Measuring Service Quality - A Study of Public and Private University Libraries in Bangladesh

Submitted by

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MPhil (2nd Part), Reg. No. 80

Session: 2002-2003

Under the Supervision of

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A Thesis
submitted in partial fulfilment of the requirements for
the award of Master of Philosophy
of the University of Dhaka

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Abstract

This research investigated the overall service quality of a public university library and a private university library from the perception of the users. A survey was conducted amongst the users of two leading public and private university libraries in Bangladesh. The libraries include Dhaka University Library (DUL) and Independent University Bangladesh Library (IUBL). The data for the study were collected from the faculty, graduate students and undergraduate students. The modified version of the SERVQUAL questionnaire was used for data collection.
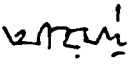
The main aim of this study was to examine the gaps between users expected service and actual service level. It also explored the expectations of the user for excellent service quality. The results of the study revealed that both public and private university libraries do not meet the expectation of the users. The services provided by the libraries are lagging far behind the expectation of the users. The concept of the "Zone of Tolerance" was applied to find the essential attributes that the library authority should allocate the resources or give more stress on those attributes of the library system for good service quality. The result showed that most of the attributes of services are not within the range of tolerance and in case of public university library the total scenario is very frustrating. Finally, the findings of different research questions are investigated and findings are discussed. Some useful recommendations are also made to improve the service quality of public and private university libraries in Bangladesh.

To

My parents,

My loving wife,

and

My two cute children-

Zareen and Safwan

Supervisor's Certificate

This is to certify that I have read the thesis entitled "Measuring Service Quality - A Study of Public and Private University Libraries in Bangladesh" submitted by Md. Zahid Hossain Shoeb in partial fulfilment for the degree of MPhil in Information Science and Library Management, University of Dhaka. This thesis is an original study carried out by him under my supervision and guidance and is worthy of examination.

15/5/08

(Supervisor)

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Acknowledgements

At first, I would like to express my heartiest and utmost appreciation to my supervisor Dr. S. M. Zabed Ahmed, Associate Professor, Department of Information Science and Library Management, University of Dhaka for his sincere and cordial guidance and support throughout this research work. Without his earnest care, sympathetic consideration, and kind cooperation this work would likely not have matured. From the beginning of the coursework up-to this thesis completion his continuous support and supervision make this research work opportune and rational to Bangladesh perspective.

Many thanks to the Dr. M. Nasiruddin Munshi, Associate Professor and Chairmen, Department of Information Science and Library Management, University of Dhaka for his cordial support and kind cooperation to continue this MPhil study.

I would also like to thank Mr. M. Hossam Haider Chowdhury, Associate Librarian, Independent University, Bangladesh (IUB) for his kind support. This research required collecting huge data from various target groups. I would like to thank Armanul Haque and Provat Kumar Majumder of IUBL for helping me in data collection. A group of six volunteers of the University of Dhaka helped in collecting data for this research. I am also thankful to them.

My parents have always been my emotional anchors. Their anticipation, support and belief in me have always inspired me in my endeavours. My wife Nazma Parveen has always been patient, encouraging and supportive to my study. She has made my study smooth at home by keeping me aloof from all sorts of house-hold problems. My daughter Zareen and my son Safwan missed me a lot during this research. They are the sources of all my happiness. This dissertation is lovingly dedicated to them.

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Chapter 1

Introduction

1.1 Introduction

In the past, the quality of a library has been measured by the size of its collection. Such thinking focused both on resources and functions associated with collection growth. Title-by-title selection and acquisition gave way to approval plans that facilitated the arrival of titles in bulk. With one order to a subscription agent, thousands of serials could be purchased and paid for within an annual check. During the 1970s, many academic libraries were regarded by university administrator as bottomless pits because of constant entreaties for more money to "keep up with the publishing output." From the 1980s, the pleas for more money centered around the large annual increases in the prices of scholarly and professional journal subscriptions and the need for electronically delivered resources and their requisite infrastructure (Hernon, 1998).

1.2 Customer Satisfaction and Service Quality

The main aim of library is to provide information service to the users. Many library surveys ask about user satisfaction, sometimes in a general context and sometimes in relation to specific services. Usually, the questions about satisfaction allow for scaled responses. Too often, satisfaction surveys are really intended as library report cards. In fact, some surveys actually ask users to assign the library a grade from A to F. There is usually no intent to take any remedial action based on replies to these questions, but rather to use the responses in negotiations with administrators in the sponsoring institution. The terms *satisfaction* and *service quality* are frequently used interchangeably; this mistake has led to more confusion. According to Elliot (1995),

satisfaction is "the emotional reaction to a specific transaction of service encounter". On the other hand *Service quality* has been described as "a global judgment, or attitude, relating to the superiority of a service". The inference is that the satisfaction levels from a number of transactions or encounters that an individual experiences with a particular organization fuse to form an impression of service for that person. The collective experiences of many persons create an organization's reputation for service quality. Expectations change according to what users want and how urgently they want it. Sometimes they are seeking a quiet place to read, sometimes just a book for enjoyment, and sometimes a vital bit of information. Importance and urgency, though seldom considered, are likely to have strong influence on users satisfaction with a service. Service quality is a complex concept. It has several dimensions beyond the content/context and the performance/performance-expectations gap. Service quality is both personal to individual and collective among many users.

As mentioned, traditionally library quality has been synonymous with collection size, an assessment of what the library "has" rather then with the library "does". Yet, library quality and service quality are very different measures. A parallel can be drawn with the observations made by Zammuto et al. (1996), who studied student services offices in universities: "The idea of service quality as opposed to educational quality has not received much attention in higher education." This situation is changing as most academic institutions now strive to attract the retained students. Service quality has become a topic of considerable interest for many service units on campus. For a library, service quality encompasses the interactive relationship between the library and the user whom it is supposed to serve. A library that adheres to all the professionally approved rules and procedures for acquiring, organizing, managing and preserving material but has no customers can claim quality because a major element is missing. Line (1996) defined

librarianship as "managing information resources for people". How the library sees and interacts with those people - users or customers - clearly affects the quality and nature of the service rendered. As Hebert (1994) noted, "When library and customer measures of quality are not congruent, the library may be meeting its internal standards of performance but may not be performing well in the eyes of its customers."

1.3 Is Quality Measurement Required?

Libraries have collected and reported statistics about their collections, funds, and staff for decades. These statistics have, however, concentrated basically on finances, the resources purchased with those finances, and workloads. However, an information gap remains. These traditional statistics lack relevance. Most of the traditional statistics do not measure the library's performance in terms of elements important to the users. They do not really describe performance or indicate whether service is good, indifferent, or bad. Even worse, they do not indicate any action that the administration or any team could or should take to improve performance (Hernon, 1998). It is important to measure the performance of the organization from the perspective of its customer or user. The library users may not always be right, but they do have right to express their opinion and to learn about the library service parameters.

The traditional measure of business success is *Profit*, which accountants call *Return of Investment (ROI)*. But these days ROI is not the only way to measure the business success, or performance of the business. Many businesses have adopted the concept of *Balanced Scoreboard*, which is a matrix of measurement or performance from the perspectives of the customers. This scoreboard asks questions about four key areas common to most organizations (Kaplan, 1992):

1. How do customers see us?

2. How do we look to decision makes and the community? (financial perspective)

3. What must we excel at? (this question looks to the internal working of the organization.)

4. Can we continue to improve and create value?

The balanced scoreboard is essentially a tool for strategic management. Implementing the balanced scoreboard requires that the administration answer the four preceding questions in terms of the present situation and desired outcomes for the future. The next step is to define the factors important for success and then to identify measures that indicate success. In case of a library, the balanced scoreboard may not work but its principle have merit that they encompass a wider variety of factors rather than the traditional statistical reports for a library.

1.4 How to Measure?

Today, the two major threats for academic libraries are: a global digital environment and increasing competition. They must improve the quality of their services in order to survive (Cullen, 2001). Historically, the quality of an academic library has been described in terms of its collection and measured by the size of the library's holdings and various counts of its uses. A measured of library quality based solely on collections has become obsolete. Alternative approaches to measure quality emerged in the business sector, specifically through marketing research. The SERVQUAL developed by Parasuraman et al. (1988) has evolved as an instrument to measure service quality and what customers values as important. SERVQUAL is a mechanism to shift the assessment of quality of a library from the traditions of measuring collection size and counting incidents of its uses, to begin investigating how the provision of services relates

to the library users' service quality expectations (Nitecki, 1996). SERVQUAL has been used in various library settings, including academic, public, and special libraries (Hernon, 2002).

It is important for libraries to know how well they perform by getting feedback from users in order to improve service performance. This study used a modified version of SERVQUAL in two major academic libraries in Bangladesh to examine the service quality and to explore how much the service attributes are expected and how much they are served from users' perception of expectation.

1.5 Research Area

The universities in Bangladesh are mainly categorized into public and private universities. The public universities are autonomous and funded by the government whereas private universities are funded by non-governmental organizations. However, private universities are approved by University Grants Commission (UGC) of Bangladesh. The framing of Education Policy of the country is the responsibility of the government. The University Grants Commission of Bangladesh is the statutory apex body in the field of higher education in Bangladesh. The primary objectives of the UGC are to supervise, maintain, promote and coordinate university education. It is also responsible for maintaining standard and quality of all public and private universities in Bangladesh. UGC plays a significant role in higher education by maintaining and improving their academic standards so that they can produce graduates who satisfy the need of employers.

At present, there are 78 universities (27 public and 51 private universities) in Bangladesh (UGC, 2006). Following two leading university libraries, were chosen for the present study:

Public University: The University of Dhaka, Library (DUL)

Private University: Independent University, Bangladesh, Library (IUBL)

1.6 University of Dhaka

The University of Dhaka, established in 1921, is the oldest and largest university in Bangladesh. It is a very well established university with 10 faculties, 51 departments and 9 institutions. In addition, it has 18 residential halls, 18 research centres also. It is a multi-disciplinary university and is among the top universities in the region. As per Cybermetrics Lab (2007) it is the only university in Bangladesh to have been listed in AsiaWeek's listing of top 100 Universities in Asia (64th position). At present, this university has 26,233 students, 1,605 teachers (UGC, 2006).

1.6.1 University of Dhaka, Library.

As a part of the Dhaka University, Dhaka University Library (DUL) started its operation on the 1 July, 1921. At present, DUL has about 6,11,884 books, 4,979 journals and 4 audio-visual materials (UGC, 2006). Besides that the Library holds 30,000 rare manuscripts and a large number of Tracts (booklets, leaflets, pamphlets, and puthis) have been procured in microfilmed copies. Some rare books and documents have also been collected and preserved in microform. In the same way, rare books and reports, puthis, Bengali Tracts and private collection of Buchanan on Bengal have been acquired from the British museum.

The library offers different services like, reading room, borrowing, photocopy, readers' guidance, online catalogue search. The current catalogue is maintained in card format and can be accessed either by author, title or subject. There are also an historical 'sheaf catalogue' for older materials. Internet services to faculty members and research students have begun in December 1998. This has been specially organized to support the

Research and Development (R&D) activities. The DUL operates from three different buildings:

Library Administration Building: administration branch, book collection, book binding, old magazines and United Nations publications collections branch manuscript department, Seminar branch.

Central Library Building: rare book department, reference department, periodical department, daily magazine, computer room, current journal, books and magazines of arts faculty, social science faculty, commerce faculty and law faculty also can be found here.

Science Library Building: science related books, magazine, reference materials, journals and periodicals could be found here.

The official website of this university library is:

http://www.univdhaka.edu/library.php

1.7 Independent University, Bangladesh

Independent University, Bangladesh (IUB) is a leading private university in Bangladesh. It has two campuses, one in Dhaka and another in Chittagong. Its main campus in Dhaka spreads over 14 independent buildings at Baridhara. The university was established in 1993 by the Private University Act, 1992 and the outreach campus in Chittagong was opened in 1999. IUB has four schools offering seventeen undergraduate and five graduate programmes. The university has 2,974 students and 137 teachers (UGC, 2006).

1.7.1 Independent University, Bangladesh, Library. The Library is truly the heart of the Independent University, Bangladesh (IUB). Since its inception in 1993, it

has been growing with the young university constantly serving the vibrant community of students and faculty. The branch libraries are Environment Management Library, Population Library and Chittagong Campus Library. The library emphasizes services to clients, at the same time trying to increase their self-help and self-service capacities. The Library is the major contributor to the university's aim of developing independent learners. The Library's collection is geared to the information pertinent to its curriculum and services. Most of the collections of the IUB Library are closely related to the university's courses and are organized using international professional standards.

The Library resources include books, periodicals, university catalogues, newspapers, audiocassettes, video cassettes, CD-ROMs, data disks, etc. At present, the users of IUB Central Library and other unit Libraries in Dhaka have accessed to around 24,924 books, 2617 audio-visual Materials, 146 current printed periodicals and journals and 12 national newspapers in both Bangla and English. In addition, the Chittagong Campus Library holds around 6400 books, 1150 audio-visual materials, 40 periodicals and 10 daily newspapers. IUB Library users can access to more than 6,000 online journals (UGC, 2006). The Library has exploited the latest information technology to improve services and operating efficiency. IUB Library offers reference, lending, library online catalogue, study room, union catalogue, information services, photocopy services, printing services, content services, Internet searching and downloading full-texts, CD/DVD writing services to its users. The official website of this university library is: http://www.lib.iub.edu.bd

Chapter 2

Review of Related Literature

2.1 Introduction

Library service assessment in the beginning can be identified to the irregular collection of statistics, such as daily library visitors/users visited library, daily circulation counts, reference questions answered, books procured, and catalogued by day, month, or year. Sometimes, the statistics that collected were considered the end results but any further analysis or follow up measures were regarding the statistics never taken. In this assessment approach, three features characterize:

- first, it is a perception of the service provider (e.g., the librarians or library staff);

- second, it is a description of phenomena (e.g., how many books are checked out on a given day); and

- third, it is a one-way application that ends at collection of statistics.

Although it may provide librarians and library managers with valuable information (e.g., the budget needs to be increased or which title of book or journal has more demand, etc. over a given year), these irregular statistics alone do not have any meaningful impact or do not guide for systematic service improvement. As library services began to develop step by step with emerging information system technologies, researchers in the field of library and information science (LIS), as well as librarians, recognized that irregular and asymmetrical service statistics alone are insufficient for assessing library operations. It has been realized that library users must be involved in the assessment process to obtain valid and applicable results. Consequently, a more systematic approach to data collection began to be researched and new methodologies emerged. In library research, data

collection in various forms has now been applied. Institutionally created surveys, focus group interviews, and complaint analysis are just some examples of data collection methods that have been employed. In recent years, questionnaires with different purposes have been created and used as an instrument and the results have been reported. These questionnaires have been distributed to different user groups like, students, faculty, researchers, and other library users. After data collection, they are often aggregated and presented in more interpretable formats, such as descriptive statistical tables and charts. This method represents considerable progress in library research, in the following three ways:

1. Library assessment shifted from just the service provider point of view to include the user's perspective.

2. It indicates early planning and designing of assessment activities.

3. This procedure incorporates user involvement as part of assessment.

Now, it is recognized in library and information science, as in other service industries, that user perceptions of service quality, user expectations, and user satisfaction are essential elements of any service assessment activity (Shi & Levy, 2005).

2.2 Assessment: A Versatile Concept

Though assessment is complicated process but almost everything is assessable and measurable. Measurement is a procedure and tool for the collection and analysis of data on which respondents/evaluators evaluate library performance against certain outlines or benchmark (e.g., goals, objectives, performance and outcome measures, standards, and efficiencies). Simply stated, there are at least eleven questions about which assessment can be made: *how much, how many, how economical, how prompt, how accurate, how responsive, how well, how valuable, how reliable, how courteous,*

and *how satisfied* (Hernon & Altman, 1998). Service quality addresses a number of these questions. Clearly, individual libraries must decide for themselves how important service quality and user satisfaction are in relation to their other data collection activities. It may be that library authority or stakeholders (e.g., accrediting bodies) shape a library's approach to accountability and somewhat to planning. However, customers should be neither ignored nor slighted; their opinions are important and worthy of hearing (Hernon & Nitecki, 2001).

2.3 Defining Service Quality for Library Assessment

The recipients of library service are library user. Faculty members and students are the primary user for the academic library. Some librarians equate the customers or the users with the principle that "customer is always right." Actually users are not always right to their judgment because sometime their opinions or expectations are unrealistic and unreasonable. However, the users do have right to express their opinion. In case of a library, the users should be conscious of the limit of their expectations. They should not expect such kind of services which is not offered by the library or is only rarely provided. The authority should tell the users what sort of services they would offer or which level of services or how much they will be provided. The users should aware about the excellence of services or quality of the services that provided by the library.

Quality is the basic philosophy and requirement of library service and all libraries strive to deliver the highest quality of service. A quality service is one that fully meets the expectations and requirements of the users. If a library provides appropriate information to the right user at the right time and in the required form, then it could be argued to be maintaining quality. Quality library services mean satisfying the query of each and every user accurately, exhaustively and expeditiously (Sharma, 2001). The

rapid development of information technology, tremendous speed of socio-technical development and the changed needs of users have all added to the expectations of a service organization. It is evident that management skills must match these demands on and threats to library and information services. The application of quality management in libraries should establish a culture of never ending improvement of quality of products and services. Its implementation in libraries improves the image of the library staff and helps in public relations and marketing (Rajan & Ravi, 2001). Service quality has been defined from at least four perspectives:

Excellence: State of the quality of excelling. It is superiority, or the state of being good to a high degree. Excellence is often externally defined.

Value: It incorporates multiple attributes, but quality and value are different constructs--one the perception of meeting or exceeding expectations and the other stressing benefit to the recipient.

Conformance to specifications: It facilitates precise measurement, but users of a service may not know or care about internal specifications.

Meeting and/or exceeding expectations: This definition is all-encompassing and applies across service industries, but expectations change and may be shaped by experiences with other service providers.

The last perspective has been concentrated by the most marketing and library and information science researchers (Hernon & Nitecki, 2001).

According to Calvert (2001), service quality can be configured as follows:

The customer:

1. past experience of the customers;

2. word-of-mouth from other customers;

3. personal needs of the customer; and

4. national culture of the customer

The service provider:

5. communications (direct and indirect) about what the customer can

expect.

Competitors:

6. service provided by other providers that acts as a benchmark.

The *Gaps Model of Service Quality* reflects that perspective and offers service

organizations a framework to identify services in the form of the gaps that exceed (or fail

to meet) customers' expectations. In brief, the Gap Model of five gaps in that reflect a

discrepancy between: Customers' expectations and management's perceptions of these

expectations (Gap 1); Management's perceptions of customers' expectations and service

quality specifications (Gap 2); Service quality specifications and actual service delivery

(Gap 3); Actual service delivery and what is communicated to customers about it (Gap

4); and Customers' expected services and perceived service delivered (Gap 5) (Zeithaml

et al, 1990). Disend (1991) correlates the Gaps Model with the concept of service

quality. He maintains that poor service results if the gap, or difference is large between

what is expected and what is delivered. When what is delivered matches what is

expected, customers find the service acceptable. If the service provided is better than

what they expected, exceptional service materializes. Consequently, when expectations

and perceptions are ranked on a scale, the gap is a number reflecting the difference

between the two-expectation ranking minus perception ranking. If there is a poor service

gap, a minus number occurs. If the number, by chance, is zero, service is acceptable

(expectations match perceptions). If a positive value emerges (perceptions exceed

expectations), the service organization has achieved exceptional service. In reality, this

characterization is too simplistic; even a minus number may signify exceptional service.

The definition of service quality presented in the Gaps Model recognizes that expectations are subjective and are neither static nor predictable (Blanchard & Galloway, 1994). The model's designers were influenced by the confirmation/disconfirmation theory, which involves a comparison between expectations and performance. Before using a service, a customer has certain expectations about it. These expectations become a basis against which to compare actual performance. After having some experience with a service, the customer can compare any expectations with actual performance and his or her perception is confirmed (if they match), negatively disconfirmed (if expectations exceed perceptions), or positively disconfirmed (if perceptions exceed expectations) (Oliver, 1976, 1980, 1997; Oliver & DeSarbo, 1998).

Vavra (1997), in his discussion of satisfaction, regards the term *positive disconfirmation* as *confusing* and prefers to use the words *affirmed, confirmed,* and *disconfirmed* to describe the three situations:

- expectations are confirmed when perceived performance meets them;
- expectations are affirmed (reinforced by positive disconfirmation) when perceived performance exceeds them; and
- expectations are disconfirmed (failed by negative disconfirmation) when perceived performance falls short of them.

Clearly, this distinction also applies to service quality.

2.4 Evaluation of Service Quality and Satisfaction

In some studies, authors have equated or confused service quality with satisfaction (Comm & Mathaisel, 2000). A number of authors have also referred to service quality as an antecedent to satisfaction; satisfaction as the antecedent to service quality; or service quality and satisfaction as either interrelated or discrete concepts (see

Anderson & Fornell, 1994; Bolton & Drew, 1991; Cronin & Taylor, 1992; Taylor & Cronin, 1994; Woodside & Wilson, 1994). Clearly, the relationship between customer satisfaction and service quality is an ongoing question in service marketing (White & Abels, 1995). Both service quality and satisfaction can be an end in themselves; each is worthy of examination as a framework for evaluating library services from a customer's perspective. Service quality is an evaluation of specific attributes, and this judgment is cognitive. However, satisfaction focuses on a specific transaction or, in the case of overall satisfaction, it is a cumulative judgment based on collective encounters with a service provider over time. Satisfaction judgments are more affective and emotional reactions to an experience or collection of experiences. Hernon & Whitman (2001) stated that satisfaction is a sense of contentment that arises from an actual experience in relation to an expected experience.

Because service quality as a means of evaluation probes precise statements on which the library seeks customer input, it also serves as a planning tool. Judgments about satisfaction, on the other hand, tend to be global in the type of questions asked. Unlike service quality, satisfaction focuses less on specific statements and relies more on open-ended questions. In satisfaction studies, there can be a probing of how customers rate the library in a few specific areas, though the list is much shorter and more general than found in a service quality questionnaire. The intention of satisfaction studies is to identify if some general areas require scrutiny, whereas service quality studies offer data to examine specific problem areas for improvement (Hernon & Nitecki, 2001).

2.5 Assessment Theories and Tools

Employing user evaluation of library services is now a well-accepted concept. The number of user studies increased greatly after the 1980s, resulting in an enormous

quantity of data. However, libraries and researchers are now facing a different problem. What could be done with the collected data? Even with all the potential data in hand; empirical evidence shows that massive quantities of data alone do not provide standards to measure service quality, nor do raw data predict library user satisfaction or suggestions for future directions. If the intention of assessment is to utilize the outcomes to measure organizational effectiveness, the tools used to perform such a task need to be designed carefully, in particular for library services. Non-academic and commercial information service providers are now competing in the information marketplace. Libraries are being challenged to maintain cutting-edge information technologies. The strength of academic institutions has always been in their reliance on research that provides findings to identify competitive advantages and suggests approaches to success. It is important to note here that *research* implies the application of scientific method and should contain two key components: methodology and purpose. The methodology component includes the collection and analysis of data, and the purpose component includes the formulation, revision, and rejection of hypotheses or answering the research question. Conclusions and recommendations are then made based on analysis of these data. As library service assessment processes develop and progress, both researchers and librarians have started examining current practices, searching for and experimenting with better assessment tools (Shi & Levy, 2005).

In this electronic age, libraries must improve the quality of their services in order to survive (Cullen, 2001). As traditionally, the quality of an academic library has been described in terms of its collection and measured by the size of the library's holding and various counts of its use (Nitecki, 1996). However, most of the traditional statistics gathered by libraries lack relevance and do not measure the library's performance in terms of element important to customers. Statistics do not really describe performance or

indicate whether service quality is good, indifferent, or bad. Even worse, they do not indicate any action that the administration or any team could or should take to improve performance (Hernon & Altman, 1998). The need to understand what library customers expect in terms of service quality is now necessary for good management. The librarians or library managers should explore the most profitable way to assess library service quality. In business industries, SERVQUAL is an alternative instrument proposed to measure service quality from customer perspectives and perhaps it has been the most popular standardized questionnaire to measure service quality. In the library setting, SERVQUAL was used to assess library quality service continually and it seems that culture of assessment in libraries had strong international dimensions as there is much potential for international collaboration on assessing library service quality (Kyrillidou & Hipps, 2000).

Another library assessement tool called LibQUAL+™ had began at Texas A&M University Libraries and later partnered with the Association of Research Libraries (ARL), and now has hundreds of participants. Because LibQUAL+™ is an expansion of SERVQUAL, it has been widely used in many fields. However, the applicability of SERVQUAL in library assessment and the theoretical issues and practical concerns of LibQUAL+™ merit serious examination. SERVQUAL is not the only generic instrument that has been used to gauge service quality. For example, SERVPERF, a modification of SERVQUAL, was developed in 1992 to measure service quality based solely on performance. It looks at the same twenty-two statements and worded same as SERVQUAL; but it does not repeat the set of statements as expectation items. However, SERVPERF has apparently been rarely used in libraries; researchers have shown a clear preference for SERVQUAL, which has broad application to service industries.

SERVQUAL was introduced in 1988 by Parasuraman, Zeithaml and Berry as an

instrument for assessing customer perceptions of service quality in service and retailing organization (Parasuraman et al., 1988). It was consisted of twenty-two pairs of statements, the first of which measure the expectations of a service provider's customers by asking each respondent to rate, on a seven-point scale, how essential each item is for an excellent service provider to deliver. The second set to twenty-two identical statements ascertains the respondent's perceptions to the level of service given by the institution or organization examined. For each pair of statements, the difference between the ranked perception and the ranked expectation is calculated; the average of the gap scores is the SERVQUAL overall quality score (Nitecki & Hernon, 2000). As discussed earlier, the SERVQUAL designers also developed the *Gaps model* of service quality and the definitions of each of the gap are as follows:

Gap 1: The discrepancy between customers' expectations and management's perceptions of these expectations;

Gap 2: The discrepancy between management's perceptions of customers' expectations and service quality specifications;

Gap 3: The discrepancy between service quality specifications and actual service delivery;

Gap 4: The discrepancy between actual service delivery and what is communicated to customers about it; and

Gap 5: The discrepancy between Customers' expected services and perceived service delivered.

