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Quality assessment of academic library performance: the case of an Iranian academic library[1]

Fahimeh Babalhavaeji[1], Alireza Isfandyari-Moghaddam[1], Seyed Vahid Aqili[2] and Ali Shakooii[1]

[1]Department of Library and Information Science, Science and Research Branch, Islamic Azad University, Tehran, IRAN

[2]Department of Communication, Science and Research Branch, Islamic Azad University, Tehran, IRAN

e-mail: ali.isfandyari@gmail.com

ABSTRACT

The present research aims to assess the performance of libraries at the Islamic Azad University, Sciences and Research Branch (IAUSRB) through gap analysis. To do this, a researcher-developed questionnaire which is based on available standards and quality assessment tools including ACRL standards, LibQUAL and ISO 11620, and some criteria included in the related literature was designed and distributed among users of IAUSRB libraries. Five service quality categories, were included in the questionnaire: "Environment, equipment and physical facilities", "Public services", "Non-book materials", "Staff (librarians and their co-workers)", and "Information literacy and user education". Based on research findings, the most expected library services prioritized by users are "operation time" (mean = 4.2300), "staff" (mean = 4.1461), and "circulation" (mean = 4.1208), while the least expected library services which are of lower importance from users' perspective are "press" (mean = 3.9734) and "audiovisual materials" (mean = 3.8796). The findings also indicate that services offered by the libraries surveyed had a relatively quality performance and average success (perceived quality is 2.9635≈50%). In other words, such a finding emphasizes an average performance of IAUSRB libraries. In addition, confirming five research hypotheses concerning gap analysis, there was a significant difference between expected quality of five service categories and their perceived quality based on users' viewpoint. It was also realized that the categories with better performance or perceived quality from users' perspective are "staff" (mean = 3.2240), "information literacy and user education" (mean = 2.9998), and "environment, equipment and physical facilities" (mean = 2.9871), and the two libraries "Theology and Philosophy" (mean = 2.2639) and "Medical Engineering" (mean = 2.4507) have offered poor services than the other IAUSRB libraries.

Keywords: Performance evaluation; Quality assessment; Gap analysis; Academic libraries; Service quality.

[1] This article has been extracted from Alireza Isfandyari-Moghaddam's PhD dissertation (2009) entitled *"quality assessment of academic library performance using gap analysis model: The case of libraries of Islamic Azad University, Science and Research Branch, Tehran"*, supervised by Dr. Fahimeh Babalhavaeji and co-supervised by Dr. Seyed Vahid Aqili and Dr. Ali Shakooii, in Department of Library and Information Science, Science and Research Branch, Islamic Azad University, Tehran, Iran.

INTRODUCTION

Nowadays, higher education institutions are progressively under pressure to produce students and graduates who can effectively function in the "knowledge-based society", and thus contribute to the realization of "sustainable development" (Aqili and Isfandyari-Moghaddam 2008). To this end, academic libraries can play an important role in making pertinent information resources and services available, and diminishing digital divide, once named the knowledge gap (Husing and Selhofer 2002) among students. However, funding for higher education has been reduced year after year, and as a consequence, the traditional manner of assessing value is being questioned (Turk 2007). On the other hand, as Schmidt (2007, p. 340) declares, "library users continue to want basic services – competence, reliability, responsiveness, timeliness, honesty and a caring approach. They want assistance with information access. They want to read materials – both in print and online formats. They want everything to function effectively and they want help to ensure they use resources effectively – but they want to use self-service approaches as much as possible. They want training and motivation in resource discovery, ICT skills and equitable service delivery. They want answers to questions and solutions to problems. Users want information brought to them and they want services with minimal effort and timeliness. They want just-in-time service". In other words, not only quality has become a momentous theme of discussion among higher education institutions and their libraries, but their users also want quality service. Hence, assessment activities in academic libraries are more important today than ever before (Turk 2007). It is notable that offering quality services and evaluating the rate of success in providing users with target services is not limited to the context of higher education and academic libraries. In this regard, Bawden, Petuchovaite and Vilar (2005) believe that "the evaluation of library services is a topic, and an activity, of importance in all countries with established library services". Without timely feedback of quality, library systems could deteriorate such that recovery or meeting users' satisfaction is difficult, if not impossible. Therefore, quality assessment efforts on the basis of end-users' viewpoint are treated as one of the major concerns and an integral part of Library and Information Science (LIS) practitioners. As a matter of fact, this rule is not an exception to Iranian academic libraries.

Islamic Azad University (IAU) as one of the most important non-profit and private higher education institutions in Iran seeks to know the status of its services from users' point of view. Hence, Science and Research Branch, as the biggest branch of IAU campus, which primarily offers post-graduate programmes, values highly the services provided by its libraries. This paper is based on a quality assessment research carried out at IAU Science and Research Branch (IAUSRB) libraries. It should be added that the present study, aims to conduct a comprehensive quality assessment using indicators included in quality assessment tools and related literature, along with some indicators based on IAUSRB libraries context.

CONTEXT OF THE STUDY

Pritchard (1996, p. 573) stated that "the major objective for academic libraries, especially in an environment of increasing economic pressure, structural change, and

technological innovation, must be to align themselves with the structures of higher education and criteria by which those institutions are judged". Accordingly, Nitecki (1996, p. 181) noted that "a measure of library quality based solely on collections has become obsolete". In addition, Powell (1992; cited in Whitmire 2002, p. 108) supports Pritchard's view as follows:

> "In an era in which academic libraries are more and more in competition for financial support with other important enterprises on their campuses, it is becoming increasingly important for them to be able to justify their costs, if not their existence. Libraries need to be able to demonstrate their resources and services are making a significant contribution to the education and research of their clientele".

Consequently, since libraries of IAUSRB are located in the most important campus of IAU branches, they should act as a pioneer and model in providing quality services for other Iranian IAU academic libraries using quality assessment of their performance. Moreover, meeting missions of IAU, generally, and IAUSRB, particularly, is greatly dependent upon understanding the current state of departments offering different library services. Performing such a research and identifying strong and weak points of library services provided by libraries distributed in different colleges of IAUSRB can help authorities make better and more informed decisions for directing the University to predetermined goals. In relation to such evaluations, O'Neill and Palmer (2004, p. 42) indicate that "researchers have adopted a variety of techniques including both inferred [analytical] and direct [descriptive] disconfirmation models. The inferred approach [or gap analysis] measures expectations and perceptions separately and seeks to estimate the size of any gap between the students' [users'] expectations and the actual performance received. This produces a relative measure of how well the service has performed relative to what the consumer expected".

The present research aims to assess performance quality of IAUSRB libraries through inferred approach which analyzes the rate of any gap between the users' expectations and the actual performance received. It is hoped that, IAUSRB library managers and authorities can make better decisions for meeting short and long-term goals, based the findings of the study.

