Measuring service quality in public and private sector university libraries of Pakistan

Shafiq Ur Rehman

Department of Library & Information Science, University of the Punjab, Lahore, Pakistan
Email: s_rehman25@hotmail.com

Abstract

The problem addressed in this study investigates the perceived service quality of public and private sector university libraries of Pakistan from its users' perspective. More precisely the study compares the following four aspects between public and private universities: zone of tolerance for overall and individual user groups, dimension wise zone of tolerance for overall and individual user group, gaps between desires and perceptions, and significant differences in the service quality. The data were collected through LIBQUAL print questionnaire from 1473 library users (faculty, graduates and undergraduates) of 22 public and private sector university libraries (main/central) of Pakistan. The psychometric properties of instrument were established through exploratory and confirmatory factor analyses. The comparisons of overall, individual service level, and dimension wise gap scores revealed that private sector university libraries were generally meeting the minimum requirements of their users (except information control dimension) but, on the other hand, public sector libraries were not meeting minimum requirement in information control and affect of service dimensions. The study also found significant difference on service quality between private and public sector university libraries. The researcher found very interesting findings that small collection creates small expectations, and it is easy to meet or satisfy the needs of the users of small collection. The article also discusses findings, implications of results and limitations of the study at the end.

Keywords: Services quality; LIBQUAL; University libraries; Pakistan

Introduction and background of the study

The traditional services and role of university libraries is changed due to multiple information providers (web, vendors, Google, Amazon etc.), increase in users' expectations, application of modern technologies, and globalization of competition in all service sector, digital revolution, different format of material and rising costs of materials. To overcome these challenges and survive in the competitive and volatile environment, university libraries require greater understanding and responsiveness to users' needs. Assessment of library service quality helps in identifying weak and strong areas as well as decreasing the gap between customers' perceptions and expectations. It also indicates how well a service is provided from a user's perspective in order to allocate resources wisely, and to plan for new and emerging services and needs. It also suggests the solutions for problems in the way of providing quality library services. In order to provide high quality services, user base assessment of library service quality has a very important role. The service quality literature identified that the customers have a central position in assessment of service quality and "only customers judge quality; all other judgments are essentially irrelevant" (Parasuraman, Zeithaml & Berry, 1988).

Many researchers (Chweh, 1981; Hernon & McClure, 1990; Nitecki, 1996; Oldman, Mary & Wills, 1977; Taylor, 1986; Taylor & Voigt, 1986; Whitehall, 1992) advocated that user is the best judge to assess the quality of services. The traditional method of service quality has become obsolete and no more fulfills

the purpose of user's demands for information. Nitecki (1996) further added "a measure of library quality based solely on collections has become obsolete" (p. 182). In this regard, library authorities should recognize the different needs, priorities and feedback of public and private sector library users. All programs and initiatives regarding current and future services must center around users. Libraries in the developed countries felt this reality and focused more energy on meeting their customers' needs. The libraries of advanced countries have moved from inputs and outputs into outcome based evaluation of quality of services across institutions at micro level, but developing countries such as Pakistan are lacking behind in this area.

Contrary to developed world, in Pakistan the patron input is hardly invited in planning of current and future services. As a matter of fact library service quality and user satisfaction are not regularly assessed in Pakistan (Rehman & Pervaiz, 2007). Various research studies (Ameen, 2011; Haider, 2004) indicated that library services were not user centered rather collection centered. Moreover, there is no comprehensive data available which guide the library managers, policy makers, and universities about service quality of university libraries of Pakistan.

Research questions

The study seeks answers to the following research questions with reference to public and private sector university libraries of Pakistan.
1) Which of the services are inside and outside the zone of tolerance for overall user as well as individual user groups of both public and private sector university libraries?
2) Which of the service quality dimensions are inside and outside the zone of tolerance for overall user as well as individual user groups of public and private sector university libraries?
3) Which attributes of library service quality meet, exceed or fall short of user perceptions of public and private sector university libraries?
4) Is there significant difference on library service quality between public and private sector university libraries?

Literature review

Theoretical foundations of service quality

Most of the service quality models (i.e. SERVQUAL and LIBQUAL) defined the service quality as "difference between customers' perceptions and expectations" using disconfirmation/confirmation theory. This theory is based on the satisfaction literature.

According to expectation-disconfirmation theory model, a positive disconfirmation occurs if a customer's perception of a service performance exceeds the prior expectations of the service performance (Green, 2007, p. 48). The positive gap indicates that users' minimum/desire expectations were met or exceeded. The customer is delighted and considered the service quality exceptionally good. Conversely, when service quality is lower than expected, expectations are expressed negatively and users' desires/minimum expectations are not met. The customer is likely to think low quality of services and feel disappointed to some degree.

Zeithaml, Berry and Parasuraman (1993) pointed out that customers have two types of expectations: "minimum expectations" and "desired expectations." The first represent the minimum level of service that users would find acceptable and later refer to the level of service that users personally want. The difference between minimum expectations and desired expectation is called zone of tolerance (ZOT). The difference between perception score and minimally-acceptable score is called service adequacy gap (SAG) and difference between perception score and desire is referred to as service superiority gap (SSG).

