

An Exploratory Study of Library User Satisfaction with Reference to Physical Facilities and Services at Einstein College of Arts and Science

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Abstract - This present study examines library user satisfaction regarding physical facilities and services. Using the expectation-confirmation and service quality theories, and focusing on users' demographic characteristics, usage patterns, and the level of satisfaction they express. This study adopted empirical method, and primary data were obtained from 200 registered library users at Einstein College of Arts and Science in Tirunelveli using a structured questionnaire. The data were analysed through frequency and percentage analysis, weighted mean ranking, the Pearson Chi-Square Test of Independence and the Pearson Correlation at both the composite and item levels. The results explored that the respondents showed high levels of satisfaction regarding the furniture, lighting, ventilation, and maintenance, but were comparatively less satisfied with the reading room and the drinking water facilities. As for services, reprographic service, the orientation programme, circulation, and reference services received the highest satisfaction ratings, whereas internet service and the bulletin board service had the lowest ratings. The chi-square analysis showed statistically significant relationships between the clustering of overall satisfaction and gender, frequency of visits, the use of information sources, the source consulted when seeking information, and the perceived usefulness of the resources; no significant association was found for the area of residence, the purpose of the visit, or the type of barrier encountered. Finally, this study provides substantive value by presenting an evidence-based model for prioritising the allocation of library resources in the Indian higher education setting.

Key Words: Library, Satisfaction, Physical Facilities, Services, ECAS.

1.INTRODUCTION

Academic libraries serve an essential function in the teaching and learning environment of higher education institutions, acting not only as stores for print and digital materials but also as active centres that provide access to information, help develop users' skills, and offer academic support (Faizan & Munshi, 2025). The degree to which a library meets this role can most accurately be assessed by looking at the level of satisfaction of its users, since patron satisfaction acts as a proxy for the effectiveness of the services, the adequacy of the resources, and the organisation's responsiveness (Cook & Heath, 2001). In the fields of marketing and information systems, user or consumer satisfaction is traditionally viewed as resulting from the extent to which pre-usage expectations are confirmed or disconfirmed by the actual performance after use (Oliver, 1980); when this idea is applied to libraries, it means that satisfaction with the physical facilities and satisfaction with

the services may be the result of separate and only weakly related expectation-performance gaps rather than being based on a single, undifferentiated quality factor. Because of the increasing expectations of students, the quick digitisation of information resources, and changing patterns of use, it has become imperative for academic libraries, if they want to stay relevant and at the same time make efficient use of their resources, to carry out regular empirical assessments of patron satisfaction Rahman et al., (2026). The study also looks at how these levels of satisfaction are related to users' demographic characteristics (such as gender and area of residence) and their usage patterns (including how often they visit, the purpose of their visits, the information sources they use, the obstacles they encounter, and the sources they consult). It statistically tests the relationship between the two satisfaction dimensions.

2. ABOUT THE COLLEGE

Einstein Group of Institutions was founded by Thiru. Aladi Aruna, former Tamil Nadu Law Minister. Being one of the sister concerns, Einstein College of Arts and Science was started in the academic year 2017, affiliated to Manonmaniam Sundaranar University, Tirunelveli, Tamil Nadu, India. The College is located about 12 km away from Tirunelveli towards the well-known Courtallam. The college thrives on continuous learning and moulding the students in all facets of life enabling them to achieve success in academics and life skill oriented with zest and confidence. The college environment inspires the students of different levels to imbibe education along with practical exposure to excel in their chosen field of study. The college continuously works towards students centric to achieve excellence. At present the college offers ten Under Graduate Courses.

3. ABOUT THE LIBRARY

Einstein College of Arts and Science have a vast Library which is considered as a Realm of Knowledge. The library caters mainly to accumulate information based on the needs of the Students and Faculty members. It has been functioning since the inception of the institution. The collections in the library include Books, National and International Journals, Standard Newspapers and Magazine and Online E-resources. The library has all modern facilities to meet the user's needs. The library provides Information Services, Reference Services, Bibliographic Services and Reprographic Services. A variety of E-books and various subjects is present. The library sends email alerts to the users about various academic activities (FDP, SDP, Training Programme Symposium, Workshops, Seminars and Conferences). The library also has its own Blog to display the

latest updates. In spite of all these facilities, the library adheres to 5'S Technique & Standard Operating Procedures (SOP). In a nutshell, it is a great pride to say that ECAS Library acts as "A Knowledge Elixir" which quenches the thirst of the library users. The library provides a conducive atmosphere for learning and gathering knowledge and information.