LITERATURE REVIEW

ISO 11620 defines quality as "totality of features and characteristics of a product or service that bear on the library's ability to satisfy stated or implied needs" (ISO 11620 1998; cited in Derfert-Wolf et al. 2005). Quality has several facets, and many studies related to quality assessment of academic libraries have been performed. This review is confined to the discussion of indicators of quality in academic libraries. Chen (1997) evaluates 23 academic libraries in Taipei on the basis of five criteria as "input measures" namely, library staff; book collection; book acquisition expenditure; area of library space; and seating capacity. Based on his findings, he concludes that 11 university libraries are relatively efficient, and that nine out of the 11 efficient university libraries have a better academic research function. Only a couple of them are attributed to lower

research capabilities. In a questionnaire survey, Woo (2004), evaluates the performance of the main library of University of Hong Kong and its six branch libraries; identifies any performance gaps, and finds out user preferences for print and electronic materials. The questionnaire includes five categories: (a) service quality; (b) facilities, equipment, and physical environment; (c) resources; (d) electronic resources; and (e) new services implemented by University of Hong Kong libraries since 2001. The results showed that 68.8 percent of the respondents prefer to use online journals, compared to 31.2 percent who prefer to use print journals; and 71.8 percent of the respondents prefer to use printed books compared to 28.2 percent who prefer to use electronic books. In addition, Glasgow Caledonian University Library (2005) conducts the twelfth annual general satisfaction survey using a questionnaire. Performance issues included in the questionnaire were: range of books; range of periodicals; course books and text; photocopying; printing; counter enquiries; provision of computers; library catalogue; range of e-information; accessing library service electronically off-campus; opening hours; library environment; communication; and helpfulness of library staff. Findings from the survey show that satisfaction and use of electronic information services is improving but computer maintenance and access is perceived to be poor.

Some studies were conducted based on highly acceptable service quality models (such as SERVQUAL, LIBQUAL and ACRL) and service standards (such as ISO 11620). SERVQUAL is an instrument or service quality framework designed by marketing research team of Berry, Parasuraman and Zeithaml (Parasuraman et al. 1985; 1988; 1991). The SERVQUAL instrument measures the gap between customer's expectations for excellence and their perceptions of actual service delivered, so service providers can understand both customer expectations and their perceptions of specific services. The first mention of the use of Parasuraman, Zeithaml and Berry's model of service quality in libraries has been reported by Humphries and Naisawald (1991; cited in Srisa-Ard 1997), who adopted the model's dimensions as service quality criteria for the evaluation of online search services in a health sciences library. Using SERVQUAL in libraries, whether academic or non-academic, has become an international phenomenon, for instance in Scotland (Campbell et al. 1995), Australia (Edwards and Browne 1995), Netherlands (Hoogen and Lemmink 1993), Iran (Derakhshan 2005) and India (Sherikar, Jange and Sangam 2006). In one survey, Srisa-Ard (1997) evaluates users' expectations for and perceptions of library service quality at an academic library in Mahasarakham University (MSU), Thailand, focusing on three service areas – circulation, reference, and computer information service. The subjects of this study consisted of 582 graduate students, 84 faculty members of Mahasarakham University, and 25 professional library staff. Findings demonstrate that responsiveness of librarians and reliability of services offered are of high importance for users and were valued by them. Likewise, there was a relative difference between offered and expected services. In other words, the library should do more endeavors to achieve optimal state expected by users. Sherikar, Jange and Sangam (2006) perform a SERVQUAL-based study in Karnataka University libraries. The results indicate that the service quality dimensions of reliability, responsiveness, assurance, access, communication and tangibles applied to university libraries in Karnataka are found to be satisfactory to a little extent based on the scale techniques.

LibQUAL, an extension of the 22-item SERVQUAL tool, includes the quantitative data yielded from the 22 core items and the qualitative data provided by users in the form of

open-ended comments. Kalb (2007) points out that more than 500 academic and research institutions around the world have participated in LibQUAL since it began in 2000. One of the first universities which its libraries have participated in any iteration of LibQUAL, beginning in 1999 is Virginia Tech (Hitchingham and Kenney 2002). In order to provide more than 25000 students with quality services, the university needs to evaluate continuously the services offered. Finally, guided by the larger of the gap scores between desired and perceived levels of services, the researchers emphasized: (a) improving collection resources; (b) renovating the library for better user spaces, particularly for the need of faculty and graduate students; and (c) developing services that equip the user for independent control of his/her information interactions. Additionally, in a research attempt, Kyrillidou and Persson (2006) implement LibQUAL in Lund University, Sweden. They examine the aspect "how the information control dimension is depicted in the results of the Swedish participants". Based on findings, Swedish users have indicated that the information control dimension is an important one to them. The five most desired items overall are: (a) making electronic resources accessible from users' home or office; (b) easy-to-use access tools that allow users to find things on their own; (c) a library web site enabling users to locate information on their own; (d) making information easily accessible for independent use; and (e) print and/or electronic journal collections. Findings clearly indicate that from 372 LibQUAL comments analyzed, the users urge the ability of independent use of the library resources and they show the importance of self-sufficiency; what is self-evident in the statement "making electronic resources accessible from users' home or office".

A quality standard compiled by ISO which has been considered by academic libraries is ISO 11620 (ISO DIS 11620 2006). A survey based on ISO 11620 was conducted in 2004 by Bellini – chief librarian of the University of Trento Library, Trento, Italy. He concludes that the implementation of standard ISO 11620 is onerous and time-consuming, requiring commitment to overcome resistance from within and outside the library but that the performance measurement has proven to be a useful and versatile tool for university management.

Building this research on aforementioned studies plus the literature included in Table 2, has drawn the orientation and the general framework of the research, as well as the design and development the questionnaire used to assess quality of services of IAUSRB libraries. However, it should be mentioned that regardless of indicators identified in the literature, there was a special reference to the existing status of services and facilities offered in IAUSRB libraries when the questionnaire and its components were being formed.

RESEARCH OBJECTIVES AND RESEARCH QUESTIONS

The objectives of this study are to:

a) assess the performance quality of IAUSRB libraries;
b) suggest a programme for constant and regular evaluation of quality and success of academic library services with an emphasis on IAUSRB libraries;
c) identify the most successful (satisfactory) and the weakest (less satisfactory) category of library services based on total perceived quality;

d) identify users' total satisfaction from the quality of IAUSRB libraries services;
e) rank libraries surveyed in terms of perceived quality of their offered services.

Findings from this study can serve as a benchmark for IAURSB authorities and policy-makers to make strategic decisions for better as well as improved future of available library services. On the other hand, it is expected that the questionnaire developed for this research can be enriched by and customized for other studies concerning quality assessment of academic libraries' performance. The following research questions are posed:

a) Which library services are the most expected priorities based on users' viewpoint?
b) How is the ranking of libraries surveyed in terms of perceived quality?

Research hypotheses

This study hypothesized that:

a) There is a significant difference between the users' expectations and the perceived quality of "environment, equipment and physical facilities".
b) There is a significant difference between the users' expectations and the perceived quality of "public services".
c) There is a significant difference between the users' expectations and the perceived quality of "non-book materials".
d) There is a significant difference between the users' expectations and the perceived quality of "staff (librarians and their co-workers)".
e) There is a significant difference between the users' expectations and the perceived quality of "information literacy and user education".
f) There is a significant difference among total perceived quality of each category defined.
g) The total perceived quality of surveyed libraries is more than 50%.

