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# Measuring service quality at Tehran University of Medical Sciences' Libraries

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## Abstract

Using the Libqual+ model, the present study aims to compare the viewpoints of students and librarians in the Tehran's Medical Sciences University to determine the quality of library services. The results show that the users consider the current quality of services lower than what the librarians consider them to be. This difference of opinion is much more drastic when examining the information control subscale. Service superiority gap was estimated to be -2.14 for the overall library services under study and the said libraries fall fairly short of providing users with the desired level of services. From the users' point of view, the three subscales of Libqual+ do not have an equal effect on the quality of the provided services whereas the librarians all agree with an equal effectiveness of the subscales. The librarians have a correct understanding of the users' expectations and the gap between the users' expectations and the librarians' perceptions of their needs and demands is very small (0.18).

Keywords: Libqual+, academic Libraries, Tehran University of Medical Sciences, Services Quality

## Introduction

For years, researchers in the field of library and information sciences have been investigating information needs, user demands, and user perceptions of the importance and significance of library services. They sought for an elusive and multifaceted concept which characterized quality as a category (involving size, current titles, and subject coverage of the category), or utility of library services (involving the number of fulfilled goals). However, in the recent years, researchers have shown a tendency toward retrieval and other texts in order to focus on user perceptions and adopting a qualitative approach to reflect the viewpoints of users or customers about library services (Nitecki & Herson, 2000).

Academic and research libraries have made efforts to offer better definitions for new scales that outline their services. Increases in the users' demands for better services have led these libraries to evaluate themselves based on the feedback they receive. On the other hand, it is only through retaining and attracting more customers and focusing more on meeting their expectations that academic libraries could survive today's uncertain environment (Ashrafirizi & Kazempour, 2008). Rather than using resources and data evaluation indicators, nowadays, libraries have come under an increasing pressure to evaluate their performance by outcome-based measures. In other words, the performance of a library is measured by the quality services it provides and this shows the efficiency and effectiveness of the library (Esfandiyari & Babolhavaeji, 2010).

ServQual or the Gap Analysis Model is one of the latest models offered by Zeithaml, Parasuraman & Berry (1990) that is used for assessing the services quality in service organizations. Following this model, extensive research were conducted on the practice and development of this instrument for assessing the quality of various services. Furthermore, in order to localize the usage of this model, extensive research was done on specific organizations. One research by Association of Research Libraries(ARL) developed a new model by the name of Libqual+. This model is for assessing the level of quality in libraries. The results from all the research in this area demonstrate a high capacity for this model in assessing the quality level of services in libraries (Babagheybi & Fatahi, 2009). This instrument has been so popular that the data collected about users' expectations and their perceptions until 2005 about the provided services approximately involved 340000 individuals from over than 500 organizations. Other than the United States, Canada, United Kingdom, the Libqual+ instrument has been used in other countries in different languages, as well (Thompson & Cook, 2005).

The Libqual+ model tries to identify and analyze the gap between the customers' expectations and perceptions. Therefore, in the final modified version of the Libqual+ questionnaire which entails 22 questions, the users' perceptions of service quality are assessed by three dimensions including the effectiveness of services (the human dimension of the services quality is reflected in the users and librarians' interaction), information control (the dimension related to the facilities and available equipment of the library which enable the users to find the information they need in an automated and independent fashion), and the library as a place ( the physical environment of the library as a place for private readings, team work, and creating a shared spirit among individuals for studying and doing research). Moreover, each question in this questionnaire

evaluates the status of services quality in each of the dimensions on three levels of analysis. Currently, the recognition of library users' expectations and analysis of the gap between their perceptions and expectations of the provided services using the Libqual+ instrument is regarded as one of the most common methods of assessing users' perceptions of service quality in libraries.

