Chapter 1

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1.1. Introduction

Education is one of the most important primary service industry in the public sector communities. Quality of education is considered as enduring wealth and security for both society and their people. During last two decades, the preservation of high quality education has become a major concern for higher education institutions. Consequently, the demand for explicit quality evaluation and assurance processes has increased rapidly. At the same time, the enormous funds, which government assigns to this sector, makes it very important for those who manage education to ensure that education imparted in schools, universities and institutions of learning be based on quality and standards.

Organizations everywhere are growing increasingly conscious of the competitive potential of quality. Quality has become an issue because standards are now contractually defined, whereas previously they were vague and unmonitored. Competition focuses not only on price but quality. In the present economic and political climate, even higher standards are demanded in the face of diminishing resources.

The use of standards in quality management can be traced back to periods long before the terms were coined. One of the earliest examples has been found in the building of the pyramids of ancient Egypt, where the developments of the cubit provide a means of ensuring that materials met the precise requirements of the builders. Quality assurance management principles have been also found in the operation of the medieval crafts guilds. The guilds regulated the standards of workmanship of its members, enabling customers to have confidence in good purchased, source such goods, which bear a standards quality and attractive price.

During the industrial revolution and the periods following it, the management of quality shifted its emphasis to inspection and control. The need for standardisation and the importance of being able to rely on the quality of input of product and of finished goods was crucial to military production during the Second World War. In Britain and the USA standards of supplies, production, and product were set by the military. This practice continued in the years following the war. The importance of quality of products for the emerging space technology programme was realised by
NASA. By the 1970s, the British standards Institution published its first charter of standards relating to quality management, ‘BS 4891: A Guide to Quality Assurance’. By the 1980s the International Standards Organisation was seeking to produce a common standard for quality assurance working with individual countries and the European Committee for Standardisation. Now, the standards are adopted all over the world. Quality Management is not a static field; but it is dynamic process, continuing to evolve in response to ongoing changes. In this context quality may be defined as the customer’s expectations and requirements. Quality addresses defects errors and complaints and goes beyond the traditional values. Since quality is based on customer expectation and satisfaction. Therefore organisation has to keep vigilant eyes in every department in accordance with the satisfaction level of the customer. This nation of providing quality and standard in every department paved the way for the total quality management.

Total Quality Management (TQM) is a philosophy and a process whose output yields clientele satisfaction and continuous improvement. This philosophy differs from traditional philosophies and processes in that everyone in the organisation can and must practice it. It espouses Win-Win attitude, differentiates cost versus price and provides added value to the system.

Quality is determined by the customer and the market place and includes all products and service attributes. Boarding the concept of quality is the aim of TQM. So that quality moves from a product appraisal function to a corporate imperative for excellence and the refusal to be satisfied with the status quo. TQM becomes integrated into all aspects of the organisations identity. Its scope covers all functions including system design, production and services.

TQM in the context of libraries is to provide the right information to the right user at the right place and time and also at the right cost. The goal includes ease, convenience, excitement, interest and fun that the library provides to the users. The goal of libraries keeps on changing and these changes affect the manpower, product, user and environment in the library. In order to cope up with these changes libraries need to change their strategy, structure, leadership and human resource management. All these management constitute the goals, techniques and elements of TQM.

TQM is a holistic disciplined and continuous system approach, which starts at the top of the library staff and goes to down the line. It is a planned organisational change based on mission, goal and objectives and requires total involvement of staff.
and calls for everyone to be skilled and knowledgeable. It promotes teamwork, focus on users and considers quality as a strategic priority. It emphasises the importance of performance measurement through the measuring scale of user satisfaction.

TQM involves defining the output to the requirement, assigning the process (action, methods and operations) specifying input requirement (men, machines, materials, information, skills etc.) maintaining, monitoring / controlling the adherents to user requirement, identifying changes in users requirements, communicating changes in process and inputs.