LIBQUAL instrument

The LIBQUAL instrument is well known and recognized instrument that libraries use to "solicit, track, understand, and act upon users' opinions of service quality" (Association of Research Libraries, 2010). More than 1.5 million library users from 1200 libraries have participated in LIBQUAL since its inception. The instrument was developed in collaboration between ARL and Texas A&M University. LIBQUAL instrument is an attractive tool to easily identify service quality from the customer perspective. As a result of various refinements the current LIBQUAL version measures library service quality through 22 core questions on three dimensions: "affect of service" (AS), "information control" (IC) and "library as place" (LP).

Various studies (Cook, Heath & Thompson, 2001; Thompson & Cook, 2002; Thompson, Cook & Heath, 2003; Thompson, Cook & Kyrillidou, 2005; Thompson, Cook & Kyrillidou, 2006; Thompson, Kyrillidou & Cook, 2008) confirmed the psychometric integrity of LIBQUAL instrument with different well known approaches such as "structural equation modeling, reliability analysis, factor analysis, taxonometric analysis and latent trait item response theory" (Miller, 2008, p. 37).

Service quality in public and private sector university libraries

The university libraries are attached to their parent organizations and providing support for research and educational learning to its community. The public (predominantly funded by public means) and private universities (mostly funded by private means) distinct from each other in terms of budget, resources (human and material), numbers and types of programs and tuition fee. The tuition fee in public universities is much lower than private universities due to subsidy by federal or provincial government. Public universities are offering diverse range of programs as compared to selected, market based profit oriented programs in private universities.

Library users formulate their expectations (with library services) based on their previous experience of library use in home or abroad. Even they may also use their past experience as user of non-library information gateway (i.e. Google, Yahoo). Due to the increasing importance of service quality in private and commercial sector, increasing comparisons are made between the quality of service provided by public sector and private sector university libraries (Wisniewski, 1996). There has been little research which comprehensively compares the service quality between public and private sector university libraries in the context of Asian countries like Pakistan. However, the researcher will report the relevant studies which little bit discuss or touch upon the topic.

The users' expectations were different in the libraries of public and private sector institutions. For example, community college library users (public sector) have different opinions than users of other institutions (private sector). The users' top concern was "consistently courteous library staff" in community dealings but this was low concern in other sector institution (Cook, Heath & Thompson, 2003).

The various types of library users think about library services in a similar way, and their expectations can be compared across both user groups and university types, and libraries can be compared one by one based on their services. The dimensions of IC (collection and access) and AS (staff related services) tend to be somewhat more important to users, across user groups and university types, and then are the dimension of LP (library space, location and other physical facilities). The faculty has narrower ranges of tolerance than students. The students gave more concerns to library timings, but faculty did not. On the other hand, faculty considered important to "giving individual attention", but students did not give much importance (Cook, Heath & Thompson, 2003). Gatten (2004a, 2004b) made several observations from the Ohio LINK LIBQUAL data. Ohio LINK is a network of 88 Ohio libraries (university, private colleges, community colleges and state library of Ohio). The result indicated that performances of private institutional libraries were better than public sector libraries (Gatten, 2004a, 2004b). The users of private institutions have low expectations and higher perceptions of library service than other types of libraries in Ohio LINK institutions. The users' minimum expectations in public sector libraries were not met in "complete runs of journal titles." The users' opinion about library service was also different. The graduate students had high demand in access and collection related issues. The faculty had lower perception on electronic full-text articles but had higher perceptions on "informing me of useful library services."

Shank, Walker and Hayes (1996) found significant differences between student and faculty expectations in both public and private sector university libraries. Comparisons of two separate studies (Ahmed & Shoeb, 2009; Shoeb, 2011) of public and private universities of Bangladesh found better service quality in private sector university than public sector. Their results suggested that private university library (Shoeb, 2011) was meeting users' minimum expectations and almost all services were within ZOT. The gap between desires and perceptions were not too high. On the contrary, public sector university library (Ahmed & Shoeb, 2009) was not meeting users' minimum/desired expectations and most of the services were below the ZOT. Additionally, there was a high negative gap between desired expectation and perceptions. The largest gaps were related to library resources and staff-related attributes. The largest gaps and higher expectations were found in faculty group in both sectors.

Relevant research in Pakistan

In Pakistan, the service quality is an unfamiliar topic and regular practices of assessment of library service quality do not exist in Pakistan at any level. Normally university library performance is

assessed from various statistics presented in annual report submitted to higher management. These statistics consist of number of collections, staff, library members as well as various usage counts (number of borrowed books and visitors).

The literature search result found only one study (Awan, Azam & Asif, 2008) which little bit compared the situation of service quality in public and private sector university libraries of Pakistan. The study reported discrepancy between users' perceptions and expectations on all survey items in both public and private sector university libraries. The service gap was comparatively lower in private sector university libraries. However, there is not a single study available, which compares the service quality at individual user and dimension level for both public and private sector university libraries. The lack of detail about individual differences (user groups, gender and academic disciplines) on service quality between public and private sector is another gap.

Method

Research design

The researcher used cross sectional research design in this empirical study and survey method was used to collect the data on a self-reporting questionnaire. This study is a part of a larger research project. The data used in this research were collected in the context of that project, where a wider range of variables were obtained. Data were collected by the researcher through personal visits of the sites of relevant universities of Pakistan. This study reports the findings concerned the public and private sector university libraries.

