Quality in Library Services – A Literature Review Study

RAJESH KUMAR*
SALMA KHAN**

The current study is part of a wider research project called "Quality in Library Services: A Study of Management Institutions in Noida and Ghaziabad Regions of Delhi NCR," which includes the literature review and brief analysis of the existing literature. The authors attempted to find previously published research works on Quality in Library Services from various viewpoints, with a focus on the Indian setting. As part of the methodology for this literature review study, all relevant sources of literature were consulted, particularly secondary sources such articles from journals, magazines, conference proceedings, websites, and/or blog posts. The literature review includes published books, theses, and dissertations to provide a comprehensive overview of the prior research on the subject. A review of the available literature is done in order to comprehend the main conclusions and to provide the direction to further research. The authors discovered that a lot of research has been done on total quality management possibilities and challenges, as well as numerous service models. The library offers a wide selection of excellent books. The current study will provide new thrust issues for aspiring scholars to focus on and serve as an exhaustive background study on the quality of library services.

Keywords: *Quality, Library Services Quality, Quality in Library Services, Comparison of Quality Services in Libraries, Literature Review*

1 INTRODUCTION

In this technological advanced era users' expectations from libraries are growing day by day. To retain the users in library has become a major challenge

---
* Research Scholar, IFTM University, Moradabad, UP, India, Email: drjharajesh1969@gmail.com

** Former Chief Librarian, IFTM University, Moradabad, UP, India, Email: salmafarhan2004@gmail.com

for libraries and libraries need to continually improve quality level of services they offer. Users in the libraries have become more and more information conscious than ever before and they need everything fast. They are impatient and can't wait for library response indefinitely.

Libraries must operate with operational efficiency, openness, and accountability given the limited resources, increasing user expectations, complexity of the information available from various publishers and platforms, and rising cost of information. It has been studied by various researchers that users' interest and reliability towards library is deteriorating day by day due to poor services offered by libraries. In such scenario, only better quality services can re-store user's trust and interest towards Library.

To define quality in a word is not easy. According to John Ruskin "Quality is never an accident. It is the result of an intelligent effort". As per British Standard "The totality of features and characteristics of a product of service that bear on its ability to satisfy stated or implied needs". Quality is measured in the terms of satisfaction levels of customer by a service experience or through the use of the product. Therefore, it is crucial to comprehend user demands and expectations, security concerns, manners and successful communication, the language that information experts should use, as well as their body language and distribution methods.

When we talk about Quality in Library Services, the first and foremost requirement is excellence in services that library offer, which means library should strive for excellence in all products and services it offer to its users. Customer satisfaction and delight should be the goal for any library offering irrespective of whether it is in physical or in e-form. Success of any library depends on its capacity to become more dynamic, demonstrate its worth in academic research outcomes, and provide services to users. Since libraries are service organisations, they should constantly be prepared to offer top-notch services to their patrons. The continued existence and viability of a library increasingly depend on the higher caliber of its services.

2 OBJECTIVES

The current literature review study, which is actually a subset of a larger research project titled "Quality in Library Services: A Study of Management Institutions in the Noida and Ghaziabad Regions of Delhi NCR," aims to identify existing research on the subject of quality service in libraries and identify potential areas for further study. The findings of this literature review will help in providing quality services to library customers as well as in recognising the advantages and problems associated with the quality services provided by the library.

The current research aims to accomplish the following goals:

   i. To locate existing literature on library quality services;

  ii. To locate existing literature on the prospects and problems of comprehensive quality management   in libraries;

 iii. To review the existing literature on quality services in Indian libraries;

 iv. To determine the temporal progression of literature on library quality services; and

  v. To identify new emphasis areas in the field of quality services where little study has been done.

3   LITERATURE REVIEW

Literature review is the backbone for any research investigation. It is primarily conducted to know what work has already been done by the previous researchers on the same or related topics so as to identify the gaps in the research area and then to undertake new research problem to answer the gaps left in previous studies.

The majority of previous research show that libraries may better serve their patrons by providing services that are focused on quality. In general, libraries cannot make use of any ready to use customer services as they are understood in the corporate sector. These must be modified in light of the nature and collection of libraries as well as the needs of their patrons. For example, requirements of customers or users in private institutions will be different from the users in corporate sector. Current research study is to determine the quality that can be implemented and improved in libraries services in management institutions in Noida and Ghaziabad region.

3.1 QUALITY MANAGEMENT

Dougherty[1] pushed for measurement of outputs and their impacts in a systems management approach, as well as a connection between staff participation and library effectiveness. Resources, capability, use, and positive impacts were offered as four measurement criteria by Orr[2], who also advocated a distinction between library quality and value. Based on models of goal fulfilment, efficiency, user enjoyment, and behavioural features, Du Mont and Du Mont[3] created criteria and testing methodologies for assessing library performance. They also identified gaps in the various approaches to libraries' effectiveness and create a taxonomy in an effort to harmonise the methods. The emerging ideas of a successful library have been influenced by the literature on organisational dynamics, management, and interaction styles.

As a result, there was much of research and literature on how to evaluate library quality and manage change and development prior to the ostensibly modern quality movement. A deluge of practical and theoretical books outlining

the fundamental ideas and execution procedure appeared as the TQM movement gained hold in libraries. TQM, on the other hand, incorporates quality circles, participative management, and other forms of process control or benchmarking. The focus on user surveys is nothing new, but the business's reorientation toward a customer-pleasant focus, the development of the customer concept, and the evaluation of processes with this in mind go beyond past conceptions of how to gather and analyse use and user data.

