CHAPTER 2
REVIEW OF RELATED LITERATURE

2.1 Introduction

The systematic study of a subject warrants a detailed account of the earlier studies conducted in the field. Literature review is an attempt to identify, locate and synthesize completed research reports, articles, books and other materials relevant to the specific problem of research. The review may be done on published sources such as journal articles, conference papers, research abstracts, chapters of books etc. or unpublished sources like theses, dissertation etc. Familiarity with the literature in any research problem helps the researcher to discover what is already known, what others have attempted to find out and what problems remain to be surveyed. Moreover, the survey of literature is helpful in avoiding duplication and errors committed by investigators.

2.2 Studies related to TQM in University Libraries

The purpose of the paper entitled “Ten years after: measuring quality revised” by Roswitha PolI¹ is to present the new edition of the IFLA handbook “Measuring Quality” that since its publication in 1996 has influenced performance measurement in many countries. The handbook developed out of work done by the IFLA section for University and other research libraries. The members of a special working group tested existing and new performance indicators in their libraries and finally chose a set of 17 indicators for the handbook. The article says the handbook tries to show a set of performance indicators that cover the full range of present services in academic and public libraries. It is also consistent and manageable, answering the interest of librarians who want to evaluate their services as to reliability, speed and user orientation.
Nana Turk\(^2\) in the article entitled "Building a Culture of Quality Assurance in the Libraries of the University of Ljubljana", examines the measures for assessing the library performance from three perspectives; efficiency, effectiveness and service quality. Libraries of the University of Ljubljana are taken as cases and the concepts of the measurement of library performance are discussed.

Changizhi Zhan and Hongxia Zhang\(^3\) in their study comment that quality management blossom first in Japan and later in US and UK industry. Since then, the theory of quality management has been growing rapidly. Now, it has become a management philosophy and has taken shape in a series of International Standards in the ISO 9000 series. The article describes how TQM turned and ordinary library into something different and is a general review of the progress made in Hainan University Library. The library implemented TQM in July 2004 and passed the authentication of ISO 9000; 2000 in 2005. The article describes how a silent ordinary library has made a difference and moving towards the international arena. H.Y.Wang\(^4\) stated that quality management has become increasingly important for Universities and colleges to stay competitive within the global trade community. The study discusses the concepts of ‘quality’, ‘quality management’ and ‘quality assurance’, the introduction of ISO 9000 standards, including the 1994 edition and 2000 revision, the interpretation of the steps for implementing ISO 9000, the practical experience of Chang-Shan Medical University Library and the benefits and issues for consideration. Also compares ISO 9000 with TQM.

Total Quality Management is a prevailing response to the bottleneck of management in an organization. C.B. Chang\(^5\) says that TQM might offer an alternative solution while libraries are faced with difficulties such as budget cuts, the downsizing of human resources and the challenge of information brokers. The study introduces the theory and content of TQM and discusses its application in the management of University Libraries.

Suresh Chander... et al.\(^6\) explains Total quality service (TQS) as a socio-technical approach for revolutionary and effective management. However, the contemporary quality management literature is overriding manufacturing oriented and there
seems to be a dearth of comprehensive studies (from the management’s perspective) addressing the critical dimensions of TQS that will depict a holistic TQM philosophy in service organizations. The present study is an earnest endeavor to fill this void. Based on a thorough review of the prescriptive, practitioner, conceptual and empirical literature, the study has identified 12 dimensions as crucial for the inculcation of a TQM ambience in a service set-up. The criticality of each of these dimensions from a service perspective is corroborated in detail. An instrument for measuring TQS with specific reference to the banking sector has been developed. Data have been collected from executives from banks in a developing economy. The instrument has been empirically tested for unidimensionality, reliability and constructs validity using a confirmatory factor analysis approach. A model for TQS has also been proposed, illustrating the relationships between the various dimensions. The present research work offers a systematic framework for the conceptual and empirical understanding of TQS and its critical factors.

In the article entitled “Application of Total Quality Management to the University Library in Punjab; a study”, K.C.Dabas and S.Singh present the findings of the study conducted to measure the application of TQM in the University Libraries in Punjab. Studied quantitatively 4 university libraries focusing on the allocation of the library budget, use and growth of the university libraries, documents added etc. Also explains the university librarians’ rating of TQM, Quality of services, Deputy and Assistant librarian’s perspective of TQM and users’ views of quality in university libraries.

E.Kuhmer presents the method and practical applications in a university library for several TQM techniques. The techniques adopted for the study have contributed to the revelation of problems and the improvement of service quality.

Lawrance W.H. Tam in his article outlines the theory and elements of quality management, employing, Deming's method to compare practices in several academic libraries in Australia. The article points out that the efforts made by Australian academic libraries on the question of quality are comparable to top level
industry standards, although there are variations in approaches to QM among the university libraries. The author concludes the article stating that TQM does not offer ethic solution; it has to be implemented by incremental changes leading to continuous improvement. If TQM cannot be implemented as an integrated exercise across the whole library, it could be applied to specific areas of library operation.

The paper presented at the Turkish librarians association's 50th anniversary symposium by S.Cukadar10 examines the effect of TQM on library services. Also describes the TQM model developed by Istanbul Bilgi University for its user services and acquisitions department. Analysis of the questionnaire shows that, as in any service sectors, the implementation of TQM practices in libraries increases the quality of customer services.

