

# Service Quality Assessment of an Academic Library in Thailand Using SERVQUAL

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## Abstract

This paper aims to assess the overall service quality of an academic library in Thailand in delivering its services. An analysis of the importance ranking of the service quality items and dimensions is also done. A survey is conducted among undergraduate students, graduate students, and faculty members as the library users. A user-based service quality tool developed by Parasuraman et al., the SERVQUAL model, is used to do the assessment, with modifications to the dimensions to fit library settings. The gap differences between the desired expectation level and the perceived level of each service quality item are examined, supported by the analysis of means (ANOM). Zone of tolerance is used to see which service quality items exceed, fall, or in the range of user's acceptable level of service. Finally, the dimensions are ranked according to their importance, where *library as a place* ranks first and *collection and access* ranks the least important. This is the first time an effort has been done to assess the academic library and it is hoped this paper can be a guideline for the library to improve its services.

## Keywords

SERVQUAL model, service quality, library services, academic libraries, Thailand

## 1. Introduction

An academic library in a university can be described as the center of the learning community, as it provides a facility for students, lecturers, and researchers to do research and enhance their knowledge (Kiran, 2010). Academic libraries organize, preserve, and make knowledge accessible and convey its role in supporting research and education in higher education (American Library Association, 2018). As higher education has evolved in the recent years, along with the development of advanced information technology that allows information and knowledge resources to be accessible at any time, the role of academic libraries is also changing. The shift to obtaining information and knowledge in digital forms has changed library user expectations about the production and use of knowledge, according to the American Library Association (2018). A comprehensive library online catalog, digital subscriptions to various journals by the library, and an easier and more efficient access to library resources are several examples of the expectations from user. If libraries cannot provide service and facilities to these expectations, there will be unmet needs that may affect user satisfaction of the library's services. Therefore, academic libraries need to assess the quality of their current services and explore more about their users' expectations.

Assessment of library service quality has been based mainly on its collection size and the availability of required resources; however, these are no longer applicable as they might be lagging indicators and do not consider user satisfaction as an input to the assessment. Landrum et al. (2008) stated that service quality influences user satisfaction and business performance. Therefore, to assess the service quality of an academic library, user satisfaction and

expectation should be considered and used as an input. SERVQUAL is a customer- or user-based tool to measure service quality, developed by Parasuraman et al. (1985). It is widely used by organizations to assess their service quality. Modified SERVQUAL model has also been developed by Nagata et al. (2004), followed by Satoh et al. (2005) to fit the SERVQUAL dimensions especially to library settings.

The Central Library is an academic library in Bangkok, Thailand. It sits on two buildings and is separated into Zone A and Zone B, where Zone A is the old building and Zone B is the newer building. The Central Library provides access to students, faculty members, staffs, and guests to its collection of resources, ranging from textbooks, thesis, dissertations, digital subscriptions to journals, and other useful resources. An audiovisual room is also available for browsing digital resources and entertainment. Spaces for self-study and group study are distributed in both Zone A and Zone B, which are open for more than ten hours in a day, especially for the first floor of the buildings. Access to other forms of entertainment and relaxation is also available, such as the karaoke rooms that library users can use for free.

Despite the various services offered by the Central Library, no effort has been made to assess the quality of the library services. Changes and improvements were made only based on the internal evaluation of the library and feedback from few library users. This paper aims to assess the service quality of the Central Library from the perspective of its users using a modified SERVQUAL model, as well as to find out the importance rankings of the SERVQUAL dimensions and the service quality items.

This research aims to develop a modified SERVQUAL model and assess the service quality of the Central Library from the perspective of its users, and to discover the importance rankings of the SERVQUAL dimensions and the service quality items. The results of this research can be used by the Central Library as a guide to improve its services.

## 2. Literature Review

This section highlights the service quality theories, the SERVQUAL model, and previous research on library service quality.

### 2.1 Service Quality in Academic Libraries

Traditionally, measuring the quality of library services has been based on the size of its collection, the availability of knowledge resources, and the various services the library delivers. Along with time and changes in the environment, the traditional measurement method no longer fulfills the goals to measure user's demands and satisfaction from library services. Kasper et al. (1999) mentioned that, "a measurement of an organization's overall performance represents only little insights into the weaknesses or strengths of the service delivery", which indicates that an organization should find a way to assess the quality of its service delivery, not only its overall performance. The measurement of the quality of service delivery now involves the users, in order to know user's expectation of the service and user satisfaction from the actual service, from all aspects.