The first four gaps are the major contributors to the service quality gap that customers may perceive. The fifth gap is the basis of a customer-oriented definition of service quality: the discrepancy between customers' expectations for excellence, and their perceptions of actual service delivered. This discrepancy is the conceptual basis for the

SERVQUAL instrument (Nitecki, 1996). The narrower the gap is, the better service quality is provided. Library Managers have to reduce the fifth gap as smallest as they can in order to provide excellent service to their customers.

The designers of SERVQUAL concluded that the instrument consists of five dimensions as follows:

1. Tangibles: (the appearance of physical facilities, equipment, personnel, and communication material);

2. Reliability: (ability to perform the promised service dependably and accurately);

3. Responsiveness: (willingness to help customers and provide prompt service);

4. Assurance: (knowledge and courtesy of employees and their ability to inspire trust and confidence); and

5. Empathy: (the caring, individualized attention that a firm provides its customers).

Nitecki (1998) noted that SERVQUAL respondents were asked to confirm whether or not the twenty-two statements and the five described dimensions adequately reflected the expectations for excellent library service quality and whether any were judged "not at all essential". Her conclusion was that "the clear majority of respondents ... confirm that there are no other expectations or service factors beyond what are cited on the questionnaire which are important to their evaluation of library service quality". Based on the findings of the Yale study, we speculate that her observation may have reflected the passive nature of library users on the question of expectations rather than a measure of the truth about the list's comprehensiveness at any one time. Similar to the research on various service industries in the profit sector, investigators using

SERVQUAL in libraries have tended to find "reliability" as the most important dimension and "tangibles" as the least important one. Edwards and Browne (1995) suggest that the five dimensions "may not hold for information services in a university library". Dimensions, they maintain, should address "technological features of service":

> There is also evidence that some items which cluster around communication are rated relatively highly by academics and stand out from the other components (e.g., competence) as an aspect of the assurance dimension. User education, which is included in "communication", may also form a separate dimension.

Cook and Thompson (2000c) found that three dimensions applied to their institution: tangibles, reliability or service efficiency, and affect of library service, which comprises the more subjective aspects of service, such as responsiveness, assurance, and empathy. Cook and Thompson (2000a, b) also called for more research on the dimensions applicable to libraries. Nitecki and Hernon (2000) concur and found that there might be other dimensions for library service, such as the customer preference for self-sufficiency or self-reliance. However, given their change of SERVQUAL from a generic form to one that is institution specific, it is not surprising that another dimension surfaced.

In a subsequent study, Cook and Health (2001), suggest that service quality may encompass the following dimensions:

1. *Affect of service* (empathy, responsiveness, and assurance);

2. *Ease of access* (formats, timely access to resources, and physical location);

3. *Self-reliance;*

4. *Reliability;*

5. Comprehensive collections; and

6. Library as place (utilitarian space and symbol of the intellect).

These six dimensions may well serve as a foundation on which additional research can build. The work of Hernon and his colleagues consistently reflects the importance of self-sufficiency or self-reliance, a dimension not likely to occur in retail settings except perhaps in e-commerce. It seems evident that library researchers are not focusing on dimensions that enable a comparison across service industries. Rather, they are focusing on dimensions that explain service quality within libraries. In conclusion, library managers/administrators should be cautious in their use of any set of dimensions as reflecting service quality in libraries at this time (Hernon & Nitecki, 2001).

Later, Parasuraman, Zeithaml, and Berry revised SERVQUAL to ask respondents to rate statements from three contexts (minimum service expectations, desired service expectations, and the perception of service performance). On a continuum, the minimum and desired service expectations appear at either end, with the area in between known as *the Zone of Tolerance*. The zone of tolerance represents the range of service performance that customers consider satisfactory (Hernon, 2002). Johnson (1995) defined the zone of tolerance in terms of the customer's evaluation of in-process service performances:

> The zone of tolerance is a range of service performance that a customer considers satisfactory. A performance below the tolerance zone will engender customer frustration and decrease customer loyalty. A performance level above the tolerance zone will pleasantly surprise customers and strengthen their loyalty.

The importance of the zone of tolerance was clarified by marketing consultants for MCB University Press (2000): Consumers have two different levels of expectations

for service quality: desired level and one they find adequate. A zone of tolerance separates the two. The managers should measure both levels of expectations because the service providers can fine-tune the way they allocate resources by incorporating the zone of tolerance framework. For example, a service provider with limited resources can improve customers' perceptions of service quality by making improvements to meet consumer's minimum expectation levels on the most essential attributes first. The service provider can then devote more resources and attention to less essential attributes, and/or to better meeting desired standards (Nimsomboon & Nagata, 2003).

2.6 SERVQUAL in Library Setting

The researchers from various subject areas contribute and adapt SERVQUAL as the instrument to measure service quality. SERVQUAL has been used in various public, academic and research libraries continually. Hernon and Altman (1998) used the SERVQUAL model to an academic library setting. The data collected from surveys and focus groups are used to refine the SERVQUAL model in order to develop a robust survey instrument for use specifically in library and information services. Two later research projects have tested the validity of the standard instrument used in the SERVQUAL model. Nitecki (1995) tested the SERVQUAL instrument on the three aspects of library service, interlibrary loan, reference, and closed-reserve and she concluded that the instrument is useful in determining how well services match user expectations. Hernon and Calvert (1996) tested the validity of the SERVQUAL instrument for evaluating academic libraries among library students and librarians, and came up with an instrument based on SERVQUAL. Researchers in the field of library and information science frequently used SERVQUAL as an instrument for assessing library service quality.

Now, there is much potential for international collaboration on assessing library service quality as seen from a cross-cultural study comparing perceptions of service quality among library users in New Zealand and China and unequivocally concluded that there are global commonalities in the way users think about library service quality (Kyrillidou and Hipps, 2001).

Service quality is not very well-known feature in case of any libraries in Bangladesh due to the lack of proper planning, funding, willingness, exhume to library services in most cases. Presently, academic libraries in Bangladesh have faced the same situations as most academic libraries in the world such as money cutback, digital environment, and have to involve in some form of evaluation caused by the policy of the educational quality assurance. The librarians or library managers have to seek the better way to improve the service quality in order to survive and derive user's loyalty. SERVQUAL has never been used in any library quality assessment practice in Bangladesh. This research is the first attempt to use this instrument to evaluate the service quality of two leading academic libraries in Bangladesh.

2.7 SERVQUAL Dimensions in Library Setting

The research results from Nitecki's (1995) doctoral dissertation showed that among the five dimensions of SERVQUAL, the users rated reliability as most important and tangibles as least important. This finding is consistent with other studies in the field (see Srisa-ard, 1997; Abdallah, 2002; Ford, 1994). On the contrary, the findings from the research project of Seay et al. (1996) has shown that tangibles and reliability were the key concerns of library patrons. However, most findings reflected that reliability is the most important quality in evaluating library services.

For the number of SERVQUAL dimensions, there are empirical research which

examined dimensions of SERVQUAL instrument. To test the data of user expectations, Nitecki's data, however, suggest a three-dimension relationship among the 22 SERVQUAL items rather than the five collapsed dimensions which the scale's designers identify from other applications. Nitecki & Hernon (2000) concluded that "there may be three dimensions in libraries, tangibles, reliability or service efficiency, and affect of service, and that there is a need for further research to explore the dimensions that may underlie quality service as a construct in the research library setting".

Chapter 3

Methodology

3.1 Problem Statement

Academic libraries in Bangladesh are facing the same challenges as most academic libraries in the world such as money cutback, digital environment. University libraries have to involve in some form of evaluation caused by the policy of the educational quality assurance. The librarians or library managers have to seek better way to improve the service quality in order to survive and derive user's loyalty. In Bangladesh, the quality of educational development and its academic excellence has been emphasized continuously. But the goal to the excellence is far away from the reality or the real service quality in education, in order to achieve the quality; the policies are made but they are not implemented fully. However, in the sector of higher education all academic libraries in Bangladesh specially university libraries including Dhaka University Library and Independent University, Bangladesh Library as academic service organizations would be in such an environment.

Dhaka University Library (DUL) is the largest library in the country which has about 6,11,884 books, 4,979 journals (UGC, 2006). Besides, the library has 30,000 rare manuscripts and a large number of Tracts (booklets, leaflets, pamphlets, and puthis) have been procured in microfilmed copies. Some rare books, reports, puthis, Bengali Tracts and documents have also been collected and preserved in microform. The library offers different services like, reading room, borrowing, photocopy, readers' guidance, and online catalogue search. The current catalogue is also maintained in card format and can be accessed either by author, title or subject. Internet services to faculty members

and research students have begun in December 1998. This has been specially organized to support the Research and Development activities.

Independent University, Bangladesh Library (IUBL) resources include books, periodicals, university catalogues, newspapers, audiocassettes, video cassettes, CD-ROMs, data disks etc. At present the users of IUB Central Library and other unit Libraries in Dhaka have accessed to around 24,924 books, 2617 Audio-Visual Materials, 146 current printed periodicals & journals and 12 national newspapers in both Bangla and English. IUB Library users can access to more than 6,000 online journals (UGC, 2006). IUB Library offers reference, lending, library online catalogue, study room, union catalogue, information services, photocopy services, printing services, content services, Internet searching & downloading full texts, CD/DVD writing services to its users.

In case of both of the libraries beside the services, the librarians also try to give attention to user opinion via the various channels such as e-mail, complaint box or direct contact more or less. The library in-charge or head librarian try to solve the different problems, expectations and the complaints of the users as per the university rule and policy with the limited capacity.

3.2 Objectives of the Study

The main objective of the present study is to measure the service quality of public and private university libraries in Bangladesh. The sub-objectives arising out of it are:

- To assess the service quality of public and private university libraries from users perspective.

- To assess the service quality of public and private university libraries from the perspective of each different respondent user group.

- To identify the top dimensions those are expected highly by the users for evaluation of service quality.

- To investigate the essential attributes that library authority should allocate the resource for better service.

3.3 Research Questions

As mentioned earlier, there are 78 universities (27 public and 51 private universities) in Bangladesh. Following two leading university libraries, one from each category, were chosen for the present study:

Public University: University of Dhaka, Library (DUL)

Private University: Independent University, Bangladesh, Library (IUBL)

This research seeks answers to the following questions:

1. In what ways do public university library (DUL) and private university library (IUBL) provide service to its users?

2. In what ways do public and private university library provide service to its users, by individual group of users?

3. Which attributes of service quality equal, exceed or fall short user perception, by individual group of users?

4. In what way do the users expect for excellent service quality from public and private university libraries, by individual group of users?

5. What are the most essential attributes that librarians or library managers should allocate the resources to support for improving excellent service quality?

3.4 Sampling and Response Rates

The samples of the study are the users (undergraduate students, graduate students and faculty/researchers) of two university libraries. They were selected randomly on a verbal approach basis and asked to complete the questionnaire.

For DUL study, six volunteers, all from the Department of Information Science and Library Management, were assigned to collect data from the users. They distributed printed questionnaire to Dhaka University students at DU library, different departments and students' residential hostels. All completed questionnaires were collected instantly by the volunteers. The data from the faculty members were collected by the researcher. A total 350 questionnaires were distributed and 314 completed questionnaires were returned.

For IUBL, all the samples were approached verbally by the researcher at the library and different departments and schools. Most of the questionnaires were completed and returned instantly. Total 260 questionnaires were distributed and 233 completed questionnaires were collected.

The following table shows the details of the two universities:

Table 3.1

Data Summary Regarding Sample

SL. No	University	Category	Year of Est.	Questionnaire Distributed	Questionnaire Returned	% Returned
1	University of Dhaka (DU)	Public	1921	350	314	89.71
2	Independent University, Bangladesh (IUB)	Private	1993	260	233	89.62

The following table shows the returned questionnaire by each respondent group at DU.

Table 3.2

Questionnaire Returned by Each Respondent Group, DU

Respondent groups	Questionnaire Distributed	Questionnaire Returned	% Returned
Undergraduate Students	180	170	94.44
Graduate Students	120	112	93.33
Faculty	50	32	64
Total	350	314	89.71

The Table 3.3 below shows the returned questionnaire by each respondent group at IUB.

Table 3.3

Questionnaire Returned by Each Respondent Group, IUB

Respondent groups	Questionnaire Distributed	Questionnaire Returned	% Returned
Undergraduate Students	170	159	93.53
Graduate	45	44	97.78
Faculty	45	30	66.67
Total	260	233	89.62

3.5 Data Collection

All sample groups were asked to complete a modified version of SERVQUAL instrument. The instrument was divided into two sections. The first part consisted of thirty statements that asked users to rate the three service levels on a 7-point scale. The second part contained personal information about the respondents (see Appendix A for a copy of the questionnaire used). The questionnaires were distributed among respondent groups at Dhaka University Library and Independent University, Bangladesh Library. This questionnaire focused on seven dimensions. These were:

1. *Assurance;*

2. *Collection & Access;*

3. *Empathy;*

4. *Library as Place;*

5. *Reliability;*

6. *Responsiveness; and*

7. *Tangibles*

The users were asked to complete the questionnaires with three levels of services: "My Minimum Service Level", "My Expected or Desired Service Level" and "My Perception or Actual Service Level". "My Minimum Service Level" means the minimum level of service that the user consider adequate or sufficient for him though it is not equal the level of his expectation, "My Expected or Desired Service Level" means the level of service that the user expect from the library and "My Perception or Actual Service Level" means the actual service provided by the library. There are 7-point scale and thirty statements are arranged at random. The points are from lowest to highest scores to find out the true outlook as a valued user of the University Library System. There are no right or wrong answers; this research concerned in the number that truly reflects the users feelings regarding excellent quality of service in the Library.

The second part of the questionnaire asked about personal information of the respondent, i.e. gender, age, type of respondents, educational background (for faculty), affiliation, duration of study (for students), major subject area, and frequency of library use.

A pilot study was conducted as pre-test at IUB Library using modified SERVQUAL instrument which contained thirty-six statements. A total of ten users (eight undergraduate and two graduate students) took part and completed the questionnaire.

After pre-test, some statements were amplified to make them clear to the user, some extra services which are irrelevant were excluded, and some statements were corrected. To avoid confusion while filling in the questionnaires, a detailed instruction was given at the beginning of the questionnaire.

3.6 Data Treatment

After data collection, the survey data was entered into SPSS for Windows. The following procedures of data treatment were set to validate the data for analysis. The processes of checking error:

1. Checking error because of wrong input:

   - Check data input by comparing with the original copies of questionnaires.

   - Correct the wrong records, noisy data.

2. Checking the gap differences among the following sections:

   - ES (Expected Service) - MS (Minimum Service) which is called *Zone of Tolerance* (The area between minimally acceptable and expected service quality rating). ES must be higher than MS or can be at the same level. If the value in ES is minus, it means erroneous occurrence caused by the response in the MS section is higher than ES.

   - PS (Perceived Service) - MS (Minimum Service) If values from PS1-30 – MS1-30 are all 0s, it means the values in each section are the same so that record has to be checked and modified if necessary.

   - PS (Perceived Service) - ES (Expected Service) The gap difference between these two sections will help the administrators to provide excellent services so if the values from PS – ES are all 0s or too much gap difference , the record has to be checked and modified if necessary.

3.7 Statistical Methods and Techniques Used for Data Analysis

The data are analyzed in the following ways:

First, to obtain in what way the public university library (i.e., DUL) and private university library (i.e., IUBL) provided service to its users, the gap discrepancy between Expected Service and Perceived Service performance are calculated and ranked respectively.

Second, to examine in what way public university library (DUL) and private university library (IUBL) provided service to its individual group of users, the gap discrepancy between Expected Service and Perceived Service performance are calculated by individual group of users and ranked respectively. This result could suggest what service meet, exceed or fall short into the user expectations.

Third, by individual group of users to examine the way user expect for excellent service quality from public and private university libraries.The means of desired service expectations are ranked and compared among three groups of users.

Finally, to investigate which are the most essential attributes that library manager should allocate the resource for good service quality, the *Zone of Tolerance* which is the range between Expected Service Level and Minimum Service Level is calculated.

Chapter 4

Data Analysis

4.1 Introduction

To measure the service quality of public and private university library systems, an adaptation of SERVQUAL questionnaire was distributed among the target groups. The respondents were asked to rate each statements of service quality at three levels of services: *My Minimum Service Level, My Expected or Desired Service Level* and *My Perception or Actual Service Level.* The scale used was a 7-point scale which measured from 1 (lowest) to 7 (highest). Thirty statements are arranged at random. This chapter reports the results of the study. The five research questions investigated for this study are as follows:

1. In what ways do public university library (DUL) and private university library (IUBL) provide service to its users?

2. In what ways do public and private university library provide service to its users, by individual group of users?

3. Which attributes of service quality equal, exceed or fall short user perception, by individual group of users?

For these three research questions, the gap difference between Expected or Desired Service Level and Perception or Actual Service Level are calculated.

4. In what way do the users expect for excellent service quality from public and private university libraries, by individual group of users?

The means of desired service expectations are ranked and compared among three groups of users.

5. What are the most essential attributes that librarians or library managers should

    allocate the resources to support for improving excellent service quality?

The *Zone of Tolerance* which is the range between desired service expectation and

minimum service expectation is calculated to find such attributes.

4.2 Characteristics of Sample Groups

Among 314 respondents at DU, 62.1% are male (see Table 4.1 below). The

majorities of the respondents are students: undergraduate students (54.1%) and graduate

students (35.7 %) (see Table 4.2). Among 233 respondents at IUB, about three-fourth are

male (72.1%) (see Table 4.3) and the majorities of the respondents are students:

undergraduate 68.2% and graduate students 18.9 % (see Table 4.4).

Table 4.1

Gender of the Respondents at DU

Gender	Frequency	Valid Percent
Male	195	62.1
Female	119	37.9
Total	**314**	**100.0**

Table 4.2

Categories of Respondents at DU

User Group	Frequency	Valid Percent
Undergraduate student	170	54.1
Graduate student	112	35.7
Faculty	32	10.2
Total	**314**	**100.0**

Table 4.3

Gender of the Respondent at IUB

Gender	Frequency	Valid Percent
Male	168	72.1
Female	65	27.9
Total	**233**	**100.0**

Table 4.4

Categories of Respondents at IUB

User Group	Frequency	Valid Percent
Undergraduate student	159	68.2
Graduate student	44	18.9
Faculty	30	12.9
Total	**233**	**100.0**

In time length or duration of study for undergraduate students at DU, 36.5% are studying for three years. Most of the graduate students (60.7%) are studying for six years. For undergraduate students at IUB, 27% of them are studying for three years. For the graduate students, 27.3% are studying for two years, 22.7% are studying for six years (see Table 4.5 - 4.8 for details).

Table 4.5

Duration of Study for Undergraduate Students at DU

Year	Frequency	Valid Percent
3 years	62	36.5
4 years	39	22.9
2 years	38	22.4
1 year	18	10.6
5 years	11	6.5
<1 year	2	1.2
Total	**170**	**100.0**

Table 4.6

Duration of Study for Graduate Students at DU

Year	Frequency	Valid Percent
6 years	68	60.7
5 years	30	26.8
4 years	8	7.1
3 years	2	1.8
2 years	2	1.8
>6 years	2	1.8
Total	**112**	**100.0**

Table 4.7

Duration of Study for Undergraduate Students at IUB

Years	Frequency	Valid Percent
3 years	43	27.0
2 years	38	23.9
4 years	32	20.1
1 year	21	13.2
<1 year	16	10.1
5 years	5	3.1
6 years	2	1.3
>6 years	2	1.3
Total	**159**	**100.0**

Table 4.8

Duration of Study for Graduate Students at IUB

Years	Frequency	Valid Percent
2 years	12	27.3
6 years	10	22.7
5 years	8	18.2
1 year	5	11.4
>6 years	3	6.8
4 years	2	4.5
3 years	2	4.5
<1 year	2	4.5
Total	**44**	**100.0**

For Faculty respondents at DU, the highest numbers of respondents are from "Associate Professor" (34.4%) category, and then "Assistant Professor" (31.3%). For Faculties at IUB, 43.3% are from "Lecturer" category, rest indicated as "Assistant Professor", "Senior Lecturer", "Associate Professor" and "Professor". (see table 4.9 - 4.10).

Table 4.9

Category of Faculties at DU

Position	Frequency	Valid Percent
Associate professor	11	34.4
Assistant professor	10	31.3
Lecturer	7	21.9
Professor	4	12.5
Total	**32**	**100.0**

Table 4.10

Category of Faculties at IUB

Position	Frequency	Valid Percent
Lecturer	13	43.3
Assistant professor	6	20.0
Senior Lecturer	5	16.7
Professor	3	10.0
Associate professor	3	10.0
Total	**30**	**100.0**

At DU, for age groups of faculties, 28.1% fell into "32-36" years age category (see Table 4.11), for graduate student age group 96.4% fell into "22-26" age category (see Table 4.13) and for undergraduate student age group 37.6% fell into "17-21" age category (see table 4.15).

At IUB, for age groups of faculty members, 36.7% fell into year "32-36" age category (see Table 4.12), for graduate student age group 59.1% fell into "22-26" age category (see Table 4.14) and for undergraduate student age group 53.5% fell into "17-21" age category (see table 4.16) .

Table 4.11

Age Groups (Faculties) at DU

Age	Frequency	Valid Percent
32-36	9	28.1
37-41	8	25.0
47-51	6	18.8
52-56	4	12.5
42-46	3	9.4
27-31	2	6.3
Total	**32**	**100.0**

Table 4.12

Age Groups (Faculties) at IUB

Age	Frequency	Valid Percent
32-36	11	36.7
37-41	6	20.0
27-31	5	16.7
42-46	3	10.0
>66	3	10.0
47-51	2	6.7
Total	**30**	**100.0**

Table 4.13

Age Groups (Graduate Students) at DU

Age	Frequency	Valid Percent
22-26	108	96.4
27-31	4	3.6
Total	**112**	**100.0**

Table 4.14

Age Groups (Graduate Students) at IUB

Age	Frequency	Valid Percent
22-26	26	59.1
27-31	15	34.1
32-36	2	4.5
17-21	1	2.3
Total	**44**	**100.0**

Table 4.15

Age Groups (Undergraduate Students) at DU

Age	Frequency	Valid Percent
17-21	64	37.6
22-26	106	62.4
Total	**170**	**100.0**

Table 4.16

Age Groups (Undergraduate Students) at IUB

Age	Frequency	Valid Percent
17-21	85	53.5
22-26	74	46.5
Total	**159**	**100.0**

In the category of subject areas at DU, most of the students are from "Arts/Humanities" faculty (37.9%) (see table 4.17). At IUB, most of the respondents are from Business discipline, more than half (65.7%) of respondents indicated their subject area as Business/Commerce (see table 4.18).

Table 4.17

Discipline or Subject Areas at DU

Subject Area	Frequency	Valid Percent
Arts/Humanities	119	37.9
Science	66	21.0
Social sciences	65	20.7
Business/Commerce	54	17.2
Others	8	2.5
Engineering	2	.6
Total	314	100.0

Table 4.18

Discipline or Subject Areas at IUB

Subject Area	Frequency	Valid Percent
Business/Commerce	153	65.7
Science	31	13.3
Engineering	31	13.3
Social sciences	15	6.4
Arts/Humanities	3	1.3
Total	233	100.0

At DU, for the frequency of library use in "all user" category, less than half of the respondents (42.4%) use library services "Several times a week". In the Faculty group, 37.5% of the respondents mentioned the frequency of library use as "Others" category. They specified "Others" as "very often", "rarely", "whenever needed", "as per demand", etc. We can assume here that the faculties are allowed to borrow books from the library's circulation section for about four weeks. They are not very interested to visit library frequently. However, graduate students use the library "Several times a week" (44.6%) which is more or less same as the undergraduate students (46.5%) (see Table 4.19 - 4.22).

At IUB, for the frequency of library use in "all user" group, about half of the users (44.2%) use library services "several times a week" like DU. It is interesting in the Faculty group that about half of the respondents (46.7%) take library services "once a month" which indicates that this group does not visit library regularly like DU as they generally borrow library materials at the beginning of the semester and take the library services rarely. About 20% faculty mentioned frequency of library uses as "others" and they mentioned under that category as "randomly", "semester wise", "on demand", etc. However, most graduate students use the library "several times a week "(31.8%). More than half of the undergraduate students use library "several times a week" (55.3%) and 25.8% use library on "daily" basis. Among all users in IUBL, undergraduate students visit and use library services frequently (see Table 4.23 - 4.26).

Table 4.19

Frequency of Library Use (all users) at DU

Library Use	Frequency	Valid Percent
Several times a week	133	42.4
Once a week	53	16.9
Daily	48	15.3
Once a month	38	12.1
Less than once a week	25	8.0
Others	17	5.4
Total	**314**	**100.0**

Table 4.20

Frequency of Library Use (Faculties) at DU

Library Use	Frequency	Valid Percent
Others	12	37.5
Once a week	6	18.8
Less than once a week	5	15.6
Once a month	5	15.6
Several times a week	4	12.5
Total	**32**	**100.0**

Table 4.21

Frequency of Library Use (Graduate Students) DU

Library Use	Frequency	Valid Percent
Several times a week	50	44.6
Daily	20	17.9
Once a week	20	17.9
Less than once a week	11	9.8
Once a month	8	7.1
Others	3	2.7
Total	**112**	**100.0**

Table 4.22

Frequency of Library Use (Undergraduate Students) DU

Library Use	Frequency	Valid Percent
Several times a week	79	46.5
Daily	28	16.5
Once a week	27	15.9
Once a month	25	14.7
Less than once a week	9	5.3
Others	2	1.2
Total	**170**	**100.0**

Table 4.23

Frequency of Library Use (all users) at IUB

Library Use	Frequency	Valid Percent
Several times a week	103	44.2
Daily	47	20.2
Less than once a week	33	14.2
Once a week	23	9.9
Once a month	19	8.2
Others	8	3.4
Total	**233**	**100.0**

Table 4.24

Frequency of Library Use (Faculties) at IUB

Library Use	Frequency	Valid Percent
Once a month	14	46.7
Less than once a week	7	23.3
Others	6	20.0
Once a week	2	6.7
Several times a week	1	3.3
Total	**30**	**100.0**

Table 4.25

Frequency of library use (Graduate students) at IUB

Library Use	Frequency	Valid Percent
Several times a week	14	31.8
Less than once a week	12	27.3
Daily	6	13.6
Once a week	6	13.6
Once a month	4	9.1
Others	2	4.5
Total	**44**	**100.0**

Table 4.26

Frequency of Library Use (Undergraduate Students) at IUB

Library Use	Frequency	Valid Percent
Several times a week	88	55.3
Daily	41	25.8
Once a week	15	9.4
Less than once a week	14	8.8
Once a month	1	.6
Total	**159**	**100.0**

4.2.1 Number of Respondent Compared with Total Population

To compare the number of respondent with total population of DU and IUB individually, at DU the respondent are 1.13% of the total users and at IUB the respondent are 7.49% of the total users (students and faulty).