4. REVIEW OF LITERATURE

The theoretical basis of user-satisfaction research is mainly based on Oliver's (1980) Expectation-Confirmation Theory (ECT), which views satisfaction as a cognitive result of the difference between expectations before using a service and the actual performance that is perceived after use. In research concerned with service quality, Parasuraman, Zeithaml, and Berry (1988) defined this gap using the SERVQUAL instrument. They identified five basic aspects of perceived service quality, tangibles, reliability, responsiveness, assurance, and empathy, all of which have since been widely adopted in various service sectors, such as libraries. On this basis, Cook and Heath (2001) created the LibQUAL+™ instrument particularly for research libraries. They showed that users assess library service quality in several areas, such as the effect of the service, information control, and the library as a place. Furthermore, Cook, Heath, and Thompson (2001) proved, by means of a hierarchical factor analysis of the LibQUAL+™ data, that although one single higher-order factor lies behind users' overall evaluations of library quality, several first-order dimensions account for unique variance, with different user groups assigning different importance to different dimensions. This result suggests the present study's own decision to treat physical-facility and service satisfaction as closely connected but separate constructs. Recent valid empirical studies support the ongoing importance of both physical and service-quality aspects within the setting of academic libraries in India. In a well-designed study published in Performance Measurement and Metrics, Faizan and Munshi (2025) surveyed 277 users at the Indian Institute of Technology, and discovered that users generally had a high level of satisfaction with ICT-enabled library resources and services, even though a considerable minority of users (28.5%) still experienced difficulty in finding specific information, furthermore, finding which shows that overall satisfaction figures can cover particular problems at the service level. This situation is in line with the differing item-by-item satisfaction rankings seen in the current study. Similarly, Rahman, Ahammad, Islam and Haque (2026), who also cited same, looked at user satisfaction at a university library in Bangladesh and found that although users were generally satisfied with the physical collections, reference services, and circulation services, they showed clear dissatisfaction with the seating capacity, internet access, and the printing/photocopying facilities staff behaviour being found to have a significant effect on the relationship between the quality of resources and services and overall patron satisfaction. The pattern of dissatisfaction concerning infrastructure, especially internet access, is very similar to the present study's finding that internet service was the lowest-ranked item in satisfaction among the sixteen physical facilities and services examined. From the point of view of facilities design, Peng, Wei, Fan, Jin and Liu (2022), conducted a comparative study involving multiple universities published in the Scopus-indexed journal Buildings, used multiple linear regression on satisfaction data from 457 library users at three Chinese universities and discovered that

the availability of service facilities was the one most influential factor in overall spatial satisfaction, outperforming interior design quality, the physical environment, spatial diversity, and space controllability something which empirically supports the importance of the quality of tangible facilities for the overall library user experience. This point is also reflected in the current study's finding that furniture, lighting and ventilation are among the most satisfying attributes. Moreover, Eronimus, Ganesa Murthy and Mani (2021), who published in the Scopus/ESCI-indexed journal Library Philosophy and Practice, looked at user satisfaction with the physical facilities and services at an engineering college library in Tamil Nadu and found no statistically significant differences in satisfaction among most of the facility and service categories apart from CD-ROM search, indicating that there is a relatively uniform level of user experience in the well-resourced college libraries of Tamil Nadu thus providing a useful benchmark against which the more varied. The body of literature surveyed comes to three conclusions which have directed the design of the current study: first, that physical-facility satisfaction and service satisfaction are separate, distinct dimensions of the library user experience both in concept and according to empirical evidence rather than forming a single, undifferentiated construct similar study which done by Cook et al., (2001); & Peng et al., (2022); secondly, that demographic and usage-pattern variables often, if not always, have an effect on satisfaction levels and so should be subject to formal inferential testing rather than being dealt with only descriptively and thirdly, that deficiencies in infrastructure and connectivity especially concerning internet access and ICT services appear as a continual cause of dissatisfaction in a wide variety of academic library environments (Rahman et al., 2026), a finding which is independently confirmed by this study's results.

