Article

Evaluating Library Service Quality of College Libraries: The Perspective of a Developing Country

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Abstract: This study was conducted to measure the quality of the college library services in the Punjab Province, Pakistan, using LibQUAL survey. Data were collected from 998 respondents consisting of the college faculty and the students. The study found that none of the service quality attributes and dimensions met the desired expectations of group users as well as individual users. Significant differences in library service quality based on users' gender, type and academic discipline were identified. This study is helpful for the Punjab Higher Education Commission (HEC), the college administrations, the college librarians at the local level and the other developing countries as well. It will guide them in future planning, contribute toward improved resource allocation and enhance purposeful utilization of resources.

1. Introduction

Academic libraries (university, college and schools) are considered to be an integral part of all the educational institutions and enjoy a significant place in any educational system [1]. The college libraries (post-matric to postgraduate level) are types of academic libraries that support educational and research activities in a college setting [2]. In the Pakistani educational system, colleges provide education at a transitional level between basic education and higher specialized education. A college library is, therefore, the best place for the students to develop their ability to locate and utilize information, which is necessary for their academic success. The establishment of well-equipped libraries and their closer integration with the teaching programs is of paramount significance for any college. The college library must meet the reading, the referencing and the academic needs of its users by providing appropriate and useful information materials, which is necessary to meet those needs. A well-balanced collection that is made accessible to the college teachers and the students via modern technological tools enriches the teaching programs and makes classroom work more stimulating and efficient for all [3]. Skillful and competent staff equipped with the latest resources is a pre-requisite for any successful academic institution [4,5]. Nothing can be more harmful to a developing institution than to ignore its library, as it plays a pivotal role in promoting the overall intellectual and emotional development of its users.

There are different kinds of colleges in Pakistan, such as general colleges (arts and science colleges), professional colleges (medical, education, agricultural, law and technical colleges), and special colleges. The college libraries vary in collection size for prospective opportunities as well as quantity and quality of the services offered. The Punjab Province

(largest province of Pakistan) has the largest college library structure in Pakistan. Currently, 588 general education colleges (for both male and female students) exist in the public sector in the Punjab [6]. These are under the administrative control of the Higher Education Department (HED) of the Punjab. Moreover, they offer education from the Intermediate to the Bachelor and Master levels (B.A/B.Sc., M.A./M.Sc.) in the disciplines of the pure sciences, the social sciences, the languages, the arts and humanities among others. Meeting the information requirements of the teachers, the researchers, the students and the staff of the concerned colleges is the most important goal of these college libraries.

Most of the research on library service quality (LSQ) in Pakistan has been limited to the university libraries. While many researchers (Jalib [7], Lodhi [8], Siddique [9], Shah [10], Zulfiqar [11]) have conducted research on the services, the resources and the problems of college libraries, still, these studies are very old and they only address the general aspects of the college libraries. Hence, there is a broad gap in the literature regarding LSQ measurements in the college libraries. Therefore, this study is the first in-depth effort to examine the various attributes of the quality of the library services that are being offered and delivered in the colleges in the Punjab, Pakistan.

This study will fill the gap and determine and recognize the service quality of college libraries. This study will find out the current status and also suggest further measures for the improvement of service quality that would eventually improve the quality of education and contribute to national development. The findings of the study may be implemented in similar institutions in Pakistan as well as in other developing countries. The aim of the study is to measure the LSQ in the college libraries of Pakistan. Hence, this study tried to answer the following research questions:

RQ1: Which of the attributes of a given library service quality meet or fall short of the users' expectations?

RQ2: Is there any significant difference in perceived library service quality across genders, user types, and academic disciplines?

The following parts of the article include a literature review mainly focusing on the concept of "library service quality," the gap between users' expectations and their perceptions, and the status of library service quality research in Pakistan. The methodology section highlights the method and criteria of the included institutions, instrument, data collection and analysis of the study. The results are presented using descriptive and inferential statistics followed by the discussion, implications, limitations and conclusion of the study.