According to Carley and Waldron[4], quality assurance is a collection of premeditated actions or activities that are started and carried out with the intention of maintaining and enhancing the quality of learning for participants. There are five methods to define quality, according to Garvin[5]. Management strategies should include these unique approaches for improved Quality Services. Butcher[6] mentioned that the libraries at Oregon State University made the decision to test TQM. Two small teams, the Document Team from the government publications unit and the Shelving Team from the stack maintenance unit, received assistance from outside facilitators. Each team conducted a poll of users and employees and found that certain issues that were important to employees but not to customers required reevaluating TQM. According to the Shelving Team, which sought to address the issue of ongoing shelving backlogs, shelvers who worked alone on the floors reported feeling lonely and discouraged to make progress. The team devised a plan for shelvers to operate in small groups on a specific floor using the data. As a result, "esprit de corps" increased, shelves were cleaned, and backlogs decreased.

According to Kinell[7], providing high-quality services has always been the responsibility of library and information managers, today's demands on and threats to these services are more intense due to increased resource competition, rising client and funder expectations, and the increasing complexity of information. According to Cooper[8], Total Quality Management (TQM) is a management idea built on a commitment to ongoing quality improvement and client needs (1996). Its model, which prioritises processes over products, also includes staff participation, customer feedback, and constant success evaluation. This essay provides an overview of TQM's application in selected case studies from across the world and Australia, as well as examples of where it has been successfully applied to libraries and information services.

Hernon, Nitecki, and Altman[9] contend that although satisfaction is a transaction-specific, short-term measure that concentrates on a personal, emotional response to service, service quality is a long-term measure that ties to consumer expectations. They assert that "service quality is a multi-faceted concept whose full dimensions are only now beginning to be understood." Research and scholarship should continue to develop that idea and offer trustworthy and dependable approaches so that libraries can ascertain what matters most to them and their users. The progression of quality management

in library and information services in the United States is described in this study by Brockman[10], from quality control to quality assurance (QA) to comprehensive quality management (TQM). Case studies of LIS in the UK and North America that are obligated to follow the quality initiatives of their parent company as well as those that have formed unilateral plans serve to highlight this tendency.

The quality literature is examined by Whitehall[11]. He illustrates how self-evaluation, user satisfaction surveys, and failure analysis have been used to analyse it, defines quality in terms of management, and provides examples of the advantages of quality assessment. He discusses ways for developing quality standards as well as how quality appraisal programmes have been built from the bottom up for a thorough examination of the quality standards, procedures, and criteria used in evaluating the four library services of document delivery, question-answering, computerised reference retrieval, and current awareness service. The number of motivational leadership and management literature is available in libraries and bookstores. McGregor[12] demonstrates that there are many paths to excellence. Although it can also be employed in public or nonprofit organisations, most of the literature is written for a business or corporate audience. The philosophy of quality management, also referred to as total quality management (TQM), quality assurance, comprehensive quality control, or any of the many other titles, has long been the subject of debate and discussion in management studies. This chapter examines the applicability, potential advantages, difficulties, and problems of implementing one type of total quality management in a library environment.

Manjunatha and Shivalingaiah[13] mentioned that "the extent to which customer expectations are met by products/services offered by the library depends on customer satisfaction and perceptions of quality. Customers give the quality of the service and the responsiveness of the staff great priority. Additionally, they anticipate reliable services and adequate resources at the library. Customers' priorities are revealed by their preferences along the dimensions of service quality, and addressing these would close any gaps in service quality. Positive reviews from pleased clients will encourage additional devoted patrons to visit the library. This validates the genuineness, self-interest, and dedication of service providers to the needs of their clients. Li[14] writes that thanks to the World Wide Web's and the internet's quick development, information sharing and distribution can be altered through many forms or dynamic channels. Knowledge, skill, or capacities are insufficient to keep up with the rapid advances in science and technology. To successfully and efficiently access, retrieve, convert, synthesise, and analyse information, many library users require assistance. The provision of high-quality, user-centered information services, resources, and education to library users must be planned, developed, improved, and put into action.

Moghaddam and Moballeghi[15] claim that quality management originated in Japan before spreading to the US and other countries. The concept of quality management has now gained enormous popularity. The industrial sector was where TQM was initially used as a management concept. The whole service industry, including libraries, is progressively embracing this concept as a result of its phenomenal success. The objective of this study is to provide a comprehensive overview of total quality management (TQM) in the library and information industries. The adoption of TQM by libraries is also investigated, with an emphasis on the library and information industries. Finally, the writers address the challenges associated with implementing TQM in libraries.

3.2 PROSPECTUS AND CHALLENGES OF TQM

Boelke[16] writes that change has long been a part for libraries. But current library professional publications expanding scope and accelerating speed of change that libraries now face has made change more visible. Furthermore, it is clear from the literature that quality enhancement is one of the numerous issues that worry libraries today. Three key factors have been identified by Hernon and Nitecki[17] as to why libraries ought to be concerned with service quality. First, clients who divulge information about their expectations provide the library a chance to build a deep personal connection with them, leading to superior services. The second is that libraries are under external pressure from parent institutions to be accountable and to employ standard commercial processes, and the third is that libraries must compete with others in the industry.