Table 4.27

Number of Selected Respondent Compare with Total DU Population (Based on the Annual Report of UGC, 2006)

Types of Population	Population	Respondents	%
Students	26,233	282	1.07
Faculty	1,605	32	1.99
Total	27,838	314	1.13

Table 4.28

Number of Selected Respondent Compare with Total IUB Population (Based on the Annual Report of UGC, 2006)

Types of Population	Population	Respondents	%
Students	2,974	203	6.83
Faculty	137	30	21.90
Total	3,111	233	7.49

4.2.2 The Frequencies of User Responses for Each Level of Service

The frequencies of user responses for each level of service at DU are shown in Table 4.29 - 4.31. All attributes are ranked respectively by their missing values. In most cases, the users did not respond to some statements that they have not experienced or they have not contacted with the library staff, etc. The missing values regarding the

statements are more or less same in three levels of services. In Minimum Service Level, the top two missing values are "Library staffs who deals with users in a concerned or considerate manner", and "Dependability in handling user's service problems", In Expected Service Level, the top two missing values are for "Library staffs who deals with users in a concerned or considerate manner", and "Library staffs provide services accurately with minimum interruption". In Perceived or Actual Service Level, the top two missing values are for "Library staffs provide services accurately with minimum interruption", and "Library staffs who deals with users in a concerned or considerate manner". In all levels at DU, the ranking of the missing values are more or less same at the tops and are related with the attributes of staffs.

The frequencies of user responses for each level of service at IUB are shown in Table 4.32 - 4.34. Like DUL, the users did not respond to some statements that they have not experienced or they have not contacted with the library staffs, etc. Here, the missing values regarding the statements are more or less same in three levels of services. In Minimum Service Level, the top two missing values are "Dependability in handling user's service problems", and "Library Online Catalogue is easy to understand and navigate", In Expected Service Level, the top two missing values are for "Library Online Catalogue is easy to understand and navigate", and "Dependability in handling user's service problems". In Perceived or Actual Service Level, the top two missing values are for "Dependability in handling user's service problems" and "Facilities are visually appealing (such as computer, audiovisual, etc.)". For the Minimum Service Level and Expected Service Level the missing values are more or less same, but there is slight difference in case Perceive Service Level. However, it may be noted here that sometime the users thought some statements are irrelevant to them or they did not know about it or they did not have any experience to that service so they did not response that.

Table 4.29

Frequency of User Responses for Minimum Services (Ranked by Missing Values) at DU

Order	Statement	N Valid	Missing	Mean	Median	Mode	SD
1	Library staffs who deals with users in a concerned or considerate manner	298	16	4.22	4	5	1.43
2	Dependability in handling user's service problems	300	14	4.04	4	4	1.48
3	Readiness to respond to user's questions	301	13	4.15	4	4	1.45
4	Assuring users of the accuracy and confidentiality of their personal information	302	12	4.23	4	5	1.51
5	Materials (such as brochures, statements or signs) associated with the services are visually appealing	302	12	4.07	4	5	1.52
6	Library staffs provide services accurately with minimum interruption	303	11	4.08	4	5	1.46
7	It is easy to make a compliment, complaint or suggestion about condition	307	7	4.16	4	5	1.55
8	Library Website contains necessary information	308	6	4.12	4	4	1.74
9	Library staffs provide services as promised	308	6	4.24	4	5	1.57
10	Library staffs keep users informed about when services will be performed	308	6	4.12	4	5	1.58
11	Providing services at the promised time	308	6	4.34	4	6	1.55
12	Library Online Catalogue is easy to understand and navigate	309	5	4.24	4	5	1.74
13	Information I get from library resources meet the course need	309	5	4.38	5	5	1.59
14	Library staffs are knowledgeable to answer users query	309	5	4.23	4	5	1.52
15	Space that enables quiet and calm study	311	3	4.32	4	5	1.44
16	Resources are delivered timely	311	3	4.15	4	5	1.67
17	Library staffs understand the needs of the users	311	3	4.22	4	6	1.62
18	Convenient opening hours (closing and opening hours)	312	2	4.94	5	6	1.48
19	A comfortable and inviting location	312	2	4.69	5	5	1.66
20	Equipments are modern and in good condition	312	2	4.01	4	5	1.71
21	Digital or online resources can be accessed from PC	312	2	3.89	4	5	1.77
22	Physical condition of resources in collection is good	312	2	4.10	4	5	1.66
23	Required resources are available	313	1	4.45	4	4	1.62
24	Giving priority to the users interests	313	1	4.36	4	4	1.53
25	Convenient access to library collection	313	1	4.40	4	5	1.54
26	Library staffs serve promptly to the users	313	1	4.25	4	5	1.69
27	Facilities are visually appealing (such as computer, audiovisual etc.)	313	1	3.96	4	5	1.68
28	Library staffs are always courteous	313	1	4.20	4	5	1.64
29	Library staffs have willingness to help user	313	1	4.16	4	5	1.58
30	Library staffs give individual attention to the users	314	0	4.04	4	5	1.70

Table 4.30

Frequency of User Responses for Expected Services (Ranked by Missing Values) at DU

Order	Statements	N Valid	Missing	Mean	Median	Mode	SD
1	Library staffs who deals with users in a concerned or considerate manner	292	22	6.12	6	6	0.92
2	Library staffs provide services accurately with minimum interruption	297	17	5.91	6	6	1.12
3	Dependability in handling user's service problems	297	17	5.84	6	6	1.18
4	Materials (such as brochures, statements or signs) associated with the services are visually appealing	302	12	6.00	6	6	1.03
5	Readiness to respond to user's questions	302	12	6.09	6	6	1.02
6	Assuring users of the accuracy and confidentiality of their personal information	303	11	5.94	6	6	1.08
7	It is easy to make a compliment, complaint or suggestion about condition	304	10	5.99	6	6	1.00
8	Library staffs keep users informed about when services will be performed	307	7	5.96	6	6	1.06
9	Library staffs provide services as promised	308	6	6.09	6	6	1.06
10	Convenient opening hours (closing and opening hours)	309	5	6.22	6	7	1.01
11	A comfortable and inviting location	309	5	6.21	7	7	1.06
12	Giving priority to the users interests	309	5	6.09	6	7	1.19
13	Library Website contains necessary information	309	5	6.20	7	7	1.20
14	Library staffs serve promptly to the users	309	5	6.10	6	7	1.08
15	Physical condition of resources in collection is good	309	5	6.19	6	7	0.96
16	Library staffs understand the needs of the users	309	5	6.18	6	7	1.02
17	Information I get from library resources meet the course need	309	5	6.16	6	7	1.00
18	Providing services at the promised time	309	5	6.07	6	6	1.01
19	Library staffs are knowledgeable to answer users query	309	5	6.11	6	7	1.05
20	Convenient access to library collection	310	4	6.13	6	7	1.17
21	Library Online Catalogue is easy to understand and navigate	310	4	6.09	6	7	1.13
22	Digital or online resources can be accessed from PC	310	4	6.14	6	7	1.03
23	Library staffs have willingness to help user	311	3	6.12	6	7	1.14
24	Facilities are visually appealing (such as computer, audiovisual etc.)	312	2	6.10	6	7	1.15
25	Library staffs are always courteous	312	2	6.07	6	6	1.09
26	Library staffs give individual attention to the users	312	2	6.08	6	7	1.16
27	Space that enables quiet and calm study	312	2	6.22	7	7	1.06
28	Equipments are modern and in good condition	312	2	6.23	7	7	1.09
29	Required resources are available	313	1	6.19	7	7	1.17
30	Resources are delivered timely	313	1	6.10	6	6	1.02

Table 4.31

Frequency of User Responses for Perceived Services (Ranked by Missing Values) at DU

Order	Statements	N Valid	Missing	Mean	Median	Mode	SD
1	Library staffs provide services accurately with minimum interruption	294	20	3.98	4	4	1.52
2	Library staffs who deals with users in a concerned or considerate manner	295	19	3.99	4	4	1.52
3	Dependability in handling user's service problems	298	16	4.08	4	4	1.60
4	Assuring users of the accuracy and confidentiality of their personal information	299	15	4.16	4	4	1.44
5	Readiness to respond to user's questions	299	15	3.93	4	3	1.57
6	Materials (such as brochures, statements or signs) associated with the services are visually appealing	301	13	3.93	4	4	1.54
7	It is easy to make a compliment, complaint or suggestion about condition	304	10	4.08	4	4	1.57
8	Library staffs keep users informed about when services will be performed	305	9	4.01	4	3	1.61
9	Information I get from library resources meet the course need	305	9	4.06	4	4	1.58
10	Library staffs provide services as promised	306	8	4.00	4	4	1.55
11	Providing services at the promised time	306	8	4.01	4	4	1.52
12	A comfortable and inviting location	307	7	4.79	5	5	1.38
13	Library staffs are knowledgeable to answer users query	307	7	3.91	4	3	1.54
14	Convenient access to library collection	309	5	4.18	4	4	1.42
15	Digital or online resources can be accessed from PC	309	5	3.55	3	3	1.68
16	Physical condition of resources in collection is good	309	5	3.99	4	3	1.65
17	Library staffs understand the needs of the users	309	5	4.05	4	5	1.64
18	Convenient opening hours (closing and opening hours)	310	4	5.23	5	5	1.35
19	Library Website contains necessary information	310	4	3.79	4	4	1.68
20	Library Online Catalogue is easy to understand and navigate	310	4	3.99	4	4	1.62
21	Giving priority to the users interests	311	3	4.23	4	4	1.39
22	Library staffs serve promptly to the users	311	3	3.99	4	4	1.52
23	Space that enables quiet and calm study	311	3	4.47	4	4	1.47
24	Resources are delivered timely	312	2	3.99	4	3	1.61
25	Library staffs have willingness to help user	312	2	3.97	4	4	1.60
26	Facilities are visually appealing (such as computer, audiovisual etc.)	313	1	3.67	3	3	1.70
27	Library staffs are always courteous	313	1	3.97	4	4	1.61
28	Equipments are modern and in good condition	313	1	3.88	4	3	1.62
29	Required resources are available	314	0	4.47	4	4	1.42
30	Library staffs give individual attention to the users	314	0	3.89	4	4	1.59

Table 4.32

Frequency of User Responses for Minimum Services (Ranked by Missing Values) at IUB

Order	Statements	N Valid	Missing	Mean	Median	Mode	SD
1	Dependability in handling user's service problems	219	14	4.65	5	4	1.14
2	Library Online Catalogue is easy to understand and navigate	223	10	4.74	5	5	1.28
3	Materials (such as brochures, statements or signs) associated with the services are visually appealing	225	8	4.69	5	4	1.21
4	It is easy to make a compliment, complaint or suggestion about condition	225	8	4.84	5	5	1.29
5	Providing services at the promised time	226	7	4.88	5	5	1.29
6	Library staffs are knowledgeable to answer users query	226	7	5.02	5	6	1.28
7	Library staffs provide services accurately with minimum interruption	226	7	4.84	5	5	1.27
8	Giving priority to the users interests	227	6	4.80	5	5	1.25
9	Assuring users of the accuracy and confidentiality of their personal information	227	6	4.84	5	4	1.25
10	Physical condition of resources in collection is good	227	6	4.80	5	5	1.19
11	Readiness to respond to user's questions	227	6	4.88	5	5	1.23
12	Library staffs who deals with users in a concerned or considerate manner	227	6	4.96	5	5	1.19
13	A comfortable and inviting location	228	5	5.04	5	5	1.21
14	Library Website contains necessary information	228	5	4.87	5	5	1.34
15	Facilities are visually appealing (such as computer, audiovisual etc.)	228	5	4.81	5	4	1.20
16	Equipments are modern and in good condition	228	5	4.71	5	5	1.32
17	Library staffs provide services as promised	228	5	4.91	5	5	1.20
18	Library staffs keep users informed about when services will be performed	228	5	4.79	5	5	1.31
19	Library staffs understand the needs of the users	228	5	4.88	5	5	1.27
20	Library staffs are always courteous	229	4	5.18	5	4	1.20
21	Resources are delivered timely	229	4	4.84	5	5	1.33
22	Library staffs have willingness to help user	229	4	5.12	5	5	1.22
23	Information I get from library resources meet the course need	229	4	5.02	5	5	1.29
24	Required resources are available	230	3	4.69	5	5	1.05
25	Convenient opening hours (closing and opening hours)	230	3	5.20	5	5	1.19
26	Convenient access to library collection	230	3	4.91	5	5	1.15
27	Library staffs serve promptly to the users	230	3	5.14	5	5	1.26
28	Library staffs give individual attention to the users	230	3	4.94	5	5	1.31
29	Space that enables quiet and calm study	230	3	4.74	5	5	1.29
30	Digital or online resources can be accessed from PC	230	3	4.89	5	5	1.24

Table 4.33

Frequency of User Responses for Expected Services (Ranked by Missing Values) at IUB

Order	Statements	N Valid	Missing	Mean	Median	Mode	SD
1	Library Online Catalogue is easy to understand and navigate	222	11	5.75	6	6	1.17
2	Dependability in handling user's service problems	223	10	5.57	6	6	1.10
3	Materials (such as brochures, statements or signs) associated with the services are visually appealing	228	5	5.65	6	6	1.14
4	Library staffs provide services as promised	228	5	5.85	6	6	1.13
5	Library staffs are knowledgeable to answer users query	228	5	5.91	6	6	1.08
6	Library staffs provide services accurately with minimum interruption	228	5	5.91	6	6	1.02
7	Library staffs who deals with users in a concerned or considerate manner	228	5	5.94	6	6	1.06
8	It is easy to make a compliment, complaint or suggestion about condition	228	5	5.83	6	6	1.18
9	Giving priority to the users interests	229	4	5.76	6	6	1.16
10	Facilities are visually appealing (such as computer, audiovisual etc.)	229	4	5.72	6	6	1.16
11	Physical condition of resources in collection is good	229	4	5.90	6	6	1.14
12	Readiness to respond to user's questions	229	4	5.86	6	6	0.98
13	Convenient opening hours (closing and opening hours)	230	3	5.99	6	7	1.01
14	A comfortable and inviting location	230	3	5.97	6	7	1.06
15	Library Website contains necessary information	230	3	5.87	6	7	1.29
16	Equipments are modern and in good condition	230	3	5.93	6	7	1.16
17	Resources are delivered timely	230	3	5.89	6	6	1.02
18	Assuring users of the accuracy and confidentiality of their personal information	230	3	5.66	6	6	1.16
19	Library staffs keep users informed about when services will be performed	230	3	5.67	6	6	1.23
20	Providing services at the promised time	230	3	5.88	6	6	1.07
21	Library staffs serve promptly to the users	231	2	5.89	6	6	1.06
22	Library staffs are always courteous	231	2	5.94	6	7	1.10
23	Space that enables quiet and calm study	231	2	5.92	6	6	1.25
24	Digital or online resources can be accessed from PC	231	2	5.92	6	7	1.22
25	Library staffs understand the needs of the users	231	2	5.83	6	6	1.20
26	Required resources are available	232	1	5.91	6	6	1.16
27	Convenient access to library collection	232	1	5.84	6	6	1.17
28	Library staffs give individual attention to the users	232	1	5.84	6	6	1.07
29	Library staffs have willingness to help user	232	1	5.91	6	7	1.08
30	Information I get from library resources meet the course need	232	1	6.05	6	7	1.11

Table 4.34

Frequency of User Responses for Perceived Services (Ranked by Missing Values) at IUB

Order	Statements	N Valid	Missing	Mean	Median	Mode	SD
1	Dependability in handling user's service problems	222	11	5.08	5	5	1.27
2	Facilities are visually appealing (such as computer, audiovisual etc.)	226	7	4.73	5	5	1.31
3	Giving priority to the users interests	227	6	4.93	5	5	1.24
4	Library Online Catalogue is easy to understand and navigate	227	6	4.97	5	6	1.40
5	Materials (such as brochures, statements or signs) associated with the services are visually appealing	227	6	4.97	5	5	1.31
6	Library staffs provide services as promised	227	6	5.21	5	6	1.30
7	Library staffs understand the needs of the users	227	6	5.22	5	6	1.27
8	Library Website contains necessary information	228	5	4.97	5	6	1.49
9	Equipments are modern and in good condition	228	5	4.92	5	6	1.47
10	Physical condition of resources in collection is good	228	5	5.29	5	6	3.59
11	Providing services at the promised time	228	5	5.32	5	6	1.24
12	Library staffs provide services accurately with minimum interruption	228	5	5.27	5	6	1.26
13	Convenient opening hours (closing and opening hours)	229	4	5.50	6	6	1.18
14	Digital or online resources can be accessed from PC	229	4	5.11	5	6	1.40
15	Library staffs are knowledgeable to answer users query	229	4	5.43	6	6	1.31
16	Readiness to respond to user's questions	229	4	5.34	6	6	1.22
17	Library staffs who deals with users in a concerned or considerate manner	229	4	5.46	6	6	1.23
18	It is easy to make a compliment, complaint or suggestion about condition	229	4	5.16	5	6	1.41
19	A comfortable and inviting location	230	3	5.35	6	6	1.35
20	Assuring users of the accuracy and confidentiality of their personal information	230	3	5.37	6	6	1.28
21	Library staffs keep users informed about when services will be performed	230	3	5.15	5	5	1.36
22	Required resources are available	231	2	4.77	5	5	1.23
23	Convenient access to library collection	231	2	5.14	5	5	1.24
24	Resources are delivered timely	231	2	5.05	5	5	1.39
25	Library staffs have willingness to help user	231	2	5.48	6	6	1.24
26	Library staffs serve promptly to the users	232	1	5.43	6	6	1.36
27	Library staffs are always courteous	232	1	5.41	6	6	1.31
28	Library staffs give individual attention to the users	232	1	5.41	6	7	1.35
29	Information I get from library resources meet the course need	232	1	5.17	5	5	1.33
30	Space that enables quiet and calm study	233	0	5.06	5	5	1.43

At DU the order of missing values among all three levels MS, ES and PS are more or less same; the rankings are very much close to each statement at DU. At IUB, the order of missing values between MS and ES levels are not very different but there is a difference in PS. We can assume that the tendency of the keeping blank of any statement (that treated as missing value) in both cases in public university library (DUL) and private university library (IUBL) are due to the lack of experience or interest to any statement or services. These missing values are ranked and compared among each level of services (see Table 4.35 and Table 4.36).

Table 4.35

Comparison of the Orders of Missing Values among Three Levels (MS, ES & PS) at DU

MS	ES	PS	Statements
6	2	1	Library staffs provide services accurately with minimum interruption
1	1	2	Library staffs who deals with users in a concerned or considerate manner
2	3	3	Dependability in handling user's service problems
4	6	4	Assuring users of the accuracy and confidentiality of their personal information
3	5	5	Readiness to respond to user's questions
5	4	6	Materials (such as brochures, statements or signs) associated with the services are visually appealing
7	7	7	It is easy to make a compliment, complaint or suggestion about condition
10	8	8	Library staffs keep users informed about when services will be performed
13	17	9	Information I get from library resources meet the course need
9	9	10	Library staffs provide services as promised
11	18	11	Providing services at the promised time
19	11	12	A comfortable and inviting location
14	19	13	Library staffs are knowledgeable to answer users query
25	20	14	Convenient access to library collection
21	22	15	Digital or online resources can be accessed from PC
22	15	16	Physical condition of resources in collection is good
17	16	17	Library staffs understand the needs of the users
18	10	18	Convenient opening hours (closing and opening hours)
8	13	19	Library Website contains necessary information
12	21	20	Library Online Catalogue is easy to understand and navigate
24	12	21	Giving priority to the users interests
26	14	22	Library staffs serve promptly to the users
15	27	23	Space that enables quiet and calm study
16	30	24	Resources are delivered timely
29	23	25	Library staffs have willingness to help user
27	24	26	Facilities are visually appealing (such as computer, audiovisual etc.)
28	25	27	Library staffs are always courteous
20	28	28	Equipments are modern and in good condition
23	29	29	Required resources are available
30	26	30	Library staffs give individual attention to the users

Table 4.36

Comparison of the Orders of Missing Values among Three Levels (MS, ES & PS) at IUB

Order of Missing Values			Statements
MS	ES	PS	
1	2	1	Dependability in handling user's service problems
15	10	2	Facilities are visually appealing (such as computer, audiovisual etc.)
8	9	3	Giving priority to the users interests
2	1	4	Library Online Catalogue is easy to understand and navigate
3	3	5	Materials (such as brochures, statements or signs) associated with the services are visually appealing
7	4	6	Library staffs provide services as promised
19	25	7	Library staffs understand the needs of the users
14	15	8	Library Website contains necessary information
16	16	9	Equipments are modern and in good condition
10	11	10	Physical condition of resources in collection is good
5	20	11	Providing services at the promised time
17	6	12	Library staffs provide services accurately with minimum interruption
25	13	13	Convenient opening hours (closing and opening hours)
30	24	14	Digital or online resources can be accessed from PC
6	5	15	Library staffs are knowledgeable to answer users query
11	12	16	Readiness to respond to user's questions
12	7	17	Library staffs who deals with users in a concerned or considerate manner
4	8	18	It is easy to make a compliment, complaint or suggestion about condition
13	14	19	A comfortable and inviting location
9	18	20	Assuring users of the accuracy and confidentiality of their personal information
18	19	21	Library staffs keep users informed about when services will be performed
24	26	22	Required resources are available
26	27	23	Convenient access to library collection
21	17	24	Resources are delivered timely
22	29	25	Library staffs have willingness to help user
27	21	26	Library staffs serve promptly to the users
20	22	27	Library staffs are always courteous
28	28	28	Library staffs give individual attention to the users
23	30	29	Information I get from library resources meet the course need
29	23	30	Space that enables quiet and calm study

4.3 Gaps between Expected Service and Perceived Service

The gap discrepancy between Expected or Desired Service and Perceived or Actual Service is the key concept of service quality so the gaps difference between the two service levels were calculated and ranked by gap size.

The results from Table 4.38 and 4.39 shows that all attributes of service quality at public university library and private university library do not meet the users' expectations. From the result obtained it may be assumed that "It is natural tendency of people to wish for more than they have".

In table 4.37, statements along with underlying dimensions are mentioned by the respective IDs and they are shown in ascending order.

Table 4.37

ID those Describes the Statements along with Dimensions

Dimension	ID	Statements
Assurance	AS-1	Assuring users of the accuracy and confidentiality of their personal information
Assurance	AS-2	Information I get from library resources meet the course need
Assurance	AS-3	It is easy to make a compliment, complaint or suggestion about condition
Assurance	AS-4	Library staffs are always courteous
Assurance	AS-5	Library staffs are knowledgeable to answer users query
Collection & Access	CA-1	Convenient access to library collection
Collection & Access	CA-2	Digital or online resources can be accessed from PC
Collection & Access	CA-3	Library Online Catalogue is easy to understand and navigate
Collection & Access	CA-4	Library Website contains necessary information
Collection & Access	CA-5	Physical condition of resources in collection is good
Collection & Access	CA-6	Required resources are available
Collection & Access	CA-7	Resources are delivered timely
Empathy	EM-1	Convenient opening hours (closing and opening hours)
Empathy	EM-2	Giving priority to the users interests
Empathy	EM-3	Library staffs give individual attention to the users
Empathy	EM-4	Library staffs understand the needs of the users
Empathy	EM-5	Library staffs who deals with users in a concerned or considerate manner
Library as Place	LP-1	A comfortable and inviting location
Library as Place	LP-2	Space that enables quiet and calm study
Reliability	RL-1	Dependability in handling user's service problems
Reliability	RL-2	Library staffs provide services accurately with minimum interruption
Reliability	RL-3	Library staffs provide services as promised
Reliability	RL-4	Providing services at the promised time
Responsiveness	RS-1	Library staffs have willingness to help user
Responsiveness	RS-2	Library staffs keep users informed about when services will be performed
Responsiveness	RS-3	Library staffs serve promptly to the users
Responsiveness	RS-4	Readiness to respond to user's questions
Tangibles	TA-1	Equipments are modern and in good condition
Tangibles	TA-2	Facilities are visually appealing (such as computer, audiovisual etc.)
Tangibles	TA-3	Materials (such as brochures, statements or signs) associated with the services are visually appealing

In public university library, i.e., DUL, the gap sizes are extremely higher than the gap sizes in private university library, i.e. IUBL. The result indicates that public university library, i.e. DUL does not meet the expectation of the user. The IUBL also does not meet the users' expectations. Comparisons of gap size of different attributes are shown in Graph 4.1. The attributes along with the dimensions are shown as ID (see Table 4.37 to interpret the ID).

