with lean, the practice engages all employees from top management down, and implements action, based on small autonomous teams, to ensure maximum efficiency and availability of manufacturing equipment (Bamber et al., 1999). The basic measure of TPM performance is the overall equipment effectiveness (OEE) value, which is described by Nakajima (1989) as the driving force and direction for improvement based activities within manufacturing operations. A recent development of TPM is the application of six sigma practices to TPM (Thomas et al., 2008).

5. **Developing best practice through benchmarking** has developed rapidly since its introduction by Xerox in the late 1970s (Andersen and Camp, 1995). Benchmarking is a process of identifying, sharing and using knowledge and best practices (Maire, 2002). A benchmarking study includes analysis of the organization's own process, and study of benchmarking partners' processes. An analysis of the differences between the two allows development of improvements based on what is learned from the benchmarking partners (Andersen, 1999). Benchmarking identifies practices that are considered to be the best available. Practices identified should have an effective contribution to improving customer satisfaction (Maire et al., 2005), but the transfer mechanism is a key aspect in realising benefit from the process (Andersen and Camp, 1995). Companies that have benchmarked themselves, and find significant gaps, are generally keen to improve (Van Landeghem, 2007). Whilst there are reservations about the effectiveness of benchmarking from Womack and Jones (1996) who consider it to be a waste of time unless used to convince sceptical managers, benchmarking remains effective in transforming an organization. This transformation is facilitated through management of knowledge and the practice of continuous learning and improvement (Knuf, 2000). Aspiring companies must be prepared to invest time and effort in finding best-practice examples (Wiarda and Luria, 1998). Best practice focus has evolved from benchmarking as a means to improve company performance through the identification of best practice, to the need to identify, manage and transfer best practices (Davies and Kochhar, 2002). It is a learning tool that can reduce uncertainty in the organization by referring to peer experience (Knuf, 2000). Having a best practice program is associated with traits such as proactivity, internal communication, training and leadership that should be commercially advantageous (Beaumont, 2005). However, benchmarking on its own it will not improve a business. It is the vision, strategic direction, energy and teamwork of the organization that delivers productivity improvements (Hanson and Voss, 1995). The use of benchmarking has changed to a great extent over the

last 15 years. Some best practices may not be suitable at all levels of operation and therefore need to be applied and used carefully (Putkiranta, 2012). There appears to be no correlation between market share or profit loss and the trigger point for adopting best practice. Some companies have ceased trading before taking action (Barker, 1998).

6. Best practice - implementation Having identified best practice, the problem of implementing it into the company's organization must be resolved. Best practice examples are generally descriptive. They are context specific and must be investigated in the context where they are studied. There is no standard recipe for how to implement lean or six sigma. The poor uptake of promising practices by a large number of UK organizations is noted by the authors of the 2004 AIM report (Lesure et al., 2004). For an effective implementation a holistic analysis should be carried out that recognises the potential and impact of the practice on all areas of the business, rather than within the target area (Davies and Kochhar, 2002). Rather than adopt a prescriptive model of best-practice, companies should develop procedures which more adequately reflect their inherent needs and the types of project they undertake (Maffin and Braiden, 2001). International productivity differences can be examined by bringing managers from the relatively weak performing economies to factories in best-practice economies (Hitchens et al., 1991). Learning to implement best practice effectively provides a longer-term approach to improve effectiveness of the implementations. Education and training are key aspects of effective best practice implementation. Using a National Vocational Qualification in business-improvement techniques can be used a mechanism to educate employees in best practice transfer (Pollitt, 2012). Lean is a management philosophy focused on identifying and eliminating waste throughout a product's entire value stream, extending not only within the organization but also along the company's supply chain network. Lean offers significant benefits in waste reduction, and increased organizational and supply chain communication and integration. Visible management commitment to long term sustainment, enabling and encouraging autonomy, focus on mid to long-term goals, communicating lean successes and continual re-evaluation were all aspects that facilitated successful and sustained lean implementation (Scherrer-Rathje et al., 2009). Lean is effective when considered as part of a high commitment culture. Management teams that consider enablers, such as autonomy and the perception of control; whilst mitigating the impact of inhibitors such as blame, long hours, poor ergonomics and tools are more likely to achieve a successful lean implementation (Angelis et al., 2011). Sim and Chiang examined (2012) organizational issues which enhance or impede successful lean implementations. Job satisfaction, management support in addressing effort-reward equity concerns and job security were found to be key aspects associated with successful lean

implementations. Best practice requires a culture that allows it to prosper (Riel, 2012). A sustainable implementation is difficult and time consuming. Simply replicating another organization's best practice is an unrealistic approach. Every organization is unique, the pressures infer-structures and cultures for each organization have a significant impact on the implementation success. Lean thinking, Toyota-style, involves a much more pervasive and deeper transformation than many organizations anticipate. Implementations that fail can be attributed to culture and management of change issues. Employee commitment is required as much as financial investment to ensure success (Bhasin, 2012). Developing a culture where continuous improvement is seen as normal and where there is no fear about raising difficult issues in the pursuit of improvement is essential (Womack et al., 1990). Training helps enable this culture change (Cooper, 1994). However, assuming management practices are the only driver of higher productivity may be misleading (Battisti and Iona, 2009). Companies that take a strategic approach to identifying and adopting best practice are more likely to generate performance improvement than those taking an ad hoc approach (Seedee, 2012; Sheather, 2002). Cost of adoption, external pressures, and satisfaction with the existing practice influence adoption of best practice (Ungan, 2004). Engagement of all employees is essential for effective implementation (Aman Deep et al., 2008). An attitude change from employees may be necessary to facilitate adoption (Cooke, 2000). Poor results from best practice implementation can be due to a failure to link practices to specific and measurable objectives, to a failure to prioritize best practices, and to a lack of analysis of necessary infrastructure practices (Davies and Kochhar, 2000). Companies may not be successful in implementing best practice if managers do not offer adequate support (Ungan, 2005), although the existence of a champion is not essential for successful implementation (Ungan, 2007). Determinants of successful best practice implementation are management, location, export growth, type of manufacturing and competitiveness (Calabrese, 2009). Top management should not only demonstrate commitment and leadership, but must also work to create interest in the implementation and communicate the change to everyone within the organization (Rentes et al., 2009). Managing implementation requires commitment to long-term, strategic workforce planning (Divakaran et al., 2012). Successful best practice implementation involves innovation, action learning, and extends throughout the organization (Parnaby and Towill, 2012). Organizational context significantly shapes NPD practice performance (Oliver et al., 2004). The key aspects to successful implementation of best practice are a strategic commitment, top management and workforce engagement, communication and adequate skills amongst the employees. There is no one prescriptive solution, but each company must assess what is best for them and implement accordingly.

7. Best practice for the future A recent CBI report suggests that if the UK is to continue as a leading economic power in the 21st century, then a growing and diverse manufacturing base must be at its core (Cassley, 2010). Creating a diverse and competitive manufacturing base will require the adoption and adaptation of existing best practices and development of new best practices. From Table 5 the following practice areas are suggested as being able to deliver the desired targets for UK manufacturing in the future. Potential areas of future best practice are:-

Application of new technologies In sectors that produce high-technology products or are reliant on technology for administrative or manufacturing processes, it is essential to link technologies to markets, in an appropriate manner, in order to increase shareholder value and to build future cash flows. Research and development (R&D) allocations in such industries are very dependent on accurate forecasting of the R&D project's estimated potential contribution to future cash flows; which is related to the project's ability to satisfy current or future customer needs (Bond and Houston, 2003). A fast rate of technological progress, as well as growing markets, or a steeply sloping demand curve, may delay adoption while an increased ability to learn may accelerate it. With multiple technology adoptions, the adoption of any particular technology presents a 'window of opportunity' in which future investment may be warranted. If this window is missed, then maintaining the older technology becomes more attractive than adoption (Chambers, 2004). Although SMEs can play a significant part as generators of radical new technologies, in areas where the capital cost of innovation is high, the SME contribution is usually small (Rothwell, 1978). Agility in technology adoption may be a best practice in the future. The application of technology to security of information and prevention of unwanted access to company systems will become a growing area of importance (Rees et al., 2011). Techniques that can be adapted across manufacturing industry to ensure this are likely to be adopted as best practice. Rapid manufacturing - the direct production of finished goods from a rapid prototyping device is more a goal than an every-day reality for industry. The application of 3D printing technologies offers the promise to merge rapid prototyping capabilities with the highvolume throughput of conventional manufacturing. Media attention promotes this as machines capable of printing homes, jet engines and the idea of a factory on a desktop (Vartanian, 2013). However, this technology will change perceptions about economies of scale and about supply chains. When production of components is akin to desktop printing, the concept of production lines and associated tooling requires rethinking. This technology could develop the concept of mass customization as the norm (Smyrlis, 2011). This could substantially alter China's dominance as the mass manufacturing base of the world (D'Aveni, 2013). Proponents of 3D printing believed that these processes may soon lead to the tool-less production of finished goods and the mass production of individually customized products (Bak, 2003). Almost ten years

later, although the technology has advanced, the practice has still to find widespread application as a “personal fabrication”. However, 3D printing technology may become as ubiquitous as networked computers, with consequences just as significant (Birtchnell and Urry, 2012). Although 3D printing is used primarily to manufacture prototypes, a number of promising applications exist in the production of replacement parts, dental crowns, and artificial limbs, as well as in bridge manufacturing. 3D printing has been compared to such disruptive technologies as digital books and music downloads that enable consumers to order their selections online, allow firms to profitably serve small market segments, and enable companies to operate with little or no unsold finished goods inventory (Berman, 2012)

8. Engagement with universities Collaboration with universities for development of new technologies, new paradigms in manufacturing and adaptation of best practice to suit the changing market, political, social and technological demands will be required. The traditional approach taken by universities and industry as two separate entities may not be suitable to meet this requirement, necessitating different paradigms for university/college/industry collaboration. Collaboration with universities is frequent in knowledge based industries, where research undertaken in partnerships complements, rather than replaces, R&D by collaborating companies. This collaboration improves the performance of innovating firms (Hanel and St-Pierre, 2006; Martin et al., 2010). A methodology that can be utilized by practitioners from both academia and industry to improve the process of collaboration and facilitate more effective transfer of knowledge will deliver more effective collaboration (Philbin, 2008). This provides a route-map for managing such collaborations. Management of this type of collaboration requires tasks such as documenting the history and impact of innovations to the two entities. Although the measurement of innovation imposes an additional workload on management of the collaboration, it must be carried out as failure to do so would result in the loss of significant but hidden benefits, along with business opportunities and business performance improvements associated with them (Martin et al., 2010).

4.3The Effects of Total Quality Management Practices on Performance and the Reasons of and the Barriers to TQM Practices in Turkey

Leadership. Leaders in a TQM system view the firm as a system; support employee development; establish a multipoint communication among the employees,

managers, and customers; and use information efficiently and effectively. In addition, leaders encourage employee participation in decision-making and empower the employees. Top management commitment and participation in TQM practices are the most important factors for the success of TQM practices. Managers should demonstrate more leadership than traditional management behaviors to increase employees' awareness of quality activities in TQM adoption and practices Previous studies have found that leadership improves operational performance inventory management performance employee performance innovation performance social responsibility and customer results financial performance and overall firm performance Based on the literature reviewed, we propose the following hypothesis

Knowledge and Process Management. Effective knowledge management ensures that employees obtain timely reliable, consistent, accurate, and necessary data and information as they need to do their job effectively and efficiently in the firm. Only in this way, the expected benefits from TQM practices can be achieved. Process management emphasizes activities, as opposed to results, through a set of methodological and behavioral activities. It includes preventive and proactive approaches to quality management to reduce variations in the process and improve the quality involving suppliers early in the product development process to take advantage of their capabilities and expertise . Inputs from suppliers constitute the first phase of producing the products and/or services in a firm. High quality inputs provide high quality products and/or services. Therefore, the suppliers should adopt TQM and be involved in this process. Effective supply management practices enable the suppliers to adopt quality management and deliver reliable and high quality products and/or services timely. Previous studies have found that supplier quality management positively affects operational performance inventory management performance, innovation performance , and overall firm performance . Thus, we propose the following hypothesis.