None of the respondents were completely satisfied with the work culture in their library, according to Sherikar, Jange, and Sangam's[18] research. The librarian's ability to create and uphold friendly ties among library professionals received great marks from the professional staff. One important finding was that customers and library personnel direct interaction while using services, and meeting their needs through the service delivery process is both a problem and an opportunity. The significance of quality management to services must be emphasised by a university library that adopts complete quality management in its operations and offerings. Hallberg and Sipos-Zackrisson[19] stress the librarian's mind-set should change to being service-oriented "retail librarian" where he/she emphasizes the process-orientation, playing the role of the contact creators and the coach/mentors inspiring the users. De Carvalho and Dominguez[20] states that the potential improvements in the quality of librarian services need to be refined for enhancing the users' autonomy. The gender of the service provider and users is a crucial factor in this situation. Utilizing and gaining access to new technologies will increase the quality of library services and ensure that they meet the expectations of users, service providers, and

other stakeholders. These technologies will also enable more convenient, efficient, and effective enface contextual relationships between users and library service providers.

Biranvand and Khasseh[21] in their study of Regional Information Centre for Science and Technology evaluated the quality of services provided by the centre. Outcome of this study indicate that the centre was able to meet minimum expectations of users in most cases except "the courteous staff" option; it was observed that there were 500,000 errors per million indicating an efficiency of 50 percent. On an average this was correct in all options regarding the staff in this place. Users were relatively satisfied with the collection and resources of the centre with efficiency of 69.20 percent. According to this study, "The presence of a web site in the center" got highest efficiency level of 99.97 percent meaning by users were highly impressed with the website presence. Library space availability got relatively lesser efficiency response of 69.20 percent than the users' maximum expectations. However this was more than the minimum expectations levels. The errors of 308,000 per million is not anywhere closed to the maximum users' expectations.

Patil and Pradhan[22] writes that marketing of their products has almost become an integral part in industries. Marketing of Library services means to make the users aware of the services provided their Library to their users. This paper highlights the concepts involved the marketing of Library services and the ways through which the Libraries can reach to their users. Academic Libraries have all types of collections these days. For making optimum use of these collections, the Libraries need to do marketing of their collections. The paper enumerates the practical solutions to find an effective way to do the marketing of their services. Haneefa, Sajna and Sajna[23] study deals with the quality of services being provided by the University Libraries in Kerala with reference to Calicut University Library. The target group to accomplish this study was the strength of 225 students randomly selected from Calicut University. This study explored both item wise and dimension wise analysis of perception and expectations of representatives. The analysis of the findings shows that the students expect highest level of quality services from their Libraries in almost every aspect. In the findings, the overall mean score of students perception is 3.653 and their expectations is 3.884. The difference of both is being 0231 shows that the students have higher level of expectations than their perceptions. According to Yan, Zha, Zhang and Hou[24], research has shown that digital libraries guarantee a greater degree of information quality, system quality, and service quality than virtual communities. Therefore, researchers suggest a win-win strategy where people are encouraged to use both digital libraries and virtual communities rather than becoming alarmed by the difficulty of the latter.

Ahmed, Soroya, and Malik[25] assert that patrons' expectations of libraries

are higher than their impressions of them. In order to meet consumer expectations, librarians can strengthen areas where they fall short, such as front desk personnel services. The survey also discovered that while female library users prefer more palpability and empathy, male library users need more responsiveness and dependability from staff. Similar to this, Becker, Hartle, and Mhlauli[26] investigated how Cape Peninsula University of Technology students used the libraries' resources and services. Customers' satisfaction, accessibility, and facility utilisation were studied. They came to the conclusion that altering library space and services would enable them to satisfy patron demand. The authors of this study, Trivedi, Bhatt, Trivedi, and Patel[27], analyse the extent of electronic services offered by state university libraries in India and suggest improvements to the standard of service based on their results. A questionnaire based on 22 components of four aspects of the quality of e-services that were rated on a five-point Likert scale was used to gather the data. There were 239 library patrons of various categories in the sample. The findings reveal that respondents gave all four dimensions ratings between 3 and 4, which is a favourable sign. The Library website was rated second best, after OPAC Internet services. No one of the 22 services traits obtained a score of more than 4 out of 22 (Excellent). It merely implies that the libraries should raise the level of e-services they offer to its patrons.

Asante and Ngulube[28] discovered that adoption of total quality management had a significant positive relationship with six of the eight tested variables, including top management commitment, employee innovation, employee training, organisational culture, teamwork and effective communication, and quality performance. Only eight variables could be examined in this study due to the crucial success factors mentioned in the paragraph above. Due to the critical success elements that were indicated in the paragraph above, this study was only able to examine eight variables. Due to the possibility that other techniques could have generated a more accurate image, the decision to select a particular strategy may have been limited. Given that the scope of this study was limited to the libraries of Ghanaian technical universities, caution should be taken when extrapolating the findings to other academic settings. If the results are modified to fit the situation, they are applicable to university libraries in Ghana and elsewhere.

