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Performance Audit through LibQUAL+ Technique: The Experience of Burdwan University and Visva-Bharati Library Users

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Abstract

Introduction-This paper discussed the need of performance audit through LibQUAL+ technique in University Library users in West Bengal, India. LibQUAL+ Technique is developed by Association of Research Libraries (ARL) in the year 2000. It is a suite of services that libraries use to solicit, track, understand, and act upon users' opinions of service quality. In this paper, an attempt has been made to measure the performance of Burdwan University Library and Visva-Bharati Library Users through LibQUAL+ technique. Comparative study of each dimension that is Library as a Place (LP), Information Control (IC) and Affect of Service (AS), Adequacy Gap (AG), Superiority Gap (SG) and Zone of Tolerance has been determined. This technique has been applied to know what library users saying about the performance of the library.

Methods-To conduct of this study a large variety of data-gathering and analysis techniques have been adopted such as surveys, interviews, observations, etc. of the users of both the libraries.

Findings- Visva-Bharati Library (VBL) performs better in all respect than Burdwan University Library (BUL) specially overall library performance of VBL (3.20 mean score) where as BUL (3.34 mean score) in West Bengal, India.

Suggestions- Library authority should concentrate whether minimum service levels are available to users, what their desired service levels are but what they are getting (perceived) at this moment. Faculty, scholars and students opinion (feedback & suggestions) regarding library services have to take regular interval i.e. quarterly, half-yearly or yearly. Besides that, authority of university library should always promote introduction of new services to the academic community through notification as well as put it library website or university website.

Keywords-Performance Audit, University Libraries, Library as a Place, Information Control, Affect of Service, Adequacy Gap, Superiority Gap, Zone of Tolerance.

1.0 Introduction

There are some well known methods and guidelines available at present across the world to determine the performance of the different types of libraries. These are EQLIPSE (Evaluation and Quality of Library Performance: System for Europe, 1996), EQUINOX Project by European Commission (1998-2000), BIX – THE BIBLIOTHEKSINDEX: STATISTICAL BENCHMARKING IN GERMAN PUBLIC LIBRARIES (Klug, 2000), Quality Handbook: Performance indicators for library activities, The Swedish Library Association's Special Interest Group for Quality Management and Statistics (Edgren, Friberg, Adrial, Mansby, Nilsson, & Aslund, 2004), Measuring quality: Performance Measurement in Libraries by International Federation of Library Associations and Institutions (IFLA, 2007) and ISO 11620- Information and documentation- Library Performance Indicators (2008), ISO/TC 46/SC 8 N (Information and documentation — Statistics and Quality Indicators for Web Archiving, 2012).

Oklahoma Department of Libraries first applied performance audit in the world during the period March 24, 1977 to May 10, 1977. The purpose of this audit is to study the management, operations, programs, and fiscal needs of the library.

But beginning in the 21st century, public library, special library, national library and academic library across the world have been started to apply the performance audit to assess fund utilisation, work flow, material flow, work process and staffing allocations for in order to identify potentials economy, efficiency and effectiveness. In India, application of performance audit in libraries and information centres is broadly discussed by the XXIV National Seminar of the IASLIC (Special Interest Group 02, Social Sciences) in the 18-21 December, 2010, organised by Deen Dayal Upadhyay, Gorakhpur University, held at Gorakhpur (UP), India.

The university library has a valuable role in higher education as well as research activities. Like other public service institutions or those financed from public funds, university libraries have come under increasing pressure to demonstrate results and outcomes of their activities and to justify the use of resources allocated to them. Nowadays, it is difficult for university libraries to manage and proper utilization of library resources due to financial crisis. It is also difficult that library finance is properly utilized according to budget allocation. Some libraries have adequate

budget allocation whether it is utilizing properly. So it is challenge to library manager proper utilization of finance as well as resources of the library. Main purpose of the library is to give right user to provide right information at the right time.

Administrative and budget reforms in the public sector have affected the university libraries, particularly as they come under the purview of the fund of the government, and thus are subject to closer scrutiny and monitoring through various budgetary and audit procedures.

In this situation, libraries and information centres in different categories have been started to apply performance audit standard and methodologies for functioning the administration, reader service, technical service and circulation service as well as web-enabled services to the patrons.

The application of performance audit in university libraries will help to review and evaluate current library operations, compare current library operations, staffing and budget with similar university libraries, assist in developing performance and outcome measurement for the library and provide an assessment of how efficiently the library is running with available resources.

Performance audit of university libraries can be divided into two parts i.e. different library activities such as fund utilisation, administration work, reader services, technical services work flow, material flow, work process and staffing allocations that can be done through different types of performance indicators that is proposed by the ISO 11620 (2008) and IFLA-Measuring Quality: Performance Measurement in Libraries (2007). Another part what are users' saying about the performances of the university libraries that can assess through LibQUAL+ technique that is developed by Association Research Libraries in 2000.

Because Library is a service organization and the basic objectives are to satisfy the needs of the clienteles. For the purpose of this study, LibQUL+ technique has been applied to know performance of the university libraries from users' point of view.

1.1 The University of Burdwan: The **University of Burdwan** (also **Burdwan University** or **B.U.**) is a public university located in Bardhaman, West Bengal, India. It was established by the West Bengal government as a teaching and affiliating university on 15 June 1960 with six graduate departments and thirty undergraduate colleges spread over five districts that come under the jurisdiction of the university. The jurisdiction covers the districts of Burdwan, Birbhum,

Bankura, and Hooghly (except Srirampur). The main campus of the university is of 398 acres (approx).

The university offers 30 graduate programmes. There are 178 affiliated colleges (including degree colleges, B.Ed. colleges and private professional institutes). (Wikipedia)

1.1.1 Burdwan University Library (BUL)

The Central Library is housed in a two-storied building in the Golapbag campus. Being in the middle of the campus it is easily accessible from all departments of the university. It has a carpet area of about 12,000 sq ft. The library opens from 7-30 am to 6 pm except Saturdays and Sundays when it remains open from 10 am to 5 pm. There are 19 departmental libraries in the Golapbag campus attached to the respective departments. The library provides consultation facilities to outside scholars, teachers of the affiliated colleges and students of other universities as well as ex-students of our university on the basis of the Library Rules. There are different service points of this university library, these are membership counter, circulation section, reference section, periodical section, Online E-Journals & CD ROM Searching under the Inflibnet project, thesis collection, report section, Archival Cell.

1.1.2 Library Automation: Computerized library activities and networking of the central library has been undertaken under INFLIBNET Programme of the UGC. The Central Library has started automation of the library activities using SOUL Package, a user's friendly software developed by the INFLIBNET Centre. The library has its own local network connecting different sections of the library to the SOUL server. Online Public Access Catalogue (OPAC) service of the library provides databases of books, list of journals, theses. The OPAC service is extended to all the departments in the campus through LAN. (University of Burdwan)

1.1.3 Digital Library: Central Library is a centre directed towards rendering the knowledge based information service to every reader of any discipline of the academic community. It has started its prototype Digital Library using DSpace software in 2007 for initial testing but overall plan of the library has been jeopardized due to shortage of funds and staff because it needs a huge amount of fund and dedicated staff for its successful implementation.

1.2 Visva-Bharati: A study of the evolution of Visva-Bharati during the lifetime of its founder, Rabindranath Tagore, offers an insight into what this institution was intended to achieve. Rabindranath founded a school for children at Santiniketan and it was around this nucleus that the structure of an unconventional university developed through careful planning. In 1863, on a seven-acre plot at the site of the present institution, Debendranath Tagore, the poet's father, had built a small retreat for meditation, and in 1888 he dedicated, the land and buildings, towards establishment of a Brahmavidyalaya and a library. Rabindranath's school Brahmacharyasrama which started functioning formally from December 22, 1901 with no more than five students on the roll, was, in part, a fulfilment of the wishes of his father who was a considerable figure of his time in the field of educational reforms. From 1925 this school came to be known as Patha-Bhavana.

The school was a conscious repudiation of the system introduced in India by the British rulers and Rabindranath initially sought to realize the intrinsic values of the ancient education in India. The school and its curriculum, therefore, signified a departure from the way the rest of the country viewed education and teaching. Simplicity was a cardinal principle. Classes were held in open air in the shade of trees where man and nature entered into an immediate harmonious relationship. Teachers and students shared the single integral socio-cultural life. The curriculum had music, painting, dramatic performances and other performative practices. Beyond the accepted limits of intellectual and academic pursuits, opportunities were created for invigorating and sustaining the manifold faculties of the human personality.

 Founded by the first non-European Nobel Laureate Rabindranath Thākur (popularly known as Tagore) in 1921, Visva-Bharati was declared to be a central university and an institution of national importance by an Act of Parliament in 1951. The President of India is the Paridarsaka (Visitor) of the University, the Governor of West Bengal is the Pradhana (Rector), and the Prime Minister of India acts as the Acharya (Chancellor). The President of India appoints the Upacharya (Vice-chancellor) of the University.