Graph 4.1

Gap Differences between Expected Service and Perceived Service DUL and IUBL
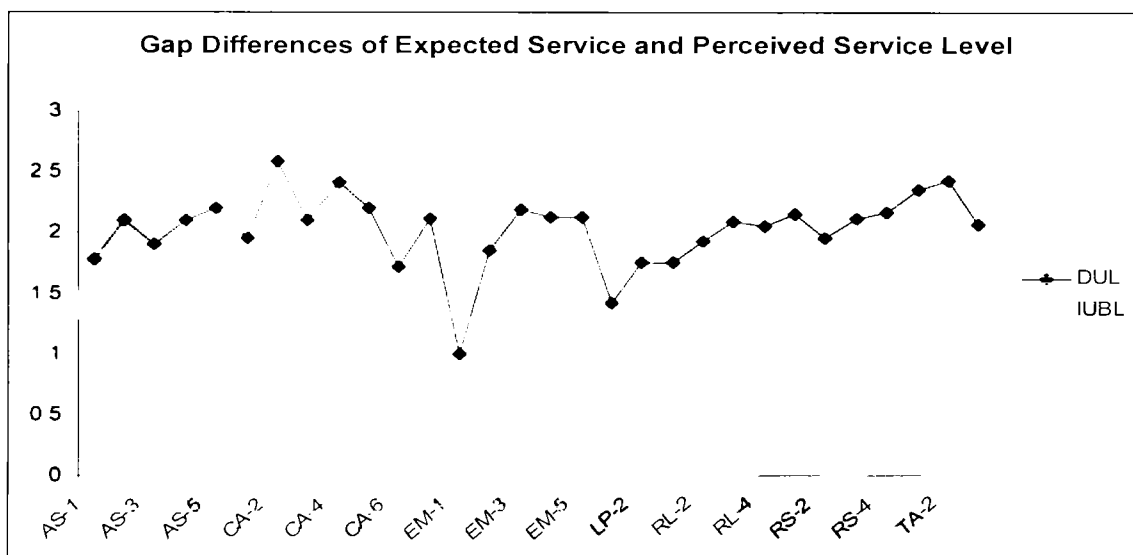
In DU, all gaps are very high, however, larger gaps are attributed by resources and staff attributes. The result shows that the attributes related to dimensions "Collection & Access" and "Tangibles" occupied among the top five ranking along with an attribute of "Assurance". The gap differences related to staff attributes (Empathy & Responsiveness) are ranked respectively behind the "Collection & Access" and "Tangibles". It is observed that "Library as Place" and "Reliability" dimensions are not problematic as the gap rank is comparatively low. From the result it is seen that DUL, the public university libraries are full of resources with convenient opening hours in good location. But the problem with the digital or electronic resources which are badly

needed, even library website has not sufficient information, online catalogue is very poor to browse. The facilities, equipments are also not good condition and the most problematic thing is the staffs; they are not cooperative, not responsive, not knowledgeable, not courteous etc. and lack of willingness to help the user.

Though in IUBL, the gap sizes are low; however the larger gaps are the attributes that related to resources only. The result reflects that the attributes related to dimension "Collection & Access" and "Tangibles" are in top five order along with an "Assurance" dimension. The attributes related to library environment "Library as Place" dimension is problematic. For other attributes gap sizes are not too large. It is interesting that top attribute is "Required resources are available" with 1.14 mean difference at IUBL, but at DU the same attribute is in 28th position with higher gap, 1.72 mean difference. However, from the result, it can be assumed that IUBL, the private university library have knowledgeable staffs with prompt service and response, willingness to help users and provide services timely; the library place and timing is also good. The library collections are well accessible for both printed and digital. But the most problematic is the scarcity of resources specially printed and the modern equipment, facilities, etc. It is also interesting to note that at DUL the attribute "Library website contains necessary information" ranked 3rd position with 2.41 mean difference where at IUBL this attribute ranked 4th position with 0.90 mean difference. Though DUL has no individual library website, IUBL has maintained individual website with detailed information and services. There are other problematic attributes, but the gaps are not so large and these attributes not mentioned here. However, from the expectation of the user it may be assumed that the expectations are comparable and they differ with different factors, like opportunity, experience, background aspects, and socio-economic condition of the user.

Table 4.38

Gaps between Expected Service and Perceived Service at DUL (order by gap size)

Order	Dimensions	Statements	Mean Diff.
1	Collection & Access	Digital or online resources can be accessed from PC	2.59
2	Tangibles	Facilities are visually appealing (such as computer, audiovisual etc.)	2.43
3	Collection & Access	Library Website contains necessary information	2.41
4	Tangibles	Equipments are modern and in good condition	2.35
5	Assurance	Library staffs are knowledgeable to answer users query	2.20
6	Collection & Access	Physical condition of resources in collection is good	2.20
7	Empathy	Library staffs give individual attention to the users	2.19
8	Responsiveness	Readiness to respond to user's questions	2.16
9	Responsiveness	Library staffs have willingness to help user	2.15
10	Empathy	Library staffs understand the needs of the users	2.13
11	Empathy	Library staffs who deals with users in a concerned or considerate manner	2.13
12	Responsiveness	Library staffs serve promptly to the users	2.11
13	Collection & Access	Resources are delivered timely	2.11
14	Assurance	Information I get from library resources meet the course need	2.10
15	Collection & Access	Library Online Catalogue is easy to understand and navigate	2.10
16	Assurance	Library staffs are always courteous	2.10
17	Reliability	Library staffs provide services as promised	2.09
18	Tangibles	Materials (such as brochures, statements or signs) associated with the services are visually appealing	2.07
19	Reliability	Providing services at the promised time	2.06
20	Collection & Access	Convenient access to library collection	1.95
21	Responsiveness	Library staffs keep users informed about when services will be performed	1.95
22	Reliability	Library staffs provide services accurately with minimum interruption	1.93
23	Assurance	It is easy to make a compliment, complaint or suggestion about condition	1.91
24	Empathy	Giving priority to the users interests	1.86
25	Assurance	Assuring users of the accuracy and confidentiality of their personal information	1.78
26	Reliability	Dependability in handling user's service problems	1.76
27	Library as Place	Space that enables quiet and calm study	1.75
28	Collection & Access	Required resources are available	1.72
29	Library as Place	A comfortable and inviting location	1.42
30	Empathy	Convenient opening hours (closing and opening hours)	0.99

Table 4.39

Gaps between Expected Service and Perceived Service at IUBL (order by gap size)

Order	Dimensions	Statements	Mean Diff.
1	Collection & Access	Required resources are available	1.14
2	Tangibles	Equipments are modern and in good condition	1.01
3	Tangibles	Facilities are visually appealing (such as computer, audiovisual etc.)	0.99
4	Collection & Access	Library Website contains necessary information	0.90
5	Assurance	Information I get from library resources meet the course need	0.88
6	Library as Place	Space that enables quiet and calm study	0.86
7	Collection & Access	Resources are delivered timely	0.84
8	Empathy	Giving priority to the users interests	0.83
9	Collection & Access	Digital or online resources can be accessed from PC	0.81
10	Collection & Access	Library Online Catalogue is easy to understand and navigate	0.78
11	Collection & Access	Convenient access to library collection	0.70
12	Tangibles	Materials (such as brochures, statements or signs) associated with the services are visually appealing	0.68
13	Assurance	It is easy to make a compliment, complaint or suggestion about condition	0.67
14	Reliability	Library staffs provide services accurately with minimum interruption	0.64
15	Reliability	Library staffs provide services as promised	0.64
16	Library as Place	A comfortable and inviting location	0.62
17	Empathy	Library staffs understand the needs of the users	0.61
18	Collection & Access	Physical condition of resources in collection is good	0.61
19	Reliability	Providing services at the promised time	0.56
20	Assurance	Library staffs are always courteous	0.53
21	Responsiveness	Library staffs keep users informed about when services will be performed	0.52
22	Responsiveness	Readiness to respond to user's questions	0.52
23	Empathy	Convenient opening hours (closing and opening hours)	0.49
24	Reliability	Dependability in handling user's service problems	0.49
25	Assurance	Library staffs are knowledgeable to answer users query	0.48
26	Empathy	Library staffs who deals with users in a concerned or considerate manner	0.48
27	Responsiveness	Library staffs serve promptly to the users	0.46
28	Empathy	Library staffs give individual attention to the users	0.43
29	Responsiveness	Library staffs have willingness to help user	0.43
30	Assurance	Assuring users of the accuracy and confidentiality of their personal information	0.29

4.4 Gaps between Expected Service and Perceived Service by Individual Group of Users

At DUL, i.e., public university library, the result exposes that by individual group of user, all Expected Services are lagging behind the Perceived or Actual Service Level and with very high gap. When the gap sizes are ranked from high to low, in the faculty group "Tangibles" and "Collection & Access" dimensions are in the top five ranks, for the graduate group "Collection & Access", "Tangibles", "Responsiveness" and "Empathy" are in the top five ranks. For the undergraduate group "Collection & Access", "Tangibles", "Assurance" and "Empathy" are in the top five ranks. So, there are few dissimilarities of each group on Expectation and Perception of services though "Collection & Access" and "Tangibles" are common. The largest gaps are in the faculty groups. It is clear that faculties are not getting as much as they are expecting the services provided by the DUL, so their gaps are larger than the other groups. The result (see Table 4.41) shows that top five attributes in this group are related to library resources and facilities. In case of graduate students, the top five attributes are a little different as those are related to library collection, equipments and staffs behaviour (See Table 4.43). On the other hand, in the undergraduate students group it is seen that library resources, facilities and staff related attributes are much problematic (see Table 4.45). The gap differences of the graduate and undergraduate students are closer than the gap difference of faculty.

At IUBL, i.e. private university library, the result reveals that by individual group of user, all Expected Services are also lagging behind the Perceived or Actual Service Level other than the attribute "Assuring users of the accuracy and confidentiality of their personal information" in graduate group though the gap sizes are not too large (see Table 4.46, 4.48, 4.50). When the gap sized are ranked from high to low, in the faculty group

"Collection & Access", "Tangibles" and "Library as Place" dimensions are in the top five ranks, for the graduate group "Collection & Access", "Tangibles", and "Empathy" are in the top five rank. For the undergraduate group "Collection & Access", "Tangibles", and "Library as Place" are in the top five ranks. So, there are a little bit similarities of each group on Expectation and Perception of services where "Collection & Access" and "Tangibles" are common. In each group, more or less the result (see Table 4.47, 4.49 and 4.51) shows that top five attribute in these groups are related to library resources and facilities. However, the gap differences are comparatively low in case of graduate student group and large gaps are in the faculty group.

Table 4.40

Faculty DUL (ES Mean, PS Mean and Mean Difference)

ID	Order	Statements	ES Mean	SD	PS Mean	SD	Mean Diff
CA-6	1	Required resources are available	6.84	0.51	3.81	1.31	3.03
EM-1	2	Convenient opening hours (closing and opening hours)	6.41	0.80	5.28	1.40	1.13
LP-1	3	A comfortable and inviting location	6.48	0.72	4.90	1.27	1.58
EM-2	4	Giving priority to the users interests	6.56	0.50	3.78	1.18	2.78
CA-1	5	Convenient access to library collection	6.63	0.55	3.94	1.29	2.69
CA-4	6	Library Website contains necessary information	6.56	0.62	3.38	1.45	3.19
CA-3	7	Library Online Catalogue is easy to understand and navigate	6.44	0.62	3.31	1.47	3.13
RS-3	8	Library staffs serve promptly to the users	6.50	0.51	3.81	1.35	2.69
TA-2	9	Facilities are visually appealing (such as computer, audiovisual etc.)	6.31	0.59	2.91	1.44	3.41
AS-4	10	Library staffs are always courteous	6.44	0.56	3.63	1.34	2.81
EM-3	11	Library staffs give individual attention to the users	6.19	0.69	3.28	1.59	2.91
LP-2	12	Space that enables quiet and calm study	6.56	0.56	3.48	1.36	3.08
TA-1	13	Equipments are modern and in good condition	6.41	0.71	3.16	1.42	3.25
CA-7	14	Resources are delivered timely	6.31	0.64	3.06	1.66	3.25
RS-1	15	Library staffs have willingness to help user	6.28	0.63	3.53	1.61	2.75
AS-1	16	Assuring users of the accuracy and confidentiality of their personal information	6.17	0.59	3.96	1.15	2.21
TA-3	17	Materials (such as brochures, statements or signs) associated with the services are visually appealing	6.00	0.68	3.73	1.41	2.27
CA-2	18	Digital or online resources can be accessed from PC	6.39	0.56	3.03	1.62	3.35
CA-5	19	Physical condition of resources in collection is good	6.38	0.55	3.68	1.51	2.70
RL-3	20	Library staffs provide services as promised	6.45	0.68	3.47	1.53	2.98
RS-2	21	Library staffs keep users informed about when services will be performed	6.23	0.56	3.23	1.57	2.99
EM-4	22	Library staffs understand the needs of the users	6.40	0.72	3.83	1.77	2.57
AS-2	23	Information I get from library resources meet the course need	6.55	0.57	3.58	1.59	2.97
RL-4	24	Providing services at the promised time	6.47	0.67	3.57	1.63	2.90
AS-5	25	Library staffs are knowledgeable to answer users query	6.29	0.78	3.83	1.53	2.46
RL-2	26	Library staffs provide services accurately with minimum interruption	6.20	0.48	3.46	1.29	2.74
RL-1	27	Dependability in handling user's service problems	5.79	1.08	3.37	1.60	2.42
RS-4	28	Readiness to respond to user's questions	6.29	0.66	3.74	1.43	2.54
EM-5	29	Library staffs who deals with users in a concerned or considerate manner	6.17	0.89	4.04	1.45	2.14
AS-3	30	It is easy to make a compliment, complaint or suggestion about condition	6.00	0.53	3.74	1.48	2.26

Table 4.41

Gap difference between ES and PS (Faculty DUL, ranked by gap size)

Order	Dimensions	ID	Statements	Mean Diff
1	Tangibles	TA-2	Facilities are visually appealing (such as computer, audiovisual etc.)	3.41
2	Collection & Access	CA-2	Digital or online resources can be accessed from PC	3.35
3	Tangibles	TA-1	Equipments are modern and in good condition	3.25
4	Collection & Access	CA-7	Resources are delivered timely	3.25
5	Collection & Access	CA-4	Library Website contains necessary information	3.19
6	Collection & Access	CA-3	Library Online Catalogue is easy to understand and navigate	3.13
7	Library as Place	LP-2	Space that enables quiet and calm study	3.08
8	Collection & Access	CA-6	Required resources are available	3.03
9	Responsiveness	RS-2	Library staffs keep users informed about when services will be performed	2.99
10	Reliability	RL-3	Library staffs provide services as promised	2.98
11	Assurance	AS-2	Information I get from library resources meet the course need	2.97
12	Empathy	EM-3	Library staffs give individual attention to the users	2.91
13	Reliability	RL-4	Providing services at the promised time	2.90
14	Assurance	AS-4	Library staffs are always courteous	2.81
15	Empathy	EM-2	Giving priority to the users interests	2.78
16	Responsiveness	RS-1	Library staffs have willingness to help user	2.75
17	Reliability	RL-2	Library staffs provide services accurately with minimum interruption	2.74
18	Collection & Access	CA-5	Physical condition of resources in collection is good	2.70
19	Collection & Access	CA-1	Convenient access to library collection	2.69
20	Responsiveness	RS-3	Library staffs serve promptly to the users	2.69
21	Empathy	EM-4	Library staffs understand the needs of the users	2.57
22	Responsiveness	RS-4	Readiness to respond to user's questions	2.54
23	Assurance	AS-5	Library staffs are knowledgeable to answer users query	2.46
24	Reliability	RL-1	Dependability in handling user's service problems	2.42
25	Tangibles	TA-3	Materials (such as brochures, statements or signs) associated with the services are visually appealing	2.27
26	Assurance	AS-3	It is easy to make a compliment, complaint or suggestion about condition	2.26
27	Assurance	AS-1	Assuring users of the accuracy and confidentiality of their personal information	2.21
28	Empathy	EM-5	Library staffs who deals with users in a concerned or considerate manner	2.14
29	Library as Place	LP-1	A comfortable and inviting location	1.58
30	Empathy	EM-1	Convenient opening hours (closing and opening hours)	1.13

Table 4.42

Graduate DUL (ES Mean, PS Mean and Mean Difference)

ID	Order	Statements	ES Mean	SD	PS Mean	SD	Mean Diff
CA-6	1	Required resources are available	6.15	1.19	4.35	1.37	1.80
EM-1	2	Convenient opening hours (closing and opening hours)	6.25	1.02	5.16	1.40	1.09
LP-1	3	A comfortable and inviting location	6.19	1.10	4.67	1.41	1.52
EM-2	4	Giving priority to the users interests	5.99	1.46	4.07	1.38	1.92
CA-1	5	Convenient access to library collection	6.01	1.19	4.02	1.33	1.99
CA-4	6	Library Website contains necessary information	6.14	1.39	3.81	1.67	2.33
CA-3	7	Library Online Catalogue is easy to understand and navigate	6.07	1.17	3.93	1.50	2.15
RS-3	8	Library staffs serve promptly to the users	6.24	0.98	3.64	1.34	2.60
TA-2	9	Facilities are visually appealing (such as computer, audiovisual etc.)	6.17	1.07	3.66	1.58	2.51
AS-4	10	Library staffs are always courteous	6.16	0.96	3.63	1.50	2.54
EM-3	11	Library staffs give individual attention to the users	6.04	1.32	3.70	1.48	2.35
LP-2	12	Space that enables quiet and calm study	6.26	0.93	4.22	1.43	2.05
TA-1	13	Equipments are modern and in good condition	6.31	0.91	3.58	1.44	2.73
CA-7	14	Resources are delivered timely	6.13	0.99	3.70	1.44	2.43
RS-1	15	Library staffs have willingness to help user	6.25	1.21	3.74	1.48	2.52
AS-1	16	Assuring users of the accuracy and confidentiality of their personal information	5.98	1.17	3.87	1.40	2.11
TA-3	17	Materials (such as brochures, statements or signs) associated with the services are visually appealing	6.14	1.00	3.69	1.43	2.44
CA-2	18	Digital or online resources can be accessed from PC	6.22	0.94	3.46	1.55	2.76
CA-5	19	Physical condition of resources in collection is good	6.28	0.78	3.76	1.60	2.52
RL-3	20	Library staffs provide services as promised	6.15	0.99	3.70	1.38	2.45
RS-2	21	Library staffs keep users informed about when services will be performed	6.08	1.14	3.70	1.48	2.38
EM-4	22	Library staffs understand the needs of the users	6.25	1.07	3.88	1.62	2.37
AS-2	23	Information I get from library resources meet the course need	6.20	0.90	3.75	1.38	2.44
RL-4	24	Providing services at the promised time	6.09	0.98	3.79	1.46	2.31
AS-5	25	Library staffs are knowledgeable to answer users query	6.14	1.05	3.67	1.53	2.47
RL-2	26	Library staffs provide services accurately with minimum interruption	6.07	1.05	3.71	1.47	2.36
RL-1	27	Dependability in handling user's service problems	5.85	1.22	3.79	1.44	2.05
RS-4	28	Readiness to respond to user's questions	6.18	1.04	3.51	1.44	2.67
EM-5	29	Library staffs who deals with users in a concerned or considerate manner	6.27	0.82	3.68	1.39	2.59
AS-3	30	It is easy to make a compliment, complaint or suggestion about condition	6.13	0.96	3.83	1.54	2.29

Table 4.43

Gap difference between ES and PS (Graduate DUL, ranked by gap size)

Order	Dimensions	ID	Statements	Mean Diff
1	Collection & Access	CA-2	Digital or online resources can be accessed from PC	2.76
2	Tangibles	TA-1	Equipments are modern and in good condition	2.73
3	Responsiveness	RS-4	Readiness to respond to user's questions	2.67
4	Responsiveness	RS-3	Library staffs serve promptly to the users	2.60
5	Empathy	EM-5	Library staffs who deals with users in a concerned or considerate manner	2.59
6	Assurance	AS-4	Library staffs are always courteous	2.54
7	Responsiveness	RS-1	Library staffs have willingness to help user	2.52
8	Collection & Access	CA-5	Physical condition of resources in collection is good	2.52
9	Tangibles	TA-2	Facilities are visually appealing (such as computer, audiovisual etc.)	2.51
10	Assurance	AS-5	Library staffs are knowledgeable to answer users query	2.47
11	Reliability	RL-3	Library staffs provide services as promised	2.45
12	Tangibles	TA-3	Materials (such as brochures, statements or signs) associated with the services are visually appealing	2.44
13	Assurance	AS-2	Information I get from library resources meet the course need	2.44
14	Collection & Access	CA-7	Resources are delivered timely	2.43
15	Responsiveness	RS-2	Library staffs keep users informed about when services will be performed	2.38
16	Empathy	EM-4	Library staffs understand the needs of the users	2.37
17	Reliability	RL-2	Library staffs provide services accurately with minimum interruption	2.36
18	Empathy	EM-3	Library staffs give individual attention to the users	2.35
19	Collection & Access	CA-4	Library Website contains necessary information	2.33
20	Reliability	RL-4	Providing services at the promised time	2.31
21	Assurance	AS-3	It is easy to make a compliment, complaint or suggestion about condition	2.29
22	Collection & Access	CA-3	Library Online Catalogue is easy to understand and navigate	2.15
23	Assurance	AS-1	Assuring users of the accuracy and confidentiality of their personal information	2.11
24	Library as Place	LP-2	Space that enables quiet and calm study	2.05
25	Reliability	RL-1	Dependability in handling user's service problems	2.05
26	Collection & Access	CA-1	Convenient access to library collection	1.99
27	Empathy	EM-2	Giving priority to the users interests	1.92
28	Collection & Access	CA-6	Required resources are available	1.80
29	Library as Place	LP-1	A comfortable and inviting location	1.52
30	Empathy	EM-1	Convenient opening hours (closing and opening hours)	1.09

Table 4.44

Undergraduate DUL (ES Mean, PS Mean and Mean Difference)

ID	Order	Statements	ES Mean	SD	MS Mean	SD	Mean Diff
CA-6	1	Required resources are available	6.09	1.22	4.68	1.42	1.41
EM-1	2	Convenient opening hours (closing and opening hours)	6.16	1.04	5.27	1.32	0.89
LP-1	3	A comfortable and inviting location	6.18	1.08	4.84	1.37	1.33
EM-2	4	Giving priority to the users interests	6.07	1.08	4.41	1.41	1.66
CA-1	5	Convenient access to library collection	6.12	1.23	4.34	1.49	1.78
CA-4	6	Library Website contains necessary information	6.17	1.15	3.86	1.72	2.30
CA-3	7	Library Online Catalogue is easy to understand and navigate	6.04	1.18	4.16	1.69	1.88
RS-3	8	Library staffs serve promptly to the users	5.94	1.20	4.26	1.61	1.68
TA-2	9	Facilities are visually appealing (such as computer, audiovisual etc.)	6.02	1.27	3.83	1.78	2.19
AS-4	10	Library staffs are always courteous	5.94	1.22	4.26	1.68	1.68
EM-3	11	Library staffs give individual attention to the users	6.08	1.12	4.13	1.62	1.95
LP-2	12	Space that enables quiet and calm study	6.13	1.19	4.82	1.41	1.31
TA-1	13	Equipments are modern and in good condition	6.15	1.24	4.21	1.68	1.95
CA-7	14	Resources are delivered timely	6.04	1.10	4.37	1.60	1.67
RS-1	15	Library staffs have willingness to help user	6.01	1.15	4.20	1.64	1.80
AS-1	16	Assuring users of the accuracy and confidentiality of their personal information	5.87	1.08	4.38	1.48	1.48
TA-3	17	Materials (such as brochures, statements or signs) associated with the services are visually appealing	5.91	1.10	4.12	1.62	1.79
CA-2	18	Digital or online resources can be accessed from PC	6.04	1.14	3.71	1.76	2.33
CA-5	19	Physical condition of resources in collection is good	6.10	1.12	4.19	1.68	1.91
RL-3	20	Library staffs provide services as promised	5.98	1.15	4.30	1.61	1.69
RS-2	21	Library staffs keep users informed about when services will be performed	5.83	1.06	4.35	1.61	1.48
EM-4	22	Library staffs understand the needs of the users	6.10	1.03	4.19	1.63	1.91
AS-2	23	Information I get from library resources meet the course need	6.06	1.11	4.36	1.64	1.70
RL-4	24	Providing services at the promised time	5.99	1.07	4.23	1.52	1.76
AS-5	25	Library staffs are knowledgeable to answer users query	6.06	1.10	4.08	1.54	1.98
RL-2	26	Library staffs provide services accurately with minimum interruption	5.73	1.23	4.25	1.55	1.49
RL-1	27	Dependability in handling user's service problems	5.84	1.17	4.38	1.63	1.46
RS-4	28	Readiness to respond to user's questions	5.99	1.04	4.23	1.60	1.76
EM-5	29	Library staffs who deals with users in a concerned or considerate manner	6.01	0.98	4.20	1.59	1.81
AS-3	30	It is easy to make a compliment, complaint or suggestion about condition	5.90	1.08	4.30	1.58	1.60

Table 4.45

Gap difference between ES and PS (Under graduate DUL, ranked by gap size)