The impact of the change in management approach from hierarchy to teams and the differences between the expected and actual results that the change engendered was analyzed by I. Owens11 in his study. The investigation developed a case study from the Author's research conducted in 1996 at a south western US university, where a change was made from hierarchy to team within the contents of TQM and compare this case study with a similar study conducted at Duke University library, North Carolina. The aim of the study was to ascertain the degree to which the goals of the change are met and/or exceeded. He concludes the study stating that the implications for change from hierarchy to team management benefiting the full time staff and users as well as students assistants.

A.G. Sanchez & M.M.G. Zapata12 report on their work at the Scientific Information Centre of the Cuautitlan Faculty of Higher Studies, part of the Autonomous University of Mexico, initiated in 1995 to establish a programme of continual improvement of services using quality circles. Drawing on the methodology of Total Quality Management, International Standards Optimization and Strategic Planning, data were gathered from a user survey to analyze existing strengths, weakness, opportunities and threats. Quality circles for each section of the Centre then identified the critical processes involved in the present environment.
Coleman...et al. reports results of a questionnaire user survey conducted at the Sterling C. Evans Library, Texas A & M University to measure the quality of the services provided to library users. The survey results reveal a discrepancy between the quality of the services provided by the library and those desired by its customers.

A 7 Step process based upon The Total Quality Management co-operative problem solving principle was adopted at Wayne State University libraries Michigan, USA to construct a cost effective rational cross training programme designed to improve reference, referral service among its 5 libraries. A study on this by L. Spang illustrates practical steps for managers and librarians in formulating programme objectives and structure and provides a perspective on changing manager and librarian roles in service education.

M. Cooper reviews cases where Total Quality Management has been successfully used in libraries and information services and includes an outline of its implementation in selected case studies on Oregon State University, Georgia Institute of Technology, Monash University, NIRC and Telstra-Australia.

S. Corrall discusses TQM as a general management technique for measuring and maintaining levels of quality within organizations with particular reference to the book acquisitions pilot project and other projects undertaken at Aston University, Library and Information Services.

In the article entitled “Total Quality Management of university libraries in India”, R.K. Rout explains Total Quality Management (TQM) as a system of continuous improvement employing participative management and centered on the needs of customers. The author discusses how the Quality Circle, a new approach to library management, can be adopted to achieve success in the library operation and programmes. Implementation of TQM in the university libraries is discussed and TQM-MODEL is suggested to bring a total quality approach for a customer – focused library. TQM aims at introducing a new cultural change which is likely to bring about greater participation of the employees in information management activities in the university libraries.
N. Littlejohn and B. Wales report that as part of a University-wide programme of total quality improvement the library at Central Missouri State University conducts ongoing assessment activities. One major component is the internal unit assessment. This review of individual library units gathers input from both internal and external clients and from the unit’s employees. Using a variety of evaluative tools, the unit review investigates the unit’s efficiency of operations and communications; client satisfaction; response to new technologies and declining fiscal resources; and the unit’s relationships within the organization. This tool offers a practical and productive approach to unit assessment with great flexibility for application in many library settings.

2.3 Studies related to Total Quality Management in Libraries other than University Library.

Jie Yang in his study on managing knowledge for quality assurance examines the relationship between knowledge management and the quality of new product and the different patterns in which knowledge acquisition and dissemination affect the quality of new product. He found out that there is significant relationship between knowledge management and quality. The study also implies that if an organization fails to understand the subtle ways by which different dimensions of knowledge acquisition and dissemination influence product quality they may fail to harvest the full value of knowledge management in quality assurance.

David Livingston in his article describes TQM as an indispensible factor for betterment and also for survival of library and information centers. The article also explains the essentials of TQM and the necessity for implementing TQM in library and information centers with special emphasis to bench marking.

The article entitled “Total Quality Management in Library and Information Services” provides information on the training programme on Total Quality Management in library and information services which was conducted by the Indian Institute of Management, on March 22, 2004 in India. Most of the participants were senior professionals in the information sector. The article by
M.K. Singh concluded that the programme enabled the professionals to cater the client needs and they can sustain cost effective in all areas of information service also great understanding of TQM and its conceptual framework is explained as an achievement of the programme.

M. Bavakutty and K.C. Abdul Majeed in the book entitled “Methods for Measuring Quality of Libraries” suggests that every library exists to satisfy the needs of the customers and aims to achieve cent percent customer satisfaction, however there may be some discrepancy between what libraries provide and what the customers actually need. This mismatch results from the failure of the library to meet the customer needs. Therefore it is necessary to have some system through which the customer needs are heard and these must be used to improve the quality of the libraries. Several methods to measure, control and improve the quality of a library is explained in the book. The book is a valuable resource for librarians and researchers for being acquainted with various methods of measuring the quality of libraries.

P. Mounissamy and B.S. Rani in the study on the application of TQM in library and information services suggests that in this age of Information and Communication Technology (ICT), library and information centers should be treated as industries were the end users are the customers. Library and Information centers (LIC) are responsible for keeping the customers satisfied using the available ICT and supported by TQM techniques. The authors discuss quality management tools, techniques and applications in LIC, influence of ICT etc. Regional Engineering College, Tiruchirappaly, Tamil Nadu is taken as a case and studied the quality management services at the case.