1.2. Background of the Study

Libraries exist to collect the record of human experience and to provide intellectual and physical access to that record. For academic libraries in particular, there is a responsibility to preserve scholarly communications as well as the primary resources upon which scholarship often depends. During the past two decades, myriad challenges and opportunities for libraries have been presented as a result of the rapid development and deployment of information technologies. This environment has spurred librarians to reconsider and redefine collections, services, organizational structure and the attributes of library facilities. Library decision makers must therefore determine how to meet new and evolving expectations for library services and materials.

While library practice is changing, it remains based on a commitment to services. Collections of books and other information resources without accompanying access tools, instruction or other library services are mere warehouses, not libraries. Librarians in all types of libraries work to ensure that their organizations provide high quality service in support of goals of libraries parent institutions. It would be rare indeed to discover an academic library, for example, that did not consider service quality an important aspect of carrying out its mission to support teaching, learning, and research in the college or university in which it operates. This is a age of techno-scientific revolution, the sheer quantity of knowledge and information is expanding exponentially and increasingly varied student population are burgeoning, the quality of training for teachers and the quality of teaching in higher education institutions demand top priority. According to Feigenbaum (1994)¹ 'quality of education' is the key factor in 'invisible' competition between countries, since the quality of products and services is determined by the way the managers, teachers, workers, engineers, and economists think and make decisions about quality. Seymour (1992)² admits that
education and in particular, higher education itself, is also being driven towards commercial competition imposed by economic forces.

The concept of Total Quality Management (TQM) is an emerging new management technique used in most of the disciplines and the Library and Information Center is not an exception to it. Its application in service sectors started in the late 1980’s is an American response aiming at customer satisfaction by way of meeting the requirements and expectations of customers (Sherikar, et.al, 2006). This is a new effort, emphasizing for conformance to the customer expectations. The application of Total Quality Management in Library and Information Center seems to be a very recent origin but it is not so in the Indian context, wherein Dr. S.R Ranganathan, father of Library and Information Science stated in his Fourth Law ‘Save the Time of the User’ has direct implication to what is advocated in TQM approach as enunciated by Raina (1995).

In India, very few studies have been conducted on TQM in the University Library System. TQM in academic libraries focusing on valued service to users as competition from alternate information sources reveals the inadequacies of traditional service. Georgia Institute of Technology, Library and Information Center devised a version of TQM to focus attention on customer needs and provide content based value added information services. As the primary agents in customer interaction, front line staffs are driving innovation and the marketing of services. Statistical quality control to assess information transactions adequately are not yet worked out and anecdotal evidence of success or failure is still the primary measure of service success. Rout (1998) also states that TQM principles are yet to be applied in the libraries of India and this new approach to library management can be adopted to achieve success in the library operations and programmes. Further, discussed the implementation of TQM in university libraries and suggests a TQM model to bring a total quality approach for a customer-focused library and concludes with a remark that TQM is likely to bring about greater participation of employees in information management activities in university libraries. According to Meera (1998) TQM is a people focused management system that aims at continual increase in customer satisfaction at continually lower cost. It is not a tool in itself, but tools and techniques of Statistical Process Control as an essential part of TQM exercises. She describes Process flow diagrams, Pareto diagrams and Cause-effect diagrams and their applications in
management of libraries and information centres and other techniques of TQM, which can also be used in the library environment but need statistical computations.

TQM is variously described as a general philosophy of management, a management system, or an organization’s strategic commitment to continuous improvement and meeting the needs of existing and potential customers. Since Edward Deming, there have been other quality management experts, such as Joseph Juran and Philip Crosby, who also contributed to the development of TQM theories, models and tools. Although, having some different focuses, the key components of their theories generally include employee involvement and training, problem solving teams, statistical methods, long-term goals and thinking and recognition that the system, not the people, produces the inefficiencies.

