

Service Quality Audit (SQA) in Libraries: a case study of Kerala University library

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Abstract

The main objective of the study is to conduct a library audit with respect to collection and resources, access and availability, facilities and environment, staff assistance and technological infrastructure of the library from user's perspective. The data for the study was collected from 246 library members selected at random from a population of 3,402 using a stratified random sampling method. Statistical techniques like arithmetic mean, standard deviation, Chi-square test, binomial test and ANOVA are used to analyse the data. It was found that the resources available in the library are quite adequate, especially periodicals and theses. Different category of members is moderately satisfied with the collection, physical facilities, IT infrastructure and staff behaviour. The access and availability of resources in the library need improvement. Eresources, internet connectivity including Wi-Fi, library website and social media presence of the library are rated as excellent. But the computer facilities, digital archive, RFID system, OPAC and WEBOPAC, web-enabled academic tools require more perfection. The staff of the library is always helping the users whenever needed. However, more than fifty percent of the members are not getting proper assistance in locating current periodicals, understanding catalogue and accessing articles from e-resources. More computers and IT infrastructure, proper information literacy and user orientation programmes are required to enhance the utilisation of resources and quality of services.

Keywords: Service quality audit; Kerala University Library; Access and availability; Physical facilities; Technological infrastructure; RFID; Staff assistance; User satisfaction

1 Introduction

University library is an integral part of higher education and is also described as the heart of university system. It has been considered as a parameter for National Assessment and Accreditation Council (NAAC) by University Grants Commission (UGC) since 1994. University libraries must contribute significantly to the formal educational environment in the age of the information revolution by offering their cutting-edge and superior services to faculty, students, and researchers. Additionally, given the changing nature of library services, it is crucial to understand customer expectations and satisfaction levels with regard to such services in order to raise service quality and achieve the library's overall goals. Therefore, a high level of service quality audit (SQA) is vital for the success of organisations.

2. Kerala University Library

Kerala University Library is the central library of the University of Kerala, NAAC reaccredited with A++ and 24th in India and first in Kerala in the NIRF ranking 2023,has a very rich collection of print and electronic documents . At present the Kerala University Library system consists of the university central library, Palayam, campus library at Kariavattom, 44 teaching department libraries and 3 study centre libraries (Kollam, Pandalam and Alappuzha). The average working days of the library are 345 days in a year. For the effective functioning of the library, it is structured as 11 sections, viz. Acquisition, Technical, Maintenance, Circulation, Periodical, Reference, Documentation, Research, Kerala Reference, United Nations and Information Technology.

3. Importance of evaluating service quality

Service quality in libraries refers to the overall level of satisfaction and effectiveness with which library services are provided to patrons. It encompasses various aspects such as the accessibility of library resources, staff assistance, the physical environment, technological infrastructure, and the overall user experience. Evaluating service quality in libraries often involves conducting a library audit, which is a systematic assessment of library services and operations.

4. Review of literature

A study was conducted (Butt & Rafiq, 2023) to evaluate the service quality of Pakistani University libraries using multidimensional modified SERVQUAL structured questionnaire among PG students. The study revealed that users expressed satisfaction with the "Empathy" dimension, indicating that they approved of the library staff's conduct and the cordial atmosphere. However, there was a discrepancy between tangible, reliable, responsive, and assurance criteria in SERVQUAL. SERVQUAL Gap analysis (John Dada, Amahian, & Abubakar, 2023) was used to look into the service quality and user satisfaction of information services offered to users of the college library at Federal College of Education, Zaria utilising traditional and electronic systems and methodologies. It was discovered that the system periodically assesses user happiness. The study suggests using the SERVQUAL approach to gauge user satisfaction across all Nigerian libraries to ensure consistent, highquality service delivery, particularly in the field of education. An Assessment of e-service quality performance of university libraries shows that the university library still has to improve the quality of its current e-service performance and take corrective action to improve the infrastructure and e-services already in place (Trivedi, Bhatt, Trivedi, & Patel, 2021). The exact level of service that the scholars in Tagore Library, University of Lucknow anticipate in all aspects rarely lives up to their expectations in a study (Jatinderkumar & Nazia Naz, 2020); however, the scholars are considerably more pleased with the execution of the library quality service. A quantitative analysis of 49 research articles published in the area of library service quality during 2015- 2019 conducted by (Vaidya, Mali, & Ali, 2022) showed that all 49 of the publications were published in 27 journals indexed in the Scopus database. According to research on the service quality of university libraries in Kerala with particular reference to the Calicut University Library (Mohamed Haneefa, Sajana, & Sajina, 2014) students anticipate high quality services from a university library, including good physical facilities, collections, services, staff, and technology.