Sample and sampling

Sampling was done on two phases. In the first phase, a total number of 43 universities from Punjab and federal capital of Pakistan having central libraries were randomly selected. In the second phase, 13 public and nine private universities (total 22) and then 25 undergraduate students, 25 graduate students, and 25 teachers of different age experience, department, gender, and qualification were conveniently selected. The convenient sampling method was selected due to non-availability of complete list of the population. The sample fairly represents various types of users (faculty, graduates, and undergraduates), public/private sector, geographical location, age, academic disciplines, gender and qualification.

Measurement tool

The researcher measured the users' opinion through LIBQUAL instrument. The modification and adaptability of the latest LIBQUAL English version into Pakistani context was made through a 9-member focus group. The slightly modified version of LIBQUAL (American English) was translated in Urdu using standard procedure of forward-backward translation. The psychometric properties of instrument were established through exploratory and confirmatory factor analysis. The final instrument, consisted on 21 items, measured the service quality on three dimensions: (a) AS, (b) IC, and (c) LP. The "AS dimension" consists of eight questions related to courtesy, knowledge and helpfulness of library staff in delivering user services. The "IC dimension" addressed (through eight questions) on the adequacy of print and electronic collection, easy to use access tools, modern equipment, library website and self-reliance in information access. The third, "LP dimension" focuses on user perceptions to quiet, comfortable, inviting and reflective study space that inspires study and learning. Users rated all items on three columns side by side on 1(low) to 9 (high) scales for perception, desire and minimum services.

The perception score points out the level of service that user believe their library currently provides. The minimum level of service is the level which users would find acceptable and desire refer to the level of service that users personally want.

Data analysis and interpretation

This section compares the perceived service quality between 13 public and nine private sector university libraries. In order to proceed for data analysis, first the initial data screening e.g., missing values, descriptive statistics, normality, detection of multivariate outliers, and correlation analysis were performed. A total of 1473 cases (public= 876, private= 595) were finally selected for further analyses. Acquired responses revealed that 66 percent of the respondents were male and 34 percent were female; 34 percent of the respondents were graduate students, 37 percent were undergraduate students and 29 percent were faculty members.The data with missing values were replaced with the Hot Deck method. The values of skewness and kurtosis were examined and it was observed that the data set of the study

though was not perfectly normal but quasi normal and suitable to proceed for further statistical analysis. The researcher used Statistical Package for the Social Sciences (SPSS) and Analysis of Moment Structures (AMOS) software for quantitative data analysis and NVivo (version-8) software for qualitative analysis.

Table 1. Descriptive statistics for public and private sector university libraries

Item Code	Items	Public Sector Universities					Private Sector Universities				
		M * Mean	D* Mean	P * Mean	SAG * (P-M)	SSG * (P-D)	M* Mean	D* Mean	P * Mean	SAG * (P-M)	SSG * (P-D)
AS-1	Library staff instill confidence in users	5.47	7.44	5.42	-0.05	-2.02	5.27	7.38	5.64	0.37	-1.74
AS-2	Library staff gives individual attention to the users	5.42	7.29	5.37	-0.05	-1.91	5.33	7.18	5.60	0.27	-1.58
AS-3	Library staff is consistently courteous	5.90	7.63	5.87	-0.03	-1.76	5.87	7.58	6.03	0.16	-1.55
AS-4	Library staff is always ready to respond to users' questions	5.69	7.44	5.62	-0.07	-1.82	5.56	7.29	5.81	0.24	-1.48
AS-5	Library staff has knowledge to answer users' questions	5.68	7.48	5.60	-0.09	-1.89	5.71	7.49	5.94	0.23	-1.55
AS-7	Library staff understands the needs of its users	5.66	7.48	5.64	-0.03	-1.84	5.75	7.47	5.77	0.02	-1.71
AS-8	Library staff is always willing to help users	5.76	7.53	5.70	-0.06	-1.83	5.80	7.57	5.97	0.17	-1.60
AS-9	Library staff shows dependability in handling users' service problems	5.66	7.40	5.59	-0.07	-1.81	5.61	7.45	5.80	0.19	-1.65
IC-1	Electronic resources of the library are accessible from my home or office	5.67	7.52	5.05	-0.62	-2.47	5.68	7.51	5.47	-0.21	-2.04
IC-2	The web site of library enables me to locate information on my own	5.77	7.55	5.24	-0.52	-2.30	5.65	7.45	5.37	-0.28	-2.08
IC-3	The library has printed materials, I need for my work	5.89	7.55	5.36	-0.53	-2.19	5.71	7.41	5.57	-0.14	-1.84
IC-4	The library has electronic information resources, I need	5.94	7.59	5.33	-0.61	-2.26	5.81	7.50	5.60	-0.21	-1.90
IC-5	The library has modern equipment that lets me easy access to the needed information	5.78	7.61	5.12	-0.66	-2.49	5.84	7.56	5.54	-0.30	-2.03
IC-6	The library has easy-to-use access tools that allow me to find things on my own	5.75	7.54	5.78	0.03	-1.76	5.74	7.45	6.01	0.27	-1.44
IC-7	The library makes the information easily accessible for independent use	5.66	7.42	5.77	0.11	-1.66	5.83	7.54	6.04	0.21	-1.50
IC-8	The library has print and/or electronic journal collections, I require for my work	5.77	7.57	5.51	-0.26	-2.06	5.72	7.50	5.75	0.02	-1.75
LP-1	The Library has space that inspires study and learning	6.03	7.73	6.08	0.05	-1.65	5.81	7.67	5.92	0.11	-1.76
LP-2	The library has quiet space for individual activities	5.91	7.57	6.12	0.21	-1.45	5.96	7.64	6.26	0.30	-1.38
LP-3	The library has comfortable and inviting location	6.06	7.72	6.31	0.24	-1.41	5.96	7.72	6.32	0.36	-1.40
LP-4	The library is a getaway for study, learning, or research	5.93	7.63	6.07	0.14	-1.56	5.95	7.60	6.24	0.29	-1.36
LP-5	The library has community spaces for group learning and group study	5.74	7.51	5.50	-0.24	-2.02	5.72	7.58	5.61	-0.11	-1.97
	Overall	5.77	7.53	5.62	-0.15	-1.91	5.73	7.50	5.82	0.09	-1.68