 In May 1951, Visva-Bharati was declared to be a Central University and "An Institution of National Importance" by an Act of Parliament. It was granted the status of a unitary, teaching and residential university. The status and function of all the major institutions have been redefined in successive Amendments. (Visva Bharati)

1.2.1 Visva-Bharati Library

The genesis of the Visva-Bharati Library System goes back to 1901, with the founding of the Brahmacharya asrama at Santiniketan by Rabindranath Tagore and building up of the asrama library with his personal collection. Rabindranath placed much stress on the use of books in the educational development of students. He personally supervised the selection of books, and remained alert to the needs of Santiniketan students and teachers and kept himself aware of what was being published. When he found any lacunae in the kind of books available, he arranged to have books written and published.

The Library at Visva-Bharati grew under his care with help coming from great minds all over the world. With the evolving of Visva-Bharati, Rabindranath toured Europe and America with the intention of collecting funds. He was often given large donations of books by universities, individuals and groups of well wishers. In 1921, Sylvian Levi and his colleagues at Strasbourg gifted a collection of French classics for the library at Santiniketan. In 1925, the Italian Government under Mussolini sent a handsome gift of Italian classics to Visva-Bharati as part of an offer of inter-cultural cooperation. Andree Karpeles would send books of art and periodicals like *Studio International* to Rabindranath who in turn handed over them to the Library. While in Japan he collected a set of the famous Kokka magazine, renowned for its works of art.

The Library system consists of the Central Library, 12 Bhavana libraries and 30 seminar libraries. There are different service points of this university library; these are lending service, reference service, E-Content service, On-line Public Access Catalogue (http://172.16.2.2:8080/jopacgwt), book reservation, bibliographic services, reprographic services, inter library loan services through different libraries, access of e-journals, internet searching & browsing and Braille library service are offered for users by the library.

1.2.2 Library Automation: The library has connected with the campus wide fiber optic networked named GitanjaliNet (INFLIBNET). Library has 92 PCs, 39 printers, two copiers, one document camera, one LCD projector, etc. for its central library and 12 sectional libraries. Library management Software LIbSys-7 (Unicode Web Compliant) is being used for automating the library activity and services.

1.2.3 Digital Library: Library has created digital repository, the digitized collections, containing its old, rare and special collections, question papers, syllabuses and publications of academic & faculty members. Library website homepage is accessible at (http://172.16.2.2/).   (Visva Bharati), (Visva-Bharati, Annual Report 2009-2010, 2010-2011, 2011-2012)

1.3 Performance Audit and University Libraries

Performance audit is a relatively recent innovation introduced in many countries to assess matters of efficiency and effectiveness in the public sector. It is prevalent predominantly in democratic countries like the United States (US), the United Kingdom (UK), Canada, Australia, and New Zealand in response to increasing public demand (Manaf, 2010).

In India, Supreme Audit Institutions has been carrying out performance audit over the past 40 years on a variety of subjects across all sectors of public sector programmes in the Central and the State Government (Supreme Audit Institutions, India, 2004).

According to ICPA (The International Centre for Performance Auditing) "A performance audit is a systematic examination of evidence to independently assess the performance and management of a program against objective criteria."
According to A. N. Whitehead, 'Universities are schools of education and schools of research'. They preserve the connection between knowledge and the zest of life uniting the young and old in the imaginative consideration of learning.

The missions of the University Libraries are to make its resources available and useful to academic community and sustain and preserve a universal collection of knowledge and creativity of future generations. It has to be done with economically, efficiently and effectively.

The university library has a valuable role in higher education as well as research activities. Like other public service institutions or those financed from public funds, university libraries have come under increasing pressure to demonstrate results and outcomes of their activities and to justify the use of resources allocated to them.

1.4 Objectives

The objectives of this study as follow:

I. To assess the library users satisfied with the library resources and service provided to them.
II. To know the need of academic community and its services priorities.
III. To determine the overall performance of the libraries
IV. To audit the gap between perceived service levels to minimum service level i.e. adequacy gap as well as desired service level to perceived service level i.e. superiority gap.
V. To assess the performance of each services through the application of zone of tolerance.

1.5 Methodology

To conduct of this study a large variety of data-gathering and analysis techniques have been adopted such as surveys, interviews, observations etc. of the university library of Burdwan and Visva-Bharati, West Bengal, India. Data has been collected through questionnaire plus interview and appropriate statistical tools and techniques (table, histogram, bar chart, pie-chart etc.) have been used to present and analysis the collected data.

1.6 Framing the Questionnaire

To frame the user's questions, idea has been taken from LibQUAL+ ® technique that is developed by ARL (Association of Research Libraries). The users are asked to assign a value to the minimum, desired and perceived service level of the library how well their library meets their needs. By asking about minimum, desired, and perceived service levels, the survey lets us see where library services are below the minimum acceptable level; where they are better than the minimum, but less than the desired level; and even where they exceed expectations. Each response is scored on 5-point Likert scale, where '1' being low and '5' being high for assessing the minimum, desired & perceived service level of the library.

1.7 Sample

Table-1 Total users of the BUL & VBL

Name of University	Faculty	Scholars	Students	Total
BU	313	388	1989	2090
VB	573	465	4351	5389

The study has been conducted during the period from June 12 to September 30, 2013.

Questionnaires were distributed to 15 % faculty and scholars of each university out of total faculty and scholars of each university. In case of students 10 % random sampling has been done during the study period because student's population belong large number and time and cost is the factor for this study, so it has been considered 10 % random sampling.

For this purpose, random sample of numbers through lottery systems have been selected i.e. picked a number from a pot and keep it aside. Suppose I want to select a sample of size 10 from this population by Simple Random Sampling without Replacement (SRSWOR); by this sampling method suppose there are 10 random numbers like 36, 41, 60, 148, 170, 189, 217, 221, 267 & 300. Then 47 persons have selected from the visitors of that category coming to the library within the study period. In case someone is not interested to respond, questionnaire was given to next one.

In this method data have collected for this study as follows:

Table-2 Data Collection of 3 category users of the BUL & VBL

Name of University	Faculty		Scholars		Students	
	Distributed	Collected	Distributed	Collected	Distributed	Collected
BUL	47	47 (100 %)	59	59 (100 %)	199	199 (100 %)
VBL	86	73 (84.88 %)	70	64 (91.42 %)	435	416 (95.63 %)

1.8 Data Analyses & Interpretations

Data collected from the users of both university libraries have been entered into computer programming that is particularly developed for this purpose. Output has been taken into Excel file and then it is converted SPSS (Statistical Package for the Social Sciences, version 2.0) software. Statistical tools and graphical presentation i.e. Arithmetic Mean, Adequacy Mean, Superiority Mean, multiple charts, bar charts have been used to interpret data.

Part 1

General Information :

1. ID : `BS200`

2. Name : `Munmun Mandal`

3. Age : `22`

4. Gender : ○ i. Male ◉ ii. Female

5. Designation : ○ i. Faculty ○ ii. Research Scholar ◉ iii. Student ○ iv. External User ○ v. Staff

6. If Student, Please specify :

   i) Name of Course : `MA` ii) Year / Semester : `II` iii) Academic Session : `2011-2013`

7. Name of Department : `Bengali`

8. Name of University : `BU`

9. How long you are member of library ? ○ i. Less than 1 year ◉ ii. 1 - 2 years ○ iii. 2 - 3 years ○ iv. More than 4 years

10. How do you visit the library ? ○ i. Daily ◉ ii. Weekly ○ iii. Monthly ○ iv. Quaterly ○ v. Half - Yearly ○ vi. Yearly ○ vii. Never

11. When you visit, how much time do you spent in this library ? ○ i. Less than 1 hour ◉ ii. 2 - 3 hour ○ iii. 3 - 4 hours ○ iv. More than 4 hours

Next   Close

Demographic Information

Part 2

Q. No.	Library as Place	Minimum Service Level	Desired Service Level	Percived Service Level
1.	Having visually appealing physical facilities of library	2	4	3
2.	Convenient library operating hours to users	3	2	5
3.	Proper arrangement of print resourses in the library	1	4	2
4.	Automated library operations and maintaining computer and other equipments in the library	5	3	1
5.	Remote (i.e. far away from library) access to library resouses	0	0	0

Q. No.	Information Control	Minimum Service Level	Desired Service Level	Percived Service Level
6.	Having a good printed collection	3	5	3
7	Having a non-printed collection	4	5	3
8.	Providing sufficient On-line Public Access Catalogue(OPAC)	1	4	2
9.	Availability of required titles	4	5	3
10.	Retrieved (i.e. success) rate of OPAC/catalogue search	2	4	1
11.	Availability of required databases	2	5	3
12.	Time taken for document delivery in circulation/loan section	3	5	3
13.	Making library resourses available through Website	0	0	0

Previous   Next   Close

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Q. No.	Affect of Service	Minimum Service Level	Desired Service Level	Percived Service Level
14.	Library staff have willingness to help users	3	5	4
15.	Library staff give individual attention to users	3	4	3
16.	Library staff have knowledge to answer questions	2	4	3
17.	Library staff understand needs of users	3	5	2
18.	Readlines to respond to user's question	4	3	4
19.	Library staff who built confidence in users	4	5	1
Q.	Library Satisfaction	Minimum Service Level	Desired Service Level	Percived Service Level

4 Snapshots of Computer Programming

1.9 Scope and Limitation

The scope of the study is limited to only to two (2) university libraries in West Bengal. The core limitation of this study is that human nature is highly variable and immeasurable in quantity and integrity of the response may be less, since the data were collected for four months period.