Order	Dimensions	ID	Statements	Mean Diff
1	Collection & Access	CA-2	Digital or online resources can be accessed from PC	2.33
2	Collection & Access	CA-4	Library Website contains necessary information	2.30
3	Tangibles	TA-2	Facilities are visually appealing (such as computer, audiovisual etc.)	2.19
4	Assurance	AS-5	Library staffs are knowledgeable to answer users query	1.98
5	Empathy	EM-3	Library staffs give individual attention to the users	1.95
6	Tangibles	TA-1	Equipments are modern and in good condition	1.95
7	Collection & Access	CA-5	Physical condition of resources in collection is good	1.91
8	Empathy	EM-4	Library staffs understand the needs of the users	1.91
9	Collection & Access	CA-3	Library Online Catalogue is easy to understand and navigate	1.88
10	Empathy	EM-5	Library staffs who deals with users in a concerned or considerate manner	1.81
11	Responsiveness	RS-1	Library staffs have willingness to help user	1.80
12	Tangibles	TA-3	Materials (such as brochures, statements or signs) associated with the services are visually appealing	1.79
13	Collection & Access	CA-1	Convenient access to library collection	1.78
14	Reliability	RL-4	Providing services at the promised time	1.76
15	Responsiveness	RS-4	Readiness to respond to user's questions	1.76
16	Assurance	AS-2	Information I get from library resources meet the course need	1.70
17	Reliability	RL-3	Library staffs provide services as promised	1.69
18	Responsiveness	RS-3	Library staffs serve promptly to the users	1.68
19	Assurance	AS-4	Library staffs are always courteous	1.68
20	Collection & Access	CA-7	Resources are delivered timely	1.67
21	Empathy	EM-2	Giving priority to the users interests	1.66
22	Assurance	AS-3	It is easy to make a compliment, complaint or suggestion about condition	1.60
23	Reliability	RL-2	Library staffs provide services accurately with minimum interruption	1.49
24	Assurance	AS-1	Assuring users of the accuracy and confidentiality of their personal information	1.48
25	Responsiveness	RS-2	Library staffs keep users informed about when services will be performed	1.48
26	Reliability	RL-1	Dependability in handling user's service problems	1.46
27	Collection & Access	CA-6	Required resources are available	1.41
28	Library as Place	LP-1	A comfortable and inviting location	1.33
29	Library as Place	LP-2	Space that enables quiet and calm study	1.31
30	Empathy	EM-1	Convenient opening hours (closing and opening hours)	0.89

Table 4.46

Faculty IUBL (ES Mean, PS Mean and Mean Difference)

ID	Order	Statements	ES Mean	SD	PS Mean	SD	Mean Diff
CA-6	1	Required resources are available	5.90	1.45	4.41	1.32	1.48
EM-1	2	Convenient opening hours (closing and opening hours)	6.21	1.15	5.79	1.21	0.41
LP-1	3	A comfortable and inviting location	5.97	1.30	4.83	1.56	1.13
EM-2	4	Giving priority to the users interests	5.83	1.39	5.03	1.32	0.80
CA-1	5	Convenient access to library collection	6.00	1.39	5.30	1.26	0.70
CA-4	6	Library Website contains necessary information	5.73	1.57	4.70	1.62	1.03
CA-3	7	Library Online Catalogue is easy to understand and navigate	5.70	1.51	5.03	1.35	0.67
RS-3	8	Library staffs serve promptly to the users	6.43	0.77	6.13	1.07	0.30
TA-2	9	Facilities are visually appealing (such as computer, audiovisual etc.)	5.62	1.42	4.62	1.50	1.00
AS-4	10	Library staffs are always courteous	6.27	0.74	5.93	1.05	0.33
EM-3	11	Library staffs give individual attention to the users	6.20	0.96	5.73	1.14	0.47
LP-2	12	Space that enables quiet and calm study	5.86	1.64	5.07	1.41	0.80
TA-1	13	Equipments are modern and in good condition	5.72	1.60	4.44	1.76	1.28
CA-7	14	Resources are delivered timely	5.86	1.38	4.83	1.47	1.03
RS-1	15	Library staffs have willingness to help user	6.20	0.96	5.70	1.32	0.50
AS-1	16	Assuring users of the accuracy and confidentiality of their personal information	5.90	1.42	5.43	1.36	0.47
TA-3	17	Materials (such as brochures, statements or signs) associated with the services are visually appealing	5.57	1.57	4.52	1.27	1.05
CA-2	18	Digital or online resources can be accessed from PC	6.03	1.52	4.83	1.65	1.21
CA-5	19	Physical condition of resources in collection is good	6.07	1.14	5.03	1.22	1.03
RL-3	20	Library staffs provide services as promised	6.10	1.06	5.17	1.37	0.93
RS-2	21	Library staffs keep users informed about when services will be performed	5.72	1.60	4.73	1.68	0.99
EM-4	22	Library staffs understand the needs of the users	5.97	1.40	5.00	1.41	0.97
AS-2	23	Information I get from library resources meet the course need	6.13	1.53	5.17	1.72	0.97
RL-4	24	Providing services at the promised time	5.86	1.30	5.07	1.41	0.79
AS-5	25	Library staffs are knowledgeable to answer users query	6.10	1.35	5.38	1.42	0.72
RL-2	26	Library staffs provide services accurately with minimum interruption	6.07	1.19	5.17	1.39	0.90
RL-1	27	Dependability in handling user's service problems	5.90	1.26	5.14	1.30	0.75
RS-4	28	Readiness to respond to user's questions	6.20	0.92	5.63	1.13	0.57
EM-5	29	Library staffs who deals with users in a concerned or considerate manner	6.14	1.19	5.60	1.16	0.54
AS-3	30	It is easy to make a compliment, complaint or suggestion about condition	5.93	1.46	5.28	1.58	0.66

Table 4.47

Gap difference between ES and PS (Faculty IUBL, ranked by gap size)

Order	Dimensions	ID	Statements	Mean Diff
1	Collection & Access	CA-6	Required resources are available	1.48
2	Tangibles	TA-1	Equipments are modern and in good condition	1.28
3	Collection & Access	CA-2	Digital or online resources can be accessed from PC	1.21
4	Library as Place	LP-1	A comfortable and inviting location	1.13
5	Tangibles	TA-3	Materials (such as brochures, statements or signs) associated with the services are visually appealing	1.05
6	Collection & Access	CA-4	Library Website contains necessary information	1.03
7	Collection & Access	CA-7	Resources are delivered timely	1.03
8	Collection & Access	CA-5	Physical condition of resources in collection is good	1.03
9	Tangibles	TA-2	Facilities are visually appealing (such as computer, audiovisual etc.)	1.00
10	Responsiveness	RS-2	Library staffs keep users informed about when services will be performed	0.99
11	Empathy	EM-4	Library staffs understand the needs of the users	0.97
12	Assurance	AS-2	Information I get from library resources meet the course need	0.97
13	Reliability	RL-3	Library staffs provide services as promised	0.93
14	Reliability	RL-2	Library staffs provide services accurately with minimum interruption	0.90
15	Empathy	EM-2	Giving priority to the users interests	0.80
16	Library as Place	LP-2	Space that enables quiet and calm study	0.80
17	Reliability	RL-4	Providing services at the promised time	0.79
18	Reliability	RL-1	Dependability in handling user's service problems	0.75
19	Assurance	AS-5	Library staffs are knowledgeable to answer users query	0.72
20	Collection & Access	CA-1	Convenient access to library collection	0.70
21	Collection & Access	CA-3	Library Online Catalogue is easy to understand and navigate	0.67
22	Assurance	AS-3	It is easy to make a compliment, complaint or suggestion about condition	0.66
23	Responsiveness	RS-4	Readiness to respond to user's questions	0.57
24	Empathy	EM-5	Library staffs who deals with users in a concerned or considerate manner	0.54
25	Responsiveness	RS-1	Library staffs have willingness to help user	0.50
26	Empathy	EM-3	Library staffs give individual attention to the users	0.47
27	Assurance	AS-1	Assuring users of the accuracy and confidentiality of their personal information	0.47
28	Empathy	EM-1	Convenient opening hours (closing and opening hours)	0.41
29	Assurance	AS-4	Library staffs are always courteous	0.33
30	Responsiveness	RS-3	Library staffs serve promptly to the users	0.30

Table 4.48

Graduate IUBL (ES Mean, PS Mean and Mean Difference)

ID	Order	Statements	ES Mean	SD	PS Mean	SD	Mean Diff
CA-6	1	Required resources are available	5.73	0.97	4.74	0.98	0.98
EM-1	2	Convenient opening hours (closing and opening hours)	5.68	0.96	5.14	1.29	0.55
LP-1	3	A comfortable and inviting location	5.63	1.18	5.40	1.28	0.23
EM-2	4	Giving priority to the users interests	5.52	1.21	4.82	1.24	0.70
CA-1	5	Convenient access to library collection	5.30	1.39	5.07	1.28	0.23
CA-4	6	Library Website contains necessary information	5.51	1.30	5.19	1.28	0.33
CA-3	7	Library Online Catalogue is easy to understand and navigate	5.26	1.27	4.86	1.21	0.40
RS-3	8	Library staffs serve promptly to the users	5.34	1.27	5.00	1.35	0.34
TA-2	9	Facilities are visually appealing (such as computer, audiovisual etc.)	5.32	1.29	4.56	1.37	0.76
AS-4	10	Library staffs are always courteous	5.64	1.35	5.16	1.31	0.48
EM-3	11	Library staffs give individual attention to the users	5.52	1.30	5.11	1.37	0.41
LP-2	12	Space that enables quiet and calm study	5.48	1.39	4.91	1.38	0.57
TA-1	13	Equipments are modern and in good condition	5.57	1.25	5.00	1.29	0.57
CA-7	14	Resources are delivered timely	5.45	1.13	5.16	1.14	0.30
RS-1	15	Library staffs have willingness to help user	5.52	1.15	5.21	1.25	0.31
AS-1	16	Assuring users of the accuracy and confidentiality of their personal information	5.27	1.21	5.30	1.32	0.02
TA-3	17	Materials (such as brochures, statements or signs) associated with the services are visually appealing	5.44	1.31	4.83	1.29	0.61
CA-2	18	Digital or online resources can be accessed from PC	5.68	1.14	5.18	1.24	0.50
CA-5	19	Physical condition of resources in collection is good	5.44	1.37	4.86	1.39	0.58
RL-3	20	Library staffs provide services as promised	5.64	1.24	5.07	1.35	0.57
RS-2	21	Library staffs keep users informed about when services will be performed	5.28	1.30	5.02	1.32	0.26
EM-4	22	Library staffs understand the needs of the users	5.16	1.49	5.09	1.32	0.07
AS-2	23	Information I get from library resources meet the course need	5.73	1.00	5.16	1.22	0.57
RL-4	24	Providing services at the promised time	5.77	1.07	5.36	1.20	0.40
AS-5	25	Library staffs are knowledgeable to answer users query	5.35	1.27	5.19	1.50	0.16
RL-2	26	Library staffs provide services accurately with minimum interruption	5.52	1.21	5.14	1.36	0.39
RL-1	27	Dependability in handling user's service problems	5.15	1.26	4.76	1.25	0.38
RS-4	28	Readiness to respond to user's questions	5.55	1.07	5.39	1.08	0.16
EM-5	29	Library staffs who deals with users in a concerned or considerate manner	5.52	1.19	5.43	1.21	0.09
AS-3	30	It is easy to make a compliment, complaint or suggestion about condition	5.41	1.28	5.05	1.24	0.36

Table 4.49

Gap difference between ES and PS (Graduate IUBL, ranked by gap size)

Order	Dimensions	ID	Statements	Mean Diff
1	Collection & Access	CA-6	Required resources are available	0.98
2	Tangibles	TA-2	Facilities are visually appealing (such as computer, audiovisual etc.)	0.76
3	Empathy	EM-2	Giving priority to the users interests	0.70
4	Tangibles	TA-3	Materials (such as brochures, statements or signs) associated with the services are visually appealing	0.61
5	Collection & Access	CA-5	Physical condition of resources in collection is good	0.58
6	Library as Place	LP-2	Space that enables quiet and calm study	0.57
7	Tangibles	TA-1	Equipments are modern and in good condition	0.57
8	Reliability	RL-3	Library staffs provide services as promised	0.57
9	Assurance	AS-2	Information I get from library resources meet the course need	0.57
10	Empathy	EM-1	Convenient opening hours (closing and opening hours)	0.55
11	Collection & Access	CA-2	Digital or online resources can be accessed from PC	0.50
12	Assurance	AS-4	Library staffs are always courteous	0.48
13	Empathy	EM-3	Library staffs give individual attention to the users	0.41
14	Collection & Access	CA-3	Library Online Catalogue is easy to understand and navigate	0.40
15	Reliability	RL-4	Providing services at the promised time	0.40
16	Reliability	RL-2	Library staffs provide services accurately with minimum interruption	0.39
17	Reliability	RL-1	Dependability in handling user's service problems	0.38
18	Assurance	AS-3	It is easy to make a compliment, complaint or suggestion about condition	0.36
19	Responsiveness	RS-3	Library staffs serve promptly to the users	0.34
20	Collection & Access	CA-4	Library Website contains necessary information	0.33
21	Responsiveness	RS-1	Library staffs have willingness to help user	0.31
22	Collection & Access	CA-7	Resources are delivered timely	0.30
23	Responsiveness	RS-2	Library staffs keep users informed about when services will be performed	0.26
24	Library as Place	LP-1	A comfortable and inviting location	0.23
25	Collection & Access	CA-1	Convenient access to library collection	0.23
26	Assurance	AS-5	Library staffs are knowledgeable to answer users query	0.16
27	Responsiveness	RS-4	Readiness to respond to user's questions	0.16
28	Empathy	EM-5	Library staffs who deals with users in a concerned or considerate manner	0.09
29	Empathy	EM-4	Library staffs understand the needs of the users	0.07
30	Assurance	AS-1	Assuring users of the accuracy and confidentiality of their personal information	-0.02

Table 4.50

Undergraduate IUBL (ES Mean, PS Mean and Mean Difference)

ID	Order	Statements	ES Mean	SD	PS Mean	SD	Mean Diff
CA-6	1	Required resources are available	5.96	1.15	4.84	1.27	1.12
EM-1	2	Convenient opening hours (closing and opening hours)	6.03	0.99	5.55	1.13	0.48
LP-1	3	A comfortable and inviting location	6.06	0.97	5.43	1.31	0.63
EM-2	4	Giving priority to the users interests	5.82	1.09	4.94	1.22	0.88
CA-1	5	Convenient access to library collection	5.96	1.01	5.13	1.23	0.83
CA-4	6	Library Website contains necessary information	6.00	1.21	4.97	1.51	1.03
CA-3	7	Library Online Catalogue is easy to understand and navigate	5.89	1.03	4.99	1.46	0.90
RS-3	8	Library staffs serve promptly to the users	5.94	0.98	5.41	1.36	0.53
TA-2	9	Facilities are visually appealing (such as computer, audiovisual etc.)	5.86	1.04	4.80	1.26	1.06
AS-4	10	Library staffs are always courteous	5.97	1.06	5.38	1.34	0.59
EM-3	11	Library staffs give individual attention to the users	5.87	1.00	5.43	1.38	0.44
LP-2	12	Space that enables quiet and calm study	6.06	1.10	5.10	1.45	0.96
TA-1	13	Equipments are modern and in good condition	6.08	1.02	4.97	1.45	1.10
CA-7	14	Resources are delivered timely	6.01	0.87	5.06	1.44	0.95
RS-1	15	Library staffs have willingness to help user	5.96	1.05	5.51	1.22	0.45
AS-1	16	Assuring users of the accuracy and confidentiality of their personal information	5.72	1.06	5.38	1.26	0.34
TA-3	17	Materials (such as brochures, statements or signs) associated with the services are visually appealing	5.73	0.99	5.10	1.31	0.63
CA-2	18	Digital or online resources can be accessed from PC	5.96	1.18	5.14	1.39	0.82
CA-5	19	Physical condition of resources in collection is good	5.99	1.04	5.46	4.26	0.54
RL-3	20	Library staffs provide services as promised	5.86	1.11	5.25	1.27	0.60
RS-2	21	Library staffs keep users informed about when services will be performed	5.76	1.12	5.27	1.29	0.49
EM-4	22	Library staffs understand the needs of the users	5.99	1.00	5.30	1.22	0.69
AS-2	23	Information I get from library resources meet the course need	6.12	1.03	5.17	1.28	0.95
RL-4	24	Providing services at the promised time	5.92	1.03	5.35	1.22	0.57
AS-5	25	Library staffs are knowledgeable to answer users query	6.03	0.92	5.50	1.23	0.52
RL-2	26	Library staffs provide services accurately with minimum interruption	5.99	0.90	5.33	1.21	0.66
RL-1	27	Dependability in handling user's service problems	5.62	0.99	5.15	1.26	0.47
RS-4	28	Readiness to respond to user's questions	5.88	0.95	5.28	1.27	0.60
EM-5	29	Library staffs who deals with users in a concerned or considerate manner	6.02	0.98	5.44	1.25	0.58
AS-3	30	It is easy to make a compliment, complaint or suggestion about condition	5.93	1.07	5.17	1.43	0.76

Table 4.51

Gap difference between ES and PS (Undergraduate IUBL, ranked by gap size)

Order	Dimensions	ID	Statements	Mean Diff
1	Collection & Access	CA-6	Required resources are available	1.12
2	Tangibles	TA-1	Equipments are modern and in good condition	1.10
3	Tangibles	TA-2	Facilities are visually appealing (such as computer, audiovisual etc.)	1.06
4	Collection & Access	CA-4	Library Website contains necessary information	1.03
5	Library as Place	LP-2	Space that enables quiet and calm study	0.96
6	Collection & Access	CA-7	Resources are delivered timely	0.95
7	Assurance	AS-2	Information I get from library resources meet the course need	0.95
8	Collection & Access	CA-3	Library Online Catalogue is easy to understand and navigate	0.90
9	Empathy	EM-2	Giving priority to the users interests	0.88
10	Collection & Access	CA-1	Convenient access to library collection	0.83
11	Collection & Access	CA-2	Digital or online resources can be accessed from PC	0.82
12	Assurance	AS-3	It is easy to make a compliment, complaint or suggestion about condition	0.76
13	Empathy	EM-4	Library staffs understand the needs of the users	0.69
14	Reliability	RL-2	Library staffs provide services accurately with minimum interruption	0.66
15	Library as Place	LP-1	A comfortable and inviting location	0.63
16	Tangibles	TA-3	Materials (such as brochures, statements or signs) associated with the services are visually appealing	0.63
17	Reliability	RL-3	Library staffs provide services as promised	0.60
18	Responsiveness	RS-4	Readiness to respond to user's questions	0.60
19	Assurance	AS-4	Library staffs are always courteous	0.59
20	Empathy	EM-5	Library staffs who deals with users in a concerned or considerate manner	0.58
21	Reliability	RL-4	Providing services at the promised time	0.57
22	Collection & Access	CA-5	Physical condition of resources in collection is good	0.54
23	Responsiveness	RS-3	Library staffs serve promptly to the users	0.53
24	Assurance	AS-5	Library staffs are knowledgeable to answer users query	0.52
25	Responsiveness	RS-2	Library staffs keep users informed about when services will be performed	0.49
26	Empathy	EM-1	Convenient opening hours (closing and opening hours)	0.48
27	Reliability	RL-1	Dependability in handling user's service problems	0.47
28	Responsiveness	RS-1	Library staffs have willingness to help user	0.45
29	Empathy	EM-3	Library staffs give individual attention to the users	0.44
30	Assurance	AS-1	Assuring users of the accuracy and confidentiality of their personal information	0.34

4.5 Users' Expectation for Excellent Service Quality by Individual Group of Users

At DUL, i.e. the public university library, by individual group of user, to see the Expected Service, the mean values of Expected Service levels are ranked respectively from highest to lowest order. Though there are some commonalities in their expectations, like some expectations or attributes are common in faculties with graduates or undergraduates, again there are some commonalities between graduates and undergraduates and vice-versa.

It is seen from the top five expectations of the faculty group that they expect more resources what they use to get or require. There is scarcity of resources; their interests are not getting priority. Along with this, in this age of information communication and technology the library website should contain more information and the library environment should be more calm and quite (See Table 4. 52). In graduate students group the top five ranking shows that the students expect more modern equipments like computer, photocopier, etc. They expect new resources as the existing resources are not in good condition. They think that the behaviour of the library staff should be well. They also expect quite study place like their faculty and they need more convenient timing for their library use (See Table 4.53). In the undergraduate student group, if we analysis top five ranking we can reveal that they expect comfortable location of the library like their faculties, they also expect more information in the website and the library as a quiet study place. Like the graduates, they also expect better library timing and up-to-date equipments (See Table 4.54).

At IUBL, i.e. the private university library by the individual group of user, to examine the Expected Service, the mean values are also ranked. Here are also some similarities and dissimilarities in their expectation to compare with each group.

It is quite interesting in the group of faculty regarding their expectation. Most of their top ranking attributes are with library staffs; they assessed that library staffs are most problematic to them. They expect library staffs to be more prompt, more courteous, more attentive and willingness. They also expect convenient opening hour though most of the faculty use library once a month (See Table 4.24 & Table 4.56). It is quite surprising that the Expectation Level of the graduate students are not much high. Their top five expectations are regarding library staffs service commitment, availability of resources, assurance of resources to their course need, suitable timing and convenient access to the electronic resources (See Table 4.57). For the undergraduate students it is in the top five ranking that like graduate students they expect the library resources should meet their course need and suitable timing. Along with, they also expect modern equipments, quiet study environment and suitable location of the library (See Table 4.58).

Table 4.52

Expected Service Level of Faculty at DUL (ranked by Means)

Order	Statements	Valid	Missing	Mean	SD
1	Required resources are available	32	0	6.84	0.51
2	Convenient access to library collection	32	0	6.63	0.55
3	Giving priority to the users interests	32	0	6.56	0.50
4	Library Website contains necessary information	32	0	6.56	0.62
5	Space that enables quiet and calm study	32	0	6.56	0.56
6	Information I get from library resources meet the course need	31	1	6.55	0.57
7	Library staffs serve promptly to the users	32	0	6.50	0.51
8	A comfortable and inviting location	31	1	6.48	0.72
9	Providing services at the promised time	32	0	6.47	0.67
10	Library staffs provide services as promised	31	1	6.45	0.68
11	Library Online Catalogue is easy to understand and navigate	32	0	6.44	0.62
12	Library staffs are always courteous	32	0	6.44	0.56
13	Convenient opening hours (closing and opening hours)	32	0	6.41	0.80
14	Equipments are modern and in good condition	32	0	6.41	0.71
15	Library staffs understand the needs of the users	30	2	6.40	0.72
16	Digital or online resources can be accessed from PC	31	1	6.39	0.56
17	Physical condition of resources in collection is good	32	0	6.38	0.55
18	Facilities are visually appealing (such as computer, audiovisual etc.)	32	0	6.31	0.59
19	Resources are delivered timely	32	0	6.31	0.64
20	Library staffs are knowledgeable to answer users query	31	1	6.29	0.78
21	Readiness to respond to user's questions	28	4	6.29	0.66
22	Library staffs have willingness to help user	32	0	6.28	0.63
23	Library staffs keep users informed about when services will be performed	31	1	6.23	0.56
24	Library staffs provide services accurately with minimum interruption	30	2	6.20	0.48
25	Library staffs give individual attention to the users	32	0	6.19	0.69
26	Assuring users of the accuracy and confidentiality of their personal information	30	2	6.17	0.59
27	Library staffs who deals with users in a concerned or considerate manner	29	3	6.17	0.89
28	Materials (such as brochures, statements or signs) associated with the services are visually appealing	31	1	6.00	0.68
29	It is easy to make a compliment, complaint or suggestion about condition	29	3	6.00	0.53
30	Dependability in handling user's service problems	29	3	5.79	1.08

Table 4.53

Expected Service Level of Graduate Students at DUL (ranked by Means)

Order	Statements	Valid	Missing	Mean	SD
1	Equipments are modern and in good condition	111	1	6.31	0.91
2	Physical condition of resources in collection is good	111	1	6.28	0.78
3	Library staffs who deals with users in a concerned or considerate manner	109	3	6.27	0.82
4	Space that enables quiet and calm study	111	1	6.26	0.93
5	Convenient opening hours (closing and opening hours)	108	4	6.25	1.02
6	Library staffs have willingness to help user	110	2	6.25	1.21
7	Library staffs understand the needs of the users	111	1	6.25	1.07
8	Library staffs serve promptly to the users	110	2	6.24	0.98
9	Digital or online resources can be accessed from PC	112	0	6.22	0.94
10	Information I get from library resources meet the course need	112	0	6.20	0.90
11	A comfortable and inviting location	110	2	6.19	1.10
12	Readiness to respond to user's questions	107	5	6.18	1.04
13	Facilities are visually appealing (such as computer, audiovisual etc.)	111	1	6.17	1.07
14	Library staffs are always courteous	112	0	6.16	0.96
15	Required resources are available	112	0	6.15	1.19
16	Library staffs provide services as promised	110	2	6.15	0.99
17	Library Website contains necessary information	109	3	6.14	1.39
18	Materials (such as brochures, statements or signs) associated with the services are visually appealing	111	1	6.14	1.00
19	Library staffs are knowledgeable to answer users query	111	1	6.14	1.05
20	Resources are delivered timely	112	0	6.13	0.99
21	It is easy to make a compliment, complaint or suggestion about condition	112	0	6.13	0.96
22	Providing services at the promised time	109	3	6.09	0.98
23	Library staffs keep users informed about when services will be performed	109	3	6.08	1.14
24	Library Online Catalogue is easy to understand and navigate	109	3	6.07	1.17
25	Library staffs provide services accurately with minimum interruption	110	2	6.07	1.05
26	Library staffs give individual attention to the users	112	0	6.04	1.32
27	Convenient access to library collection	111	1	6.01	1.19
28	Giving priority to the users interests	110	2	5.99	1.46
29	Assuring users of the accuracy and confidentiality of their personal information	110	2	5.98	1.17
30	Dependability in handling user's service problems	104	8	5.85	1.22

Table 4.54

Expected Service Level of Undergraduate Students at DUL (ranked by Means)