The impact of the COVID-19 outbreak on university libraries in Mexico is examined in this study article by Ortega-Martnez et al.[29], as well as the extent to which the libraries' actions contribute to the containment of this effect without sacrificing the quality of library services. Statistical data analysis using FanPage Karma software, a documentary examination, and a mix of qualitative and quantitative methodologies are all used in this study. The materials utilised in this study are open to the public and are used in other parts of Mexico as well as in university education programmes. In the outcomes portion of this

study, we discuss the Library services that have developed as a result of the post-COVID situation that resulted in containment and isolation. The action plan put forth by the universities and the digital skills of librarians are also covered in order to meet the demands of the user community.

3.3 SERVICE QUALITY MODEL

Nitecki[30] calls for alternative approaches to measure quality emerge in the business sector. The SERVQUAL has evolved as an instrument to measure service quality and what customers value as important. The doctorial research conducted by Nitecki tested the SERVQUAL instrument on the three aspects of library services- Interlibrary loan, reference, and closed-reserve and concluded that the instrument was useful in determining how well services match user expectations. The validity and reliability of the SERVQUAL scale were both supported by the study, suggesting that the instrument might be profitably applied to library settings and further indicating which services or staff behaviors need to conform more closely to customer expectations. According to the researcher, greater attention is needed to provide quality library services, but as yet, there is not a clear concept of what that means or how to monitor it within academic libraries". Quinn[31] for instance believes that the service quality model has utility for "the non-commercial environment of the academic library", but warns that "some adaptation may be necessary''. "The educational setting" he explains, "is different from the corporate one. The assumption appears to be that a model that works in one sector will readily translate into another, but this is not necessarily so".

Cook and Thompson's[32] study examines the validity and reliability of SERVQUAL measurement procedure results. Although the SERVQUAL dimensions could not be recovered, the scores were quite reliable. As a result, in a research library situation, the instrument's original validity can be called into question. There are comparisons with earlier SERVQUAL studies found in academic libraries. This Nitecki and Hernon[33] research examines a novel method of evaluating service quality that produces findings that could be applied to regional planning and decision-making. Additionally, it makes a distinction between service happiness and quality and offers ideas for future study areas.

According to Banwet and Datta[34], although attribute priority levels have stayed consistent over the last six months, service quality has decreased for the majority of characteristics. The temporal impact of service quality on post-visit goals was examined using a causal path model. The results demonstrate that service performance and satisfaction levels have an impact on future post-visit intentions throughout the interim period. Obtaining management support and rearranging services within the demands of a quality management system, such as the MS ISO 9001:2000, proved challenging, according to Kaur,

Mohamad, and George[35]. Client input becomes the focal point of continual planning to satisfy customer needs. Higher customer satisfaction and better informed judgments have been the outcomes of a quality management system.

Sahu[36] looks into how customers feel about the Jawaharlal Nehru University (JNU) Library's level of customer service in New Delhi, India. The tool used to acquire the data was a questionnaire. SERVQUAL was utilised as a diagnostic tool to assess service quality which distinguishes between customer perceptions and service expectations. Service quality is crucial for changing workplace attitudes and increasing employee involvement in library services. It should place more of an emphasis on ongoing product and service improvement with increased staff involvement and a stronger focus on consumer requests. According to Sahu[37], a comprehensive information programme that is based on and dependent upon the user's activities and needs will be successful in achieving total perfection in information service.

Thakuria[38] in his study mentions that "Quality services means resources and services, which satisfy users' expectations and perceptions. It is very clear that librarians must use management tools to run the library services. These tools such as TQM, SERVQUAL, LibQUAL help them to assess services, to make decisions, to improve services and to achieve a better quality". Hossain and Islam[39] measured the perceptions of the users of the existing services along with expectations and requirements which are important to identify the PSQ (Perceived Service Quality). A changed SERVQUAL instrument was used and the responses by users for minimum perceived and expected services were computed. To measure the PSQ revealing the positive gap by way of quality services and negative gap indicating short fall of services, a gap analysis was done. They identified user's satisfaction levels. Minimum service level was the common comparison standard in both assessment of PSQ and satisfaction. According to this study finding, for users only "library hours" was the service item that mattered most and led to their optimum satisfaction, while other items fall short of meeting the users' needs.

Babalhavaeji, Isfandyari-Moghaddam, Aqili, and Shakooii[40] analysed the theoretical and empirical literature on performance evaluation and quality assessment in academic libraries in order to pinpoint the major problems. The study goals were to find a set of criteria that appears to be useful for assessing the calibre of academic libraries ITBS, to find the criteria that are strongly connected with that performance quality, and to utilise those criteria to create an instrument or evaluation checklist for doing so. For use in the quality evaluation studies shown in the paper, a number of indicators have been created and evaluated. The literature suggests that assessing ITBS in academic libraries should receive more focus, and that further evaluation studies utilising tested methodologies are needed.

According to Saarti and Juntunen[41], the library might merge the two

libraries' service production by utilising its quality management system. It is critical that the entire team participate in the process. The purpose of this article is to show how the strategy was set, how the organisation grew, and how a quality manual for the new combined library was constructed. Sharma, Anand, and Sharma[42] write that libraries must routinely evaluate changing client objectives and expectations in order to improve their service offerings. E-resources' ferocious competition forces libraries to constantly innovate or risk extinction. To ascertain the present levels of satisfaction with library services, a SERVQUAL-derived Likert scale questionnaire with 32 items on several service quality topics was administered to 100 users and 20 library staff members of two institutions in Punjab. They conducted a linear regression analysis, a Pearson correlation analysis, an independent sample t-test, and an ANOVA. The results show that there were no significant disparities in the age, educational level, or gender of library users. But users and providers differ significantly on some measures of service quality. Libraries can enhance the quality of their services by benchmarking against international best practices and incorporating a variety of stakeholders, such as users, staff, management, publishers, and sponsors.