5. Significance of the study

This study is conducted to assess the overall quality of services of the Kerala University Library for the purpose of helpinglibrary managers understand the values and limitations of library services



through customer satisfaction. Library audit helps to identify the strengths and weaknesses of services and thus allowing managers to make appropriate decisions and improve the products and services. Recommendations lead to developing a balanced collection, staff training, facility upgrades, technology investments, and user engagement strategies, ultimately ensuring that libraries provide high-quality services that meet the evolving needs of their clientele.

6. Objectives of the study

The specific objectives of the study are:

- i. To conduct a library audit with respect to collection and resources, access and availability, facilities and environment, staff assistance and technological infrastructure of Kerala University library with respect to users' perspectives
- ii. To find out whether library users are satisfied with the overall collection, services and products of the library
- iii. To identify the problems encountered by the users in the library and
- iv. To make suggestions for the improvement of the library situation, if found necessary.

7. Data and methodology

This is a quantitative study employed based on questionnaires, personal interviews, and verification of records. The questionnaire was distributed to 300 library members selected at random from a population of 3,402 members using stratified random sampling to ensure sufficient representation from each category of members. Out of 300 questionnaires distributed 246 were duly filled and returned and it constituted the sample of the study. Rating has to be done on the five point Likert scale. From the reviewed literature the quality of any tangible services depends on the derived satisfaction level of the beneficiaries depends on the mean value of the scores. Accordingly, mean value less than 2.84 is treated to be low effect, 2.84-3.15 has moderate effect and the mean value greater than 3.15 is found to be high effect. Statistical techniques like arithmetic mean, standard deviation, Chisquare test, binomial test and ANOVA are used to analyse and interpret the data.

8. Analysis and interpretations

The library quality audit in this study is analysed under collection and resources, facilities and environment, access and availability, technological infrastructure, staff assistance and overall user satisfaction.

8.1 Demographic and other characteristics of the respondents

Among the 246 respondents, 147 (59.6%) are females and 99 (40.4%) are males. The sex ratio of the population is 1485, which is above the sex ratio of 1084 in Kerala (Kerala, State Planning Board, 2016). Membership wise distribution shows that 100 (40.7%) are students, 58 (23.6%) are researchers, 45 (18.3%) are graduate public and 43 (17.5%) are teachers. The classification of respondents based on the subject of interest shows that 97 (39.4%) are from the field of Arts, Humanities 85 (34.60%) and Science 64 (26%).

8.2 Collection and resources in different sections of the library

Placing of materials in various sections of the library is audited with respect to the opinion of the users' community. Table 1 shows that the materials placed in the periodical section are very useful to the teachers with a mean score of 3.744 ± 1.114 followed by research scholars with

 3.672 ± 0.886 . The mean score of reference section by the teachers is high with a score of 4.488 ± 0.798 followed by public members with 3.911 ± 1.040 . The materials in the stack room are highly rated by students (4.85 ± 0.358) and then by research scholars (3.897 ± 1.359) . The resources in the IT section are highly useful to the research scholars (3.241 ± 1.288) and then to the students (2.8 ± 1.2553) .

