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A Review of Service Quality Assessment of Library and Information Centres

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Abstract

Due to impact of Information and Communication Technology (ICT) and changing needs of users, libraries have to force to shift from manual to automated environment. Users now want quality services within shortest possible time. Libraries have to assess its services from the user's point of view. It is the user, who can judge the services better provided by the concerned library. In this paper, it is try to review the available literature on assessment of service quality of libraries worldwide. The present study would be beneficial for library professionals, research scholars and the teachers of library and information science, who want to do further research work on the aspect of service quality of libraries.

Keywords: *Service quality, LibQUAL+®, ServQUAL, Agricultural libraries, Medical libraries, Assessment*

Introduction

The present era is of digital era and it is assume that every type of information should be available in digital form. Due to rapidly innovations in science and technology, everyone has affected by the impact of technology. As we have seen in and around us, everyone talks about digital information, virtual information and computerized information. Behind this, the role of Internet is crucial, which affect the way of life. Libraries are also no exception to the Information and Communication Technology (ICT) and it affects the way of providing services and dealing with the queries of informed users.

Now, the trend has totally been changed in the libraries due to vide impact of ICT. Earlier, the focus had given on just collection management on manually basis, whereas, in today's digital environment, every type of information and resources are acquisitioned, managed and accessed electronically. Libraries are going to automated and fight the battle for its sustainability in this digital era. On one side, libraries are forced to adopt the technological innovations; on the other hand, the demands of users are rapidly changed. Now, the users are so informed and want their desired information quickly and pinpointetly. The users are demanding quality services particularly in electronic or digital form.

Educational institutions particularly universities around the world are undergoing a major change and the libraries of Indian universities has no exception to this technological impacts. The users are now expected quality services even within shortest possible time 24x7x365. Accordingly, the libraries have to change its service delivery pattern as well as frequently conducted quality survey so that the authority may able to know where they are lacking and will take to improve the same.

There are some tools generated, which are using particularly to assess the quality of library services such as ServQUAL and LibQUAL. These tools are very useful for all type of libraries to measures its services in the purview of quality.

Quality services are those, which are providing up to the satisfaction of particular user or group of users.

Service Quality

Quality means the degree of goodness as per the specifications and standard. Hornby (2007) defined quality as *the standard of something as measured against other things of a similar kind or the degree of excellence of something*. Therefore, in general, it can be said that quality is a degree of excellence towards the resources and services provided to the users, and similarly, the users can get the maximum satisfaction and feel delighted.

Due to rapid technological (ICT) change and impact on libraries, the libraries are now heavily dependent on users' satisfaction of their services, meaning that how the users are more satisfied with the resources and services provided by the respective libraries has become a matter of significance for survival of libraries. A service of library is considered of good quality, when it fulfills the need of the users. When a library provides right information to right user at right time and in required form, it may be considered that a library is giving quality service to its users (Sahu, 2006).

“Quality is an attribute, a characteristic, a trait, or an excellence, or the possession of which invests a thing, a person, or an idea with a sense of superiority. Although the concept of service quality is not new but measuring service quality as a management technique has gained much importance over the last few decades in most service organizations, especially in library and information centers” (LibQUAL, 2018).

Parasuraman *et al.* (1985) stated that service quality is a measure of the extent to which the service delivered meets the customers' expectations. The principles underlying the concept of service quality are given as under:

- Service quality is more difficult to measure than quality of a commodity.
- Service quality is based on the customer's perception.
- Service quality is the difference between the outcome of the service and what the customer expected prior to the service.

If library provides quality services, the users can be attracted towards library and may become regular user and may also convey the message to others to use the library services. Thus, quality program will increase the library efficiency and improve the library or institutions image in academic arena.

Only few studies have been carried out on service quality and user satisfaction of library services but no study was found in India on agricultural and medical university libraries service quality assessment using LibQUAL+ tool. It is not possible to trace all the related work on the subject, therefore, an attempt has been made here in this STUDY to review the existing literature for measuring the service quality of libraries. Studies of service quality assessed in general without using quality measuring tools have been presented first, followed by the studies, which were conducted by using SERVQUAL tool, and studies conducted using LibQUAL+ tool are represented at the end.

