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A gap analysis to measure service quality of university libraries through user perspectives: a case study at the university of Colombo

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ABSTRACT

User expectations and perceptions are important measures of service quality in academic libraries and service quality is frequently defined in terms of reducing the gap between user expectations and the service provided. The assessment of service quality through user perspectives provides an important feedback for libraries. The aim of this research was to determine the gap between user desired service expectations and actual service perceptions of the University of Colombo Library System to provide a better service to satisfy their expectations. This study conducted as a user survey covered 614 users of the Colombo University Library system. A modified version of a SERVQUAL model was used to ascertain the views of library users about service level. They were asked to assess the actual service delivered by the library; to establish the importance of the service to them as users; and, to identify to what extent the service met their expectations. The largest service quality gap among all the attributes applied to the Colombo University Library System was "Access to electronic journals". The author's fervent hope is that this research would provide insights for further research in this field which in turn would eventually help decision makers to improve service quality in our academic libraries.

Keywords

Service Quality, SERVQUAL, Gap Analysis, User Expectation, User Perception, User Satisfaction

1. INTRODUCTION

Historically, Library quality has been regarded as the collection size, an assessment of what the Library has, rather than what the Library does. Now, quality is recognized as a multi faceted concept, one that can be approached from different perspectives. One perspective focuses on the library users while others focus on educational programmes and the extent to which they achieve their mission and goals. As in any service organization in academic libraries, customer satisfaction means fulfilling expectations.

Library service quality measurement and assessment are a part of the library management process. The planning of library activities, drawing up a Library Development Plan, developing library and information policies cover a whole complex of

management information including financial planning and a rational distribution and use of income and expenditure. The results of analysis and evaluation form the basis for developing informational infrastructure, avoiding redundant duplication of activities and supporting rational use of resources whilst at the same time meeting the needs of customers. Therefore it is very much necessary to identify user expectations, satisfactions and problematic areas with large expectation-satisfaction gaps. By identifying these gaps, quality barriers can be eliminated and service priorities can be determined.

Throughout the past decade a great deal of interest has been focused on service quality in libraries and how to measure it. The most pervasive definition of quality currently in use is the extent to which a product or service meets and or exceeds a customer's expectations (Parasuraman *et al.*, 1985). As described by Wisniewski and Wisniewski (2005) "The SERVQUAL instrument was specifically designed to measure service quality using both the gap concept and service quality dimensions, and was designed to be transportable, with minor adaptation, to organizations in any service sector" (p.220). The SERVQUAL model consisted of five dimensions, which includes tangibles, reliability, responsiveness, assurance and empathy (Parasuraman *et al.*, 1988). Still the SERVQUAL dominates in the service sector as a service quality measuring tool.

According to Cullen (2001), the modification of SERVQUAL model was introduced to academic libraries by Herson and Altman. They used the data collected from surveys and focus groups to refine the SERVQUAL model in order to develop a robust survey instrument for use specifically in library and information services. Harwood and Bydder's (1998) user survey in University of Waikato Library was the first survey conducted in New Zealand, which measured both user expectation and satisfaction. As in many academic libraries, the gap between customer expectations and service provision was measured by using a generic set of statements developed by Herson and Altman and refined by Herson and Calvert 1997.

The aim of this research was to assess the service quality of the University of Colombo library system through user perspectives. Following objectives were set to achieve that aim of the study.

- i. to determine the gap between user desired service expectations and actual service perceptions of all users of the University of Colombo Library System

- ii. to determine the service quality gaps with respect to each user category_ academic staff, undergraduates and postgraduates

2. METHOD OF THE STUDY

The University of Colombo had a total student population of approximately 12158 in the year 2008 and there were 475 academic staff members (University Grants Commission, 2008). To determine the service quality gap between user desired service expectation and actual service perception of the University of Colombo Library System a user survey was conducted in the library, University of Colombo. The study sample was selected randomly. A total of 855 printed questionnaires were distributed to the library users of the University of Colombo. The questionnaire was distributed directly to users during approximately four weeks a period from end of May 2008 to end of June 2008. Six hundred thirty four usable questionnaires were received indicating 74% of overall response rate. When the response rate by each user category is considered, for academic staff category it was 56.43%. The response rate was 82.39% and 49.62% for Undergraduates and Postgraduates respectively.

