

IMPORTANCE-SATISFACTION ANALYSIS OF LIBQUAL SERVICE QUALITY ATTRIBUTES IN THE SRI LANKAN CONTEXT

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Abstract

Service quality measuring tools and methods should be revisited to address the changing environments. Although there are criticisms, LibQUAL+ is a well-tested tool for validity and reliability in different continents and is suitable for the Sri Lankan university library context too. To measure the service quality in university libraries, LibQUAL survey items were selected and tested for their applicability using the Importance-Performance Analysis (IPA) matrix with a randomly selected sample of 1,791 respondents. The sample consisted of 2,000 users including teachers and undergraduates selected from eight state universities in Sri Lanka. Results indicated that there was a significant gap between users' expected quality and perceived quality ($t(1,790) = 43.053, p < 0.001$). The IPA results showed that 13 service quality attributes related to 'Library as Place' and "Service Affect" dimensions fell into quadrant II implying that those attributes are highly important and highly performed (satisfied). Four quality attributes fell into quadrant III while three attributes to quadrant IV. No variable was fallen into quadrant I indicating that no item was highly important and low performance. The IPA matrix is very helpful for librarians to evaluate service quality. Future studies should consider discovering more quality variables and more robust methods to evaluate service quality in turbulent environments.

Keywords: *Service quality, LibQUAL items, University libraries, Importance-Performance analysis, Quality evaluation methods, Sri Lanka*

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Introduction

Library quality evaluation is a never-ending process because quality expectations are changing according to the turbulent changes in the library service environment. These turbulences occur as predictable as well as unpredictable changes. If analogies are taken from recent history, users' expected library services in Sri Lanka were dramatically changed due to the pandemic situation as well as the conditions created by the economic crisis. Therefore, quality evaluations should be revisited from time to time to address the changing needs.

Assessment of Academic Libraries

Throughout its long history, academic librarians have assessed their libraries through indicators based on input, output, outcome, and impact aspects which were valid to show the internal performance as well as the external perspective of the library. These indicators focused on the assessment statistics such as finding the purpose of visiting the library, use of the library resources, facilities & services available, determining the level of satisfaction of users, and the types of information sources they used (Saikia & Gohain, 2013). All of these measures have links to the service quality.

It is very hard to find a single unique definition for service quality. Defining service quality is still incomplete and subject to many debates and interpretations. Some scholars have used the concept of quality in the forms of impact, value, worth, or satisfaction. Service quality is intangible and is experienced while using the service. It is heterogeneous because people perceive it differently depending on the environment, situation, the mood of the consumer, past experiences of the receiver, time of delivery, attitudes of the service provider, and so on. Many critiques of service quality emphasize that quality is an attitudinal concept and hence it pertains to a psychological paradigm that is difficult to measure.

Service quality is the overall evaluation of the services provided by the firm (Parasuraman *et al.*, 1988) and it is the relative inferiority or superiority of the firm (Bitner *et al.*, 1994). Service quality represents the attitude of the long-run, overall evaluation of the service (Cronin & Taylor, 1994) and is a measure of the extent to which the service can meet or exceed customers' expectations. Customers of the modern market want the firm to provide them with goods and services that match their expectations (Cronin *et al.*, 2000). This meeting of user expectations would be the quality.

The service provider is required to understand the service user's perception of the quality. Quality implies not doing well but understanding what is important to the user and doing those things well (Martin *et al.*, 2020). Service quality in academic libraries involves

three main areas: information resources, the environment, and staff involvement (Hernon & Nitecki, 1999). Thus, measuring the service quality is not a simple task.

Perception-based Evaluation of the Service Quality

Although the earlier measures were concentrated on the service provider's perspective, later developments of the service quality measuring moved onto the assumption that the customer decides the quality. Hence, customer perception gained much attention and practitioners followed many theories such as the confirmation/disconfirmation theory to measure the perception-based quality. Quality is a powerful indicator of satisfaction. Therefore confirmation/disconfirmation theory is used to compare the customers' perceptions regarding the services provided by a firm (Wang & Pearson, 2002). In this scenario, practitioners tended to measure the quality of customer satisfaction rather than the traditional assessments solely based on various counts such as collection size, number of users registered, number of user contacts, etc. Although asking the customers about their attitudes towards the service they received is a subjective mechanism (Hossain *et al.*, 2013), one cannot ignore the satisfaction-based measurement because the perception of an individual tells something important about the quality.