The concept of service quality has been changed from supplier-oriented to user-oriented, or in other words, the quality is user-required. Therefore, the basis of the measurement is the user's satisfaction (Trivedi & Bhatt, 2019). Library service quality is defined as the gap between what users expect and what they actually perceive from the services that they receive from the library. The quality is measured from the customer's point of view, as user satisfaction is always based on both the process and outcome of library (Trivedi & Bhatt, 2019). Grönroos (1990) uses different terms for these two aspects of service, which are "technical outcome" and "functional outcome". Technical outcome is the *what* of service delivery (e.g., the reference books that users want to borrow), while functional outcome is the *how* of service that concerns the service delivery itself (e.g., the processes involved in borrowing books, prompt services by the library staff). Measuring service quality involving the users can help any library maximize its user satisfaction and to potentially exceed expectation (Sahu, 2007).

### 2.2 SERVQUAL Model

Parasuraman et al. (1985) developed a customer-based tool to conceptualize and measure service quality, which is called SERVQUAL. The SERVQUAL model is already a widely accepted tool that organizations use to assess the quality of their service, and library is no exception. The tool helps identify the gaps between user's desired expectation and the perceived service user actually receives from the library. There are five gaps in the SERVQUAL model, which

become the base of customer perception of service quality. According to Parasuraman et al. (1988) and Zeithaml et al. (1990), the five gaps are shown in Figure 1, with their definitions explained in Table 1.

The fifth gap is a function of all the other gaps, as it defines the difference between the user's expectation and how the user perceives the actual service delivery. Thus, the goal of the library as an organization is to narrow the gap, by providing service that lives up to the user's expectation and therefore increases user satisfaction.

Later, Parasuraman et al. (1994) proposed in their research to measure service quality by asking the customers to rate the service based on three levels: desired service level, minimum level, and perceived level. The desired service level is defined as the ideal or excellent level of service that customers expect the organization to deliver, while the minimum level is the level of service that the customer considers acceptable. The desired and minimum levels will be at either end, forming an area that is also known as the *zone of tolerance*. The zone illustrates the extent to which users consider the service performance satisfactory (Ahmed & Shoeb, 2009). If the service performance is below the tolerance zone, it can cause disappointment and dissatisfaction of users and if it is above the tolerance zone, it increases users' satisfaction and therefore strengthen their loyalty.

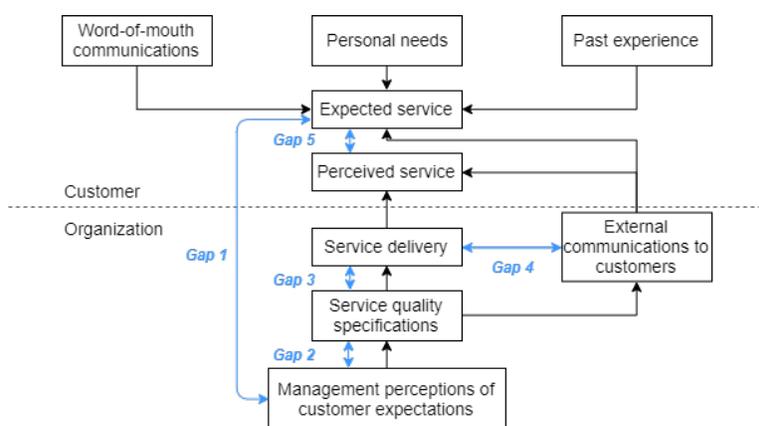


Figure 1. SERVQUAL gaps model

Source: (Parasuraman, Zeithaml, & Berry, 1988; Zeithaml, Parasuraman, & Berry, 1990)

Table 1. SERVQUAL 5 gaps

Gap 1	The gap between what management perceives as customer expectations and the customer's actual expectations of service
Gap 2	The gap between management perception and the design of the service quality specifications
Gap 3	The gap between the design of the service quality specifications and the actual service delivered to the customer
Gap 4	The gap between the actual service delivery and the external communication to customers about the service delivery
Gap 5	The gap between what customer expects of a service and the actual service perceived by the customer