TQM was adopted gradually by US and UK libraries in the early 1990s. In the USA, beginning with Oregon State University, there were at least 25 other universities, including Harvard, Carnegie-Mellon and the Universities of Chicago, Michigan, etc., involved in TQM programs in 1990, (Butcher, 1993). The range of TQM implementation in higher education extends from the most prestigious universities to community colleges and the library’s involvement is generally part of the institute-wide initiative. The first international conference on TQM and academic libraries was held on 20-22 April 1994 in Washington, DC with the title “Total Quality Management in Academic Libraries: Initial Implementation Efforts”. This conference facilitated the universal implementation of TQM in libraries. In the UK, Chase (1988) declares: “quality is no longer an option. it is a positive requirement for the 1990s”. A survey conducted by Mistry and Usherwood in 2000 indicated that 62.5 per cent of academic LIS had quality management, (Mistry and Usherwood, 2000). In Australia, the University of Wollongong Library introduced a formal TQM program in 1994 and won the 2000 Australian Business Excellence Award the first library ever in the world to win a recognized quality or business excellence award of University of Wollongong Library (UOW, n.d.).

ISO 9000 is an international standard series for quality management and it can be applied to any organisation whatever its product, whether it is actually a service, a business enterprise, a public administration or a government department. The eight principles of quality management as defined in ISO 9000 reflect the essential features of TQM. This means that if an organization does want to enhance customer satisfaction by meeting customer requirements and by continually improving its
performance to apply the regulatory requirements of ISO 9000 may be a basis for approaching TQM. So, a library is a suitable place to comply with ISO 9000 and this international standard can be a strong catalyst to TQM. There are colorful examples of ISO 9000 authentication activities in libraries around the world. In particular, European countries have moved far in pursuit of TQM. Although authentication activities in American libraries are not as dynamic as those in European ones, libraries such as OCLC, Harvard University, Columbia University etc. have passed the authentication of ISO 9000. In recent years, libraries in Asian countries have also been active. For example, four academic libraries in Thailand and all the libraries of Malaysia University have passed the authentication of ISO 9000. In China, research on TQM or ISO 9000 in the library context started in the late 1990s and few libraries implement TQM and make quality management conform strictly to the requirements of ISO 9000. So far, China’s Macao University, the libraries of Dalian University of Marine Affairs, Qingdao University of Marine Affairs, Shanghai University of Marine Affairs together with their institutes, as well as Shanghai Library have passed the authentication of ISO 9000 (Zhan and Zhang, 2006)^12

In India, The University Grant Commission (UGC), The National Assessment Accreditation Council (NAAC), All India Council of Technical Education (AICTE), and National Board of Accreditation (NBC), have succeeded in promoting and encouraging quality in all elements of higher education institutions in the country. Higher education in India is one of the largest and oldest systems and now NAAC has assessed the quality of universities and higher institutions and AICTE has assessed the quality of institutions in India.

There are number of universities, deemed universities, colleges in India that are granted status of accreditation by the NAAC. The gap between accreditation and non-accredited institutions will affect the quality of education. As per the National Knowledge Commission (KNC) report submitted, one of the major recommendations is the element of infrastructure that supports the teaching-learning process, such as libraries, laboratories and connectivity, which needs to be monitored and upgraded on a regular basis (Babakuti 2005)^13.

The assessment bodies use many criteria for evaluating the quality of the educational institutions. The NAAC is adopting its new methodology of assessment for accreditation from April 2007. The major criteria used by them are: Circular Aspects; Teaching, Learning and Evaluation; Infrastructure and Learning Resources;
Organization and Governance; Research, Consultancy and healthy Practices; Student Progression. Among these criteria library plays an important role in teaching, Learning, Infrastructure and Resource, Research activities etc. Recently the NAAC has issued a set of ‘Guide Lines on quality indicators in LIS’ to improve the quality of the learning resource center in affiliated and constituent colleges and universities in India. All these show that the quality of library and information services offered in higher education institution is a serious matter and the authorities and the library and information professional in higher education institution must considered its seriousness. In order to improve the quality, the institutions should provide good library facilities, collection of documents and services. They should provide necessary facilities to promote effective current and accurate access to use latest information sources available.