For this study, SERVQUAL was adapted to examine the service quality of the library of the University of Colombo. After an extensive review of literature on service quality the attributes relevant to Academic Libraries in Sri Lanka were selected by a panel of experts and the questionnaire was prepared using the 35 selected items most appropriate to the Sri Lankan Academic Library environment (see table 1 in appendix A). The questionnaire thus constructed was to assess users' expectations and perceptions. To measure user expectations and perceptions a seven point Likert scale was used with "1" being "strongly disagree" and "7" being "strongly agree".

A pilot test was conducted to assess the reliability of the attributes and ensure that the wording, format, length and sequencing of questions were appropriate. Reliability analysis was employed to test the internal consistency of the questionnaire. Reliability investigation of the data was done using Cronbach's alpha method. Cronbach's alpha coefficient was calculated as 0.890.

3. RESULTS

3.1 Gap between user desired service expectations and actual service perceptions

The gap discrepancy between desired service expectation and actual service perception is the key concept of service quality. Thus, the gap difference between the desired service expectations and actual service perceptions were calculated and ranked by the gap size. Paired sample t-test was employed to test the significant difference between the two means of importance and performance.

Table 1 (see appendix A) indicates the gap differences between desired service expectations and actual service perceptions of the Library system of the University of Colombo. The results presented in this table reveal that all attributes of service quality measurement do not meet the users' expectations. The larger gaps

were related to E-resources, Library Catalogue and Physical facilities. "Access to electronic journals" shows the largest gap score 2.698 followed by "Online catalogue is easy to use", "Visually appealing facilities", "Modern equipment (photocopiers, scanners, printers, etc.) in good condition", "Well organized web page", "Convenient opening hours", "Online catalogue is an accurate source of information" and "Quiet study areas".

Of all the attributes the smallest gap score was for the attribute "Feel safe and secure in the library" with the lowest gap score, 0.275. The paired sample t- test between the expectations and performance means in this attribute showed that the mean difference is non significant ($p=0.72$) with the lowest t-value 3.089. All the other attributes too showed low significance values for the t-test ($p\leq 0.05$) indicating that there was a significant difference between the two variables. Of these the smallest gap score was for the attribute, "Accuracy of information received" followed by "Making users feel secure about transactions", "Willingness to help users" and "Clear directional signs for the collection".

3.2 Service quality gaps with respect to each user category

The results reveal that by user category (Academic staff, Undergraduate, Postgraduate), all desired service expectations lagged behind the actual service perception. In the Academic Staff category, the largest gap was "Access to electronic journals" followed by modern equipment (photocopiers, scanners, printers, etc.) in good condition; online catalogue is easy to use; visually appealing facilities; and Library guides, brochures and alert services.

In the Undergraduates user group, some attributes encountered larger service quality gaps. They are access to electronic journals; visually appealing facilities; online catalogue is easy to use; quiet study areas; and modern equipment (photocopiers, scanners, printers, etc.) in good condition. "Convenient opening hours" was the largest service quality gap for Postgraduates. According to the obtained results they search information via the library web page and preferred to use modern equipment to multiply copies using photocopiers, scanners or printers.

As for the lower service quality gaps, it was interesting to find that the academic staff members indicated a negative gap score for the attribute of "feel safe and secure in the library". This is due to the higher perception score (5.912) than the expectation score (4.579). The gap size for that is -1.333. "User education programmes" ($p=.496$) and "quiet study areas" ($p=.529$) also presented very low gap scores and these gaps were non significant due to $p>0.05$. The attributes "feel safe and secure in the library" and "making users feel secure about transactions" show lower service quality gaps for Undergraduates and Postgraduates. Other than that the "user education programmes" showed a low gap score among Postgraduates. For the Undergraduates it was "accuracy of information received".

When the top ten service quality gaps were ranked by order, some similarities were found among Academic staff, Undergraduates and Postgraduates. For the Academic Staff group and

Undergraduate student group, the largest gap was for the same attribute “access to electronic journals”. The top four attributes: “access to electronic journals”, “online catalogue is easy to use”, “visually appealing facilities” and “modern equipment (photocopiers, scanners, printers, etc.) in good condition” were common to all user groups. Another interesting finding was that students (both Undergraduates and Postgraduates) expected a better service for convenient opening hours, quietness of study areas and availability of required information than the Academic staff members. A “well organized library Web page” and “library alert services” were ranked by both Academic staff and Postgraduates, among the top ten service quality gaps.