5. RESEARCH GAP

The literature reviewed specifies strong individual evidence on the various determinants of library service quality, but three gaps remain. First, there are few Indian studies at the college level that formally examine the statistical relationship between users' demographic characteristics or usage patterns and a combined satisfaction classification using inferential methods, most Indian studies rely only on descriptive comparisons or non-parametric rank tests. Second, very few studies clearly measure the correlation between satisfaction with physical facilities and satisfaction with services when these are treated as two connected yet distinct constructs, even though there are theoretical reasons to expect them to differ in certain situations. Third, no study among those reviewed has taken the correlations found at the composite level and applied them to an item-level correlation matrix to determine which specific sub-items are responsible for an unexpected relationship at the composite level, a diagnostic procedure that this study applies to explain, rather than report, its main correlational finding. The present study addresses these three gaps within one empirical framework customised to the situation of library at Einstein College of Arts and Science.

6. OBJECTIVES

- To study the demographic profile and library usage pattern of the respondents.
- To examine the association between user demographics (gender, area of living) and satisfaction levels with physical facilities and library services.
- To examine the association between usage patterns (frequency of visit, purpose of visit, information sources used, barriers faced) and satisfaction levels.
- To examine the relationship between satisfaction with physical facilities and satisfaction with library services, and to identify the item-level drivers of this relationship.

7. RESEARCH METHODOLOGY

The study uses a descriptive-empirical, cross-sectional research design. It is based on primary data gathered through a standardised questionnaire administered to library users and collected 200 samples from the Einstein College of Arts and Science in Tirunelveli.

The questionnaire included two demographic variables (gender and area of residence), six variables relating to usage patterns (frequency of visit, purpose of visit, use of information sources, barriers encountered, source consulted, and opinion regarding the usefulness of the periodicals and back volumes), and sixteen items concerning satisfaction, 6 relating to the physical facilities (SPFL1 to SPFL6) and 10 relating to library services (SLLS1 to SLLS10) with each item being assessed on a five-point Likert scale extending from Highly Dissatisfied to Highly Satisfied. The data were coded and analysed with the help of JAMOWI Statistics; frequency and percentage analyses were carried out to describe the respondents, weighted mean scores were calculated in order to rank the satisfaction items, the Pearson Chi-Square Test of Independence was applied to look at the associations between the categorical demographic and usage variables and an overall satisfaction cluster grouping, and Pearson Product-Moment Correlation was used to examine the relationship between the combined physical-facility and service-satisfaction scores as well as between the individual satisfaction items.

8. SCALE OF MEASUREMENT

Table 1: Scale of Measurement for Study Constructs

Construct	No. of Items	Scale Type	Response Anchors
Demographic Variables (D1–D2)	2	Nominal	Category-specific (e.g., Male/Female; Rural/Urban)
Usage Pattern Variables (PER1–PER6)	6	Nominal/Categorical	Category-specific (e.g., frequency, purpose, source)
Satisfaction with Physical Facilities (SPFL1–SPFL6)	6	5-Point Likert (Ordinal, treated as interval)	1 = Highly Dissatisfied to 5 = Highly Satisfied
Satisfaction with Library Services (SLLS1–SLLS10)	10	5-Point Likert (Ordinal, treated as interval)	1 = Highly Dissatisfied to 5 = Highly Satisfied

The demographic and usage-pattern variables were assessed on a nominal scale since this is suitable for categorical classification and for use with chi-square analysis. Satisfaction with the physical facilities and satisfaction with library services were each measured by means of five-point Likert-type (ordinal) scales and were regarded as interval-level data when calculating weighted means and Pearson correlations, in accordance with standard practice in both social-science and library-science survey research (Parasuraman et al., 1988; Peng et al., 2022). The composite scores for physical-facility satisfaction (M_SPFL) and service satisfaction (M_SLLS) were obtained by taking the arithmetic average of the individual item scores for each respondent, in keeping with the composite-scoring method employed in similar multi-item satisfaction studies.