Customer Focus. TQM firms focus on serving the external customers. They first should know the customers' expectations and requirements and then should offer the products/services, accordingly. By the aid of successful customer focus efforts, production can be arranged with respect to the customers' needs, expectations, and complaints. This encourages firms to produce high quality and reliable products/services on time with increased efficiency and productivity. When customer expectations are met, their satisfaction will be increased, and the firm's sales and the market share will increase. Previous studies have found that customer focus positively affects operational performance [28–31, 51–53], inventory management performance [30], employee performance [29, 31, 51], innovation performance [30, 32, 40], customer satisfaction/results [30, 38, 51, 52], sales [51],

and aggregate firm performance [40, 54]. Based on the literature reviewed, we suggest the following hypothesis.

. Strategic Quality Planning. Strategic quality planning includes vision, mission, and values of the firms. They are formed by taking into account the quality concept. With effective strategic quality planning efforts employees are taken as an input in developing the vision, mission, strategies, and objectives. This facilitates acceptance and support of strategic quality plans by the employees. Successful strategic quality planning efforts also take into account the possible side effects of the plan to the environment prior to the production. This will manifest and improve social responsibility of the firm. Previous studies have found that strategic quality planning is positively associated with operational performance, inventory management performance [30, 55], society results [56], customer results, and market performance [35]. However, strategic quality planning is not statistically related to perceived performance in the computer industry [55]. Thus, we propose the following hypothesis.

1. Strategic and systematic approach

The International Organization for Standardization (ISO) describes this principle as:

“Identifying, understanding and managing interrelated processes as a system contributes to the organization’s effectiveness and efficiency in achieving its objectives.”Multiple processes within a development or production cycle are managed as a system of processes in an effort to increase efficiencyProvide your people with the proper training and resources that will help them complete their individual steps in the process Continually improve processes and products, and upgrade equipment as necessary to reach goals.

Make continual improvement a measurable objective for all employees. Recognize, acknowledge, and reward innovations and process improvements.

.

2. Continual improvement

Optimal efficiency and complete customer satisfaction doesn’t happen in a day—your business should continually find ways to improve processes and adapt your products and services as customer needs shift. As previously stated, the other Total Quality Management principles should help your business keep an eye toward continual improvement.

Implement policies to establish product, process, and system improvements as measurable goals for individuals, teams, and departments.

Recognize, acknowledge, and encourage innovation to improve processes and development.

Encourage employees to participate in available training sessions to learn and take on new and additional roles.

Improved knowledge and capabilities to increase performance

Improvement goals strategically aligned with organizational capabilities and goals

Quick reaction times to recognize and fix bottlenecks and broken processes

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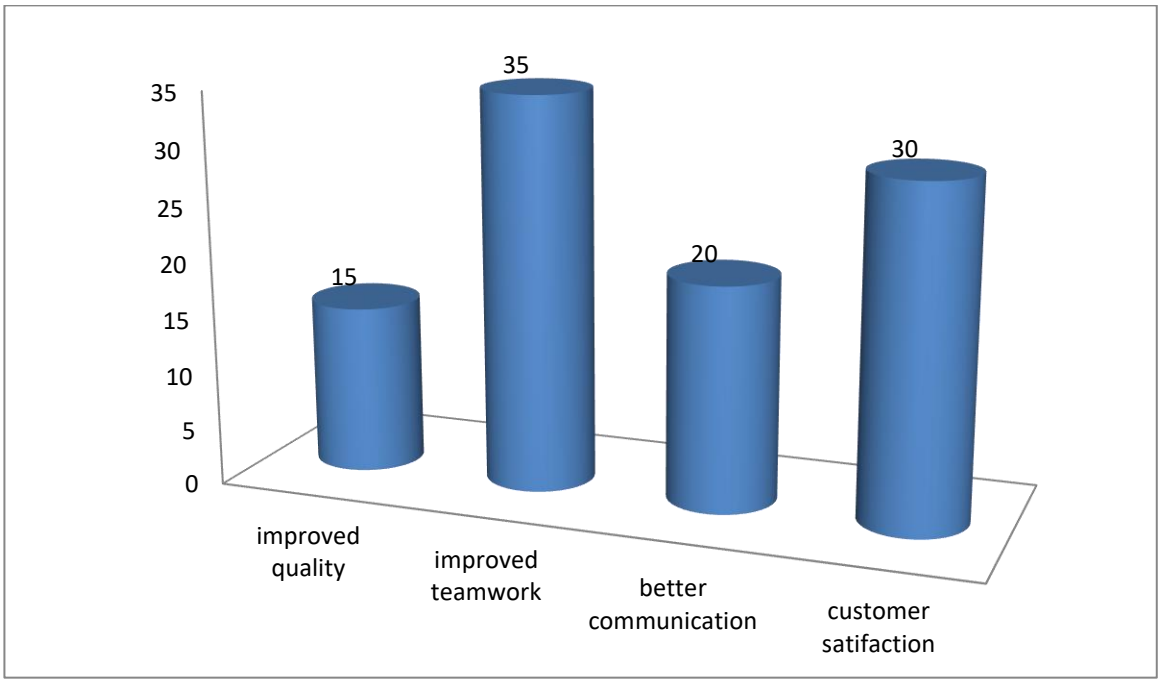
What do you mean by TQM

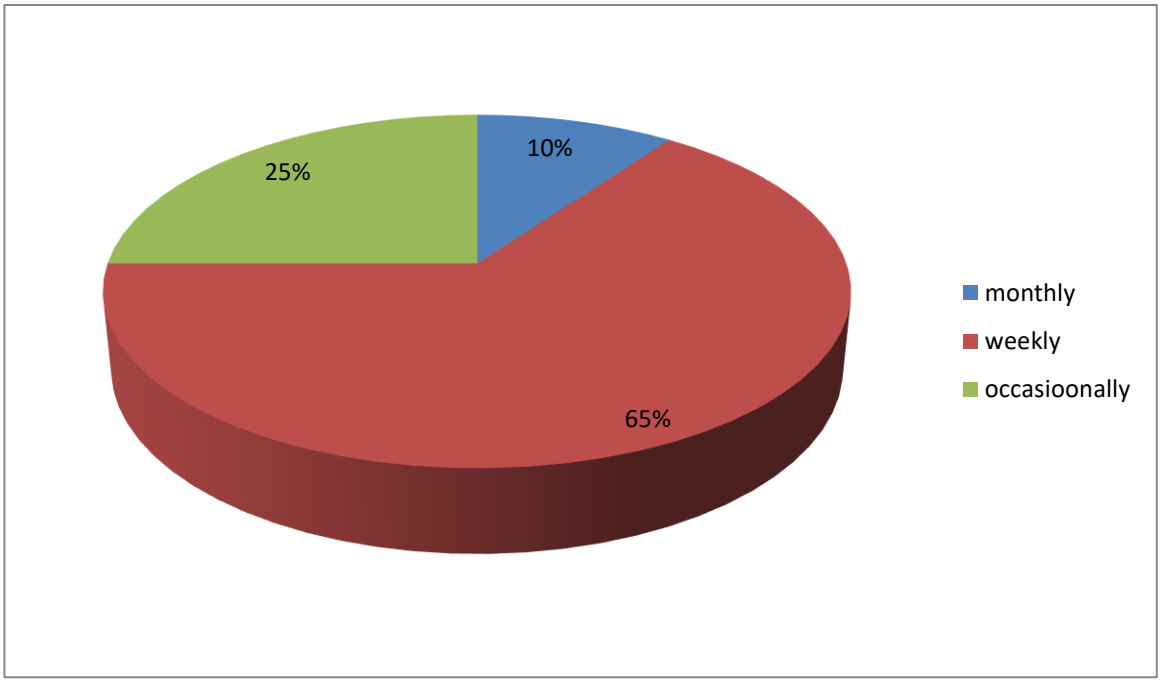
Improved quality	15
Improved teamwork	35
Better communication	20
Customer satisfaction	30



The study revealed that TQM means for 35% respondend improved team work 30% respondend customer satisfaction 20% respondend better communication and 15%respondend improved quality

How frequently refer them

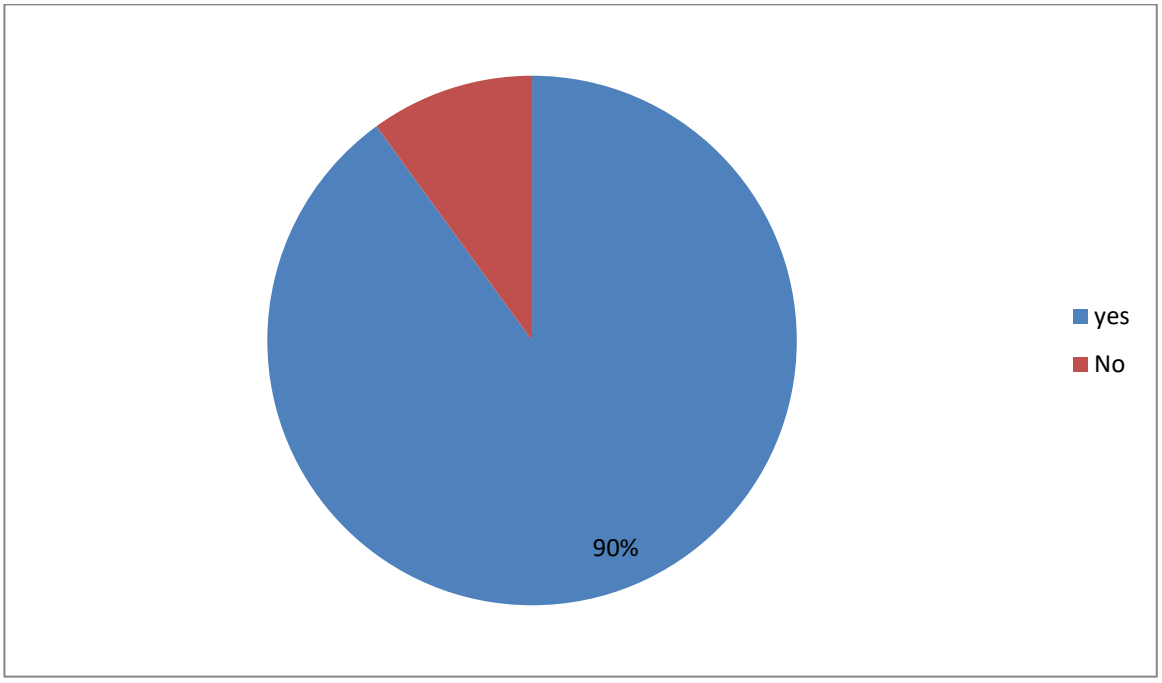
Monthly	10
Weekly	65
occasionally	25



The study found that 65% responded prefer TQM weekly were as 25% monthly 10% occasionally

Is your library is automated

Yes	90
no	10



To a query is regarding library automation 90% library are found automated and 10% are under process of automation