Accessing the needs and requirements as well as the satisfaction of the user with regard to the library and information services is highly necessary. The NAAC has viewed that the main objective of the higher educational institutions should always be total user satisfaction. It is opined that the functioning of the library should be user focused and the librarian should be the interpreter of thought and content and user satisfaction should guide the libraries. It shows that there should be a user-based assessment of the quality LIS being offered in higher education institutions in India. There are certain reliable tools such as SERVQUAL, LibQUAL, WebQUAL etc, for understanding the expectation and perception of user with regard to higher educational institutions and the library services and thereby assess its quality. The Association of Research Libraries (ARL) is using LibQUAL to measure the service quality of its member libraries. The LIS professional understand what the user actually expects from the library. It will also help the LIS professionals to improve or switch over the library. It will also help to improve the quality of services.

Therefore, this study is an attempt in this direction to exploit the application of Total Quality Management (TQM) in the central university Libraries in India. This study is undertaken with a hope that Total Quality Management (TQM) is a way of management which helps to improve the effectiveness, efficiency, flexibility and competitiveness among the universities as a whole by way of involving everyone in the organization towards improving the ways in which things are done.
1.3. **Selection of the Problem**

During last two decades, the preservation of high quality and standards in education has become a major concern for higher education institutions and governments; consequently, the demand for explicit quality evaluation and assurance processes has been increasing rapidly. It is true that by using a variety of Information Technology tools and techniques, university library is now able to generate various kinds of information products and services in addition to performing routine tasks. However, it is unfortunate that these remain largely underutilized and in some cases even wholly unutilized. The basic reason of selecting this problem is to raise the quality level of library and information science awareness or consciousness among the users. Library information products and services are ‘generator-driven’ rather than ‘user-driven’ and there remains a ‘linkage gap’ between the generators and the users of such products and services. On the other hand, university library have, over the years, spent enormous amount of money, expertise and other valuable resources to reach their present stage of service delivery. Mobilizing resources, particularly finances may not be a easy now as it was in the past. But there won’t be any looking back when it comes to the demands and expectations of their users. The only way out seems to be that LICs develop only in accordance with more exact and specific needs of their users. Towards this end and keeping the concept of a resource-constrained regime in mind, the services offered will have to be internally efficient and externally effective. It is in this context that the concept of ‘Total Quality (TQ)’ becomes relevant for the effective ‘Management (M)’ of university libraries. Total quality management (TQM) is an approach aimed at satisfying customer requirements on a continual basis (Quality-first time, every time, all the time) by involving everyone (Total) in the system and at a lower cost (Management), (Raina, 1999)\(^{14}\).

The problem selected for the present study entitled **“A Study of Total Quality Management in Central University Libraries of India”**. The problem deals with the application of TQM process, principles in central university library systems and to measure the users perception about the quality of services.

1.4. **Definition of Terms**

A adequate definition of terms is necessary, since lack of proper explanation can contribute to the problem. The term, **Study, TQM, (Total Quality Management), Central University, Library and India** will be oftenly used by the researcher.
Study: The Concise Oxford Dictionary of Current English\textsuperscript{15} defines ‘Study’ as “the act of considering or examining something in detail”. It is also applying the mind to learning and understanding a subject in order to discover new information.

TQM: TQM is an acronym, which means Total Quality Management. Total Quality involves a continuous improvement effort by everyone from top to bottom of the organization to meet or exceed the users satisfaction. It includes system methods and tools. Total quality is the unyielding and continually improvement effort by everyone in an organisation to understand, meet and exceed the expectation of customers. Quality is a relative term, which has been defined in dictionaries as ‘degree of excellence.’ Though, literally the term may have both positive and negative connotations, it is now mainly used in positive sense. In that sense, it is synonymous to ‘high standard’. Quality is then an idea, which is to be achieved in every sphere of life. It is single most important force, which leads to the organisational success. It is the most important managerial demand facing many organizations today. According to Juran\textsuperscript{16} one of the gurus of quality management says, “Quality is a fitness for use”. Another term is Management, according to the Concise Oxford Dictionary of Current English\textsuperscript{17} "the act or skill of dealing with people in a successful way".