General Studies on Service Quality

Users' perceptions

In Academic University Library of Malaya, Malaysia, the academic staff perceived the quality of library services just above average and considered the library staff quite helpful and able to instill confidence in library users (Kiran Kaur, 2010). In seven university libraries of the Maharashtra State, Dandgawhal (2014) observed a significant correlation between overall library service quality perceptions of respondents and their average rating along each of the dimensions and further revealed that the services offered to the users were not satisfactory. In the Girne American University library at Cyprus, Kitana and Serdar (2014) noticed that the library collections did not meet the respondent's satisfaction and perception as the users wanted more improved services. Bhatti, Marwat and Khan (2015) observed that Central Public Library of Bahawalpur, Pakistan offered good quality services to its users as the library users showed their positive perceptions about the library services and satisfaction with overall library services. While studying the perception and satisfaction of the academic staff members towards service quality of academic libraries of Sri Lanka, Nawarathne (2015) found no difference among academics according to daily library usage and satisfaction level about service quality. Satisfaction level of academic staff was lesser than the satisfaction level of students.

Gap between level of perception and expectations of users

In survey of seven university libraries of Maharashtra State, Dandgawhal (2014) observed a significant difference between average values of gap of seven university libraries under study and also observed the library services were below the users' expectations.

Service quality and satisfaction level of users

While studying the service quality and customer satisfaction in Academic University Library of Malaya, Malaysia, Kiran Kaur (2010) found that the academic staff perceived the quality of library services just above average and the library staff was considered quite helpful and able to instill confidence in library users. She further observed that, the overall satisfaction with the library services was quite satisfactory. In two university libraries of Punjab, Sharma, Anand and Sharma (2010) found no significant difference in the perception of readers with different educational qualifications except on the dimension of adequate provisions of display of new books but found a perceptual difference in the perceived quality of services rendered by the library staff and the perceived service quality availed by the users. While making a comparative study on service quality being provided in the special libraries (Government College of Technology, Quaid-e-Azam Medical College and University College of Engineering & Technology) of Bahawalpur, Asghar and Shafique (2012) found that the libraries were not up to the mark and users were not satisfied with the service quality. In Dr. Zakir Husain Library of Jamia Milia Islamia, New Delhi, Sohail and Raza (2012) revealed that majority of the respondents had been receiving an average quality service and 59.50% respondents asserted positive response and were satisfied with reliability aspect of service quality. Nawarathne and Singh (2013) observed that overall service quality of university libraries of Sri Lanka was not good and quality of library services was rather bad or in middle level and the users' satisfaction on e-journals was at very low level. The users were not satisfied with the range of books, check out system, convenient service hours, prompt services, e-learning facilities and opening hours.

In another study of Sri Lankan libraries (Nawarathne & Singh, 2013) found that the quality of services provided by the academic libraries in Sri Lanka was unsatisfactory, and respondents specifically showed their dissatisfaction with the check out system of the library materials, convenient service hours, Internet facilities for library users and availability of information in the online catalogue as users rated these services very poor. In the University of Girne American Library at Cyprus, Kitana and Serdar (2014) found that the overall service quality in the library was simply good and met the respondent's satisfaction and needs but the library electronic services such as the computers, printers and scanners were excellent. Nawarathne (2015) observed that the response received from the students of Sri Lankan academic libraries on overall satisfaction was very close to the value received from academics on overall user satisfaction and that academic staff focused more attention to overall service quality and user satisfaction because of long experience. In university libraries of Haryana, Sheela Devi (2015) found that the average user satisfaction level with quality of library collection was 57.5%, quality of staff 57.79% and quality of library services 56.93%.

Suggestions for improving the service level

While assessing the service quality levels, Kulkarni (2010) revealed that 67% faculty members of Administrative Training Institutes (ATIs) suggested that library should be recognized as place of wisdom and symbol of intellect, and all the library professionals working in ATIs should come together and form associations of ATI librarians so that collectively better user services could be given to the ATIs trainees and trainers. In two university libraries in Punjab, Sharma, Anand and Sharma (2010) suggested that for providing library services and measuring their performance level, the library needs to identify priorities among the demands of users and measure service performance in areas, which the users perceive important. In Dr. Zakir Husain Library of Jamia Milia Islamia, New Delhi, Sohail and Raza (2012) suggested that library services should always be tailor-made to accommodate the needs and wants of the users.