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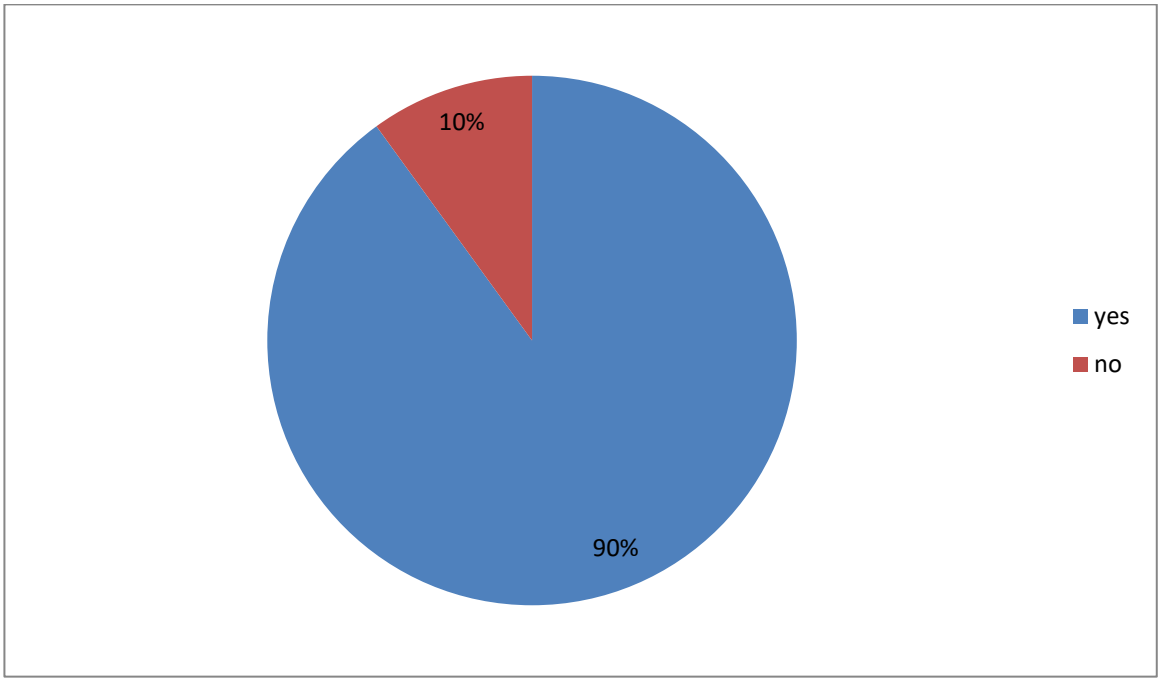
Do your library has internet facility

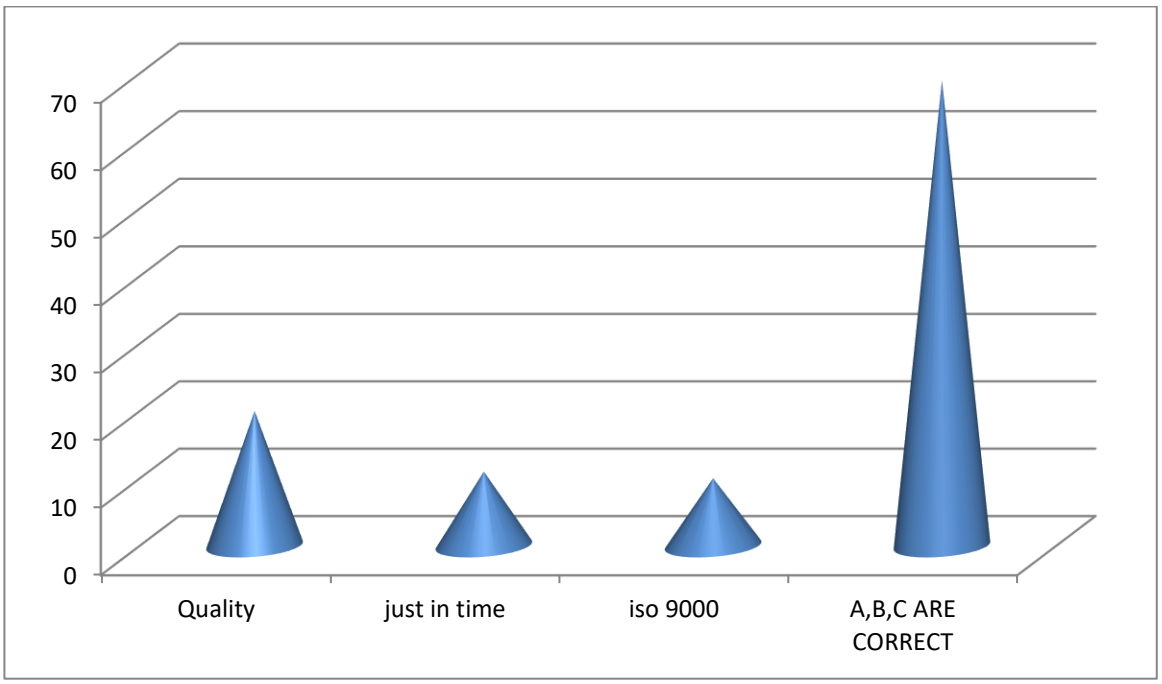
Yes	90
No	10



To a query regarding 90% respondend library have internet facility with student and 10% are using personal connectivity connection.

How TQM help in library

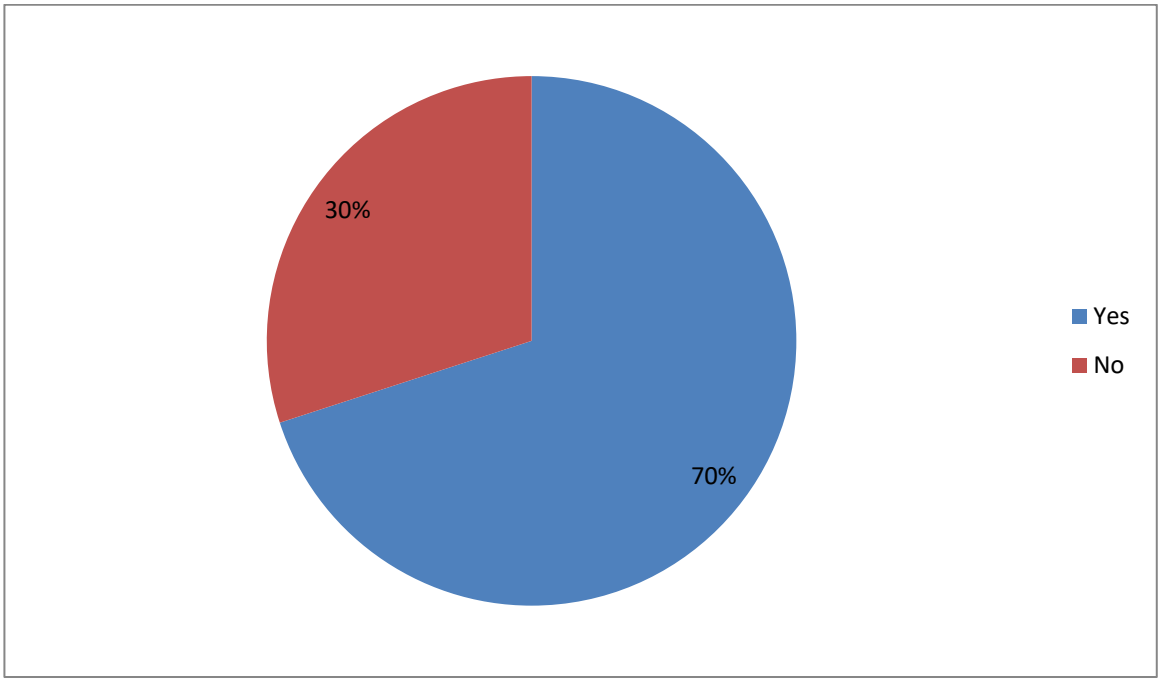
Quality	15
Just in time	11
ISO 9000	4
A B C are correct	70



The study found that the TQM must have 70% qulity just in time and certification

Do you have any problem if your library adopts TQM facilities for library service

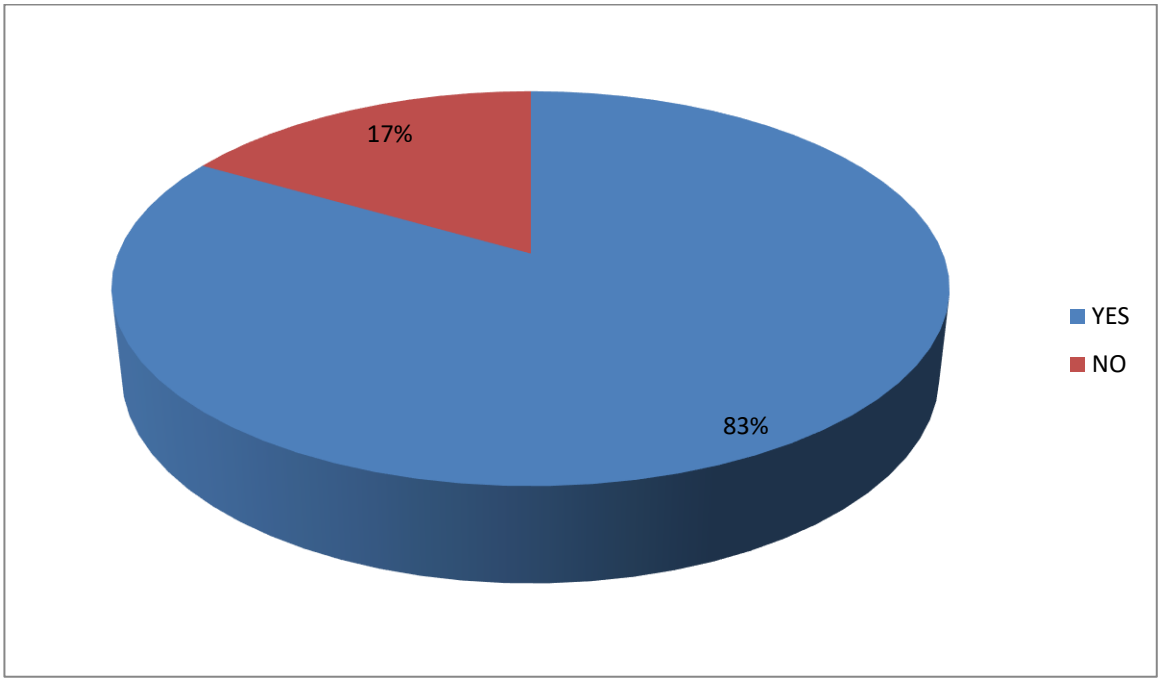
Yes	70
no	30



To query regarding adoption in tqm in library 70% respondend felt that there are problem in adopting TQM procedure due to various reasons

If your library start using TQM would you like to receive tranning/assistance to use to service through TQM

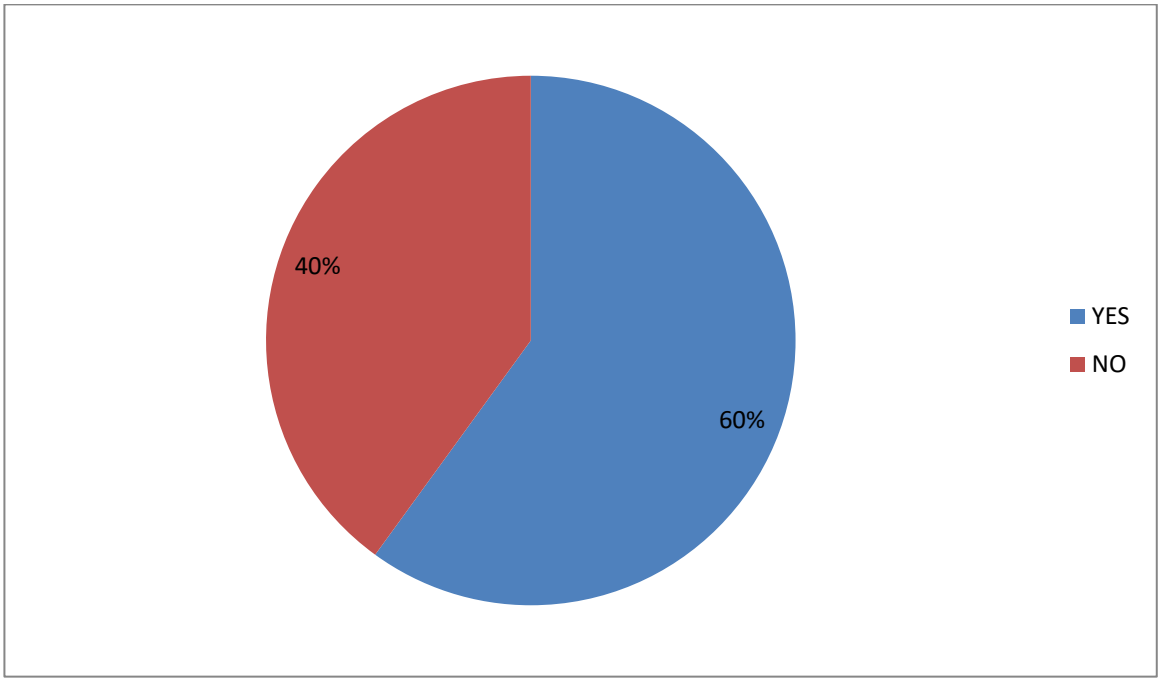
Yes	83
no	17



The study also revealed that training is must and for development of TQM infrastruture in library

Are you aware of TQM service which can be provided by libraries to its users?

