

Analysis of Student Satisfaction Levels with Multimedia Services Sepuluh Nopember Institute of Technology (ITS) Library Using the Libqual^{+TM}

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Abstract

This study aims to analyze student satisfaction with multimedia services at the Sepuluh Nopember Institute of Technology (ITS) Library using the LibQUAL+TM indicator. LibQUAL+TM is a tool developed by the Association of Research Libraries (ARL) to assess user perceptions of library service quality. The research method used is quantitative with a survey approach. The research instrument was an online questionnaire developed based on three dimensions of LibQUAL+TM: the effect of service, information control, and Library as place. Data were collected from a sample of ITS students who used the Library's multimedia services in 2023. The analysis showed that overall, students were "Satisfied" with the effect of service but "Dissatisfied" with the dimensions of information control and the Library. Gap analysis shows that student perceptions have mostly exceeded minimum expectations but are still below ideal expectations. Some aspects that need to be improved are the completeness of the multimedia collection, ease of access, and facility updates and maintenance. This research provides valuable input for ITS library managers to improve the quality of multimedia services to meet student needs and expectations.

Keywords: student satisfaction; multimedia services; LibQUAL+TM; university library

INTRODUCTION

Information and communication technology development has brought significant changes in the provision of library services, especially in higher education institutions. One service that receives special attention is multimedia services in libraries. This service includes access to books, electronic journals, and other digital resources supporting student learning and research processes. The Sepuluh Nopember Institute of Technology (ITS) library provides various services to support the academic and research needs of the academic community. One of the services provided is multimedia services. Multimedia services in the ITS Library provide comprehensive access for users to explore diverse audiovisual collections, such as microfiche, microfilm, compact disk (CD), and CD-ROM. This collection can enrich reference sources and facilitate learning, teaching, and research activities.

Besides access to audiovisual collections, multimedia services also provide a mini theater and museum. This mini theater service is most popular with users in the ITS Library because the mini theater room is an alternative relaxing place for students to watch films or other small entertainment in groups. The mini theater room makes it easier for students to carry out collaborative learning activities in groups outside of class. The mini theater room provides facilities for learning, discussions, and presentations. This allows students to easily hold academic activities such as tutorials or share knowledge among colleagues. At the same time, the mini museum displays various information technology tools that the ITS Library has used to provide services and manage collections, which can inspire and broaden users' insight. These two facilities are designed to create an interactive and exciting learning experience for students, lecturers, and researchers.

With the above collections and facilities, the ITS library is hoped to become a pleasant place to study and discuss. However, in reality, visits from ITS students tend to be few compared to ITS library services in other rooms, as seen in the comparison table of the number of ITS library visits below.

Table 1. Users of the Sepuluh Nopember Institute of Technology Library Services

Library Services	Number of visits to the Library	Prosentase
Reference Services	5.930	10%
Magazine Services	18.480	32%
IKOMA Corner Services	5.985	10%
Multimedia Services	1.196	2%
Circulation Services	26.837	46%
Total	58.428	100%

From Table 1: Comparison of the Number of Visits in ITS Library Service Rooms in 2023, circulation services recorded the highest number of visits, namely 26,837 (46%), followed by magazine services at 18,480 (32%), IKOMA Corner services at 5,985 (10%), reference services amounted to 5,930 (10%), while the service that recorded the lowest number of visits was multimedia services, namely 1,196 (2%). This is because the service may be less exciting or important to users than other services. Factors such as the development of digital content that can be accessed online and outdated audiovisual collections could be the cause of the lack of popularity of this service.

Kumar Mahajan (2019) stated that regular evaluations must be carried out to ensure that library multimedia services can provide optimal student satisfaction. One evaluation model that can be used is LibQUAL+TM, developed by the Association of Research Libraries (ARL) (Rehman, 2012). The LibQUAL+TM indicator has been widely used to measure the quality of library services from the user's perspective. LibQUAL+TM is a survey tool developed by the Association of Research Libraries (ARL) to assess user perceptions of the quality of library services. There are three main dimensions in LibQUAL+TM: the effect of Service, Information Control, and Library as Place (Mallya & Payini, 2018).

This research aims to analyze student satisfaction with multimedia services in the ITS Library using the LibQUAL+TM indicator. ITS, one of Indonesia's leading higher education institutions, has a library as an information and learning center for students. By evaluating multimedia services, it is hoped that this study will analyze student satisfaction with multimedia services at the Sepuluh Nopember Institute of Technology (ITS) Library. This study is essential to evaluate the effectiveness of existing multimedia services, understand the needs and expectations of users, and provide policy recommendations for service improvement. Based on previous research, satisfaction with library services can potentially affect student academic success.