9. RESULTS AND DISCUSSION

Demographic and Perception Profile of Respondents

Table 2: Demographic and Perception Profile of Respondents (N = 200)

Particulars	Frequency	Percentage (%)
Gender		
Male	114	57
Female	86	43
Area of Living		
Rural	90	45
Urban	110	55
Frequency of Visit to Library		
Occasionally	16	8
Monthly once	6	3
Once in a week	6	3
Once in two days	70	35
Every day	102	51
Purpose of Visit to Library		
Entertainment	8	4
Competitive exam Preparations	42	21
Newspaper Reading	14	7
Browse Internet Resources	22	11
Refer Books and Periodicals	60	30
Borrow Books	54	27
Use of Information Sources		
E-resources	24	12
CD/DVD	6	3
Year Books	12	6
Dictionary	14	7
Periodicals	62	31
Books	82	41
Barriers in Using Library Resources		
Slow Internet connection	20	10
Inadequate Resources	82	41

Particulars	Frequency	Percentage (%)
Gender		
Lack of Staff Support	52	26
Library Timings	46	23
Source Consulted to Locate Information		
Browsing Shelves	20	10
Friends	56	28
Teachers	48	24
Library Staff	76	38
Opinion on Usefulness of Periodicals/Back Volumes		
Fair	30	15
Good	86	43
Very good	84	42

Source: Primary Data from Survey

The frequency results explored that the 200 users surveyed, among 114 (57%) were male and 86 (43%) were female students, while 110 (55%) residing at urban areas and 90 (45%) were from rural areas. Most of the respondents, 102 (51%), visited the library every day, and 70 (35%) went once every two days, showing a high level of regularity that is comparable to the 46.1% weekly visit rate found by Peng et al. (2022) in three university libraries in China context. The main reasons for visiting the library were looking up books and periodicals (30%), borrowing books (27%), and preparing for competitive exams (21%), which shows that the use was mainly academic. Books were still the most frequently used source of information (41%), followed by periodicals (31%), with e-resources making up only 12% showing a continued dependence on print rather than digital sources. This situation contrasts with the ICT-intensive usage observed among research scholars in Faizan and Munshi's (2025) IIT sample. Inadequate resources were the most frequently mentioned obstacle (41%), with lack of staff support coming second at 26%. Library staff were the most frequently approached when trying to find information (38%), and most of the respondents rated periodicals, projects, and back volumes as either good (43%) or very good (42%).

Satisfaction with Physical Facilities of the Library

Table 3: Satisfaction Level – Physical Facilities, Ranked by Weighted Mean (N = 200)

Code	Scale	Weighted Mean	Rank
SPFL3	Furniture	4.33	1
SPFL4	Lighting Facility	4.29	2
SPFL2	Ventilation in the library	4.23	3
SPFL1	Maintenance of Library	4.20	4
SPFL5	Reading Room Facility	2.95	5
SPFL6	Drinking Water Facility	2.94	6

Source: Primary Data from Survey

The weighted mean rank results depict that the respondents were very satisfied with the furniture (mean 4.33), with the lighting (4.29), ventilation (4.23), and maintenance

(4.20) also receiving high ratings; no one reported being dissatisfied with any of these four aspects. On the other hand, the Reading Room Facility scored 2.95 and the Drinking Water Facility 2.94, both near the Moderately Satisfied level, indicating that these are areas that need improvement. This order is in line with Peng et al.'s (2022) regression result, which shows that the availability of service facilities and the quality of the physical environment are the best predictors of overall satisfaction with library space, as well as with Rahman et al.'s (2026) finding that seating-related infrastructure is a recurring cause of user dissatisfaction even when other physical facilities are rated positively.