Total Quality Management: Quality management experts, Joseph Juran and Philip Crosby contributed to the development of TQM theories, models and tools. TQM is now practiced in business as well as in government, the military, education, and in non-profit organizations including libraries, (Jurow and Barnard, 1993)\textsuperscript{18}. The TQM philosophy revolves around quality. This integrated approach, involving all departments in a company is providing a quality product of service, came to be known as Total Quality Management\textsuperscript{19}. TQM is a strategic approach to producing the best products and services, possible through continuous improvement. The TQM philosophy is built around three basic ideas, which are: to become customer-driven, to concentrate on the process rather than the end-result, and to use the workers thinking ability.\textsuperscript{20} According to Okland (1993)\textsuperscript{21}, TQM as “An application to improving the effectiveness and flexibility of business as a whole. It is essentially a way of organising and involving the whole organisation, every department, every activity, and every single person at every level. For an organisation to be truly effective, each part of it must work properly together, recognising that every person and every activity affects, and is in turn affected by others.”
TQM is a set of tools, techniques and procedures and in a more interpretative way, it is a vehicle to enact change processes within the organisation. TQM, in fact, necessitates a major change in attitude, in the measurement and reward system and in top managerial behaviour.

**Central University:** University is an institution of higher education and research, which grants academic degrees in a variety of subjects. A university provides both undergraduate education and postgraduate education. The word university is derived from the Latin universitas magistrorum et scholarium meaning 'community of teachers and scholars'. Central Universities are set up by an act of parliament. The president of India is the visitor of all central universities. The University Grants Commission (UGC) is the agency that provides funding for maintenance and development of these universities. The Government of India is responsible for arranging, allocating and distributing financial resources required by the University Grants Commission (UGC) for the establishment of Central Universities in India.

**Library:** A.L.A. Glossary of Library and Information Science²² has defined library as “a collection of materials organized to provide physical, bibliographical and intellectual access to a target group with a staff that is trained to provide services and programmes related to the information needs of the target group.” According to S.R. Ranganathan²³, term the library is a “public institute or establishment charged with the care of a collection of books, the duty of making them accessible to those who required the use of them and the task of converting every person in its neighborhood into a habitual library goers and readers of a books” thus a library is regarded as a public institution which is also expected to convert the potential readers into actual readers.

**India:** India, officially the Republic of India, is a country in South Asia. It is the seventh-largest country by geographical area, the second-most populous country, and the most populous democracy in the world. The name ‘India’ is derived from Indus, which is derived from the Old Persian word Hindu from Sanskrit Sindhu, the historic local appellation for the Indus River. The ancient Greeks referred to the Indians as Indoi the people of the Indus The Constitution of India and common usage in various Indian languages also recognise Bharat as an official name of equal status.
1.5. **Objectives of the Study**

The main objectives of the study is to examine the application of Total Quality Management in central university libraries of India and to measures the perception of users as they relate to quality of information products and services, and to determine how far the library has succeeded in delivering such services to its users. The present study attempts to achieve the following objectives.

1.5.1 To find out the existing level of quality management, services and facilities in different Central University Libraries of India

1.5.2 To compare the quality of services and facilities of different Central University Libraries of India.

1.5.3 To know the current status of Total Quality Management approaches in Central University Libraries of India.

1.5.4 To know the quality awareness level among the library information science professionals in the Central University Libraries of India.

1.5.5 To assess the impact of various factors on quality management level of University Libraries.

1.5.6 To identify the problems in planning and implementation of TQM in Central University Libraries of India.

1.5.7 To measure the user perception of service quality in seven respective central university libraries.

1.5.8 To find out the status of ISO certification or any certification process in Central University Libraries of India.

1.5.9 To know the standard guidelines and quality indicators followed by Central University Libraries.

1.5.10 To find out the need for top library and information managers to understand total quality management.

1.5.11 To examine how the adaptation of TQM approach can help overcome some of the difficulties of changing environment.

1.5.12 To examine the application of TQM in libraries with particular reference to users satisfaction and perceptions of library quality services.

