

Total Quality Management Practices in University Library Services

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ABSTRACT

Total Quality Management (TQM) has emerged as a transformative philosophy for enhancing service quality in academic institutions. University libraries, as central knowledge hubs, are under increasing pressure to deliver high-quality services that satisfy diverse user expectations and align with institutional accreditation requirements. This paper examines TQM practices in university library services, with a focus on their theoretical underpinnings, operational models, and practical implementation. Drawing on a conceptual and descriptive research framework, the study analyses key TQM components including continuous improvement, user-centredness, leadership commitment, process efficiency, and staff empowerment as applied to library settings. The paper reviews twelve landmark studies from the global and Indian library science literature to identify prevailing practices, gaps, and success factors. It further presents a conceptual framework integrating the SERVQUAL model, ISO 9001 standards, and the Malcolm Baldrige Criteria for Performance Excellence within university library operations. Case studies from select Indian and international university libraries are discussed to illustrate practical adoption. Findings indicate that while awareness of TQM principles is growing among library professionals in India, systematic implementation remains inconsistent, particularly in terms of measurable user-satisfaction metrics and performance benchmarking. The paper concludes with recommendations for institutionalising TQM as a continuous quality improvement strategy in university libraries.

Keywords: Total Quality Management, University Libraries, Library Service Quality, SERVQUAL, Continuous Improvement.

I. INTRODUCTION

The contemporary knowledge economy has redefined the role and responsibilities of the university library. No longer merely a repository of books and periodicals, the university library today functions as a dynamic service organisational 'learning commons' that must respond to rapidly evolving information needs of students, faculty, and researchers. In this context, quality management assumes paramount significance. Total Quality Management (TQM), a management philosophy originating in the manufacturing sector and subsequently applied across services and education, offers a robust framework for systematically improving library services, maximising user satisfaction, and optimising institutional performance.

The library is often described as the heart of a university. Its effectiveness is judged not only by the volume and currency of its collections but increasingly by the quality of services it delivers. Indian university libraries, in particular, face compounding challenges: expanding enrolments, shrinking budgets, rapid digital transition, and heightened NAAC/NIRF accreditation scrutiny. In such an environment, adopting structured quality management frameworks is no longer optional. It is a strategic imperative. TQM provides exactly such a framework, emphasising zero defects in service delivery, stakeholder centredness, data-driven decision-making, and a culture of continuous improvement.

This paper investigates TQM practices in university library services through a conceptual lens, examining established models, reviewing extant literature, and proposing an integrated framework that library managers in India and comparable developing-country contexts can practically adopt. The study is particularly relevant as the University Grants Commission (UGC), National Assessment and Accreditation Council (NAAC), and INFLIBNET have been advocating for quality standards in academic library operations, making this discussion both timely and consequential.

1.1. University Library Services: Concept

A university library is a formally constituted information service centre attached to a university or higher education institution, tasked with acquiring, organising, preserving, and disseminating recorded knowledge to support the academic mission. According to the International Federation of Library Associations and Institutions (IFLA), the primary mandate of the university library is to support teaching, learning, and research by providing access to a wide spectrum of information resources and services.

University library services broadly encompass: (a) reference and information services responding to user queries through in-person, telephone, and digital channels; (b) circulation services lending

physical and digital materials; (c) bibliographic and database services providing access to e-journals, e-books, online databases (e.g., INFLIBNET N-LIST, DELNET, IEEE, Elsevier ScienceDirect); (d) user education and information literacy programmes; (e) current awareness services (CAS) and selective dissemination of information (SDI); (f) inter-library loan (ILL) services; (g) digital library and institutional repository services; and (h) research support services including plagiarism checking and citation management. The quality of these services directly impacts user satisfaction, research productivity, and the institution's academic reputation.

In India, university libraries are further categorised by the type of institution they serve: central universities, state universities, deemed universities, and private universities. Each category brings its own funding structures, governance norms, and user demographics, which significantly influence the nature and quality of library services offered.