Quality and Satisfaction

Quality and satisfaction are highly used terms in the literature. Some argue that both terms are similar in interpretation and some argue that they are different concepts. Conceptually the terms share similar meanings. Quality is an antecedent to satisfaction (Mukuvi, 2013) and hence quality and satisfaction are interrelated (Anderson & Fornell, 1994; Bolton & Drew, 1991; Cronin & Taylor, 1992; Eshghi *et al.*, 2008; Woodside & Wilson, 1994). Some believe quality leads to satisfaction while others support the concept that satisfaction causes quality (Cronin & Taylor, 1992; Negi, 2009; Parasuraman *et al.*, 1988; Saravanan & Rao, 2007). Asubonteng *et al.* (1996) accept that there are measurable attributes of both quality and satisfaction.

Customer satisfaction is a popular topic in marketing (Kotler, 2014). According to Elliot (1995) and Smith & Bolton (2022), satisfaction is an emotional reaction to a specific transaction or service. Calvert (2008) asserts that service quality is more holistic than satisfaction. Service quality and customer satisfaction are very important to retain customers with the business. Both are influential on the success of the university library. In overall

consideration, user satisfaction and service quality have distinct dimensions, but they are interdependent, interrelated, and share many common attributes.

Importance of the LibQUAL Instrument

Various service quality assessment models have been used to evaluate the library. To name some of them are: the Balanced Scorecard Model (BSC), European Foundation for Quality Management (EFQM) Model, SERVQUAL Model, SERVPERF Model, Total Quality Management Model (TQM), LibQUAL+™ instrument, and ClimateQUAL model.

LibQUAL+ instrument which has been developed by the Association of Research Libraries is an important tool to measure the service quality in academic libraries. It has been adopted from SERVQUAL by making necessary modifications to suit the library environment, particularly for the ARL member libraries (Kyrillidou 2009; Posey, 2009). According to Kyrillidou (2009), LibQUAL+ is a grounded protocol that includes a standard set of items. Naidu (2009) asserts that the LibQUAL+ tool provides a more reliable survey in terms of measuring the gap between user expectations and perceptions. LibQUAL+ is more flexible for the understanding of user needs (Marnane, 2004).

The LibQUAL+ survey includes 22 survey items to measure the overall service quality of the library. It has three dimensions viz. 'Service Affect', 'Information Control', and 'Library as Place'. The 'Service Affect' dimension measures the interpersonal component of library service through nine questions. The 'Information Control' dimension measures the service quality from the perspective of the content of the resource collections and access to them. It measures eight questions in the LibQUAL tool. The dimension 'Library as Place' measures the library on its physical facilities environment and five questions measure it. LibQUAL is considered an important benchmark widely used by many academic libraries in the world to measure their patron needs and satisfaction (Li, 2017).

Despite its merits and success, there are many criticisms too (Posey, 2009). According to Edgar (2006), service adequacy is very difficult for the customer to evaluate. Roszkowski *et al.* (2005) argue that incongruity can arise when satisfaction is measured as the scores between actual and desired service level measurement. Saunders (2007) noted that LibQUAL+ is difficult for librarians to tailor to their own assessment needs and that patron perceptions are not the only important measure for library assessment.

However, there is a consensus of published research that LibQUAL+ is a valuable means of assessment for academic libraries (Li, 2017; Nicol & O'English, 2012). The reliability and validity of LibQUAL have been confirmed by many researchers (Boyce, 2017;

Heath, 2004; Heath *et al.*, 2002; Kyrilidou & Heath, 2004; Thompson *et al.*, 2005; Thompson & Cook, 2002; Xi & Levy, 2005). LibQUAL+ is an internationally available tool that contains standardized questions as well as additional questions unique to a given library. Thus, survey items used in the LibQUAL+ tool can be utilized to construct a measuring instrument for measuring library service quality perception among users. LibQUAL instrument is reliable and valued in exploring users' expectations regarding the library service in the Indian subcontinent setting and hence in Sri Lanka.

Given the above context, the LibQUAL tool plays a dominant role in evaluating the service quality in university libraries. As the tool has been designed specifically for the university library environment, and has been tested and highly utilized in different continents of the world, the author of this article assumes that it is still valid and reliable to measure service quality in university libraries.

Therefore, it is important to assess how users in the Sri Lankan context feel about the items in the LibQUAL protocol and how these items can be used to map the importance and satisfaction of service quality attributes among users.