2. Literature Review

2.1. Library Service Quality (LSQ)

The term "library service quality" is regularly utilized in library and information science (LIS) research. Its definition is a subtle, elusive, intangible and a complex idea [12–14]. Early experts (Orr [15], Whitehall [16]) have described the LSQ as something related to the service, delivering effectiveness, appropriateness and quality up to the standard. The LIS researchers have defined "library service quality" as "difference between library users' perceptions of actual services received and desired expectations about the services" [17]. Hence, it is the library users' evaluation of the overall quality of the library services. Users' views are very crucial in the development and improvement of the level of the quality of services being delivered in the academic libraries [18–20].

Traditionally, LSQ has been assessed by using conventional methods of quantitative measurement such as the size of the library collection, visitor's statistics, issue and return data, the budget size and the staff strength [12,13]. However, none of these features reflects the actual state of LSQ. An ongoing program for the assessment of library services is essential to fulfill users' demands and preferably increase their expectations by providing high quality services [12]. Thus, "library service quality" is defined in the most established service quality evaluation models (i.e., SERVQUAL and LibQUAL) as the "difference between customers' perceptions and expectations" by the use of disconfirmation/confirmation

theory, which depends on the satisfactory literature [21]. If the perceived quality scores related to one service are equivalent to or above the desired levels, then that service is considered as extraordinarily fine. Conversely, perceived quality scores below the desired levels demonstrate that the library is not meeting user expectations. Therefore, this creates a gap between the users' perceptions and desires regarding the actual service being provided to them. Jackson [22] was of the view that the library decision makers must be aware of the measures that relate to different areas of library services. In addition, Wu et al. [23] investigated the core casual items of LibQUAL using the DEMATEL model (Decision-making Trial and Evaluation Laboratory). Data were collected from the 32 participants of a workshop held in Fu Jen Catholic University in New Taipei City. They found that the library staff must be motivated and highly willing to help the users by giving them individual attention. The library amenities must provide a quiet space for the individual activities. The library website must allow the users to locate and access information easily, individually and independently.

2.2. Gap Between the Users' Expectations and the Perceptions

Library service quality is normally an investigation of the gap, a detailed analysis of the gap between the users' desires and perceptions about a library and its services [17,24]. In an ideal situation, user perceptions should exceed their desired expectations. The difference between expected library service and perceived library service is called the "gap." This gap can be either positive or negative. A positive gap illustrates that the users' expected level of service has either been obtained or surpassed the desired level, whereas a negative gap reveals that the service delivery is below the expected service level [24]. Goud [3] revealed that libraries in the engineering colleges in India have depicted a negative gap in the overall LSQ items. These libraries have been failing to fulfill the desired expectations of their students and the faculty members. Zha et al. [25] reported that there is no significant difference based on the position for all the equality and the affinity constructs. A significant difference, though, regarding user perceptions of system quality and LSQ was detected based on the factor of age. Oliveira [26] found that the students have different preferences for different types of library services, e.g., regarding study space preferences, some students like to study in a group, while others prefer individual study. The highest negative gap was found in Information control (IC) and the lowest in the Library as place (LP) dimension. Latest books and periodicals were the highest negative gap services. Dahan et al. [1] used the LibQUAL model and concluded that the overall LSQ gap was positive, indicating a higher perceived LSQ level of the library than the desired level. Similarly, Partap [20] investigated the LSQ of the Punjab Agriculture University, Ludhiana, and reported that the library was not fulfilling the desired expectations of its users. The users were satisfied with the minimum expectations, but they were not happy with the desired LSQ attributes [19]. Ziaei and Korjan [27] found that the overall quality of Tabriz Central Library met more than the minimum expected level and that there was a little gap between the existing level and the maximum expected levels of the users. Overall, the library users want a peaceful and comfortable environment with proper study spaces equipped with adequate heating, cooling, and lighting arrangements. They also desire enough library material, interlibrary loan facility, and library instruction services in their libraries.