In line with the research hypotheses above, the following null hypotheses are proposed:

a) There is no significant difference between the users' expectations and the perceived quality of "environment, equipment and physical facilities".
b) There is no significant difference between the users' expectations and the perceived quality of "public services".
c) There is no significant difference between the users' expectations and the perceived quality of "non-book materials".
d) There is no significant difference between the users' expectations and the perceived quality of "staff (librarians and their co-workers)".
e) There is no significant difference between the users' expectations and the perceived quality of "information literacy and user education".
f) There is no significant difference among total perceived quality of each category defined.
g) The total perceived quality of surveyed libraries is less than 50%.

METHODOLOGY

Research population consists of users (including professors, students and staff) of IAUSRB libraries. Using formula $n=\frac{Z^2\sigma^2}{B^2}$, sample size was determined to be 563[1]. Using disproportionate stratified random sampling which is a probability sampling subtypes, the questionnaires were distributed among stratums (Table 1). In a disproportionate stratified sample, the size of each sampled stratum is not proportionate to its size in the overall population. Some stratums may be over-sampled or under-sampled relative to their actual proportion in the population.

Table 1: Research Sample

Libraries surveyed	Number of members (population) Total: 18428	Sample Total: 566
Central	11174	123
Engineering	3885	80
Environmental Science	431	40
Management and Economics	112	40
Theology and Philosophy	224	40
Veterinary Science	229	40
Physics	624	40
Art and Architecture[2]	116	40
Medical Engineering	748	40
Food Science	750	43
Social Science and Humanities	117	40

Data Collection Tool

The focus of the survey was twofold. Respondents were asked to assess their expectation from each library service and the library as a whole, and the library's performance or current quality (named perceived quality) of each attribute in order to identify problem areas with large gaps that could be targeted for improvement. In order to collect the required data for analysis, a researcher-developed instrument (Appendix 1) which is based on available standards and quality assessment tools [ACRL standards (2004), LibQUAL and ISO 11620 (2006)], and some criteria included in the related literature (Table 2) was designed and distributed among samples. For the distribution of questionnaires among 526 users, the researchers attended individual target libraries at the peak of their working hours. It should be reminded that by conducting a pilot study and distributing the questionnaire to 32 users, its reliability was examined. As a result, Cronbach's alpha was equal to 0.9603 (≈ 0.96) and therefore the reliability of the questionnaire was confirmed. The questionnaire was reviewed by eight experts for its

[1] Z= 1.96; σ^2 (variance of a population) = 2968.879 ≈ 2968.88; B (maximum error) = 4.5

[2] It should be noted that since Library of College of Art and Architecture was closed at the time of questionnaire distribution because of some hardware problems, it was discarded from the libraries studied and data analysis.

validity, as proposed by Saaty and Shih (2009, p. 872), who indicated "no matter how a structure is validated, group participation with knowledgeable people is a good way to ensure its logicality and completeness". As can be seen in Appendix 1, five service quality categories with each category having its own subcategories were included in the questionnaire: "Environment, equipment and physical facilities", "Public services", "Non-book materials", "Staff (librarians and their co-workers)", and "Information literacy and user education". To determine the rate of gap between the users' expectations and the actual performance received or perceived quality, an intensity-scaled choice of 1 (very weak = lowest) – 3 (moderate) – to 5 (excellent = highest) rating items, in two levels (users' expectations and perceived quality) was employed. The application of Five-point Likert scale is supported by Sclove (2001) who says that "five-point Likert scales are perhaps most commonly used".

Table 2: Related Studies Consulted to Design the Questionnaire

Issues	Authors
Accreditation	Williams 1993; Ebbinghouse 1999; Praditteera 2001
Benchmarking	Pritchard 1995; Creaser 2001; Laeven and Smit 2003; Wilson and Town 2006; Chim 2007
TQM	Butcher 1993; Clack 1993; Jurow and Barnard 1993; Sirkin 1993; Tam 2000; Zhan and Zhang 2006; Wang 2006
EFQM	Barrionuevo and P'erez 2003; Melo and Sampaio 2003; Domenico 2004; Diaz et al. 2005
ISO 9000 series	Johannsen 1996; Lundquist 1997; Praditteera 2001; Fontana and Sardelli 2005; Bawden et al. 2005; Derfert-Wolf et al. 2005; Lopez-Alvarez and Chavez-Comparan 2006
ISO 11620	Bellini 2004; Derfert-Wolf et al. 2005; ISO DIS 116202006
SERVQUAL	Srisa-Ard 1997; Campbell et al. 1995; Edwards and Browne 1995; Hoogen and Lemmink 1993; Kerlin 2000; Derakhshan 2005; Sherikar et al. 2006
LibQUAL	Dole 2002; Sessions et al. 2002; McNeil and Giesecke 2002; Boykin 2002; Hitchingham and Kenney 2002; Cook et al. 2003; Roszkowski et al. 2005; Feather 2005; Kyrillidou and Persson 2006; Harer 2006; Kalb 2007; Moon 2007
ACRL standards	ACRL 2004; Fernekes and Nelson 2005
IFLA guidelines	Poll and te Boekhorst 1996; Poll et al. 2007

The following quality assessment tools are consulted to design the questionnaire:

a) ISO 11620

This International Standard is concerned with the evaluation of libraries of all types. The main purpose of this International Standard is to endorse the use of performance indicators in libraries and to spread knowledge about how to conduct performance measurement. By the establishment of this International Standard, the use of performance indicators can be advanced and libraries in developing and developed countries will benefit from the knowledge and skills associated with formal planning procedures and data collection processes. This International Standard specifies the requirements of a performance indicator for libraries and establishes a set of indicators

to be used by libraries of all types. It also provides guidance on how to implement performance indicators in libraries where such indicators are not already in use (ISO 11620 2006). In relation to strong points of this standard, Bellini (2004) declares that there are three main reasons for the preference of ISO 11620 standard:

a) ISO is a highly authoritative body and is internationally well known even outside the library sector. Consequently, the results yielded by an ISO standard enjoy more credence outside the restricted domain of the library;
b) ISO 11620 offers greater guarantees as regards development and updating;
c) The ISO standard comprises a larger number of indicators.

b) ACRL standards

These standards are intended to apply to libraries supporting academic programmes at institutions of higher education. In fact, the standards and key principles are designed as a tool to help libraries establish individual goals within the context of their institutional goals. They provide suggested points of comparison for peer and longitudinal comparison, and encourage the development of other measures. Some measures of quality and quantity are used in this document, as well as questions to provide guidance for assessing each element of library operations and the provision of library services (ACRL standards 2004). As mentioned in the standard, "Each library is encouraged to choose its own peer group for the purpose of comparisons. Peer groups may already be identified for benchmarking purposes by the institution. If not, a peer group could be identified using criteria such as the institution's mission, reputation, selectivity for admission, size of budget, size of endowment, expenditure for library support, and/or size of collection. Once a peer group has been determined, "points of comparison" can be made to compare the strength of the library with its peers. Suggested points of comparison for input and output measures are provided. This list is not to be considered exhaustive; other points of comparison can be determined by the institution. If comparisons are going to be conducted on an annual or other regular basis, the same categories should be used each time to assure a consistent and usable result". Accordingly, some points and indicators included in the questionnaire of this study have been inspired by paying attention to ACRL standards.

c) LibQUAL

The LibQUAL survey, evolved from a conceptual model based on the SERVQUAL instrument developed in the 1980s by Parasuraman, Zeithaml and Berry (1985, 1988, 1991, and 1994), is a popular tool for assessing service quality in the private sector. SERVQUAL was developed for use in the for-profit business sector, and because of these two reasons: (a) it included items not considered relevant by some library users (e.g., the attire of service staff); and (b) it did not include some items very important to library users; ARL, representing the largest research libraries in North America, partnered with Texas A&M University Libraries to develop, test, and refine LibQUAL. The goals of LibQUAL are to:

a) Foster a culture of excellence in providing library service;
b) Help libraries better understand user perceptions of library service quality;
c) Collect and interpret library user feedback systematically over time;
d) Provide libraries with comparable assessment information from peer institutions;
e) Identify best practices in library service; and

f) Enhance library staff members' analytical skills for interpreting and acting on data.