Proper placing		Ν	Mean	Std. Deviation	Std. Error
	Students	100	3.5***	0.8103	0.081
	Research Scholars	58	3.672***	0.8863	0.1164
Periodical section	Public	45	3.622***	1.0721	0.1598
	Teacher membership	43	3.744***	1.1147	0.17
	Total	246	3.606***	0.9362	0.0597
	Students	100	3.6***	0.804	0.0804
	Research Scholars	58	3.414***	0.8591	0.1128
Reference section	Public	45	3.911***	1.0406	0.1551
	Teacher membership	43	4.488***	0.798	0.1217
	Total	246	3.768***	0.9341	0.0596
	Students	100	4.85***	0.3589	0.0359
	Research Scholars	58	3.897***	1.3597	0.1785
Stack room section	Public	45	3.756***	1.2276	0.183
	Teacher membership	43	3.14**	1.0597	0.1616
	Total	246	4.126***	1.1695	0.0746
	Students	100	2.8*	1.2553	0.1255
	Research Scholars	58	3.241***	1.2884	0.1692
IT section	Public	45	2.8*	1.2358	0.1842
	Teacher membership	43	2.326*	1.1489	0.1752
	Total	246	2.821**	1.2683	0.0809
	Students	100	1.95*	1.0286	0.1029
V I D C	Research Scholars	58	3.138**	1.7913	0.2352
Kerala Reference section	Public	45	2.533*	1.5315	0.2283
section	Teacher membership	43	2.047*	1.0901	0.1662
	Total	246	2.354*	1.426	0.0909
	Students	100	1*	0	0
	Research Scholars	58	3.655***	1.7923	0.2353
Research section	Public	45	2.178*	1.7358	0.2588
	Teacher membership	43	1.07*	0.2578	0.0393
	Total	246	1.854*	1.5789	0.1007
	Students	100	1.05*	0.219	0.0219
TTNI	Research Scholars	58	1*	0	0
UN and World	Public	45	1*	0	0
Bank section	Teacher membership	43	1*	0	0
	Total	246	1.02*	0.1414	0.009

(*-Low,**-Moderate,***-High)



The score for the Kerala Reference section by the research scholars is high with a score of 3.138 ± 1.791 and lowest by student members with a mean score of 1.95 ± 1.028 . The research scholars rated the Research section highly with a score of 3.655 ± 1.792 and least by student members with a score of

1.00. The mean score assigned by the students to proper placing of UN and World Bank section is 1.05 ± 0.219 and by the research scholars, teachers and public are 1.00.

The adequacy of the collection in the library according to the preference of the respondents. is given in table 2.

Rank	Mean	п	Std. Dev	Adequacy of the collection
1	3.8***	246	1.10	Theses
2	3.5***	246	1.22	Periodicals
3	3.3***	246	1.24	General Magazines
4	3.2 ***	246	1.25	Reference Books
5	3.2***	246	1.32	General Books
6	2.9**	246	1.18	Online Data base/e-Journals/e-books
7	2.8*	246	1.17	Text Books

Table 2: Adequacy of Library Collections

(*-Low,**-Moderate,***-High)

It is clear from table 2 that the theses are highly adequate with a mean score of 3.8 followed by periodicals and general magazines with mean scores of 3.5 and 3.3 respectively. The collection of textbooks and e-resources needs improvement with the lowest mean scores of 2.8 and 2.9 respectively. The adequacy of all the resources in the library has a mean score of above 2.5 on a five-point scale implies that the resources are moderately good.

8.3 Access and availability of resources

Table 3 shows majority of students 80

(80.00%), 26 (57.8%) public and 28 (65.1%) teachers opined that they are not at all satisfied with the access and availability of resources in the library. But 33 (56.90%) researchers opined that they were moderately satisfied. Overall 145(65.6%) respondents are not at all satisfied with the access and availability of resources. The Chi- Square test with a computed value of 36.284 and a significant value of 0.000(P<0.05), implies that there is a significant difference in the opinion of different categories of members with the access and availability of resources.