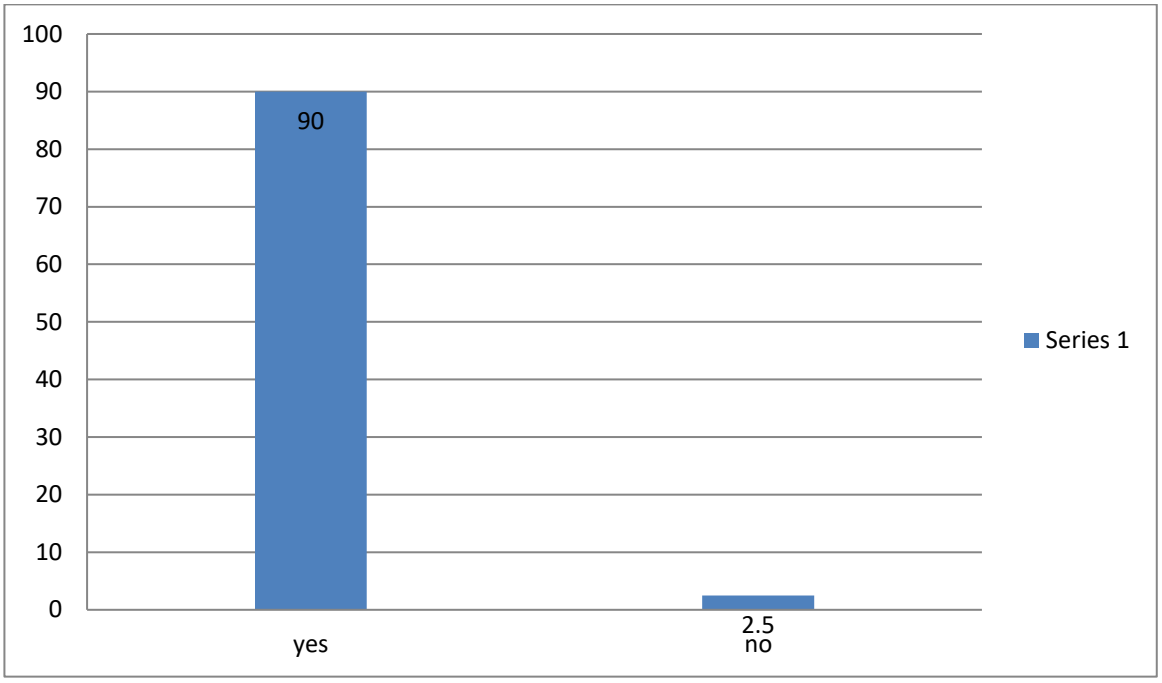
Yes	60
No	40



The study revelead that 60%responded know about TQM and 40% are learning the procedure to adopt it

DO you think use of tqm can help in providing library service to its users

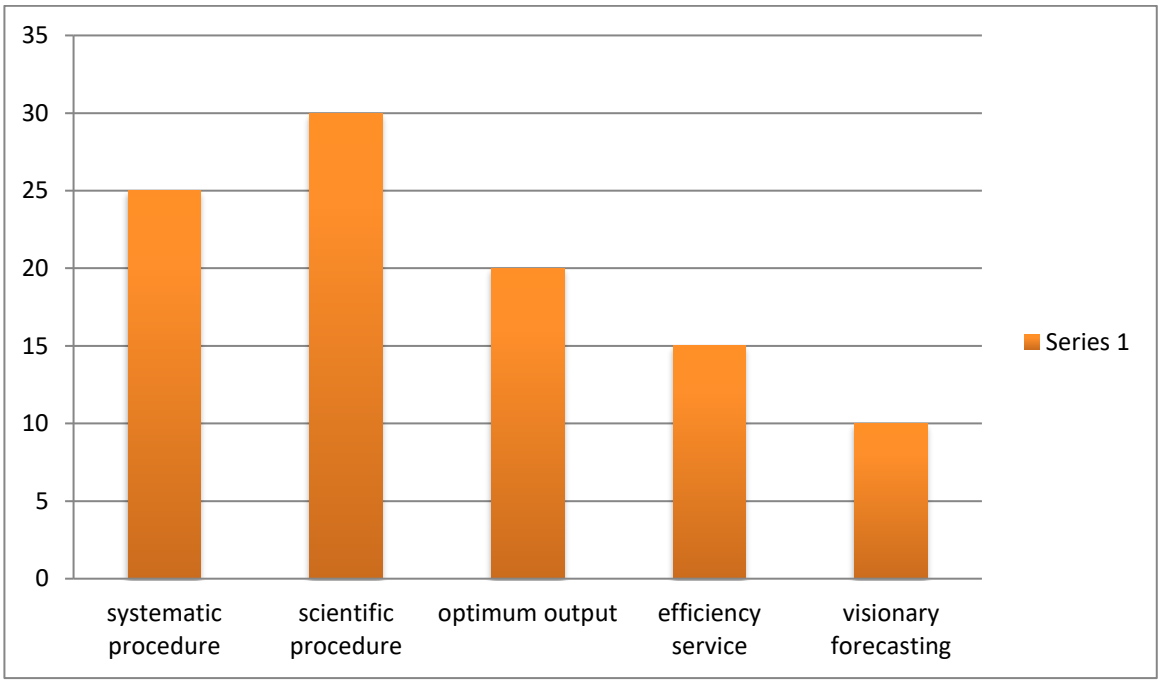
Yes	90
No	10



The study revelead that 90% responded intense to use TQM in developing their library

Please tick benefit of TQM

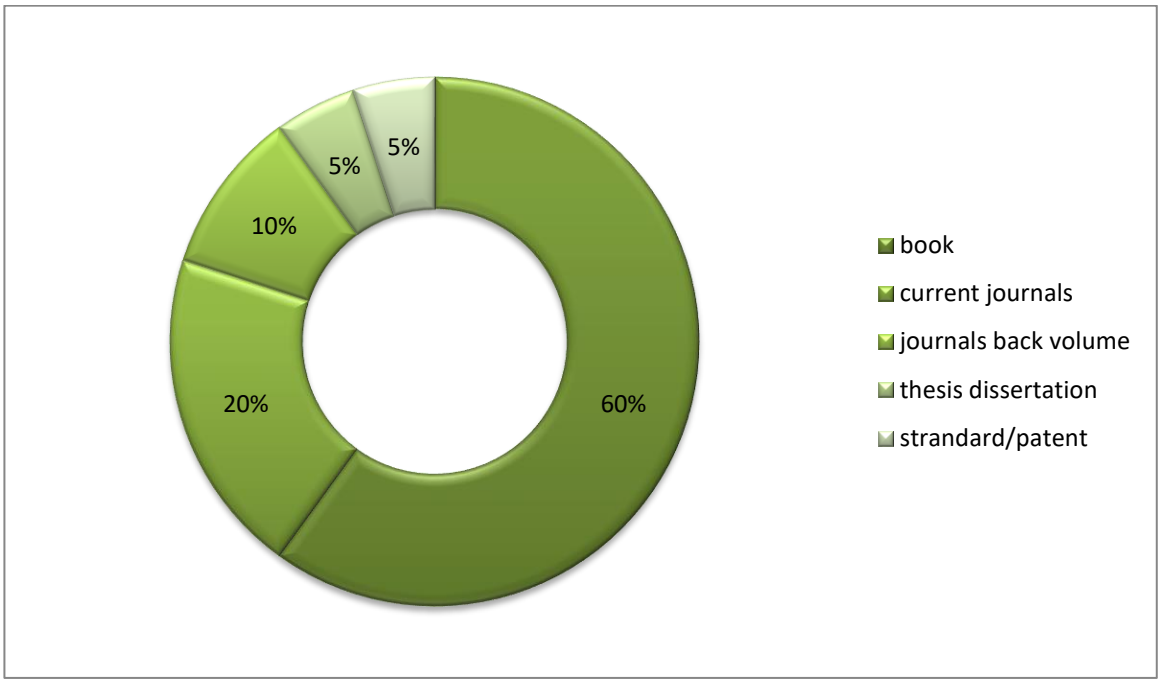
Systematic procedure	25
Scientific procedure	30
Optimum output	20
Efficiency service	15
Visionary forecasting	10



To a query benefit of TQM 25% responded felt it is a systematic procedure then 30% felt that it is a scientific procedure 20% responded it is a optimum output 15% responded felt efficiency service 10% responded felt visionary forecasting

Print resource

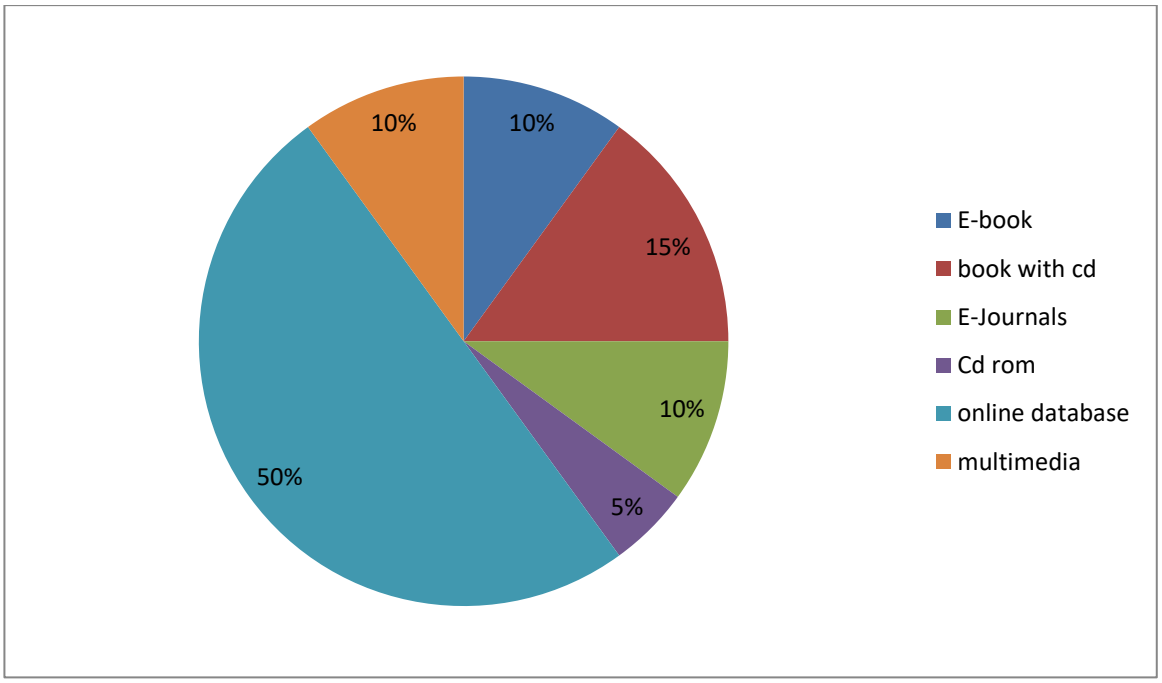
Book	60
current journals	20
journals back volume	10
thesis dissertation	5
standard/patent	5