According to Roszkowski, Baky and Jones (2005), based on this paradigm, customer satisfaction constitutes the "gap" (i.e., difference) between the service a customer expects to receive and the service that she or he actually experiences. Thus, on each item of the LibQUAL questionnaire (including a list of 22 standardized items plus some open-ended comments), the respondent provides three ratings of library service: (a) minimum acceptable level of service; (b) desired (i.e., expected) level of service; and (c) the perceived (i.e., currently provided) level of service. By subtraction, gaps are calculated between desired, perceived, and minimum expectations of service.

To sum up, as LibQUAL is one of 11 ways of listening to users, called a total market survey (LibQUAL 2007 Survey Results 2007), and because according to ACRL Standards (2004) that each institution can determine its own points of comparison, it can be said that there are more than 11 ways to assess quality of various libraries and here, academic library performance. Hence, the present survey aims to do a comprehensive quality assessment using indicators suggested in aforementioned quality assessment tools, related literature along with some indicators based on IAUSRB libraries context.

Data Analysis

Both descriptive (mean, standard deviation, standard error and so on) and inferential (ANOVA, t-test alongside its sub-tests namely Levene and F, and Tukey HSD) statistics were utilized to reach valid findings. The nature and application these statistical tests and methods are detailed out where results are offered. Data collected were analyzed using the statistical software package Statistical Product and Service Solutions (SPSS).

FINDINGS

Answering the Research Questions

a) Q1: Which library services are the most expected priorities based on users' viewpoint?

The results of the ANOVA are indicated in Table 3. By means of comparing the "Sig." value to alpha (.05), the decision rule is as follows: if the significance value is less than alpha, we should conclude that "there is a significant difference between the groups". In other words, users have different expectations concerning different services offered in IAUSRB libraries.

Table 3: ANOVA for Q1

	Sum of Squares	*df*	*Mean Square*	*F*	*Sig.*
Between Groups	*53.489*	*14*	*3.821*	*2.830*	*.000*
Within Groups	*10631.611*	*7875*	*1.350*		
Total	*10685.099*	*7889*			

As presented in Table 4, the most expected library services prioritized by users are "operation time", "staff", and "circulation". Additionally, the least expected library services which are in lower importance from users' perspective are "audiovisual materials" and "press". Such a finding can help library managers focus on, as well as plan for services more considered by users. This can also contribute to spend library budget more precisely and properly.

Table 4: Descriptive Statistics for Q1

Maximum	Minimum	95% Confidence Interval for Mean		Std. Error	Std. Deviation	Mean	N	Library services
		Upper Bound	Lower Bound					
5.00	.00	4.3117	4.1484	.04156	.95313	4.2300	526	**Operation time**
5.00	.00	4.1634	3.9930	.04338	.99486	4.0782	526	**Place**
5.00	.00	4.1140	3.9298	.04688	1.07515	4.0219	526	**Information finding tools**
5.00	.00	4.0957	3.8967	.05067	1.16200	3.9962	526	**Proliferation, scanner, and printer**
5.00	.00	4.2051	4.0366	.04289	.98358	4.1208	526	**Circulation**
5.00	.00	4.2041	4.0004	.05185	1.18927	4.1023	526	**Reference**
5.00	.00	4.0909	3.8917	.05071	1.16299	3.9913	526	**Information services**
5.00	.00	4.1875	3.9940	.04925	1.12946	4.0908	526	**Journals**
5.00	.00	4.0766	3.8702	.05252	1.20446	3.9734	526	**Press**
5.00	.00	3.9927	3.7665	.05758	1.32052	3.8796	526	**Audiovisual materials**
5.00	.00	4.1105	3.8946	.05496	1.26038	4.0025	526	**Databases**
5.00	.00	4.2222	3.9907	.05892	1.35122	4.1065	526	**Internet**
5.00	.00	4.1407	3.9163	.05712	1.31009	4.0285	526	**Library website**
5.00	.00	4.2415	4.0506	.04857	1.11405	4.1461	526	**Staff**
5.00	.00	4.2002	4.0072	.04914	1.12694	4.1037	526	**Information literacy**
5.00	.00	4.0838	4.0324	.01310	1.16380	4.0581	7890	**Total**

b) Q2: How is ranking of libraries surveyed in terms of perceived quality?

From Table 5, it is apparent that the following libraries: "Engineering", "Physics", and "Social Science and Humanities", are among the most successful and satisfactory libraries on the basis of perceived quality. In contrary, "Theology and Philosophy" and "Medical Engineering" libraries have provided their users with lower quality services compared to their counterparts.

Table 5: Descriptive Statistics for Q2

Maximum	Minimum	95% Confidence Interval for Mean		Std. Error	Std. Deviation	Mean	N	Library ranking	Libraries surveyed
		Upper Bound	Lower Bound						
4.30	.00	2.6632	1.8647	.19740	1.24845	2.2639	40	**10**	**Theology and Philosophy**
4.19	.00	3.2532	2.6582	.14709	.93029	2.9557	40	**6**	**Management and Economics**
4.07	.00	3.4407	2.8701	.14105	.89206	3.1554	40	**3**	**Social Science and Humanities**
4.43	1.77	3.1366	2.7484	.09597	.60695	2.9425	40	**7**	**Veterinary Science**
4.69	1.59	3.4174	2.9854	.10679	.67538	3.2014	40	**2**	**Physics**
4.63	1.60	3.3435	2.9265	.10307	.65187	3.1350	40	**4**	**Environmental Science**
3.56	1.63	2.9316	2.6166	.07803	.51168	2.7741	43	**8**	**Food Science**
4.14	1.71	3.3473	3.1127	.05896	.52731	3.2300	80	**1**	**Engineering**
4.00	1.00	2.6928	2.2086	.11970	.75704	2.4507	40	**9**	**Medical Engineering**
4.33	1.14	3.1707	2.9580	.05373	.59591	3.0643	123	**5**	**Central**
4.69	.00	3.0300	2.8970	.03385	.77637	2.9635	526		**Total**

Research Hypotheses

As a result of testing research hypotheses, research findings are offered as follows:

> **H1*: There is a significant difference between the users' expectations and the perceived quality of "environment, equipment and physical facilities".***

The statistics used for testing hypotheses 1 to 5 is similar. Therefore, the process of analyzing the tables is explained for first hypothesis only. For the other hypotheses, it is suffice to present the relevant tables along with brief description.