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Table 3: Type of	membership with	access and availability	of resources
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Satisfaction level on		Total				
Access and Availability of Resources	Student	Researchers	Public	Teacher	Iotai	
Not at all	80	25	26	28	159	
	(80.0%)	(43.1%)	(57.8%)	(65.1%)	(64.6%)	
Moderately	15	33	19	15	82	
	(15.0%)	(56.9%)	(42.2%)	(34.9%)	(33.3%)	
Extremely	5	0	0	0	5	
	(5.0%)	(0.0%)	(0.0%)	(0.0%)	(2.0%)	
Total	100	58	45	43	246	
	(100.0%)	(100.0%)	(100.0%)	(100%)	(100.0%)	
	36.284					
	0.000					
	Result			Signi	Significant	

ANOVA test was conducted to examine the significant difference among the category of members with reference to the opinions about

the access and availability of library resources in different sections. From table 4, it was found that there is a significant difference

Table 4: ANOVA	-Proper pla	acing of the	material
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Ca	tegory	Sum of Squares	df	Mean Square	F	Sig.
	Between Groups	2.212	3	.737	.840	.473
Periodical section	Within Groups	212.540	242	.878	Resu	ılt
	Total	214.752	245		Not sign	ificant
	Between Groups	33.335	3	11.112	14.901	.000
Reference section -	Within Groups	180.458	242	.746	Resu	ılt
Reference section	Total	213.793	245		signifi	cant
Cto als no ann	Between Groups	103.490	3	34.497	36.045	.000
Stack room section	Within Groups	231.603	242	.957	Result	
section	Total	335.093	245		significant	
IT (Between Groups	20.868	3	6.956	4.510	.004
IT section	Within Groups	373.263	242	1.542	Result	
	Total	394.130	245		significant	
V 1 D C	Between Groups	57.478	3	19.159	10.520	.000
Kerala Reference	Within Groups	440.754	242	1.821	Result	
section	Total	498.232	245		significant	
	Between Groups	292.260	3	97.420	74.027	.000
Descent section	Within Groups	318.472	242	1.316	Resu	ılt
Research section -	Total	610.732	245		significant	
	Between Groups	.148	3	.049	2.520	.059
UN and World	Within Groups	4.750	242	.020	Resi	ılt
Bank section	Total	4.898	245		Not sign	ificant



among different types of members regarding the access and availability resources in different sections of the library except for Periodical and UN & World Bank sections.

8.4 Facilities and environment

The physical environment of the library,

		Fac	ilities and H	Environment		
Level of	Seating	Study and	T 1 1 1	Temperature	Noise	Overall
Awareness	Arrangement	Reading	Lighting	Control	Control	other
	r intungement	Space		Control		facilities
Very Poor	6	12	6	10	81	30
very roor	(2.4%)	(4.9%)	(2.4%)	(4.1%)	(32.9%)	(12.%)
D	25	20	5	67	79	125
Poor	(10.2%)	(8.1%)	(2.0%)	(27.3%)	(32.1%)	(50.8%)
Aggentable	67	87	61	141	65	80
Acceptable	(27.2%)	(35.4%)	(24.8%)	(57.3%)	(26.4%)	(32.5%)
Good	118	85	67	28	21	11
0000	(48.0%)	(34.6%)	(27.2%)	(11.4%)	(8.5%)	(4.5%)
Verse Cood	30	42	107	0	0	0
Very Good	(12.2%)	(17.1%)	(43.5%)	(0%)	(0%)	(0%)
Total	246(100%)					

Table 5: Facilities and environment of the library

From table 5 it is clear that seating arrangement of the library is rated as very good by 30 (12.2%), good by 118 (48.00%), acceptable by 67 (27.20%) and only 25 (10.2%) rated as poor and 6 (2.4%) as very poor. Regarding the study and reading space, more than 50% opined that it is good or very good, only 32 (13%) rated as poor or very poor and 67 (27.20%) opined that the lighting is good and 107 (43.5%) rated as very good. The temperature control in the library is

moderately good for 141 (57.3%) and 77 (31.4%) opined that it is very poor or poor. The noise control in the library is poor or very poor for 160 (65%). The overall other facilities and environment of the library is rated as poor by more than 50% of the members and very poor by 12%.

including seating arrangements, study spaces,

lighting, temperature control, and noise

levels, significantly impacts the overall user

experience. A library audit assesses the adequacy and comfort of these facilities.