2. Literature Review

A literature review is both a summary and explanation of the complete and current state of knowledge on a limited topic as found in academic books and journal articles. There are two kinds of literature reviews; one that students are asked to write as a stand-alone assignment in a course, often as part of their training in the research processes in their field, and the other that is written as part of an introduction to, or preparation for, a longer work, usually a thesis or research report, (The Learning Commons, University of Guelph)

Thompson, Cook, & Heath (2000) have discussed various measurement models employed to obtain attitude and perception data. Some protocols employ a 'gap measurement model' to frame perceptions. One important benefit of using a gap measurement model is that tools such as LibQUAL+ inherently incorporate a natural lie or random-response scale. The present study investigates performance of scores on the scale for the 4407 LibQUAL+ Phase one participants.

Thompson, Cook, & Heath (2001) explored the question: what are the fewest dimensions required to measure users' perceptions of library service quality? Understanding the number and hierarchy of dimensions that users employ in evaluating library services is important, because we want to use scoring dimensions that correspond with users' perceptions rather than our own preconceptions of what those perceptions might be. The study was conducted as part of the LibQUAL+ project, which is one of the ARL "New Measures" initiatives. Results for data provided by 3987 participants from eleven ARL institutions were consistent with a view that a single set of scores is one reasonable way to characterize user perceptions of library service quality.

Cook, Heath, & Thompson, (2002) investigated a study based on data from 20,416 LibQUAL+^{TM} respondents from forty-three universities, the authors developed norm tables to allow librarians to interpret LibQUAL+^{TM} scores with respect to typical profiles at other universities. Norms were developed for both "perceived" service scores and "gap" scores (e.g., "perceived" performance minus "minimally acceptable" performance). Norms such as these will assist library managers in decision-making by identifying (a) specific areas for needed improvement, (b) specific areas of needed additional service quality information (e.g., focus groups), and (c) peer institutions from which superior service practices can be modeled.

The LibQUAL+^{TM} protocol was designed to help librarians assess whether their services are meeting user expectations. In this article, the relationship of scores on these locally selected LibQUAL+^{TM} augmentation items with LibQUAL+^{TM} scores are examined for the first time by Thompson, Cook, & Kyrillidou (2006). The results provide some guidance regarding which augmentation items do and do not add different information than the 22 core LibQUAL+^{TM} items with respect to users' library service quality perceptions. These results may be helpful to future LibQUAL+^{TM} users in selecting augmentation items because the results quantify the degrees of

overlap of information from these items with the LibQUAL+^{TM} core items. The fi ndings also suggest that LibQUAL+^{TM} scores are reasonably psychometrically valid.

This study was conducted to address five research questions bearing upon the psychometric validity of LibQUAL+^{TM} scores using data provided by 20,416 participants. It was found that LibQUAL+^{TM} subscale and total scores were highly correlated with satisfaction scores in two independent subsamples. As expected, respondents who reported never use the library systematically rated services lower than did other users. Also as expected, LibQUAL+^{TM} mean scores—intended primarily to measure perceived service quality—were little correlated with institutional ARL Index scores. (Heath, Cook, Kyrillidou, & Thompson, 2002)

Thompson, Cook & Thompson (2002) evaluated these data to address two research questions: (a) how reliable were the LibQUAL+^{TM} scores? ; and (b) what were the dimensions underlying user perceptions of library service quality? The second question focuses upon identifying the most appropriate scales to report LibQUAL+^{TM} scores to librarians using the protocol to improve service quality.

One of the two major ways of interpreting LibQUAL+^{TM} data involves placing perceived service quality ratings within the "zones of tolerance" defined as the distances between minimally acceptable and desired service quality levels. Cook, Heath, & Thompson, (2003) compared the zones of tolerance on the 25 LibQUAL+^{TM} items across undergraduate, graduate student and faculty groups, and across institution types (i.e., community college, health science setting, four-year non-ARL university, and four-year ARL university). These data were generated during the 2002, third-phase of the LibQUAL+^{TM} study. Data were provided by 63,285 students and faculty.

LibQual+^{TM} survey asks by Earlham College Libraries, (2006) to participants not just to rate the quality of service, but to also indicate the level of performance which is minimally acceptable and the quality of service which is viewed as ideal. A user's rating of service quality is compared to his/her minimum rating as an indication of whether or not adequate service in being provided (adequacy gap), and the comparison with the ideal level of service (superiority gap) provides a measure of room for improvement.

Harer (2006) described how small, academic libraries may realize significant benefits from employing LibQual+^{TM} as an assessment of customer needs and expectations, stressing that these

benefits may vary by the actual size of the institution. The study found that a larger response rate was realized than that of the larger of the two institutions, especially by faculty, and suggests that this is due to the nature of the small colleges where faculty and student body are more familial. The paper also describes LibQual+^{TM} as a type of "turn-key" survey process that is advantageous for small libraries with limited resources.

Bowe & Dennis (2007) outlined three analytic tools utilized in the analysis and interpretation of LibQUAL+^{TM} quantitative data. The paper found that these tools provide a way to more easily utilize LibQUAL+^{TM} results in taking actions and developing strategic plans designed to improve patrons' perceptions of service quality. These tools also allow for the continuous evaluation of implemented plans.

Duffy, Jaggars & Smith (2008) aimed to examine how well the service priorities of library staff are aligned with the priorities of undergraduates, graduate students, and faculty. Preliminary results indicate that service priorities for library staff align more closely with those of undergraduates than with those of graduate students and faculty.

Hiller, Kyrillidou, & Self (2008) aimed to examine the organizational factors that facilitate and impede effective data use and the implications for assessment in research libraries. This study found that libraries surveyed have made some progress incorporating data in decision making and services improvement, but there is much work to be done.

Hariri & Afnani (2008) conducted a study using a LibQUAL+^{TM} survey, consisting of 22 core questions. The research sample included 361 users of the library and the results were interpreted on the basis of gap analysis. The result of this study found that the mean values of gap scores for female and male users were compared statistically. The mean score for the overall adequacy gap for women was 0.08 while this score for men was 20.08. The overall and dimensions superiority gap for both genders were negative. Statistical analysis did not show significant differences between mean values of gap scores for female and male users. The desired level of service quality, as in most LibQUAL+^{TM} surveys in non-Iranian libraries, was not met by this library.

Russell (2009) provided an outline of the Lib-QUAL+™ web-based survey conducted in 2009 at ITT (Institute of Technology Tallaght) Dublin library. The findings of this study were positive in each of the three dimensions of library service quality. Overall, satisfaction levels were higher in the 'Affect of service' dimension than in the 'Information control' or 'Library as place'

dimensions. The highest satisfaction levels were registered by respondents for 'library staff who instill confidence' and 'giving users individual attention'. Low levels of satisfaction were noted for 'quiet space for individual work' and 'space for group learning and group study'.

Ahmed & Shoeb (2009) attempted to examine of the service quality of Dhaka University Library (DUL), a premier public university library in Bangladesh, from its users' viewpoint. The results of the study showed that DUL services are lagging far behind what is expected by its users. The result of the zone of tolerance showed that most of the items of service quality are not within the range of tolerance. A number of users' desired expectations for service quality are identified. The results obtained through exploratory factor analysis suggest that university library service quality consists of four dimensions – i.e. affect of service (organisational), collection and access, library as a place, and affect of service (personal) – which are different from SERVQUAL's original dimensions.

In 2006/2007, the Canadian academic library community came together in the largest national LibQUAL+$^®$ consortium to conduct ARL library service quality survey. This paper found out to address how and why the national consortia project came about, the challenges for recruiting and managing participants, and what was learnt, together with possible future directions. (Kalb, 2010).

Mehrjerdi, Toranlo & Jamali (2009) presented the perception of service quality. The measurement of service quality the LibQUAL method is applied to identify the gap between customer expectation and perceptions of the actual service received. The linguistic procedure is developed considering four dimensions of LibQUAL. It is found that there is no gap between the students' expectations and perceptions in three dimensions of "affect of service", "library as a place", and "personal control". But, from the students' point of view, regarding the "access to information" dimension, there is a significant difference between the students' expectations and perceptions.

Loyola University, Chicago (2010) conducted the LibQual survey to ask users to assign three scores, ranging from a low of 1 to a high of 9, to each of 22 aspects of library performance. The "Minimum Service Level" refers to the baseline of what the user considers acceptable. The "Desired Service Level" reflects what they would ideally like. Finally, the "Perceived Service Level" reflects their interpretation of existing service. The overall mean for the adequacy gap

(which is the difference between minimum expected levels and perceived levels) jumped from a -0.03 to 0.40.

Clemson University Libraries (2011) made a survey using LibQUAL technique to know the adequacy and superiority mean of users. Survey results indicate that all user groups are largely satisfied with the library's service and with the level of attention given by and the caring assistance of library employees.

Oak & Patil (2011) conducted a study to find out the gaps between the customers' perceptions regarding quality of library service in IMCC, Pune (state level library) & IIM Bangalore using the LIBQUAL+ technique. The results of the study show that there is a gap in customers' perception of quality of library services against their expectations.