Aims and Objectives

The primary objective of this study is to measure the importance and satisfaction of the service quality through LibQUAL items and analyze them in the Importance-Performance framework in the Sri Lankan university library context. The study was guided by the following research questions:

1. How about the users expected level and perceived level of service quality in the university libraries?
2. Is there a significant difference between the expected level and the perceived level of service quality?
3. How the service attributes can be identified as important and satisfactory according to the user's viewpoint?

Methodology

By employing a sample survey method, this study administered a structured questionnaire designed to collect data from the users of university libraries regarding the expected level of services and the perceived level of performance of those services.

The research instrument was developed by adopting LibQUAL survey items focusing on the local context. The survey statements were translated into Sinhala and Tamil languages so that

respondents can understand them in any medium they were convenient. The instrument went through a vigorous process of questionnaire development to ensure its validity and reliability. The questionnaire included 22 survey statements related to the service quality of university libraries. All the survey items were measured in two aspects: 'expected level' (importance of the service) and the 'perceived level' (satisfaction of the performance) and respondents were asked to rate their responses within the weighting from 1 to 9 where 1=very low and 9=very high.

The sample was selected from eight universities viz. University of Peradeniya, University of Colombo, University of Sri Jayewardenepura, University of Kelaniya, University of Jaffna, University of Ruhuna, Eastern University of Sri Lanka, and the Rajarata University of Sri Lanka. In sampling, it attempted to cover overall geographical areas of the country and respondents from all main subject streams. Therefore, eight universities representing six provinces that conduct courses in Humanities & Social Sciences, Natural Sciences, Management & Finance, and Medical Sciences were selected. Three universities from the Western Province were included because the dispersion of the academic community is relatively large in these areas. The sample consisted of 2000 library users including undergraduates and teachers selected on a random basis representing 250 users from each university. In selecting the teacher respondents, an equal number (10) of teachers from each subject major (Faculties) of the respective university was included into the sample using the university Web. Fifty (50) student respondents from each subject major of the respective university irrespective of their batch were selected with the support of the library staff. The questionnaires were distributed on the Google form link to the respondents in February 2021 and hard copies were provided on request.

Collected data were analyzed with descriptive analysis and inferential analysis using the SPSS package version 25. Mainly the IPA technique was used to map the dispersion of factors from the data.

Importance-Performance Analysis (IPA)

The Importance-Performance Analysis is a gap analysis technique used to map how the individuals of an organization feel about the service they receive in terms of the importance of the service and how they are satisfied with the performance (Martilla & James, 1977; Sinischalchi *et al.*, 2008). It can be used to identify the levels of the highest mean and lowest mean of the score and the spreading of the scores of attributes over the framework in four quadratics (Chaudhary *et al.*, 2016). The IPA analysis provides the performance of the survey

item and its importance through the clients' ratings which will be important to make decisions on whether the item should be kept, developed, or removed. This combined view in two components can be used to estimate the situation of the service delivery (Silva & Fernandes, 2010).

This method can be easily applied to the academic library sector to view the clients' perception of the performance and the importance of quality attributes. Mallya and Patwardhan (2018) used this method in college libraries to measure the students' perception of service quality.

IPA framework uses a four quadrants matrix to indicate the ratings of respondents. Quadrant I represents the area of 'high importance and low performance'. Quadrant II represents the area of 'high importance and high performance'. Quadrant III represents the area where the ratings fall into 'low importance and low performance', and quadrant IV includes the area of 'low importance and high performance'. These four quadrants are useful to understand the status of the service attributes (Figure 1).

Basically, it uses the x-axis and y-axis, where the x-axis represents the status of performance and the y-axis represents the status of importance.