Scale: M=minimum expectation, P=perceptions of library performance, D=desire, SAG =service adequacy gap, SSG=service superiority gap

Services inside and outside the zone of tolerance

The services are within the ZOT if perception scores are above or equal to minimum scores. Those services are outside the zone of tolerance, which received perception scores below the minimum service level. The researcher identified ZOT of both public and private sector for overall user as well as

individual level such as faculty, graduate, and undergraduates (see tables 1-2). The overall SAG (perceived-minimum) mean score mentioned in table 1 showed that the quality of services were better in private sector libraries as compared to public sector libraries (public SAG = -.15, private SAG = .09). The users of private sector exhibited overall positive SAG but public sector users demonstrated negative SAG.

For public sector libraries, 15 items were outside the ZOT. Most of the items were related to collection, access and staff services (AS=8 items, IC=6 items). The five services having highest negative gap scores were common for overall user group, graduates, undergraduates and faculty users. These services were: "modern equipment for easy access to information," "remote access of electronic resources," "adequacy of needed electronic resources," "printed materials" and "library web site to find information independently."

For the private sector, only six items were outside ZOT. Four of them were commonly marked below the ZOT (related to collection and access) by faculty, graduates and undergraduates. These services were "modern equipment for easy access to information," "adequacy of needed electronic resources," "printed materials" and "library web site to find information independently." The other two services identified below the ZOT (overall user group) were: "remote access of electronic resources" and "spaces for group study (see table 2). The private sector users have wide zone of tolerance (1.77) than the public sector (1.76) for overall library service variation**.**

Overall public sector libraries were meeting minimum requirement of graduates but did not meet for faculty and undergraduates. It was very surprising and interesting that all items were outside the ZOT for public sector faculty. On the contrary, all items were within ZOT for private sector faculty. For graduate students, 10 items fell outside the ZOT. The five items having highest negative gap related to collection and access were same as mentioned above (IC dimension). There were 12 items outside the ZOT (see table 2) for undergraduate students of public sector universities. The five items having highest negative SAG were again related to IC dimension. Fifteen and 14 items were outside ZOT (see table 2) for private sector graduates and undergraduates respectively. Most of the items were related to collection, access and staff services (IC and AS dimensions).

Table 2. Service adequacy gap for individual user of public and private sector

Public sector						Private sector					
Faculty		Graduates		Undergraduates		Faculty		Graduates		Undergraduates	
Items Code	SAG	Item Code	SAG	Items Code	SAG	Items code	SAG	Items code	SAG	Items code	SAG
IC-5	-0.98	IC-5	-0.48	IC-4	-0.70	IC-1	0.31	IC-5	-0.66	LP-5	-0.52
IC-1	-0.92	IC-4	-0.42	IC-1	-0.63	IC-2	0.34	IC-3	-0.52	IC-2	-0.50
IC-4	-0.73	IC-2	-0.37	IC-3	-0.62	IC-4	0.39	IC-1	-0.51	IC-5	-0.41
IC-3	-0.66	IC-3	-0.35	IC-2	-0.60	IC-5	0.49	IC-4	-0.42	IC-4	-0.34
IC-2	-0.62	IC-1	-0.33	IC-5	-0.50	IC-3	0.55	IC-8	-0.40	IC-1	-0.24
LP-5	-0.50	AS-4	-0.13	IC-8	-0.44	LP-2	0.69	IC-2	-0.34	AS-7	-0.22
IC-8	-0.34	IC-8	-0.05	LP-5	-0.39	IC-8	0.74	IC-7	-0.21	IC-3	-0.19
AS-5	-0.26	AS-3	-0.04	AS-9	-0.17	LP-1	0.79	AS-8	-0.20	AS-9	-0.08
LP-4	-0.21	AS-1	-0.02	AS-5	-0.17	AS-7	0.83	LP-5	-0.16	LP-1	-0.07
AS-1	-0.15	AS-9	-0.01	AS-8	-0.11	LP-4	0.91	IC-6	-0.13	AS-4	-0.07
AS-2	-0.13	AS-7	0.03	AS-7	-0.10	LP-5	0.97	AS-7	-0.13	AS-8	-0.04
AS-4	-0.13	AS-8	0.04	AS-2	-0.09	AS-2	0.98	AS-9	-0.11	AS-3	-0.03
AS-8	-0.12	AS-2	0.06	IC-6	0.00	AS-3	0.98	AS-3	-0.10	IC-8	-0.02
LP-2	-0.11	LP-5	0.11	LP-1	0.00	IC-6	0.98	LP-1	-0.05	AS-5	-0.01
LP-3	-0.08	AS-5	0.13	AS-3	0.01	LP-3	1.01	AS-1	-0.01	LP-4	0.09
AS-9	-0.06	IC-6	0.13	AS-1	0.03	IC-7	1.03	AS-5	0.03	AS-2	0.10
IC-6	-0.05	LP-1	0.17	IC-7	0.07	AS-5	1.11	AS-2	0.08	IC-7	0.12
LP-1	-0.05	IC-7	0.27	AS-4	0.09	AS-4	1.18	AS-4	0.14	AS-1	0.13
AS-3	-0.05	LP-2	0.39	LP-4	0.11	AS-8	1.23	LP-3	0.19	LP-2	0.13
AS-7	-0.03	LP-4	0.49	LP-3	0.16	AS-9	1.28	LP-4	0.22	LP-3	0.20
IC-7	-0.02	LP-3	0.61	LP-2	0.35	AS-1	1.50	LP-2	0.33	IC-6	0.21
Overall	-.29	Overall	.01	Overall	-.17	Overall	.87	Overall	-.14	Overall	-.08