4. DISCUSSION

This study on measuring service quality has principally focused on how to meet or exceed users’ expectations. The findings illustrate that the users have high expectations than perceptions, which lead to the gap between expected service and perceived service. This reflects a simple characteristic of human behaviour. Humans always expect more than what they have in their day-to-day life. The service quality gap explains the difference between what the user expected to receive from the service and what they believe they actually did receive. This is significant because, when the perceived service falls short of the customer’s expectations, they are found to be disappointed and dissatisfied. According to Filiz (2007), the concept of measuring the difference between user expectation and perception in the form of the SERVQUAL gap score proved very useful for assessing levels of service quality. This study applied an adopted SERVQUAL instrument to measure service quality of the University of Colombo library system.

According to the results of gap analysis, the larger gaps were related to E-resources and library catalogue. The largest gap of all was “Access to electronic journals”. Similar results were encountered in Hong Kong University libraries and according to the survey results in Hong Kong university libraries their second largest gap score was for “electronic resources is accessible from my home/ office” (Woo, 2005). The possible reasons for the largest gap, access to electronic journals may be due to insufficient subscribed E- journals with full text download facilities. Electronic resources were introduced to University libraries of Sri Lanka in 2002 under the aegis of the International Network for the Availability of Scientific Publications (INASP) of Oxford, United Kingdom with the funding assistance of Swedish international Development Agency (Sida). This gave an opportunity to access a number of scholarly databases and this facility expired in December 2007 and now Sri Lankan University libraries rely on only a very few number of electronic databases and some open access electronic journals due to budgetary constraints in the university system. Due to this reason, the majority of the library users disappointed and dissatisfied with available E-resources (Damayanthi, 2006) and this may have led to the largest gap score of desired service expectation and actual service perception. This problem is common to all Sri Lankan University libraries and there is an urgent requirement for a national level solution to overcome this problem. The solution could be an establishment of a financially strong and sustainable national level consortium.

Large gap scores were found for the attributes related to the library catalogue; online catalogue that is easy to use and it is an accurate source of information. Users face difficulties when searching library materials due to their poor searching ability via the library catalogue and inadequate knowledge of the arrangements of the library collection. Similar results were obtained from the study done by Filiz (2007) at Osmangazi University and Anadolu University, the largest gap score was found in his study for “an online catalogue easy to use”. Users’ knowledge of both the catalogue and the shelf arrangement should be enhanced via ongoing library orientation programmes parallel to the undergraduate curriculum.

Large gap scores were also found for attributes related to library collection and ease of access by giving high ranks to availability of required information. These sections were amongst the most problematic areas and users seem to be dissatisfied with the available collection. Answers to open ended questions revealed that insufficient copies of books, inadequacy of latest books, not enough journal titles and re-shelving problems were significant among other comments as the reasons for this large gap. Therefore there is a need to increase the number of copies of books with a greater demand and a need to update the collection by adding new editions. To achieve this library allocations for books and journals should be increased.

The gap differences of service quality attributes were different among the three user categories. Academic Staff, Undergraduates and Postgraduates. However for the Academic Staff group and undergraduate student group, the largest gap is for the same attribute “Access to electronic journals” while the Postgraduates have ranked this as the second largest gap. This reveals that E-resources were the most important to all three user groups for their academic enhancements.

These findings are similar to those of Nimsomboon and Nagata (2003). According to the findings of their study, all desired service expectations lagged behind the actual service perception and there are different perspectives among the three user groups. In their study for the faculty, researcher group and graduate student group, the larger gaps fell into dimensions “Collection & Access” and relate to library place and the gap of the attribute “Access to digital collection from PC ” was the largest. For the undergraduate group, the staff attributes occupied the larger gaps followed by those of dimensions “Collection & Access” and the library place. From their study it is clear that library staff treat the faculty/researcher as different from students.

Walters (2003) argued that most Undergraduate students were not aware of available information, for example, the range of resources that might be useful to them. He continued by saying that without this knowledge, students were unable to distinguish between high-quality service and inadequate service. As discovered by Sayo (2006) the Undergraduates might lack knowledge of information technology to gain access to the databases and this would make them disappointed or dissatisfied when accessing E-resources. This would in turn mean that students need training on how to use electronic databases and that was proven by answers to the open ended questions in my study

requesting more training sessions on E resources and data retrieval.

While the higher order gaps of Academic Staff related to E-resources, physical facilities and awareness programs, the gap sizes of attributes related to service delivery by staff such as “Knowledgeable about user questions”, “Availability of staff when required” and “Understanding the needs of users” were within the top ten in the perspectives of Undergraduates. For Postgraduates, these attributes ranked behind the physical facilities. These results agree with the findings of Nimsomboon and Nagata’s (2003). In their view the library staff may treat faculty/researcher group different from student group”.