2.3. Library Service Quality's Assessment in Pakistan (University Libraries)

The literature review revealed that some of the individual libraries (other than the college libraries) have partially explored this topic and conducted studies on the users' satisfaction regarding the library resources and the services [21,28–30] Generally, the library performance was evaluated by using library statistics like collection size, statistics for borrowed books, staffing levels, and the number of the library members and visitors, etc. [30]. Some user studies (Arshad & Ameen [28], Rehman et al. [31], Asghar & Shafique [29]) of the individual libraries explored this topic at the university level. Arshad and Ameen [28] found that the users had higher expectations than the perceptions at the University of the

Punjab, Lahore, and all 22 SERVQUAL statements demonstrated the differences between the expectations and the perceptions. Rehman [21] confirmed that LSQ has three dimensions in the Pakistani context: the "affect of service" (AS), the "information control" (IC) and the "library as place" (LP). The first in-depth study of the university LSQ revealed that none of the library services met or exceeded the users' desired level of service quality. There were negative gaps that were found for the library services that dealt with the provisions of modern equipment, the electronic resources and their remote access, usability of the library website, and the availability of printed material. All the three dimensions showed negative superiority gaps, with the IC dimension having the largest gap and LP dimension the lowest negative gap.

2.4. Status of the College Libraries in Pakistan

Service quality assessments have rarely been performed in the college libraries of Pakistan (CLP). Therefore, there is a shortage of research data pertaining to the topic. However, some research studies investigating the college library services, the sources and the problems were found during the literature review and were reviewed generally. Mahmood and Rehman [32] found that the college libraries in Pakistan have been facing several problems such as inadequate staff, lack of furniture, insufficient library material, and improper shelving of library material, etc. Similarly, Bhatti [33] highlighted that the college libraries have mostly developed their collections, facilities and the services to meet the information and entertainment needs of their users. Mahmood et al. [34] found that the majority of the college libraries were not satisfied with the present funding systems due to the lack of a set formula for the allocation of funds. Therefore, there is a dire need to research the current situation of LSQ within the college libraries at the provincial and the national levels in Pakistan. It will provide empirical evidence to the policy makers.

3. Method

This was a quantitative study using a survey research method. All the postgraduate colleges of the Punjab, Pakistan, that met these inclusion criteria: (i) College must be run administratively under the Higher Education Department, Govt. of the Punjab, (ii) Status of college should be postgraduate, and (iii) College library must have a professional librarian, were regarded as the population for this research study. According to the available data, there were 588 public sector general education colleges being run under the administrative control of Higher Education Department, Government of the Punjab [6], at the time of the study. Out of those 588 colleges, there were 87 postgraduate colleges providing education from the intermediate level to master's (two-year B.A./two-year M.A.) or four-year bachelor's (B.S.) level degrees in the Punjab province. There were only 42 colleges in which professional college librarians were employed [35]. Sampling was conducted in two phases. In the first phase, a simple random sampling technique was applied to draw a sample of 22 colleges from the 42 employing professional librarians. In the second stage, the respondents from the 22 colleges were taken through convenient sampling due to the unavailability of complete lists of the library users. Only those respondents were included in the sample who had experience of the library use and were either permanent faculty members or regular students of the colleges. Various types of users such as faculty members and students can have different opinions on LSQ. There were 50 respondents from each college, having different genders, ages, educational levels and disciplines (undergraduates n = 20, graduate students n = 20, and n = 10 faculty members). The total sample size was set at n = 1100 (22 × 50), which is a reasonable sample size.

3.1. Data Collection Instrument

During the literature review, it was found that Rehman [36] (2012) confirmed the reliability and validity of the Urdu version of LibQUAL in the Pakistani context. This modified version was deemed easy to understand for the Pakistani college library users for the assessment of library service quality (LSQ). The LibQUAL consisted of 22 statements

and three dimensions: Affect of service (AS), Information control (IC) and Library as a place (LP). The researcher obtained permission from the Association of Research Libraries (ARL) to use this version for the current study, and Rehman [36] (2012) allowed the researchers to use his modified version. Keeping in view the objectives of the study, the scale was reduced to two aspects instead of the original three: desired level of service and perceived level. The reliability of the questionnaire was checked through reliability analysis test using Cronbach's alpha statistics. The Cronbach's alpha coefficient value for overall scale was 0.93, which demonstrated that the instrument was highly reliable. The Cronbach's alpha coefficient value was also checked subscale-wise, which appeared to be 0.91, 0.85, and 0.81 for AS, IC and LP dimensions, respectively. It revealed that reliability of overall and subscales of instrument was also up to the standard, i.e., above 0.70 [37].