Swallehe and Mandari[43] study revealed the quality of services in public University Libraries of Tanzania and developing economies by using SERVQUAL model through improving policies and other appropriate measures for supporting the governing boards and watchdogs to overcome the overall service quality gaps to improve the quality control and assurance in higher learning institutions to make sure each and every Institutions adhere to the standards set by them. Grieves and Halpin[44] developed a quality model for the University of Sunderland library. This strategic and holistic approach was developed to enable the cultural change for meeting the contemporary challenges faced by the Institutes of higher (HE). The objective of this strategic approach was to facilitate the capturing of impact evidence and highlight the value of the contribution. Wantara[45] investigated the library of Trunojoyo University fir the impact of service quality, customer satisfaction, and customer loyalty. The structural Equation Modeling (SEM) was used to test the casual relationship model. The finding shows that service quality and customer satisfaction are both important for customer loyalty. It was also observed that and important mediator between service quality and student loyalty was student satisfaction.

Dahan, Taib, Zainudin and Ismail[46] study suggests that highly competitive global scenario where even academic institutions are also competing, university libraries are compelled to change their orthodox roles & services to a more elegant 360 degrees service provider to their users. Libraries have to maintain balance between growing information sources, high demand of users and use of information technology tools in addition to growing number of student

enrolments. Successful balancing by the library of above parameters will lead to users' satisfaction for its services. Researchers have used a new measuring tool LibQUAL Model to measure service quality and perspectives of library users. Outcome of this study indicates positive response from majority of the users about perceived service quality level and can serve a model and guide for effective decision making by any library. Eqbal[47] study highlights the quality of services being offered by the Libraries of Central Universities in India. The scope of this research is limited to only seven central University Libraries in India. The questionnaire method that comprises of the modified SERVQUAL instrument developed by Parasurama, et al.[48] was used as a tool to get the final findings. The target groups were selected to be the Faculty members and the research scholars of these Universities. The questionnaire had been divided into six parameters – Access, Assurance, Communication, Reliability, Responsiveness and tangibles. The analysis of the mean scores of all the variables discloses that the users of Delhi University, CRL have highest level of perception for their Libraries and also they have expressed the same level of satisfaction with the services offered by their Library.

Oak[49] writes that libraries have been helping users since the dawn of time to learn more about anything and everything. Being a service institution, academic libraries play a crucial part in making information accessible to all members of the academic community, whether they be students, faculty, or researchers. To address this, academic libraries constantly upgrade themselves. The user expectations at the Savitribai Phule Pune University-accredited management libraries in the Pune, Nashik, and Ahmadnagar districts are the topic of this essay. Data gathering was done using the LibQUAL+ technique. As a result of this analysis, it was discovered that library customers in management colleges have extremely high standards. High marks are given for remote access to library resources, website accessibility, an enriched collection, and database subscriptions. When compared to their students, faculty members anticipate more from their libraries than do students. The average number of faculty members visiting the library, on the other hand, is lower than that of their pupils. The Management Libraries must continually improve in order to meet and exceed the needs of the users in order to satisfy their needs.

After being put to the test, the conceptual model of Academic Library (AL) service quality proposed by La Fata and Lupo[50] is evaluated utilising a cutting-edge evaluation technique. Particularly, the conceptual model combines the core characteristics of the conventional AL service with those of the modern, well-regarded AL Electronic Service (e-services). It makes use of the Fuzzy Sets Theory (FST) to address students' misconceptions regarding their own assessments of the quality of AL services as well as a Structural Equation Model (SEM) to examine the conceptual model and determine the important

factors influencing AL service quality. An actual study involving the Polytechnic School of the University of Palermo in Italy attests to the effectiveness of the suggested approach.

In order to address the quality of electronic library services utilising failure modes and effects analysis (FMEA) in an intuitionistic-fuzzy environment, Mirghafoori, Izadi, and Daei[51] conducted this study in the library of Yazd University. Twenty failure modes in the quality of electronic library services were discovered after a research of the literature and conversations with LIS experts. The priority and importance of each failure mode are evaluated using the entropy-based FMEA model in an intuitionistic-fuzzy setting after creating and distributing questionnaires to LIS specialists and students. The total service quality (SQ) of the services offered by institute libraries varies, claim Trivedi and Bhatt[52]. On the other hand, the library offers mainly adequate services to academics, but it still needs to expand to fulfil the needs of its enrolled patrons. Customers' expectations for the institute library are higher as evidenced by the study extraordinarily high average anticipation score, especially in the reliability and tangibles dimensions. The results show that ten of the 22 SERVQUAL qualities have high expectations and a significant service gap.