The study entitled “ISO 9000 implementation in Thai Academic Libraries”, examined the quality assurance models and practices currently utilized in Thai Academic Libraries with a special focus on the ISO 9000 implementation process that has been completed by Thai Academic Libraries. The study utilized surveys to determine which quality assurance models were being used in academic libraries. Case studies were then prepared and presented on those libraries that have
implemented and certified ISO 9000 standards through questionnaire and personal interview. The findings of the study indicated that unlike other organizations, Thai Academic Libraries did not experience much difficulty in ISO 9002 implementation and certification. The study concludes that even though ISO9000 will be utilized and considered for future implementation in Thai Academic libraries, one thing the senior librarians learned was that it was difficult to interpret ISO 9000 requirements. Since it is a generic standard, it is time-consuming to learn and develop to fit an organization; this suggests that ISO 9000 consultants and training activities are very important in the ISO 9000 implementation process.

K.C. Abdulmajeed and M. Bavakutty in the article “Assessing the Quality of Information Sources and Services in Academic Libraries: a new management technique for librarians in the technical age”, explains library as a service organization dealing with tangible assets and intangible services. The tangible assets of a library include the library building, furniture, equipments, information resources and staff, and the intangible services includes all services rendered by library staff to its users. Both tangible assets and intangible services are evaluated in the light of changing face of libraries and users. The paper discusses how the quality of service provided in libraries can be measured and used for improving library services and attracts more users. The results of the study conducted in a post graduate college library to see how far the service quality determinants are applicable in libraries are also discussed.

Jo Bell Whitlach in his study described 3 possible scenarios for the future of reference services outsourcing, the web and knowledge counseling. The ability to design reference services that users will continue to value in libraries of the future is limited by current professional reference practices. These limits are related to the failure to incorporate Total Quality Management principles into the design and practices of the present day reference service. The TQM principles utilized to discuss the contrasts between TQM principles and Current Reference Practices are focused on customer, quality work the first time, strategic holistic approach to improvement, continuous improvement as a way of life and mutual respect and
teamwork. The roles that library organizations must fulfill the change the current professional culture are described.

Siraj Nissa Begum in the article entitled “Total Quality Management in the Academic Library” explains how to manage quality in an academic library meeting customer expectations. The author suggests the expectations that the customers bring to a library have a critical effect upon their perceptions of quality. Properly planned user education is a must for an academic library. Public services staff must be carefully appointed and be given periodic training to keep up-to-date. Well-trained staffs 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.

Better quality is not more but less expensive; this fundamental thesis of quality management is still the basic pre requisite for TQM. R. Pehlke reveals in his article that although studies have shown that TQM’s positive effects could not be proved, TQM has continued to make headway in the service sector gradually too in public services including libraries.

H.Y. Wang stated that quality management has become increasingly important for universities and colleges to stay competitive within the global trade community. The study discusses the concepts of “Quality”, “Quality Management” and “Quality Assurance”, the introduction of ISO9000 standards including the 1994 edition and 2000 revision, the interpretation of the steps for implementing ISO9000, the practical experience of Chang-Shan Medical University Library and the benefits and issues for consideration. Also compares ISO9000 with TQM.

Z. Moh’d discussed in his study the concept of TQM its relevance, the challenges in its implementation in libraries and information centers and the way forward. He argues that the application of TQM to library and information centers should be encouraged in treasury institutions where there are constant changes in curricula and academic programmes to cope up with the dynamics of the 21st century.

Devinder K. Banwet & Biplob Datta investigated the quality of services offered in a reputed institute in New Delhi. Attribute level service quality, importance,
satisfaction and post visit intentions have been measured twice during a period of six months. A modified SERVQUAL questionnaire has been used for the study. The tangible and intangible dimensions of service quality have been measured using the 22-item Likert type seven point scales. The sample consisted of 120 students who use the library. Responses to the service importance scale clearly indicated that students placed more importance on the outcome of library services than other service dimensions. The study indicated that the service performance level had declined during a six months period in the library and also identified areas for improving a quality of services being delivered. The results also indicated that service managers must frequently and carefully monitor and control service performance in order to build a consumer – focused attitude towards service delivery.

The article on “TQM and ISO9000 in the context of academic library services”, G.T. Selvy32 argues that a value added information service can only confirm to the requirements of users and user satisfaction, achieved only by the implementation of TQM principles in library and information services. To achieve and implement TQM for the system, library professionals need to learn and understand the core concept of TQM and ISO9000. Defines what are quality service and the steps necessary for its provision in the context of academic libraries.

G. Solinas33 in his study examines the key role that knowledge management plays library reorganization, in the context of Total Quality Management. Describes the three distinct types of library knowledge – tacit, explicit and contextual; outlines what a learning library is, shows how knowledge can be formalized for different purpose in a library quality system.

Quality has become a necessity in this age of technological advances. N. Varatha Rajan and B. Ravi34 in the article describe the concept and importance of TQM in libraries. The article presents the features of TQM, major quality factors in libraries, advantages of TQM in libraries etc. The authors discusses service quality and points out that TQM could be the catalyst that motivates librarians to examine
issues such as librarianship, staff empowerment, incentive programs, work simplification, innovation and performance evaluation.