However, limited studies still focus on user satisfaction with multimedia services in higher education libraries in Indonesia. This research is expected to contribute to the academic understanding of the quality of library services and provide practical insights for library managers in efforts to improve multimedia services. The results of this study are expected to be a reference for ITS Library and other higher education libraries in Indonesia to improve the quality of multimedia services to meet users' needs more optimally.

METHOD

This research uses quantitative methods with a survey approach. The quantitative method was chosen because this study aims to measure student satisfaction with multimedia services at the ITS Library using LibQUAL +TM indicators. The LibQUAL +TM indicators used in this study include: 1. Affect of Service, 2. Information Control, and Library as Place. A survey approach was used to collect data from a representative sample of the ITS student population. This method allows researchers to understand student perceptions and satisfaction with library multimedia services comprehensively. The survey approach was used to collect data from a representative sample of the ITS student population (Creswell & Creswell, 2018).

The population in this research is all ITS library visitors who use multimedia services, both mini theater services and mini museums, and visitors who accessed the audiovisual collection in 2023, with 1,196 visitors. The sample size was determined using the Slovin formula with an error rate of 10% or 0.1 (Sugiyono, 2021). Based on the calculation results, it is known that the minimum number of samples in this study is 92 people. The sampling technique used is simple random sampling, with the formula:

$$n = \frac{N}{1 + N(e)^2} \quad (1)$$

The population in this study is all ITS library visitors who use multimedia services, including mini theater services and mini museums, and visitors who access the audiovisual collection in 2023, namely 1,196 users. Determining the sample size uses the Slovin formula with a confidence level of 95% and a margin of error of 5% (Tejada & Punzalan, 2012). The research instrument was an online questionnaire developed based on the LibQUAL +TM dimensions: the effect of service, information control, and Library as place (Atikah & Anshori, 2023).

The questionnaire consists of 30 statement items measured using a 5-point Likert scale, ranging from 1 (strongly disagree) to 5 (strongly agree). The questionnaire also includes open questions to obtain input and suggestions from respondents. Before use, the questionnaire was tested for validity and reliability. The validity test used Pearson product-moment correlation, while the reliability test used Cronbach's alpha

(Taherdoost, 2016). The validity test results show that all statement items are valid ($r > 0.3$), and the reliability test results show that the instrument is reliable ($\alpha > 0.7$).

Data collection was carried out online via Google Forms for two weeks. The Questionnaire link, its.id/Survey_Layanan_Multimedia, is distributed via ITS Library social media. To increase the response rate, researchers provided incentives through online shopping vouchers to KMART ITS for respondents who completed the questionnaire. The collected data was analyzed using questionnaire data analysis and gap analysis.

Next, user satisfaction was measured using the LibQual+™ method with the dimensions of service, information control, and Library and the aspects surrounding them. The level of satisfaction regarding expectations and perceptions can be understood through Figure 1. In simple terms, the LibQual+™ research method can be explained in Figure 2.