After surveying seven university libraries of Maharashtra State to assess the quality of library services, Dandgawhal (2014) suggested that there should be a committee of library professionals to improve the quality of services, which will find the reliable outcome by users in different places and types of library, and the libraries should introduce the concept of customer care training. Bhatti, Marwat and Khan (2015) noticed dissatisfactory services, thus, suggested that library should offer electronic resources and proper training programmes, user education programmes, seminars, conferences, workshops, *etc.* to educate the library users so that they can easily utilize different types of library print and electronic resources and services for lifelong. Sheela Devi (2015) suggested that each library must have to take some major steps in order to improve service quality aspects for achieving the goal of 100% users' satisfaction.

ServQUAL Studies on Service Quality

Users' expectations

While assessing service quality in a private university library system (Independent University Library) in Bangladesh using modified version of SERVQUAL instrument, Shoeb and Ahmed (2009) found that overall IULB met minimum service expectations of its respondents but not up to the level of desired service expectations. In technical college libraries of Odisha, Jena and Dalbehera (2013) found that the

availability and functionality of tangibles like e-resources and digital library software were significantly lagging behind the expected level of the users in the libraries. While investigating the service quality of library in affiliated medical colleges with University of Health Science, Lahore, Pakistan with the help of SERVQUAL instrument, Waqar, Soraya, and Malik (2015) found that expectations of users were higher in all the five dimensions as compared to the perceptions and they further observed that the overall expectations of female users were higher in tangibility and empathy, while the male users expected more in reliability, responsiveness and assurance dimensions of SERVQUAL.

Users' Perceptions

In 2012, Hossain and Islam conducted a study to understand the perceived service quality and satisfaction among the users of Dhaka University Library in Bangladesh and observed that the convenient library hours were the only variable, which showed positive service output and high satisfaction from users, while all other variables were showed negative service output, indicating dissatisfaction. The perceived values of service quality of libraries in affiliated medical colleges with University of Health Science, Lahore, Pakistan Waqar, Soraya and Malik (2015) were higher among female library users, thus, the library front desk staff was required to increase the perceived values of male users through improving their services to male library users.

Gap between level of perceptions and expectations of users

In Dhaka University Library, Ahmed and Shoeb (2009) found significant differences in service expectations for six library collection and staff-related items, and there was a lack of professionally qualified library staff and also a great shortage of ICT literate manpower in the library. In the same university library, Shoeb and Ahmed (2009) observed overall adequacy gap positive for graduate and undergraduate students but the adequacy gap negative for faculty members regarding library resources. In a study of Dhaka University Library, Bangladesh, Hossain and Islam (2012) found overall gap, indicating low standard of current service quality resulting in dissatisfaction among library users. Vinod Kumar and Bansal (2012) found a gap in the perceptions and expectations of library users and also highlighted the perception of library authorities towards the application of management dimensions in libraries of different North Indian universities. Hossain, Islam and Saadi (2013) noticed in the study of private university libraries of Bangladesh, a significant difference between male and female students in the nature of library use as female students were found to be more sincere in the regular use of library as compared to male students. They also noticed a lack of user-employee relationship, which might result in user dissatisfaction toward service encounter. In two university libraries (Kenya University and USIU-United States International University) of Kenya, Mukuvi (2013) assessed users' perception of service quality levels by using GAP model and SERVQUAL tool and reported a gap between service responsiveness and empathy among the five service quality determinants. Asogwa *et al.* (2014) used SERVQUAL instrument to evaluate the service quality of academic libraries in Developing Countries (Nigeria, Iran, Bangladesh and Pakistan) and reported a significant gap between perceptions and expectations of library users and academic libraries did not satisfy the information needs of users' properly.

Service quality and satisfaction level of users

A study conducted by Sahu (2007) to measure the service quality in the library of Jawahar Lal Nehru University (JNU), Delhi by using SERVQUAL model revealed no

lacking in quality of service in JNU library, as, the users were satisfied in overall aspects. Ahmed and Shoeb (2009) expressed that the library services in Dhaka University, Bangladesh were lagging far behind what was expected by the users as most of the items of service quality were not within the range of tolerance, hence, the users were not satisfied with the service quality. Jange and Huriya (2009) found in the study of management institutions of Bangalore, that the respondents were satisfied to a full extent with the library mechanism to tell promptly and accurately where a particular document is available at a given point of time.