Table 6 presents the descriptive statistics for H1. Specifically, the table includes the number of cases (N), the mean score, the standard deviation, and the estimated standard error of the mean (the standard deviation divided by N).

Table 6: Group Statistics for H1

	Quality	N	Mean	Std. Deviation	Std. Error Mean
Environment, equipment and physical facilities	Expected	526	73.49	16.666	.727
	Perceived	526	53.77	14.092	.614

As highlighted, of greatest interest here are the mean scores for "Expected quality" (73.49) and for "Perceived quality" (53.77). One might be tempted to conclude that this indicates that "Expected quality" has significantly higher average scores than "Perceived quality". However, this conclusion would be premature; in fact, the whole point of the t-test is to determine whether this is a real difference (statistically significant), or one that could be attributed to random chance. To do this, we need to examine Table 7 for Independent Samples Test.

Table 7: Independent Samples Test for H1

Environment, equipment and physical facilities	Levene's Test for Equality of Variances		t-test for Equality of Means						
	F	Sig.	t	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	95% Confidence Interval of the Difference	
Equal variances assumed	1.999	.158	20.721	1050	.000	19.719	.952	17.851	21.586
Equal variances not assumed			20.721	1021.762	.000	19.719	.952	17.851	21.586

In Table 7, The first two columns labeled Levene's Test for Equality of Variances provides a test of one of the assumptions of the t-test, i.e., that the variance in the two groups are equal (i.e., similar or homogenous). If this assumption is violated in the data, a statistical adjustment needs to be made. The *F* statistic in the first column and its probability in the second column (Sig., an abbreviation for significance) provide this test. If the probability of the *F* value (i.e., Sig.) is less than or equal to .05, then the variances in the groups being compared are different, and the condition of homogeneity of variance has not been satisfied. The results of the *F* test determine whether to use the Equal variances assumed rows or the Equal variances not assumed rows in evaluating the t statistic. The decision rule for determining which rows to use is as follows:

- If the variances for the two groups are equal (i.e., Sig. > .05), then use the output in the *Equal variances assumed* rows. These rows represent the more conventional method of evaluating the t value based upon degrees of freedom (df) equal to the total number of scores minus 2 (this is the method that is described in most introductory statistics or research methods textbooks).
- If the variances for the two groups are significantly different (i.e., Sig. < .05), then use the output in the *Equal variances not assumed* row. Evaluation of the t statistic in this row is based upon adjusted degrees of freedom which takes into account the dissimilar variances in the two groups.

Since the probability (Sig. = .158) for the *F* value is more than .05; thus, the variances of the two groups are equal, and therefore the output in the Equal variances assumed row should be used.

To determine whether the difference between expected and perceived quality is significant, we need to look at the columns labeled t-test for equality of Means. We are

currently only interested in the obtained t-value and its probability, which can be seen in the columns labeled *t* and Sig. (2-tailed). Looking in the Equal variances assumed row, we see a *t* value of 20.721. The probability in the Sig. (2-tailed) column in the (p = .000) is less than .05, meaning that we need to reject the null hypothesis of not differences, concluding that there was a significant difference between expected and perceived quality in relation to service category "environment, equipment and physical facilities". Consequently, the first hypothesis of the research is confirmed.

H2: ***There is a significant difference between the users' expectations and the perceived quality of "public services".***

As can be seen in Table 8, the mean scores for "Expected quality" and "Perceived quality" for H2 are (109.85) and (79.71), respectively.

Table 8: Group Statistics for H2

	Quality	N	Mean	Std. Deviation	Std. Error Mean
Public services	Expected	526	109.85	27.235	1.188
	Perceived	526	79.71	22.557	.984

To test hypothesis 2, we need to examine Table 9. Since the probability (Sig. = .072) for the *F* value is more than .05; thus, the variances of the two groups are equal, and therefore the output in the Equal variances assumed row should be used. Looking in the Equal variances assumed row, we see that the probability in the Sig. (2-tailed) column in the (p = .000) is less than .05, meaning that we need to reject the null hypothesis of not differences, concluding that there is a significant difference between expected and perceived quality in association with service category "public services". Hence, the second hypothesis of the research is confirmed.

Table 9: Independent Samples Test for H2

	Levene's Test for Equality of Variances		t-test for Equality of Means						
Public services								95% Confidence Interval of the Difference	
	F	Sig.	t	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference		
Equal variances assumed	3.236	.072	19.546	1050	.000	30.139	1.542	27.113	33.164
Equal variances not assumed			19.546	1014.796	.000	30.139	1.542	27.113	33.165

H3: ***There is a significant difference between the users' expectations and the perceived quality of "non-book materials".***

Table 10 presents the mean scores for "Expected quality" and "Perceived quality" for H3 which are (39.92) and (27.62) respectively.

Table 10: Group Statistics for H3

	Quality	N	Mean	Std. Deviation	Std. Error Mean
Non-book materials	Expected	526	39.92	11.818	.515
	Perceived	526	27.62	10.117	.441

As can be interpreted through Table 11, the probability (Sig. = .718) for the *F* value is more than .05. Thus, the variances of the two groups are equal, and so the output in the Equal variances assumed row should be used. Looking in the Equal variances assumed row, we see that the probability in the Sig. (2-tailed) column in the (p = .000) is less than .05, meaning that there was a significant difference between expected and perceived quality in association with service category "non-book materials". Hence, the third hypothesis of the research is confirmed; the third null hypothesis is rejected.

Table 11: Independent Samples Test for H3

	Levene's Test for Equality of Variances		t-test for Equality of Means						
Non-book materials								95% Confidence Interval of the Difference	
	F	Sig.	t	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference		
Equal variances assumed	.131	.718	18.123	1050	.000	12.293	.678	10.962	13.624
Equal variances not assumed			18.123	1025.646	.000	12.293	.678	10.962	13.624

H4: ***There is a significant difference between the users' expectations and the perceived quality of "staff (librarians and their co-workers)".***

As observed in Table 12, the mean scores for H4's "Expected quality" and "Perceived quality" are (24.88) and (19.34) respectively.

Table 12: Group Statistics for H4

	Quality	N	Mean	Std. Deviation	Std. Error Mean
Staff	Expected	526	24.88	6.684	.291
	Perceived	526	19.34	6.322	.276

Table 13 shows that the probability (Sig. = .627) for the *F* value is more than .05. Thus, the variances of the two groups are equal, and therefore the output in the Equal variances assumed row should be used. Looking in the Equal variances assumed row, we see that the probability in the Sig. (2-tailed) column in the (p = .000) is less than .05, along with rejecting the fourth null hypothesis, concluding that there was a significant difference between expected and perceived quality regarding service category "staff". Hence, the fourth hypothesis of the research is confirmed.

Table 13: Independent Samples Test for H4

Staff	Levene's Test for Equality of Variances		t-test for Equality of Means						
	F	Sig.	t	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	95% Confidence Interval of the Difference	
Equal variances assumed	.236	.627	13.791	1050	.000	5.532	.401	4.745	6.319
Equal variances not assumed			13.791	1046.755	.000	5.532	.401	4.745	6.319

H5: ***There is a significant difference between the users' expectations and the perceived quality of "information literacy and user education".***

Table 14 presents the mean scores for "Expected quality" and "Perceived quality" for H5 which are (36.93) and (27.00) respectively.