The study found that under librarian questionair majority of student use printed book current journals journals back volume thesis and dissisation

Electronic resource

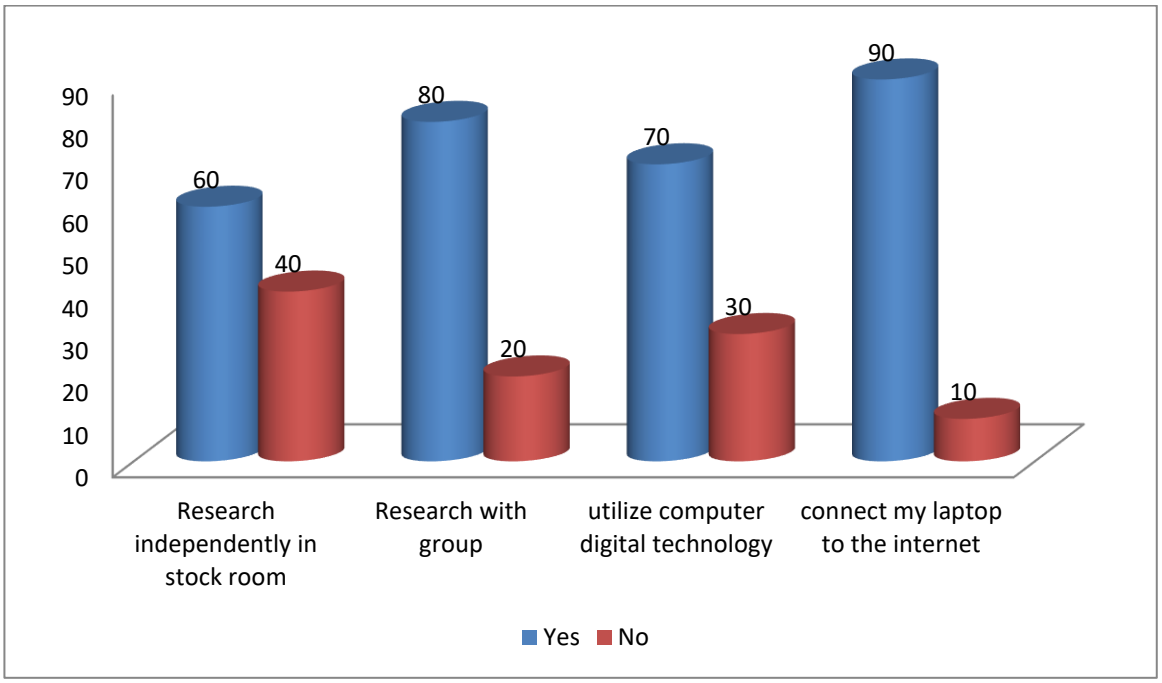
E-book	10
book with cd	15
E-Journals	10
Cd rom	5
online database	50
multimedia	10



The study found that 50% online databases resource use to compare to other electronic formate

Does your library provides following facilities

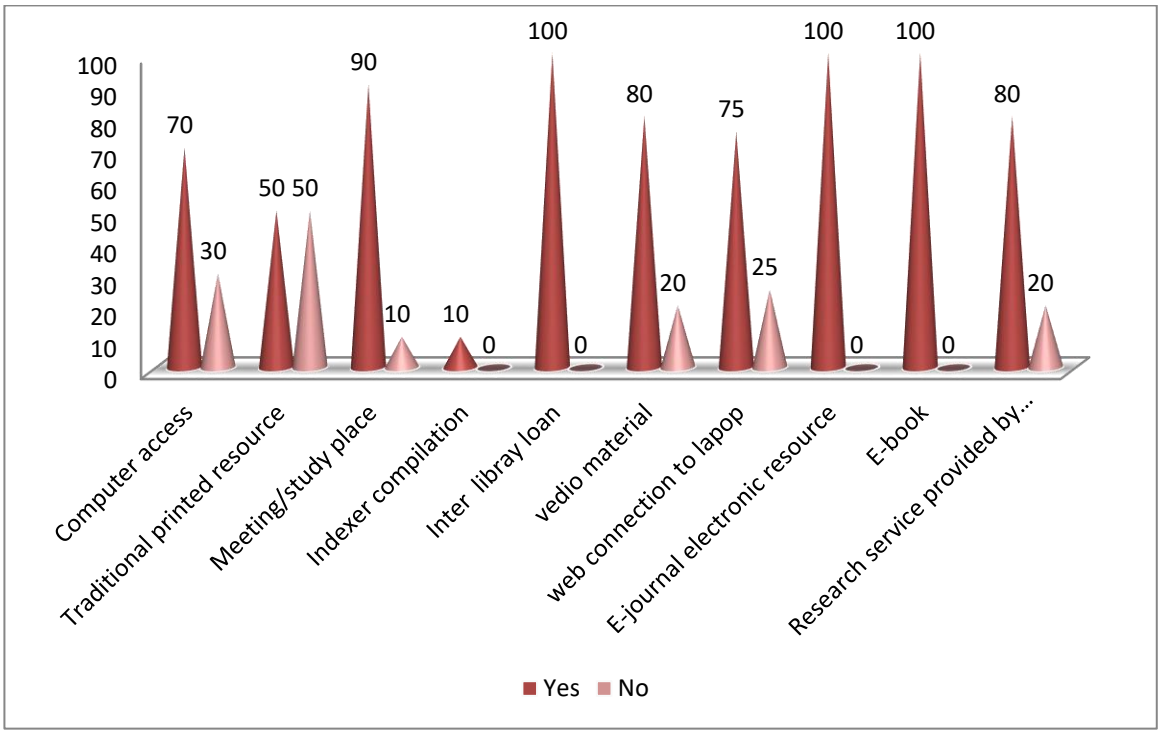
Respones	Yes	No
Research independently in stockroom	60	40
Research with group	80	20
utilize computer digital technology	70	30
connect my laptop to the internet	90	10



The study also revelead that 60% of student like to study research independently in study room 80% responded research with group 70%responded utilize computer digital technology futher 90% want internet connect to my laptop

Which of the following library service your readers under frequently

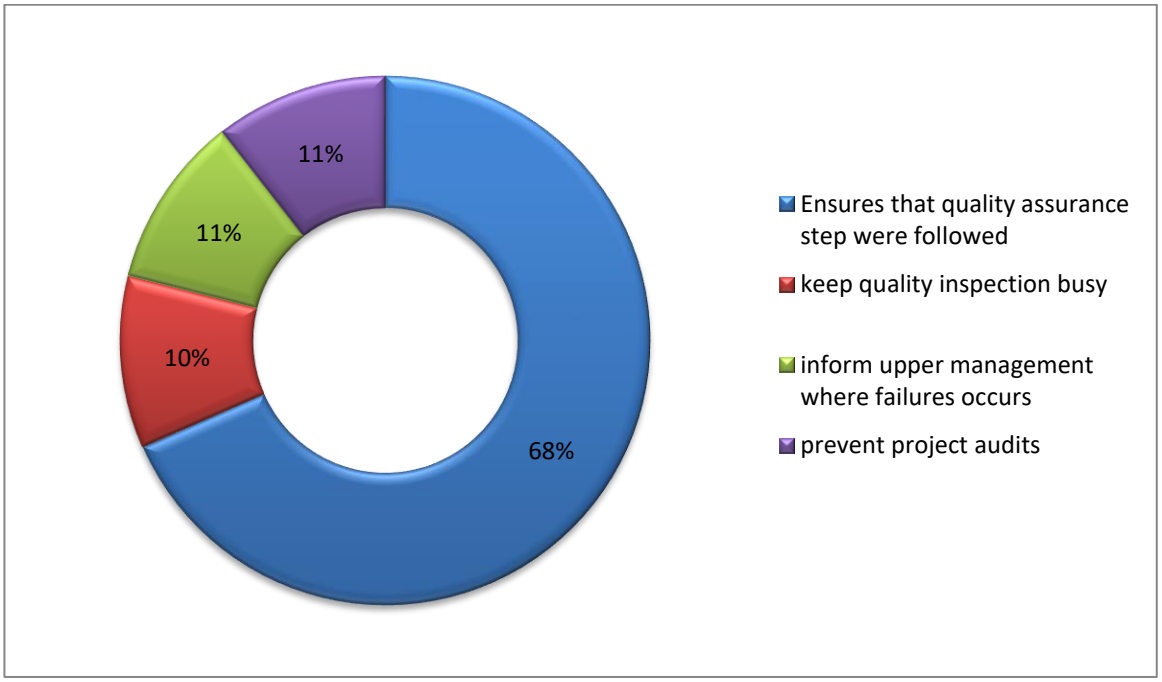
Response	Yes	No
Computer access	70	30
Traditional printed resource	50	50
Meeting/study place	90	10
Indexes compilation	0	0
Inter libray loan	100	0
vedio material	80	20
web connection to laptop	75	25
E-journal electronic resource	100	0
E-book	100	0
Research service provided by library staff	80	20



The study revelead that 70% responded need computer access 50%responded need traditional printed book 90% responded need meeting study place 10% responded need indexer compilation 100% responded need inter library loan 80% responded need vedio material 75% responded need web connected to laptop 100% responded need ejournal electronic resource 80% responded need research service by library staff

Quality checklist used to

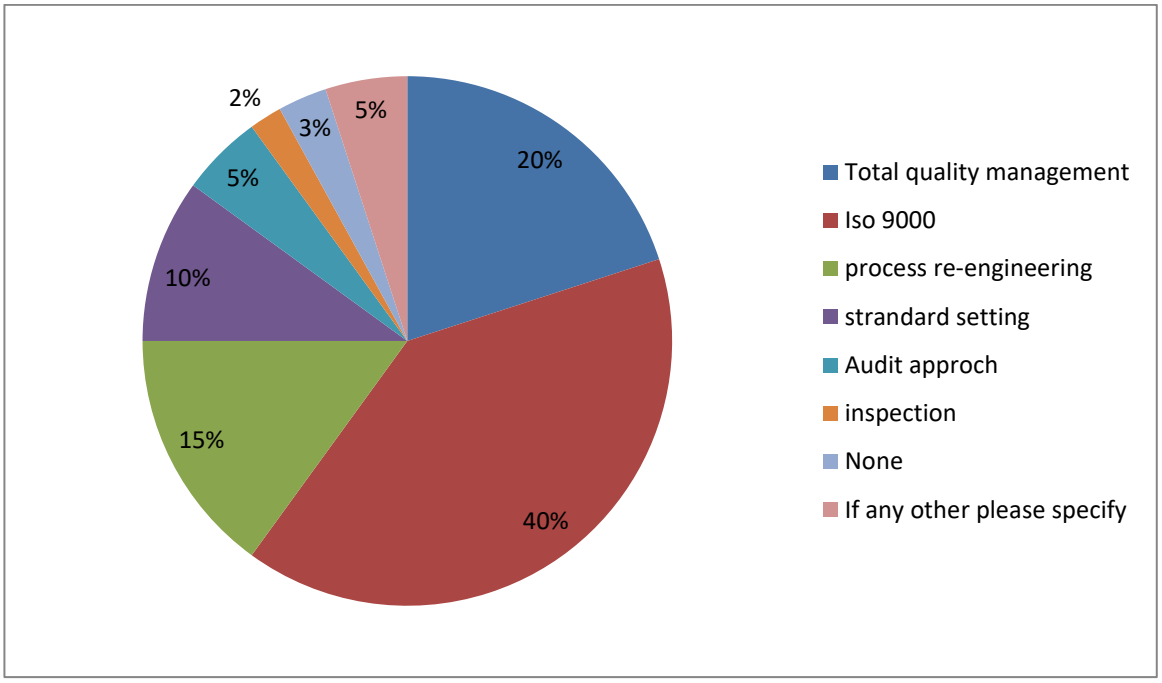
Ensures that quality assurance step were followed	68
keep quality inspection busy	11
inform upper management where failures occurs	11
prevent project audits	10