In a research study, Calvert (2001) compared the expectations of students from the libraries in the Chinese and New Zealand universities. He realized that despite having different cultures, the users from both countries had very similar expectations from their libraries; in a way that the importance of the three dimensions of services quality in the Libqual+ model were the same for all students. Calvert thus concluded that there are no inherent-cultural differences in the perceptions about libraries' services quality on the international level and this allowed the model to be used globally for assessing services quality in libraries. Using the Libqual+ model, Cook (2003) revealed that Northern American Libraries have been more successful in terms of creating library physical environments (library as a place=0.64) and also in terms of human aspects and staff training that help users in searching for information (impact of services=0.60). Thus, it is no surprise that while the users and libraries have been equally faced with rapid changes of technology and of late, constant increases in the costs of information resources, the library staff have been rather down on luck in terms of access to information (access to information=0.25). By using the Libqual+ instrument, Kyrillidou & Persson (2006) evaluated the library users' expectations in the Lund University in Sweden. The findings showed that the information control dimension is very important for the users; be that as it may, the libraries under study have failed to cater to expectations of users in this area. From the users' point of view in this study, Libqual+ is seen as a modern instrument for assessing expectations far better than the traditional instruments. Implementing the Libqual+ model in the Alabama University, it was shown in another study that the current level of services is upwards of the minimum acceptable limit and is positive with regard to the gap. The superiority gap for services is negative having a -0.85 mean value. According to the present research findings, the strong suits of the libraries under study include pleasant and comfortable environment, good atmosphere for group learning and studying, and librarians' paying attention to each and every user (Bace, 2011).

Mirqafouri & Kayfi (2007) assessed the users' opinions of service quality in the University of Yazd's libraries. Based on the data analysis, the quality level of services in these libraries does not properly meet the users' needs and thus, there is a gap between the expectations and perceptions of the users where it is more serious with the access to information and personal control dimensions. Using the Libqual+ instrument, Hariri and Afnaie (2007), too, assessed the users' opinions of service quality in the central libraries of Iran University of Medical Sciences and also the Shahid Beheshti University and the Tehran's Medical Sciences branch of Azad University. Findings from this research suggest that the central libraries of Iran University of Medical Sciences offer better services than the latter universities. Also, the services that the central libraries of the Medical Sciences faculty of Shahid Beheshti University and Tehran's Medical Sciences branch of Azad University do not differ, significantly. In terms of the

information control dimension, the services that all the three libraries provide are very far from meeting the expectations of the users.

Baba-Ghaybi and Fattahi (2009) evaluated users' perceptions in the libraries of the Ferdowsi University of Mashhad on two levels of analysis: the "existing" and the "expected" levels. The findings showed that there was a significant difference between the users and librarians about the quality of existing services. In all cases, there was a significant difference between the expectations of master students and the available services in the mentioned libraries. Given the importance of each Libqual+ dimension and its effects on the library services quality, there was a difference between the quality of existing services, from the librarians' point of view, and the services expected by master students and librarians. However, there are no differences between the views of master students in the four academic areas.

Using the fuzzy approach, Sayyadi, Mansouri and Jamali (2008) ranked the most important components and dimensions of the Libqual+ model from the viewpoints of the University of Yazd students. From the students' points of view, most of the considered components had rather significant effects on the quality of library services. However, in order to identify the most important dimensions and components of the library services quality, the TOPSIS model was used to rank the components of library services quality. The results showed that the access to information dimension was the most important in improving the quality of library services. Based on the degree of importance, the other dimensions that contribute to the improvement of the quality of library services respectively include: personal control, library as a place, effectiveness of services .

In another research with the purpose of evaluating the quality of services from the viewpoint of users in the central library of the Tarbiat Modares University, Najafgholi Nejad and Hassanzadeh(2009) used the Libqual+ model on three levels: minimum, maximum, and actual. They found out that in most cases, there was a difference between the expectations of users and the services provided by the library. The users minimum demands were somewhat met, however, they were significantly far away from the proper and maximum levels of meeting users' expectations. User groups (including students and the faculty) differed significantly, in terms of the gap between the expectations and the available services. Lastly, there didn't exist any significant difference between intra-organizational and extra-organizational users, in terms of the gap between the expectations and the available services.

Mohammad Baygi and Hassanzadeh (2009) evaluated the users' opinions in the public libraries in Qazvin. They found out that the level of provided services for users for some indices exceeded the minimum level of expectations. However, in general, they had failed to satisfy the maximum level of users' expectations. These libraries were weaker, in terms of the effectiveness of services, than other dimensions, such that they could not even meet the minimum level of user expectations for want of available resources. They identified five factors that according to the users were the most significant in evaluating the quality of library services. The staff's tendency to provide services, availability of resources and accessibility of resources are among the factors that influence users' responsiveness in evaluating these types of libraries.