Table 6 explains the adequacy of the physical facilities according to the preferences of the respondents.



Rank	Mean	п	Std. Dev	Adequacy of facilities
1	4.4***	246	0.96	Cleanliness
2	3.9***	246	1.23	Ventilation
5	2.4*	246	0.87	Computer Facilities
4	3.0**	246	0.90	Reading tables and chairs
3	3.2***	246	0.79	Arrangement of books in racks
8	1.4*	246	0.61	Drinking water facility
6	1.8*	246	1.00	Photocopying facility
7	1.5*	246	0.70	Toilet facility

Table 6:Adequacy of the physical facilities

(*-Low,**-Moderate,***-High)

From table 6 it is clear the mean score of the adequacy of the physical facilities in the library according to the preference of the respondents to the cleanliness is 4.40 and

Table 7: Working hours of the library

ranked as first. The second and third ranks awarded to the ventilation followed by arrangement of books in rack with mean score is 3.90 and 3.20 respectively.

Proper	placing	Ν	Me
	Students	100	5.000

Proper placing		Ν	Mean	Std. Deviation	Std. Error
	Students	100	5.000***	.0000	.0000
Week days	Research Scholars	58	4.707***	.8167	.1072
8A.M to 8	Public	45	4.689***	.8208	.1224
P.M	Teacher membership	43	4.674***	.7471	.1139
	Total	246	4.817***	.6285	.0401
	Students	100	4.500***	1.0778	.1078
Sunday	Research Scholars	58	4.034***	1.3632	.1790
2A.M to 8 P.M	Public	45	3.578***	1.7385	.2592
	Teacher membership	43	3.186***	1.8420	.2809
	Total	246	3.992***	1.5091	.0962

^{(***-}High)



Table 7 shows the mean score for working hours. of the library on weekdays is 5.00 by students, 4.707 by research scholars, 4.689 by public members and 4.674 by teachers. It shows that all the categories of users are fully satisfied with the existing working hours of the library. The working hours of the library on Sunday from 2 pm -8 pm are highly acceptable by the students with a mean score of 4.5 followed by researchers 4.034 and public 3.578 respectively. The working hours are not adequate for the public and teachers with a mean score of 3.578 and 3.186 respectively.

8.5 *Technological infrastructure and service*

As libraries increasingly adopt digital technologies, assessing the quality of the library's technological infrastructure becomes important. This includes evaluating the functionality and reliability of computer systems, internet connectivity, online databases, RFID system self-checkout systems, and other technological services provided to library users.

Rank	Mean	п	Std. Dev	Sources
1	4.1	246	1.4	E-Resources including online databases
2	3.9	246	1.41	Internet connectivity including Wi-Fi
3	3.9	246	1.61	Web site, Blog and other Social Media of the library
4	3.7	246	2.06	Functionality and reliability of the computers
5	3.5	246	1.35	Digital Archives (Knowledge repository)
6	3.4	246	1.54	RFID system –Kiosk, Drop Box etc.
7	3.2	246	1.32	OPAC and Web OPAC
8	2.5	240	1.68	Grammarly, Plagiarism Checking service

 Table 8: Adequacy of technological infrastructure and services

As per table 8 the mean score of eresources including online databases is 4.1, ranked first. The second and third ranks to internet connectivity including Wi-Fi and website, blog and social media presence of the library with a mean score of 3.9 and standard deviation of 1.41 and 1.61 respectively.

8.6 Staff assistance

The competence and helpfulness of

library staff play a crucial role in service quality. This aspect examines the knowledge, responsiveness, and professionalism of librarians and other personnel in assisting patrons, providing reference services, and offering guidance on resource utilization. Table 9 shows the opinion of the respondents about the helping mentality of the staff.