3.2. Data Collection and Analysis

The first author personally visited the colleges and distributed the questionnaires with the permission of the college principal. The respondents were briefed about the purpose of the study and asked for their voluntary participation in the study. Furthermore, it took lots of time and energy to get the responses due to the geographically scattered population of the study. After multiple visits, reminders through emails, phone/calls, and text messages, the researcher received 998 filled questionnaires, resulting in a response rate of 90.72%. The data revealed that 55% of the respondents were female and 45% were male. Furthermore, 20% of the respondents were faculty members, 39% were master's level students or equivalent, 17% were bachelor's level students or equivalent, and 23% were intermediate level students or equivalent. The academic discipline categories consisted of pure sciences (31%), art and humanities (29%), languages (20%), social sciences (13%), and others (7%). The data analysis was conducted applying descriptive and inferential statistics (independent sample *t*-test, ANOVA) with the help of SPSS (version 21).

4. Results

Which attributes of a given library service quality meet or fall short of the users' expectations?

The researcher determined the service gap by subtracting the desired score from the perceived score on all 21 core statements for all the users' and the individual user's groups, i.e., the faculty, the master's students, the bachelor's students, and the intermediate students. The respondents indicated that none of the LSQ attributes being investigated met their expectations. All of the attributes were found to fall short of their expectations (Table 1).

Table 1. Gap between the users' expectations and the perceptions for overall user group.

Item Code	Scale Items	Perceived		Desired		Service Gap
		Mean	SD	Mean	SD	Mean
IC-2	The library website enables me to locate information on my own	2.29	1.38	3.69	1.54	−1.4
IC-1	Electronic resources of the library are accessible from my home or office	2.50	1.42	3.80	1.40	−1.30
IC-8	The library has print and/or electronic journal collections I require for my work	2.56	1.44	3.84	1.40	−1.28
IC-4	The library has electronic information resources I need	2.49	1.42	3.75	1.50	−1.26
IC-5	The library has modern equipment that lets me easily access to the needed information	2.70	1.45	3.95	1.34	−1.25
IC-3	The library has printed materials I need for my work	2.91	1.47	3.95	1.35	−1.04
IC-6	The library has easy-to-use access tools that allow me to find things on my own	2.94	1.39	3.94	1.31	−1.00

Table 1. *Cont.*

Item Code	Scale Items	Perceived		Desired		Service Gap
		Mean	SD	Mean	SD	Mean
IC-7	The library makes the information easily accessible for independent use	3.09	1.36	4.06	1.23	−0.97
LP-1	The library has space that inspires study and learning	3.56	1.31	4.37	1.03	−0.81
AS-9	Library staff shows dependability in handling the users' service problems	3.45	1.28	4.21	1.09	−0.76
LP-5	The library has community spaces for group learning and group study	3.57	1.27	4.29	1.03	−0.72
AS-2	Library staff gives individual attention to the users	3.32	1.35	4.02	1.22	−0.70
AS-6	Library staff deals with users in a caring fashion	3.49	1.35	4.15	1.17	−0.66
AS-8	Library staff is always willing to help the users	3.47	1.30	4.13	1.10	−0.66
AS-7	Library staff understands the needs of their users	3.42	1.32	4.06	1.22	−0.64
LP-4	The library is a gateway for study, learning, or research	3.82	1.14	4.46	.92	−0.64
LP-3	The library has a comfortable and inviting location	3.73	1.22	4.35	1.00	−0.62
AS-5	Library staff has the knowledge to answer the users' questions	3.57	1.30	4.16	1.19	−0.59
LP-2	The library has quiet spaces for individual activities	3.86	1.19	4.44	0.93	−0.58
AS-4	Library staff is always ready to respond to the users' questions	3.47	1.32	4.04	1.27	−0.57
AS-1	Library staff instills confidence in the users	3.52	1.27	4.08	1.18	−0.56
AS-3	Library staff is consistently courteous	3.70	1.26	4.17	1.18	−0.47
	Overall gap	3.24	0.87	4.08	0.87	−0.84