Rehman (2012) made a study to assess the library service quality in university libraries of Pakistan. The study showed that Pakistani users expected very high level of service quality. They expected good physical facilities, adequate collection, easy access and proper study space. The highest expectations were found on LP dimension (physical space, environment and location) and lowest were related to AS dimension (ability, attitude and willingness of staff). Among three user groups, the faculty expected the highest and graduates the lowest level of services. The results also suggested that Pakistani users have two levels of expectations (minimum and desired level) concerning to library service quality. Moreover, the minimum expectations were significantly different from desire expectations.

Neshat & Dehghani (2014) have conducted a study to measure service quality in a National Library of Iran (NLAI) from users' views, based on gap analysis model by using the LibQUAL+^{TM} tools. Findings showed that from users' views, librarians could not meet minimum users' expectations except in some cases. Library resource quality in perceived level of service is less than their expectations minimum. In other words, library resources could not meet minimum expectation and there are more gaps until desired level. Library as Place dimension has more quality than the two other dimensions, but NLAI place quality in perceived level is less than users' expectation minimum. Of course there is a little gap with perceived level in this dimension.

3. Data analysis and Interpretation

3.1 Demographic Features

Features	Details		
		BUL	VBL
Gender	Male	153 (50.16 %)	349 (63.11 %)
	Female	152 (49.84 %)	204 (36.89 %)
	Total	**305**	**553**
Age Group	17-20	0	157 (28.49 %)
	21-30	247 (80.98 %)	318 (57.71 %)
	31-40	22 (7.22 %)	28 (5.08 %)
	41-50	18 (5.9 %)	30 (5.44 %)
	Above 50	18 (5.9 %)	20 (3.62 %)

Table-3 Demographic features of the BUL & VBL respondents

Gender-The table-3 shows that BUL have 153 (50.16 %) male and 152 female (49.84 %) respondents out of total 305 respondents; VBL have 349 (63.11 %) male and 204 female (36.89 %) respondents out of total 553 respondents.

Age- The respondents are grouped into 5 groups as 21-30 years group forms the biggest group among the user group of each university followed by 17-20 years group forms the second largest group of VBL because these universities offer graduate courses in its own campus. Age group have been also analysed by university wise. These are as follows:-

80.98 % in age group 21-30, 7.22 % in age group 31-40, 5.9 % in age group 41-50 & above 50 each of BUL respondents. There are no respondents in the age group 17-20.

28.49 % in age group 17-20, 57.71 % in age group 21-30, 5.08 % in age group 31-40, 5.44 % in age group 41-50 each and above 50 3.62 % responded of VBL users.

3.2 Membership Period

Name of University Libraries		Membership Period			
		Less than 1 Year	1-2 Years	2-3 Years	More than 4 years
BUL (n=305)	Faculty	1(0.33 %)	2 (0.66 %)	5 (1.64 %)	39 (12.79 %)
	Research Scholar	0	13 (4.26 %)	30 (9.84 %)	16 (5.25 %)
	Student	75 (24.59 %)	121 (39.67 %)	3 (0.98 %)	0
VBL (n=553)	Faculty	0	3 (0.54 %)	14 (2.54 %)	56 (10.16 %)
	Research Scholar	18 (3.27 %)	11 (2.00 %)	19 (3.45 %)	16 (2.90 %)
	Student	93 (16.88 %)	176 (31.94 %)	52 (9.44 %)	93 (16.88 %)

Table-4 Membership Period of the BUL & VBL respondents

The table-4 shows that membership period of both university library users. Membership period have been categorized into 4 groups.

In BUL, 12.79 % faculty are member more than 4 years where as 9.84 % research scholars are member 2-3 years followed by 5.25 % more than 4 years and 24.59 % & 39.67 % students are the member of less than 1 year and 1-2 years respectively.

In VBL, 10.16 % faculty are member more than 4 years followed by 2.54 % 2-3 years where as 3.45 % research scholars are member 2-3 years followed by 3.27 % less than 1 year, 2.90 % more than 4 years, 2 % 1-2 years and 31.94 %, 16.88 % & 9.44 % students are the member of 1-2 years, more than 4 years & less than 1 year each and 2-3 years respectively.

3.3 Frequency of Visit

Name of University	Library Visit (Frequency)

Libraries		Daily	Weekly	Monthly	Quarterly	Half-Yearly	Yearly
BUL (n=305)	Faculty	3 (0.98 %)	34 (11.15 %)	9 (2.95 %)	0	0	1 (0.33 %)
	Research Scholar	3 (0.98 %)	26 (8.52 %)	28 (9.18 %)	2 (0.66 %)	0	0
	Student	49 (16.07 %)	141 (46.23 %)	8 (2.62 %)	1 (0.33 %)	0	0
VBL (n=553)	Faculty	3 (0.54 %)	56 (10.16 %)	13 (2.36 %)	1 (0.18 %)	0	0
	Research Scholar	25 (4.54 %)	34 (6.17%)	2 (0.36 %)	0	2 (0.36 %)	1 (0.18 %)
	Student	252 (45.37 %)	158 (28.68 %)	5 (0.91 %)	1 (0.18 %)	0	0

Table-5 Library Visit of the BUL & VBL respondents

The table-5 shows that frequency of visit of library users of both universities. Frequency of visit of the library has been grouped into six categories. These are daily, weekly, monthly, quarterly, half-yearly and yearly.

In case of BUL sample 11.15 % faculty visit library weekly followed by 2.95 % monthly, 0.98 % daily and 0.33 % yearly. 9.18 % research scholars go library monthly, followed by 8.52 % weekly, 0.98 % daily and 0.66 % quarterly whereas 46.23 % students come library weekly followed by 16.07 % daily, 2.62 % monthly & 0.33 % quarterly.

In case of VBL sample 10.16 % faculty visit library weekly followed by 2.36 % monthly, 0.54 % daily and 0.18 % quarterly. 6.17 % research scholars go library weekly followed by 4.54 % daily, 0.36 % monthly & half-yearly each and 0.18 % yearly whereas 45.37 % students come library daily followed by 28.68 % weekly, 0.91 % monthly & 0.18 % quarterly.

3.4 Time Spent

Name of University Libraries		Time Spent			
		Less than 1 Hour	2-3 Hours	3-4 Hours	More than 4 Hours
BUL (n=305)	Faculty	20 (6.56 %)	23 (7.54%)	3 (0.98 %)	1 (0.33 %)
	Research Scholar	27 (8.85 %)	23 (7.54 %)	2 (0.66 %)	7 (2.30 %)
	Student	163 (53.44 %)	35 (11.48 %)	1 (0.33 %)	0
VBL (n=553)	Faculty	1 (0.18%)	15 (2.72 %)	40 (7.26 %)	17 (3.09 %)
	Research Scholar	8 (1.45 %)	40 (7.26 %)	10 (1.81 %)	6 (1.09 %)
	Student	55 (9.98 %)	298 (53.72 %)	50 (9.07 %)	13 (2.36 %)

Table-6 Time Spent of the BUL & VBL respondents

The table-6 shows that time spent of library users of both universities. Time spent of the library has been categorized into four groups. These are less than 1 hour, 2-3 hours, 3-4 hours and more than 4 hours.

Total sample of BUL is 305 including faculty, research scholars and students. They have spent their time as 7.54 % faculty spent time 2-3 hours followed by 6.56 % less than 1 hour, 0.98 % 3-4 hours and 0.33 % more than 4 hours. 8.85 % research scholars spent less than 1 hour followed by 7.54 % 2-3 hours, 2.30 % more than 4 hours and 0.66 % 3-4 hours whereas 53.44 % students spent their time less than 1 hour in the library followed by 11.48 % 2-3 hours and 0.33 % 3-4 hours.

On the other hand, total sample of VBL is 553 including faculty, research scholars and students. They have spent their time as 7.26 % faculty spent time 3-4 hours followed by 3.09 % more than 4 hours, 2.72 % 2-3 hours & 0.18 % less than 1 hour.7.26 % research scholars spent 2-3 hours followed by 1.81 % 3-4 hours, 1.45 % less than 1 hour & 1.09 % more than 4 hours whereas

53.72 % students spent their time 2-3 hours followed by 9.98 % less than 1 hour in the library, 9.07 % 3-4 hours and 2.36 % 3-4 hours.

3.5 Statement Ranking

3.5.1 Statement Ranking of Burdwan University Library Users

Q. No.	Question Statement	Perceived Mean Score
14	Library staff have willingness to help users	3.83
15	Library staff give individual attention to users	3.41
1	Having visually appealing Physical facilities of library	3.34
2	Convenient Operating hours to Users	3.34
19	Library staff who built confidence in users	3.29
16	Library staff have knowledge to answer questions	3.25
17	Library staff understand needs of users	3.24
6	Having a good printed collection	3.22
18	Readiness to respond to users' questions	3.21
12	Time taken for document delivery in circulation/Loan section	3.07
3	Proper arrangement of print resources in the library	2.94
9	Availability of Required Titles	2.82
	Overall Perception Average	**2.54**
8	Providing Sufficient online catalogue (OPAC)	2.05

10	Retrieve (i.e. success) rate of OPAC/Catalogue search	1.99
4	Automated library operations and maintaining Computer and other equipments in the library	1.94
7	Having a non-printed collection	1.63
11	Availability of required databases	1.51
13	Making library resources available through Website	.11
5	Remote (i.e. far away from library) access to library resources	.00

Table-7 Statement Ranking of the BUL respondents

The table-7 shows that perceived mean score of each question, total 19 questions were asked to the library users of the Burdwan University library. From this, overall average perceived mean score has been derived; here mean score is "2.54".