Order	Statements	Valid	Missing	Mean	SD
1	A comfortable and inviting location	168	2	6.18	1.08
2	Library Website contains necessary information	168	2	6.17	1.15
3	Convenient opening hours (closing and opening hours)	169	1	6.16	1.04
4	Equipments are modern and in good condition	169	1	6.15	1.24
5	Space that enables quiet and calm study	169	1	6.13	1.19
6	Convenient access to library collection	167	3	6.12	1.23
7	Physical condition of resources in collection is good	166	4	6.10	1.12
8	Library staffs understand the needs of the users	168	2	6.10	1.03
9	Required resources are available	169	1	6.09	1.22
10	Library staffs give individual attention to the users	168	2	6.08	1.12
11	Giving priority to the users interests	167	3	6.07	1.08
12	Information I get from library resources meet the course need	166	4	6.06	1.11
13	Library staffs are knowledgeable to answer users query	167	3	6.06	1.10
14	Library Online Catalogue is easy to understand and navigate	169	1	6.04	1.18
15	Resources are delivered timely	169	1	6.04	1.10
16	Digital or online resources can be accessed from PC	167	3	6.04	1.14
17	Facilities are visually appealing (such as computer, audiovisual etc.)	169	1	6.02	1.27
18	Library staffs have willingness to help user	169	1	6.01	1.15
19	Library staffs who deals with users in a concerned or considerate manner	154	16	6.01	0.98
20	Providing services at the promised time	168	2	5.99	1.07
21	Readiness to respond to user's questions	167	3	5.99	1.04
22	Library staffs provide services as promised	167	3	5.98	1.15
23	Library staffs serve promptly to the users	167	3	5.94	1.20
24	Library staffs are always courteous	168	2	5.94	1.22
25	Materials (such as brochures, statements or signs) associated with the services are visually appealing	160	10	5.91	1.10
26	It is easy to make a compliment, complaint or suggestion about condition	163	7	5.90	1.08
27	Assuring users of the accuracy and confidentiality of their personal information	163	7	5.87	1.08
28	Dependability in handling user's service problems	164	6	5.84	1.17
29	Library staffs keep users informed about when services will be performed	167	3	5.83	1.06
30	Library staffs provide services accurately with minimum interruption	157	13	5.73	1.23

We can get the following result after ranking the Mean value of all user groups. The ranked attributes of the Expected Services of DUL are as follows (Table 4.55):

Table 4.55

Expected Service Level of All Groups at DUL (ranked by Means)

Order	Statements	Valid	Missing	Mean	SD
1	Equipments are modern and in good condition	312	2	6.23	1.09
2	Convenient opening hours (closing and opening hours)	309	5	6.22	1.01
3	Space that enables quiet and calm study	312	2	6.22	1.06
4	A comfortable and inviting location	309	5	6.21	1.06
5	Library Website contains necessary information	309	5	6.20	1.20
6	Required resources are available	313	1	6.19	1.17
7	Physical condition of resources in collection is good	309	5	6.19	0.96
8	Library staffs understand the needs of the users	309	5	6.18	1.02
9	Information I get from library resources meet the course need	309	5	6.16	1.00
10	Digital or online resources can be accessed from PC	310	4	6.14	1.03
11	Convenient access to library collection	310	4	6.13	1.17
12	Library staffs have willingness to help user	311	3	6.12	1.14
13	Library staffs who deals with users in a concerned or considerate manner	292	22	6.12	0.92
14	Library staffs are knowledgeable to answer users query	309	5	6.11	1.05
15	Library staffs serve promptly to the users	309	5	6.10	1.08
16	Facilities are visually appealing (such as computer, audiovisual etc.)	312	2	6.10	1.15
17	Resources are delivered timely	313	1	6.10	1.02
18	Giving priority to the users interests	309	5	6.09	1.19
19	Library Online Catalogue is easy to understand and navigate	310	4	6.09	1.13
20	Library staffs provide services as promised	308	6	6.09	1.06
21	Readiness to respond to user's questions	302	12	6.09	1.02
22	Library staffs give individual attention to the users	312	2	6.08	1.16
23	Library staffs are always courteous	312	2	6.07	1.09
24	Providing services at the promised time	309	5	6.07	1.01
25	Materials (such as brochures, statements or signs) associated with the services are visually appealing	302	12	6.00	1.03
26	It is easy to make a compliment, complaint or suggestion about condition	304	10	5.99	1.00
27	Library staffs keep users informed about when services will be performed	307	7	5.96	1.06
28	Assuring users of the accuracy and confidentiality of their personal information	303	11	5.94	1.08
29	Library staffs provide services accurately with minimum interruption	297	17	5.91	1.12
30	Dependability in handling user's service problems	297	17	5.84	1.18

Table 4.56

Expected Service Level of Faculty at IUBL (ranked by Means)

Order	Statements	Valid	Missing	Mean	SD
1	Library staffs serve promptly to the users	30	0	6.43	0.77
2	Library staffs are always courteous	30	0	6.27	0.74
3	Convenient opening hours (closing and opening hours)	29	1	6.21	1.15
4	Library staffs give individual attention to the users	30	0	6.20	0.96
5	Library staffs have willingness to help user	30	0	6.20	0.96
6	Readiness to respond to user's questions	30	0	6.20	0.92
7	Library staffs who deals with users in a concerned or considerate manner	29	1	6.14	1.19
8	Information I get from library resources meet the course need	30	0	6.13	1.53
9	Library staffs provide services as promised	30	0	6.10	1.06
10	Library staffs are knowledgeable to answer users query	29	1	6.10	1.35
11	Physical condition of resources in collection is good	30	0	6.07	1.14
12	Library staffs provide services accurately with minimum interruption	29	1	6.07	1.19
13	Digital or online resources can be accessed from PC	30	0	6.03	1.52
14	Convenient access to library collection	30	0	6.00	1.39
15	A comfortable and inviting location	30	0	5.97	1.30
16	Library staffs understand the needs of the users	30	0	5.97	1.40
17	It is easy to make a compliment, complaint or suggestion about condition	29	1	5.93	1.46
18	Required resources are available	29	1	5.90	1.45
19	Assuring users of the accuracy and confidentiality of their personal information	30	0	5.90	1.42
20	Dependability in handling user's service problems	29	1	5.90	1.26
21	Space that enables quiet and calm study	29	1	5.86	1.64
22	Resources are delivered timely	28	2	5.86	1.38
23	Providing services at the promised time	29	1	5.86	1.30
24	Giving priority to the users interests	30	0	5.83	1.39
25	Library Website contains necessary information	30	0	5.73	1.57
26	Equipments are modern and in good condition	29	1	5.72	1.60
27	Library staffs keep users informed about when services will be performed	29	1	5.72	1.60
28	Library Online Catalogue is easy to understand and navigate	27	3	5.70	1.51
29	Facilities are visually appealing (such as computer, audiovisual etc.)	29	1	5.62	1.42
30	Materials (such as brochures, statements or signs) associated with the services are visually appealing	28	2	5.57	1.57

Table 4.57

Expected Service Level of Graduate Students at IUBL (ranked by Means)

Order	Statements	Valid	Missing	Mean	SD
1	Providing services at the promised time	43	1	5.77	1.07
2	Required resources are available	44	0	5.73	0.97
3	Information I get from library resources meet the course need	44	0	5.73	1.00
4	Convenient opening hours (closing and opening hours)	44	0	5.68	0.96
5	Digital or online resources can be accessed from PC	44	0	5.68	1.14
6	Library staffs are always courteous	44	0	5.64	1.35
7	Library staffs provide services as promised	44	0	5.64	1.24
8	A comfortable and inviting location	43	1	5.63	1.18
9	Equipments are modern and in good condition	44	0	5.57	1.25
10	Readiness to respond to user's questions	44	0	5.55	1.07
11	Giving priority to the users interests	44	0	5.52	1.21
12	Library staffs give individual attention to the users	44	0	5.52	1.30
13	Library staffs have willingness to help user	44	0	5.52	1.15
14	Library staffs provide services accurately with minimum interruption	44	0	5.52	1.21
15	Library staffs who deals with users in a concerned or considerate manner	44	0	5.52	1.19
16	Library Website contains necessary information	43	1	5.51	1.30
17	Space that enables quiet and calm study	44	0	5.48	1.39
18	Resources are delivered timely	44	0	5.45	1.13
19	Materials (such as brochures, statements or signs) associated with the services are visually appealing	43	1	5.44	1.31
20	Physical condition of resources in collection is good	43	1	5.44	1.37
21	It is easy to make a compliment, complaint or suggestion about condition	44	0	5.41	1.28
22	Library staffs are knowledgeable to answer users query	43	1	5.35	1.27
23	Library staffs serve promptly to the users	44	0	5.34	1.27
24	Facilities are visually appealing (such as computer, audiovisual etc.)	44	0	5.32	1.29
25	Convenient access to library collection	43	1	5.30	1.39
26	Library staffs keep users informed about when services will be performed	43	1	5.28	1.30
27	Assuring users of the accuracy and confidentiality of their personal information	44	0	5.27	1.21
28	Library Online Catalogue is easy to understand and navigate	43	1	5.26	1.27
29	Library staffs understand the needs of the users	43	1	5.16	1.49
30	Dependability in handling user's service problems	41	3	5.15	1.26

Table 4.58

Expected Service Level of Undergraduate Students at IUBL (ranked by Means)

Order	Statements	Valid	Missing	Mean	SD
1	Information I get from library resources meet the course need	158	1	6.12	1.03
2	Equipments are modern and in good condition	157	2	6.08	1.02
3	A comfortable and inviting location	157	2	6.06	0.97
4	Space that enables quiet and calm study	158	1	6.06	1.10
5	Convenient opening hours (closing and opening hours)	157	2	6.03	0.99
6	Library staffs are knowledgeable to answer users query	156	3	6.03	0.92
7	Library staffs who deals with users in a concerned or considerate manner	155	4	6.02	0.98
8	Resources are delivered timely	158	1	6.01	0.87
9	Library Website contains necessary information	157	2	6.00	1.21
10	Physical condition of resources in collection is good	156	3	5.99	1.04
11	Library staffs understand the needs of the users	158	1	5.99	1.00
12	Library staffs provide services accurately with minimum interruption	155	4	5.99	0.90
13	Library staffs are always courteous	157	2	5.97	1.06
14	Required resources are available	159	0	5.96	1.15
15	Convenient access to library collection	159	0	5.96	1.01
16	Library staffs have willingness to help user	158	1	5.96	1.05
17	Digital or online resources can be accessed from PC	157	2	5.96	1.18
18	Library staffs serve promptly to the users	157	2	5.94	0.98
19	It is easy to make a compliment, complaint or suggestion about condition	155	4	5.93	1.07
20	Providing services at the promised time	158	1	5.92	1.03
21	Library Online Catalogue is easy to understand and navigate	152	7	5.89	1.03
22	Readiness to respond to user's questions	155	4	5.88	0.95
23	Library staffs give individual attention to the users	158	1	5.87	1.00
24	Facilities are visually appealing (such as computer, audiovisual etc.)	156	3	5.86	1.04
25	Library staffs provide services as promised	154	5	5.86	1.11
26	Giving priority to the users interests	155	4	5.82	1.09
27	Library staffs keep users informed about when services will be performed	158	1	5.76	1.12
28	Materials (such as brochures, statements or signs) associated with the services are visually appealing	157	2	5.73	0.99
29	Assuring users of the accuracy and confidentiality of their personal information	156	3	5.72	1.06
30	Dependability in handling user's service problems	153	6	5.62	0.99

We can get the following result after ranking the mean value of all user groups. The ranked attributes of the Expected Services of IUBL are as follows (Table 4.59):

Table 4.59

Expected Service Level of All Groups at IUBL (ranked by Means)

Order	Statements	Valid	Missing	Mean	SD
1	Information I get from library resources meet the course need	232	1	6.05	1.11
2	Convenient opening hours (closing and opening hours)	230	3	5.99	1.01
3	A comfortable and inviting location	230	3	5.97	1.06
4	Library staffs are always courteous	231	2	5.94	1.10
5	Library staffs who deals with users in a concerned or considerate manner	228	5	5.94	1.06
6	Equipments are modern and in good condition	230	3	5.93	1.16
7	Space that enables quiet and calm study	231	2	5.92	1.25
8	Digital or online resources can be accessed from PC	231	2	5.92	1.22
9	Required resources are available	232	1	5.91	1.16
10	Library staffs have willingness to help user	232	1	5.91	1.08
11	Library staffs are knowledgeable to answer users query	228	5	5.91	1.08
12	Library staffs provide services accurately with minimum interruption	228	5	5.91	1.02
13	Physical condition of resources in collection is good	229	4	5.90	1.14
14	Library staffs serve promptly to the users	231	2	5.89	1.06
15	Resources are delivered timely	230	3	5.89	1.02
16	Providing services at the promised time	230	3	5.88	1.07
17	Library Website contains necessary information	230	3	5.87	1.29
18	Readiness to respond to user's questions	229	4	5.86	0.98
19	Library staffs provide services as promised	228	5	5.85	1.13
20	Convenient access to library collection	232	1	5.84	1.17
21	Library staffs give individual attention to the users	232	1	5.84	1.07
22	Library staffs understand the needs of the users	231	2	5.83	1.20
23	It is easy to make a compliment, complaint or suggestion about condition	228	5	5.83	1.18
24	Giving priority to the users interests	229	4	5.76	1.16
25	Library Online Catalogue is easy to understand and navigate	222	11	5.75	1.17
26	Facilities are visually appealing (such as computer, audiovisual etc.)	229	4	5.72	1.16
27	Library staffs keep users informed about when services will be performed	230	3	5.67	1.23
28	Assuring users of the accuracy and confidentiality of their personal information	230	3	5.66	1.16
29	Materials (such as brochures, statements or signs) associated with the services are visually appealing	228	5	5.65	1.14
30	Dependability in handling user's service problems	223	10	5.57	1.10

If we consider the top ten attributes that were commonly or partially expected by all respondent groups at DUL, the result is as follows:

Table 4.60

Top Ten Attributes of Expected Service Level of All Groups at DUL

Order	Dimensions	Attributes	Faculty	Graduate	Under graduate
1	Tangibles	Equipments are modern and in good condition		✓	✓
2	Empathy	Convenient opening hours (closing and opening hours)		✓	✓
3	Library as Place	Space that enables quiet and calm study	✓	✓	✓
4	Library as Place	A comfortable and inviting location	✓		✓
5	Collection & Access	Library Website contains necessary information	✓		✓
6	Collection & Access	Required resources are available	✓		✓
7	Collection & Access	Physical condition of resources in collection is good		✓	✓
8	Empathy	Library staffs understand the needs of the users		✓	✓
9	Assurance	Information I get from library resources meet the course need	✓	✓	
10	Collection & Access	Digital or online resources can be accessed from PC		✓	

For DUL, i.e. public university library, the top ten Expected or Desired Services shown in the Table 4.60 reveals that the users need all types of resources (both traditional and electronic) which should meet their course need along with modern equipments and with the good physical condition of the printed resources. They expect noiseless environment for study, suitable timing and better location of the library. They also expect resourceful library website and they wish that the library staff should understand the need of the users.

If we consider the top ten attributes that were commonly or partially expected by all respondent groups at IUBL, the result is as follows:

Table 4.61

Top Ten Attributes of Expected Service Level of All Groups at IUBL

Order	Dimensions	Attributes	Faculty	Graduate	Under graduate
1	Assurance	Information I get from library resources meet the course need	✓	✓	✓
2	Empathy	Convenient opening hours (closing and opening hours)	✓	✓	✓
3	Library as Place	A comfortable and inviting location		✓	✓
4	Assurance	Library staffs are always courteous	✓	✓	
5	Empathy	Library staffs who deals with users in a concerned or considerate manner	✓		✓
6	Tangibles	Equipments are modern and in good condition		✓	✓
7	Library as Place	Space that enables quiet and calm study			✓
8	Collection & Access	Digital or online resources can be accessed from PC		✓	
9	Collection & Access	Required resources are available		✓	
10	Responsive- ness	Library staffs have willingness to help user	✓		

For IUBL, i.e. private university library, the top ten Expected Services shown in Table 4.61 reflects that the users required both traditional and electronic resources which will meet their course need and the equipments should be more modern. They expect comfortable location with quiet environment to study and suitable library timing. They expect more cooperation from the library staffs and the staffs should be more courteous and well mannered.

4.6 Attributes that Inside and Outside the Range of the "Zone of Tolerance" by Individual Group of Users

To identify the *Zone of Tolerance* among three user groups of both public and private university i.e. DUL and IUBL, the mean value of three service levels Expected or Desired Service Level, Perception or Actual Service Level and Minimum Service Levels are compared and shown in the graphs (see Graph 4.2-4.7).

At DUL, i.e. public university library, for faculty group other than only two attributes, ID are EM1 and LP1 which are "Convenient opening hours (closing and opening hours)" and "A comfortable and inviting location" unfortunately all the attributes are not in range of *Zone of Tolerance* (See Graph 4.2).

Graph 4.2

Zone of Tolerance: Faculty, DUL

Zone of Tolerance: Faculty

—●— Minimum Service   Expected Service   Perceived Service
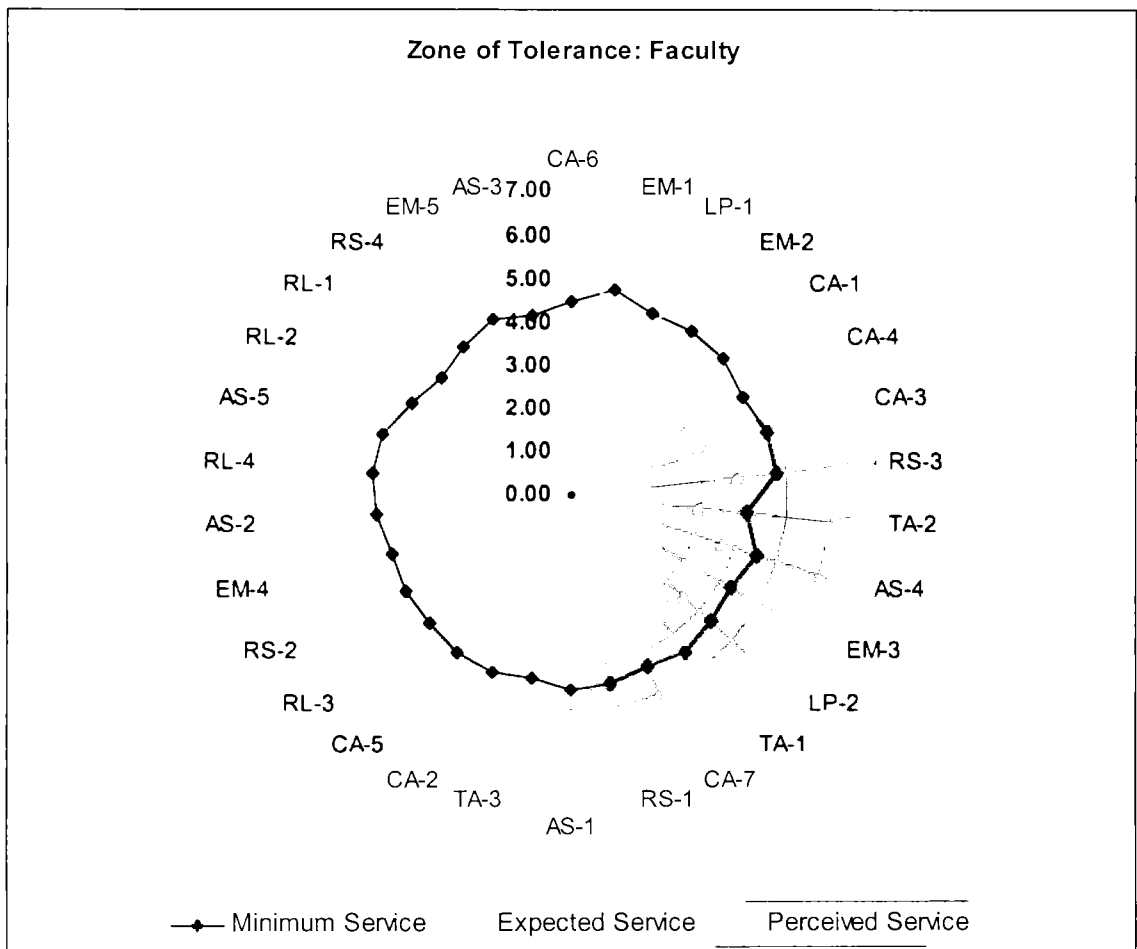
For graduate students group at DUL EM1, LP1, LP2, RL1, EM2 i.e. "Convenient opening hours (closing and opening hours)", "A comfortable and inviting location", "Space that enables quiet and calm study", "Dependability in handling user's service problems" and "Giving priority to the users interests" are in the *Zone of Tolerance*. All other attributes are outside of the *Zone of Tolerance* (See Graph 4.3).
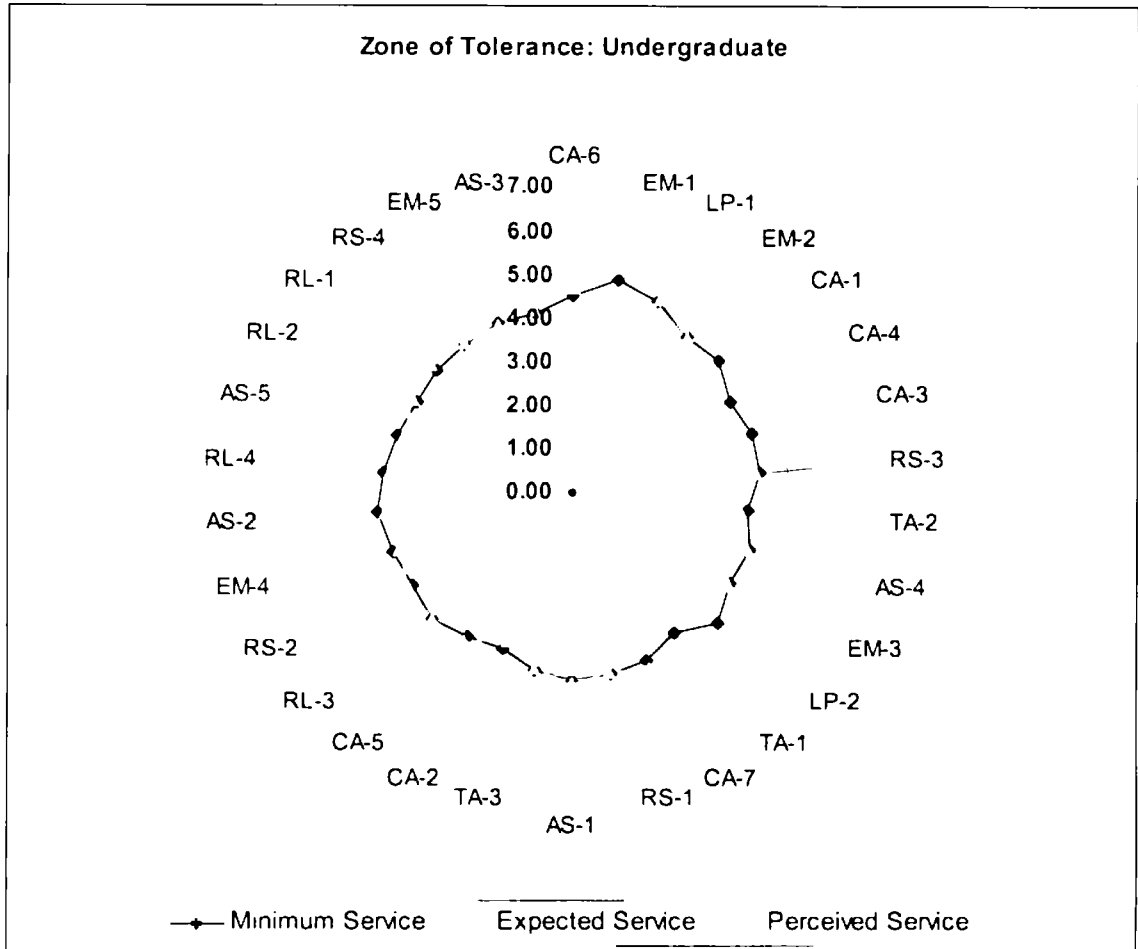
Graph 4.3

Zone of Tolerance: Graduate, DUL

Zone of Tolerance: Graduate

CA-6
EM-5 AS-3 7.00 EM-1 LP-1
RS-4 6.00 EM-2
RL-1 5.00 CA-1
RL-2 4.00 CA-4
3.00
AS-5 2.00 CA-3
RL-4 1.00 RS-3
0.00 •
AS-2 TA-2
EM-4 AS-4
RS-2 EM-3
RL-3 LP-2
CA-5 TA-1
CA-2 CA-7
TA-3 RS-1
AS-1

→ Minimum Service   Expected Service   Perceived Service
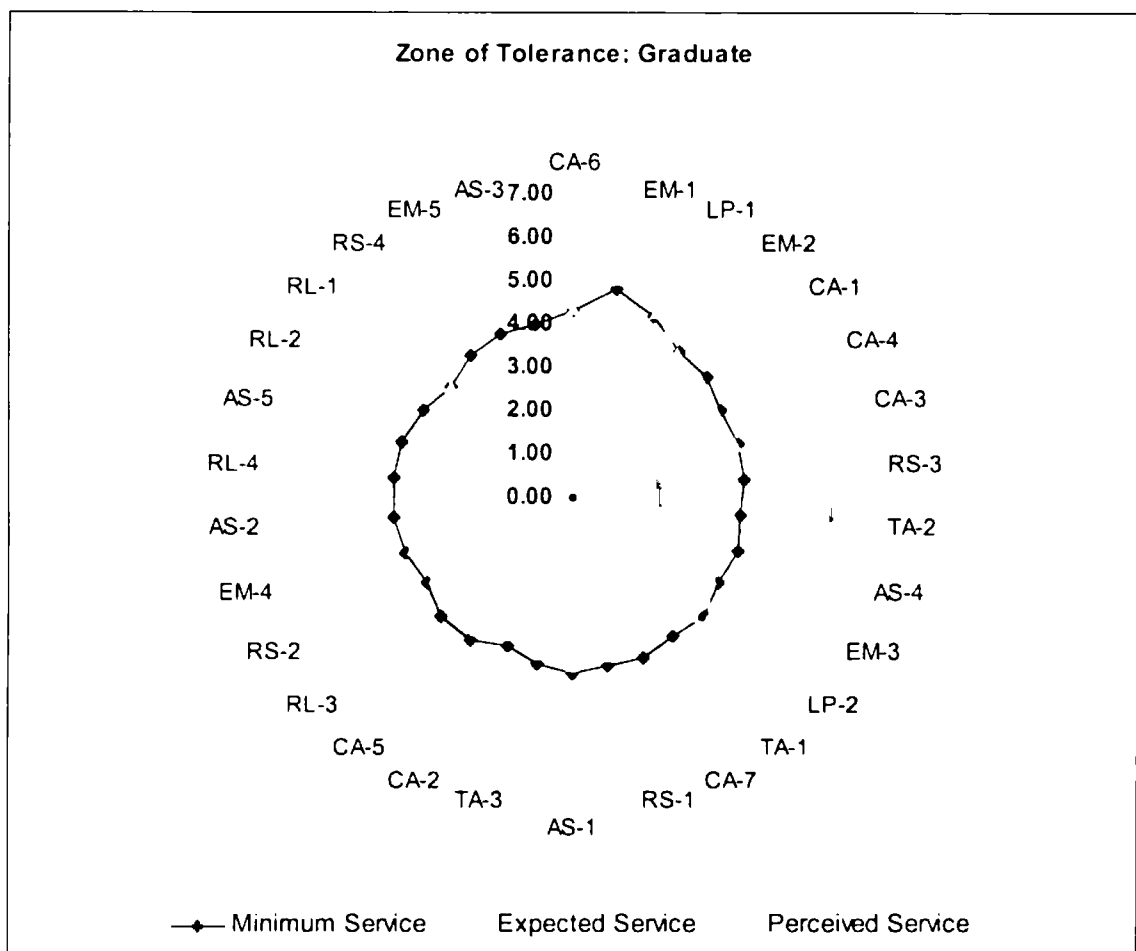
For undergraduate group at DUL, the attributes CA1, CA4, CA3, RS3, TA2,