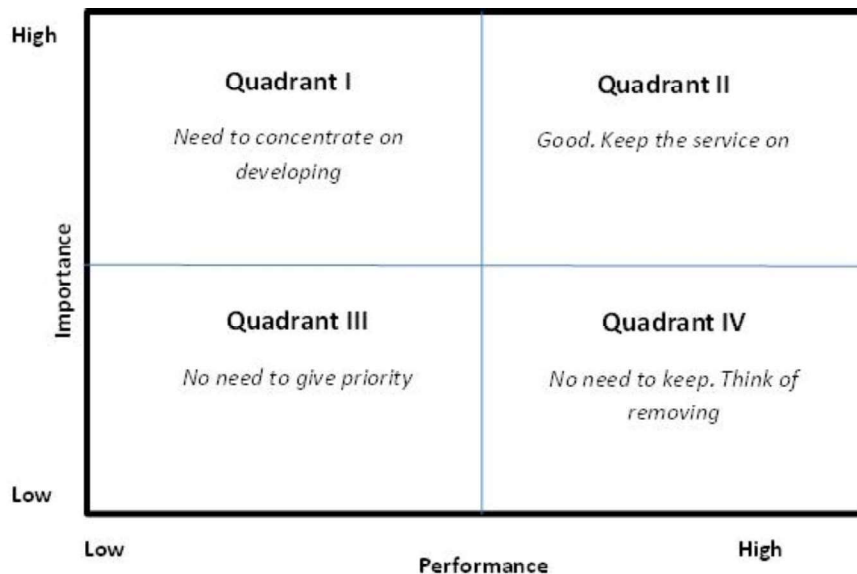


Figure 10: Importance-Performance Analysis (IPA) framework

By analyzing the falling of factors in the IPA framework, managers can decide the status of the factors whether they perform well or whether they are counted as important to customers. Accordingly, if the factors fall into Quadrant I, they are considered highly important for customers but performed low in the organization. This condition says that although these

services are very important for customers, they are not provided satisfactorily and the management should concentrate on the development of their performance. The factors or services falling on Quadrant II are considered highly important and highly performed by the organization. These services should be continued as essential and successful. Factors falling into Quadrant III are not highly required for the organization but can be developed to retain. However, the factors in Quadrant IV are not required to maintain by the organization.

Findings and Discussion

The response rate was 90.1% which was good for the representation of the sample. Out of 2000 questionnaires, 1,802 questionnaires were received and there were 1,791 questionnaires that were usable for analysis.

Among the respondents, 14.8% were teachers and 85.1% were undergraduates. Further, 69.1% were females while 30.8% were males. When considering the usage of the library, 21.5% of respondents visited the library daily, 27.8% of respondents visited the library twice a week, and 16.8% of respondents visited the library once a week. The data also indicated that among respondents 9.3% visited the library once in two weeks, 10.1% of respondents once a month, and 14.1% respondent rarely when a need has arisen. Accordingly, library usage among teachers and students seems at average level and their responses can be considered a valuable representation of the use.

The study selected 22 attributes of service quality for the investigation and measured them according to the expected level and perceived level. The expected level was considered as the level of the users' importance of the attribute and the perceived level was considered as the level of satisfaction of the particular service quality attribute. Descriptive statistics indicate that there was a gap between the importance and satisfaction of each quality attribute. Table 1 describes the details of the expected level and perceived level of each service quality attribute under study.

Table 1: Descriptive Statistics of Service Quality Attributes According to Expected Level and Perceived Level

Item Code	Quality Attribute	Expected level of the services		Perceived level of the services	
		Mean	SD	Mean	SD
UQSA1	Ability of library staff to instill confidence in me	7.34	1.670	5.38	2.070

UQSA2	Ability of the library staff to pay individual attention to me	7.01	1.908	5.10	2.261
UQSA3	Consistent courteousness of the library staff to me	7.79	1.562	6.12	2.284
UQSA4	Readiness of the staff to respond to my questions	7.95	1.483	6.44	2.179
UQSA5	Knowledge of the staff to answer my questions	7.90	1.479	6.49	1.999
UQSA6	Caring fashion of the staff when dealing with me in the library	7.80	1.474	5.98	2.144
UQSA7	Ability of library staff to understand my needs	7.73	1.521	6.02	2.052
UQSA8	Willingness of the library staff to help me	7.89	1.451	6.25	2.163
UQSA9	Trustworthiness of the staff in handling my service problems	7.74	1.503	6.32	1.998
UQIC10	Making electronic resources accessible from my home or office	7.52	1.821	5.04	2.435
UQIC11	Capability of the Website to enable me to locate information on my own	7.80	1.600	5.92	2.345
UQIC12	Availability of needed printed library materials for my work	7.85	1.525	5.97	2.133
UQIC13	Availability of electronic information resources that I need	7.69	1.611	5.66	2.159
UQIC14	Availability of modern equipment to let me easily access needed information	7.68	1.597	5.52	2.144
UQIC15	User-friendliness of access tools to find things on my own	7.71	1.537	5.73	2.084
UQIC16	Easy accessibility to information for independent use	7.74	1.545	5.97	2.078
UQIC17	Availability of print and/or electronic journal collections required for my work	7.70	1.613	5.76	2.099
UQLP18	Availability of Library Space that inspires study and learning	8.05	1.440	6.48	2.183
UQLP19	Availability of quiet space for individual activities	8.15	1.440	6.80	2.152