It was interesting to find that in the students’ group (both Undergraduates and Postgraduates) gap differences for convenient opening hours, quietness of study areas and availability of required information were very large. This reveals that students expect more about convenient access to the library to find required information for their course work and prefer to do references in study areas in a silent environment. In contrast to this the academic staff members have ranked the attribute “quietness of study areas” last with the minimum gap score indicating that they seldom used study rooms for references.

Use of gap scores enables the service manager to assess current service quality and quantify gaps that exist. Use of the service quality dimensions will allow an understanding of the broad areas where customers have particularly high – or low expectations and an assessment of where there may be relatively large gaps (Wisniewski, 2001). A breakdown of a dimension into its constituent statements will then allow focusing on particular problem areas.

5. CONCLUSIONS

The results reveal that, from the perspectives of user categories (Academic staff, Undergraduates and Postgraduates), all service quality attributes did not meet their desired expectations. The attributes, Access to electronic journals, Modern equipment in good condition and online catalogue that is easy to use, show higher gap scores in all three user categories.

The importance of quality assessment of the higher education sector including University libraries is now being discussed widely in Sri Lanka. The result obtained from this study will help the librarians in understanding Institutional and user differences and similarities, to identify the user problems and reduce the gap between user perception and expectation. Hence this study at the University of Colombo will be an initiator and basis for future research on this subject in the University Library sector in Sri Lanka.

This study assesses the service quality of the University of Colombo library system only through the user perspective. Based on these findings it is suggested that a wider survey could be

conducted to identify other facets that affect library service quality such as management perceptions, service quality specification, external communication, information auditing, etc. It is recommended that a continuous evaluation process be conducted to monitor the progress of library performance management and evaluation to track the extent to which specific users’ needs are met, and their expectations are delivered.

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Appendix A

Table 1. Ranked gap scores between Desired Service Expectations and Actual Service Perceptions of the Library System of University of Colombo

Attribute	Expectation (E) score mean	Perception (P) score mean	Mean difference (E-P)	t- value	Significance (at p<0.05)
Access to electronic journals	6.731	4.033	2.698	34.466	.000
Online catalogue is easy to use	6.577	4.284	2.293	30.683	.000
Visually appealing facilities	6.355	4.083	2.272	29.180	.000
Modern equipment in good condition	6.536	4.313	2.223	30.109	.000
Well organized web page	6.393	4.190	2.203	26.695	.000
Convenient opening hours	6.630	4.503	2.127	26.417	.000
Online catalogue is an accurate source of information	6.541	4.438	2.102	26.773	.000
Quiet study areas	6.528	4.502	2.026	29.246	.000
Availability of required information	6.560	4.732	1.828	27.369	.000
Library guides, brochures and alert services	6.279	4.528	1.750	26.386	.000
Availability of staff when required	6.584	4.871	1.714	27.780	.000
Keeping users informed	6.459	4.776	1.683	25.399	.000
Currency of information received	6.555	4.917	1.638	27.009	.000
A pleasant comfortable and inviting location	6.556	5.047	1.508	19.368	.000
Understanding the needs of users	6.375	4.868	1.507	22.015	.000
Having the user's best interest at heart	6.544	5.127	1.417	23.509	.000
Condition of library materials	6.377	4.974	1.403	20.544	.000
User education programmes	6.191	4.788	1.403	18.464	.000
Giving users individual attention	6.623	5.294	1.329	20.987	.000
Dependability in handling users' service problems	6.620	5.293	1.327	21.472	.000
Adequate lighting	6.660	5.369	1.291	18.709	.000
Relevance of information received	6.806	5.645	1.161	25.539	.000
Neat, professionally appearing staff	6.455	5.301	1.154	18.444	.000
Staff who instill confidence in users	6.572	5.419	1.152	12.119	.000
Performing services right the first time	6.585	5.438	1.148	21.399	.000
Convenient access to library collection	6.559	5.437	1.123	18.077	.000
Approachable staff	6.463	5.373	1.090	16.457	.000
Knowledgeable about user questions	6.620	5.561	1.059	17.153	.000
Providing services at the promised time	6.615	5.562	1.053	18.601	.000
Courteous, polite and friendly staff	6.617	5.593	1.024	18.079	.000
Willingness to help users	6.583	5.566	1.017	17.852	.000
Making users feel secure about transactions	6.482	5.519	0.963	16.522	.000
Clear directional signs for collection	6.495	5.539	0.956	17.048	.000
Accuracy of information received	6.607	5.817	0.789	15.720	.000

Feel safe and secure in the library	5.982	5.708	0.275	3.809	.072
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E-P – Expectation - Performance