Source: (Parasuraman, Zeithaml, & Berry, 1988; Zeithaml, Parasuraman, & Berry, 1990)

### 2.3 SERVQUAL Dimensions

Parasuraman et al. (1985) initially categorized service quality items into ten dimensions, namely *reliability*, *responsiveness*, *competence*, *credibility*, *access*, *courtesy*, *security*, *communication*, *understanding/knowing the customer*, and *tangibles*. Through a series of revisions and refinements, in a later study, the SERVQUAL model came up with five dimensions as a result of combinations of dimensions. The final five dimensions and their definitions are presented in Table 2.

As SERVQUAL model has been used in to assess the service quality in several sectors, new modifications of the original model emerged. Some authors proposed in their studies that instead of five dimensions, they found only one or two factors, while other authors argued for more than five factors (Schneider & White, 2003). These differences might be due to the changes that the authors made in the studies, as well as the different focuses of service being assessed in different sectors.

In its application as a tool to assess service quality in libraries, some authors grouped service quality items into the original five dimensions, while other authors proposed modified SERVQUAL model with different dimensions. Nitecki and Hernon (2000), in their research, noted that besides the five original SERVQUAL dimensions, there might be other dimensions for library service. They also identified the relative importance of each of the five dimensions, with *reliability* as the most important, followed by *responsiveness*, *assurance*, *empathy*, and the least important is *tangibles*. Kiran (2010) assessed the service quality of an academic library in Malaysia using the five dimensions and so did Arshad & Ameen (2010) when they measured the service quality of academic libraries in the University of Punjab, Pakistan. In contrast with Nitecki and Hernon (2000)'s finding, however, the study results showed that *tangibles* dimension is more preferred or expected by the library users than the other dimensions. This difference might be caused by the contrast physical condition of the facilities in University of Punjab's libraries and Yale University's. Another research where SERVQUAL's five dimensions were used is when Trivedi & Bhatt (2019) measured the expectation and perceptions of users of an academic library in India.

Table 2. SERVQUAL dimensions

Reliability	The ability to deliver the promised performance dependably and accurately
Responsiveness	The willingness of the organization to provide prompt service and help customers
Assurance	The ability of the organization's employees to inspire confidence through their knowledge and courtesy
Empathy	The ability to give personalized and caring attention to customers
Tangibles	The physical appearance of the facilities, employees, equipment, and communication materials

Source: (Parasuraman, Zeithaml, & Berry, 1985)

A modification of the SERVQUAL dimensions that have been used by some authors for library settings consists of four dimensions, namely *effect of service (organizational)*, *library as a place*, *collection and access*, and *effect of service (personal)*. Nagata et al. (2004) conducted a survey in libraries in two universities in Japan and Finland and proposed the new dimensions through exploratory and confirmatory factor analysis. There was a total of five dimensions, with *effect of service (organizational)*, *library as a place*, *reliability*, *collection and access*, and *effect of service (personal)*. In a much recent study, Satoh et al. (2005) conducted a focus group discussion in university libraries and came with a finding that suggested university library service quality contains the following dimensions:

1. Effect of service (personal) – labeled as P, which concerns the attitude of library staff to the library user.
2. Library as a place – labeled as L, which is composed of items in tangibles as well as those related to the environment of the library.
3. Collection and access – labeled as C, which concerns the library collection and access to it.
4. Effect of service (organizational) – labeled as O, which is concerned with the services offered by the library as an organization.

Despite some modifications to the original SERVQUAL dimensions, the new dimensions are still aligned with the original ones. Through certain modification or adjustment, SERVQUAL can be applied to evaluate service quality in library settings. The modified SERVQUAL model has never been used to assess the Central Library. Therefore, this research aims to apply the modified tool to measure the service quality of the Central Library, determine which services require more improvement than the others, and identify the relative significance of the service quality items through user expectations.