AS4, CA2, EM4, AS2, RL4, and AS5 (11 attributes) are outside the *Zone of Tolerance*;

the rest of the 19 attributes are in the *Zone of Tolerance* (See Graph 4.4).
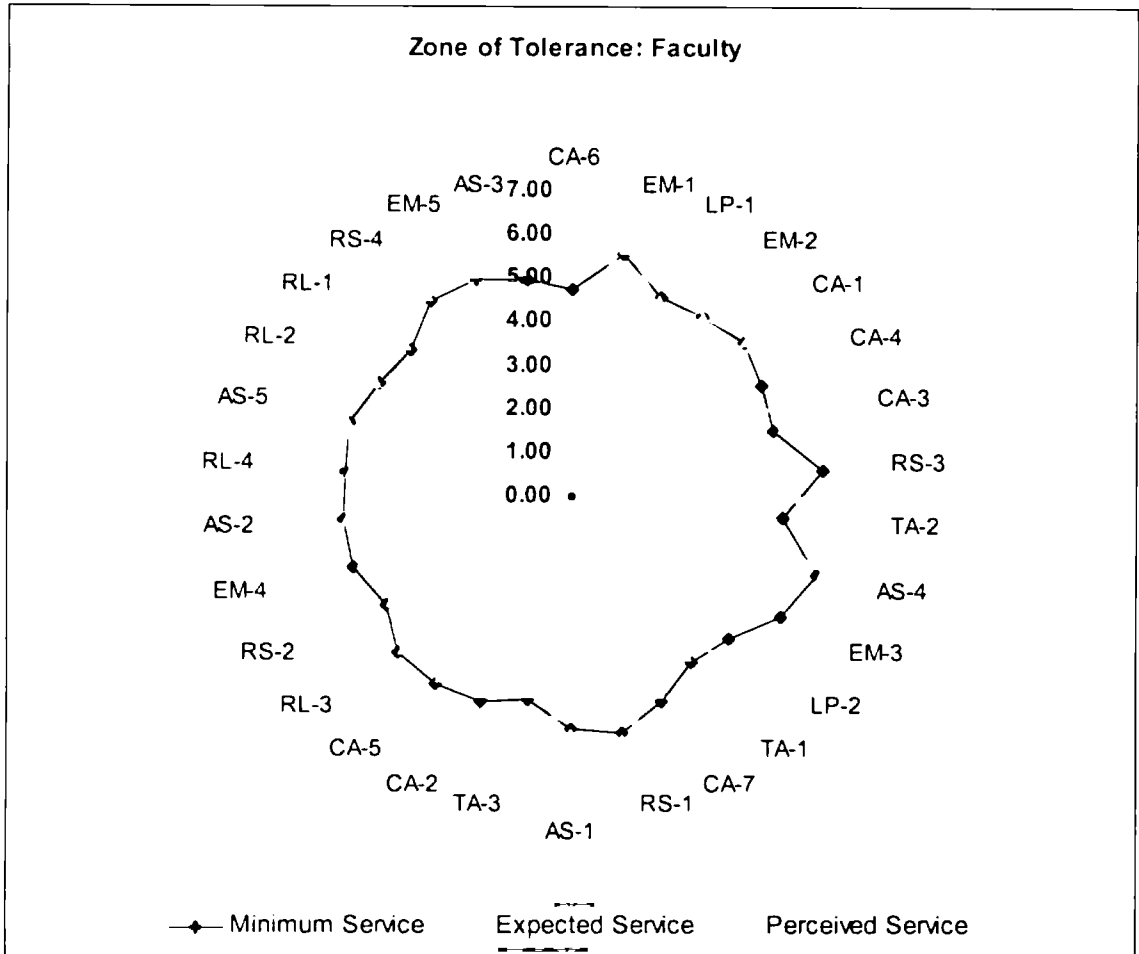
Graph 4.4

Zone of Tolerance: Undergraduate, DUL

Zone of Tolerance: Undergraduate

CA-6	
AS-3 7.00 EM-1	
EM-5 LP-1	
RS-4 6.00 EM-2	
RL-1 5.00 CA-1	
RL-2 4.00 CA-4	
3.00	
AS-5 2.00 CA-3	
RL-4 1.00 RS-3	
0.00	
AS-2 TA-2	
EM-4 AS-4	
RS-2 EM-3	
RL-3 LP-2	
CA-5 TA-1	
CA-2 CA-7	
TA-3 RS-1	
AS-1	

—●— Minimum Service   Expected Service   Perceived Service

At IUBL, i.e. private university library, for the faculty group CA6, LP1, CA4, TA2, TA1, CA7, TA3, CA2, CA5, RL3, RS2, EM4, AS2 and RL4 are out of the *Zone of Tolerance*. The rest of the 16 attributes are in the *Zone of Tolerance* (See Graph 4.5).

Graph 4.5

Zone of Tolerance: Faculty, IUBL

In the category of graduate students at IUBL, it is quite surprising that none of

the attributes are outside the *Zone of Tolerance*. Graduate students think that all the

perceived services are higher than the minimum services level (See Graph 4.6).

Graph 4.6

Zone of Tolerance: Graduate, IUBL
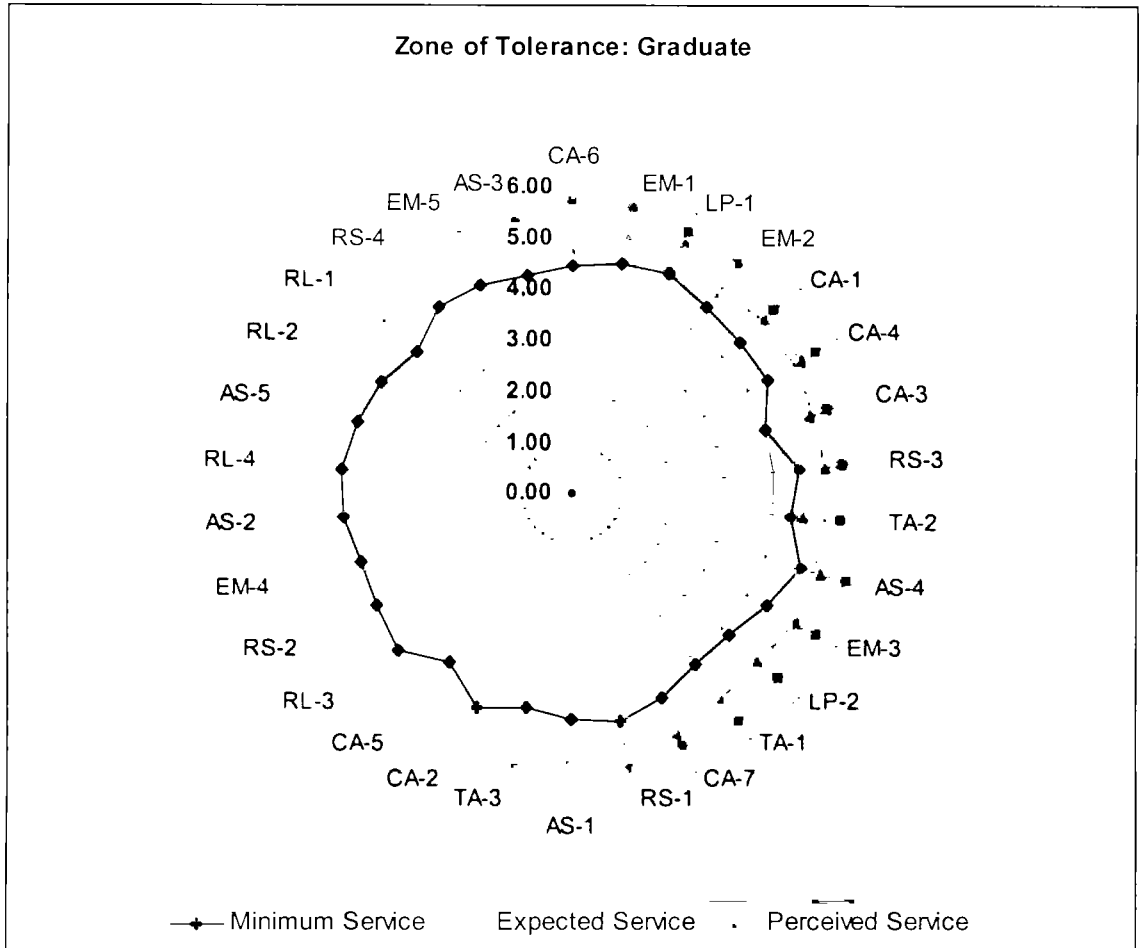
For undergraduate group at IUBL, only two attributes, CA4 and TA2 i.e.

"Library Website contains necessary information" and "Facilities are visually appealing

(such as computer, audiovisual etc.)" are not in range of *Zone of Tolerance*. The rest of

the 28 attributes are in the *Zone of Tolerance* (See Graph 4.7).

Graph 4.7

Zone of Tolerance: Undergraduate, IUBL
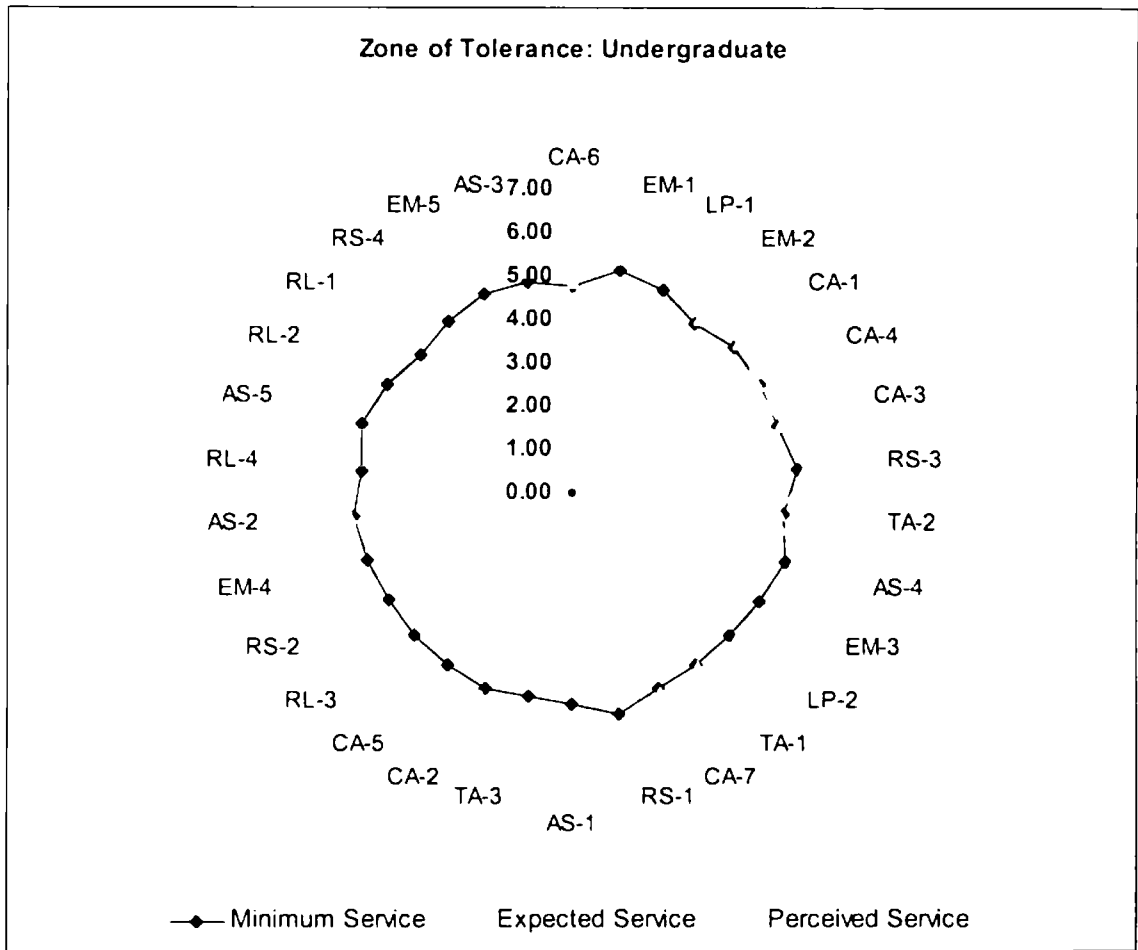
4.7 Summary of Research Findings

The research findings discussed above can answer the research questions and can be summarized as follows:

4.7.1 Research Question One: In what ways do public university library (DUL) and private university library (IUBL) provide service to its users? The results from calculation of gap difference between Expected Services and Perceived Services of all user groups were ranked respectively in order to investigate what attributes of service quality meet, exceed or fall short from the users perspective (see Table 4.38 and Table 4.39). The results revealed that all the attributes of service quality do not meet both the public or private university library users.

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In case of public university library, i.e. DUL, all the gaps are with high difference. It is because the actual services provided are comparatively low what the users expected. As public university library, the total number of resources may large, staffs are sufficient but the total quality management is absent there due to lack of accountability. However, the problematic dimensions for public university library (DUL) are: "Collection & Access", "Tangibles", "Assurance" and these are related to resources, facilities and library staffs. The library system should be up-to-date by using latest information technology, modern equipments and facilities. Even the services of the staff should be standardized and optimized as most users found the services disappointing.

On the other hand, for private university library, i.e. IUBL the gap differences are not as high as DUL though all the services do not meet the users' expectation. The users expect more services than what they are getting now. The problematic dimensions are related to resources and facilities.

If we summarize these results, we can find that all attributes of service quality for public university library and private university library do not meet the users' expectation. For the public university library, i.e. DUL, the most problematic attributes are related to "Collection & Access", "Tangibles" and "Assurance" and few are related to "Empathy" and "Responsiveness". For private university library, i.e. IUBL, the most problematic attributes are related to "Collection & Access", "Tangibles", and "Assurance" dimensions. Another problematic attribute is related to "Library as Place" dimension.

4.7.2 Research Question Two: In what ways do public and private university library provide service to its users, by individual group of users? The gap differences between Expected Services and Actual Services are calculated for each group of users. The gaps are calculated to identify what attributes of service quality meet, exceed or fall short from the each group of users (see Table 4.40 - 4.51).

At DUL, the public university library, the results revealed all expected services are lagging far behind the actual service level. For faculty group, the gaps are the largest. The faculties are mostly dissatisfied with the service provide by DUL. The gaps are highest with "Tangibles" and "Collection & Access" dimensions. For graduate students, "Collection & Access", "Tangibles", "Responsiveness" and "Empathy" and for the undergraduate students group "Collection & Access", "Tangibles", "Assurance" and "Empathy" are most problematic. It seems that resource, facilities and staff related attributes are most problematic dimensions.

In case of IUBL, the private university library, all the attributes of service quality are lagging behind the expectations though the gap sizes are low. However, for the faculty group, "Collection & Access", "Tangibles" and "Library as Place", for graduate group, "Collection & Access", "Tangibles" and "Empathy", and for the undergraduate

group "Collection & Access", "Tangibles" and "Library as Place" are most problematic. It is seen that services related to library resources and facilities are most problematic.

4.7.3 Research Question Three: Which attributes of service quality equal, exceed or fall short user perception, by individual group of users? For this research

question, the gap differences between expected services and actual services are calculated (see Table 4.40 - 4.51). The gap differences are very large for DUL and comparatively low for IUBL.

At DUL, for the faculty group the following top five attributes with higher gap size are reported, "Facilities are visually appealing (such as computer, audiovisual etc.)", "Digital or online resources can be accessed from PC", "Equipments are modern and in good condition", "Resources are delivered timely", and "Library website contains necessary information" (see Table 4.41). For the graduate group, top five problematic attributes are "Digital or online resources can be accessed from PC", "Equipments are modern and in good condition", "Readiness to respond to user's questions", "Library staffs serve promptly to the users", and "Library staffs who deals with users in a concerned or considerate manner" (see Table 4.43). For the undergraduate group, top five attributes are from higher to lower order are, "Digital or online resources can be accessed from PC", "Library website contains necessary information", "Facilities are visually appealing (such as computer, audiovisual etc.)", "Library staffs are knowledgeable to answer users query", and "Library staffs give individual attention to the users" (see Table 4.45). The result showed that resource, facilities and staff related attributes are most problematic and all other attributes are lagging behind the expectation of the users with high gaps.

At IUBL, for the faculty group the following top five attributes with higher gap size, "Required resources are available", "Equipments are modern and in good condition", "Digital or online resources can be accessed from PC", "A comfortable and inviting location", and "Materials (such as brochures, statements or signs) associated with the services are visually appealing" (see Table 4.47). For the graduate group top five problematic attributes are, "Required resources are available", "Facilities are visually appealing (such as computer, audiovisual etc.)", "Giving priority to the users interests", "Materials (such as brochures, statements or signs) associated with the services are visually appealing", and "Physical condition of resources in collection is good" (see Table 4.49). For the undergraduate group top five attributes are from higher to lower order are, "Required resources are available", "Equipments are modern and in good condition", "Facilities are visually appealing (such as computer, audiovisual etc.)", "Library website contains necessary information", and "Space that enables quiet and calm study" (see Table 4.51). So, it is seen that services related to library resources and facilities are most problematic here and all the service attributes are lagging behind the expectation excluding the attribute in the graduate students group, "Assuring users of the accuracy and confidentiality of their personal information" with the gap difference of "-0.02" (negative value).

4.8.4 Research Question Four: In what way do the users expect for excellent service quality from public and private university libraries, by individual group of users?

The mean values of Expected Services (Table 4.52 - 4.59) of each user group and all user groups were ranked and compared.

For the faculties at public university library (DUL), the top-ranked expectation is related to resource and the mean value is the highest in both public and private university

libraries. Other attributes are related to the accessibility to collection, needs for resources and library environment (see Table 4.52). The graduates expected better equipments, better resources, better timing and good behaviour mostly (see Table 4.53). In the top five expectations, the undergraduate students considered suitable location, better equipment & information, and calm environment (see Table 4.54).

At the private university library (IUBL), for faculty group, the top five expectations are mainly related to staff (see Table 4.56), for graduate group, the expectations are for library staffs and electronic resource accessibility and assurance about resource content (see Table 4.57), and for the undergraduate students the expectations are related to the assurance about resource information, equipments and library environment (see Table 4.58).

However, there are both similarities in each group of users of public and private university library and even among the all user groups of public and private university libraries.

4.7.5 Research Question Five: What are the most essential attributes that librarians or library managers should allocate the resources to support for improving excellent service quality? The range between Expected Service and Minimum Service is called *Zone of Tolerance*. If the Perception or Actual Service score goes under the score of Minimum Service Level then it is problematic or that service is not within the *Zone of Tolerance*. A service performance below the tolerance zone creates customer disappointment, frustration and dissatisfaction as well as decrease customer loyalty and reliability. The attributes which are under the *Zone of Tolerance*, library authority should allocate resources, or develop the service where it is required.

For public university library (DUL), most of the attributes are out of the *Zone of Tolerance* among three groups of users.

At DUL, for the faculty group only two attributes, i.e., "Convenient opening hours (closing and opening hours)" and "A comfortable and inviting location" are within the tolerance zone. All other attributes are not in range of *Zone of Tolerance* (see Graph 4.2 and Table 4.62).

Table 4.62

Attributes Outside the Zone of Tolerance, Faculty at DUL

Group	S.L.	ID	Attributes/Statements
Faculty	1	AS-1	Assuring users of the accuracy and confidentiality of their...
	2	AS-2	Information I get from library resources meet the course need
	3	AS-3	It is easy to make a compliment, complaint or suggestion about...
	4	AS-4	Library staffs are always courteous
	5	AS-5	Library staffs are knowledgeable to answer users query
	6	CA-1	Convenient access to library collection
	7	CA-2	Digital or online resources can be accessed from PC
	8	CA-3	Library Online Catalogue is easy to understand and navigate
	9	CA-4	Library Website contains necessary information
	10	CA-5	Physical condition of resources in collection is good
	11	CA-6	Required resources are available
	12	CA-7	Resources are delivered timely
	13	EM-2	Giving priority to the users interests
	14	EM-3	Library staffs give individual attention to the users
	15	EM-4	Library staffs understand the needs of the users
	16	EM-5	Library staffs who deals with users in a concerned or considerate...
	17	LP-2	Space that enables quiet and calm study
	18	RL-1	Dependability in handling user's service problems
	19	RL-2	Library staffs provide services accurately with minimum...
	20	RL-3	Library staffs provide services as promised
	21	RL-4	Providing services at the promised time
	22	RS-1	Library staffs have willingness to help user
	23	RS-2	Library staffs keep users informed about when services will be...
	24	RS-3	Library staffs serve promptly to the users
	25	RS-4	Readiness to respond to user's questions
	26	TA-1	Equipments are modern and in good condition
	27	TA-2	Facilities are visually appealing (such as computer...)
	28	TA-3	Materials (such as brochures, statements or signs) associated...

For graduate students at DUL, the following 25 attributes are outside of the *Zone of Tolerance* (See Graph 4.3 and Table 4.63).

Table 4.63

Attributes Outside the Zone of Tolerance, Graduate Students at DUL

Group	S.L.	ID	Attributes/Statements
Graduate	1	AS-1	Assuring users of the accuracy and confidentiality of their...
	2	AS-2	Information I get from library resources meet the course need
	3	AS-3	It is easy to make a compliment, complaint or suggestion about...
	4	AS-4	Library staffs are always courteous
	5	AS-5	Library staffs are knowledgeable to answer users query
	6	CA-1	Convenient access to library collection
	7	CA-2	Digital or online resources can be accessed from PC
	8	CA-3	Library Online Catalogue is easy to understand and navigate
	9	CA-4	Library Website contains necessary information
	10	CA-5	Physical condition of resources in collection is good
	11	CA-6	Required resources are available
	12	CA-7	Resources are delivered timely
	13	EM-3	Library staffs give individual attention to the users
	14	EM-4	Library staffs understand the needs of the users
	15	EM-5	Library staffs who deals with users in a concerned or considerate...
	16	RL-2	Library staffs provide services accurately with minimum...
	17	RL-3	Library staffs provide services as promised
	18	RL-4	Providing services at the promised time
	19	RS-1	Library staffs have willingness to help user
	20	RS-2	Library staffs keep users informed about when services will be...
	21	RS-3	Library staffs serve promptly to the users
	22	RS-4	Readiness to respond to user's questions
	23	TA-1	Equipments are modern and in good condition
	24	TA-2	Facilities are visually appealing (such as computer...)
	25	TA-3	Materials (such as brochures, statements or signs) associated...

For the undergraduate group at DUL, the following attributes (11 attributes) are

outside the *Zone of Tolerance* (See Graph 4.4 and Table 4.64).

Table 4.64

Attributes Outside the Zone of Tolerance, Undergraduate Students at DUL

Group	S.L.	ID	Attributes/Statements
Under-graduate	1	AS-2	Information I get from library resources meet the course need
	2	AS-4	Library staffs are always courteous
	3	AS-5	Library staffs are knowledgeable to answer users query
	4	CA-1	Convenient access to library collection
	5	CA-2	Digital or online resources can be accessed from PC
	6	CA-3	Library Online Catalogue is easy to understand and navigate
	7	CA-4	Library Website contains necessary information
	8	EM-4	Library staffs understand the needs of the users
	9	RL-4	Providing services at the promised time
	10	RS-3	Library staffs serve promptly to the users
	11	TA-2	Facilities are visually appealing (such as computer...)

At IUBL, i.e. private university library, 14 attributes are out of the *Zone of Tolerance* for the faculty group (See Graph 4.5 and Table 4.65).

Table 4.65

Attributes Outside the Zone of Tolerance, Faculty at IUBL

Group	S.L.	ID	Attributes/Statements
Faculty	1	AS-2	Information I get from library resources meet the course need
	2	CA-2	Digital or online resources can be accessed from PC
	3	CA-4	Library Website contains necessary information
	4	CA-5	Physical condition of resources in collection is good
	5	CA-6	Required resources are available
	6	CA-7	Resources are delivered timely
	7	EM-4	Library staffs understand the needs of the users
	8	LP1	A comfortable and inviting location
	9	RL-3	Library staffs provide services as promised
	10	RL-4	Providing services at the promised time
	11	RS-2	Library staffs keep users informed about when services will be...
	12	TA-1	Equipments are modern and in good condition
	13	TA-2	Facilities are visually appealing (such as computer...)
	14	TA-3	Materials (such as brochures, statements or signs) associated...

In the category of graduate students at IUBL, it is quite surprising that none of the attributes are outside the *Zone of Tolerance*. Graduate students considered all the perceived services are higher than the minimum services level (See Graph 4.6).