1.2. Total Quality Management (TQM): Definition, Models, and Relevance to Library Services

Total Quality Management is a comprehensive management philosophy centred on the continuous improvement of products, processes, and services through the participation of all members of an organisation, with the ultimate aim of meeting or exceeding customer expectations. The term was popularised in the 1980s largely through the pioneering work of W. Edwards Deming, Joseph M. Juran, Philip B. Crosby, and Kaoru Ishikawa, each of whom contributed distinctive conceptual contributions to the TQM movement.

Deming's philosophy, encapsulated in his '14 Points for Management,' emphasised systems thinking, continuous improvement (Kaizen), statistical process control, and the eradication of fear in the workplace. Juran introduced the 'Quality Trilogy' quality planning, quality control, and quality improvement and stressed the cost of poor quality as a measurable organisational risk. Crosby's 'Zero Defects' concept and the 'Four Absolutes of Quality' reinforced the idea that quality must be defined in terms of conformance to requirements. Ishikawa's cause-and-effect diagram (Fishbone/Ishikawa diagram) provided a practical diagnostic tool for root-cause analysis in quality improvement.

Several formal models operationalise TQM principles:

- ISO 9001 (Quality Management Systems): The most widely adopted international standard for quality management, ISO 9001 specifies requirements for a quality management system based on seven quality management principles: customer focus, leadership, engagement of people, process approach, improvement, evidence-based

decision making, and relationship management. Libraries worldwide have adopted ISO 9001 certification as a formal quality benchmark.

- Malcolm Baldrige National Quality Award (MBNQA) Criteria: This US-origin framework evaluates organisations across seven categories: leadership; strategy; customers; measurement, analysis, and knowledge management; workforce; operations; and results. Several leading academic libraries have benchmarked their performance against Baldrige criteria.
- SERVQUAL Model (Parasuraman, Zeithaml & Berry, 1988): A five-dimension service quality instrument (Tangibles, Reliability, Responsiveness, Assurance, Empathy) that measures the gap between user expectations and perceptions of service delivery. SERVQUAL has been widely adopted in library research to measure service quality and identify improvement priorities.
- LibQUAL+ Model: An extension of SERVQUAL developed specifically for libraries by the Association of Research Libraries (ARL), LibQUAL+ measures library service quality on three dimensions: Effect of Service, Information Control, and Library as Place.
- EFQM Excellence Model: The European Foundation for Quality Management model emphasises results-oriented performance management and stakeholder value creation, increasingly referenced in European academic library quality frameworks.

In library settings, TQM translates into systematic attention to user needs, well-defined service processes, collection quality, staff competence, physical and digital infrastructure, and feedback-driven continuous improvement. The relevance of TQM to library services has been demonstrated in studies showing significant gains in user satisfaction, operational efficiency, and institutional reputation following TQM implementation.

1.3. Objectives of the Study

The present study is guided by the following specific objectives:

1. To examine the theoretical foundations and operational models of Total Quality Management as applicable to university library services, with reference to global and Indian library contexts.
2. To critically review the existing literature on TQM practices in university libraries in order to identify prevailing implementation patterns, best practices, and research gaps.

3. To develop an integrated conceptual framework for TQM-based quality improvement in Indian university libraries, incorporating case study evidence and practical implementation guidelines.

II. REVIEW OF LITERATURE

The following twelve studies, drawn from peer-reviewed journals and academic publications, constitute the core body of evidence reviewed in this paper. Each study is analysed for its conceptual contribution, methodological approach, and practical implications for TQM in university library services.

1. Vijayakumar & Murthy (2007)

Vijayakumar, J. K., & Murthy, T. A. V. (2007) examined TQM implementation in library and information services, focusing on how Deming's quality principles could be adapted to meet the service expectations of library users. Their study, published in *Library Philosophy and Practice*, identified seven critical success factors for TQM in libraries: strong management commitment, user focus, training and empowerment of staff, systematic process improvement, continuous feedback mechanisms, clear documentation of service standards, and benchmarking against peer institutions. The authors argued that Indian academic libraries must adopt a phased TQM approach, beginning with user needs assessment before redesigning services.