Note: SAG = service adequacy gap (perception -minimum)

Dimension wise ZOT for public and private sector

The researcher further calculated the zone of tolerance for individual dimension for both public and private sector libraries. The result (see figure 1) showed that AS (staff related services) and IC dimension (collection and access related services) were outside the ZOT and LP dimension (space and environment) was inside the ZOT for public sector libraries. On the other hand AS and LP dimensions were inside the ZOT and IC dimension was below the ZOT for private sector libraries (see figure 2).

The researcher also checked the dimension wise ZOT for individual users of public and private sector libraries. The result provided at table 3 showed that all three dimensions were outside and inside the ZOT for faculty users of public and private sector respectively. The IC dimension was outside the ZOT for graduate users of public sector, whereas AS and IC were outside the ZOT for public sector undergraduates. For private sector undergraduates, all three dimensions were outside the ZOT and for graduates AS and IC dimensions were outside the ZOT.
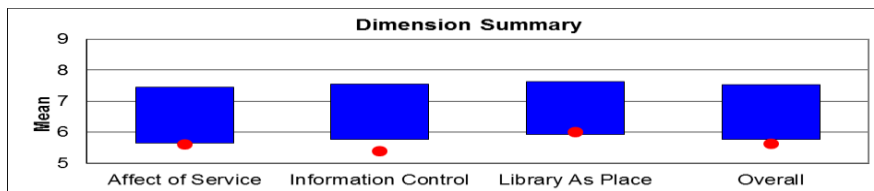
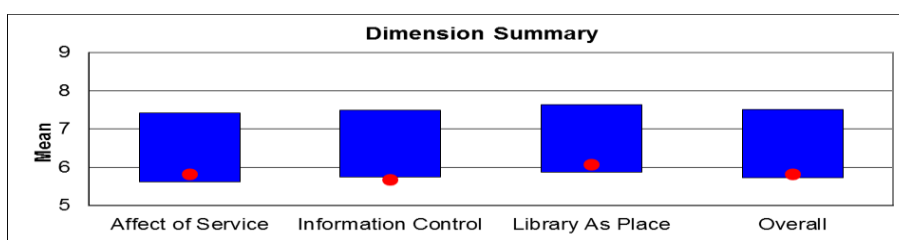Figure 1. Dimension wise zone of tolerance for public sector libraries

Figure 2: Dimension wise zone of tolerance for private sector libraries

Table 3. SAG (service adequacy gap, perception -minimum) for individual users of library sector

Dimension	Public Sector			Private Sector		
	Faculty SAG	Graduates SAG	Undergraduates SAG	Faculty SAG	Graduates SAG	Undergraduates SAG
Affect of Service	- .12	.007	- .06	1.13	- .03	- .02
Information Control	- .54	- .20	- .43	.60	- .40	- .17
Library as Place	- .19	.35	.04	.87	.10	- .03

Note: SAG = service adequacy gap (perception -minimum)

Difference between desired and perceived service level

The difference between perceptions (actual delivered service) and desires (what the user wished to receive from library) is called "service superiority gap (SSG)." If perception score for any service is equal or above the desired level, then that service is considered exceptionally well. On the other hand, perception score below the desired level shows that libraries are not meeting users' desires.

We calculated SSG by subtracting the desired score from the perceived score on all 21-core questions for overall user and individual user groups, i.e., faculty, graduates and undergraduates. The result (see table 1) showed that both private and public sector libraries had high scores on desired level as compared to perception (i.e. actual received services) scores on all individual services and dimensions. The negative gap for public sector was greater (-1.91) than private sector (-1.67). The four services, which had highest negative SSG, were similar for public and private sector. These services were: modern equipment for easy access to information," "remote access of electronic resources," "adequacy of needed electronic resources" and "library web site to find information independently." The public sector had higher range of negative gap (-1.41 to -2.49) than private sector (-1.36 to -2.08).