### 3. Methods

After reviewing literature about the applicability of SERVQUAL in the library settings, the author designed a survey questionnaire that consists of 25 items. Initially, a total of 41 questions was identified from 10 research papers (Nitecki & Herson, 2000; Nagata, Satoh, Gerrard, & Kytömäki, 2004; Jamali & Tooranloo, 2009; Ahmed & Shoeb, 2009; Kiran, 2010; Arshad & Ameen, 2010; Shoeb, 2011; Gathoni & Walt, 2016; Hossain, 2016; Trivedi & Bhatt, 2019), where they were sorted according to the frequency and relevance to the real condition. The 25 items are then categorized into the modified SERVQUAL's four dimensions (*effect of service (personal), library as a place, collection and access, and effect of service (organizational)*). The Likert scale of 1 to 7 was used, with 1 being the lowest score and 7 the highest score. The questionnaire items were arranged according to their relevance to the previous item(s), using a three-column SERVQUAL format. Several other questions were also asked to indicate respondent's status in the university, faculty, and frequency going to the library.

As this survey was conducted in Thailand, the survey questionnaire used both English and Thai, in order for the respondents to better understand it. The survey was conducted in January 2020 and the data were collected from undergraduate students, graduate students, and faculty members. A total of 50 questionnaires were distributed to students in the Central Library, with 36 completed questionnaires returned. Along with the offline survey, the author also created an online survey questionnaire, with a slightly different design from the three-column offline survey. This is because the online form did not support the format. However, the instructions were also adjusted so the respondents understand how to fill it. From the online survey, a total of 69 out of 71 respondents filled the questionnaire completely and consistently. This concludes that the total number of respondents who returned a complete and consistent questionnaire is 105 out of 121.

The respondents were asked to score the 25 SERVQUAL items with three levels: desired service level, minimum level service, and perceived service level. Desired service level means the ideal kind of library that would deliver an excellent service quality that respondents expect from the Central Library. Minimum service level is the level of service that respondents consider acceptable. Perceived service level means the actual service provided by the library from the respondents' perspective. Scoring 1 means that the respondent thinks the service quality in the Central Library is the lowest and scoring 7 means the service quality is the highest.

In order to find out which service quality items meet the desired expectation of the library users, or fall short of their expectation, after the data were collected, the gap differences between the desired service level and the perceived service level were examined. Cronbach's alpha was used to determine the consistency and reliability of the respondents' data, which showed that all 105 data were consistent and thus, reliable to be used in the analysis. The Wilcoxon matched pairs test was also used to examine the significance of the gap differences between the services. The analysis is supported also by the analysis of means (ANOM). The desired level, minimum level, and perceived level results from the respondents were plotted on a radar chart, showing an area also known as the *zone of tolerance*.

Finally, the mean desired expectation levels for all service quality items are ranked to determine which service quality items are considered the most important, as well as to rank the importance of the modified SERVQUAL dimensions.

## 4. Results and Discussion

### 4.1 Reliability of user responses

After all data from a total of 105 respondents were collected (shown in Table 3), the data are measured for the reliability, or the internal consistency, to see if the modified SERVQUAL items survey is reliable. Cronbach's alpha is used for the measurement, as it is a measure of how a set of items is sharply related as a group (UCLA Statistical Consulting Group, n.d.). The Cronbach's alpha coefficient ranges from 0 to 1, with  $\alpha$  equals to 0 implies that the questionnaire items are entirely independent from one another (not correlated). In other words, the higher the  $\alpha$  coefficient, the more the questionnaire items are correlated and thus measure the same underlying concept.

From all data for the desired, minimum, and perceived levels, the Cronbach's alpha coefficients are 0.9838, 0.9690, and 0.9663 respectively. These values are higher than the general standard 0.70, which suggests that the overall questionnaire items are of good reliability.

#### 4.2 Gap differences between desired and perceived service levels

In determining the service quality of the Central Library using SERVQUAL, the differences between desired and perceived service levels from all questionnaire items are analyzed. To find out the gap difference, the desired level mean is subtracted by the perceived level mean. The mean values of the desired and expected service levels of all questionnaire items, as well as the gap differences, are listed in Table 4. The order is arranged from the largest gap difference to the smallest gap difference in descending manner.