The table indicates that if the services and resources provided by the library greater than (>) 2.54 then the services and resources provided perceived better, in case of services and resources provided less than (<) 2.54 then library authorities have to concentrate these services so that users can get satisfied with these services.

Therefore, the services and resources are better position in BUL as follows:

Library staff have willingness to help users (3.83)

Library staff give individual attention to users (3.41)

Having visually appealing Physical facilities of library (3.34)

Convenient Operating hours to Users (3.34)

Library staff who built confidence in users (3.29)

Library staff have knowledge to answer questions (3.25)

Library staff understand needs of users (3.24)

Having a good printed collection (3.22)

24

Readiness to respond to users' questions (3.21)

Time taken for document delivery in circulation/Loan section (3.07)

Proper arrangement of print resources in the library (2.94)

Availability of Required Titles (2.82)

The services and resources have to be concentrated by the Burdwan University library authorities as follows:

Providing Sufficient online catalogue (OPAC) (2.05)

Retrieve (i.e. success) rate of OPAC/Catalogue search (1.99)

Automated library operations and maintaining Computer and other equipments in the library (1.94)

Having a non-printed collection (1.63)

Availability of required databases (1.51)

Making library resources available through Website (0.11)

Remote (i.e. far away from library) access to library resources (0.00)

Therefore "remote (i.e. far away from library) access to library resources" should start by the library and "making library resources available through website" should be posted more so that users can get their required resources.

3.5.2 Statement Ranking of Visva-Bharati Library Users

Q. No.	Question Statement	Perceived Mean Score
6	Having a good printed collection	4.08
14	Library staff have willingness to help users	3.71
4	Automated library operations and maintaining Computer and other equipments in the library	3.52
12	Time taken for document delivery in	3.52

	circulation/Loan section	
2	Convenient Operating hours to Users	3.49
3	Proper arrangement of print resources in the library	3.49
1	Having visually appealing Physical facilities of library	3.48
9	Availability of Required Titles	3.45
15	Library staff give individual attention to users	3.37
8	Providing Sufficient online catalogue (OPAC)	3.30
	Overall Perception Average	**3.20**
10	Retrieve (i.e. success) rate of OPAC/Catalogue search	3.14
16	Library staff have knowledge to answer questions	3.13
13	Making library resources available through Website	3.09
5	Remote (i.e. far away from library) access to library resources	3.02
17	Library staff understand needs of users	2.95
18	Readiness to respond to users' questions	2.87
19	Library staff who built confidence in users	2.75
11	Availability of required databases	2.34
7	Having a non-printed collection	2.13

Table-8 Statement Ranking of the VBL respondents

The table-8 shows that perceived mean score of each question, total 19 questions were asked to the library users of the Visva- Bharati library. From this, overall average perceived mean score has been derived; here mean score is "3.20".

The table-8 also indicates that if the services and resources provided by the library greater than (>) 3.20 then the services and resources provided perceived better, in case of services and resources provided less than (<) 3.20 then library authorities have to concentrate these services so that users can get satisfied with these services.

Therefore, the services and resources are better position in VBL as follows:

Having a good printed collection (4.08)

Library staff have willingness to help users (3.71)

Automated library operations and maintaining Computer and other equipments in the library (3.52)

Time taken for document delivery in circulation/Loan section (3.52)

Convenient Operating hours to Users (3.49)

Proper arrangement of print resources in the library (3.49)

Having visually appealing Physical facilities of library (3.48)

Availability of Required Titles (3.45)

Library staff give individual attention to users (3.37)

Providing Sufficient online catalogue (OPAC) (3.30)

The services and resources have to be concentrated by the Visva-Bharati library authorities as follows:

Retrieve (i.e. success) rate of OPAC/Catalogue search (3.14)

Library staff have knowledge to answer questions (3.13)

Making library resources available through Website (3.09)

Remote (i.e. far away from library) access to library resources (3.02)

Library staff understand needs of users (2.95)

Readiness to respond to users' questions (2.87)

Library staff who built confidence in users (2.75)

Availability of required databases (2.34)

Having a non-printed collection (2.13)

3.6 Comparative Study of Each Dimension

In this study, the users are asked to assign a value to the minimum, desired and perceived service level of the library how well their library meets their needs into 3 core dimensions viz., Library as a Place (LP), Information Control (IC), Affect of Service (AS) and one additional dimension added locally to get idea from the user's about overall library performance. By asking about minimum, desired, and perceived service levels, where library services are below the minimum acceptable level; where they are better than the minimum, but less than the desired level; and even where they exceed expectations.

Minimum Service Level is baseline of what the user considers acceptable (i.e. what users expect or where should this service level start)

Desired Service Level reflects what user would ideally like (i.e. what users want or where should this service level be)

Perceived Service Level reflects user interpretation of existing service (i.e. what users get where is the service level now), (Begay, 2011)

Library as a Place (LP) dimension deals with the physical environment of the library as a place for individual study, group work and inspiration that is the performance of library as a place.

Information Control (IC) dimension relates to whether users are able to find required information in the library in the format of their choosing, in independent and autonomous way that is how effectiveness of information resources and information delivery tools.

Affect of Service (AS) is the human dimension of service quality. The questions of this dimension relate to user interactions with and the general helpfulness and competency of library staff that is how efficiently services are provided by the library staff. (Oak & Patil, 2011)

For getting the more focused results, each dimension mentioned above is assessed and analysed as follows:

Dimension	Perceived Mean Score	
	BUL	VBL
LP	2.31	3.40
IC	2.05	3.13
AS	3.37	3.13

Table-9 Dimension wise perceived mean score of BUL & VBL

The table-9 shows that BUL has achieved 2.31, 2.05 & 3.37 perceived mean score for LP, IC and AS respectively while VBL has achieved 3.40, 3.13 & 3.13 perceived mean score for LP, IC & AS. In case of LP & IC VBL has performed well than BUL but BUL performed better in case AS than VBL. It can also represented by the following figure:
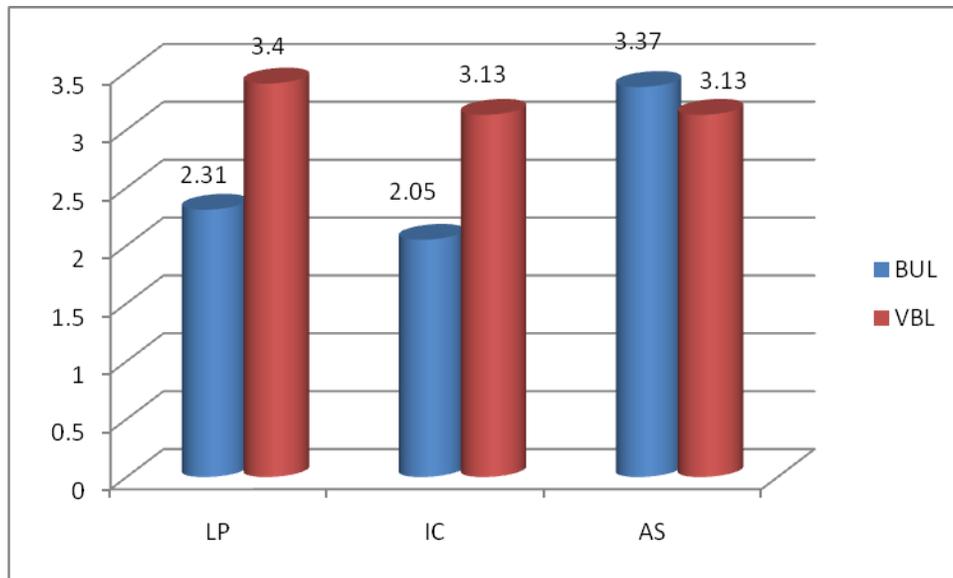
Figure-1 Dimension wise comparative perceived mean score of BUL & VBL