Significant differences between public and private sector libraries

Overall difference on SAG and SSG. The independent samples t-test result on SAG (p= .013) and SSG shows that there is significant difference on overall SAG and SSG mean scores between private and public sector university libraries. Examination of individual mean scores presented in table 1 revealed that

private sector libraries had positive SAG (mean=.09) and low negative SSG. However, public sector had negative SAG (mean=-0.15) and high negative SSG (see table 4).

Table 4. Independent samples t-test for overall SAG and SSG

Variable	t-test for equality of means		
	t	Sig.	Mean difference
Overall SAG	-2.70	.007*	-0.23
Overall SSG	-2.49	.013*	-0.24

Note: significant at .05

Dimension wise differences on SSG. The researcher also calculated MANOVA statistics to investigate dimension wise differences on SSG between public and private sector libraries. A statistically significant difference was found between public and private sector users on AS (F=7.27, p=.007, partial eta squared=.005) and IC dimensions (F=10.58, p=.001, partial eta squared=.007). However, significant difference was not observed between public and private sector on LP dimension **(**see table 5). An inspection of mean scores indicated that private sector users reported to have lower negative SSG scores on all three service quality dimensions (AS=-1.61, IC= -1.82, LP= -1.57) than the public sector (AS=-1.86, IC=-2.15, LP= -1.62) **.**These results were also in consistence with results on SAG (see table 3) that private sector users significantly differed on perceived service quality.

Table 5. MANOVA statistics for library sector

Source	Dependent variable	Type III sum of squares	F	Sig.
Sector university	AS dimension	22.235	7.27	.007
	IC dimension	38.003	10.59	.001
	LP dimension	.771	.275	.600

Note: significant at .05

Summary of qualitative comments

The users were asked an open-ended question to write any comments/suggestions about library services. The analysis of open ended comments provided by 477 public sector users revealed that library was meeting users' essential requirements in physical facilities, space and environment of library (except space for group discussion) and some area of staff service. The users were not satisfied with library collection and access, attitude of library staff, library space for group learning. The analysis of comments provided by 309 private sector users showed strong concern regarding collection and access services. However, they were moderately satisfied with staff, physical facilities and study space. The public sector faculty user group was more vocal and expressed dissatisfaction with electronic resources and their remote access. Additionally public sector users wanted comfortable space for individual and group learning. They also showed concern about knowledge and attitude of library staff. In their suggestions, they indicated that whenever they encountered service problem they needed knowledgeable, cooperative and courteous staff. The comments about physical facilities showed that users of both sectors were generally happy with library environment and facilities but some areas like space for group discussion need immediate attention. The complete details of qualitative comments were provided in another article (Rehman & Mustafa El-Hadi, 2012).

General discussion on results

The overall, individual service and dimension wise gap scores revealed that private sector libraries were generally meeting the minimum requirements of their users (except collection and access services) but, on the other hand, public sector libraries were not meeting minimum requirement in collection, access (IC dimension), and staff skill, abilities and attitude (AS dimension). The observation of individual service items demonstrated that public sector libraries had negative SAG for 15 services and private sector for six services. The five services having highest negative adequacy gap both for public and private sector were related to modern equipment, electronic and print collection, web base services and remote access of electronic resources (IC dimension). The low perception score on IC dimension by both sector suggested that users are facing problems in collection and access issues.

It is somewhat surprising that collection and access services (IC dimension) were marked poor by both public and private sector users. Presently, almost all university libraries have access to 75000 digital contents provided by the Higher Education Commission (HEC) under National Digital Library Program. Despite the heavy investment on countrywide subscription of electronic resources over the past few years, users' perceptions indicated that services in libraries were not sufficient. The possible causes might be: low information literacy training, poor marketing of resources to users, lack of professional commitment, inadequate tools for easy and timely dissemination of available electronic resources, non-availability of library websites for free electronic resources, irrelevant selection and un-subscription of some of important electronic resources by the HEC due to budget cut. The few research studies (Ramzan, 2010; Saïd, 2006; Sajid, 2009; Warraich & Ameen, 2008) pointed out underutilization of these resources.

It is interesting to note that the largest gap between both sectors was related to AS dimension. It seems that knowledge, skill and attitude of private sector library staff is better than public sector. There are several possible explanations for this result. Firstly, private sector universities have better competitive and customer oriented approach than public sector universities. Secondly, users of private sector libraries have low expectations and higher perceptions than public sector libraries. Thirdly, private sector users have somewhat broad and public sector has a narrow range of tolerance for variation in service quality. Fourthly, private sector users may have limited alternative options and users are more tolerant when they have limited alternatives. The t-test results for adequacy gap and superiority gap showed significant difference between private and public sector university libraries. The researcher found it very interesting that private sector users of ULP had low expectations and high perceptions than public sector users. These results suggested that users of private sector libraries thought differently and small collection of private sectors ULP created low expectations and high perceptions. Furthermore, they were more tolerant than users of large collection (public sector). It is easy to satisfy the users of small libraries. The researcher also found some evidence in the previous literature in favor of our argument (Cook, Heath & Thompson, 2003; Gatten, 2004a; Lee, 2004).