All of the services' gap differences show positive value, in which it can be inferred that the services provided by the Central Library are still under the desired expectation levels of the users. A non-parametric Wilcoxon matched pairs test was run on Minitab software to examine whether the values between desired and perceived levels for all items are significantly different. The results show that the gaps for all items have significant value  $p < 0.01$ , which means that the gaps are significant for all the Central Library services.

Table 3. Mean and standard deviation of all responses for desired, minimum, and perceived levels

Code	Item of service quality	Desired		Minimum		Perceived	
		Mean	StDev	Mean	StDev	Mean	StDev
C1	Required resources are available	5.714	1.321	3.914	1.21	4.8	1.164
C2	Convenient access to library collection	5.781	1.301	4	1.225	4.865	1.191
C3	Library website / online catalog contains necessary information and resources	5.819	1.307	4.038	1.247	4.596	1.258
C4	Library resources are available to meet the course need	5.762	1.334	4.01	1.221	4.686	1.195
C5	Library online catalogue is easy to understand and navigate	5.808	1.373	4.029	1.265	4.748	1.377
C6	Keeping records accurate and consistent with actual holdings/status	5.829	1.304	4.067	1.346	4.904	1.281
C7	Resources are delivered on time	5.800	1.266	4.171	1.274	5.058	1.298
O1	Convenient library opening hours	6.038	1.393	4.181	1.321	5	1.532
O4	Convenient total loan limits and loan period for borrowing resources	5.962	1.2	4.181	1.385	5.076	1.313
P1	Library staff who give willingness to help user	5.990	1.348	4.057	1.314	5.114	1.396
P2	Library staff who are knowledgeable to answer users' inquiry	6.010	1.252	4.317	1.367	5.21	1.357
P3	Library staff who serve promptly to the users	5.962	1.337	4.067	1.265	4.981	1.373
P4	Library staff who understand the needs of their users	5.848	1.277	4.01	1.341	4.867	1.345
P5	Library staff who deal with users in a concerned or considerate manner	6.000	1.323	4.143	1.424	4.981	1.481
P6	Providing services at the promised time	5.952	1.274	4.257	1.308	5.114	1.273
O2	Library staff who keep users informed about when services will be performed	5.924	1.328	4.143	1.304	4.981	1.315
L1	Space that enables quiet and calm study	6.029	1.333	4.133	1.331	4.962	1.427
L2	A comfortable and inviting library location	6.152	1.125	4.21	1.371	5.257	1.33
L3	Facilities are visually appealing (computers, audiovisual, etc)	5.952	1.22	3.981	1.126	4.848	1.199
L4	A place for reflection and creativity or innovation	5.838	1.279	3.943	1.167	4.781	1.152
L5	Space for group work	5.905	1.369	4.095	1.369	4.733	1.375

Code	Item of service quality	Desired		Minimum		Perceived	
		Mean	StDev	Mean	StDev	Mean	StDev
O5	Instruction in use and/or training sessions, when needed	5.733	1.354	4.048	1.396	4.762	1.348
O3	Materials (brochures, signs, library maps, etc) are visually appealing, clear, and helpful	5.657	1.427	3.724	1.471	4.505	1.475
C8	Equipment and technology is modern and in good condition	5.914	1.408	4.038	1.365	4.695	1.388
C9	The availability of working photocopiers, computers, and printers	5.819	1.42	4.048	1.477	4.39	1.458

Table 4. Gap differences between desired and perceived levels (rank by gap size)