Tehran University of Medical Sciences was founded in 1934. This university is the oldest and the most outstanding medical center in the Iran and is one of the country's top research universities, receiving an annual grant of over 300 billion Rials from the government. This has 1300 academics in eight schools and research centers; has over 13,000 students (40% of which are women) and trains more than 2,000 specialists in over 80 postgraduate programs including M.S., Ph.D., Fellowship and Residency. Tehran University of Medical Sciences has more than 40 libraries in the Schools, Research Centers, and Hospitals with the Central Library located in the School of Medicine. The Tehran University of Medical Sciences held the several workshops to consider its purposes to improve the services of the libraries and it is anticipated that LibQUAL+ will fulfil an important function in evaluating the impact of implemented strategies. They believe the importance and significant role of libraries in promoting scientific research and development in academic environments and it is considered that the quality of services and performance of the libraries should be regularly assessed in the future.

Therefore, given the gravity of the matter, the present study endeavors to use the LibQUAL+ model to assess the quality level of services in the libraries of the Tehran University of Medical Sciences (from now on TUMS) from the viewpoints of users of these services. TUMS is the oldest and the most outstanding medical center in Iran and is one of the country's top research universities. Then, by identifying the existing gaps that hinder proper services, some necessary suggestions will be offered to fill these gaps. For this purpose, the following hypotheses will be tested in the present research:

1. There does not exist any significant difference between the viewpoints of the users of the libraries of the TUMS and the librarians about the quality of services in those libraries (in terms of subscales including effectiveness of the services, information control, and library as a place).
2. There exists a significant difference between the provided services in the libraries and the user expected services from the viewpoints of the users of the libraries of the TUMS.
3. There exists a significant difference between the effectiveness degrees of library services quality subscales and the provided services in the TUMS.
4. There exists a significant difference, from the librarians' point of view, between the effectiveness degrees of library services quality subscales and the quality of the provided services in the libraries of the TUMS.
5. There does not exist any significant difference between the expectations of the users of library services and the librarians' perceptions of the expectations of users (in terms of each subscale including effectiveness of services, information control, and library as a place).

## **Methodology**

The present paper is a survey with a statistical population comprised of a group of users and a group of librarians from the TUMS libraries (including the central library and the libraries in the other faculties). Employing the simple random sampling method and distributing questionnaires

among the 42-member group of librarians from the library staff with university degrees in library sciences, 30 were returned. For the users' group, questionnaires were randomly distributed among 231 users of the TUMS libraries. In order to examine the research questions and gather data, the three scales of "Library Services Quality Evaluation" (Libqual+ scales) were used. These scales are characterized as thus:

1. The measurement scale for the provided and expected services, from the library users' perspective;
2. The measurement scale for the provided and expected services, from the librarians' perspective;
3. The measurement scale for the perceptions of librarians about expectations of users.

Libqual+ is consisted of 22 questions across three subscales of services effectiveness (questions 1 to 9), information control (questions 10 to 17), and library as a place (question 18 to 22). We used the 2011 Libqual+ in a non-electronic format that was translated into the Persian language (Farsi). The instrument has been offered to the library community by the Association of Research Libraries.( <https://www.Libqual+.org>). The Cronbach's Alpha was used to ensure the reliability of data collection instruments. Since the Alpha coefficient for all the three scales across the three subscales were 60% or higher, the scales have acceptable reliability.

## Findings

The Mann-Whitney test was used in order to test the first research hypothesis. According to the findings, the ranks mean for the group of the TUMS library users is lower than the ranks mean for the librarians with respect to the "quality of services in the libraries" subscale. In other words, there is a significant difference between the mean ranks for users and for the librarians regarding both the services quality subscale and the three subscales of services effectiveness, information control, and library as a place. Therefore, it can be concluded that the users consider the quality of services to be lower than what the librarians perceive them to be. And so, the results do not support the first research hypothesis. Tables 1 and 2 clearly demonstrate this difference.