Satisfaction with Library Services

Table 4: Satisfaction Level -Library Services, Ranked by Weighted Mean (N = 200)

Code	Scale	Weighted Mean	Rank
SLLS3	Reprographic service	4.70	1
SLLS10	Library Orientation Programme	4.66	2
SLLS7	Circulation services	4.60	3
SLLS1	Reference service	4.58	4
SLLS2	CAS/SDI	4.53	5
SLLS9	Inter Library Loan	4.45	6
SLLS5	CD-ROM search	3.71	7
SLLS8	Newspaper clipping services	3.68	8
SLLS6	Bulletin Board Service	2.52	9
SLLS4	Internet service	2.18	10

Source: Primary Data from Survey

The traditional services, namely reprographic (4.70), orientation programme (4.66), circulation (4.60), and reference (4.58), achieved the highest satisfaction, with no instances of dissatisfaction. On the other hand, Internet Service (2.18) was the worst-performing service overall, with Bulletin Board Service (2.52) coming next. This aligns with the usage-pattern finding that insufficient resources and poor internet connectivity were cited as the main obstacles. This result is very similar to that of Rahman et al. (2026), who also identified internet access as a specific source of dissatisfaction, even though they generally found reference and circulation services to be well-received. It is also generally in line with Faizan and Munshi's (2025) finding that a substantial minority of users still have difficulty finding specific information, even in a well-resourced library environment that incorporates information and communication technology.

Chi-Square Analysis: Demographics, Usage Patterns, and Satisfaction

To test the independence between the demographic and usage-pattern variables and the overall satisfaction cluster grouping (High / Moderate / Low Service Adopters), the sparse categories were first combined in accordance with Cochran's (1954) rule.

Table 5: Summary of Chi-Square Test Results

Hyp.	Variable (tested against Satisfaction Cluster Group)	χ^2 value	Df	p-value	Result (5% level)
H1	Gender	83.598	2	0.000	Rejected (Significant)
H2	Area of Living	1.252	2	0.535	Accepted (Not Significant)
H3	Frequency of Visit to Library*	11.232	4	0.024	Rejected (Significant)
-	Purpose of Visit to Library*	5.796	8	0.670	Accepted (Not Significant)
-	Use of Information Sources*	45.981	6	0.000	Rejected (Significant)
H4	Barriers in Using Library Resources	8.682	6	0.192	Accepted (Not Significant)
-	Source Consulted to Locate Information	26.802	6	0.000	Rejected (Significant)
-	Opinion on Usefulness of Periodicals/Back Volumes	28.173	4	0.000	Rejected (Significant)

Source: Primary Data from Survey

The chi-square results show that Gender (H1) had a highly significant association ($\chi^2 = 83.598$, $df = 2$, $p < 0.001$): most females were classified as Moderate Service Adopters (77%), with none in the Low Service Adopters category, whereas males were more evenly distributed, with 26 falling into the Low Service Adopters group. For Area of Living (H2), there was no significant association ($\chi^2 = 1.252$, $df = 2$, $p = 0.535$). Frequency of Visit (H3) was significant even after the sparse categories had been combined ($\chi^2 = 11.232$, $df = 4$, $p = 0.024$), with frequent visitors more likely to be in the High and Moderate Adopter groups, a result that aligns with Faizan and Munshi's (2025) finding that research scholars, who are the most frequent users of the library, reported the highest perceived impact scores. Purpose of Visit showed no significant association ($p = 0.670$). Use of Information Sources was highly significant ($\chi^2 = 45.981$, $df = 6$, $p < 0.001$), with e-resource users notably divided between the High and Low satisfaction categories and none in the Moderate group. Barriers Faced (H4) showed no significant association ($p = 0.192$), indicating that although inadequate resources were the most mentioned barrier, the type of barrier did not statistically distinguish between the satisfaction groups. Source Consulted and Opinion on Usefulness were both highly significant ($p < 0.001$), showing that information-seeking behaviour and the perception of resource usefulness are closely linked to overall satisfaction.