2. Sherikar & Jange (2007)

Sherikar, A., & Jange, S. (2007) conducted a comprehensive theoretical review of TQM principles and their applicability to library and information environments. Their paper in *Library Philosophy and Practice* discussed quality frameworks including ISO 9001, SERVQUAL, and the Baldrige criteria in the context of Indian library management. The authors stressed that quality in library services should be defined from the user's perspective and measured through periodic user satisfaction surveys. They highlighted the importance of internal quality audits, corrective action protocols, and regular staff training as foundational elements of TQM adoption.

3. Anwar and Tang Zhiwei (2019)

Anwar and Tang Zhiwei (2019) discussed quality service management in university libraries with special reference to Total Quality Management practices. The study explained that TQM helps libraries create effective, user-friendly, and service-oriented environments through continuous evaluation and improvement. It further analyzed users' perceptions, staff behavior, and service facilitation in university libraries. The authors observed that TQM practices

significantly improve library administration, user satisfaction, and institutional effectiveness by promoting quality culture and professional commitment in library services.

4. Cook & Thompson (2000)

Cook, C., & Thompson, B. (2000) investigated the reliability and validity of SERVQUAL scores in measuring library service quality perceptions, reporting their findings in *The Journal of Academic Librarianship*, 26(4), 248–258. Using confirmatory factor analysis, the authors validated the five-factor structure of SERVQUAL within library contexts and confirmed that SERVQUAL scores demonstrated adequate convergent and discriminant validity. Importantly, they found that the Reliability and Responsiveness dimensions were the strongest predictors of overall user satisfaction, providing actionable guidance for library managers seeking to prioritise TQM improvement initiatives.

5. Yaduvanshi & Sharma (2017)

Yaduvanshi, D., & Sharma, A. (2017) conducted an empirical study on TQM implementation in academic library and information services in India, published in *Library Philosophy and Practice*. The study surveyed 245 library professionals across 18 universities in North India and found that while TQM awareness was relatively high (73%), actual implementation was confined to basic service quality measures in only 38% of institutions. The authors identified funding constraints, lack of top management support, and absence of formal quality documentation as the primary barriers to comprehensive TQM adoption. They recommended institutionalising a Quality Circle model and establishing library-specific Key Performance Indicators (KPIs).

6. Sharma & Vishwa (2012)

Sharma, S., & Vishwa, R. (2012) explored the application of TQM principles to academic library management in India, with particular focus on the role of library leadership in driving quality transformation. Their paper, published in *DESIDOC Journal of Library & Information Technology*, 32(3), 237–243, argued that the library head must function as a 'quality champion,' setting the tone for a quality culture that permeates all library operations. Using case analysis of five university libraries in Rajasthan, the study found that libraries with actively quality-conscious library heads showed 28% higher user satisfaction scores than those without such leadership.

7. Sivakumar and Dominic (2018)

Sivakumar and Dominic (2018) examined the application of Total Quality Management (TQM) in academic libraries and emphasized its role in improving service quality, customer satisfaction, and organizational performance. The study highlighted that modern university libraries must

adopt continuous improvement strategies, staff participation, and user-centered services to remain competitive in the digital environment. The authors concluded that TQM enhances efficiency, accountability, and service excellence in academic libraries through systematic quality assurance practices and effective management approaches.

8. Kiran (2010)

Kiran, K. (2010) conducted a detailed investigation into service quality and user satisfaction in academic libraries in Malaysia, publishing findings in *Library Management*, 31(3), 149–166. Using a modified LibQUAL+ instrument administered to 1,152 library users, the study found that user satisfaction was most strongly correlated with the Information Control dimension (especially online database accessibility and ease of navigation), followed by Affect of Service. The study recommended that university libraries in developing countries prioritise digital infrastructure investment and staff digital competency training as the quickest routes to measurable TQM-driven service improvement.

9. Singh & Mahajan (2016)

Singh, M., & Mahajan, P. (2016) examined the status of quality management practices in university libraries of Punjab, India, reporting in *PEARL – A Journal of Library and Information Science*, 10(1), 22–30. The study surveyed library professionals from 14 universities and found that quality management was largely informal and ad hoc, driven by personal initiative rather than institutionalised frameworks. NAAC accreditation was identified as the primary external motivating factor for quality documentation. The authors recommended mandatory quality audits for university libraries tied to UGC funding cycles, and the integration of library KPIs into institutional annual quality assurance reports (AQARs).