3.7 Comparative Study of Overall Library Performance

University Libraries	Perceived Mean
BUL	3.34
VBL	3.76

Table-10 Overall perceived mean score of BUL & VBL

Overall library performance was asked to users (question no. 20) of the studied university libraries to get how users are satisfied with overall performance of the library. The table-10 shows that VBL has achieved 3.76 mean score where as BUL has achieved 3.34. Therefore, VBL has performed better than BUL. It can be also represented by the following figure:
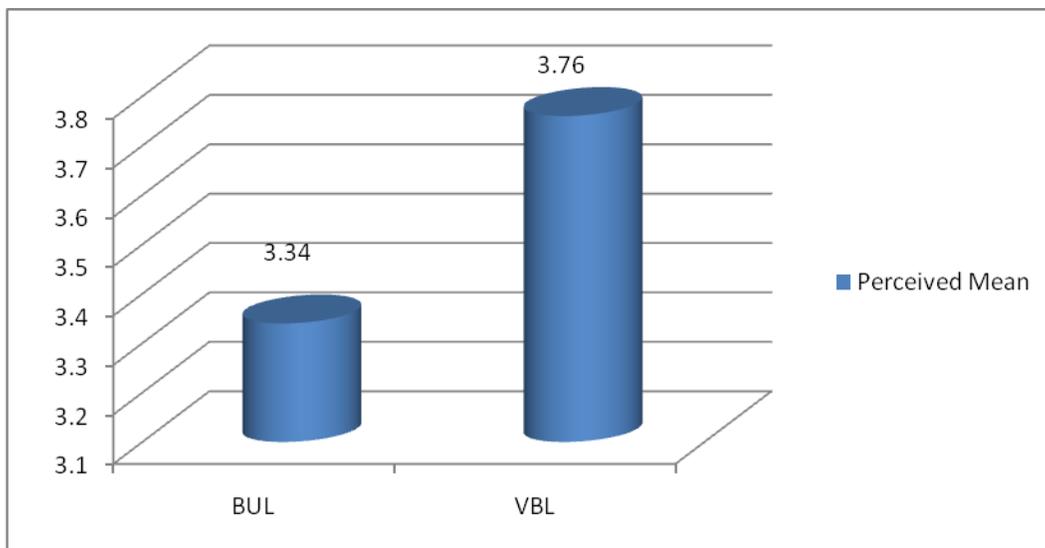
Figure-2 Overall comparative perceived mean score of BUL & VBL

3.8 Comparative Study of Adequacy Gap (AG) of Each Dimension

Dimension wise adequacy gap has been discussed in this part. Adequacy Gap is a cumulative function of *Perceived-Minimum* Service Scores; therefore

Adequacy Gap = PERCEIVED - MINIMUM

Higher the adequacy gap means each dimension has perceived more than minimum service level provided by the library. So, each dimension has performed well in terms of adequacy gap that means library provide better services to its users than minimum service level. So, higher score is more desirable. Here, minimum service level means what users expect and perceived service level is what users actually getting at the time of service provided by the libraries. The table-11 shows the dimension wise adequacy gap two studied university libraries.

Dimension	BUL	VBL
LP	0.12	0.39
IC	0.16	0.52
AS	0.14	0.49

Table-11 Dimension wise Adequacy Gap of BUL & VBL

VBL has achieved 0.39, 0.52 and 0.49 mean score as Adequacy Gap of LP, IC and AS respectively where as 0.12, 0.16 & 0.14 mean score is achieved by BUL for LP, IC & AS. So, each dimension of VBL has performed well in terms of adequacy gap that means library provide better services to its users than minimum service level than BUL. It can be represented by the following figure:
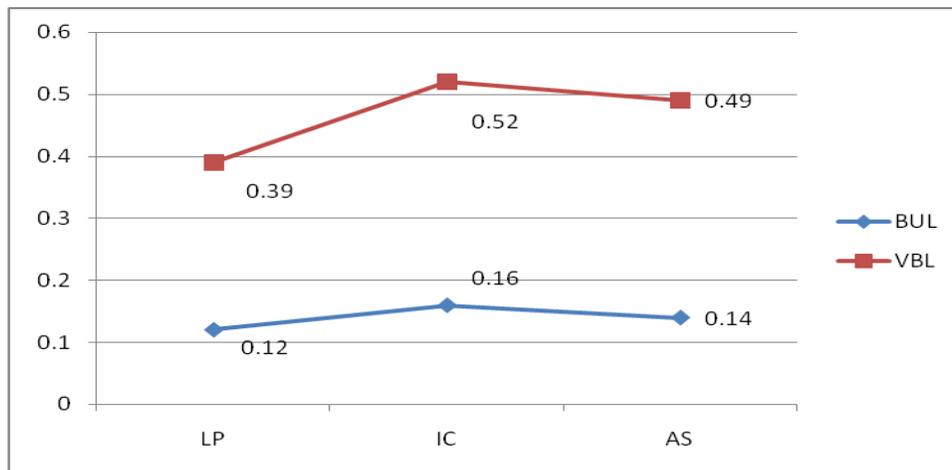

Figure-3 Dimension wise comparative study of Adequacy Gap of BUL & VBL

3.9 **Comparative Study of Superiority Gap (SG) of Each Dimension**

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Superiority Gap is a cumulative function of *Perceived-Desired* Service Scores; Higher (Positive or at least less negative) Scores are more desirable; therefore

Superiority Gap = PERCEIVED - DESIRED

Higher the Superiority Gap means users desired service level is more demand than the actual services provided at present by the libraries. So, higher the superiority gap (Positive or at least less negative) means each dimension has performed well that means desired service level of the users have satisfied by perceived service level.

Dimension	BUL	VBL
LP	-1.32	-0.64
IC	-1.54	-0.78
AS	-1.24	-0.85

Table-12 Dimension wise Superiority Gap of BUL & VBL

VBL has achieved -0.64, -0.78 and -0.85 mean score as Superiority Gap of LP, IC and AS respectively where as -1.32, -1.54 & -1.24 mean score is achieved by BUL for LP, IC & AS. So, each dimension of VBL has performed well than BUL in terms of superiority gap that means library provide better services to its users than they demand. It can be represented by the following graph:
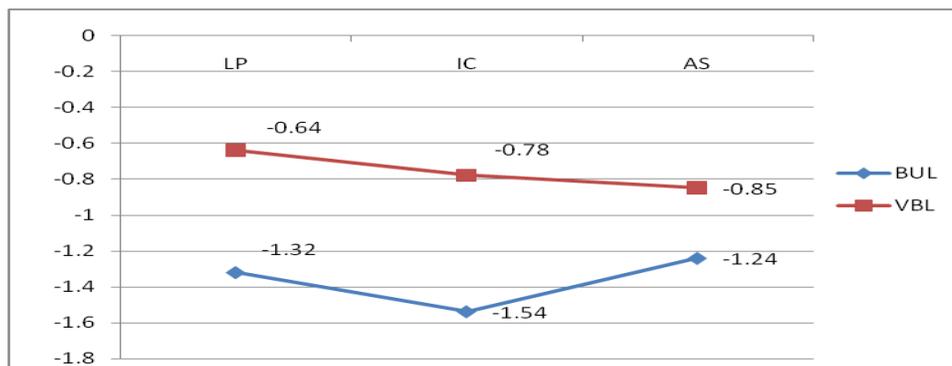

Figure-4 Dimension wise comparative study of Superiority Gap of BUL & VBL

3.10 Comparative Study of Zone of Tolerance (ZoT) of Each Dimension

Zone of Tolerance is the area between minimally acceptable and desired service performance ratings. Perception ratings ideally fall within the "Zone of Tolerance". Berry & Parasuraman (1991) also 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 in the university libraries is that users may accept variation within a range of performance and any increase in performance within this area will only have a marginal effect on perceptions. It can be represented by the following figure:
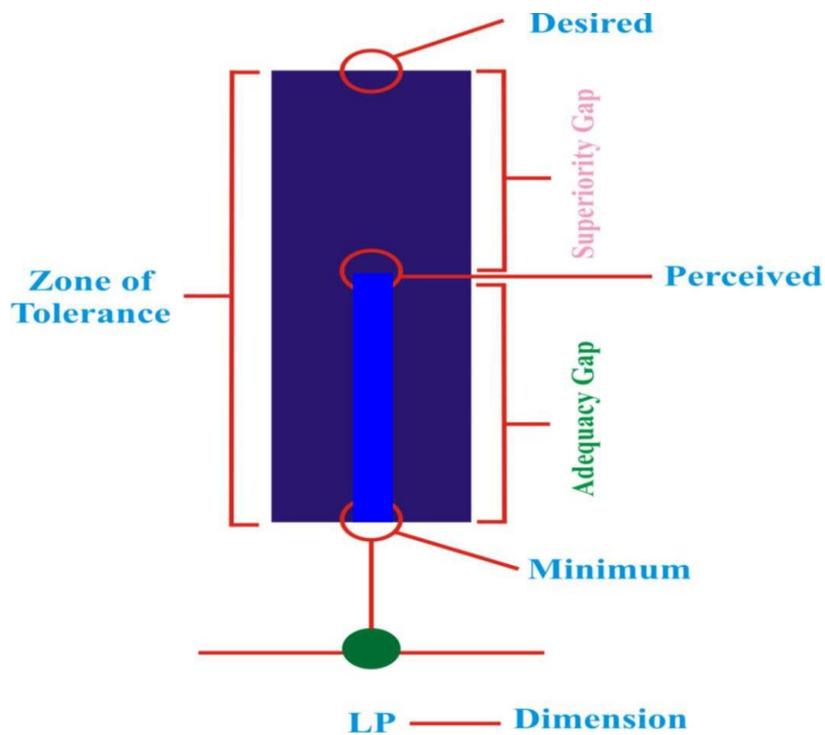

Figure-5 Understanding Zone of Tolerance

Source:- (Killick, Analysis and Interpretation of the LibQUAL+® Results, 2012 but modified for this study)

The Zone of Tolerance has been determined of each dimension of both university library users' as follows:

Service Level	LP		IC		AS	
	BUL	VBL	BUL	VBL	BUL	VBL
Minimum Mean	2.19	3.00	1.89	2.61	3.22	2.64
Perceived Mean	2.31	3.4	2.05	3.13	3.37	3.13
Desired Mean	3.63	4.05	3.59	3.91	4.61	3.98

Table-13 Comparative Study of Zone of Tolerance of LP, IC & AS between BUL & VBL

The Table-13 shows minimum, perceived and desired service level mean of Library as a Place (LP), Information Control (IC) and Affect of Service (AS) of BUL & VBL users'.