*Table 1. Quality of services from the perspective of users and librarians in the TUMS.*

Scale	Users	Librarians	Mean gap	Z test	p-value
	ranks Mean SD	ranks Mean SD			

<b>Quality of services</b>	3.06	3.5	- 0.44	- 4.19	0.001
	0.11	0.13			

The results suggest that the difference is greater for the information control subscale and is only minor for the library as a place subscale. The information control subscale involves aspects such as availability of electronic or print resources, modern paraphernalia in the library, library's website, and easy access to information. It appears that the quality of these services provided by the libraries of the TUMS is much better in view of the librarians in comparison with the views of users. The mean gap values for both subscales of library as a place and effectiveness of libraries were much lower than those for the information control dimension. According to the librarians, the quality of services for the effectiveness of services subscale was higher than the rest of the subscales. This subscale involves various aspects such as the library staff's good behavior and attention to users and their efforts to satisfy users' needs. It goes without saying that the evaluation of librarians for this subscale would be high, nevertheless, the users also found the services quality for this subscale to be high, albeit with a minor difference. Therefore, it could be understood that the librarians and staff in the TUMS have been largely successful in satisfying their users.

*Table 2. The status of the services quality subscales for the libraries in the TUMS from the perspectives of users and librarians.*

<b>Services quality subscales</b>	Users	Librarians	Mean gap	Z test	p-value
	Ranks mean SD	Ranks mean SD			
Effectiveness of services	3.72 0.07	3.92 0.12	- 0.2	- 3.99	0.001
Information control	3.13 0.14	3.84 0.19	-0.71	-5.61	0.000
Library as a place	3.17 0.09	3.34 0.1	-0.17	-1.14	0.02

The Wilcoxon test was used to analyze the second hypothesis of the research. As can be deduced from tables 3 and 4, there is a significant difference between the provided and expected services from the perspectives of users and librarians in terms of both the quality of services scale and its subscales.



Table 3. The status of provided services by the TUMS and user expected services.

Dimension	Quality of provided services	Quality of expected services	Mean gap	Z test	p-value
	Ranks mean SD	Ranks mean SD			
Quality of services	3.06 0.11	5.2 0.13	-2.14	-4.19	0.001

Therefore, the results support the second hypothesis of the research. As can be deduced from the above tables, the superiority gap for services is negative for all the investigated library services and thus, given the maximum quality level of services, the libraries under study are very far from satisfying the expectations of users. The gap between the existing library services and the best user expected level of services in the TUMS is -2.14. The widest gap between the provided services and the user expected services exists in the information control subscale. In terms of the library as a place subscale, the mean difference for the provided and user expected services were the lowest among all the other scales. This indicates that the libraries of the TUMS have been largely successful in meeting the expectations of users in terms of the library space and environment.

Table 4. The status of the quality of provided and user expected services subscales in the TUMS.

Quality of services subscales	Quality of provided services	User expected services	mean Gap	Z test	p-value
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	Ranks mean SD	Ranks mean SD			
<b>Effectiveness of services</b>	3.72 0.07	4.74 0.08	-1.02	-13.8	0.000
<b>Information control</b>	3.13 0.14	6.84 0.13	-3.71	-14.89	0.001
<b>Library as a place</b>	3.17 0.09	4.04 0.06	-0.87	-13.27	0.001

The Friedman's test was used in order to examine the third and fourth research hypotheses. The results (table 5) suggest that on a 95% meaningfulness level, there is a significant difference between the effectiveness degrees of the three subscales of services quality and the quality of provided services, from the perspective of the users. This is while, according to the librarians, such significant difference does not exist. In other words, the effective degrees of each subscale on the quality of provided services are different from one to another from the perspective of the TUMS library users, whereas, the librarians believe the effects of all the subscales on the quality of the provided services to be the same. Therefore, the research findings support the third but not the fourth hypothesis.

Table 5. The results of the Friedman's test illustrating the effectiveness degrees of services quality subscales and the provided services quality

Group	Sample frequency	K <sup>2</sup> value	df	p-value
<b>Users</b>	231	13.82	2	0.001
<b>Librarians</b>	30	2.43	2	0.32

The Mann-Whitney's test was used to examine the fifth hypothesis of the research. The results (Tables 6 & 7) support the fifth hypothesis. This is to say that the librarians in the TUMS have perceived the expectations of the users and hence, the gap between the expectations of users and librarians' perceptions is just but small (0.18).

Table 6. mean Difference for the user expected quality of services and librarians' understanding and perceptions of these expectations.

Scale	User expected quality of services	Librarians' understanding and perceptions of the expectations	Mean gap	Z test	p-value
	Ranks mean SD	Ranks mean SD			
Quality of services	5.2 0.13	4.93 0.17	0.18	-2.39	0.07

Table 7. mean Difference for the subscales of user expected quality of services and librarians' understanding and perceptions of the expectations.