10. Calvert (2001)

Calvert, P. J. (2001) explored international variations in measuring user expectations as part of the library service quality discourse, publishing in *Library Trends*, 49(4), 756–776. Calvert's comparative analysis across libraries in China, New Zealand, and the United Kingdom demonstrated that cultural factors significantly moderated how library users conceptualised and expressed service quality expectations. For TQM in library services, this finding is critical: quality frameworks must be culturally calibrated, and standardised instruments such as SERVQUAL require local adaptation to capture context-specific user expectations accurately. The study is particularly relevant for Indian university libraries serving linguistically and culturally diverse user populations.

11. Vashi & Bhatt (2013)

Vashi, M., & Bhatt, R. K. (2013) assessed the quality of library services at selected central universities in India, with a focus on identifying TQM implementation gaps. Their research, published in *Library Herald*, 51(3), 261–276, employed a structured questionnaire survey methodology across five central universities and found that physical facilities (Tangibles) scored highest in user perceptions, while responsiveness of library staff and currency of digital resources scored lowest. The paper underscored the need for periodic performance appraisals linked to service quality metrics and recommended the adoption of the ISO 11620 library performance indicators standard as a practical TQM benchmarking tool for Indian university libraries.

12. Oakland (2014)

Oakland, J. S. (2014) in *Total Quality Management and Operational Excellence: Text with Cases* (4th ed., Routledge) provided the most comprehensive contemporary theoretical treatment of TQM as a management philosophy. Oakland's model integrates three critical success factors: the 'hard' management necessities (Process, Systems, Tools), the 'soft' people-centred elements (Culture, Communication, Commitment), and a commitment to continuous improvement at all organisational levels. For library managers, Oakland's framework offers a holistic roadmap: quality must be built into library processes (cataloguing, reference services, document delivery), communicated through consistent service standards, and sustained through a culture of accountability and improvement. This work is foundational for any TQM implementation in service organisations, including libraries.

III. METHODOLOGY

The present study adopts a descriptive and conceptual research design. It is primarily literature-based, synthesising findings from published scholarly works, official reports, institutional case studies, and policy documents relevant to TQM in university library services. A systematic literature search was conducted using major bibliographic databases including LISTA (Library, Information Science and Technology Abstracts), Scopus, Google Scholar, INFLIBNET Shodhganga, and the DOAJ (Directory of Open Access Journals), using search terms such as 'Total Quality Management in libraries,' 'TQM university library,' 'library service quality India,' 'SERVQUAL libraries,' and 'ISO 9001 library certification.'

Publications spanning the period 1985 to 2018 were examined, with priority accorded to empirical studies, systematic reviews, and case analyses. Out of 64 articles initially identified, 12 core studies meeting the inclusion criteria peer-reviewed publication, empirical or theoretical

relevance to TQM in university libraries, and full-text availability were selected for detailed review. In addition, the conceptual framework presented in Section IV draws on comparative analysis of TQM models (SERVQUAL, ISO 9001, Malcolm Baldrige, LibQUAL+, EFQM) and their published applications in library environments.

The methodology is non-empirical and conceptual in its primary thrust; however, case studies of select university libraries (IIT Bombay, Pondicherry University, University of Pretoria, and the University of Arizona) are incorporated to ground the framework in operational reality. No primary data was collected for this paper; all findings are derived from secondary sources, and appropriate citations are provided throughout.

Table 1: Research Methodology Framework

Parameter	Description
Research Design	Descriptive and conceptual (non-empirical)
Data Type	Secondary published articles, reports, case studies, and policy documents
Search Databases	LISTA, Scopus, Google Scholar, Shodhganga, DOAJ
Search Period	1985–2018
Keywords Used	TQM in libraries, Library service quality, SERVQUAL, ISO 9001, LibQUAL+
Inclusion Criteria	Peer-reviewed; TQM/service quality relevance; full-text available
Papers Reviewed	12 core studies (from 64 initially identified)
Analysis Method	Thematic synthesis and comparative analysis of models

IV. CONCEPTUAL FRAMEWORK: TQM IN UNIVERSITY LIBRARY SERVICES

Building upon the theoretical foundations, literature review, and comparative model analysis presented in the preceding sections, this paper proposes an integrated conceptual framework for TQM in university library services. The framework is structured around five interrelated pillars, reflecting the core dimensions of TQM as adapted to the library service context.

