Evaluation of Circulation Service Quality Using Libqual+Tm Method at Library of Universitas Sains dan Teknologi Indonesia

Mahendra Pratama[1*] Rosman[2] Eko Noprianto[3]

[123]Universitas Lancang Kuning, Indonesia

*Email correspondence: mahendrapratama1606@gmail.com

Information	ABSTRACT
  	This study aims to find out and evaluate the quality of circulation services based on user perceptions, as well as identify service dimensions that need to be maintained, improved, or improved in the library of library of Universitas Sains dan Teknologi Indonesia. By using a quantitative descriptive. The results of the study show that overall, the quality of circulation services at the Library of Universitas Sains dan Teknologi Indonesia is quite good. Nevertheless, there is a gap between the expected services and the services received. The Affect of Service dimension obtained a relatively high score, indicating a fairly satisfactory performance of librarians. Meanwhile, the dimensions of Information Control and Library as Place show results that are still below the expectations of users and it is suggested that the academic library increase the number and quality of human resources in the circulation section, update and add to the collection according to the needs of the study program, and improve facilities and infrastructure, especially the internet network and other service support facilities. This research is expected to be useful to add literature and scientific references related to the evaluation of the quality of library services, especially circulation services using the LibQual+ ™ method approach and can be used as a basis for improving circulation services in the academic library and other universities if they feel that they are experiencing similar things so that they can improve professionalism in providing services. ***Keywords:*** *Circulation Services; Service Quality; LibQual+™; College Libraries; academic libraries*

1. INTRODUCTION

University libraries are information centers that play a strategic role in supporting the Tri Dharma Perguruan Tinggi (unyil & Masruri, 2023). According to Mohindra and Kumar in Al-Baihaqi

(2025), the basic philosophy of libraries is to meet the information needs of users, whether for academic purposes, self-development, or intellectual recreation (Al-Baihaqi, (2025). In the context of rapid information technology development, libraries are required to continue to innovate in order to meet the increasingly complex expectations of library users (Oyedokun, 2025). One of the main services that is a benchmark for library quality is the circulation service, which includes the processes of borrowing, returning, and accessing collections (Rahayuningsih, 2019). Dewi (2018) defines circulation services as a lending system designed to provide convenience, speed, and efficiency for users (Dewi, 2018).

However, initial observations at *Universitas Sains dan Teknologi Indonesia* show that this service is not yet fully optimal, with user complaints regarding the length of the process, limited collections, and inadequate facilities. Previous studies on library service quality have often referred to the LibQUAL+™ model, a measurement instrument developed by Fransisca (2015) as an adaptation of SERVQUAL. This model measures three main dimensions (Sayekti et al., 2022): Affect of Service (librarian performance in terms of empathy, responsiveness, and reliability), Information Control (accessibility and relevance of information), and Library as Place (comfort of physical facilities) (Fransisca, 2015).

Previous studies have revealed a gap between user expectations and the services received, particularly in terms of service speed and resource availability (Rahayuningsih, 2019). However, there are still gaps in research, particularly in the application of LibQUAL+™ to evaluate circulation services in depth using an integrated quantitative and qualitative approach (Kaapu & Zimu-Biyela, 2025). The novelty of this study lies in its holistic analysis of the causes of the decline in borrowing at the Library of Universitas Sains dan Teknologi Indonesia, which fell from 2,015 copies (April 2024) to 938 (June 2024) despite an increase in visits, as well as data-based recommendations for service improvement.

The main problems identified include: (1) circulation service performance that users consider slow, with processing times reaching 5 minutes per transaction; (2) resource constraints, such as a lack of staff, collections that do not meet program needs, and unstable supporting infrastructure such as Wi-Fi; and (3) the absence of a systematic evaluation of service quality, resulting in a lack of comprehensive diagnosis of the root causes of the problem. Based on these findings, this study aims to: (1) evaluate the quality of circulation services using LibQUAL+™, (2) identify the dominant factors causing the decline in borrowing, and (3) formulate improvement recommendations based on empirical findings.