In libraries of North Indian agricultural universities, Vinod Kumar (2009) observed that the librarians were managing the quality of their libraries to a great extent and the librarians of universities under study involved the section in-charges, in making policies and optimal use of ICTs for providing library services. Arshad and Ameen (2010) revealed that the overall service quality and satisfaction with university libraries of Punjab State of Pakistan was somewhat good. They further revealed that the users were satisfied with library staff's courtesy, caring behavior and their ability to perform services quickly. Hossain and Islam (2012) found that the users of Dhaka University Library (Bangladesh) were dissatisfied with the overall perceived performance of library services on five dimensions of SERVQUAL instrument. In Technical College of Odisha, Jena and Dalbehera (2013) found the library services unsatisfactory and tried to confirm the positive relationship between all the service quality attributes and customer satisfaction. In two academic university libraries of Kenya, Mukuvi (2013) observed that majority of users in both the libraries were happy about their physical facilities and also found that gender had no major influence on service quality perception. Using SERVQUAL, Mohindra and Anil Kumar (2015) found that the levels of quality of different attributes, *i.e.*, library environment, collection, staff and services, were significantly different across the academic discipline of respondents and were at satisfaction level.

Suggestions for improving the service level

The request or the information required by the students or the faculty members should be given equal importance and effective communication systems should be put in place so that the users may be informed about the availability of required services (Sahu, 2007). Ahmed and Shoeb (2009) suggested for Dhaka University, Bangladesh, that the library needs to invest heavily on acquiring reading resources, subscribing more e-journals and developing its physical infrastructure and library should appoint professionally qualified staff at all levels and organize training programs for staff members on current issues in librarianship on regular basis, which would help in developing professionalism, creating awareness and changing mental attitudes among the library staff so that better and quality library services can be provided. Arshad and Ameen (2010) suggested that library authorities must give preference to the users by understanding their needs and provide them quality services and service quality being a continuous process should be assessed repeatedly with regular intervals and with feedback. After observing negative service output, Hossain and Islam (2012) suggested that the relevant authority needs to take immediate remedial actions to improve the situation, and should make an effort to introduce a national standard for benchmarking library services in order to improve the quality of university libraries in Bangladesh.

In selected university libraries of North India, Vinod Kumar and Bansal (2012) suggested that quality is a continuous process and the library authorities must get feedback in order to enhance it. Hossain *et al.* (2013) suggested that librarians must consider Service Performance Matrix (SPM) as a method to determine the level of service performance as well as to determine improvement priorities for the service items. Jena and Dalbehera (2013) suggested that there is a need to improve the overall services provided by the library as well as the staff issues. Mukuvi (2013) after studying two academic university libraries of Kenya suggested that there is a need to work more on improving staff-user relations in delivery of service. For academic libraries of Developing Countries (Nigeria, Iran, Bangladesh and Pakistan), Asogwa *et al.* (2014) suggested that concerned authorities should pay immediate attention in allocation of enough funds for adequate provision of ICT facilities and subscription of e-journals to attract the users in library as a place for study, learning and research. For colleges of University of Health Science, Lahore, Pakistan, Waqar, Soraya and Malik (2015) suggested that librarians must improve their weak areas of front-desk staff services to meet the expectations of the users.

LIBQUAL+™ Studies on Service Quality

Users' expectations

In Florida A&M University Libraries (Swan, 2004) revealed that respondents had very high expectations from library, even then, they were satisfied with the services of their University Libraries. In Chancellor College Library (CCL), University of Malawi, Kachoka and Hoskins (2009) observed highest minimum expectation for affect of service (4.23) followed by information control (4.18) and library as place (4.15). Oak and Patil (2011) found the expectation level of users of Indian Institute of Management-Bangalore (IIMB), as high when compared to the state level institute-Institute of Management of Career Courses-Pune (IMCC). Rehman (2012) revealed that five services having lowest minimum expectations were mostly related to *affect of service* dimension and also found that library users' minimum expectations were significantly different than desired expectations on all service items and dimensions. Rehman and El-Hadi (2012) observed that university libraries in Pakistan were not up to the mark and far from meeting users' desired expectations about their information needs, especially attributes related to collections and access.

In special educational institutes recognized by Rehabilitation Council of India, Dodamani and Keshava (2014) found all the respondents satisfied with good number of books and journals, more than 83% respondents to prefer the books in Indian languages and majority of the respondents (92.15%) expecting good special collection like Braille books, talking or audio books, tactile picture books, e-books, *etc.* At Kharazmi University of Tehran, Emami and Riahinia (2014) reported that the quality level of perceived services in all three factors including *services effectiveness*, *information control* and *library as place* lagged behind the minimum level of the users' expectations. Mohindra, Anil Kumar and Shokeen (2015) revealed that the items of library service quality (LSQ) *viz.*, *library space that inspired study and learning*, *quiet space for individual activities* and *making information easily accessible available for independent use*, were on desired level of expectations. Mohindra and Shokeen (2016) measured the quality of services provided by the library of National Law School of India University, Bangalore and noticed that the most desired LibQUAL item were *a library website enabling me to locate information*

on my own, followed by *willingness to help users* and *printed library materials I need for my work*.