R.H. Walmiki\(^35\) in his study ‘Total Quality Management in Librarianship’ sifts through various definitions of quality. The study explains the genesis, meaning and elements of TQM. The paper also seeks to relate the need for TQM in library and information centre. The author suggests that implementation of TQM in library services requires change in the mental frame of the employees and each employee has to be familiarized with the tenets of TQM and problem solving techniques. The article entitled ‘Indispensability of Total Quality Management in Library and Information Centre’\(^36\) suggests that TQM is a positive way of managing the effectiveness, efficiency, flexibility, competitiveness of an organization where it is a joint responsibility of one and all. The study presents the quality concepts characteristics of TQM and its application in library and information services. Explains the SERVQUAL model and guidelines for the successful accomplishment of TQM in library and information services.

Prashanta Kumar Behera and Bibhuti Bhusan Sahoo\(^37\) in the article explains the benefits from quality system, various steps of TQM, introduction of TQM in libraries, necessary prerequisites and methods to be adopted in Library and Information Service activities. The study also presents how libraries have improved with TQM and the areas of application, benefits, barriers and potential challenges to the adoption of TQM. The authors also suggest main points to develop the TQM in libraries.

J.M. Wilhite,\(^38\) in the article ‘Service Standards for the Metropolitan Oklahoma City Government Document Depositories: the road continues states that in from red tapes to results’, US Vice President Albert Gore established a 3- step process for the creation of service standards. Describes the third step following this methodology, the production of public service standards for the Metropolitan Oklahoma City Document depositories using data from the previous two surveys, a patron and an employee survey and total quality management.
The Total Quality Management directs all the library activities towards the fulfillment of needs and requests of library users and of the broader community, says E. Glowacka in his article “Library Marketing and Total Quality Management in Libraries”. He further suggests that, to achieve these ends the library should continuously monitor user needs and the degree of satisfaction, organize collective work, increase responsibility of its staff members for the library work, allow for continuous training and professional education, adopt correct management attitudes unleashing staff initiatives, determine quality indicators and continuous use of these indicators in library work.

A.A. Alemna in his article stressed the importance of marketing and TQM in libraries. Takes the view that the conditions which challenged libraries in developed countries to adopt marketing and TQM strategies are currently very much prevalent in Ghana. However, it is not clear if library managers are affecting the necessary changes to satisfy their users. There is therefore the need for libraries in Ghana to adopt these initiatives in order to ensure their continued use and importance. Failing this, the continued survival and sustenance of libraries in Ghana may be in Jeopardy.

L.S.R.C.V. Ramesh describes the range of ISO9000 standards in the context of total quality management in general. The adoption of TQM in libraries is discussed in terms of integration of staff and services, the concept of continuous improvement; top management commitment; leadership issues; investigation of user needs and human resource development.

R. Raina and K. Dayal report in their study the positive effects of using well thought out library acquisitions and collection development instruments, at the Indian Institute of Management, Lucknow, for ensuring that the resulting collection is an active rather than a passive one. The acquisition policy, budget allocation policy etc. are analyzed in detail and the study is concluded that it is the quality of the collection rather than its quantity, which is the key to success. The challenges faced by library managers such as communication, team based management, shared organizational vision, trusting relationships between staff and users. The study
explores the gaps in service due to lack of leadership training and provides ways to promote quality service in libraries.

G. Aslan presented a paper at the Turkish Librarians' Association's 50th anniversary symposium: 'Adventure of Information, its past present and future', November 1999. Quality management has spread widely in the last two decades both in private and public sector organizations dealing with either products or services. There are various approaches to quality management. Turkey's State Planning Organization aims to cover total quality management in public sector organizations dealing with either products or services. There are various approaches to quality management. Turkey's State Planning Organization aims to cover total quality management in the 8th Five-Year Development Plan. Surveys approaches to quality management in public sector libraries in the USA, the UK, Australia and Turkey. Argues that quality management philosophy can be beneficial in the development of LIS with its customer focus and the idea of continuous improvement.

B. Snoj and Petermanec suggest that the awareness of the quality of library services requires at least a basic knowledge of marketing. They further states that the evaluation of the quality of library services is carried out by means of different performance indicators, methods and programmes; libraries will have to give up their classical role of only offering books and periodicals and become user centered.

Paper presented at the 5th National Convention for Automation of Libraries in Education and Research (CALIBER-98), at Bhubaneswar, 4-5 March 1998 by K.C. Dabas and N.S. Gill discusses the benefits of TQM and the barriers for its implementation in academic libraries. States TQM as a holistic and systems approach aimed at satisfying the customer requirements on a continual basis by involving everyone in the system and at a lower cost. In the changing information environment, the academic libraries have to adopt TQM for their survival. Benefits of TQM for academic libraries and barriers for its implementation are also provided. Explains quality as a very important tool for the application of TQM, which can be measured, managed and improved using the measuring rod of customer satisfaction.
TQM is a people focused management system that aims at continual increase in customer satisfaction at continually lower cost, says B.M. Meera in her paper presented in CALIBER-98 at Bhubaneswar, 4-5 March 1998. TQM is not a tool in itself, but tools and techniques of statistical process control form an essential part of TQM exercises. Describes process flow diagrams, Pareto diagrams and cause-effect diagrams and their applications in management of libraries and information centres.