Table 14: Group Statistics for H5

Information literacy and user education	Quality	N	Mean	Std. Deviation	Std. Error Mean
	Expected	526	36.93	10.142	.442
	Perceived	526	27.00	8.821	.385

Table 15 indicates that the probability (Sig. = .756) for the *F* value is more than .05. Thus, the variances of the two groups are equal, and therefore the output in the Equal variances assumed row should be used. Looking in the Equal variances assumed row, we see that the probability in the Sig. (2-tailed) column in the (p = .000) is less than .05, concluding that there was a significant difference between expected and perceived quality regarding service category "information literacy and user education". As a result, fifth hypothesis of the research is confirmed. The fifth null hypothesis is rejected.

Table 15: Independent Samples Test for H5

Information literacy and User education	Levene's Test for Equality of Variances		t-test for Equality of Means						
	F	Sig.	t	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	95% Confidence Interval of the Difference	
Equal variances assumed	.096	.756	16.952	1050	.000	9.935	.586	8.785	11.085
Equal variances not assumed			16.952	1030.171	.000	9.935	.586	8.785	11.085

H6: ***There is a significant difference among total perceived quality of each category defined.***

Some descriptive data including the means and standard deviations of the groups are presented in Table 16. To meet one of the main objectives of the research, i.e., "to identify the most successful (satisfactory) and the weakest (less satisfactory) category of library services based on total perceived quality", the data available, particularly the mean rate is useful. Accordingly, the "staff" category is regarded as the most successful (satisfactory) category of library services based on the total perceived quality among five categories defined in this study, while the "non-book materials" category is treated as the weakest (less satisfactory) category of library services.

Table 16: Descriptive Statistics for H7

Maximum	Minimum	95% Confidence Interval for Mean		Std. Error	Std. Deviation	Mean	N	Categories defined
		Upper Bound	Lower Bound					
4.72	.00	3.0542	2.9201	.03413	.78287	2.9871	526	Environment, equipment and physical facilities
4.74	.00	3.0238	2.8806	.03643	.83545	2.9522	526	Public services
4.80	.00	2.8490	2.6757	.04411	1.01174	2.7624	526	Non-book materials
5.00	.00	3.3143	3.1338	.04594	1.05366	3.2240	526	Staff
5.00	.00	3.0837	2.9158	.04273	.98007	2.9998	526	Information literacy and user education
5.00	.00	3.0214	2.9488	.01851	.94937	2.9851	2630	Total

Due to the multiple independent variables, a one-way ANOVA was used for this hypothesis. Table 17 presents the results for this test. Because the significance value of .000 is less than .05, we can interpret that "there is a significant difference among total perceived quality of each category defined", i.e., the sixth hypothesis of the research is confirmed, and the sixth null hypothesis of the research is rejected.

Table 17: ANOVA for H7

	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	56.807	4	14.202	16.119	.000
Within Groups	2312.736	2625	.881		
Total	2369.543	2629			

On the other hand, since the overall F is statistically significant as shown in Table 17 (F = 16.119, p = .000 (<0.05)), a post hoc test (the Tukey method) designed for situations in which the variances are unequal was conducted. In fact, ANOVA analysis only tells us that there is a difference among the categories; it does not specify which ones. Hence, we ran a Tukey's HSD so that rate of difference among the categories can be statistically shown. Admittedly, this test supports result of ANOVA test that "there is a significant difference among total perceived quality of each category defined". Tukey's HSD post hoc test compares each control group to the other groups. The asterisks in the mean difference column in Table 18 identify the paired groups that show statistical difference at the 0.05 confidence level or lower. Based on Table 18, it can be demonstrated that the category "environment, equipment and physical facilities", for instance, is different compared with all other categories but significantly different than the categories "non-book materials" and "staff".

Table 19 shows that the categories "public services", "environment, equipment and physical facilities", and "information literacy" form one homogeneous subset because their means are not significantly different from one another. Paying attention to this finding, these three categories should be improved towards staff status so that more satisfaction of users is guaranteed. Moreover, the category "non-book materials" with its sub-categories should be specially considered to take a step forward.

H7: ***Total perceived quality of surveyed libraries is more than 50%.***

Table 20 presents the output or the descriptive statistics of one-sample T test. To understand whether the total perceived quality of surveyed libraries is more than 50% or not, we compared the mean level of perceived quality for our sample namely 2.9635≈3 to a value of 3. In fact, the mean of our sample (2.9635≈3) is fairly equal to 3.

Now, we need to see the results of our one-sample T test. As observed in Table 21, T value is 3 and significance value is .281. Because the significance value, .281, is more than .05, there is not a significant difference between the two groups – mean level of perceived quality (2.9635≈3) and T value (3). Therefore, it can be said that the total perceived quality of surveyed libraries is rather equivalent to – not more than – 50%, meaning that we need to confirm the seventh null hypothesis, i.e. "total perceived quality of surveyed libraries is less than 50%", concluding that the seventh hypothesis of the research is rejected. By means of this finding, another objective of the research, i.e., "to identify users' total satisfaction from the quality of IAUSRB libraries services" is met. As a matter of fact, library users have been moderately satisfied with all services offered by all libraries studied. As such, the library managers should plan for the near future in

which better and quality services, or better performance as well as users' satisfaction, come true tangibly.

Table 18: Tukey HSD Multiple Comparisons for H6

95% Confidence Interval		Sig.	Std. Error	Mean Difference (I-J)	(J) Category	(I) Category
Upper Bound	Lower Bound					
.1929	-.1231	.975	.05788	.03492	Public services	**Environment, equipment and physical facilities**
.3827	.0668	.001	.05788	.22476(*)	Non-book materials	
-.0789	-.3949	.000	.05788	-.23690(*)	Staff	
.1453	-.1707	.999	.05788	-.01267	Information literacy	
.1231	-.1929	.975	.05788	-.03492	Environment….	**Public services**
.3478	.0318	.009	.05788	.18983(*)	Non-book materials	
-.1138	-.4298	.000	.05788	-.27183(*)	Staff	
.1104	-.2056	.924	.05788	-.04760	Information literacy	
-.0668	-.3827	.001	.05788	-.22476(*)	Environment….	**Non-book materials**
-.0318	-.3478	.009	.05788	-.18983(*)	Public services	
-.3037	-.6197	.000	.05788	-.46166(*)	Information literacy	
-.0794	-.3954	.000	.05788	-.23743(*)	Information literacy	
.3949	.0789	.000	.05788	.23690(*)	Environment….	**Staff**
.4298	.1138	.000	.05788	.27183(*)	Public services	
.6197	.3037	.000	.05788	.46166(*)	Non-book materials	
.3822	.0662	.001	.05788	.22423(*)	Information literacy	
.1707	-.1453	.999	.05788	.01267	Environment….	**Information literacy**
.2056	-.1104	.924	.05788	.04760	Public services	
.3954	.0794	.000	.05788	.23743(*)	Non-book materials	
-.0662	-.3822	.001	.05788	-.22423(*)	Staff	

* The mean difference is significant at the .05 level.