The variations in respondents' responses toward the perceived and the desired LSQ attributes were broad. The range covered from −0.47 to −1.4, leading to a negative gap. The five services having the highest negative gap were: (a) "the library website enables me to locate information on my own" (−1.4); (b) "electronic resources of the library are accessible from my home or office" (−1.30); (c) "the library has print and/or electronic journal collections I require for my work"(–1.28); (d) "the library has electronic information resources, I need"(−1.26); and (e) "the library has modern equipment that lets me easily access to the needed information"(−1.25).

On the other hand, the following attributes related to the LSQ had a slightly lesser gap between the perceived and the desired service quality: (a) "library staff has the knowledge to answer the users' questions" (−0.59), (b) "the library has quiet spaces for individual activities" (−0.58); (c) "library staff is always ready to respond to the users' questions" (−0.57); (d) "library staff instills confidence in the users" (−0.56); and (e) "library staff is consistently courteous" (−0.47).

4.1. Dimension-Wise Gap for Overall User Group

The dimension-wise gap provided insight into the users' opinion on three LSQ dimensions: Affect of service (AS), Information control (IC) and Library as a place (LP). Affect of service deals with the staff-related services. Information control is related to information and communication technology and access to print and electronic sources. Library as a place is associated with the physical environment and space of the library. The data elicited negative LSQ gaps on all three dimensions.

Table 2 indicates that the highest negative gap was found in the IC dimension (−1.19), followed by the LP dimension (−0.67). The lowest gap was observed in the AS dimension (− 0.62), indicating slightly better services in that dimension as compared to the IC and LP

dimensions (Table 2). The results show that a negative gap was observed for all the LSQ items. Therefore, the results of the study demonstrated that none of the library services met the users' expectations. All attributes of the LSQ fell short of the users' expectations.

Table 2. Dimension-wise library service quality gap.

Dimension	Perceived Mean	Desired Mean	Service Gap
Information Control	2.68	3.87	−1.19
Library as Place	3.71	4.38	−0.67
Affect of Service	3.49	4.11	−0.62
Overall	3.25	4.09	−0.84

ANOVA and independent sample t-test were used to investigate whether there were significant differences among the demographic variables.

4.2. Difference in Library Service Quality Based on the User Type

The researcher examined whether a significant difference existed statistically among the different categories of the users, i.e., the faculty, the master's level students, the bachelor's level students, and the intermediate level students (Table 3). Analysis of variance (ANOVA) technique was used to investigate this difference.

Table 3. Descriptive statistics on library service quality based on the user type.

User Type.	N	Perceived Mean	Desired Mean	Gap	S.D.
Faculty	200	3.21	4.30	−1.09	1.04
Master's Student or Equivalent	392	3.35	4.09	−0.88	1.14
Bachelor's Student or Equivalent	174	3.24	3.98	−0.74	1.23
Intermediate or Equivalent	232	0.34	3.97	−0.63	1.31
Total	998	3.25	4.09	−0.84	1.19

A statistically significant difference was found as (F = 6.09, p = 0.000) among the various types of users. The mean values of −1.09 showed that the highest gap in LSQ was in the faculty group, followed by the master's students (−0.88), the bachelor's students (−0.74), and the intermediate students (−0.63). So, various types of users such as faculty members and students were found to have different opinions on LSQ (see detail in Tables 4 and 5).

Table 4. ANOVA statistics for library service quality based on the user type.