Helping mentality of staff	Туре				Total
	Student	Researchers	Public	Teacher	Total
Always Helpful	65	36	24	24	149
	(65.0%)	(62.1%)	(53.3%)	(55.8%)	(60.6%)
Occasionally Helpful	30	14	19	19	82
	(30.0%)	(24.1%)	(42.2%)	(44.2%)	(33.3%)
Not helpful	5	8	2	0	15
	(5.0%)	(13.8%)	(4.4%)	(0.0%)	(6.1%)
Total	100	58	45	43	246
	(100.0%)	(100.0%)	(100.0%)	(100.0%)	(100.0%)

Table 9: Type of membership with helping mentality of the library staff

From table 9 it is clear that the majority of the members in all categories opined that the staff in the library are always or occasionally helpful. Only a small fraction of members (6.1%) responded that the staff are not helpful. It is further analysed using binomial test with reference to specific type of assistance in the library and is provided in table 10.

Table10: Binomial Test - assistance of the Kerala University library staff

Category	Opinion	Ν	Observed Prop.	Test Prop.	Exact Sig. (2-tailed)
Locate Books	Yes	221	.90	.50	.000
	No	25	.10	Result	
	Total	246	1.00	Significant	
Locate current periodicals	Yes	120	.49	.50	.750
	No	126	.51	Result	
	Total	246	1.00	Not Significant	
Understand Catalogue	Yes	119	.48	.50	.655
	No	127	.52	Result	
	Total	246	1.00	Not Significant	
Understand Reference Books	Yes	130	.53	.50	.407
	No	116	.47	Result	
	Total	246	1.00	Not Significant	
Articles from E- Publications	Yes	57	.23	.50	.000
	No	189	.77	Result	
	Total	246	1.00	Significant	

With reference to the assistance for locating books, 90% opined that they get the assistance and is statistically significant. More than 50 % of the members are not getting proper assistance in locating current periodicals, or understanding catalogue. A lion's share of respondents (77%) are not

getting proper help in accessing articles from e-resources and it is statistically significant.

9. Findings

The overall service quality of university library is moderately good with the collection, physical facilities, IT infrastructure and staff behaviour. With respect to the proper placing of materials in the library in different sections, most of the respondents prefer the Periodical section. The second preference to the Reference section followed by Stack room, IT section, Kerala reference section and Research section. The quality of these available in the library is highly rated and other resources need improvement. The seating arrangement, study and reading space, and lighting are rated as good but the temperature control is rated as moderate and noise control is very poor. Regarding the physical facilities cleanness, ventilation, arrangement of books on shelves, reading tables and chairs are ergonomic and good and more computer facilities are required. All the categories of users are fully satisfied with the existing working hours of the library. Eresources, internet connectivity including Wi-Fi, library website, and social media presence of the library are rated as excellent. The staff of the library are always helping the users whenever needed. However, more than half of the members are not getting proper assistance in locating current periodicals, understanding catalogue and accessing articles from eresources.

10. Suggestions

The Kerala University library authorities shall continually meet the stakeholders' requirements with formal means of addressing and resolving customer needs in time. It also develops a team-oriented work environment that encourages continuous quality improvement and effective staff user interface to ensure continuous improvement in library services and products. Based on the above findings the following suggestions can be made:

- i. Regular user orientation programmes, training programmes and soft skill development workshops have to be organised to improve customer relations.
- ii. The authorities shall conduct quality assessment and staff evaluation at least once in three years.
- iii. Reclassification of documents from Colon Classification to Dewey Decimal Classification system for easy access to documents on the shelves.
- iv. More computers with the latest specifications shall be provided in all sections to ensure the resources are available and accessible.
- v. The absence of a leading personality adversely affects the quality in the overall management of the library. Appointing a University Librarian may enhance effectiveness in the management of the library.

11. Conclusion

Today, the quality of information that the library and information centres supply and disseminate affects teaching, learning, research, and development. With the introduction of Artificial Intelligence (AI) tools like Chat GPT, Google Bard, and others, university libraries are more conscious of the fact that their continued operation depends on the satisfaction of their customers and as a result strive to provide complete customer satisfaction. What libraries offer and what their patrons actually need may not always



match up. As a result, the library is unable to satisfy the needs of its patrons. It is necessary to have a system through which the customers' needs are heard and these must be used to improve the quality of service. Conducting service quality audits and implementing quality management in the Kerala University Library may accomplish customer satisfaction to a great extent.

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