For undergraduate group at IUBL, only two attributes, CA4 and TA2 i.e. "Library website contains necessary information" and "Facilities are visually appealing (such as computer, audiovisual, etc.)" are not in range of *Zone of Tolerance*. The rest of the 28 attributes are in the *Zone of Tolerance* (See Graph 4.7).

Table 4.66

Attributes Outside the Zone of Tolerance, Undergraduate Students at IUBL

Group	S.L.	ID	Attributes/Statements
Under-graduate	1	CA-4	Library Website contains necessary information
	2	TA-2	Facilities are visually appealing (such as computer...)

Chapter 5

Summary, Discussion and Recommendation

5.1 Introduction

Public and private university libraries should take initiatives to provide quality service, meet changing expectations of the users, satisfy current users and seek out better ways to draw the intent of the new users. They should learn from their success and mistakes. A belief that service is "good enough" does not inspire a library to improve. Continuous assessment and improvement is a worthy goal for any library. This chapter describes the summary, discussion of the research findings and recommendation for excellence in service quality.

5.2 Objective of the Study

The main objective of the present study was to measure the service quality of public and private university libraries. The sub-objectives arising out of it were: to assess the service quality of public and private university libraries from users' perspective, to assess the service quality of public and private university libraries from the perspective of each different respondent user group, and to investigate the essential attributes that library authority should allocate the resource for better service.

5.3 Research Area

In Bangladesh, the universities are mainly categorized into public and private universities. The public universities are autonomous and funded by the government whereas private universities are funded by non-governmental organizations. The following two leading university libraries, one from each category were chosen for the

present study:

Public University: University of Dhaka, Library, (DUL)

Private University: Independent University, Bangladesh, Library (IUBL)

5.4 Sampling and Response Rates

The samples of the study were the users (undergraduate students, graduate students and faculty/researchers) of two university libraries. At Dhaka University, 350 questionnaires were distributed and 314 questionnaires were collected. In Independent University, Bangladesh, 260 questionnaires were distributed and 233 questionnaires were collected. The respondents at DU consisted 1.13% of the total user population and at IUB the respondents were 7.49% of the total user community (students and faulty).

5.5 SERVQUAL Questionnaire

The selected sample groups were asked to complete a modified version of SERVQUAL. The instrument was divided into two sections. The first one cosisted of thirty statements which asked users to rate three service levels on a 7-point scale. The users were asked to complete the questionnaire with three levels of services: *My Minimum Service Level, My Expected or Desired Service Level* and *My Perception or Actual Service Level.* A pilot study was conducted as pre-test at IUB with the modified SERVQUAL instrument. Eight undergraduate and two graduate students took part in the pre-test and completed the questionnaire which then included thirty-six statements. Based on pre-test results, some statements were amended to make them easier to understand. Some library services which were irrelevant were excluded, and some statements were corrected.

5.6 Statistical Analysis

After collecting the questionnaires, all data were transferred to SPSS from the completed questionnaire. The procedures of data treatment were set to validate the data for further analysis. After data treatment statistical analysis was done in order to accomplish the purposes of the study. The data was analyzed in the following ways.

First, the gap discrepancy between Expected Service and Perceived Service performance was calculated and ranked respectively. Second, by individual group of user, the gap discrepancy between Expected Service and Perceived Service performance was calculated by individual group of users and ranked respectively. Third, for individual group of users the means of desired service expectations were ranked and compared among three groups of users. Finally, the Zone of Tolerance which is the range between Expected Service Level and Minimum Service Level was calculated.

5.7 Scope and Limitation

The study was conducted to measure the service quality of public and private university libraries in Bangladesh to find out which attributes of service quality are meet, equal or fall short of the perception, which attributes expected most and which attributes are not in the zone of tolerance. Library authority may use this result to compare the institutional and users differences and similarities in the quality of services. The study is not aimed at judging any library as good or bad.

Data was collected randomly from DU and IUB. All the IUB respondents were non-residential but most of the respondents from DU were residential. There are 27 public and 51 private universities in Bangladesh; it would be difficult to generalize the result of this study. More such research is needed to find out the overall service quality of university libraries in Bangladesh.

5.8 Discussion

For measuring service quality of the public and private university libraries, this study examined the three levels of service quality. These are: minimum service, expected or desired service and perceived or actual service. The result showed the gap difference between expected and actual services and the way the libraries provide service to their users. The results also identified the way users expect for excellent service quality from public and private library systems. The result could be useful for future studies to measure university library service quality in Bangladesh.

5.8.1 Gaps between Expected Service and Perceived Service. The research result showed that for both the public and private university libraries all service quality attributes of desired or expected services are not met. It is natural tendency of people to expect more than what they have.

However, for public university library the gap sizes are very high, top five higher gaps are related to the dimensions "Collection & Access", "Tangibles", and "Assurance" though there are higher gaps related to the dimensions "Empathy", "Reliability", and "Responsiveness". Even the lower raked attributes are also with large gaps. In public university library, top ranked dimension "Collection & Access" is related to the attributes "Digital or online resources can be accessed from PC", and "Library Website contains necessary information". The cause is that DUL does not subscribe to much electronic resources in comparison to printed resource. The Library has no individual website other than a page linked to the main website of the university. As the users search new information, knowledge, latest advancement on different subject areas, they were quite right in their judgement. Two "Tangible" dimension is related to the attributes are "Facilities are visually appealing (such as computer, audiovisual etc.)" and

"Equipments are modern and in good condition". It is also truly reflected the condition of public university library. The services are mostly provided manually and the computers and equipments are also old. Another top problematic dimension is "Assurance" which is liked to "Library staffs are knowledgeable to answer users query". This attribute is staff related and some users (particularly students) have had bad experiences with the staff regarding this service attribute. All top five attributes are related to resources, facilities and library staffs.

For private university library, the result reflects that the attributes related to dimension "Collection & Access" and "Tangibles" are in top five order along with an "Assurance" dimension. Though there are more dimensions and attributes which are problematic but for other attributes gap sizes are not too large. In private university library, top ranked dimension "Collection & Access" is related to the attributes "Required resources are available" and "Library website contains necessary information". It is found that most users visit library for borrowing resources and browse online resource. If the traditional resources are not sufficient or not available at library it frustrated the users. As an academic library, IUBL should provide more resources to the users though it is not a good practice to keep multiple copies of the same text for users. The library website should be dynamic and informative. Two "Tangibles" dimensions are as same as the attributes of public university library. Equipments and the facilities need to be updated. As "Required resources are available" is the top ranked attribute, it is quiet natural that "Information I get from library resources meet the course need" ranked in the top five attributes.

There are differences of gap sizes among three groups in terms of order. At DUL, when the gap sizes are ranked by order, in the faculty group "Tangibles" and "Collection & Access" dimensions are in the top five ranks. For the graduate group, "Collection &

Access", "Tangibles", "Responsiveness" and "Empathy are in the top five ranks. For the undergraduate group, "Collection & Access", "Tangibles", "Assurance" and "Empathy" are in the top five ranks. Though there are some dissimilarities among various groups on Expectation and Perception of services, "Collection & Access" and "Tangibles" are common dimensions.

Table 5.1

Top Five Attributes: Gap difference between ES and PS (Faculty DUL)

Order	Dimensions	ID	Statements	Mean Diff
1	Tangibles	TA-2	Facilities are visually appealing (such as computer, audiovisual etc.)	3.41
2	Collection & Access	CA-2	Digital or online resources can be accessed from PC	3.35
3	Tangibles	TA-1	Equipments are modern and in good condition	3.25
4	Collection & Access	CA-7	Resources are delivered timely	3.25
5	Collection & Access	CA-4	Library Website contains necessary information	3.19

Table 5.2

Top Five Attributes: Gap difference between ES and PS (Graduate DUL)

Order	Dimensions	ID	Statements	Mean Diff
1	Collection & Access	CA-2	Digital or online resources can be accessed from PC	2.76
2	Tangibles	TA-1	Equipments are modern and in good condition	2.73
3	Responsiveness	RS-4	Readiness to respond to user's questions	2.67
4	Responsiveness	RS-3	Library staffs serve promptly to the users	2.60
5	Empathy	EM-5	Library staffs who deals with users in a concerned or considerate manner	2.59

Table 5.3

Top Five Attributes: Gap difference between ES and PS (Undergraduate DUL)

Order	Dimensions	ID	Statements	Mean Diff
1	Collection & Access	CA-2	Digital or online resources can be accessed from PC	2.33
2	Collection & Access	CA-4	Library Website contains necessary information	2.30
3	Tangibles	TA-2	Facilities are visually appealing (such as computer, audiovisual etc.)	2.19
4	Assurance	AS-5	Library staffs are knowledgeable to answer users query	1.98
5	Empathy	EM-3	Library staffs give individual attention to the users	1.95

The largest gaps are in the faculty groups. It is clear that they are not getting as much as they are expecting or the service provided by the DU, so their gaps are larger than the other groups. The result (see Table 5.1) shows that top five attribute in this group are related to library resources and facilities. For graduate students, the top five attributes are different as those are related to library collection, equipments and staffs behaviour (See Table5.2). On the other hand, in the undergraduate group, it is seen that library resources, facilities and staff related attributes are much problematic (see Table 5.3). The gap differences of the graduate and undergraduate students are closer than the gap difference of the faculty group.

There are also differences of gap sizes among three groups in terms of order. At IUBL, when the gap sizes are ranked by order, in the faculty group "Collection & Access", "Tangibles" and "Library as Place" dimensions are in the top five ranks. For the graduate group, "Collection & Access", "Tangibles", and "Empathy" are in the top five rank. For undergraduate students, "Collection & Access", "Tangibles", and "Library as Place" are in the top five ranks. There are similarities among groups on Expectation and Perception of services where "Collection & Access" and "Tangibles" are common. In

each group (see Table 5.4, 5.5 and 5.6), the top five attributes are related to library

resources and facilities.

Table 5.4

Top Five Attributes: Gap difference between ES and PS (Faculty, IUBL)

Order	Dimensions	ID	Statements	Mean Diff
1	Collection & Access	CA-6	Required resources are available	1.48
2	Tangibles	TA-1	Equipments are modern and in good condition	1.28
3	Collection & Access	CA-2	Digital or online resources can be accessed from PC	1.21
4	Library as Place	LP-1	A comfortable and inviting location	1.13
5	Tangibles	TA-3	Materials (such as brochures, statements or signs) associated with the services are visually appealing	1.05

Table 5.5

Top Five Attributes: Gap difference between ES and PS (Graduate, IUBL)

Order	Dimensions	ID	Statements	Mean Diff
1	Collection & Access	CA-6	Required resources are available	0.98
2	Tangibles	TA-2	Facilities are visually appealing (such as computer, audiovisual etc.)	0.76
3	Empathy	EM-2	Giving priority to the users interests	0.70
4	Tangibles	TA-3	Materials (such as brochures, statements or signs) associated with the services are visually appealing	0.61
5	Collection & Access	CA-5	Physical condition of resources in collection is good	0.58

Table 5.6

Top Five Attributes: Gap difference between ES and PS (Undergraduate, IUBL)

Order	Dimensions	ID	Statements	Mean Diff
1	Collection & Access	CA-6	Required resources are available	1.12
2	Tangibles	TA-1	Equipments are modern and in good condition	1.10
3	Tangibles	TA-2	Facilities are visually appealing (such as computer, audiovisual etc.)	1.06
4	Collection & Access	CA-4	Library Website contains necessary information	1.03
5	Library as Place	LP-2	Space that enables quiet and calm study	0.96

However, the gap differences are comparatively low for the graduate student group and large gaps are in the faculty group. The attribute "Required resources are available" is very problematic as it ranked top in each three groups. In the faculty group, the attribute "Digital or online resources can be accessed from PC" comes in as one of the top five attributes. The subscribed electronic resources at IUBL are accessible only from the university campus as those are IP (Internet Protocol) number based. The undergraduate students are the most frequent users of the library (see Table 4.24 - 4.26), they found the library (specially study room) as noisy place. However, the staffs are not a problematic dimension here.

5.8.2 Users' Expectation for Excellent Service Quality. Though there are some similarities and dissimilarities, in public university library (DUL), it is seen from the top five expectations of the faculty group that they expect more resources what the library actually provided. There are not sufficient resources and their requirement should be prioritised. This group expect more informative and interactive library website. They also expect calm and quite library environment (See Table 4. 52). In graduate students group, the top five ranking shows that the students expect more modern equipments like computers, photocopiers, etc.. They expect more new resources as the existing resources are not in good condition. They expect that the library staff should be well-behaved. They also expect quite study place like their faculty and they need more convenient timing for their library use (See Table 4.53). In the undergraduate student group, if we analysis top five ranking, we can see that they expect comfortable location of the library like their faculty, they also expect more information in the website and quiet study place. Like the graduates, they also expect better library timing and up-to-date equipments (See Table 4.54).

At the private university library (IUBL), there are also some similarities and dissimilarities in expectation among various groups. Though it is difficult to give personal attention to every user, the top ranking expectation of the faculty is with library staffs; library staffs are most problematic to them. They expect library staffs should be more prompt, more courteous, more attentive and should have willingness. They also expect convenient opening hour though most of the faculty members visit library once a month (See Table 4.24 & Table 4.56). It is quite surprising that the Expectation Levels of the graduate students are not very high. Their top five expectations are regarding library staffs service commitment, availability of resources, assurance of resources to their course need, suitable timing and convenient access to the electronic resources (See Table 4.57). The graduate classes are held in the evenings and the students rarely use library facilities. For the undergraduate students, they expect the library resources should meet their course need and suitable timing. They also expect modern equipments, quiet study environment and suitable location of the library (See Table 4.58). Though the library is in suitable location, it is not in the central location as schools are scattered in different areas. As the undergraduate students visit the library frequently they expected the library to be located in a central place.

5.8.3 The Zone of Tolerance. It is quite frustrating for the public university library (DUL) that for the faculty group other than only two attributes "Convenient opening hours (closing and opening hours)" and "A comfortable and inviting location", all other attributes are not in range of *Zone of Tolerance* (See Graph 4.2). It is also a matter of disappointment that for graduate students group, only five attributes, "Convenient opening hours (closing and opening hours)", "A comfortable and inviting location", "Space that enables quiet and calm study", "Dependability in handling user's

service problems" and "Giving priority to the users interests" are in the *Zone of Tolerance*. The rest of 25 attributes are outside of the *Zone of Tolerance* (See Graph 4.3). For undergraduate group eleven attributes are outside the *Zone of Tolerance*; other attributes are in the *Zone of Tolerance* (See Graph 4.4). So, the total scenario of the service quality is very poor for public university library. In all sectors or all the attributes are needed to be improved for better services. Library is not only a large building with huge resources, the factors or attributes of the service quality should be tolerable at least. For DUL, the required resources should be available, more electronic or digital resources should be subscribed, equipments and facilities should be modernized, library website and online catalogue should be informative and user-friendly, library staff should be prompt, courteous and knowledgeable.

At private university library (IUBL), the overall service quality is somewhat tolerable. However, for the faculty group, fourteen attributes are out of the *Zone of Tolerance*. The rest of the 16 attributes are in the *Zone of Tolerance* (See Graph 4.5). In the category of graduate students, none of the attributes are outside the *Zone of Tolerance* (See Graph 4.6). For undergraduate group, only two attributes, "Library website contains necessary information" and "Facilities are visually appealing (such as computer, audiovisual, etc.)" are not in range of *Zone of Tolerance*. The rest of the 28 attributes are in the *Zone of Tolerance* (See Graph 4.7). However, for IUBL more resources should be available and accessible, location should be in a central place, library staffs should keep their commitment, library website should be more informative. As comparatively few attributes are out of the zone of the tolerance, it can be said that private university library is in better position then public university library in terms of excellence of service quality.

5.9 Recommendations

After investigating and reviewing the result the recommendations is presented for the improvement of the better service quality. Recommendation for public university libraries and private university libraries which are more or less same:

1. The service attributes that library should allocate resources to improve for good service quality. The service quality attributes which do not meet user desired expectations from the calculation of the *Zone of Tolerance* shown that about all the attributes are more or less outside the *Zone of Tolerance.* Though private university library are with the better service quality than the public university library, however for both types of libraries more or less most problems are related to insufficient library collection, access to digital resources, more informative website, user-friendly online catalogue, and service-mind of the staffs, noiseless environment, modern equipment, up-to-date facilities, knowledge of the staffs, performance of the staff. Though the library budget is not sufficient, library should consider how to minimize the gap between users desired expectations and actual service perceptions appropriately. Most of the public universities are lack of modern equipments and facilities, so, more computer terminals, internet access points must be provided. So, it is required immediately to improve and develop the service quality for excellence of services.

2. Library instruction or orientation session. The researcher believes that at the beginning of the session or semester the users should be instructed about the services provided by the library and how to communicate with the library staffs, librarian. The missing value reveals that the users seldom contact librarians when involve in library service and it seems that users want to use library by their own. The library should consider how to provide library effective guide both printed and electronic version

associate with the services. For the researcher's opinion, the librarians should cooperate with the lecturers to recommend library resources, service etc. on the orientation session.

3. Remote access service in this age of digital environment more electronic or digital resources and subscription to online resources is required and remote secured access should be ensured.

4. Staff The data calculated from the *Zone of Tolerance* implies that library staff may treat each user group differently so the library staff should consider this finding. High missing value related to staff knowledge implies that users seldom contact professional staff so reference service should be more proactive, besides reference desk should be easy to observe. The accountability, responsiveness, and willingness of the staffs should be developed.

5. Public relations about the services. The libraries should announce services and resources via library homepage. The library homepage needed to improve urgently. It must be more informative and well organized. The structure of the homepage should be clear and easy to use. Remote access will be more and more increased as most users are young generation. They demand to use library services via internet. Marketing of library services is also a new concept.

6. Resource Sharing and Inter-library loan service. As it is very common about the requirement of resources, and this is in the highest rank more or less in the all group of users in both type of university libraries collection is at the highest rank. Though it is so common that no library has complete collection, effective resource sharing and interlibrary loan service may be enhanced to alleviate this problem. The Resource Sharing and inter-library loan service regulations must be officially set.

5.10 Conclusion

This research examined service quality of public university library and private university library from the users' perception. It investigated the gaps between desired service and perceived service level of the user. This study also explored the expectations of the user for excellent service quality. The modification of SERVQUAL questionnaire was used for instrumentation. The study revealed that both the public or private university libraries do not meet the expectation of the user. The services which are provided by the libraries have been lagging behind the expectation of the users. However, this is the first attempt to measure service quality in Bangladesh using SERVQUAL, more research is needed with underlying dimensions and related attributes for excellence quality of services with wider scope.

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Appendix

Measuring Service Quality - A Study of Public and Private University Libraries in Bangladesh

Questionnaire

Section-I
(Assessing your library services)

Directions

Based on your experiences as a user in this University Library, please think about the kind of University Library that would deliver excellent quality of service. This survey contains 30 questions. There are 3 (three) scales of assessment; those are "My Minimum Service Level", "My Expected or Desired Service Level" and "My Perception or Actual Service Level". "My Minimum Service Level" means the minimum level of service that you consider adequate or sufficient for you though it is not equal the level of your expectation, "My Expected or Desired Service Level" means the level of service that you expect from the library and "My Perception or Actual Service Level" means the actual service provided by the library. Please encircle (O) the point (1 - 7) to which you think this Library has the feature described by each statement in each level. The points are from lowest to highest scores to find out the true outlook as a valued user of this University Library. There are no right or wrong answers - all we are interested in is a number that truly reflects your feelings regarding excellent quality of service in this Library.

When access service in this library...	My Minimum Service Level	My Expected or Desired Service Level	My Perception or Actual Service Level
	Low . . . . . . High	Low . . . . . . High	Low . . . . . . High
1. Required resources are available	1 2 3 4 5 6 7	1 2 3 4 5 6 7	1 2 3 4 5 6 7
2. Convenient opening hours (closing and opening hours)	1 2 3 4 5 6 7	1 2 3 4 5 6 7	1 2 3 4 5 6 7
3. A comfortable and inviting location	1 2 3 4 5 6 7	1 2 3 4 5 6 7	1 2 3 4 5 6 7
4. Giving priority to the users interests	1 2 3 4 5 6 7	1 2 3 4 5 6 7	1 2 3 4 5 6 7
5. Convenient access to library collection	1 2 3 4 5 6 7	1 2 3 4 5 6 7	1 2 3 4 5 6 7
6. Library Website contains necessary information	1 2 3 4 5 6 7	1 2 3 4 5 6 7	1 2 3 4 5 6 7
7. Library Online Catalogue is easy to understand and navigate	1 2 3 4 5 6 7	1 2 3 4 5 6 7	1 2 3 4 5 6 7
8. Library staffs serve promptly to the users	1 2 3 4 5 6 7	1 2 3 4 5 6 7	1 2 3 4 5 6 7
9. Facilities are visually appealing (such as computer, audiovisual etc.)	1 2 3 4 5 6 7	1 2 3 4 5 6 7	1 2 3 4 5 6 7
10. Library staffs are always courteous	1 2 3 4 5 6 7	1 2 3 4 5 6 7	1 2 3 4 5 6 7
11. Library staffs give individual attention to the users	1 2 3 4 5 6 7	1 2 3 4 5 6 7	1 2 3 4 5 6 7

When access service in this library...	My Minimum Service Level	My Expected or Desired Service Level	My Perception or Actual Service Level
	Low . . . . . . High	Low . . . . . . High	Low . . . . . . High
12. Space that enables quiet and calm study	1 2 3 4 5 6 7	1 2 3 4 5 6 7	1 2 3 4 5 6 7
13. Equipments are modern and in good condition	1 2 3 4 5 6 7	1 2 3 4 5 6 7	1 2 3 4 5 6 7
14. Resources are delivered timely	1 2 3 4 5 6 7	1 2 3 4 5 6 7	1 2 3 4 5 6 7
15. Library staffs have willingness to help user	1 2 3 4 5 6 7	1 2 3 4 5 6 7	1 2 3 4 5 6 7
16. Assuring users of the accuracy and confidentiality of their personal information	1 2 3 4 5 6 7	1 2 3 4 5 6 7	1 2 3 4 5 6 7
17. Materials (such as brochures, statements or signs) associated with the services are visually appealing	1 2 3 4 5 6 7	1 2 3 4 5 6 7	1 2 3 4 5 6 7
18. Digital or online resources can be accessed from PC	1 2 3 4 5 6 7	1 2 3 4 5 6 7	1 2 3 4 5 6 7
19. Physical condition of resources in collection is good	1 2 3 4 5 6 7	1 2 3 4 5 6 7	1 2 3 4 5 6 7
20. Library staffs provide services as promised	1 2 3 4 5 6 7	1 2 3 4 5 6 7	1 2 3 4 5 6 7
21. Library staffs keep users informed about when services will be performed	1 2 3 4 5 6 7	1 2 3 4 5 6 7	1 2 3 4 5 6 7
22. Library staffs understand the needs of the users	1 2 3 4 5 6 7	1 2 3 4 5 6 7	1 2 3 4 5 6 7
23. Information I get from library resources meet the course need	1 2 3 4 5 6 7	1 2 3 4 5 6 7	1 2 3 4 5 6 7
24. Providing services at the promised time	1 2 3 4 5 6 7	1 2 3 4 5 6 7	1 2 3 4 5 6 7
25. Library staffs are knowledgeable to answer users query	1 2 3 4 5 6 7	1 2 3 4 5 6 7	1 2 3 4 5 6 7
26. Library staffs provide services accurately with minimum interruption	1 2 3 4 5 6 7	1 2 3 4 5 6 7	1 2 3 4 5 6 7
27. Dependability in handling user's service problems	1 2 3 4 5 6 7	1 2 3 4 5 6 7	1 2 3 4 5 6 7
28. Readiness to respond to user's questions	1 2 3 4 5 6 7	1 2 3 4 5 6 7	1 2 3 4 5 6 7
29. Library staffs who deals with users in a concerned or considerate manner	1 2 3 4 5 6 7	1 2 3 4 5 6 7	1 2 3 4 5 6 7
30. It is easy to make a compliment, complaint or suggestion about condition	1 2 3 4 5 6 7	1 2 3 4 5 6 7	1 2 3 4 5 6 7

Section-II
(Personal Information)

Please tick (✓) or answer more few question applicable to you

1. Your gender...

a. ☐ Male
b. ☐ Female

2. Your age in the range...

a. ☐ 17 - 21   e. ☐ 37-41   i. ☐ 57-61
b. ☐ 22 - 26   f. ☐ 42-46   j. ☐ 62-66
c. ☐ 27 - 31   g. ☐ 47-51   k. ☐ Others
d. ☐ 32 - 36   h. ☐ 52-56   (Pls.
                                     specify)
                                     _____

3. What best describes you?

a. ☐ Faculty
b. ☐ Graduate Student
c. ☐ Undergraduate Student
d. ☐ Researcher
e. ☐ Others (Please specify)_____

4. Your educational background *(only for the faculties)*...

a. ☐ Post Doctoral degree
b. ☐ Doctoral degree
c. ☐ Master degree
d. ☐ Others (Please specify)_____

5. Your affiliation *(only for the faculties)*...

a. ☐ Professor
b. ☐ Associate Professor
c. ☐ Assistant Professor
d. ☐ Sr. Lecturer
e. ☐ Lecturer
f. ☐ Others (Please specify)_____

6. As a student how long have you been studying at this university?

a. ☐ 6 years
b. ☐ 5 years
c. ☐ 4 years
d. ☐ 3 years
e. ☐ 2 years
f. ☐ 1 year
g. ☐ Less than 1 year
h. ☐ Others (Please specify)_____

7. Your discipline...

a. ☐ Science
b. ☐ Engineering
c. ☐ Business/Commerce
d. ☐ Arts/Humanities
e. ☐ Social Science
f. ☐ Others (Please specify)_____

8. Frequency of library use...

a. ☐ Daily
b. ☐ Several times a week
c. ☐ Once a week
d. ☐ Less than once a week
e. ☐ Once a month
f. ☐ Others (Please specify)_____

Thank you very much.