There is a close relationship between service innovation and service quality, claim Chen and Shen[53]. A significant positive association exists between service quality and behavioural intention. This study's objective was to ascertain the impact of a creative service mode on an intelligent library's ability to provide higher service quality and a range of user behaviours. As information technology has developed quickly, the internet of things has grown to be a significant carrier of peoples' "intelligent lives". Intelligent libraries are becoming more commonplace, and they won't be constrained by physical limitations any longer. They already have a subtle impact on how people live and work. From the perspective of user acceptability and use behaviour, the investigation of this unique service mode explored the relationship between the quality of the intelligent library service and users' behaviour. This research also considers how to enhance service quality so that people accept this technology and service model, enabling the realisation of the initial notion. In order to rank failure modes of ESQ of academic libraries in an intuitionistic fuzzy environment, Mirghafoori, Tooranloo, and Saghafi's[54] work demonstrates how this technique may be applied in FMEA. Given their fundamental functions, libraries' electronic service quality (ESQ) is absolutely essential. Customer satisfaction is significantly impacted by ESQ, which improves organisational performance. A low ESQ thus denotes a lack of user satisfaction and the waste of organisational resources. The researcher contends that the ESQ should provide justifications for the many failure modes encountered in academic libraries.

It's crucial to look into the failure mechanisms that impact academic library ESQ as a result. One approach in this area is the application of intuitionistic

fuzzy (IF) failure mode and effects analysis (FMEA), which is one of the widely used methodologies for failure mode prediction and identification. According to Mehta[55], the objective of this work is to assess the user satisfaction criterion for qualitative evaluation of the timeliness and effectiveness of digital libraries using the multivariate fuzzy logic technique. The effectiveness of digital library services has been evaluated using fuzzy logic. This fuzzy logic-based method is used to compute the dynamic response of users using many variation technologies. In a practical setting, these aspects are characterised by fuzzy linguistic information due to inherent uncertainties. The statistical effectiveness and correctness of the model may be validated using real-world data sets, notwithstanding the small sample size in this data set.

4   ANALYSIS AND FINDINGS

Table 1: Distribution of Selected Literature by Major Sub-Headings

S. No.	Sub-heading	Published papers reviewed
1.	Service quality	10
2.	Quality management	4
3.	Measuring service quality	4
4.	Quality of Library Services	3
5.	Total quality management	3
6.	Quality performance	2
7.	Quality assessment	2
8.	Quality assurance	2
9.	Library effectiveness	2
10.	Performance management	2
11.	Customer Satisfaction	2
12.	Fuzzy logic	2
13.	LibQUAL+	1
14.	Quality improvement	1
15.	SERVQUAL	1
16.	LibQUAL Model	1
17.	Service quality and satisfaction	1
18.	Quality management service	1
19.	Quality management	1
20.	Structural equation model	1

21.	User interfaces	1
22.	Intuitionistic fuzzy	1
23.	Failure mode and effects analysis (FMEA) method	1
24.	LibQUAL	1
25.	Quantitative assessment of libraries and their services	1
26.	Digital services	1
27.	Marketing of library services	1
28.	Service quality model	1
29.	Information quality	1
Total		55

Table 2: Distribution of Selected Literature Year Wise

S. No.	Year	Published papers reviewed
1.	1972	1
2.	1973	1
3.	1979	1
4.	1984	1
5.	1988	1
6.	1992	2
7.	1993	1
8.	1995	2
9.	1996	2
10.	1997	1
11.	1999	1
12.	2000	2
13.	2001	1
14.	2002	1
15.	2004	2
16.	2006	4
17.	2007	2
18.	2008	1
19.	2010	2
20.	2011	1
21.	2012	3
22.	2013	2
23.	2014	4
24.	2015	2
25.	2016	3
26.	2017	2
27.	2018	1
28.	2019	2
29.	2020	2
30.	2021	4
Total		55

5 RESEARCH IMPLICATIONS AND FUTURE DIRECTIONS

Study of total quality management in libraries is not a new area of study and authors of the current study discovered that a lot of research has already been done on this subject, however, no exclusive study has been done to compare the quality of libraries services of management institutions particularly in the region of Noida and Ghaziabad and to suggest how the quality services can be implemented among these libraries and what are the challenges during course of implementation of quality services. Hence, the present study has great significance and the model suggested in this study may be generalized and adopted among other libraries across different geographical regions. The current study will provide new thrust areas for aspiring scholars to generalize the findings of this study and to test different quality services models among different set-ups of libraries spread across different regions.

REFERENCES

1. DOUGHERTY (RM) (1972). The human side of library effectiveness, in Hershfield, A. and Boone, M. (Eds.), *Approaches to measuring library effectiveness: A symposium,* Syracuse University School of Library Science, Syracuse, pp. 40- 47.

2. ORR (RH) (1973). Progress in documentation: Measuring the goodness of library services: A general framework for considering quantitative measures. *Journal of Documentation, 29*(3): 315- 332.

3. DU MONT (RR) and DU MONT (PF) (1979). Measuring library effectiveness: A review and an assessment in Harris, M. H. (Ed.), *Advances in librarianship*. New York Academic Press, New York, *24*(2): 103- 141.

4. CARLEY (R) and WALDRON (MW) (1984). Quality Assurance and Continuing Education. *Canadian Journal of University Continuing Education, 10*(1): 53-97.

5. GARVIN (DA) (1988). Managing Quality: The Strategic and Competitive Educe. New York, Free Press.

6. BUTCHER (1993). Fast Focus on TQM: A Concise Guide to Company Wide Learning. Portland, Oregon: Productivity Press.

7. KINNELL (M) (1995). Quality Management and Library and Information Services: Competitive Advantage for the Information revolution. *IFLA Journal*, *21*(4): 265-273.