Code	Item of service quality	Desired	Perceived	Gap difference
C9	The availability of working photocopiers, computers, and printers	5.819	4.390	1.429
C3	Library website / online catalog contains necessary information and resources	5.819	4.596	1.223
C8	Equipment and technology is modern and in good condition	5.914	4.695	1.219
L5	Space for group work	5.905	4.733	1.172
O3	Materials (brochures, signs, library maps, etc) are visually appealing, clear, and helpful	5.657	4.505	1.152
L3	Facilities are visually appealing (computers, audiovisual, etc)	5.952	4.848	1.104
C4	Library resources are available to meet the course need	5.762	4.686	1.076
L1	Space that enables quiet and calm study	6.029	4.962	1.067
C5	Library online catalogue is easy to understand and navigate	5.808	4.748	1.060
L4	A place for reflection and creativity or innovation	5.838	4.781	1.057
O1	Convenient library opening hours	6.038	5.000	1.038
P5	Library staff who deal with users in a concerned or considerate manner	6.000	4.981	1.019
P3	Library staff who serve promptly to the users	5.962	4.981	0.981
P4	Library staff who understand the needs of their users	5.848	4.867	0.981
O5	Instruction in use and/or training sessions, when needed	5.733	4.762	0.971
O2	Library staff who keep users informed about when services will be performed	5.924	4.981	0.943
C6	Keeping records accurate and consistent with actual holdings/status	5.829	4.904	0.925
C2	Convenient access to library collection	5.781	4.865	0.916
C1	Required resources are available	5.714	4.800	0.914
L2	A comfortable and inviting library location	6.152	5.257	0.895
O4	Convenient total loan limits and loan period for borrowing resources	5.962	5.076	0.886

Code	Item of service quality	Desired	Perceived	Gap difference
P1	Library staff who give willingness to help user	5.990	5.114	0.876
P6	Providing services at the promised time	5.952	5.114	0.838
P2	Library staff who are knowledgeable to answer users' inquiry	6.010	5.210	0.800
C7	Resources are delivered on time	5.800	5.058	0.742

The top ten largest gaps mostly come from services related to *collection and access* and *library as a place*. Out of these ten services, five belong to the *collection and access* dimension and four belong to the *library as a place* dimension. This gap ranking does not necessarily mean the top ten gaps have the highest desired expectation from the users. In fact, the service item that has the largest gap, “the availability of working photocopiers, computers, and printers”, is at 18<sup>th</sup> on the ranking of desired expectation values. These large gaps may result from both high and low desired expectation levels on services that the Central Library cannot fulfil.

Although the gap values are not able to differentiate services with high and low desired expectation levels, it is important to note that large gaps mean the levels of services currently provided by the Central Library are significantly different from what the users expect. Thus, the Central Library needs to pay attention to improving the areas under the *collection and access* dimension and the *library as a place* dimensions, in order to minimize the gaps.

A one-way normal ANOM test was also run to identify the significant gaps. The results are shown in Figure 2. From the figure, it can be seen that the mean of the service item C9, “the availability of working photocopiers, computers, and printers”, is significantly different from that of the other service items. Other four items with large gaps, which are C3, C8, L5, and O3, are not considered significantly different in this figure. The results can be improved by collecting more data, to show which gaps are statistically significant.

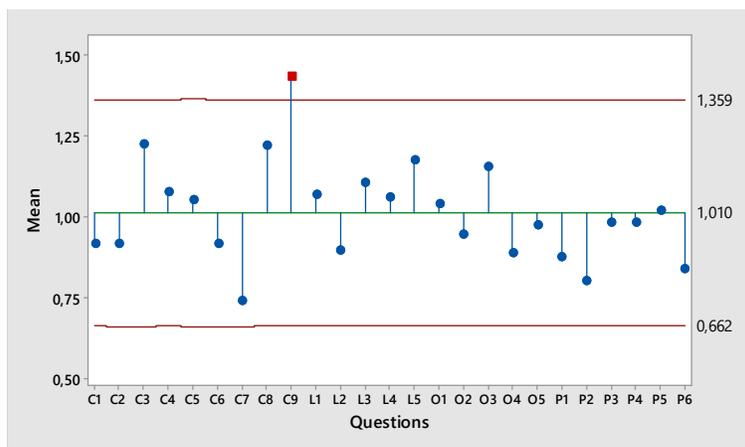


Figure 2. Significant gap differences

### 4.3 Zone of tolerance

In this research paper, the *zone of tolerance* is used to identify the range between the desired expectation and the perceived service, and which service items are inside or outside the range. If a service item has a perceived service level lower than the minimum service level, it falls outside of the zone of tolerance. The zone of tolerance graph is constructed from comparing the mean values of the service levels, as shown in Figure 3.

All the service quality items are inside the zone of tolerance, indicating that in average, the university students and faculty members consider the service quality of the Central Library still above the minimum acceptable level. However, it also implies that there is not a single service quality item which level is beyond the desired expectation level of the university students and faculty members. Compared to the other service quality items, C9 perceived level is significantly closer to its minimum acceptable level.