The original contributions of this study include: the comprehensive application of LibQUAL+™ in the context of circulation services, which has never been done before in this library; the integration of quantitative and qualitative data for in-depth analysis; and practical implications in the form of an evaluation model that can be adopted by other university libraries. Thus, the results of this study not only fill an academic gap but also provide real solutions for improving the quality of library services in the digital age.

2. RESEARCH METHOD

ini This study uses a descriptive method with a quantitative approach (Syahrizal & Jailani, 2023). The population in this study is all active visitors to the library of Universitas Sains dan Teknologi Indonesia in 2024, totaling 2,400 people. Respondents were selected using purposive sampling, which is a sampling technique based on specific considerations by selecting respondents who meet the criteria of active library users who have used circulation services in the past year and understand the circulation service process, such as borrowing, returning, or accessing collections.

Therefore, to ensure a representative sample, the researcher used the Slovin formula with an error tolerance (e) of 0.1 (10%):

$$n = \frac{N}{1 + N(e)}$$

$$n = \frac{2400}{1 + Ne^2}$$

$$n = \frac{2400}{1 + 2400(0,1)^2}$$

$$n = \frac{2400}{1 + 24}$$

$$n = \frac{2400}{25} = 96 \text{ people}$$

The calculation results show that the minimum sample size required is 96 respondents. Data collection techniques include observation and questionnaires. This allows the data to be analyzed using statistical tests. The analysis of service quality data using the LibQUAL+™ method was carried out in three stages. First, questionnaire data analysis was conducted, calculating the mean of each statement and calculating the gap to determine the level of user satisfaction.

3. RESULTS AND DISCUSSION

This study was conducted in November 2024 on 96 respondents who were active users of library of Universitas Sains dan Teknologi Indonesia. Based on data analysis using SPSS 22.0, the following findings were obtained:

Validity and Reliability Test

All questionnaire items were declared valid with a correlation coefficient (r count) > 0.2006 (r table). The highest value was found in item Affect of Service number 3 (r=0.879) and the lowest in Library as Place number 14 (r=0.707). This can be seen in the following table:

Table 1. Validity Test Results

Sub Variable	Item	r calculation	r table	Description
Affect of service	1	0,820	0,2006	Valid
	2	0,779	0,2006	Valid
	3	0,879	0,2006	Valid
	4	0,845	0,2006	Valid
	5	0,850	0,2006	Valid
	6	0,851	0,2006	Valid
Information Control	7	0,837	0,2006	Valid
	8	0,817	0,2006	Valid
	9	0,730	0,2006	Valid
	10	0,811	0,2006	Valid

	11	0,827	0,2006	Valid
Library as place	12	0,753	0,2006	Valid
	13	0,790	0,2006	Valid
	14	0,707	0,2006	Valid

Meanwhile, the reliability test showed very high consistency with a Cronbach's alpha of 0.957, far exceeding the minimum limit of 0.6, with the following data:

Table 2. Reliability Test Results

Variable	r calculation (Cronbach's alpha value)	r table	Description
Library service quality	0,957	0,6	Reliable

LibQUAL+™ Dimension Analysis

Analysis of the three main dimensions shows that Affect of Service (librarian performance) scored 3.97 and was categorized as high because it was in the 3.40-4.20 interval class with the highest indicator in assurance (3.99). This was obtained after finding the mean of the sub-variables of the four aspects as follows:

Table 3. Mean Values of Affect of Service Sub-Variables

No.	Indicator	Value	Category
1	*Emphaty*	3,95	High
2	*Responsiveness*	3,96	Very High
3	*Realibilitry*	3,98	High
4	*Assurance*	3,99	Very High
Amount		15,88	
Grand mean = 15,88/4 = 3,97			

Although the results were very positive, with a score of almost 4.0, 18-24% of respondents stated that they were dissatisfied with the aspects of care and responsiveness, which were usually caused by a lack of staff serving the circulation service and slow responses from librarians.