	Sum of Squares	Mean Square	F	Sig.
Between Groups	25.48	8.49		
Within Groups	1385.30	1.39	6.09	0.000
Total	1410.78	-		

Post hoc Tukey HSD (Honestly Significant Difference) test was performed in order to further probe the one-to-one significant difference in LSQ among the various categories of the users. Statistically significant difference was found between the group of the faculty members and that of the bachelor's level students (p = 0.024); the faculty members and the intermediate level students (p = 0.000); the master's level students and the intermediate level students (p = 0.046), whereas no statistically significant difference was found between other groups, i.e., the faculty members and the master's students, the master's students and the bachelor's students, and the bachelor's students and the intermediate level students (Table 5).

Table 5. Library service quality and the user type (post hoc Tukey HSD, honestly significant difference).

(I) Types of Users	(J) Types of Users	Mean Difference (I-J)	Sig.
Faculty	Master's Student or Equivalent	−0.21	0.170
	Bachelor's Student or Equivalent	−0.35 *	0.024 *
	Intermediate or Equivalent	−0.46 *	0.000 *
Master's Student or Equivalent	Bachelor's Student or Equivalent	−1.36	0.584
	Intermediate or Equivalent	−0.25 *	0.046 *
Bachelor's Student or Equivalent	Intermediate or Equivalent	−0.12	0.749

* The mean difference is significant at the 0.05 level.

4.3. Gender Difference in Library Service Quality

The researcher also investigated the factor of gender difference regarding satisfaction with LSQ. The independent sample t-test was applied to see whether any difference existed regarding satisfaction with LSQ between the male and the female respondents.

The results revealed that a statistically significant difference existed (F = 2.53, p = 0.00) between the male and the female respondents (Table 6). Furthermore, the male respondents showed a higher negative gap (−0.99) than the female respondents (−0.72). The opinion of female respondents on LSQ was better than that of the male respondents.

Table 6. Gender difference in library service quality for overall user group.

Gender	N	Perceived Mean	Desired Mean	Mean	Std. Deviation	F	T	p-Value
Male	448	3.13	4.12	−0.99	1.21	2.53	−3.54	0.000
Female	550	3.34	4.06	−0.72	1.16			

4.4. Effect of the Academic Discipline on Library Service Quality

The results of one-way ANOVA revealed a statistically significant difference (F = 3.79, p = 0.000) based on the academic disciplines of the respondents.

This means that the users had different opinions on LSQ based on their academic subjects of study. The highest mean difference in LSQ was found in the group of the social sciences (−1.05), followed by others (−0.97) and those from the arts/humanities (−0.91). Overall, statistically significant differences were found among the users of the different academic disciplines (Tables 7 and 8).

Table 7. Descriptive statistics on library service quality based on academic disciplines.

Discipline	N	Perceived Mean	Desired Mean	Mean	Std. Deviation
Pure Science	305	3.16	3.98	−0.82	1.37
Social Science	130	3.14	4.19	−1.05	1.03
Languages	205	3.45	4.04	−0.59	1.07
Arts/Humanities	292	3.28	4.19	−0.91	1.09
Others (Please Specify)	66	3.11	4.08	−0.97	1.28
Total	998	3.25	4.09	−0.84	1.19

Table 8. ANOVA statistics for library service quality based on the academic disciplines.

	Sum of Squares	Mean Square	F	Sig.
Between Groups	21.21	5.30		
Within Groups	1389.58	1.39	3.79	0.005
Total	1410.78	-		

Post hoc Tukey HSD test was performed to discover the one-to-one difference between the respondents' respective disciplines. Statistically significant difference was found between the respondents of the social sciences and the languages ($p = 0.005$), and the languages and the arts/humanities ($p = 0.023$), However, no significant difference was found between the other disciplines, such as the pure sciences and the social sciences ($p > 0.05$), the pure sciences and the languages ($p > 0.05$), the pure sciences and the arts/humanities ($p > 0.05$), and the pure sciences and others (Table 9).

Table 9. Difference in library service quality based on the academic disciplines (post hoc Tukey HSD).