Here, Library as a Place (LP) dimension, lowest gap score between minimally acceptable and desired service performance ratings of studied university libraries are as follows VBL (1.05) & BUL (1.44). In case of Information Control (IC) dimension, lowest gap score between minimally acceptable and desired service performance ratings between VBL (1.30) & BUL (1.70) and as an Affect of Service (AS) dimension performance ratings between VBL (1.34) & BUL (1.39).

Aggregate scores for Library as a Place (LP), Information Control (IC) and Affect of Service (AS) dimension between BUL & VBL users' of library service performances zone of tolerance in the following chart have been plotted graphically:
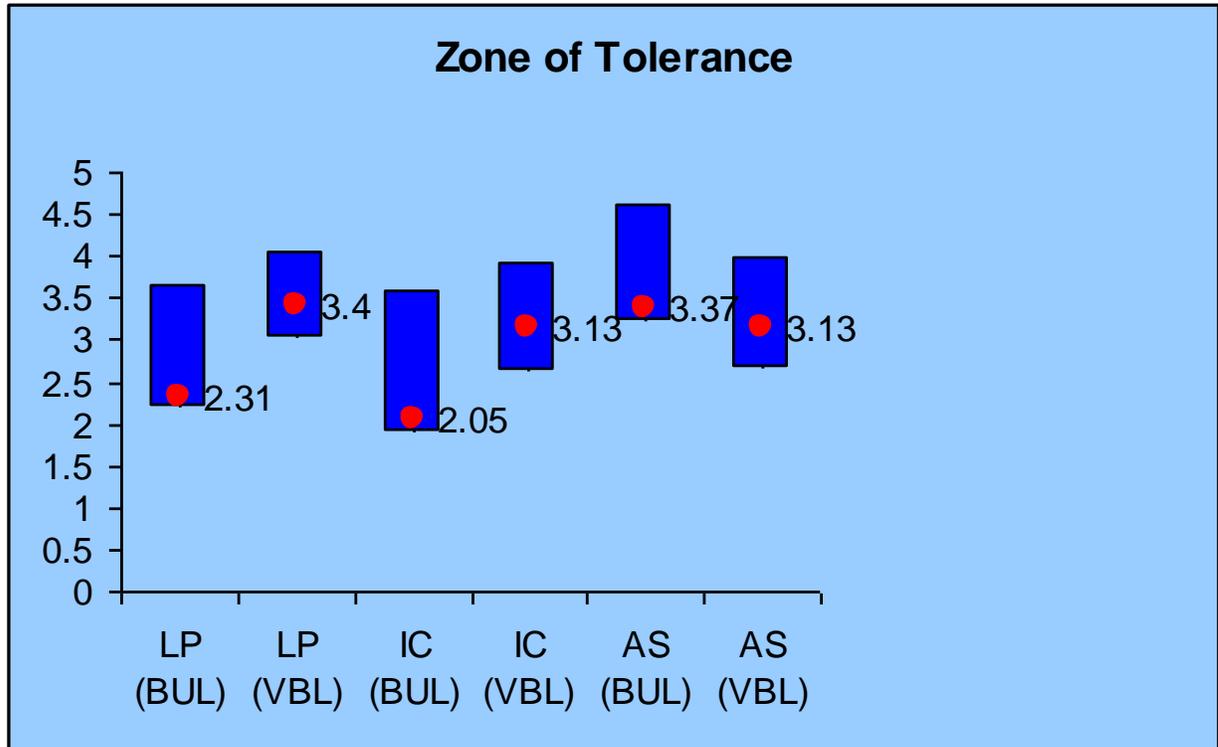

Zone of Tolerance

Figure-6 Dimension wise comparative study of zone of tolerance of BUL & VBL respondents

In the Figure-6, the blue bar represents the range of minimum to desired aggregate scores for LP, IC & AS dimension. The Interior Red Circle represents the range of Minimum to Perceived aggregate scores.

The area between the top of the Blue Bar and top of Red circle represents the Gap for LP, IC & AS dimension of library service performance. Less the gap between the desired and perceived service level of the university libraries, then performance is better of that library.

Here VBL (LP-0.65, IC-0.78, and AS-0.85) performed well than BUL (LP-1.32, IC-1.54, AS-1.24) in terms of zone of tolerance.

4. Findings

    i.   BUL has more or less equally male and female respondents whereas VBL has more male respondents than female respondents. Both the libraries have highest respondents in the age group 21-30 years.

   ii.   In case of membership period 12.79 % and 10.16 % of faculty respondents of BUL & VBL are member more than 4 years respectively. Major of the respondents from research scholar group of both the libraries are 2-3yeras i.e. BUL (9.84 %) & VBL (3.45 %). Students' respondents of both the libraries are 1-2 years i.e. BUL (39.67 %) & VBL (31.94 %).

  iii.   It is found that major of the respondents from faculty of both the libraries visit library weekly i.e. BUL (11.15 %) & VBL (10.16 %). Maximum no. of research scholar of BUL visit library monthly (9.18 %), then weekly (8.52 %) where as maximum no. of research scholar of VBL visit library weekly (6.17 %), then daily (4.54 %). Students of BUL visit library weekly (46.23 %) and daily (16.07 %) but students of VBL visit library more daily (45.37 %) and weekly (28.68 %) respectively.

  iv.   Faculty of BUL spent library 2-3 hours (7.54 %) & less than 1 hour (6.56 %) where as VBL faculty spent more time that is 3-4 hours (7.26 %). Major of the research scholar of BUL spent time in less than 1 hour (8.85 %), and then 2-3 hours (7.54 %) but major of the research scholar of the VBL spent more time that is 2-3 hours (7.26 %). Students' respondents of VBL spent more time i.e. 2-3 hours (53.72 %) where as BUL students respondents spent time in the library less than 1 hour (53.44 %).

   v.   Overall perception average of VBL (3.20 mean score) is better than BUL (2.54 mean score).

  vi.   Overall library performance of VBL (3.76 mean score) is better than BUL (3.34 mean score).

  vii.   LP (0.39), IC (0.52) & AS (0.49) dimension of VBL has performed well in terms of adequacy gap that means library provide better services to its users than minimum service level than each dimension of BUL i.e. LP (0.12), IC (0.16) & AS (0.14).

 viii.   LP (-0.64), IC (-0.78) & AS (-0.85) dimension of VBL has performed well in terms of superiority gap that means library provide better services to its users than they demand of each dimension of BUL i.e. LP (-1.32), IC (-1.54) & AS (-1.24).

  ix.   In case of Zone of Tolerance VBL performed well than BUL.

5. Suggestions & Conclusions

Performance audit is a new technique that is already introduced in many countries to assess the efficiency and effectiveness of library operations and services in public sector including different types of library and information centres. In this study, LibQUAL+ technique is used to know the how efficiently and effectively library services are provided to the academic community of BUL & VBL users'. VBL & BUL have performed well but few services of BUL i.e. automated library operations and maintaining computer and other equipments in the library, having a non-printed collection, providing sufficient On-line Public Access Catalogue (OPAC), retrieved rate of OPAC, availability of required databases and making library resources available through website have to be concentrated more to give better services to faculty, scholar and students of Burdwan University library.

The success of performance audit of university libraries mainly depends upon the proper planning of different activities, functions, services and appropriate decisions taken by the university authority from time to time. Performance of the university libraries from users' point of view can be achieved better if library authority concentrate more whether minimum service levels are available to users, what their desired service levels are but what they are getting (perceived) at this moment. Faculty, scholars and students opinion (feedback & suggestions) regarding library services have to take regular interval i.e. quarterly, half-yearly or yearly and always promote introduction of new services to the academic community through notification as well as put it library website or university website, besides that nowadays social media (such as face book, twitter) can be utilised to reach large amount of users so that they may get information regarding the new services.

References

Ahmed, S. M., & Shoeb, M. Z. (2009). Measuring Service Quality of a Public University Library in Bangladesh using SERVQUAL. *Performance Measurement and Metrics , 10* (1), pp. 17-32.

Association of Research Libraries . (2007). *LibQUAL+2007 Survey.* Retrieved March 12, 2012, from http://www.libqual.org

Begay, W. (2011, November). *LibQUAL Results & Analysis.* Retrieved May 31, 2014, from https://www.k-state.edu/assessment/resources/documents/Library.pdf

Berry, L. L., & Parasuraman, A. (1991). *Marketing Services: Competing Through Quality.* New York: Free Press.

Bowe, T., & Dennis, B. (2007). How to get more from your quantitative LibQUAL+TM dataset: making results practical. *Performance Measurement and Metrics , 8* (2), pp. 110-126.