Users' Perceptions

While exploring the perception of service quality of academic libraries in fuzzy environment using LibQUAL+ method, Mehrjerdi, Toranlo and Jamali (2009) found that the users were happy with the types of library provided information that they had received *via* Internet and websites, the service time and the simplicity. The results of a study conducted in 146 colleges and universities of United States and Canada reveal that users were perceived services as they required (Thompson, Cook, & Heath, 2009). In the academic libraries of Iran, the level of perceived services in dimension of *information control* was higher than other dimensions but in dimension of *library as place*, it was relatively weak (Asemi, Kazempour, & Rizi, 2010). In two university libraries of Punjab, Sharma *et al.*(2010) observed a perceptual difference in perceived quality of services rendered by the library staff and perceived service quality availed by the users. In library services of Institute of Management and Career Courses, Pune (IMCC) and Indian Institute of Management, Bangalore (IIMB), Oak and Patil (2011) observed the overall perception score (average perception) 4.12, which indicated that the users' perception level for the library services was lower than the expectation level. In library of Rajiv Gandhi National Law University, Patiala, Mohindra, Anil Kumar & Shokeen (2015) noted that the perceived level of library service quality items differed from the desired service level such as, *library space that inspires study and learning* followed by the statement *electronic information resources I need and comfortable and inviting location*, which were ranked high in perceived service level. At National Law School of India University, Bangalore, Mohindra and Shokeen (2016) found that the perceived service level of LibQUAL items differed from the desired service level such as *employee who have the knowledge to answer user questions* followed by *library staff who are consistently courteous and modern equipment that lets me easily access needed information*, which were ranked high in the perceived service level.

Gap between level of perceptions and expectations of users

In a study of libraries in Sweden, Kyrillidou and Persson (2006) found that the largest negative adequacy gap score was observed in the item *a library web site enabling me to locate information on my own*, meaning that website of the libraries was not up to the mark and links of the online resources were not given properly and updated frequently and they further observed that the *information control dimension* was most important to the users but libraries under study were not fulfilling their needs in this dimension. Hariri and Afnani (2008) in the study of a library of Iran found that the desired level of service quality was not met by the library under study but the mean score for adequacy gap for all users was 0.00, indicating that the library performed at minimum acceptable level of its users. Kachoka and Hoskins (2009) in the study of Chancellor College Library, University of Malawi, found the users' expectations of service above the actual service perceptions. They further observed that both *affect of service* and *library as place* had a smaller adequacy gap score of -0.32 as compared to *information control*, which had a score of -0.63, indicating that the library remained failed to meet the minimum expectation of service. The study of academic libraries of Iran revealed no gap between the students' expectations and perceptions in three dimensions of *affect of service*, *library as a place*, and *personal control* but from the students' point of view, regarding the *access to information* dimension, there was a

significant difference between the students' expectations and perceptions (Mehrjerdi, Toranlo, & Jamali, 2009). Asemi, Kazempour and Rizi (2010) reported that academic libraries of Iran were not providing the required atmosphere for group study and learning and also library space for individual activities was a relatively weak area for these universities as it was shown as service gap in calculated results. While measuring the gap in service quality provided by the library of Mashhad University of Medical Science, Iran, Pedramnia *et al.* (2012) noticed lower quality of libraries than the expected in all the dimensions of LibQUAL instrument and explored most gap related to updated multimedia databank, appropriate number of computers and adequate facilities like Laptop/PC and broadband network for better access to subscribed electronic resources through MUMS Central Library website.