C.G. Johannsen presented a paper at the 5th Inter lending and document supply International Conference, Aarhus, Denmark, 1997, examining the validity of the relationship between innovation and quality in an inter library loan / document delivery context and demonstrates how new innovative uses of information technology can be managed by basic quality management principles.

The scientific, theoretical and practical problems of combining a traditional library and information science perspective on quality with a modern management oriented approach based on TQM is outlined and analyzed by Brandt...et al. The study also analyzes the cognitive and conceptual difficulties of linking a TQM approach with a traditional information science approach and examines the pedagogical considerations associated with curriculum planning and design.

J.H. Viljoen and P.G. Underwood discuss the use of total quality management in solving some of the problems of change and growing user demands currently faced by libraries in the article entitled “Total Quality Management in libraries: fad or fact?”. The article considers the present circumstances in libraries and the changes that are taking place arising from present uncertainty. Also explains how TQM can help libraries to establish a culture of never ending improvement of quality of products and services.

G. St.Clair in a paper describes how 3 management concepts can provide the perfect frame work for information specialists seeking to achieve excellence in information delivery. Linking TQM, Quality Information Management (QIM) and
Special Libraries Association (SLA) competencies positions the information operation as an organizational functional unit that works providing users with the information products, services and consultations they require.

In the article, 'The Application of TQM in cataloguing,' Zahiruddin Khurshid\textsuperscript{51} discusses the possible application of various TQM tools in cataloguing operations. The article focuses on the methods libraries have adopted to identify user needs and to improve services to meet user needs. The paper suggests that the application of TQM in cataloguing is not only possible, but a number of its tools have already been applied successfully by many libraries. The article concludes that the methods applied by libraries to identify user needs and to improve services to meeting user needs in the cataloguing and related areas may need to be adapted to conform more closely to TQM principles.

The issues associated with the implementation of total quality management in a library and information service environment is explored in J. Rowley's\textsuperscript{52} study. The study discusses the issues that need to be addressed in the implementation of TQM in library services including defining quality, clarifying customers, establishing quality as a strategic issue, organizational structure, organizational culture and human resource management.

V. Lemieux,\textsuperscript{53} the newly appointed Campus Records Manager at the University of the West Indies, describes how she employed a four-step Total Quality Management (TQM) methodology as a means of introducing change in a methodical way, to address serious operational problems in the Mona Campus Registry Filling Room. The four-step process involves understanding and measuring, analyzing work processes, implementing and testing, and monitoring. By following the process, the University overcame a number of challenges to achieve greater operational efficiency and improved customer service.

S.M. Pritchard\textsuperscript{54} in his article entitled 'Determining Quality in Academic Libraries', summarizes the attempts of define and measure quality and effectiveness in academic libraries, from traditional evaluative studies to TQM and new research on
user defined criteria. The study suggests several areas for future research and for collaboration among library managers, educational administrators, scholars and measurement theorists.

Stella Pilling describes the setting up of a total quality management programme in conjunction with a specialist consultancy, and its implementation through a steering group, process improvement groups and a series of kaizen continuous improvement of process workshops, in his article entitled 'putting the customer first: total quality and customer service at the British Library Document Supply Centre'. Study revealed that TQM has contributed significantly to improvements in speed of service and the quality of relationships with customers.

P. Kovel-Iarboe determines exactly what quality improvement means in a library environment and the challenges of identifying and using an appropriate strategy for implementation. Studies critically the reasons for the failure in the implementation of quality improvement efforts such as TQM, and suggests strategies by which adoption of quality improvement can be undertaken successfully.

In the article 'Managing Quality in Information Services', J. Rowley explores issues associated with the implementation of TQM in the service environment. Reviews briefly the literature concerned with measuring service quality as a forum in which to explore the concept of service quality.

External developments on the economic, political and technological fronts have necessitated the need for libraries to change in order to service. M.B. Line discusses how change has been accomplished in industry with the aid of processes such as Total Quality Management and Business Process Reengineering. The study also discusses the problems of change in libraries and identifies its requirements which include: good and exciting leadership, a shared vision, radical reviews of functions and processes and the involvement of staff in the whole process, examines how some libraries have successfully managed change and have set role models for others.
C.G. Johanssen examines the relationship between strategic management and quality management in the context of Library and Information Science. He further discusses how the theoretical considerations made may influence the validity of practical managerial advice found in the library management literature.

The article entitled "Total Quality Management: Implications for Implementation in Library and Information Centres" is based mainly on the analysis of most frequently accepted and proven track of TQM philosophy and its implications. By merely acquiring highly sophisticated technological infrastructure, and latest software, libraries and information centers cannot produce valued added information services. What is required is the managers have to understand core concepts of TQM and they have to be trained in these techniques. Emphasizing this fact, the paper discusses the Cultural Change Tactics Approach for TQM; creating user information satisfaction enterprise resource planning and pitfalls for implementing TQM and the possible solutions.

The results of a study of a continuous education course, entitled 'Total Quality Management in Health care and Health Science Libraries' is reported by J.A.V. Reenen. Explains the roles and objectives of the courses and results obtained. The courses were rated in terms of participants' satisfaction and met the expectations of the majority.

N. Trzan-Herman and D. Kianta compares the application of the business technique of organizational mapping to the implementation of total quality management in special libraries with particular reference to practical examples. The comparison was made from the viewpoint of organizational design and results indicate that the organization of work in the 2 libraries compared is mainly the same and that differences occur because of the different demands of users.