8. COOPER (M) (1996). The use of Total Quality Management (TQM) in libraries and information services in Australia and overseas. *The Australian Library Journal, 45*(2): 92-101.

9. HERNON (P), NITECKI (DA) and ALTMAN (E) (1999). Service quality and customer satisfaction: An assessment and future directions. *The Journal of Academic Librarianship, 25*(1): 9-17.

10. BROCKMAN (JR) (1992). Just another management fad? The implications of TQM for library and information services. *In ASLIB proceedings.* MCB UP Ltd. *Aslib Proceedings, 44*(7/8): 283-288.

11. WHITEHALL (T) (1992). Quality in library and information service: a review. *Library Management, 13*(5): 23-35. DOI: https://doi.org/10.1108/01435129210020361

12. MCGREGOR (F) (2004). Excellent Libraries: A Quality Assurance Perspective. *Advances in Librarianship, 28*: 17-53. DOI: doi:10.1016/S0065-2830(04)28002-3

13. MANJUNATHA (K) and SHIVALINGAIAH (D) (2004). Customer's perception of service quality in libraries. *Annals of library and information studies, 51*(4): 145-151.

14. LI (L) (2006). Leveraging quality web-based library user services in the digital age. *Library Management, 27*(6/7): 390-400. DOI: https://doi.org/10.1108/01435120610702387

15. MOGHADDAM (GG) and MOBALLEGHI (M) (2008). Total quality management in library and information sectors. *The Electronic Library, 26*(6): 912-922.

16. BOELKE (JH) (1995). "Quality Improvement in Libraries: Total Quality Management and Related Approaches", Godden, I.P. (Ed.) *Advances in Librarianship* (Advances in Librarianship, Vol. 19), Emerald Group Publishing Limited, Bingley, 43-83. DOI: https://doi.org/10.1108/S0065-2830(1995)0000019005

17. HERNON (P) and NITECKI (DA) (2001). Service quality: A concept not fully explored. *Library Trends, 49*(4): 687-708.

18. SHERIKAR (A), JANGE (S), and SANGAM (SL) (2006). Performance Measurement of quality services in academic and research libraries in India in C. Khoo, D. Singh & A.S. Chaudhry (Eds.), *Proceedings of the Asia-Pacific Conference on Library & Information Education & Practice 2006 (A-LIEP 2006), 3-6 April 2006;* School of Communication & Information, Nanyang Technological University, Singapore, pp. 61- 67.

19. HALLBERG (A) and SIPOS-ZACKRISSON (K) (2010). Improvements of public library service quality: Perspective of libraries and study centres. *The TQM Journal, 22*(1): 89-100.

20. DE CARVALHO (MMM) & DOMINGUEZ (CE) (2012). New challenges for the quality of librarian services delivery in Portugal. *Library management, 33*(4-5): 272-291.

21. BIRANVAND (A) and KHASSEH (AA) (2013). Evaluating the service quality in the Regional Information Centre for Science and Technology using the six sigma methodology. *Library Management, 34*(1-2): 56-67.

22. PATIL (SK) and PRADHAN (P) (2014). Library promotion practices and marketing of Library services: A role of Library professionals. *Procedia-Social and Behavioral Sciences,* 133: 249-254.

23. HANEEFA (MK), SAJNA (KP) and SAJNA (C) (2014). Measuring service quality of a university library in Kerala in National Seminar on Knowledge Management in Electronic Environment: Opportunities and Challenges. Alagappa University, Karaikudi, 93-105.

24. YAN (Y), ZHA (X), ZHANG (J) and HOU (X) (2014). Comparing digital libraries with virtual communities from the perspective of e-quality. *Library Hi Tech, 32*(1): 173-189.

25. AHMED (W), SOROYA, (MS) and MALIK (GF) (2015). Service quality of library front desk staff in medical colleges of Lahore. *Library Management, 36*(1-2): 12-22.

26. BECKER (D), HARTLE (H) and MHLAULI (G) (2017). Assessment of use and quality of library services, accessibility and facilities by students at Cape Peninsula University of Technology. *South African Journal of Libraries and Information Science, 83*(1): 11-25.

27. TRIVEDI (D), BHATT (A), TRIVEDI (M) and PATEL (PV) (2021). Assessment of e-service quality performance of university libraries. *Digital Library Perspectives, 37*(4): 384-400. DOI: https://doi.org/10.1108/DLP-07-2020-0072

28. ASANTE, (E) and NGULUBE (P) (2020). Critical success factors for total quality management implementation and implications for sustainable academic libraries. *Library Management, 41*(6/7): 545-563. DOI: https://doi.org/10.1108/LM-02-2020-0017

29. ORTEGA-MARTINEZ (EA), PACHECO-MENDOZA (J), GARCIA MELENDEZ (HE), ORTIZ-DIAZ (EM) and SAAVEDRA-ALAMILLAS (C) (2021). Digital services adapted by libraries in Mexico to COVID-19 pandemic: a critical review. *Digital Library Perspectives, 37*(1): 3-17. DOI: https://doi.org/10.1108/DLP-07-2020-0063

30. NITECKI (DA) (1996). Changing the concept and measure of service quality in Academic Libraries. *The Journal of Academic Librarianship, 22*(3): 181-190.

31. QUINN (B) (1997). Adapting service quality concepts to academic libraries. *The journal of academic librarianship, 23*(5): 359-369.