On *service adequacy* gap in select university libraries of Hyderabad, Rao (2012) observed wider gap on all the indicators of *information control* dimension and found the users dissatisfied with the *information control* dimension and rated all the indicators *superior* by the respondents with regard to *service adequacy* gap of *library as place* dimension. Rehman (2012) revealed a wide gap between users' perceptions and expectations of service quality in both public and private sector libraries of Pakistan and observed that public sector libraries had largest service gap and private sector the lowest service gap. Rehman and Sabir (2012) in a study of university libraries of Pakistan noted significant difference between faculty and students on *affect of service* (AS) dimension and found no significant difference between male and female library users on service adequacy gap (SAG) and service superiority gap (SSG) and also identified similarities and differences on perceived library service quality across the user types, gender and academic disciplines. In a study of academic libraries of Brazil, Brito and Vergueiro (2013) found that there were two service gap scores on LibQUAL+ with desired service score 8.36, minimum score 6.96 and perceived score 6.80. In the study of medical college libraries of Karnataka, Goud (2013) observed a gap across the dimensions of LibQUAL+ instrument and found that the library users were quiet dissatisfied with the library services and resources. Neshat and Dehghani (2013) observed a significant difference between expected service quality (158.75) and provided service quality in different library departments (109.80) of National Library of Iran and also observed a difference between expected quality of library personnel (52.28) and current status (37.67) on affect of service dimension.

In a study of university libraries of Pakistan, Rehman (2013) found a wide gap between users' perceptions and expectations of service quality and the *affect of service* and *library as place* dimensions within the Zone of Tolerance and *information control* dimension below the Zone of Tolerance for the overall user group. He further observed that none of the library services met or exceeded users' desired levels of service quality. Rehman (2012) in the study of Pakistani libraries found that the zone of tolerance (ZOT) identified eight problematic services, most of which were related to the information control dimension (IC). He also highlighted a wide gap between users' perception and expectations of service quality. Mardani and Zare (2014) found the service superiority gaps (-2.14) for all the services in the libraries of Tehran University of Medical Sciences, Iran, as negative and the libraries were far-off from meeting the expectations of users on the maximum level, meaning that the said libraries fell fairly short of providing users with the desired level of services. At Rajiv Gandhi National Law University, Patiala, Mohindra, Anil Kumar and Shokeen (2015) revealed a significant difference in perceived and desired service level among most of

the library service quality (LSQ) items and all the three LibQUAL dimensions, however, they found maximum gap in the *information control* (IC) dimension. Mohindra (2016) found superiority gap in *affect of service*, *information control* and *library as place* dimensions and overall library service quality among users of different status, hence, significant impact was found between library service quality and user satisfaction. Mohindra and Shokeen (2016) at National Law School of India University, Bangalore revealed a significant difference in perceived and desired service level among most of the LibQUAL items in all the three LibQUAL dimensions and a maximum gap in the information control (IC) dimension.

Service quality and satisfaction level of users

In research libraries across North America, the respondents were slightly satisfied with the services of concerned libraries (Cook, & Heath, 2001). Tomaiko (2003) revealed that the overall satisfaction varied among user groups in Georgia Tech Library and Information Centre, as the undergraduate respondents were satisfied with the library's collection but not with the building, on the other hand, many faculty members were dissatisfied with the collection depth of the library. The undergraduates were quite satisfied with the services of Clemson University Libraries, United States in terms of all the three dimensional areas of *information control*, *affect of service* and *library as place* (Comfort, 2004). The users of Penn State University Libraries were generally satisfied with the library services and resources on *information control* dimension, indicating that the libraries were closer to meet the users' desired levels of service quality (Probst, 2004). The users of A & M University Libraries were mostly satisfied with the willingness of staff to provide help as needed, the functionality of library web page and the provision of comfortable study environment (Swan, 2004). Using survey instrument LibQUAL+™ in Swedish language besides American and British English in Lund University, Sweden, Kyrillidou and Persson (2006) revealed that the *information control* dimension was important, however, the users on *affect of service* dimension showed the importance of self-sufficiency in their use of library resources.

While investigating the service quality of central library of Iran University of Medical Sciences and Health Services (IUMS) using LibQUAL+ instrument from the viewpoints of female and male users of the library, Hariri and Afnani (2008) found that the users were not satisfied with the quality of services provided by the library as they scored negative to maximum items. A survey study conducted by Babolhavaeji *et al.* (2009) in Iranian academic libraries reveals that the services offered by the libraries *viz. cooperation time, staff and circulation* (most expected), *press and audiovisual materials* (least expected), were not relatively good. Kachoka and Hoskins (2009) recorded in the study of Chancellor College library, University of Malawi that the expectations of users were above the actual service perceptions and the library failed to meet the minimum service expectation. Mehrjerdi, Toranlo and Jamali (2009) observed that users of academic libraries of Iran were not happy with the policy of not being able to borrow the periodicals, books and other materials from the library, however, the users were happy with the types of library information that they received *via* internet and websites, the service time and the simplicity. At Walters State Community College, Posey (2009) noticed that the lowest perceived scores were in the *affect of service* dimension, indicating that users were not pleased with the quality of library services provided. However, the students were happy with the *library as place* dimension, indicating that the library was very friendly,