#### 4.4 Dimensions importance ranking

This paper also aims to rank the importance of the modified SERVQUAL dimensions in library settings. To rank the dimensions importance, higher desired expectation levels of each dimension's service quality items imply higher importance. The first step is to group the service quality items according to the dimensions and calculate each dimension's average desired expectation level. After calculating the dimension mean, the four dimensions are ranked based on the average desired expectation level from the highest to the lowest level.

The average desired expectation level of the *collection and access* dimension is 5.805, *library as a place* dimension 5.975, *effect of service (organizational)* 5.863, and *effect of service (personal)* 5.960. Thus, the ranking of the dimensions according to the most important to the least important is:

1. Library as a place
2. Effect of service (personal)
3. Effect of service (organizational)
4. Collection and access

The ranking of each service quality item according to the highest to the lowest desired expectation level is also done, as seen in Table 5. The first and third ranked service quality items, "a comfortable and inviting library location" and "space that enables quiet and calm study", consecutively, belong to the first ranked dimension, *library as a place*. The fourth and fifth ranked items, "library staff who are knowledgeable to answer users' inquiry" and "library staff who deal with users in a concerned and considerate manner", belong to the second ranked dimension, *effect of service (personal)*. The second ranked service quality item, "convenient library opening hours", belongs to the third ranked dimension, *effect of service (organizational)*. In summary, these are the top five most important service quality items based on the desired expectation levels:

1. A comfortable and inviting library location
2. Convenient library opening hours
3. Space that enables quiet and calm study
4. Library staff who are knowledgeable to answer users' inquiry
5. Library staff who deal with users in a concerned and considerate manner