(I) Discipline of the Participants	(J) Discipline of the Participants	Mean Difference (I-J)	Sig.
Pure Science	Social Science	0.23	0.352
	Languages	−0.23	0.199
	Arts/Humanities	0.09	0.868
	Others	0.15	0.891
Social Science	Languages	−0.46	0.005
	Arts/Humanities	−0.13	0.082
	Others	−0.08	0.991
Languages	Arts/Humanities	0.32	0.023
	Others	0.38	0.162
Arts/Humanities	Others	0.05	0.998

5. Discussion

5.1. Library Service Quality Gap

The results of the study indicated that all the LSQ attributes fell short of the users' desired expectations by displaying a negative gap between their perception scores and their desired scores. The highest gap was found in the items related to the IC dimension, followed by the LP dimension. The smallest gap was found along the AS dimension. This indicates that the libraries are providing slightly better staff-related services, followed by their physical facilities such as infrastructure, space, and library environment, etc. However, services related to the provision and accessibility of print and electronic collections, and information and communication technology, including library websites, failed to meet the users' expectations. The users desire remote access to electronic resources via the library websites, but they are not provided with adequate facilities for this purpose. These results are consistent with those of earlier studies (Arshad & Ameen [28], Asghar & Shafique [29], Goud [3], Kumar & Mahajan 19], Partap [20]). The mentioned writers reported unfulfilled highly desired expectations of the users. Possible causes for this may be a shortage of resources (material, IT infrastructure, modern equipment for easy access), poor IT skills of the library staff, inadequate library websites, limited information retrieval training for the users and the library staff, limited subscription or access to e-databases, and poor infrastructure of the libraries with respect to their layout, shape of building, space, and environment, etc. Furthermore, the behavior of the staff and their level of professionalism in dealing with the users may also be below the desired levels. It is evident from the results of this study that these resources (library collection, technological tools, furniture, employees, etc.) made available by the Higher Education Commission (HEC), Pakistan, are not being used effectively. Although, these resources are primarily intended for the

university libraries, the HEC has sanctioned the subscription of its e-databases for the college libraries belonging to the colleges offering B.Sc./B.S. programs. This reflects either the negligence of the library staff or the scarcity of skilled staff who are capable of assisting the users. According to Rehman [21] and Ashiq et al. [4,38,39], staffing issues such as non-availability of the desired number of staff, lack of skillful staff and lack of continuing professional development of the existing staff are some of the major issues that are being faced by the people concerned. It is critical that the accessibility and the availability of e-resources for the college library users should be improved. In addition, the library staff must be motivated to show willingness to help the library users and to give them individual attention, while the library management should ensure that the amenities such as space for individual activities are readily available [23] (Wu et al., 2019).

5.2. Difference in Perceived Library Service Quality Based on the Gender, the User Type and the Academic Discipline

The results of the independent sample t-test found a significant difference between the male and the female college library users with respect to LSQ. The results revealed that the female respondents exhibited a lower negative gap as compared to the male respondents. These results verify the findings of the earlier studies (Choshaly & Mirabolghasemi [18], Goud [3]), which indicated that a significant difference in the male and the female user groups exists regarding LSQ. However, these results were found to be inconsistent with those of some other studies (Mirza & Mahmood [40], Rehman & Sabir [41], Sharma et al. [42], Zha et al. [25]) that found no gender-based difference in LSQ.