Implications for practice

The result of the study suggest following implications for the administration of university libraries, the HEC, Government of Pakistan and policy makers to improve the overall quality of public and private sector university libraries:

1. The findings of the study have some implications for the policy makers, the HEC and universities. The users of public and private sectors rated the quality of electronic resources and their access very poor. Potential reason for these findings can be that librarians are not marketing these resources. Then, these findings are thought provoking for the library administration, policy makers, the HEC. Despite of the fact that they have spent a lot of money to subscribe to the electronic resources but they have not yet succeeded. They need to work more on it in Pakistan.

2. Individual service and dimension wise gap scores revealed that public sector libraries were not meeting minimum requirements of users in collection, access (IC dimension) and staff skill, abilities and attitude (AS dimension).The library administration of public sector can isolate these problematic areas and make plans for immediate action based upon these results.

3. The study result showed that collection and access related services were very poor in both public and private sector libraries. Library management of concerned sectors should consider minimizing the gap in collection and accessing related services and should devise solutions to meet these problems.

4. It was found that "modern equipment for easy access to information," "remote access of electronic resources," "adequacy of needed electronic resources" and "library web site to find information independently" have highest negative SSG for public and private sector. Therefore, the HEC, universities, and other concerned authorities should immediately increase the budget allocation for above-mentioned services.

5. This study explored the quality of library services beyond LIBQUAL through the large number of open comments by users. These comments give many useful suggestions and public and private sector libraries should focus on these suggestions to improve their quality.

6. The data calculated from the zone of tolerance implies that library staff of both sectors may treat each user group differently. The faculty and graduates ranked poorest opinion for public and private sector respectively. Therefore, public sector library staff should pay more attention to faculty users and private sector need to more focus on graduate users.

7. Staff related services are important determinant of user satisfaction, but open-ended comments and quantitative data suggested that users of public sector libraries were not happy with the attitude of library staff. Therefore, polite and courteous frontline staff should be deputed for customer services. Furthermore, library management of public sector should regularly arrange training programs focused on customer service, customer care, communication skills and public relations.

Limitations of study and future research directions

The study, however, has few limitations. First, the researcher used convenient sampling method for data collection thus the sample may not be true representative of population. Secondly, the study focused only on one sector i.e. university libraries of Punjab and federal capital of Pakistan (Islamabad). The results of the study, therefore, may be applied with caution to other types of libraries i.e. public, special, national and college. The future research may be conducted in other types of libraries and other geographical area of Pakistan. Finally, the researcher measures the library service quality through quantitative method so future research may be conducted through qualitative methods such as focus group and interviews.

Conclusion

The results of the study showed that there was a wide gap between users' perceptions and expectations of service quality in both public and private sector libraries. The public sector libraries had the largest and the private sector had the lowest service gap. The tolerance zone identified 15 and six problematic services for public and private sector universities respectively and most of them were related to IC dimension. These services could create disappointment, frustration and dissatisfaction as well as decrease customers' loyalty and reliability. Concerned authorities should pay immediate attention and allocate resources for these services. In addition, managers of public sector libraries should also allocate resources for staff training to improve courtesy, willingness and knowledge among library staff so that they can meet or exceed users' minimum requirements. A significant difference was noticed between libraries of public and private sector universities. The perceived service quality of private sector libraries is better than public sector university libraries. This was the first comprehensive study on the perceived service quality in private and public sector university libraries in Pakistan. The study also investigated and compared both types of service quality gaps (minimum and desire). The study also pointed out and compared the perceived service quality among faculty, graduates, and undergraduates of both sectors. The researcher found very interesting and new findings that private sector libraries' users had low expectations and high perception than the users of public sector universities, who had high expectations and low perceptions. The researcher concludes that small collection creates small expectations and it is easy to meet or satisfy the needs of the users of small collection.

References

Ahmed, S. M. Z., & Shoeb, Z. H. (2009). Measuring service quality of a public university library in Bangladesh using SERVQUAL. *Performance Measurement and Metrics, 10*(1), 17-32.

Ameen, K. (2011). Changing scenario of librarianship in Pakistan: Managing with the challenges and opportunities. *Library Management* , *32*(3), 171-182.

Association of Research Libraries. (2010). *What is LIBQUAL* 2010. ieved from http://www.libqual.org/about/about_lq/general_info

Awan, M. U., Azam, S., & Asif, M. (2008). Library service quality assessment. *Journal of Quality and Technology Management, 4* (1), 51-64.

Chweh, S. S. (1981). User criteria for evaluation of library service. *Journal of Library Administration, 2*(1), 35-46.

Cook, C., Heath, F., & Thompson, B. (2001). Users' hierarchical perspectives on library service quality: A LibQUAL+ study. *College and Research Libraries, 62*(2), 147-153.

Cook, C., Heath, F., & Thompson, B. (2003). "Zones of tolerance" in perceptions of library service quality: A LIBQUAL+ study. *Portal: Libraries and the Academy, 3*(1), 113-123.

Gatten, J. N. (2004a). Measuring consortium impact on user perceptions: OhioLINK and LibQUAL+ *Journal of Academic Librarianship, 30*(3), 222-228.