Brophy, P. (2001, March). *The EQUINOX Project.* Retrieved August 17, 2011, from European Commission, Centre for Research in Library & Information Management (CERLIM): http://uksg.metapress.com/media/bn42qpruml2kkdhukgur/contributions/2/a/7/a/2a7agfwn l0wlk5wq.pdf

Clemson University Library. (2011). *Analysis of Clemson University Libraries 2011: LibQUAL Survey Data.* Retrieved November 8, 2013, from http://media.clemson.edu/library/lib_overview/libqual/libqualanalysis.pdf

Commission of the European Communities. (1997, March). *Evaluation and Quality in Library Performance: System for Europe.* Retrieved April 7, 2011, from http://www.cerlim.ac.uk/projects/eqlipse/del4.pdf

Cook, C., Heath, F. M., & Thompson, B. (2002, January). *Score Norms for Improving Library Service Quality: A LibQUAL+.* Retrieved May 27, 2013, from Project Muse: http://muse.jhu.edu/journals/pla/summary/v002/2.1cook.html

Cook, C., Heath, F., & Thompson, B. (2003, January). *"Zones of Tolerance" in Perceptions of Library Service Quality: A LibQUAL+ Study.* Retrieved May 17, 2013, from Project Muse: http://muse.jhu.edu/journals/pla/summary/v003/3.1cook.html

Duffy, J. S., Jaggars, D. E., & Smith, S. E. (2008). Getting our Priorities in Order: are our service values in line with the communities we serve? *Performance Measurement and Metrics , 9* (2), pp. 171-191.

Earlham College Libraries. (2006). *LibQual+TM Survey: Spring 2005, Final Report December 2006.* Retrieved July 30, 2012, from http://legacy.earlham.edu/is/documents/LibQual_results.pdf

Edgren, J., Friberg, T., Adrial, C. J., Mansby, S., Nilsson, J., & Aslund, H. (2004). *Quality Handbook: Performance Indicators for Library Activities.* Retrieved April 5, 2013, from The Swedish Library Association's Special Interest Group for Quality Management and Statistics: http://www.biblioteksforeningen.org.test.levonline.com/organisation/dokument/pdf/quality_handbook.pdf

Harer, J. B. (2006). LibQual+TM in Lilliput: Assessment Benefits for Small Academic Libraries. *Performance Measurement and Metrics , 7* (3), pp. 193-204.

Hariri, N., & Afnani, F. (2008). LibQUAL+TM in Iran: a Subgroup Analysis by Gender. *Performance Measurement and Metrics , 9* (2), pp. 80-93.

Heath, F. M., Cook, C., Kyrillidou, M., & Thompson, B. (2002, January). *ARL Index and Other Validity Correlates of LibQUAL+ Scores.* Retrieved May 27, 2013, from Project Muse: http://muse.jhu.edu/journals/pla/summary/v002/2.1kyrillidou.html

Hiller, S., Kyrillidou, M., & Self, J. (2008). When the Evidence is not Enough: Organizational Factors that Influence Effective and Successful Library Assessment. *Performance Measurement and Metrics , 9* (3), pp. 223-230.

IASLIC. (2010). Reading Habits in Changing Scenario & LIS Education: Emerging Paradigm, Challenges and Vision. *XXIV National Seminar of the IASLIC.* Gorakhpur: IASLIC.

IFLA. (2007). *Measuring Quality: Performance Measurement in Libraries.* Retrieved March 8, 2013, from http://www.degruyter.com/view/books/9783598440281/9783598440281.7/9783598440281.7.xml?format=EBOK

International Organisation for Standardization. (2012, September 28). *Information and Documentation — Statistics and Quality Indicators fo rWeb Archiving.* Retrieved April 4,

2013, from http://netpreserve.org/sites/default/files/resources/SO_TR_14873__E__2012-10-02_DRAFT.pdf

International Organization for Standardization. (2008). *ISO 11620: Information and Documentation - Library Performance Indicators.* Retrieved April 4, 2011, from http://gjbz.ugcn.cn/%E5%9B%BD%E5%A4%96%E6%A0%87%E5%87%86/%E5%9B%BD%E9%99%85%E6%A0%87%E5%87%86/20110228/2/ISO%2011620%EF%BC%9A2008%20Information%20and%20documentation%20%E2%80%94%20Library%20performance%20indicators.pdf

Kalb, S. (2010). Benchmarking on a National Scale: the 2007 LibQUAL+® Canada Experience. *Performance Measurement and Metrics , 10* (2), pp. 161-171.

Killick, S. (2012, June 26). *Analysis and Interpretation of the LibQUAL+® Results.* Retrieved April 24, 2013, from www.libqual.org/%5Cdocuments%5CLibQual%5Cpublications%5CKillic

Klug, P. (2000, August). BIX – The Library Index, or: Why less is often more. *Performance Measurement and Metrics , 1* (2), pp. 129–134.

Loyola University, Chicago. (2010). *LibQual 2010 Executive Summary.* Retrieved JUly 23, 2013, from http://libraries.luc.edu/sites/all/attachments/LibQual2010.pdf (

Manaf, N. A. (2010). *The Impact of Performance Audit: the New Zealand Experience (Victoria University of Wellington, Master of Commerce and Administration in Accounting, Master Thesis).* Retrieved April 6, 2012, from http://researcharchive.vuw.ac.nz/bitstream/handle/10063/1376/thesis.pdf?sequence=1

Mehrjerdi, Y. Z., Toranlo, H. S., & Jamali, R. (2009). Measuring Academic Libraries Service Quality in Fuzzy Environment. *Performance Measurement and Metrics , 10* (2), pp. 94-115.

Neshat, N., & Dehghani, M. (2014). Review of the Current Gap between Clients' Expectations and Perceptions of Received Service in National Library by Using Gap Analysis Model. *Performance Measurement and Metrics , 14* (1), pp. 45-60.

Oak, M., & Patil, S. K. (2011). Exploring the Usefulness of LIBQUAL + Model for Maintaining the Quality and Excellence in Library Services: A Case Study of IMCC (Pune) and IIM (Bangalore). *Asia Pacific Journal of Library and Information Science , 1* (1), 3-33.

Oklahoma Department of Libraries. (1977, May 30). *Performance Audit.* Retrieved February 14, 2013, from

> http://digitalprairie.ok.gov/cdm/singleitem/collection/stgovpub/id/18730/rec/24

Rehman, S. U. (2012). Understanding the Expectations of Pakistani Libraries Users: A LibQUAL Study. *Library Philosophy and Practice* .

Russell, P. (2009). *Measuring up: the Experience of LibQUAL+™ at ITT Dublin Library.* Retrieved May 7, 2013, from

> http://www.sconul.ac.uk/sites/default/files/documents/17_10.pdf

Supreme Audit Institutions, India. (2004, May 14). *Performance Auditing Guidelines.* Retrieved March 12, 2011, from

> http://saiindia.gov.in/english/home/Our_Process/Audit_Methology/Guidelines_Notes/Per _Au_Guidelines.pdf

The International Centre for Performance Auditing. (n.d.). *Performance Audit*. Retrieved January 7, 2011, from http://www.performanceaudit.org/

Thompson, B., Cook, C., & Heath, F. (2001, April). *How Many Dimensions Does It Take to Measure Users' Perceptions of Libraries?: A LibQUAL+Study.* Retrieved May 27, 2013, from Project Muse: http://muse.jhu.edu/journals/pla/summary/v001/1.2thompson.html

Thompson, B., Cook, C., & Heath, F. (2000, December). *The LibQUAL+ gap measurement model: the bad, the ugly, and the good of gap measurement.* Retrieved February 14, 2013, from www.emeraldinsight.com/journals.htm?issn=1467-8047&volume=1&issue=3&articleid=862287&show=pdf

Thompson, B., Cook, C., & Thompson, R. L. (2002, January). *Reliability and Structure of LibQUAL+ Scores: Measuring Perceived Library Service Quality.* Retrieved May 17, 2013, from Project Muse:

> http://muse.jhu.edu/journals/pla/summary/v002/2.1thompson.html

Thompson, B., Cook, C., & Kyrillidou, M. (2006, April). *Using Localized Survey Items to Augment Standardized Benchmarking Measures: A LibQUAL+ Study.* Retrieved May 17, 2013, from Project Muse:
http://muse.jhu.edu/journals/pla/summary/v006/6.2thompson.html

University of Burdwan. (n.d.). *Central Library.* Retrieved June 16, 2013, from

> http://buweb.buruniv.ac.in/

University of Guelph. (n.d.). *Writing Services, The Learning Commons.* Retrieved January 12, 2013, from www.learningcommons.uoguelph.ca

Visva Bharati. (n.d.). *About Visva Bharati.* Retrieved August 18, 2013, from http://www.visvabharati.ac.in/Visva_Bharati.html

Visva Bharati. (n.d.). *Library.* Retrieved August 18, 2013, from http://visva-bharati.ac.in/Library/Contents/LibraryContents.htm

Visva-Bharati . (2010). Annual Report-2009-2010. West Bengal.

Visva-Bharati . (2011). Annual Report-2010-2011. West Bengal.

Visva-Bharati. (2012). Annual Report-2011-2012. West Bengal.

Visva-Bharati, Central Library. (2012). Visva-Bharati Library 2012. West Bengal.

Whitehead, A. N. (n.d.). *IWISE Wisdom on Demand.* Retrieved January 19, 2012, from http://www.iwise.com/khPGB

Wikipedia. (n.d.). *University of Burdwan.* Retrieved June 16, 2013, from http://en.wikipedia.org/wiki/University_of_Burdwan