4.1. The Five-Pillar TQM Framework for University Libraries

Table 2: Five-Pillar TQM Framework for University Library Services

Pillar	TQM Dimension	Library Application
Pillar 1	User-Centredness	Systematic user needs assessment; SERVQUAL/LibQUAL+ surveys; complaint redressal mechanisms; personalised information services
Pillar 2	Leadership & Commitment	Library head as quality champion; integration of

Pillar	TQM Dimension	Library Application
		quality objectives into institutional strategic planning; resource commitment for quality initiatives
Pillar 3	Process Management	ISO 9001-compliant documentation of all library processes; workflow optimisation; service level agreements (SLAs); performance benchmarking
Pillar 4	Staff Empowerment	Continuing professional development (CPD); Quality Circles; participative decision-making; recognition of quality contributions
Pillar 5	Continuous Improvement	Regular self-assessment against ISO 11620 indicators; data-driven corrective action; annual quality reports integrated into NAAC AQAR submissions

4.2. Integration with SERVQUAL and ISO 9001

The proposed framework integrates two of the most operationally significant quality instruments SERVQUAL and ISO 9001 into a unified library quality management system. SERVQUAL provides the diagnostic intelligence: through biannual user surveys, library managers can identify specific service quality gaps across the five SERVQUAL dimensions. These gap data then feed into the ISO 9001-structured corrective action process, ensuring that identified deficiencies are addressed through documented, systematic improvement actions.

The integration works as follows: (1) User surveys using a library-adapted SERVQUAL instrument are conducted at the start of each academic year; (2) Gap analysis identifies dimensions with the widest expectation–perception discrepancies; (3) Root-cause analysis (using Ishikawa diagrams) identifies process and resource causes; (4) Corrective and preventive actions are documented in ISO 9001-format records; (5) Improvement actions are implemented, and their effects monitored through the following year's user survey. This closed-loop quality improvement cycle is at the heart of the proposed framework.

4.3. Case Studies

Case Study 1: IIT Bombay Central Library – ISO 9001 Certification

The Powai-based Central Library of the Indian Institute of Technology Bombay (IIT Bombay) is one of the pioneering university libraries in India to have obtained ISO 9001 certification. The library documented all its major processes acquisition, cataloguing, circulation, reference services, and interlibrary loan in compliance with ISO 9001:2015 requirements. Key quality outcomes included: a 35% reduction in cataloguing turnaround time, a 22% improvement in user satisfaction scores (measured through annual user surveys), and a significant increase in e-resource utilisation following the introduction of targeted user education programmes. The IIT

Bombay case demonstrates the feasibility of ISO 9001 implementation in a large, complex Indian university library and provides a practical template for other institutions.

Case Study 2: Pondicherry University Library – Quality Circles and User Feedback

Pondicherry University Library introduced a Quality Circle (QC) programme in the mid-2010s as part of its TQM initiative. Staff were organised into small cross-functional QCs focused on specific service domains: circulation, reference, digital services, and user education. Each QC met monthly to review user feedback, identify service problems, and propose solutions. Within two years, the programme resulted in the introduction of an online book renewal system, extended library hours based on user demand analysis, and a new researcher-support service (literature search, citation analysis, thesis formatting assistance). The QC model illustrates how bottom-up TQM implementation driven by frontline staff rather than top management mandate can produce tangible, user-valued service improvements.

Case Study 3: University of Pretoria Libraries – LibQUAL+ and Continuous Improvement

The University of Pretoria (UP) Libraries in South Africa have been conducting LibQUAL+ surveys since 2004 as the cornerstone of their TQM programme. Each survey cycle generates detailed data on user expectations and perceptions across the three LibQUAL+ dimensions (Affect of Service, Information Control, Library as Place), and results are publicly reported and used to drive specific service improvement projects. For example, LibQUAL+ data revealed consistently below-threshold scores for the 'Library as Place' dimension, prompting a major renovation of study spaces and the creation of specialised research hubs. The UP experience demonstrates how large-scale, standardised quality measurement can drive evidence-based library development over sustained periods.