The study revelead that quality assurance step should taken to maintain TQM which was endorse by 68% responded 10% responded keep quality inspection busy 11% responded inform upper management where failures occurs 11% responded prevent project audits

What quality management approaches is/are practices in your organization

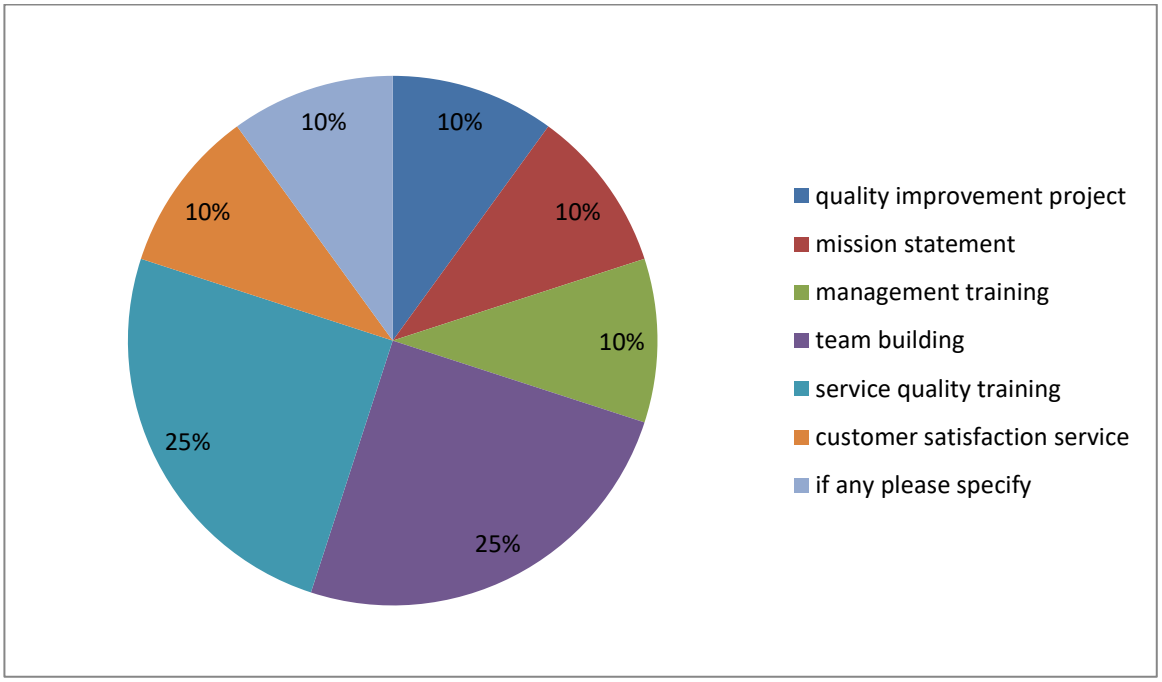
Total quality management	20
ISO 9000	40
process re-engineering	15
strandard setting	10
Audit approch	5
inspection	2
None	3
If any other please specify	5



Further the study revelead that40% responded ISO 9000 shall use for maintaining TQM 15% responded need process re-regineering 10% responded need strandard setting 5% responded audit approach 2% responded need inspection

What are the method adopted to implemented quality customers satisfaction survey quality improvement project

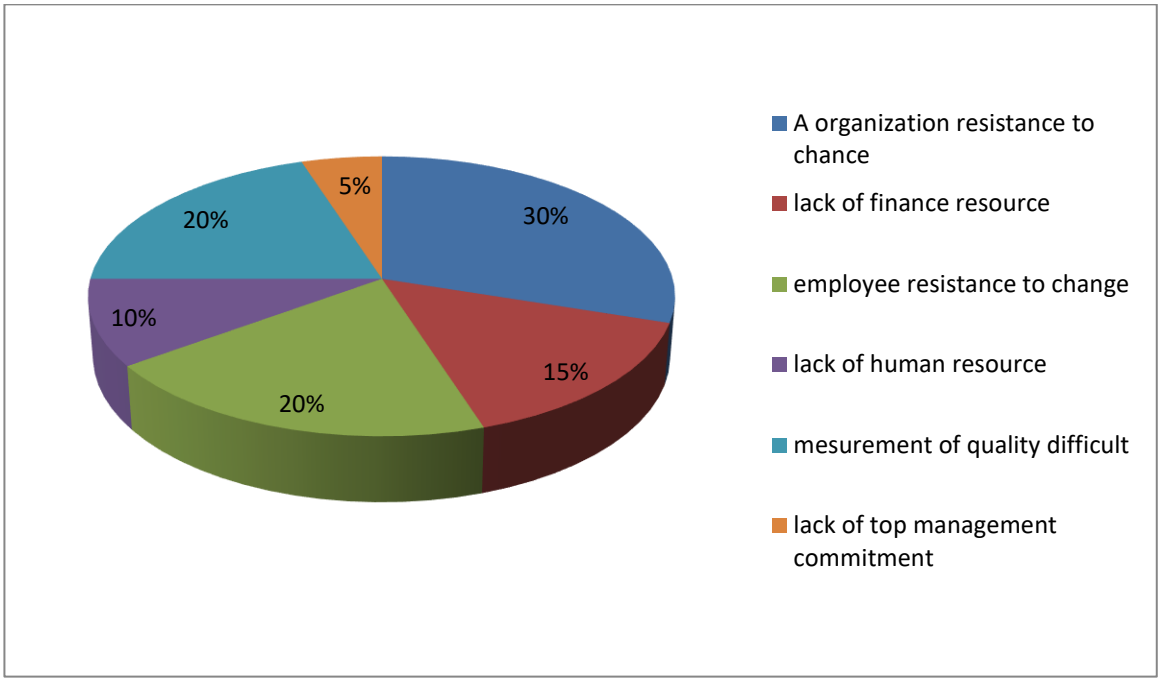
quality improvement project	10
mission statement	10
management training	10
team building	25
service quality training	25
customer satisfaction service	10
if any please specify	10



The study found that 25% responded said that service quality is must were as 25%responded customer satisfaction service 10% responded management training 10% responded team building 10% responded service quality training 10% responded customer satisfaction service 10% responded if any please specify

What could be possible difficulties faced in the implementation of total quality management

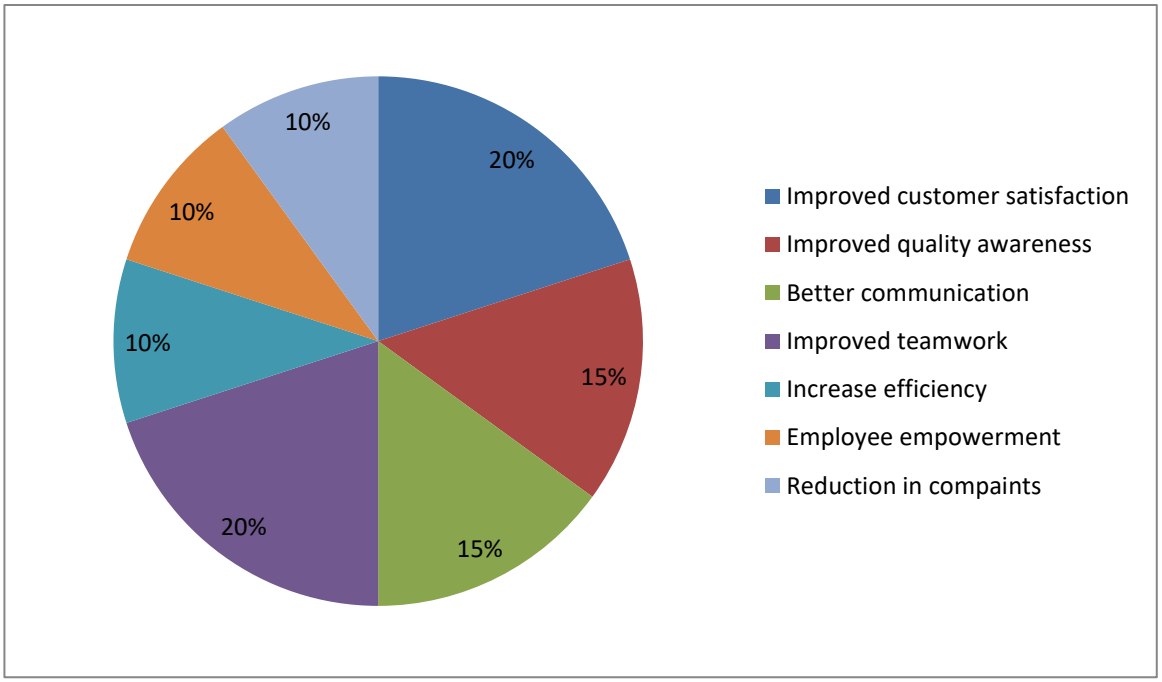
A organization resistance to chance	30
lack of finance resource	15
employee resistance to change	20
lack of human resource	10
mesurement of quality difficult	20
lack of top management commitment	5



The study found that 30% responded a organization resistance to change for change 20% responded felt employee resistance change 20% responded measurement of quality difficult 15% responded lack of finance resource 10% responded lack of human resource 5% responded felt lack of finance resource

What could be possible impact on your organization with the introduction of total quality management

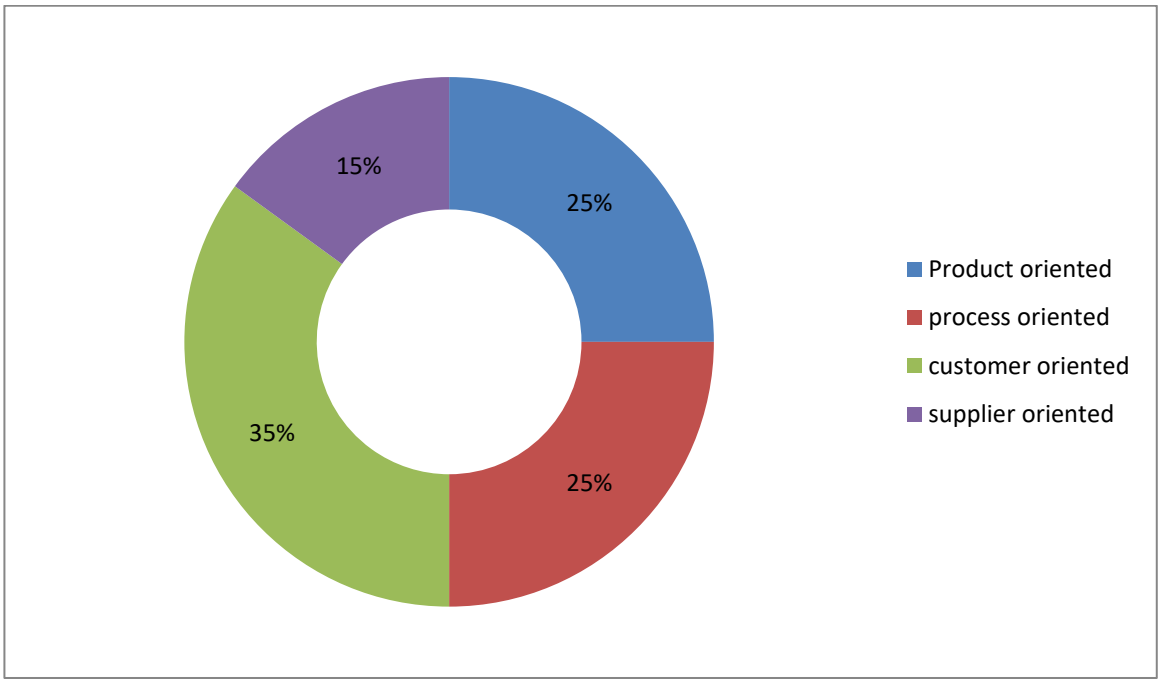
Improved customer satisfaction	20
Improved quality awareness	15
Better communication	15
Improved teamwork	20
Increase efficiency	10
Employee empowerment	10
Reduction in compaints	10