In the article entitled 'TQM in library and information services, S.L. Jain and D.K. Gupta discusses various aspects of TQM with particular reference to its implementation in libraries and information services.

M.K. Harhai compares total quality management with traditional management techniques, provides a brief history of its development and examines its principles
and vocabulary. Discusses how TQM can be applied to law libraries. The customer-first orientation, top management leadership, continuous improvement, emphasis on prevention with organizational goals etc. are considered in the study.

### 2.4 Studies related to service quality

K. Manjunatha and D. Shivalingaiah\(^6\) conducted a study to investigate a quality of library and information services from customers' perspective in eight academic libraries situated in Dakshina Kannada and Udupi districts of Karnataka states. The libraries in sampling frame were serving customers of postgraduate education in Medicine, Engineering, Science and Social Science disciplines. The sample population consisted of faculty members, research scholars and post graduate students. SERVQUAL was adapted as the principal instrument for data collection. Customers' ranking of relative importance of SERVQUAL dimensions and gaps in customers perceived service quality are discussed. The study concludes as managing SERVQUAL is not a fad but a commitment from top management for continuous improvement.

The article entitled "User Perceptions of the Reliability of Library Services at Texas A & M University: a focus group study" by Jeannette Ho and H. Gwyneth Crowley\(^6\) presents a study that explored user perceptions of the reliability of Texas A & M University Library services with emphasis on access services and the online catalogue. The study uses the focus group method to explore user perceptions of the reliability. Based on content analysis, five themes emerged that were related to service reliability, finding materials on shelves, arrangement of materials, interlibrary loan / circulation procedures, signage and experience with searching LibCAT. The study has demonstrated the importance of user perceptions when designing and evaluating library services, and the need for special attention to non-public service aspects, such as stack maintenance, catalogue and circulation records etc.

Susan Martin\(^6\) in the study" Using SERVQUAL in Health Libraries across Somerset, Devon and Cornwall" provides the results of a survey conducted in the autumn of
2001 by ten NHS library services across Somerset, Devon and Cornwall. The aim of the project was to measure the service quality of each individual library. The survey results have provided the librarians with a wealth of information about service quality. The service as a whole is perceived to be not only meeting but also exceeding expectations in terms of reliability, responsiveness, empathy, and assurance. For the first time, the ten health library services can measure their own service quality as well as benchmark themselves against others.

The article by Rowena Cullens presents a study which examined the relationship between library service quality and library user satisfaction and examines how user survey have been employed in a number of previously published data sets. A model which demonstrates how satisfaction can be seen as both a micro-level as an outcome of service quality is proposed. Using evidence based approach, gaps between user expectations and perceptions are explored as well as the gap between user expectations and managers' perceptions of these. Studies that include user surveys of electronic library services are also analyzed in terms of customer expectations. Suggestions are offered about ways in which library and information service provides could make more use of the information derived from their own and other organizations user surveys to improve their services.

Collen Cook and Bruce Thompson explore reliability and validity of scores from the SERVQUAL measurement protocol in the article entitled "Reliability and Validity of SERVQUAL scores used to Evaluate Perceptions of Library Service Quality". The study addressed two research questions. First, how reliable are the various SERVQUAL scores across different times of measurement. Second, does factor analysis of SERVQUAL responses yield the structure suggested by the measure's scoring keys and thus corroborate score validity. The participants were selected by random sampling and were requested to respond to a questionnaire and the responses were analyzed. The study is concluded suggesting that library administrators can ill afford to stand by and watch, are must be responsive to user expectations and to do so, we must better understand how users judge quality in library services. Applied in a thoughtful manner, SERVQUAL may prove to be a useful tool for this purpose, as 'we cannot manage what we cannot measure'.

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The article entitled “Measuring Service Quality at Yale University’s Libraries”, by Danuta A. Nitecki and Peter Hernon present Information on a study which examined an approach to measuring service quality at Yale University’s Libraries in New Haven. Researchers in Library and Information Science who examined quality realized that only customers judge quality; all other judgments are essentially irrelevant. The objectives of the study were to develop and test an approach for converting SERVQUAL into an instrument that reflects the expectations of a library and its customers, determine the feasibility of libraries pursuing that approach and compare study findings to other uses of SERVQUAL within library and information service. The methodology used is a user survey using questionnaire which is distributed among clients of Yale University Libraries. The survey form and approach presented in this article merit continued examination especially because the findings have clear implications to library planning and decision making. The study concludes suggesting that the survey instrument has become an important communication channel between customers and staff. A culture of SERVQUAL assessment provides opportunities to demonstrate to customers how the staff learns about customers’ expectations and perceptions.