Quality of services subscale	User expected quality of services	librarians' understanding and perceptions of the expectations	Gap mean	Z test	p-value
	Ranks mean SD	Ranks mean SD			

<b>Effectiveness of services</b>	4.74 0.08	4.6 0.19	0.14	-2.5	0.1
<b>Information control</b>	6.84 0.13	6.31 0.08	0.53	-2.9	0.058
<b>Library as a place</b>	4.04 0.06	3.98 0.14	0.06	-1.27	0.32

## Discussion

The users and librarians of the TUMS do not share the same opinions about the quality level of library services. That is to say, the users consider the quality of existing services to be lower and this difference of opinions has more gravity in the information control subscale. This dimension was very important for the users (Hariri & Afnaie, 2007) and the libraries under study Kyrillidou & Persson (2006) have failed to cater to expectations of users in this area. However, those aspects of services that are related to human issues i.e. behavior and face to face service offering (the effectiveness of services subscale) received the highest evaluation than other subscales. It is essential to promote customer centricity in these libraries. But Mohammad Baygi and Hassanzadeh (2009) revealed that the libraries were weaker, in terms of the effectiveness of services, than other dimensions, such that they could not even meet the minimum level of user expectations for want of available resources. As was shown in a study by Kyrillidou & Persson (2006), in spite of the information control subscale having great importance for the users, the libraries had failed to satisfy the expectations of users in this area. This dimension has also been considered as the most important of all the dimensions in the University of Yazd (Sayadi, Mansouri & Jamali, 2008). The most important point would be to create serving incentives for the employees by initiating appropriate and pragmatic practices, holding training courses and comprehensive programs to promote such culture, participating employees in decision makings related to their fields of work, and creating a participatory system that leads to creativity and innovation.

Another part of the results indicates that the quality level of services in these libraries is lower than the maximum favorable state. In other words, the services superiority gaps for all the services in the libraries under study were negative and the mentioned libraries are very distant from meeting the expectations of users on the maximum level. The library services gap with the maximum level of meeting the expectations of users in the TUMS is -2.14. This gap is greater with the information control subscale; however, the libraries of this university have largely succeeded in satisfying the expectations of users in terms of library space and environment. The findings from almost all the research done in the universities overseas suggest that there is a negative gap between library services and the maximum level of user expectations (Shorp & Dirscoll, 2004; Roszkowski, 2005; Jankowska & Hertel, 2006). This has also been true based on

the domestic studies. For example, studies that investigated the libraries of the Ferdowsi University (Babagheybi & Fatahi, 2009), the public libraries of Qazvin (Mohamadbeygi & Hasanzadeh, 2009), libraries of Yazd University (Sayadi & Mansouri, 2008), and also the libraries of TUMS addressed similar research questions as the present research. Among the factors that create a gap in the accessibility of information are limited availability of print journals, essential books, and electronic information resources.

From the users' perspective, the three subscales of Libqual+ do not have the same effects on the quality of services provided by TUMS. However, in a study by Calvert, the three dimensions of quality had the same degrees of effectiveness from the viewpoint of users (Calvert, 2001). This is while, according to the librarians, the effects of all the subscales on the services quality are the same. Knowing that the users did not believe the Libqual+ subscales to have the same effects, it is necessary for the managers and officials of the libraries to employ practices such as multivariate decision making techniques to rank the subscales so as to ensure user satisfaction on higher levels. Ultimately, it was revealed that the librarians in the libraries of this university do not have a correct understanding and perception of the expectations of the users. Hence, the gap between the expectations of users and perceptions of librarians of their users' needs and expectations is just but little (0.18). Therefore, there is hope that by providing the necessary facilities, the librarians, while aware of users' expectations and need, strive to offer better services to them. So, it should be noted that the current shortcomings in the quality of services are not because of librarians' lack of awareness of the expectations of users but it should be sought on other grounds such as lack of facilities for offering proper services. Therefore, the officials of the TUMS libraries could exploit these opportunities and provide the necessary facilities in order to offer better services and reduce the gaps. Given the appearance of information technology-oriented services and the necessity to learn the related skills, some initiatives should be introduced to increase the awareness of human resources in libraries about latest achievement in IT and to train employees to acquire abilities in identifying the needs of users. The important role of human relations and communications in determining the quality of services and taking optimum advantage of a library's facilities makes the librarians and other human factors in libraries have to receive enough training so they could offer better services.

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