Pearson Correlation: Physical Facilities and Library Services Satisfaction

Table 6: Pearson Correlation – Composite Satisfaction Scores (N = 200)

Variables Correlated	Pearson r	P-value	N	Result
Satisfaction with Physical Facilities (M_SPFL) ↔ Satisfaction with Library Services (M_SLLS)	-0.212	0.003	200	Significant (negative, weak)

Source: Primary Data from Survey

In contrast to the supposed positive relationship, contrary also to the idea of a single, general quality factor that was assumed to underlie the earlier LibQUAL+™ hierarchical models (Cook et al., 2001) a statistically significant weak negative correlation was observed between satisfaction with the physical facilities and satisfaction with library services ($r = -0.212$, $p = 0.003$). This means that as satisfaction with the physical facilities rises, satisfaction with library services tends to decrease slightly rather than increase, and H7 is thus not supported in its proposed positive direction, even though there is a significant relationship between the two aspects. This discrepancy provides empirical support for the theoretical distinction put forward by Oliver's (1980) ECT framework, according to which expectations relating to facilities and those relating to services can be verified or refuted independently.

Correlation Matrix

To understand the composite-level finding in greater depth and to identify its specific drivers addressing the diagnostic gap identified in Section 3 a Pearson correlation matrix was computed across all sixteen individual satisfaction items. Item numbers correspond to the list below.

1. Maintenance of Library
2. Ventilation in the library
3. Furniture
4. Lighting Facility
5. Reading Room Facility
6. Drinking water Facility
7. Reference service
8. CAS/SDI
9. Reprographic service
10. Internet service
11. CD-ROM search
12. Bulletin Board Service
13. Circulation services
14. Newspaper clipping services
15. Inter Library Loan
16. Library Orientation Program

Table 7: Pearson Inter-Item Correlation Matrix (N = 200)

#	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
1	1															
2	0.189**	1														
3	-0.013	0.096	1													
4	0.073	0.030	0.085	1												
5	.173*	-0.071	0.098	.435**	1											
6	0.078	0.119	0.040	.228**	.292**	1										
7	0.040	-0.039	-.348**	0.038	-0.004	-0.121	1									
8	0.040	0.023	-0.108	.149*	0.093	-.206**	.214**	1								
9	-0.031	-0.096	0.098	.270**	0.133	-0.138	-0.071	-0.004	1							
10	.173*	.184**	0.078	.153*	.141*	-0.042	0.086	0.081	-0.094	1						
11	-0.054	0.091	.285**	-0.017	-0.136	-.248**	-.219**	-0.127	.394**	-0.138	1					
12	0.017	-0.112	-0.036	-0.131	0.126	0.030	0.075	0.058	-.192**	-0.111	-0.067	1				
13	-0.144	0.035	-0.120	-.375**	-.178*	-.307**	0.008	.294**	-.178*	-0.061	0.014	0.074	1			
14	.285**	.224**	-0.081	-0.059	.202**	.228**	-0.063	-.174*	0.065	0.062	-0.123	-.230**	-.166*	1		
15	-0.114	-0.038	0.129	-0.131	-.202**	-0.034	-.289**	0.046	-.329**	-0.036	-0.069	0.064	0.082	-.198**	1	
16	-.305**	-.215**	-0.123	-.209**	-.358**	-.251**	-0.012	-0.126	-0.055	-0.100	.153*	0.071	.190**	-.447**	0.098	1

** Correlation is significant at the 0.01 level (2-tailed). * Correlation is significant at the 0.05 level (2-tailed) "Source: Primary Data from Survey"