2.5 Studies related to benchmarking in Libraries.

Roxanne Missingham and Margarita Moreno in the article entitled “Australian Resource Sharing: did ILL benchmarking make a difference?” describes the national inter library loan and document delivery (ILL/DD) benchmarking study undertaken by Australian libraries in 2001 and evaluates its impact on the same. The study also outlines the nature and scope of ILL/DD in Australia. The methodology used is survey including detailed statistical information from libraries in all sectors. The study provided a major breakthrough by developing a methodology that could be used to assess ILL/DD services. Over 100 libraries across Australia participated in the study including special, public and university libraries. The study and activities undertaken to implement the finding of the study have improved the turnaround time and the operation of ILL/DD in Australia for both libraries and users.
Mechael, Char bonneau,72 examines existing library and personnel literature to determine whether any strides have been made among academic libraries in determining cataloguing productivity benchmarks. The perceived importance of performance evaluations based on quantitative and qualitative standards is explored, as in the intended effect of established cataloguing production norms. The pros and cons of cataloguing benchmarks are analyzed from four different perspectives: library administration, library human resources, cataloguing managers and cataloguing staff. The paper concludes that additional research is needed in order to determine whether established production cataloguing benchmarks are feasible and meaningful within academic libraries.

The article entitled “What Benchmarking Measures?”73 present information of the kinds of things benchmarking measures and the related criterion for measuring. A national resident survey was conducted by the Association of college and university housing offices – international and educational Benchmarking. Another survey “First year initiative” was also conducted among the students who responded to items such as improvement in their writing skills, finding easy solutions to complex problems and an increased level of understanding of the available library resources. The study “Benchmarking Academic Business School Libraries relative to their Business School Rankings”74 is done in the business school libraries in the US. 10 library variables and ranking systems are used for the study implications of benchmarking on libraries are studied in detail. Suggestions for advancement of business school libraries are also made in the study.

The article entitled “Benchmarking Databases Access in Academic Business Libraries”75 presents a new tool to help librarians’ select electronic business resources. On the basis of data collected as part of the college and university business library statistics surveys conducted in fall 1998 and 1999, reports on access to business and economic databases and aggregations in 30 academic business libraries. Describes the databases accessed in academic business libraries in both alphabetic and ranked tabular lists, each of which offers two years of data for comparison. In addition, an appendix includes the summary statistics for
collections, expenditures, staffing and services, facilities, faculty and enrollment from the 1998 / 1999 surveys.

John Stanton\textsuperscript{76} describes experimental calculations and benchmarks which attempted to quantify value for money in library collection development. The study suggests that the first stage in determining the value for money of library stock purchases is to establish a set of base line data. This data will vary for each library service, but is used to establish an internal benchmarking system that can be applied in a variety of circumstances. As libraries move towards meeting an increased demand for data with which librarians can adequately evaluate their services, more refinement and elegance is going to be required. The calculations presented in the study are a beginning, broad, framework within which librarians can start to quantify and report value for money to their users and to their complex. However they can provide a springboard from which public libraries can reasonably answer any questions regarding the value of their collection development decisions.

The study “Why we should establish a National System of Standards”,\textsuperscript{77} discusses the need for a system of rigid national standards for US Libraries, the advantages of the use of benchmarking standards in determining best practices, benefits of obtaining ISO 9000 certification for America’s best libraries.

Martin Ellis,\textsuperscript{78} in his study describes the genesis of New South Wales’ public libraries benchmarking database. Twenty two performance indicators are discussed as well as full income and expenditure statement for all participating libraries. Five principles of benchmarking are outlined. Some observations are made on benchmarking in the wider competitive environment.

The study entitled “Library Benchmarking: old wine in new bottles”\textsuperscript{79} scrutinizes benchmarks in relation to library and higher education. Developing appropriate benchmarks is part of a process of evaluation, a long tradition in library management. Study attempt to clarify definitions, outline some ways in which we have developed benchmarks already, and sketch the importance of this for
information services management in the context of contemporary higher education. The study is summarized explaining stages of library benchmarking. The stages explained are – identify goods and context for data, define process and units of measurement, collate existing data to use as detail needed, identify user and stakeholders groups, determine whether new data are needed to supplement analysis, develop new data, integrate all sources of data in interpretive framework and make decisions about the service/library being evaluated or proposed.

Paul Rux in his study discusses how librarians can benefit from Total Quality Management (TQM), using TQM tools to identify customer needs and wants, measuring quality of customer service, benchmarking inter library back-up reference, automation and training. The study concludes TQM benchmarking is an excellent way for helping each other get the most and best from our limited resources through systematic comparisons.

2.6 Studies related to LibQUAL in Libraries.

Bruce Thompson et al explores how the library service expectations and perceptions of users might differ across health-related libraries as against major research libraries not operating in a medical context; to determine whether users of medical libraries demand better library service quality, because the inability of users to access needed literature promptly may lead to a patient who cannot be properly diagnosed, or a diagnosis that cannot be properly treated. LibQUAL+® total and subscale scores across these groups of US, Canadian and British Libraries compared. Anticipated differences in expectations for health as other library settings did not emerge. The expectations and perceptions are similar across different types of health science library settings, hospital and academic and across other general research libraries.

The article entitled “The LibQUAL+ Phenomenon” discusses about LibQUAL+, an assessment tool that can be used by libraries in assessing their services. The LibQUAL+ was developed by the Association of Research Libraries which will be used in developing a survey that allowed local libraries to discover their particular
strengths and deficiencies. LibQUAL+ enables libraries to compare their results with results of peer institutions and they can use a proved and tested survey instrument. Libraries can also use the new tool for help in strategic planning.