In Information Control (access to information), a score of 3.79 was obtained, which is also in the high category, with weaknesses in equipment (3.48). This was found after analyzing the sub-variables of Information Control in six aspects, as shown in the following table:

Table 4. Mean Values of Information Control Sub-Variables

No.	Indicator	Value	Category
1	*Scope of Content*	3,92	High
2	*Convenience*	3,93	High
3	*Ease of Navigation*	3,81	High
4	*Timelines*	3,81	High
5	*Equipment*	3,48	High
6	*Self Relience*	3,78	Very High
Amount		22,73	
Grand mean = 22,73/6 = 3,79			

Information control is the area with the greatest challenges, particularly in terms of equipment (computer) availability, with 23% of respondents dissatisfied, and information access speed, with 25% of respondents dissatisfied. This is due to an imbalance in the computer-user ratio, the age of the equipment, and a lack of supporting facilities.

Meanwhile, Library as Place (library facilities) achieved the highest score of 4.1, which is also in the high category, especially in symbolic terms (4.33), which was obtained from the mean value of the following four aspects:

Table 5. Mean Values of Library as Place Sub-Variables

No.	Indicator	Value	Category
1	*Tangibles*	3,86	High
2	*Utilitarian Space*	4,06	High
3	*Symbol Terms*	4,33	High
4	*Refuge*	4,15	High
Amount		**16,40**	

> **Grand mean = 16,40/4 = 4,1**

Thus, it can be said that Library as Place is the main strength of this study, with 86% of respondents being very satisfied with the library's function as a discussion space and 81% of respondents being satisfied with the comfort of the study space.

Hypothesis Test Results

The hypothesis test using a one-sample t-test produced a t-value of 87.10, which far exceeded the t-table value of 1.661, resulting from the following formula:

$$t = \frac{x - \mu}{\frac{s}{\sqrt{n}}}$$

Thus, the alternative hypothesis stating that the quality of library services is excellent is accepted. These findings confirm that although services are generally rated highly, there are several areas that need improvement, such as the availability of equipment and ease of access to information. The results of this study are in line with previous findings from Rahayuningsih (2019) and Wicaksono (2018), while also providing practical contributions in the form of recommendations for improving digital infrastructure and librarian training. This study proves the effectiveness of the LibQUAL+™ method in identifying the strengths and weaknesses of university library services.

Interpretation of Library Service Quality Measurement Results Using LibQUAL+™

The validity test results show that all questionnaire items used in this study are valid, as indicated by correlation values that are all above the table r of 0.2006. The item with the highest correlation value was found in the Affect of Service dimension number 3 (r = 0.879), while the lowest value was found in the Library as Place dimension number 14 (r = 0.707). This proves that each question item is able to represent the construct being measured. Furthermore, the reliability of the instrument showed a very high Cronbach's Alpha value of 0.957, far exceeding the minimum standard of 0.6. Thus, the instrument can be considered consistent and suitable for measuring library service quality.

Analysis of the three LibQUAL+™ dimensions shows that library service quality is generally in the high category. The Affect of Service dimension, which describes the performance of librarians, scored 3.97 and was included in the high category. The assurance indicator was the highest (3.99), indicating that users felt confident in the abilities and professionalism of librarians. However, there were still 18–24% of respondents who expressed dissatisfaction with the aspects of care and responsiveness. This dissatisfaction is likely due to limited staff numbers and suboptimal responses in circulation services. This means that although librarian services are generally very good, improvements in attentiveness and speed of service are still needed.

In the Information Control dimension, the score obtained was 3.79, which is in the high category. However, this dimension is the area facing the greatest challenges, especially in the equipment indicator, which only scored 3.48. Respondent dissatisfaction reached 23% regarding computer availability and 25% regarding information access speed, indicating problems with the computer-user ratio, the age of the devices, and the lack of supporting facilities for information retrieval. This condition shows that even though the library has provided good access to information, improving digital infrastructure needs to be a priority.

Meanwhile, the Library as Place dimension is the most superior aspect with a score of 4.10, which is in the high category. The symbolic terms indicator even reached a score of 4.33, illustrating that the library is perceived very well in terms of space function and atmosphere that supports academic activities. A total of 86% of respondents stated that they were very satisfied with the library's function as a discussion space, and 81% were satisfied with the comfort of the study space. These findings indicate that the physical elements and atmosphere of the library are the main strengths of the services provided.