1.6 **Hypotheses:**

1.6.1 There is no significant difference in the perception of services quality dimensions among research scholars and faculty member’s with central university libraries of India.
1.6.2 There is no significant difference in the perception of service quality dimensions of the seven central universities libraries of India.

1.6.3 All the seven central university libraries are maintaining the level of quality management standards and services

1.6.4 Most of the central university libraries have implemented Total Quality Management principles and practices.

1.6.5 Most of the central university libraries are not certified with ISO.

1.7. **Scope and Limitations of the Study**

The scope is to determine and analyse the various dimensions and processes of TQM in Central University Libraries of India and to measure the perception of library quality services. The scope of the research entitled “A Study of Total Quality Management in Central University Libraries of India” is limited to only central university libraries. The study includes only seven central university libraries of India namely: Maulana Azad Library, Aligarh Muslim University, Aligarh; Sayaji Rao Gaekwad Central Library, Banaras Hindu University, Banaras; Central Reference Library, University Of Delhi, New Delhi; Dr Zakir Husain Central Library, Jamia Millia Islamia, New Delhi; Central Libraray, Jawaharlal Nehru University, New Delhi; Central Library, North-Eastern Hill University, Shillong; and Central Library, Visva Bharti University, Bolpur Shanti Niketan.

The decision regarding the selection of seven central university libraries out of 20 for this study is based on the logic of stratified sampling. The selected seven universities cover 35% of populations and have been chosen carefully from different state/location irrespective of the geo-political scenarios. Another reason is that, all these universities have well-established library and recognized by the University Grant Commission (UGC) and also established by the government of India Act. They were established 2003.

It is necessary to draw some limitations specific to this research. The limitations are mostly based on these factors: time, geographical location and selection of library and area of study. This limitation are necessary to develop worthwhile norms towards the accomplishment of the present study. The investigator was able to identify some of the major limitations such as,

1.7.1 The limitation of time is associated with the period of research. In the other words, the time of gathering information from questionnaires takes more time.
1.7.2 The present study consists of users including, research scholars and faculty members of seven central university libraries of India. The questionnaires were distributed to university librarian, research scholars and faculty members.

1.7.3 It is also necessary to narrow down the geographical areas of study because selecting a much wider area tends to defuse the results and findings in a research works; therefore, such a study will not be feasible if a much wider geographical area is taken into consideration. In view of these factors, the present study confines its scope and limitation to the seven-selected central university libraries in Indian. The geographical area is restricted in Delhi, UP, Bengal and North East region.

1.7.4 The responses have been taken only from research scholars and faculty members those who have been using library services and are regular users of libraries.

1.8. Needs and Importance of the Study

Indian university libraries are not been fully prepared to meet out the challenging need of higher education in the context of earlier revolutions, i.e., industrial revolution, white revolution, yet another new and bigger information has tremendously shaken the whole world; and globalization, privatization, liberalization have become the 'mantras' of the international order and the global information society. Information has become a key fugitive resource for socio-economic, cultural & political development and quality of life. Organization has increased their demand for information for reengineering and innovation so as to enhance their effectiveness and competitive position. The world “Quality” has become the buzzword and symbol of survival and growth in manufacturing and commercial sector and has also started making in-roads on information service sector. Many information providers have started working as indirect competitors to the university libraries.