Santa Falcone and Michael Rivera aimed to evaluate and improve university electronic library services in the study “Improving University Library Electronic Services”. After briefly reviewing library service performance evaluation literature, this paper reports the findings of three libQUAL surveys and two usability studies at the University of New Mexico. The result of the three libQUAL+ surveys (2001, 2002 and 2003) and two usability studies (in 2001 and 2003) at the University of New Mexico was to move the entire instrument to a web-based format so that the tracking of the paths patrons choose can be more accurately and easily recommended. The paper is a valuable information source to library managers who desire to evaluate and improve their library’s electronic resource service provision and offers practical help to conduct a usability study.

Martha Kyrillidou and Fred Heath explains the relationship between library institutional characteristics such as volumes held, volumes added gross, current serials, total staff and expenditures, and the scores on the four libQUAL + service quality dimensions are analyzed across a gap of 130 libraries that participated in spring 2002 for the members of the Association of Research Libraries and the participating libraries that are not members. Service quality indices, especially as measured by the service affect dimension, appear to have a slightly increase relation to collection investments reflecting the higher expectations and header-to-meet demands of the research library user. Relationships between institutional characteristics and service quality indices are also explored for OhioLINK and AAHSL, the two consortia groups that participated in 2002.

The Association of Academic Health Sciences Libraries (AAHSL) participated as one of two consortia in the 2002 pilot of LibQUAL + the other was Ohio Library and information Network, a consortium of Ohio’s college and university libraries and the state library of Ohio. The report “Exploring Outcomes Assessment:
The AAHSL Libqual+ Experience" focuses on the AAHSL/ARL partnership, the AAHSL aggregate experience and results, and collaborative outcomes. Whereas AAHSL will continue libQUAL+<sup>TM</sup> participation in 2003 with another cohort of participating libraries, a foundation for qualitative assessment within AAHSL has been grounded. Report outlines the quantitative efforts of the AAHSL Task Force on Service Quality Assessment.

James Shedlock in the article “Academic Medical Library using LibQUAL+: the experience of the Gaiter Health Sciences Library, North Western University” explains the LibQUAL+ survey conducted in the library in two consecutive years. Both sets of survey results provided useful information to understand how users perceive the quality of Gaiter Library Services. The first year’s relatively positive results offered a useful and hopeful benchmark. The second year’s results provided more of a ‘wake up’ call to explore in depth what users want and need from the library. Peer comparison also offers an additional insight as to where Gaiter staff can look to find models and/or best practices when exploring specific remedies that would improve services to Gaiter users.

“Defending and Expanding Library Turf: the need for scalable consumer research” explains libQUAL+ survey as a necessary and complementary tool in our arsenal that enables us to measure our effectiveness and determine where improvements must be made. The power of libQUAL+ is that it transcends a local campus survey. When executed across the consortium, it allows comparing the results with our activity measurements and applying the results relative to both our local and statewide programs and funding. As a broad-base measure of user satisfaction, it is an importance and necessary tool.

The impact of an academic library consortium on the perceptions of library services experienced by users of the member institutions libraries is explained in the article entitled “Measuring Consortium Impact on user Perceptions: OhioLINK and LibQUAL+<sup>TM</sup>. Member institutions in the Ohio link are Ohio’s consortium of eighty-four Ohio universities, colleges, community colleges, and the state library of Ohio. Financial support was provided by Ohio LINK for conducting libQUAL+<sup>TM</sup> survey,
the objective was to measure both perceptions of an individual library's service quality and the service quality provided through Ohio LINK program. Academic libraries seem to be more alike than different when measured by service quality perceptions using the LibQUAL+™ instrument. Therefore one of the most beneficial uses of LibQUAL+™ at the consortium level becomes one of continuous improvement, benchmarking against previous years' performances.

The study by Colleen Cook and Fred M. Heath⁸⁹ provides information on a study which examined the perception of uses in North America on library service quality using the LibQUAL+ instrument. Describes the interviews conducted with users of research libraries across North America in the first round of work on the still-evolving LibQUAL+ instrument. Analysis of the interviews revealed a penchant among all users for self-reliant, autonomous, information-seeking behavior seems to be related to their perceptions of library service quality. Ubiquity and case of access, the library as place and self-reliance emerged from the interviews with users as inescapable elements of the construct of quality library service. The study is concluded as these dimensions will be explored in further LibQUAL+ evaluation studies in an iterative process of building and testing theory of library service quality.

The article entitled "LibQUAL+: one instrument in the New Measures Toolbox" by Colleen Cook...et al⁹⁰ discusses LibQUAL+, a performance assessment tool for research and academic libraries in the United States. Origins in the SERVQUAL instrument, affect of service, reliability, library as place, provision of physical collections, access to information, user perception of library quality at multiple levels.

The article, "Psychometric Properties of scores from the Web-based LibQUAL+ study of Perceptions of Library Service Quality"⁹¹ focuses on a study which examined the psychometric integrity of scores of the LibQUAL+ evaluation of perceived service quality. The study investigated LibQUAL+ score structure, score reliability, score correlation and concurrent validity coefficients, scale means and scale standardized norms. Under the guidance of a lead library contact at the
twelve institutions, random samples of 600 faculty, 600 graduate students, and 900 undergraduate students were randomly selected at each institution. Each randomly selected participant received an e-mail from library requesting participant assistance by responding to a brief survey.

2.7 Conclusion.
The related literature in the field of study given above covers a wide spectrum of the various facets of the research problems under study. These studies are also helpful in such substantiating the various findings derived in the field of investigation.

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