Study further revelead that regarding impact of development 20% responded felt improved customer satisfaction 20% responded felt improved customer satisfaction for team work 15% responded improved quality awareness 15% responded better communication 10% responded felt increase efficiency 10% responded empowerment 10% responded reduction in compaint

Traditional culture of quality requirement focuses on

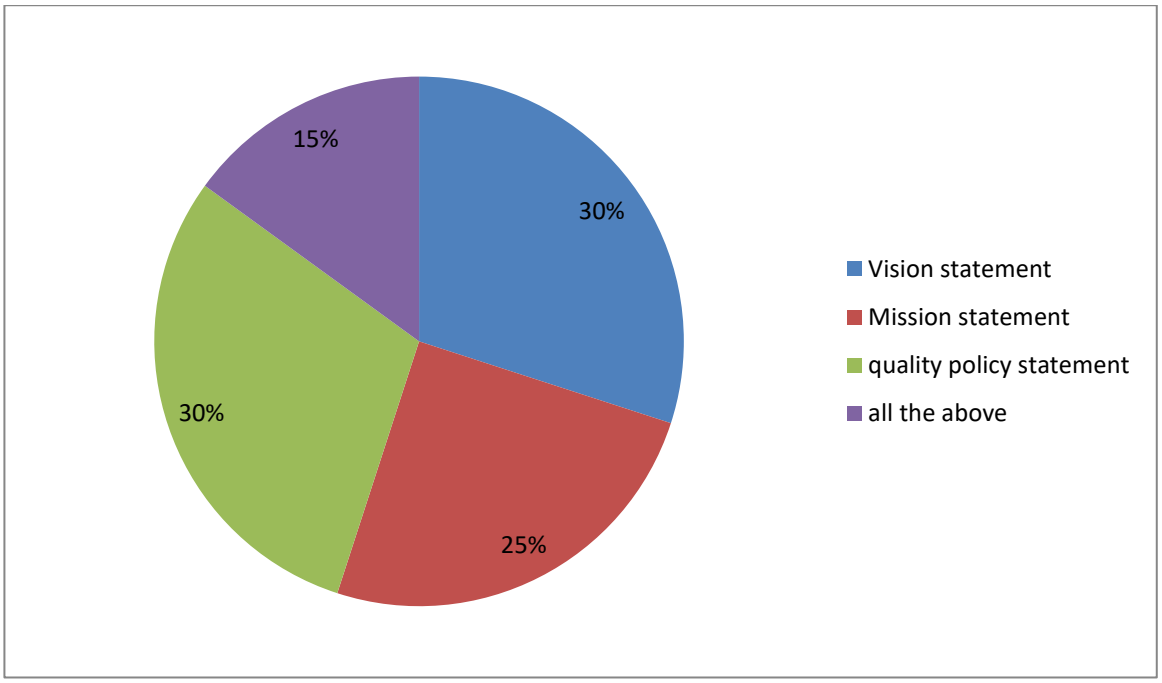
Product oriented	25
process oriented	25
customer oriented	35
supplier oriented	15



To a query regarding traditional culture of 25% of responded felt for product oriented 25% process oriented were 35% favored customer oriented process were 15% supplier oriented

What are three element of quality statement

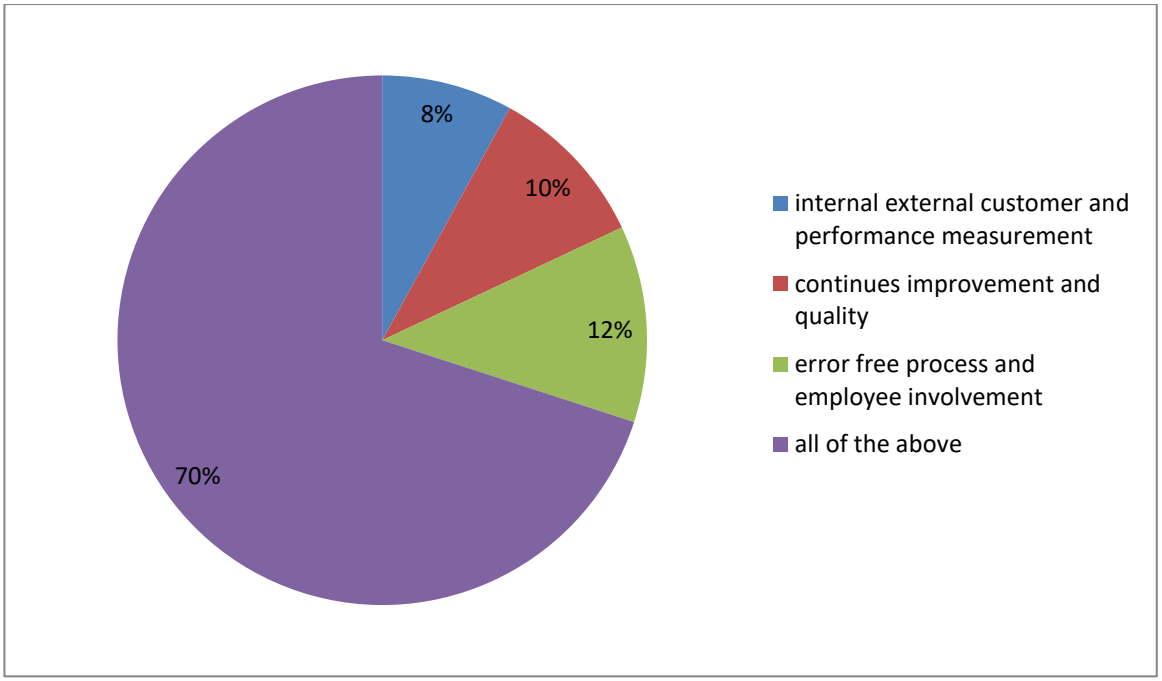
Vision statement	30
Mission statement	25
quality policy statement	30
all the above	15



The study revelead that 30% responded favored for vision statement 25%responded felt mission statement 30% responded quality policy statement 15% responded all the above statement TQM

The main element of Total quality management are

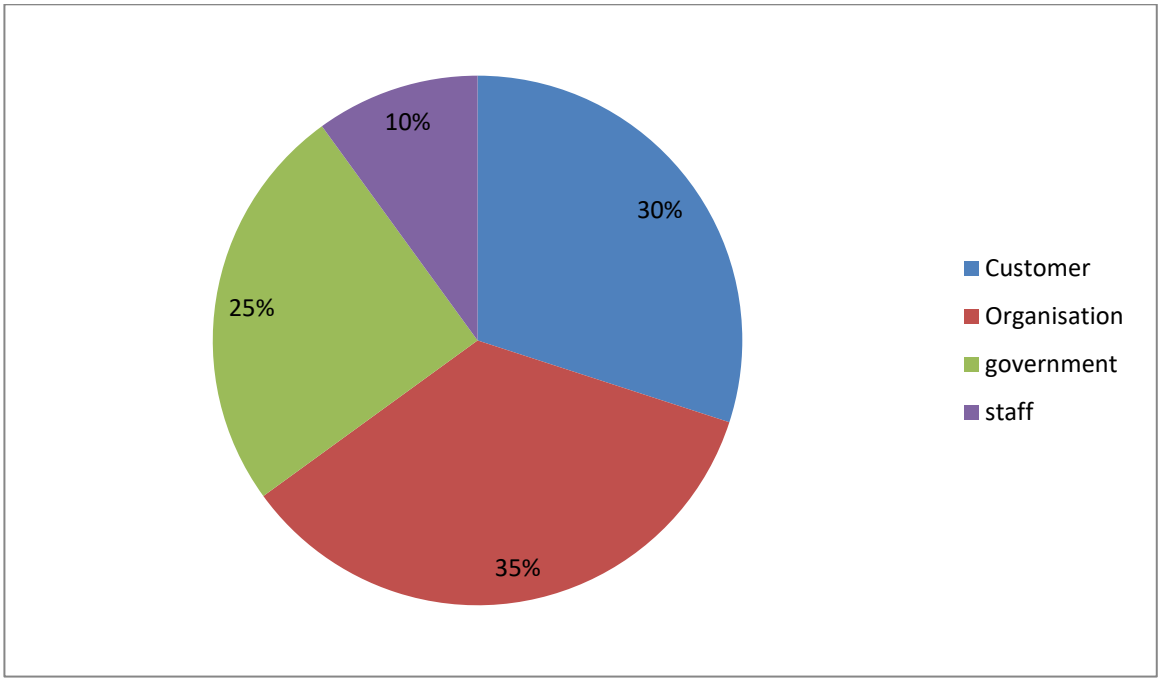
internal external customer and performance measurement	8
continues improvement and quality	10
error free process and employee involvement	12
all of the above	70



The study revelead that 70% respondend contionues improvement and quality 12% respondend error free process and employee involvement.

Total quality management is system of contionus improvement employing and partcipative management and centered on need of the

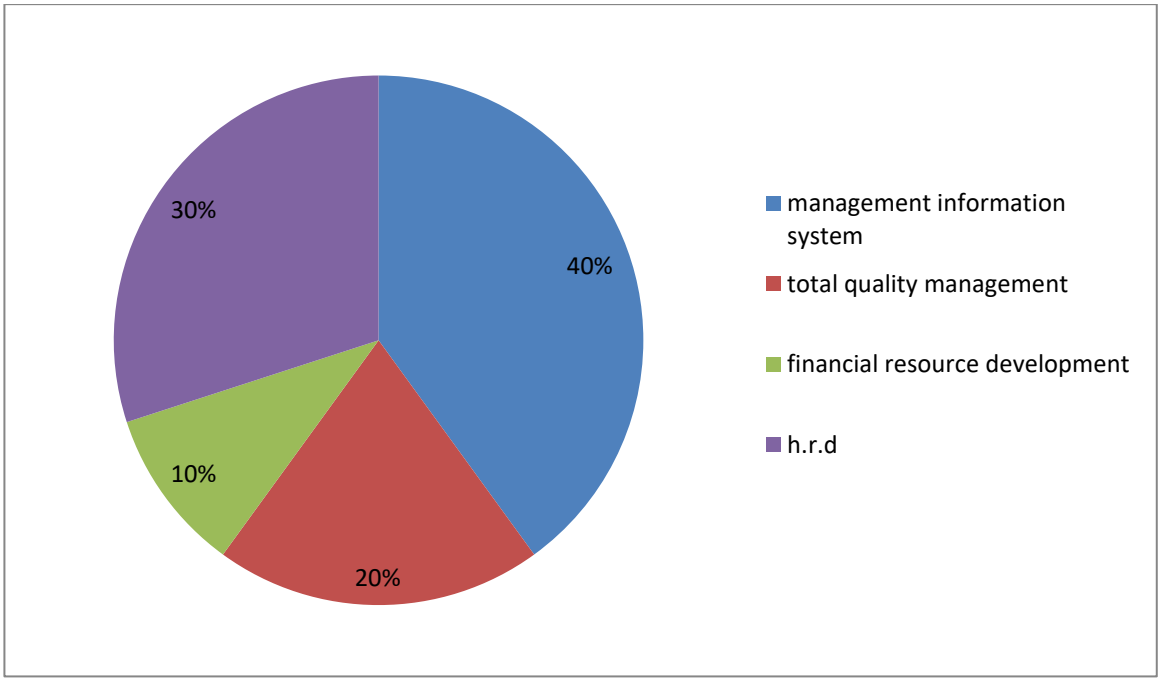
Customer	30
Organisation	35
government	25
staff	10



The study revelead that 35% responded organization then 30% responded customer 25% responded government 10% responded is of prime important with partipative management

It is process of helping employees in and organization to achieve new skill and competence on contionus basis

management information system	40
total quality management	20
financial resource development	10
H.R.D	30



Data show that 40% majority of responded are happy with management information system but 20% of responded are decline the change in total quality management but very few responded are adopted

CHAPTER : 6 OBSERVATION, FINDING, SUGGESTION, AND CONCLUSION

6.1 Introduction:

The number of challenges have been identified in using the available tools and techniques for adopted best practices in the library. Similar challenges were pointed out by particpants as challenges that the library may face in implementing best practices. The proposed observation for the library to successfully design and implement are based on finding in the study and these observations are presented in the form of strategies for the library to successfully design and implement it.