UQLP20	Availability of comfortable and inviting location of the library	8.07	1.440	6.55	2.197
UQLP21	Capability of the library as a getaway for study, learning or research	8.00	1.440	6.42	2.084
UQLP22	Availability of Community Space for group learning and group study at the library	7.62	1.440	4.24	2.410
Valid N (listwise)	1790				

When considering the mean score and standard deviation, it shows that there is a difference between the expected level and perceived level. Figure 2 visually indicates this difference. In an overall view, the perceived level falls between a standard deviation of 2.0 and 2.4, however the expected level falls between 1.4 and 1.8.

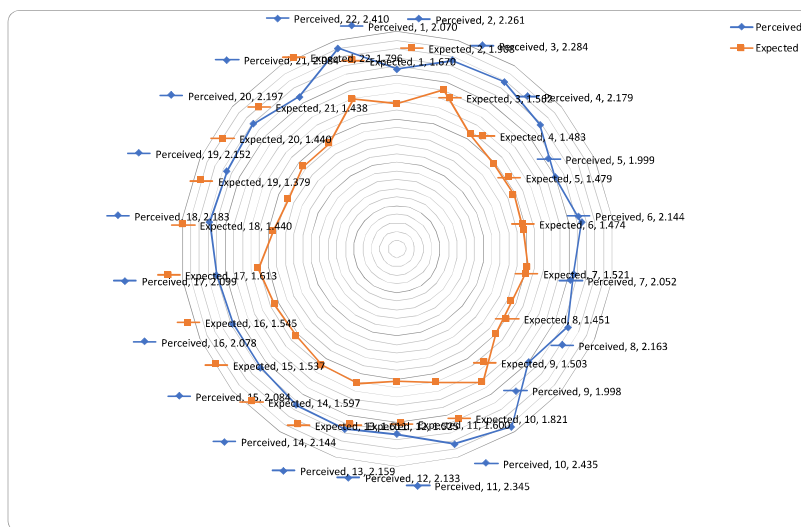


Figure 2: Difference between expected level and perceived level of service quality attributes

In order to examine whether this difference was statistically significant, an Independent Sample t-test was employed. The grouping variable was the status of the expected level or the perceived level. In grouping, group 1 was the perceived level (N=1791, Mean=171.13, SD=25.73) and group 2 was the expected level (N=1790, Mean=130.36, SD=30.72). Summated score of the responses was the outcome variable.

The Levene's Test for Equality of Variances showed that the *p-value* was significant ($p < 0.001$) indicating that the null hypothesis was not assumed and there was a significant difference between expected level and perceived level of service quality (M=40.77, BCa 95%

CI [38.92, 42.63]. Therefore, the difference between importance and satisfaction is statistically significant ($t(1,790) = 43.053, p < 0.001$).

Importance-Performance Analysis of variables

As discussed above the mean and standard deviation of the aggregated data were considered to understand the importance and performance levels of quality attributes of the library. The dispersion of variable data on the IPA framework was investigated. Figure 3 indicates the falling pattern of the variables in the IPA matrix.

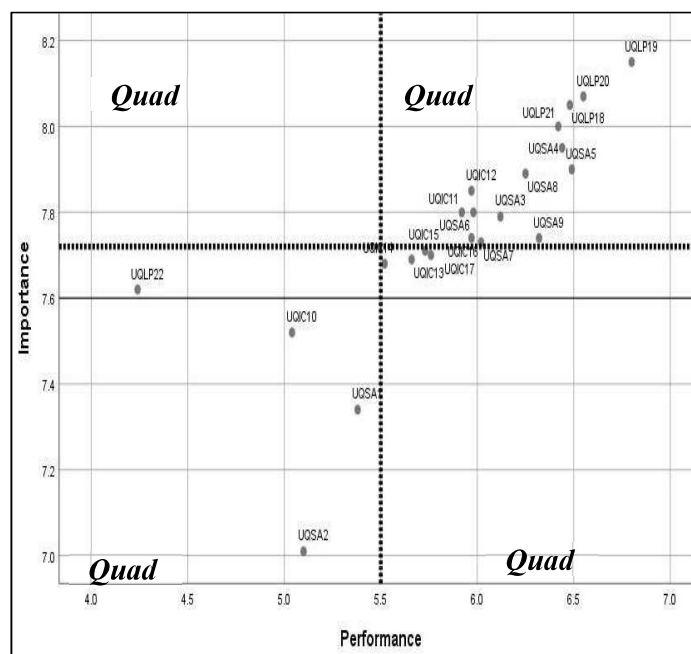


Figure 3: Distribution of Service Quality Variables in the IPA Matrix

According to the mapping of the variables on the IPA framework, no variables fell into quadrant I indicating that the university library system of Sri Lanka was not maintaining services that have high importance and low-performance characteristics.