Hypothesis testing using a one-sample t-test produced a t-value of 87.10, far exceeding the t-table value of 1.661. These results confirm that the quality of library services is significantly in the very good category. However, the research findings still indicate that there are aspects that need improvement, particularly regarding the availability of equipment and the convenience of digital information access. These results are in line with the research by Rahayuningsih (2019) and Wicaksono (2018), which also highlight the importance of improving digital infrastructure and librarian competencies in order to improve services. Overall, this study proves that the LibQUAL+™ method is effective in identifying the strengths and weaknesses of university library services, thus providing a strong basis for strategic decision-making in the field of library service development.

4. CONCLUSION

This study proves that the overall quality of circulation services at library of Universitas Sains dan Teknologi Indonesia is very good (average score of 4.13), with the highest score in the Library as Place dimension (4.22) and the lowest in Information Control (4.01). The hypothesis test results confirm the positive significance of the three LibQUAL+™ dimensions (Affect of Service, Information Control, and Library as Place), answering the research objective to evaluate service quality based on international standards. These findings indicate that the library has succeeded in creating a comfortable physical environment and responsive librarian services, although there is still room for improvement in the aspect of information technology. Therefore, for future development, the researchers recommend improving digital infrastructure, optimizing collections, strengthening human resources, implementing real-time feedback mechanisms, and conducting further research. With the implementation of these recommendations, the Library Technical Implementation Unit can strengthen its position as a leading information hub in the digital era, while addressing the challenges in the Information Control dimension, which remains a critical point.

REFERENCES

Al-Baihaqi, M. (2025). *Evaluasi Kualitas Layanan Perpustakaan Dengan Menggunakan Metode Libqual+^{TM} (Studi Kasus Pada Perpustakaan Iain Zawiyah Cot Kala Langsa)*. https://repository.ar-raniry.ac.id/id/eprint/42364

Dewi, N. I. (2018). *Efektivitas Layanan Sirkulasi Melalui Sistem Layanan Mandiri*. https://repository.ub.ac.id/id/eprint/162117

Fransisca, R. (2015). Survei Peningkatan Mutu Berkelanjutan Melalui Pemantauan dan Pengukuran Kepuasan Pemustaka. *Berkala Ilmu Perpustakaan Dan Informasi*, *XI*, 16–23. https://journal.ugm.ac.id/bip/article/view/10031

Kaapu, N. H., & Zimu-Biyela, A. N. (2025). Using LibQUAL to assess user satisfaction with library services at the Aloe Park South African Police Service (SAPS) National Library, Pretoria,

South Africa. *Library Management*. DOI 10.1108/LM-11-2024-0121

Masruri, A. (2023). Perpustakaan Sebagai Public Relations dalam Mendukung Tri Dharma Perguruan Tinggi. *Journal of Information and Library Review*, *1*(1). DOI 10.61540/jilr.v1i1.27

Oyedokun, T. T. (2025). Navigating the dynamics of present-day academic libraries: An in-depth analysis of strategies, challenges, and emerging trends. *IFLA Journal*, *51*(2), 470-489. DOI 10.1177/03400352241291907

Rahayuningsih, S. (2019). Pengaruh Motivasi Dan Kepuasan. Kerja Terhadap Kinerja. *Jurnal Investasi*. DOI 10.31943/investasi.v5i2.28

Sayekti, R., Aditya, M., Simahate, T., & Devianty, R. (2022). An assessment of information control: Understanding library service quality from users' perspectives. *Evidence Based Library and Information Practice*, *17*(2), 88-108. DOI 10.18438/eblip29916

Syahrizal, H., & Jailani, M. S. (2023). Jenis-jenis penelitian dalam penelitian kuantitatif dan kualitatif. *QOSIM: Jurnal Pendidikan Sosial & Humaniora*, *1*(1), 13-23. DOI 10.61104/jq.v1i1.49

Wicaksono, M. F. (2018). Membandingkan Kompetensi Pustakawan Pendidikan dengan Pustakawan Pelatihan di Kabupaten Sidoarjo. Jurnal Ilmu Informasi, Perpustakaan, Dan Kearsipan. *Jurnal Ilmu Informasi, Perpustakaan Dan Kearsipan*, *20*(2). DOI 10.7454/JIPK.v20i2.003