welcoming, or comfortable, and simultaneously, the users were also satisfied with the *information control* dimension, indicating that the library had sufficient electronic resources, students had the ability to find information easily, independently and remotely and were satisfied with opening hours of the library but dissatisfied with print and electronic journal collections. Thompson, Cook and Heath (2009) in a study of colleges and universities of United States and Canada revealed that the respondents were satisfied with the library staff that they properly understood the needs of the users. Moreover, the users were overall satisfied with the services provided by the libraries of their parent organization.

In academic libraries of Iran, the users were quite dissatisfied with their library space but were more satisfied with access to information tools, including the library catalogue, computerized lists, databases and Internet and further demanding polite and courteous staff (Asemi, Kazempour, & Rizi, 2010). Sharma, Anand and Sharma (2010) found in the university libraries of Punjab that the users in the age group of 25-29 were not satisfied with the cleanliness of library and the users in the age group of below 20 years were not satisfied with the number of computers in libraries as well as handling of queries by the staff. Oak and Patil (2011) found the library users of Institute of Management and Career Courses-Pune (IMCC) and Indian Institute of Management-Bangalore (IIMB) quite satisfied. The library users of Mashhad University of Medical Sciences (MUMS), Iran were dissatisfied with their library building but quite satisfied with the availability of information resources and modern facilities (Pedramnia, Modiramani, & Ghavami, 2012). The library users of Osmania University, Hyderabad felt the *service adequacy* more on *affect of service* dimension as the library staff members were courteous, friendly and helpful and the users considered the library services *superior* in terms of *affect of service* dimension (Rao, 2012). A survey conducted in Pakistan by Rehman (2012) in public and private sector university libraries reveals that university libraries of private sector were generally meeting the minimum requirements of their users except *information control* dimension, but on the other hand, public sector libraries were not meeting the minimum requirements in *information control* and *affect of service* dimensions. In another study, Rehman (2012) observed that in public sector libraries, the users were not satisfied with library collection and access, attitude of library staff and library space for group learning, however, in private sector, the users were moderately satisfied with staff, physical facilities and study space, which was somewhat surprising for the researcher as collection and access services were marked poorly by both public and private sector users.

The users in university libraries of Pakistan were also not satisfied with library collection and access, attitude of library staff and library space for group learning, which represented *information control* dimension (Rehman, & El-Hadi, 2012). Rehman and Sabir (2012) reported that overall, libraries of Pakistani universities were not meeting minimum and desire expectations of users since the overall perception mean score was less than minimum and desired expectations. However, the libraries were performing better in *library as place* dimension and poor in *information control* dimension. A study conducted by Brito and Vergueiro (2013) in Brazil reveals that the Brazilian academic libraries were not up to the mark in terms of their services provided to the users and had the lacuna on all the dimensions of LibQUAL+ tool, resulting dissatisfaction among the users about the perceived quality of services. While measuring the service quality at RYM Engineering College Library, Bellari of

Karnataka state, Goud (2013) noticed that the level of service quality on minimum level across three dimensions did not achieve the customers' desire. Neshat and Dehghani (2013) found that National Library of Iran could not fulfil users' minimum expectations except in some cases and there were more gaps up to the desired level. While measuring the service quality of university libraries of Pakistan through a locally modified LibQUAL+ survey in Urdu, Rehman (2013) observed that libraries do not meet users' minimum acceptable and desired levels of service quality and users rated the electronic resources being of very poor quality. In another survey, Rehman (2013) assessed the service quality of 22 university libraries of Pakistan through locally modified LibQUAL+ and found all the libraries under study were unable to meet users' minimum acceptable and desired level of service quality and further found lack of ICT based equipments, poor marketing services, non-active library websites, inadequate collections, inability of library staff, *etc.* the major reasons for poor service quality in the university libraries of Pakistan.