Quadrant II represents the highly important and highly performed factors. According to Figure 3, variables UQLP19, UQLP20, UQLP12, UQLP18, UQSA4, UQSA5, UQSA8, UQIC12, UQIC11, UQSA3, UQSA9, UQSA6 and UQIC15 represent the quadrant II. This indicates that in the Sri Lankan university library context, service quality attributes viz. ‘Availability of quiet space for individual activities’, ‘Availability of comfortable and inviting location of the library’, ‘Capability of the library as a gateway for study, learning or research’, ‘Availability of library space that inspires study and learning’, ‘Readiness of the staff to respond to my questions’, ‘Knowledge of the staff to answer my questions’, ‘Availability of

needed printed library materials for my work’, ‘Capability of the website to enable me to locate information on my own’, ‘Consistent courteousness of the library staff to me’, ‘Trustworthiness of the staff in handling my service problems’, ‘Caring fashion of the staff when dealing with me in the library’ and ‘User-friendliness of access tools to find things on my own’ are highly important services and highly satisfied with the performance. Many of these attributes are related to the ‘Library as a Place’ dimension and the ‘Service Affect’ dimension of the LibQUAL protocol. These findings further revealed that the high demand is existing in the university libraries for a convenient place of learning as well as for the staff involvement in the user services. According to the results, users are satisfied with these services and the library management should continue these services with the same high level of performance.

Four quality attributes such as ‘Availability of Community space for group learning and group study’, ‘Making electronic resources accessible from my home or office’, ‘Ability of library staff to instill confidence in me’ and ‘Ability of the library staff to pay individual attention to me’ have been mapped in the Quadrant III implying that those attributes are neither highly important nor highly performed in the Sri Lankan university library context.

These findings imply an important message that users of the university library believe that they are confident in finding information on their own and they have different channels to access e-resources. They might obtain these information resources through sharing with peers or obtain them from outside contacts. They also may be fulfilling their needs for community activities from other places rather than from the library. These findings are important for library managers and they should not worry about them as these variables are not threats to the library and should thrive to improve other attributes.

The variables that fall into Quadrant IV have low importance and high performance. These attributes are not important for users and the library spends money and effort to maintain them without a profit. Therefore, library managers should think of dropping them and introducing new service attributes to users. According to the results, four service quality attributes viz. ‘Easy accessibility to information for independent use’, ‘Ability of library staff to understand my needs’, ‘Availability of electronic information resources that I need’ and ‘Availability of print and/or electronic journal collections required for my work’ are fallen into this category. However, they show some kind of importance and high performance because they are located very close to the mean and to the Quadrant II of the IPA Matrix.

Conclusion

This study attempted to investigate the importance and satisfaction of service quality attributes in the Sri Lankan university library context. The study was guided by three research questions to find out the gap between users' expected service quality and perceived service quality. Expected service quality represented the importance of service attributes and perceived level represented the satisfaction of the service attributes of the library.

The study results indicated that there was a significant gap between expected service quality and perceived service quality. This leads library professionals to think of strategies to minimize the service quality gaps in their libraries. The study utilized the IPA technique to map the importance and performance (satisfaction) of the library service variables in four quadrants matrix. This tool supports the library managers to identify important and non-important areas of the service quality in the libraries and identifying the satisfied and unsatisfied service attributes of the library.

The study was limited to 22 LibQUAL items to measure the service quality attributes. Future research may be focused to find more research attributes that emerged in the new situation and measure them through more robust tools.

The study has many implications. Theoretically, university library managers should rethink the applicability of LibQUAL items as they are for the evaluation of the library service quality in the contemporary environment. Methodologically library managers should find different methods and techniques to grasp the quality attributes rather than sticking to conventional methods. Practically library managers should evaluate the quality criteria of the library service from time to time so that they can ascertain the validity and applicability to the contemporary user requirements.

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