The correlation item matrix indicates that most of the correlations between the items, both within the physical-facility group and within the service group, are weak ($r < 0.30$), and several are not significant or are even negative when they should be within the same construct a fact which itself warns against considering either scale as strictly unidimensional. The Library Orientation Programme (item 16) has significant negative correlations with five out of the six physical facility items, the strongest of these being with Reading Room Facility ($r = -0.358$, $p < 0.001$), Maintenance of the Library ($r = -0.305$, $p < 0.001$), and Drinking Water Facility ($r = -0.251$, $p < 0.001$). This one item is the main reason for the negative composite-level correlation mentioned in Section 10.5, indicating that users see the Orientation Programme as functionally different from and in some way in conflict with the quality of physical infrastructure a situation that can be explained by the fact that orientation is provided as a separate instructional event rather than as an ongoing ambient facility, in agreement with the distinct 'library as place' and 'information control' dimensions identified by Cook et al. (2001). The most prominent positive item-level correlations were found between Reading Room Facility and Lighting Facility ($r = 0.435$, $p < 0.001$) and between Reprographic Service and CD-ROM Search ($r = 0.394$, $p < 0.001$), with both pairs clearly sharing a noticeable spatial or functional proximity, while the strongest negative correlations were between Circulation Services and Lighting Facility ($r = -0.375$, $p < 0.001$) and between Reference Service and Furniture ($r = -0.348$, $p < 0.001$).

10. IMPLICATIONS AND CONCLUSION

The study examined student satisfaction with the library at Einstein College of Arts and Science in relation to the physical facilities and services it provides, using a theory based on expectations, confirmation, and service quality, and comparing the results with recent academic library research indexed in Scopus. The results show that tangible facility aspects such as furniture, lighting, ventilation, and maintenance, as well as traditional services like reprographic, circulation, and reference services, lead to high levels of user satisfaction. However, the reading room and drinking water facilities among the physical facilities, and the internet and bulletin board services among the services, are clear areas that need the attention of administrators. This results similar to the disappointment over internet access that was separately recorded by Rahman et al. (2026) and the difficulties experienced in finding information that were reported by Faizan and Munshi (2025) in other well-equipped Indian institutional libraries. It was found that gender, how often one visits the library, the information sources used, the sources consulted, and the users' views on the usefulness of the resources were all significantly linked to clusters of overall satisfaction, while the area of residence, the reason for the visit, and the type of barrier encountered were not. The surprising negative relationship between satisfaction with physical facilities and satisfaction with services, mainly due to the Library Orientation Programme, indicates that library management should regard orientation and instructional services as a separate area requiring improvement rather than

believing that improving the infrastructure will automatically result in greater service satisfaction, this represents a practical managerial adjustment of the one-factor service-quality assumption that underlies previous applications of the LibQUAL+™ method (Cook et al., 2001). As an example, the results show that library administrators should concentrate on improving the atmosphere of the reading room and the availability of drinking water when carrying out physical improvements, and on improving internet bandwidth/connectivity and using bulletin boards for communication when making service improvements, while at the same time making use of the good performance of staff-led services such as reference and circulation, in line with the mediating role of staff behaviour as found by Rahman et al. (2026). In terms of academic contribution, the study shows the advantage of combining descriptive, chi-square, and dual-level (composite and item) correlation analysis in a single empirical framework for research into library user satisfaction, building on the methodological approaches seen in recent Scopus-indexed academic library studies from India Faizan & Munshi, (2025) and providing a replicable model for similar institutional evaluations.

11. FUTURE RESEARCH

Future research could be carry out this study in several different ways. Firstly, since several weak and negative correlations between items have been observed, a reliability analysis (using Cronbach's Alpha) of the physical-facility and service-satisfaction scales should be carried out in order to determine whether these constructs are adequately unidimensional and thus justify the use of composite scores, in keeping with the psychometric rigour shown in Cook et al.'s (2001) hierarchical LibQUAL+™ factor analysis. Secondly, longitudinal or repeated-survey designs would enable the monitoring of changes in satisfaction over time, especially after infrastructure or service improvements such as upgrades to internet bandwidth. Thirdly, future studies might make use of multivariate methods such as confirmatory factor analysis, structural equation modelling, or the MANOVA-based method employed by Faizan and Munshi (2025) in order to examine the latent dimensions underlying physical-facility and service satisfaction more thoroughly, and also to test the mediating role of staff behaviour as identified by Rahman et al. (2026) in the specific context of Indian college libraries. Lastly, expanding the study to include several affiliated colleges or comparing autonomous institutions with non-autonomous ones would offer a more extensive empirical foundation on which to base the generalisation of the current findings beyond a single institutional setting.

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