Table 19: Tukey HSD Homogeneous Subsets for H7

Category	N	Subset for alpha = .05		
		1	2	3
Non-book materials	526	2.7624		
Public services	526		2.9522	
Environment equipment and physical facilities	526		2.9871	
Information literacy	526		2.9998	
Staff	526			3.2240
Sig.		1.000	.924	1.000

Means for groups in homogeneous subsets are displayed.
(a) Uses Harmonic Mean Sample Size = 526.000.

Table 20: One-Sample Statistics for H7

	N	Mean	Std. Deviation	Std. Error Mean
Perceived quality	526	2.9635≈3	.77637	.03385

Table 21: One-Sample Test for H7

Test Value = 3						
95% Confidence Interval of the Difference		Mean Difference	Sig. (2-tailed)	df	t	
Upper	Lower					
.0300	-.1030	-.03653	.281	525	-1.079	**Perceived quality**

DISCUSSION

In response to the research problem – performance quality of IAUSRB libraries – it should be indicated that because their perceived quality is 2.9635 (≈50%), services offered by libraries surveyed had a relatively average quality performance and average success (Table 20). Even if individual libraries (Table 5) such as the Engineering (mean=3.23) and Physics (mean=3.2014) libraries had a better performance than others, yet their performance is near to average level. Consequently, such a finding emphasizes average performance of IAUSRB libraries. Additionally, the "non-book materials" category is treated as the weakest (less satisfactory) category of library services. Hence, it is treated as a potential area for improvement. In comparison with Moon's LibQUAL-based research (2007), it was found that all groups of library users at Rhodes were very dissatisfied with their library building, It seems that IAUSRB library users are criticizing "non-book materials". Because non-book materials emphasize a virtual environment and can highly facilitate information accessibility, it is reiterated that library planners should provide their users with the best information access – which is also emphasized in Sessions, Schenck and Shrimplin (2002) and Hitchingham and Kenney (2002), who focus more on the weaknesses of this category. Furthermore, it was realized that the categories with better performance or perceived quality from users' perspective are "staff", "information literacy and user education", and "environment, equipment and physical facilities" (Table 16). Another important point extracted from the survey is that users' priorities are "operation time", "staff", and "circulation". Also, the least expected library services which are of lower importance from users' perspective are "audiovisual materials" and "press". This can help library managers focus on as well as plan for services more considered by users. The finding that "staff" is among the most expected library services is similar with Dole's (2002) research findings at Washburn University and Sessions, Schenck and Shrimplin (2002) at Miami University.

On the other hand, results of hypotheses 1-5 demonstrated that there is a significant difference between expected quality of five service categories and their perceived quality based on users' viewpoint. This supports truly the finding that "services offered by libraries surveyed had a relative quality performance and average success". In fact, it can be even paraphrased that their general performance is less than 50%, i.e., lower than the satisfactory rate. Hence, managers including top managers (policy-makers), administrative managers (library managers) and operational managers (librarians and their co-workers) are reminded that the gap currently observed between expected quality and perceived quality should be bridged or diminished. To do this, they can rely upon results of this survey and thus listen to what their clients do say, and respond to their comments in theory and practice.

It should not be neglected that in relation to the implications of this research and its generalizability, a couple of limitations must be indicated. Hopefully, future studies take them into consideration. The research deals with one of IAU libraries. Thus, the generalization of these results needs to be taken with caution. Furthermore, in collecting data, a quantitative method was applied which alone is not capable to produce all-inclusive findings without a qualitative method.

RECOMMENDATIONS

Findings from this study recommend that the authorities (including managers, librarians and co-librarians) and decision-makers of IAUSRB:

a) take a strategic planning into consideration and therefore pay attention to enough investment in terms of budget and human resources;
b) identify higher education objectives as well as their users' needs;
c) acquire sufficient update resources and equipment;
d) value user education programs particularly information literacy skills.
e) pay high attention for service improvement to "Theology and Philosophy" and "Medical Engineering" libraries, which have provided their users with lower quality services compared to their peer libraries.
f) consider quality improvement approach to "non-book materials" category which includes audiovisual materials and online databases such as Emerald, SagePub, and ScienceDirect, Internet, and library website.
g) bridge or diminish the gap currently observed between expected quality and perceived quality. To do this, managers can rely upon results of this survey and thus listen to what their clients do say, and respond to their comments in theory and practice;
h) plan and design ongoing courses of information technology and related skills;
i) promote and introduce various academic library services through compiling and publishing manuals and guides;
j) equip IAUSRB libraries with more information technology facilities; hence consider a special budget for development of information technology infrastructure and thus overcoming telecommunication barriers and shortcomings to better use of information technology.

k) report results to the respondents and the wider IAU community including professors, students, and librarians in order to strengthen relationships between the libraries and their users.

CONCLUSION AND FURTHER RESEARCH

The evaluation performed in this research can be considered as a success and one beginning. If we accept that academic libraries affect the quality of their stakeholders' life, they should be considered and scrutinized more via such evaluation studies. Hence, the present research concludes that such a survey ought to be preceded by a several-year examination of performance indicators based on library statistics and user satisfaction research. It is also suggested that larger scale studies are done using the methodology and tool used here. For this reason and as for the future, it is proposed that the method and questionnaire applied to be used IAU-wide so that it can be developed and applicable for other Iranian academic libraries. Particularly, the methodology and tool used in the research need to be improved, completed, and developed to select more adequate performance indicators with reference to information technology-based environment, and to prepare a comment form for comments and questions from the end-users. On the other hand, as indicated in Sessions, Schenck and Shrimplin (2002, p. 67) that "although academic libraries place the highest value on their clients' concerns for desired levels of services, they also have to remember that the clients may not always be qualified to realize all the possibilities for unique information services today. Academic librarians need to accept their role as experts in information management and not just meet clients' expectation, but also anticipate clients' needs and help define those very expectations". Academic librarians, in general, and librarians working in IAUSRB libraries, in particular, should emerge as mentioned by Arthur Andersen, repeated by Omekwu (2006; cited in Aqili and Isfandyari-Moghaddam 2008):

- Technology experts: ensuring that members of the knowledge communities understand the available technology and use it to its potential. This role is a technology trainer and cheerleader.
- Guides: directing members of knowledge community to outside information when appropriate and maintaining high-level information about sources outside the community.
- Scouts: ferreting out information useful to the knowledge community and bringing it into the knowledge base.
- Research librarians: helping users define information needs and prioritizing highly relevant information from a pool of interesting information according to user preferences.
- Analysts: adding value to information by creating a context for understanding and by looking for pattern of information that points to new arrears of interest.
- As information providers: librarians can make available much more widely collections which now can be used not only within a single physical library location. A wide range of publications and access formats can be accommodated, from remote login catalogues and indexes, to provision of electronic copies of entire collection or works, in print or other formats.

As a closing remark, quality assessment of academic library collection and services can be supposed as a "never-ending beginning" and according to Hitchingham and Kenney (2002) as "a cycle of assessment". That is, it should become as a culture in academic libraries, and then this process is done annually or regularly. There is much to be gained by using this tool repeatedly in the future provided that the process of distributing the questionnaire will be facilitated using web-based carriers.