Gatten, J. N. (2004b). The OhioLINK LibQUAL 2002 experience: A consortium looks at service quality. *Journal of Library Administration, 40*(3/4), 19-48.

Green, J. P. (2007). *Determining the reliability and validity of service quality scores in a public library context: A confirmatory approach.* (PhD dissertation, Capella University).

Haider, S. J. (2004). Perspectives on ..... coping with change: Issues facing university libraries in Pakistan. *The Journal of Academic Librarianship, 30*(3), 229-236.

Hernon, P., & McClure, C. R. (1990). *Evaluation and library decision making.* Norwood, NJ: Ablex.

Lee, T. (2004). Exploring outcomes assessment. *Journal of Library Administration, 40*(3), 49 58.

Miller, K. (2008). *Service quality in academic libraries: An analysis of LibQUAL+(TM) scores and institutional characteristics.* (PhD dissertation, University of Central Florida).

Nitecki, D. A. (1996). Changing the concept and measure of service quality in academic libraries. *Journal of Academic Librarianship, 22*(3), 181-90.

Oldman, C. M., Mary, C., & Wills, G. (1977). *The beneficial library*: Bradford: MCB Books.

Parasuraman, A., Zeithaml, V. A., & Berry, L. L. (1988). SERVQUAL: A multiple-item scale for measuring consumer perceptions of service quality. *Journal of Retailing, 64*(1), 12-37.

Ramzan, M. (2010). *Attitudes of librarians towards application of information technology in academic libraries of Pakistan.* (PhD dissertation, University of Malaya).

Rehman, S. U., & Mustafa El-Hadi, W. (2012). Perceptions of Pakistani users about library service quality: LIBQUAL comments. *Library Philosophy and Practice.* Retrieved from http://unllib.unl.edu/LPP/rehman-elhadi.htm

Rehman, S. U., & Pervaiz, A. (2007). Challenges and opportunities for libraries in Pakistan. *Pakistan Library and Information Science Journal, 38*(3), 6-11.

Rehman, S. U., Shafiq, F., & Mahmood, K. (2011). A survey of user perception and satisfaction with reference services in university libraries of Punjab. *Library Philosophy and Practice.* Retrieved from http://www.webpages.uidaho.edu/~mbolin/rehman-shafique-mahmood.pdf

Saïd, A. (2006). *Accessing electronic information: A study of Pakistan's digital library.* Oxford: International Network for the Availability of Scientific Publications.

Sajid, M. (2009). Electronic resources and services in federally chartered general university libraries of Pakistan. *Pakistan Library and Information Science Journal, 40* (2).

Shafique, F., Rehman, S. U., & Mahmood, K. (2012). A macro sketch of users' needs, satisfaction and library performance. *Library Philosophy and Practice.* Retrieved from http://digitalcommons.unl.edu/cgi/viewcontent.cgi?article=2015&context=libphilprac

Shank, M. D., Walker, M., & Hayes, T. (1996). Understanding professional service expectations: Do we know what our students expect in a quality education? *Journal of Professional Services Marketing, 13*(1), 71-89.

Shoeb, Z. H. (2011). Identifying service superiority, zone of tolerance and underlying dimensions: Service quality attributes in a private university library in Bangladesh. *Library Review, 60*(4), 293-311.

Taylor, R. S., & Voigt, M. J. (1986). Value added processes in information systems. Norwood, NJ: Greenwood.

Thompson, B., & Cook, C. (2002). Stability of the reliability of LibQUAL+™ scores: A reliability generalization meta-analysis study. *Educational and Psychological Measurement , 62*(4), 735-743.

Thompson, B., Cook, C., & Heath, F. (2003). Two short forms of the LibQUAL+ survey: Assessing users' perceptions of library service quality. *Library Quarterly, 73*(4), 453-465.

Thompson, B., Cook, C., & Kyrillidou, M. (2005). Concurrent validity of LibQUAL+™ scores: What do LibQUAL+™ scores measure? *Journal of Academic Librarianship, 31*(6), 517-522.

Thompson, B., Cook, C., & Kyrillidou, M. (2006). Stability of library service quality benchmarking norms across time and cohorts: A LIBQUAL+TM study. In *Asia-Pacific Conference of Library and Information Education and Practice (A-LIEP),* Singapore.

Thompson, B., Kyrillidou, M., & Cook, C. (2008). How you can evaluate the integrity of your library service quality assessment data: Intercontinental LibQUAL+® analyses used as concrete heuristic examples. *Performance Measurement and Metrics, 9*(3), 202-215.

Warraich, N. F., & Ameen, K. (2008). Perceptions of library and information science professionals about a national digital library programme. *Library Hi Tech News, 25*(8),15-19.

Whitehall, T. (1992). Quality in library and information service: A review. *Library Management, 13*(5), 23-35.

Wisniewski, M. (1996). Measuring service quality in the public sector: The potential for SERVQUAL. *Total Quality Management & Business Excellence, 7*(4), 357-366.

Zeithaml, V. A., Berry, L. L., & Parasuraman, A. (1993). The nature and determinants of customer expectations of service. *Journal of the Academy of Marketing Science, 21*(1), 1-12.