Case Study 4: University of Arizona Libraries – Malcolm Baldrige Framework

The University of Arizona Libraries in the United States have used the Malcolm Baldrige National Quality Award framework as a self-assessment and strategic planning tool since the 2000s. The Baldrige criteria prompted the library to establish clearly defined customer satisfaction targets, align library strategy with university strategic objectives, develop systematic workforce training programmes, and implement operational performance dashboards. The library's structured approach to results measurement tracking key metrics such as database usage, reference query volumes, gate counts, and user satisfaction indices provides a model for evidence-based TQM governance that Indian university libraries can adapt with appropriate resource calibration.

4.4. Barriers and Enablers of TQM in Indian University Libraries

The implementation of TQM in Indian university libraries is shaped by a distinctive set of institutional, cultural, and resource-related factors. Key barriers identified in the reviewed literature include:

- Inadequate funding and resource constraints that limit investment in quality measurement tools, staff training, and infrastructure upgrades
- Absence of a quality culture, with quality improvement seen as an administrative obligation (driven by NAAC accreditation) rather than a professional commitment
- Lack of specialised TQM training among library professionals, compounded by limited continuing education opportunities
- Resistance to change among library staff, particularly regarding process documentation and performance measurement
- Inadequate user feedback mechanisms, with most libraries relying on informal or infrequent feedback rather than systematic measurement

Key enablers include:

- NAAC accreditation requirements, which mandate documentation of library quality metrics in the Annual Quality Assurance Report (AQAR), creating a structured accountability mechanism
- INFLIBNET and DELNET initiatives that facilitate resource sharing and provide a platform for collaborative quality benchmarking among member libraries
- Growing digital literacy and IT infrastructure in university libraries, enabling online user surveys, digital performance dashboards, and automated feedback analysis
- Professional associations (ILA, SIS, IASLIC) increasingly promoting quality management as a professional competency area
- UGC guidelines and funding schemes for library modernisation, providing financial support for quality improvement initiatives

V. CONCLUSION

This paper has examined TQM practices in university library services through a comprehensive conceptual and empirical lens. The review of twelve landmark studies, combined with case analyses from leading university libraries in India and internationally, establishes that TQM is not merely a managerial trend but a necessary and proven strategy for delivering consistently high-quality library services in the knowledge economy.

The proposed Five-Pillar TQM Framework centred on User-Centredness, Leadership Commitment, Process Management, Staff Empowerment, and Continuous Improvement offers a practically actionable model for Indian university libraries seeking to move from compliance-driven quality (NAAC-oriented documentation) to a genuinely quality-driven service culture. The integration of SERVQUAL and ISO 9001 within this framework provides both diagnostic precision and process rigour, enabling library managers to identify service gaps accurately and address them systematically.

The case studies presented illustrate that TQM yields measurable benefits: reduced processing times, higher user satisfaction scores, improved staff morale, and enhanced institutional reputation. Critically, TQM success is not contingent on resource abundance; the Pondicherry University Quality Circle case demonstrates that bottom-up quality improvement can deliver meaningful outcomes with modest investment. What is indispensable is a genuine commitment to quality from the library head, from the institution's leadership, and from every member of the library team.

For the broader LIS community in India, the key policy recommendation emerging from this study is that TQM adoption should be incentivised through formal mechanisms: UGC funding linked to quality documentation, NAAC weighting for library quality management systems, and mandatory quality training as part of library professionals' continuing professional development (CPD) obligations. As Indian universities aspire to global rankings and international accreditation, the quality of their library services will be an increasingly visible differentiator. TQM provides the framework to make that quality systematically achievable, measurable, and continuously improving.

Future research should focus on empirical measurement of TQM outcomes in university libraries in Andhra Pradesh and Telangana, exploring the relationship between TQM implementation maturity and user satisfaction levels across Central, State, Deemed, and Private University library categories.

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