32. COOK (C) and THOMPSON (B) (2000). Reliability and validity of SERVQUAL scores used to evaluate perceptions of library service quality. *The Journal of Academic Librarianship, 26*(4): 248-258.

33. NITECKI (DA) and HERNON (P) (2000). Measuring service quality at Yale University's libraries. *The Journal of Academic Librarianship, 26*(4): 259-273.

34. BANWET (DK) and DATTA (B) (2002). Effect of service quality on post-visit intentions over time: the case of a library. *Total Quality Management, 13*(4): 537-546.

35. KAUR (K) MOHAMAD (P) and GEORGE (S) (2006). Quality management service at the University of Malaya Library. *Library management, 27*(4/5): 249-256. DOI: https://doi.org/10.1108/01435120610668188

36. SAHU (AK) (2006). Perceptions of service quality in an academic library: a case study. *Journal of services research, 6*(1): 188-204.

37. SAHU (AK) (2007). Measuring service quality in an academic library: an Indian case study. *Library review, 56*(3): 234-243.

38. THAKURIA (PK) (2007). Concept of Quality in Library Services: An overview. 5th Convention Planner, INFLIBNET Centre, 412-420.

39. HOSSAIN (MJ) and ISLAM (A) (2012). Understanding perceived service quality and satisfaction: A study of Dhaka University Library, Bangladesh. *Performance Measurement and Metrics, 13*(3): 169-182.

40. BABALHAVAEJI (F), ISFANDYARI-MOGHADDAM, (A), AQILI, (SV) and SHAKOOII (A) (2010). Quality assessment of academic libraries' performance with a special reference to information technology-based services: Suggesting an evaluation checklist. *The Electronic Library, 28*(4): 592-621. DOI: https://doi.org/10.1108/02640471011065409

41. SAARTI (J) and JUNTUNEN (A) (2011). The benefits of a quality management system: the case of the merger of two universities and their libraries. *Library management, 32*(3): 183-190. DOI: https://doi.org/10.1108/01435121111112899

42. SHARMA (SK), ANAND (VK), and SHARMA (G) (2012). Quality of services rendered by university libraries: An empirical investigation. *Trends in Information Management (TRIM), 6*(1): 1-16.

43. SWALLEHE (O) and MANDARI (U) (2013). Management of Library Quality Services in Public Universities in Tanzania. *Anvesha, 6*(4): 41-50.

44. GRIEVES (K) and HALPIN (M) (2014). Developing a quality model at university library services Sunderland. *Performance Measurement and Metrics, 15*(1-2): 50-57.

45. WANTARA (P) (2015). The relationships among service quality, customer satisfaction, and customer loyalty in library services. *International Journal of Economics and Financial Issues*, *5*(1): 264-269.

46. DAHAN (SM), TAIB (MY), ZAINUDIN (NM) and ISMAIL (F) (2016). Surveying users' perception of academic library services quality: A case study in Universiti Malaysia Pahang (UMP) Library. *The Journal of Academic Librarianship, 42*(1): 38-43.

47. EQBAL (M) (2016). Perceptions and Level of Service Quality in Central University Libraries in India: A Study. 10th Convention PLANNER-2016

NEHU, Shillong, Meghalaya, 09-11 November, 2016.

48. PARASURAMAN (A) (1998). Customer service in business to business markets: an agenda for research. *Journal of Business & Industrial Marketing, 13*(4/5): 309-321. DOI: https://doi.org/10.1108/08858629810226636

49. OAK (M) (2016). Assessing the Library Users Expectations: A Select Study of Management Institutions in Savitribai Phule Pune University (SPPU), Pune, India. *International Journal of Library & Information Science (IJLIS), 5*(3): 149-158.

50. LA FATA (CM) and LUPO (T) (2017). A combined fuzzy-SEM evaluation approach to identify the key drivers of the academic library service quality in the digital technology era: An empirical study. *Journal of the Association for Information Science and Technology, 68*(10): 2425-2438.

51. MIRGHAFOORI (SH), IZADI (MR) and DAEI (A) (2018). Analysis of the barriers affecting the quality of electronic services of libraries by VIKOR, FMEA and entropy combined approach in an intuitionistic-fuzzy environment. *Journal of Intelligent & Fuzzy Systems, 34*(4): 2441-2451.

52. TRIVEDI (D) and BHATT (A) (2019). Quest for quality: Assessment of service quality of special academic institution library: case study. *Performance Measurement and Metrics, 21*(1): 1-17. DOI: https://doi.org/10.1108/PMM-02-2019-0004

53. CHEN (M) and SHEN (CW) (2020). The correlation analysis between the service quality of intelligent library and the behavioral intention of users. *The Electronic Library, 38*(1): 95-112. DOI: https://doi.org/10.1108/EL-07-2019-0163

54. MIRGHAFOORI (SH), TOORANLOO (HS) and SAGHAFI (S) (2020). Diagnosing and routing electronic service quality improvement of academic libraries with the FMEA approach in an intuitionistic fuzzy environment. *The Electronic Library, 38*(3): 597-631.

55. MEHTA (R) (2021). Digital library service model for predictive analysis of user satisfaction based on multivariate fuzzy logic. *Digital Library Perspectives, 37*(4): 366-383. DOI: https://doi.org/10.1108/DLP-07-2020-0071