Different user groups, i.e., the faculty, the master's students, the bachelor's students, and the intermediate students, had differences in their opinions about LSQ and showed a negative gap in LSQ. This result is in line with one earlier key study by Rehman [21], who reported that Pakistani university libraries services do not meet the minimum level of the desired and the expectation levels of LSQ as perceived by the library users. The current study also indicated that the faculty had the highest negative gap, followed by the master's students and the bachelor's students. The intermediate students had the lowest negative gap, as compared to those of the other groups. The results of the study were consistent with those of the earlier studies (Peterson et al. [43], Kumar and Mahajan [19], Mirza and Mahmood [40]), which found that the different types of users have different opinions about LSQ. However, the results were contrary to those of other studies in Malaysia (Choshaly & Mirabolghasemi [18]) and Pakistan (Rehman & Sabir [41]), which found no difference in the opinions of the different user groups on LSQ. The results indicate that the libraries are not meeting the demands of any type of library users. The reason behind a negative gap in the faculty group might be the higher needs of the faculty as compared to those of the students, especially for lecture preparation and ongoing research projects. The other reason might be the higher expectations of the faculty due to their senior positions in the colleges. The second user group having a higher negative gap than the others was the master's students. It might be because at the master's level, the students must make intensive use of the library material for their assignments and the research projects. Similarly, fewer information needs might be the reason for the lower gap score of the bachelors' and the intermediate students, as compared to those of the faculty and the master's students.

These results demonstrate that library users from the different academic disciplines have different opinions about the LSQ. These results are consistent with those studies (Mirza & Mahmood [40], Rehman [21]) that reported significant differences among the library users belonging to the different academic disciplines. The highest mean gap shows that the respondents from the language discipline expect more from the college libraries as compared to those belonging to the other disciplines. As a result, they were found to be the least satisfied user group. One possible cause of this might be the non-availability of the adequate material related to the languages in the college libraries.

5.3. Implications of the Study

From a theoretical point of view, this research study will contribute to new knowledge in the area of LSQ measurement in college libraries from a developing country's perspective. The research recognizes that attributes of the services fall below the users' desired expectations in the college libraries in the Punjab, Pakistan. The library administrators can use the study results to prioritize the challenging areas and take necessary action based on these results. The results of the study also provide useful information to the library management, the college administrations, and the Punjab Higher Education Commission for future planning and funds allocations, and to make improvements.

5.4. Limitations of the Study and the Future Research Directions

There have been some limitations of the study geographically and methodologically. The data were collected from library users of the government colleges of the Punjab province that were offering post-graduate education. The study applied a sampling technique at two phases (described in the methodological section) due to unavailability of complete data of the participants.

There is a need to explore the LSQ of the school libraries in the future. Further, there is a huge network of private colleges in the country; a future study should be conducted to investigate the LSQ of the private sector colleges. A library service quality study of professional college libraries, such as medical, engineering, agriculture, and law college libraries, etc., should be a worthwhile study. Future LSQ studies should be conducted on other provinces of the country. In order to cross-validate the findings of this study, future research should be conducted using qualitative research techniques and mixed methods.

6. Conclusions and Recommendations

The aim of this study is to measure the LSQ in the college libraries of Pakistan. This is the first in-depth study in Pakistan to measure the LSQ of the college libraries. This research study found that none of the LSQ attributes meets the user's expectations. It demonstrates the dismal state of affairs regarding the college libraries in the developing countries. Currently, the college libraries are being used as places of sitting, reading newspapers, and completing home assignments. Most of the libraries do not have a professional librarian. There has been no significant increase in the funding of the college libraries in the last decade. The infrastructure of the college libraries is deplorable and greatly lacks the modern ICTs/technological tools. Despite the fast adoption of technologic tools by the users, most libraries, particularly the college libraries, have failed to keep pace with the technological revolution because of lack of funds, resources, and skilled staff. Scarcity of skilled professional library staff is also a major issue; currently there are approximately 500 vacant college librarian posts in the Punjab. This huge deficiency is not only affecting the libraries but also the whole educational systems in the colleges. The findings suggest the need for allocation of proper college library funds for the improvement of the infrastructure, the services and the resources of the libraries. Recruitment of knowledgeable staff is also of paramount importance. The governmental authorities as well as professional library associations must start continuous professional development (CPD) courses for the fresh and mid-career professionals, so that they can keep pace with the technological innovations affecting libraries in this modern era and learn to facilitate their modern users. Since most of the colleges have recently started offering 4-year Bachelor of Science programs, as per HEC directions, it is now imperative for them that the libraries provide access to HEC e-resources and have staff skilled enough to assist the users in their purposeful use.

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