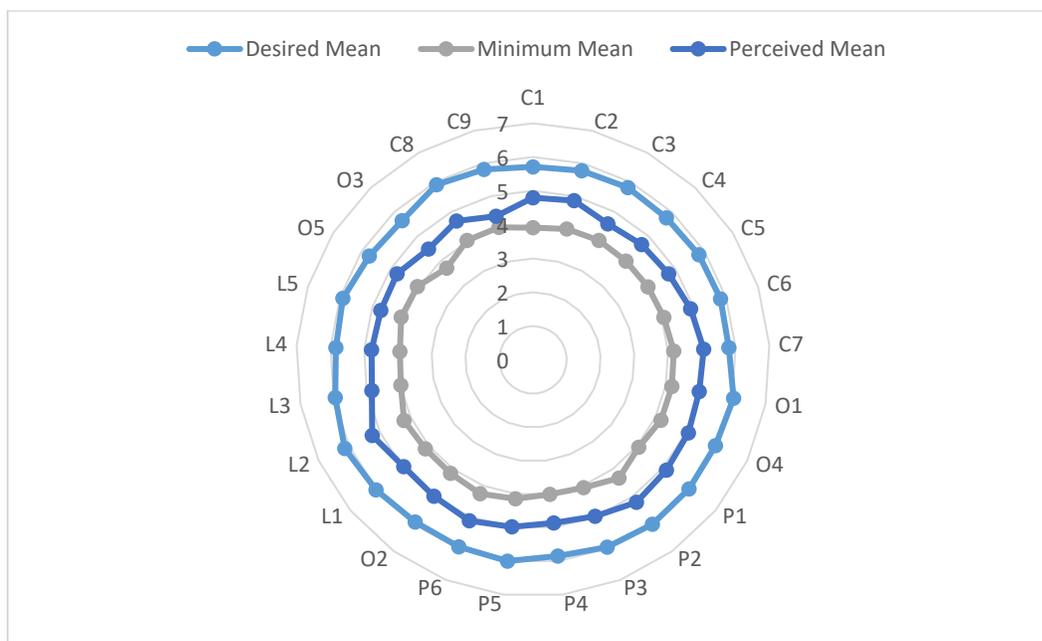


Figure 3. Zone of tolerance

Table 5. Dimensions and service quality items ranking

Dimension	Code	Item of service quality	Desired Mean	Dimension Mean	Dimension Rank	Desired expectation rank
Collection and access	C1	Required resources are available	5.714	5.805	4	24
	C2	Convenient access to library collection	5.781			21
	C3	Library website / online catalog contains necessary information and resources	5.819			18
	C4	Library resources are available to meet the course need	5.762			22
	C5	Library online catalogue is easy to understand and navigate	5.808			19
	C6	Keeping records accurate and consistent with actual holdings/status	5.829			16
	C7	Resources are delivered on time	5.800			20
	C8	Equipment and technology is modern and in good condition	5.914			12
	C9	The availability of working photocopiers, computers, and printers	5.819			18
Library as a place	L1	Space that enables quiet and calm study	6.029	5.975	1	3
	L2	A comfortable and inviting library location	6.152			1
	L3	Facilities are visually appealing (computers, audiovisual, etc)	5.952			10
	L4	A place for reflection and creativity or innovation	5.838			15
	L5	Space for group work	5.905			13
Effect of service (organizational)	O1	Convenient library opening hours	6.038	5.863	3	2
	O2	Library staff who keep users informed about when services will be performed	5.924			11
	O3	Materials (brochures, signs, library maps, etc) are visually appealing, clear, and helpful	5.657			25
	O4	Convenient total loan limits and loan period for borrowing resources	5.962			8
	O5	Instruction in use and/or training sessions, when needed	5.733			23
Effect of service (personal)	P1	Library staff who give willingness to help user	5.990	5.960	2	6
	P2	Library staff who are knowledgeable to answer users' inquiry	6.010			4
	P3	Library staff who serve promptly to the users	5.962			8
	P4	Library staff who understand the needs of their users	5.848			14
	P5	Library staff who deal with users in a concerned or considerate manner	6.000			5
	P6	Providing services at the promised time	5.952			10

## 5. Summary and Conclusion

This paper assesses the overall service quality of an academic library in Thailand from its users' perspective using a modified SERVQUAL dimensions and service quality items. A bilingual survey questionnaire was used to collect data from the university students and faculty members. Respondents were asked to score the service quality of the Central Library from 1 (lowest) to 7 (highest) on three levels: desired level, minimum level, and perceived level.

The gap differences between desired and perceived levels of all service quality items were examined, where they indicate large gaps in service quality items related to the *library as a place* and *collection and access* dimensions. Although large gaps do not necessarily mean the service quality items have higher desired expectation levels, it is still important to note that large gaps mean the levels of services currently provided by the Central Library are significantly different from what the users expect. From the zone of tolerance graph, there is not a single service quality item that is outside the zone. All items are still above the users' average minimum acceptable level, however, none of them fulfils the users' desired expectation. Therefore, the Central Library might want to pay more attention not only to improving areas that have significant gaps in order to minimize the gaps, but also to give attention to all services so that it can improve the overall service quality.

This paper also examines the rank of the dimensions' importance and all service quality items' importance, by ranking them according to the highest to the lowest desired expectation levels. Higher desired expectation level is assumed to suggest higher importance to the users. From the analysis, the most important dimension is *library as a place*, followed by *effect of service (personal)*, *effect of service (organizational)*, and *collection and access*. The first ranked service quality item, "a comfortable and inviting library location", is inside the *library as a place* dimension and this suggests that the Central Library users expect highly of the library as a "place". Users also expect the library staff to be knowledgeable to solve their problems or inquiries and assisting them in considerate manner. The *collection and access* dimension is the least important among the other dimensions, which may be because users mainly come to the library to do their work using their own laptops and resources. They do not necessarily require resources available in the library to support their work or study, which makes users not access library collection as frequent.

This is the first time a study has been conducted to assess the service quality of the Central Library. Using a modified SERVQUAL that has four dimensions, 25 service quality items were constructed to fit the survey in library settings. It is hoped that this study can be used by the Central Library to continuously improve its services for its users.

Lastly, this study has its own limitations that might be considered for future research. The time to conduct this study was short, for only one month, so not enough data were collected. More of the university students and faculty members and hopefully campus staff should be involved in the survey to make this study more comprehensive and representative. The Central Library can also personalize its services to fulfil the expectations of the university students, faculty members, and staff, by identifying the difference between desired expectation levels of service quality items based on the user groups.

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