Self-sufficiency has compelled universities to find other means for survival and growth in cost conscious and competition oriented setups. In addition to worldwide escalating costs of information products, shrinking budgets and increasing fees have enhanced the operational transparency and accountability of university libraries. Information technology has extended the scope of doing business for librarians on the one hand and enhanced the expectation of users for high quality information services on the other. In spite of this, the gap between information
generation and utilization has increased tremendously. Moreover, increasing consciousness and awareness of internal and external customers about rights and privileges. All these problems posed serious challenges for proper information management which calls for immediate concern of university libraries to have a careful investigation of the whole gamut of university library service, e.g. management competence, staff skills, management philosophy, expectation and perception of internal customers. It is in this context that application of total quality management (TQM) to university libraries is important. Information is now considered as an important resource for socio-economic development of a society. So value added information service can only provide the conformance to the requirement of the users and their satisfaction. Libraries adopt management techniques to give their best in the form of service and products to its users. But it is very difficulty to give best products and services, if there is no precise definition of what the best is in terms of library goals. There is no universally acceptable tool and techniques to measure, control and improve the quality of products and services in libraries. Total Quality Management (TQM) is one of such technique used for the improvement and maintenance of quality or performance of the libraries. Therefore, it is necessary for library and information professionals to understand core concepts, methods and techniques used in TQM.

1.9. Research Design

The design of a research pertains to the strategy used to collect empirical data to analyse the findings and draw conclusions. Research design is a way of arranging the environment in which a survey takes place. The environment, which consists of the individuals or group of people, places, activities or objects that are to be surveyed. The design must fit the research question and the type of evidence that it is necessary to obtain. For conducting any research, planning of study is the most vital upon which the whole process of study depends. Such a planning acts as a guideline while investigating the problem. Though it is subject to occasional changes or modifications with the progress in research. Research Design is a blue print or a detailed plan for a research study.

1.10. Methodology

Methodology has its own implication and importance in scientific investigation because objectively any research investigation cannot be obtained unless it is carried out in a very systematic and planned manner. Scientific investigation
involves careful and proper design, use standardized tools and tests identifying adequate sample by using sampling technique. There are several methods of collection of data for measuring the performance and quality of libraries. These methods can broadly be grouped into two, namely quantitative and qualitative methods and investigator used both. The quantitative methods include verification of library records, questionnaire, interview and qualitative methods comprising of focus group and observation. The quantitative and qualitative data collected through questionnaire and informal interviews were organized and tabulated by using statistical methods, tables and percentage, mean and average mean. After gathering the questionnaires, the data was feeded in Excel file. Before transferring to SPSS (version 16.0), the procedures of data treatment were set to validate the data for further analysis. After data treatment, the data was transferred to SPSS (Version 16.0) for statistical analysis in order to accomplish the purposes of the study. For the analysis the users perception score for each item in all the dimensions were calculated in the form of means, average mean and standard derivation. Further to substantiate the data, statistical tests were conducted, i.e., ANOVA, t-test and mean control chart. The Analyses of Variations (ANOVA) test were used to identify the differences of service quality dimensions in central university libraries of India and t-test was used to measure the significant differences between research scholars and faculty members for the perception of service quality. Control chart of mean were prepared to measure the quality levels.

Organization of Thesis
This thesis consists of seven chapters such as introduction, Total quality management, University libraries under study, and Review of related literature, Research methodology, Data analysis and interpretation, Findings, Tenability of hypotheses, Conclusion and suggestions and Bibliography.

Chapter 1 provides an introduction to the research including background, problem statement, research objectives, research questions, expected benefits, scope and limitation of research. It also summarises of the research methodology of present study.

Chapter 2 introduces brief theoretical framework about concept of quality, quality control, statistical quality control and TQM. It highlights the objectives, principles, dimension, and tools of TQM. It discusses the contribution of TQM gurus,
Deming, Juran, Crosby, Feigenbaum, and Ishikawa. It further examines the application and implementation of TQM in university libraries.

**Chapter 3** deals with the concepts of central university and brief outline the university library system in India. It also examines the profile of seven central university libraries such as history and background, collections, staff, users and present status etc

**Chapter 4** presents the literature review of the research concerning service quality concept and TQM.

**Chapter 5** presents the research strategies and detailed processes and the methods of conducting the questionnaire survey, structured interviews, and case study were described.

**Chapter 6** presented the detailed results of the data analyses and interpretation. It also includes hypotheses testing and discussion of results.

**Chapter 7** describes the findings, tenability of hypotheses, conclusion. This chapter also indicates some suggestions for further research.

**REFERENCES**