In a study of Kharazmi University of Tehran, Iran, it was found that library is a relaxing, desirable and pleasing place, which has highly met the users' expectations and has achieved users' satisfaction but the presence of staff who understands the users' needs seems to meet the users' expectations to a lesser extent (Emami and Riahinia, 2014). Killick, Weerden and Weerden (2014) tried to identify commonalities in customer satisfaction among academic and national libraries of United Kingdom and Ireland and observed that the respondents who were satisfied with the *information control* dimension yielded an average perceived score of 7.61, while average perceived score was 7.44 for *library as place* dimension. They further noticed that the highest score was for *information control* dimension and the lowest score for *library as place* dimension. Using LibQUAL+ model, Mardani and Zare (2014) measured the service quality at Tehran University of Medical Sciences and found that the users considered the current quality of services lower than what the librarians consider them to be. Mohindra (2016) observed significant difference in desired and perceived level of service quality and the users were unsatisfied somehow with the service quality provided by the law university libraries. Mohindra and Shokeen (2016) observed that the respondents were satisfied with services rendered by the library of National Law School of India University, Bangalore.

Suggestions for improving the service level

More funds should be provided to libraries for the development of staff and customer relations (Swan, 2004). Hariri and Afnani (2008) suggested that the library must pay special attention to the aspects of *information control* dimension. Mehrjerdi, Toranlo and Jamali (2009) suggested that the decision maker needs to pay more attention to the students' expectations and enrichment of library by subscribing new journals, master thesis, electronic sources and others were among the basic library services needed to be taken into consideration by decision makers. Based on the findings, Posey (2009) recommended that a training program focusing on user services should be organized on regular basis for library staff so that the staff could make themselves competent and courteous. Asemi, Kazempour and Rizi (2010) suggested that academic librarians need to accept their role as experts in information management and not just meet client expectations but anticipate client needs and help in defining those very expectations.

The library in providing services and measuring its performance level needs to identify priorities among the demands of users and measure service performance in

areas, which the users perceive important (Sharma, Anand, & Sharma, 2010). Rehman and El-Hadi (2012) found that users want comprehensive collection in print and electronic format and they also expect tools and modern equipment for easy and remote access through library websites. Goud (2013) suggested that the service quality studies should be a continuous feature, which helps to the college library for knowing the library user satisfaction level and improving the service quality to meet the user's expectations for sustainable competitive advantage. Neshat and Dehghani (2013) suggested that some regulations such as allocating services at macro-level need to be legislated in order to require many national databases producers to offer their databases to the libraries so that the International sources may be developed by participating in the convention of the Science and Health Ministry.

The universities and other concerned authorities should immediately increase the budget allocation for services that are identified below the Zone of Tolerance (ZOT) so that quality services may be provided to the users and the users' satisfaction could be achieved (Rehman, 2013). Rehman (2013) suggested that the Higher Education Commission (HEC) and the Government of Pakistan as administrative and statutory bodies of the universities in Pakistan should work towards introducing national standards for benchmarking library services in order to maintain the quality of university libraries in Pakistan. Emami and Riahinia (2014) suggested for the library of Kharazmi University of Tehran, Iran that the staff is required to accurately fulfil their duties and the Library Management Board is also required to adopt necessary policies with regard to the professional staff and to provide them with on-going training courses in order to enable them to offer more and better services and to invoke enthusiasm among both the staff and the users. Killick, Weerden and Weerden (2014) suggested that there is a vital need to improve both the *information control* dimension and *affect of service* dimension elements of the library services in order to meet users' needs or satisfaction. Mardani and Zare (2014) suggested that some initiatives should be introduced to increase the awareness of human resources in libraries about latest achievement in IT and to train employees to acquire abilities in identifying the needs of users so that service quality at Tehran University of Medical Sciences could be achieved. Mohindra, Anil Kumar and Shokeen (2015) suggested that library authority should have enhanced e-resources, reading space and improved the qualifications of the staff so that ultimate user satisfaction could be achieved.

Conclusion

There are too many studies conducted in foreign countries to evaluate the service quality of libraries but there are very few studies in India. No study was conducted to assess the service quality of agricultural and medical university libraries of Haryana and Punjab State of India. From North India, only the study of Law University Libraries was conducted but on agricultural and medical universities, no study was conducted to measure the service quality of their libraries. Thus, there is a need to investigate the service quality of agricultural and medical university libraries in this region. Although the service quality assessment should be a continuous process but only few studies have been reported in Indian context. Moreover, there are small numbers of studies on academic libraries particularly in North India. In recent past, no study of agricultural and medical university libraries has been conducted in this region using LibQUAL+™ tool. The present study was therefore planned to fill this gap.

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