6.2 FINDING

1. The study found that printed book are highly usable.

2. Case Study also found the student shall be given computer access for maximum place.

3. Study also found reading book are used for researcher and student

4. The study also found that quality assurance must be maintain all libraries

5. All the libraries should adopt quality standard that is ISO 9000

6. The study also found that continuous improvement in quality training, team building and customer satisfaction should be maintain all level

7. The study found that in difficulty in implementing TQM due to many reason including resentencing of management and employee

8.The study also revised that TQM has few impact on customer satisfaction, improved quality, improvement efficiency, and better working environment

9. The study also found that three major element of TQM is vision student, quality policy statement mission statement at all level

6.2 SUGGESTION

1. it is suggested that Be Progressive by regularly asking your employees for suggestions

2. it is suggested that to Remove fear by focusing on the library process and not on the person.

3. it is suggested that a simplify the process so it is easy to participate in library activities

4. it is also suggested that to Respond Quickly to suggestions and within specified period of time

5. it is also suggested that to reward the idea with published recognition so that everyone knows the value of contribution.

6. it is suggested that clearly communicate and acknowledge the importance of each individual contribution to the completed library product.

7. It is suggested that Stress that each team or individual accepts ownership and give them the responsibility and opportunity to solve problems when they arise.

8. It is suggested that encourage staff of library to self-evaluate performance against personal goals and objectives, and make modifications as necessary to improve workflow.

9. It is suggested that acknowledge successes and optimized performance to build confidence in your employees and your stakeholders.

10. It is suggested that make responsibilities clear, provide adequate training, and make sure your resources are used as efficiently as possible.

11. It is suggested that Encourage people to continually seek opportunities to learn and move into other roles to increase their knowledge, competence, and experience.

12. It is suggested that Create an environment where employees can openly discuss problems and suggest ways to solve them.

13. It is suggested that individual and team innovation and creativity in problem-solving and process improvement

14. It is suggested that employees who take pride and accountability for their own work

15. It is suggested that enthusiasm for active participation and contribution to continual improvement

6.3 CONCLUSION

This concluding chapter has focused on making practical and appropriate recommendations for the elimination of the deficiencies in implementing TQM at SA Air Force Bases that were identified through an analysis of the responses to the questionnaires. The suggestions made for each objective are essential for the successful implementation of TQM at air force bases. Furthermore, the recommendations made in this chapter, stretching over all 14 dimensions and ranging from improved leadership to the management of processes, present a framework on which a full action plan can be developed for TQM at air force bases. It is also suggested that it is possible to evaluate the nature and scope of TQM implementation, based on a framework, as an internal organisational arrangement for personnel at SA Air Force Bases, in a scientifically responsible manner and to make recommendations on what can be done to eliminate specific deficiencies.

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Questionair for libraians.

1. Name of the collage

2. Years of establish of collage

3. Homepage/URL

4. Specify the library collection in the table below

4.1 print resource (please tick)

book	Current journals	Journal back volume	Thesis dissertation	Strandard/patent

4.2 electronic resource (please tick)

e-book	Book with cd	e-journal	Cdrom	Online database	Multimedia documents

5 does your library provides following facilities please tick

Respones	Yes	No
Research independently in stock room		
Research with group		
Utilize computer digital technology		
Connect my laptop to the internet		

6 Which of the the following library service your readers under frequently? Please tick

Responses	yes	no
Computer access		
Traditional printed resource		
Meeting/study space		

Indexes compilations		
Inter library loan		
Video material		
Web connection to laptop		
e-journals electronic resource		
e-book		
Research service provided by library staff		

7. Quality checklists are used to

A. ensure that quality assurance step were followed ☐

B .Keep quality inspectors busy ☐

C. inform upper management where failures occur ☐

D. Prevent project audits ☐

8 what quality management approaches is/are practiced in your organization.

A. Total quality management ☐
B. Iso 9000 series ☐
C. Process re-engineering ☐
D. Strandard setting ☐
E. Audit approach ☐
F. Inspection ☐
G. None ☐
H. If any other please specify…….

9. What are the method adopted to implement quality customers satisfaction survey Quality improvement project

A. Quality improvement project ☐

B. mission statement ☐

C. management training ☐

D. leadership training ☐

E. team building ☐

F. service quality training ☐

G. Customer satisfaction service ☐

H. if any other please specify 

10. What could be possible difficulties faced in the implementation of total quality management.

A. Organization resistance to change 

B. Lack of finance resource 

C. Employee resistance to change 

D. Lack of human resource 

E. Measurement of quality difficult 

F. Lack of top management commitment 

11. What could be possible impact on your organization with the introduction of total quality management.

A. improved customer satisfaction 

B. improved quality awareness 

C. Better communication 

D. improved teamwork 

E. increase efficiency 

F. employee empowerment 

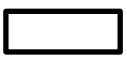
G. Reduction in compaints 

12. Traditional culture of quality requirement focuses on

A. product oriented 

B. process oriented 

C. customer oriented 

D. supplier oriented 

13. What are thee Element of quality statements

A. vision statement

B. mission statement

C. quality policy statement

D. All the above

14. The main elements of total quality management is/are

A. Internal external customer and performance measurement
B. Continues improvement and quality
C. Error free process and employee involvement
D. All a b and c are correct

15. Total Quality Management is a system of continuous improvement employing participative management and centered on needs of the

A. Customers
B. Organization
C. Government
D. Staff

16. what is the barrier in implementing total quality management in a library and information units

A. Vocabulary barriers
B. Commitment barriers
C. Process barrier and professional barriers
D. All a, b, c are correct

17. It is process of helping employees in and organization to achieve new skill and competence on continuing basis

A. Management information system
B. Total Quality Management
C. Financial resource development
D. H.R.D

18. The concept of T.Q.M is centred around the idea of

A. Scientific management
B. Timeliness of services

C. Customer focus

D. Quality circle

Questionair for users

Name of the student

1.What do you means by total quality Management

A. Improved quality

B. Improved teamwork

C. Better communication

D. Customer satisfaction

2. How frequently do you refer them

A. Monthly

B. weekly

C. Occasionally

3. Is your library is automated

A. YES

B. NO

4. Do your library have internet facility

A. YES

B. NO

5. How T.Q.M help in library

A. Quality

B. just in time

C. ISO 9000

D. A, B, C, ARE CORRECT ☐

6. Do you have any problem if your library adopt T.Q.M facilities for library service

A. YES ☐

B. NO ☐

7. If your library start using T.Q.M would you like to receive tanning/assistance to use to service through T.Q.M

A. YES ☐

B.NO ☐

8. Are you aware of T.Q.M service which can be provided by libraries to its users

A. YES ☐

B. NO ☐

9. Do you think use of T.Q.M can help in providing library service to its users

A. YES ☐

B. NO ☐

10. Please tick benefit of T.Q.M

A. Systematic procedure ☐

B. Scientific procedure ☐

C. Optimum output ☐

D. Efficiency service ☐

E. Visionary forecasting ☐

Synopsis of Project Report

Title:

"Total quality management in libraries to support students and facility: A study''

Dissertation

Submitted by

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Towards the partial fulfilment of requirement of the

Masters in Library and Information Science (M.L.I.Sc)

2021-2022

Total quality management in libraries to support students and facility:

A study

Introduction:-

The growing need of information make the librarian to think the logical way so as to satisfy the user at a large library is a center of any academic institution while classroom teaching provide for learning the libraries disseminate a wide range of knowledge required to excellent and intellectual height libraries supplement the instructional work of classrooms and carried forward the ideals of education thus the libraries provide the informal education guiding the learner to search vast range of material available.

Review of literature :

1) Astunkar (2016) [3] studied that total quality management library and information services. He have investigated application of TQM philosophy among different organization and especially in libraries. author is tried to get the information regarding the service sectors which applying this kind of management system. TQM changed the mindset of library professionals to bring changes in organizational structure. He also disclosed team work is the best combination of quality services of any services or organization sector.

2)Rani (2016) expressed that TQM provide users satisfaction and managed the services effectively. This will help library to fulfill the requirement of the users with the application of TQM. TQM help the library staffs to make library organization in better way. TQM will be the responsible for lower cost and high quality service to the library users.

3) Dash, J. (2008) studied the total Quality Management in Libraries-a Perspective approach. He has investigated the total quality management in library and information services. He also presented the benefits and challenges related to total quality management in library and information services. The author's added that TQM is the techniques and methods which provide a platform to make better services of an organization. He has pointed out some technical tolls which are very much crucial to make good quality services.

Objective:-

- To identify the process involved in total quality management
- To understand the continuous improvement in process of total quality management
- To acquaint with latest trends in total quality management

Scope:-

- The scope of study will include the study of different aspect of total quality management and it will benefit the reader and library equally.

Hypothesis:-

- Total quality process needs awareness and confidence

- The library professional lacks initiative to implement total quality management
- Total quality management process need technological knowledge

Limitation:-

The study is limited to 50 libraries of South Goa district of Goa State.

Research Methodology :

- The researcher will browse all the literature available on the topic.
- Further the researcher will also visit all the websites related to the topic.
- The researcher will visit the different stakeholders and experts asserting the opinion.
- The researcher will conduct interview with all libraries regarding use of total quality management.
- The investigator will discuss with experts to analyse the functioning of the topic.
- The investigator will try to collect different information by using different tools such as questionnaire, interview and personal discussion.
- This investigator will make the use of suitable statistical techniques in finalizing the data with required charts and graphs in presentation to make the interpretation clear and precise.

Population to study:-

The study will include around 100 library professionals.

Organization of study:

- Chapter I : Introduction
- Chapter II : Review of Literature
- Chapter III : Total quality managements and its concepts
- Chapter IV : Total quality management at National and International level
- Chapter V : Data Analysis and Interpretation
- Chapter VI : Observation, Findings, Suggestions and Conclusion.

Conclusion:-

The concept of total quality management is emerging in libraries and study will highlight the modern concept of total quality management among library professional.

References :

1). Astunkar, D. S.(2016). Total Quality Management in Library and Information Services,. *Abhinav International Monthly Refereed Journal of Research in Management & Technology*,5(5), 43-48. Retrieved April 22, 2019, from http://abhinavjournal.com/journal/index.php/ISSN-2320-0073.

2)Rani, M. (2017). Total Quality Management in Womens' University Libraries in India: A Study *(Doctoral dissertation, Department Of Library and Information Science, School For Information Science and Technology, Babasaheb Bhimrao Ambedkar University).*

3)Miller,R.G.,& Steams,B. (2019). Quality Management for today's academic library. *Collage & Research Libraries news*,55(7),406-422.