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APPENDIX 1: Questionnaire Used to Assess Quality of Services of IAUSRB Libraries

Dear respondent:

Library is committed to the improvement of its services. Better understanding your expectations will help us adapt offered services to your needs. Hence, the present survey is being performed to assess quality of library services and identify their strengths as well as weaknesses. Please spend 20 minutes of your valuable time to complete the questionnaire and answer its items. In advance, special thanks for your cooperation!

Demographic information

1. Sex: Male❍ Female❍

2. Age: 18-22❍ 23-30❍ 31-45❍ 46-65❍ Over 65❍

3. Position: Student (Undergraduate❍ MSc❍ PhD❍) Faculty (Assistant professor❍ Associate professor❍ Lecturer❍ Professor❍ Other❍) Researcher❍ Staff❍ Other❍

A. Environment, equipment and physical facilities

	Expectation level	**Perceived quality**
• **Operation time**		
1. Daily opening hours	①②③④⑤	①②③④⑤
2. Days open during the week	①②③④⑤	①②③④⑤
3. Adequate hours of service (Total hours of offering services is sufficient)	①②③④⑤	①②③④⑤
• **Place**		
4. Number of reading halls	①②③④⑤	①②③④⑤
5. Library space that inspires study and learning	①②③④⑤	①②③④⑤
6. Quietness (Quiet space for individual activities)	①②③④⑤	①②③④⑤
7. Equipment (furniture)	①②③④⑤	①②③④⑤
8. Temperature	①②③④⑤	①②③④⑤
9. Lighting	①②③④⑤	①②③④⑤
10. Community space for group learning and group study	①②③④⑤	①②③④⑤
11. A getaway for study, learning, or research	①②③④⑤	①②③④⑤
• **Information finding tools such as OPACs, union catalogues, …**		
12. Number of available stations	①②③④⑤	①②③④⑤
13. Ease of use	①②③④⑤	①②③④⑤
14. Speed of use	①②③④⑤	①②③④⑤
15. Modern equipment that lets users easily access needed information	①②③④⑤	①②③④⑤
• **Proliferation (copy services), scanner, and printer**		
16. Number of machines and devices	①②③④⑤	①②③④⑤
17. Cost of services	①②③④⑤	①②③④⑤
18. Efficiency (availability of paper, toner, assistance,…)	①②③④⑤	①②③④⑤
B. Public services		
• **Circulation**		
19. Quality of collection in terms of currency and subject relevance of available books	①②③④⑤	①②③④⑤

20. State of conservation of books	①②③④⑤	①②③④⑤
21. Availability of several copies of the same book	①②③④⑤	①②③④⑤
22. Duration of loans	①②③④⑤	①②③④⑤
23. Waiting time for requested books from closed stacks	①②③④⑤	①②③④⑤
24. Number of books that can be borrowed simultaneously	①②③④⑤	①②③④⑤
25. Existence of inter-library loan	①②③④⑤	①②③④⑤
26. Speed and ease of borrowing books through inter-library loan	①②③④⑤	①②③④⑤
27. Cost of borrowing books through inter-library loan	①②③④⑤	①②③④⑤
• **Reference**		
28. State of conservation of reference works	①②③④⑤	①②③④⑤
29. Diversity of reference works (e.g. existence of several dictionaries)	①②③④⑤	①②③④⑤
30. Existence of reference desk which replies users' questions and information needs	①②③④⑤	①②③④⑤
31. Existence of general references such as encyclopedias, dictionaries and so on	①②③④⑤	①②③④⑤
32. Existence of sufficient and relevant special references in relation to users' disciplines	①②③④⑤	①②③④⑤
• **Information services**		
33. Current awareness services (CAS)	①②③④⑤	①②③④⑤
34. Selective dissemination of information (SDI)	①②③④⑤	①②③④⑤
35. Offering indexing and abstracting services	①②③④⑤	①②③④⑤
36. Providing press cuttings	①②③④⑤	①②③④⑤
37. Announcement on upcoming conferences relating to available scientific departments	①②③④⑤	①②③④⑤
38. Table of content services	①②③④⑤	①②③④⑤
39. Bulletin board services	①②③④⑤	①②③④⑤
• **Journals**		
40. Number and variety of existing journals	①②③④⑤	①②③④⑤
41. State of conservation of journals	①②③④⑤	①②③④⑤
42. Findability (ease of finding items in the stack)	①②③④⑤	①②③④⑤
43. Availability of printed and electronic journals relevant to information needs of users	①②③④⑤	①②③④⑤
• **Press (magazines and newspapers)**		
44. Number and variety of existing press	①②③④⑤	①②③④⑤
45. Availability of several copies of the same item	①②③④⑤	①②③④⑤
C. Non-book materials		
• **Audiovisual materials**		
46. Usefulness of audiovisual videocassettes	①②③④⑤	①②③④⑤
47. State of conservation of videocassettes	①②③④⑤	①②③④⑤
48. Availability of equipped stations for using (viewing and listening) audiovisual materials	①②③④⑤	①②③④⑤
• **Databases like Emerald, SagePub, ScienceDirect,…**		
49. Number and variety of existing subscribed databases	①②③④⑤	①②③④⑤
50. Number of available stations for searching existing subscribed databases	①②③④⑤	①②③④⑤
51. Ease of use	①②③④⑤	①②③④⑤
• **Internet**		
52. Number of Internet rooms	①②③④⑤	①②③④⑤
53. Number of connections (number of PCs connected to the Internet)	①②③④⑤	①②③④⑤

• **Library website**		
54. Ease of use (It has a user-friendly interface)	①②③④⑤	①②③④⑤
55. Helping users find and locate needed information	①②③④⑤	①②③④⑤
D. Staff (librarians and their co-workers)		
56. Willingness to help users	①②③④⑤	①②③④⑤
57. Employees who understand the needs of their users	①②③④⑤	①②③④⑤
58. Employees who deal with users in a caring fashion	①②③④⑤	①②③④⑤
59. Employees who are consistently courteous	①②③④⑤	①②③④⑤
60. Readiness to respond to users' questions	①②③④⑤	①②③④⑤
61. Employees who have the needed knowledge and enough skills to answer user questions	①②③④⑤	①②③④⑤
E. Information literacy and user education		
62. The library helps users stay abreast of developments in their field(s) of interest	①②③④⑤	①②③④⑤
63. The library aids users' advancement in their academic disciplines	①②③④⑤	①②③④⑤
64. The library enables users to be more efficient in their academic pursuits	①②③④⑤	①②③④⑤
65. The library helps users understand their information need(s)	①②③④⑤	①②③④⑤
66. The library help users to be more efficient in accessing useful and effective information	①②③④⑤	①②③④⑤
67. The library helps users distinguish between trustworthy and untrustworthy information	①②③④⑤	①②③④⑤
68. The library provides users with the information skills they need for meeting certain goals such as problem solving	①②③④⑤	①②③④⑤
69. The library teaches users information seeking skills using formal and informal user education programs	①②③④⑤	①②③④⑤
70. The library uses information technologies properly in its educational programs	①②③④⑤	①②③④⑤