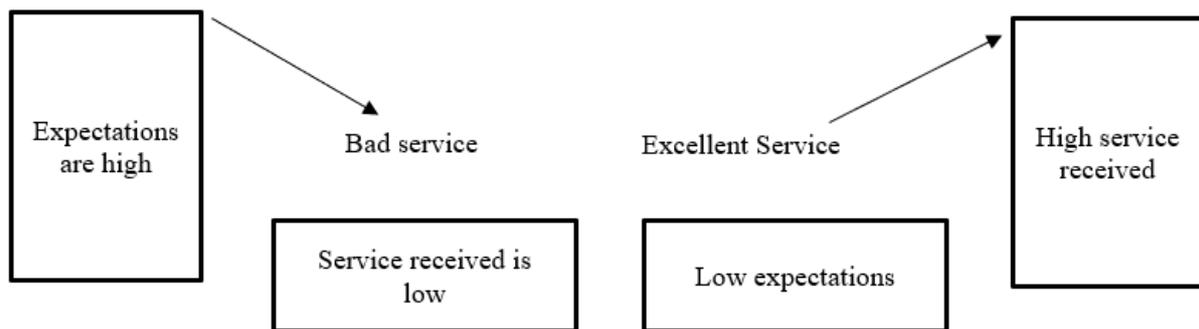


Figure 1. LibQual+™ Method Framework

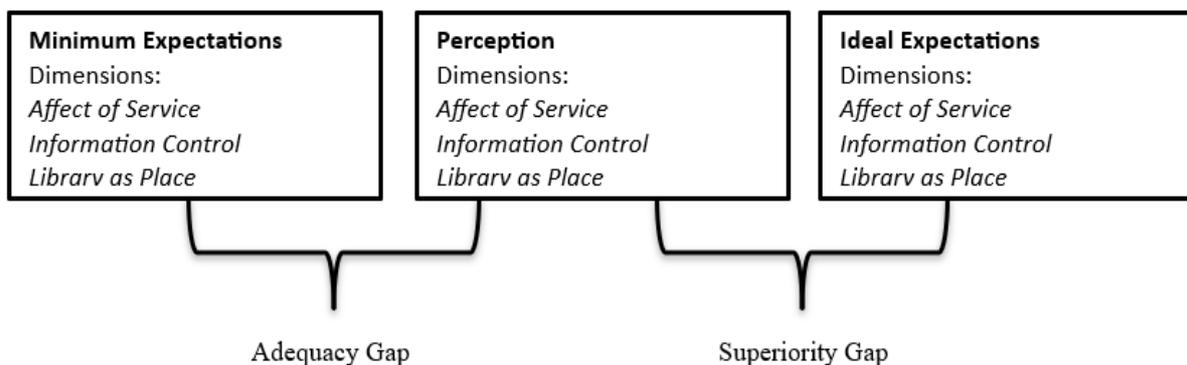


Figure 2. Explanation of the concept of the LibQual+™ method

Measuring user satisfaction using the LibQual+™ method is based on the level of user perception and expectations, which are closely related to the quality of library

services. In this research, LibQual+™ is used to measure the level of user satisfaction by looking at the user's level of perception (P), namely the service that is known and felt by the user, as well as the level of user expectations, which include minimum expectations (HM) and ideal expectations (HI). Minimum expectations are the lowest level of expectations desired by users, while ideal expectations are the level of service that users consider ideal (Rahayuningsih, 2015). According to Rahayuningsih (2015), user satisfaction is measured using the LibQual+™ method, which uses the AG (Adequacy Gap) and SG (Superiority Gap) formulas.

$$AG \text{ (Adequacy Gap)} = \text{Persepsi (P)} - \text{Harapan Minimum (HI)}$$

$$SG \text{ (Superiority Gap)} = \text{Persepsi (P)} - \text{Harapan Ideal (HI)}$$

Questionnaire data analysis was carried out in two stages. First, user satisfaction with its library multimedia services will be analyzed based on the LibQual+™ dimensions, including service, information control, and Library as place. This analysis was conducted in detail to determine user satisfaction in each dimension. Second, it analyzes user satisfaction with its library multimedia services in general, without distinguishing the LibQual+™ dimensions, to provide a general picture of the level of user satisfaction.

The analytical method used is descriptive analysis for user satisfaction data obtained from questionnaires. In addition, gap analysis is interpreted as a boxplot diagram to visualize the distribution of data, medians, quartiles, and potential outliers from the gap between user perceptions and expectations.

RESULTS AND DISCUSSION

Analysis Of Library Satisfaction With Its Library Multimedia Services Based On Libqual+™ Dimensions affect Of Service

Table 2 below displays a recapitulation of the results of data analysis by calculating the average scores P (perception), HM (minimum expectations), HI (ideal expectations), AG (adequacy GAP), and SG (superiority GAP) from the LibQUAL+™ effect of dimensions service.

Table 2. Recapitulation of Data Processing Results with LibQUALTM Affect of Service

Question Variables Affect Of Service	P	HM	HI	AG	SG
Multimedia officers often show empathy for the needs	4,48	3,77	4,33	0,71	0,15
The multimedia officer was responsive when they needed help	3,9	3,85	4,54	0,05	-0,64
Multimedia officers provide good service	4,2	3,73	4,42	0,47	-0,22
Multimedia officers provide clear and accurate information about available services	3,6	3,79	4,42	-0,19	-0,82
The multimedia officer quickly met the needs	2,6	3,77	4,48	-1,17	-1,88
Multimedia officers show professionalism in their work	3,8	3,77	4,6	0,03	-0,8
The multimedia officer was often available when needed him	4	3,9	4,44	0,1	-0,44
Multimedia officers understand deeply the services they offer	4,3	3,91	4,6	0,39	-0,3
Multimedia officers often offer practical solutions to problems encounter	4,4	3,85	4,44	0,55	-0,04
Satisfied with the assistance service from the multimedia staff as a whole	4,3	3,79	4,44	0,51	-0,14
Average Score Value	3,96	3,81	4,47	0,15-0,513	

Source: ITS Library 2023

From Table 2 above, an analysis of student satisfaction with multimedia services can be explained by the effect of the Service dimension. The effect of the Service dimension includes aspects related to the attitudes and behavior of library staff in providing services to users. The results of descriptive analysis for this dimension show that overall, students feel "Satisfied" with an average score of 3.96. Some indicators that get the highest scores are "Multimedia staff often show empathy for my needs" (4.48) and "Multimedia staff often offer effective solutions to the problems I face" (4.4). Meanwhile, the indicator with the lowest score is "My needs are quickly met by multimedia officers" (3.96).

Meanwhile, the gap analysis results show that almost all indicators show a positive gap, meaning that students' perceptions of library staff services have exceeded their expectations. As seen in the picture below:

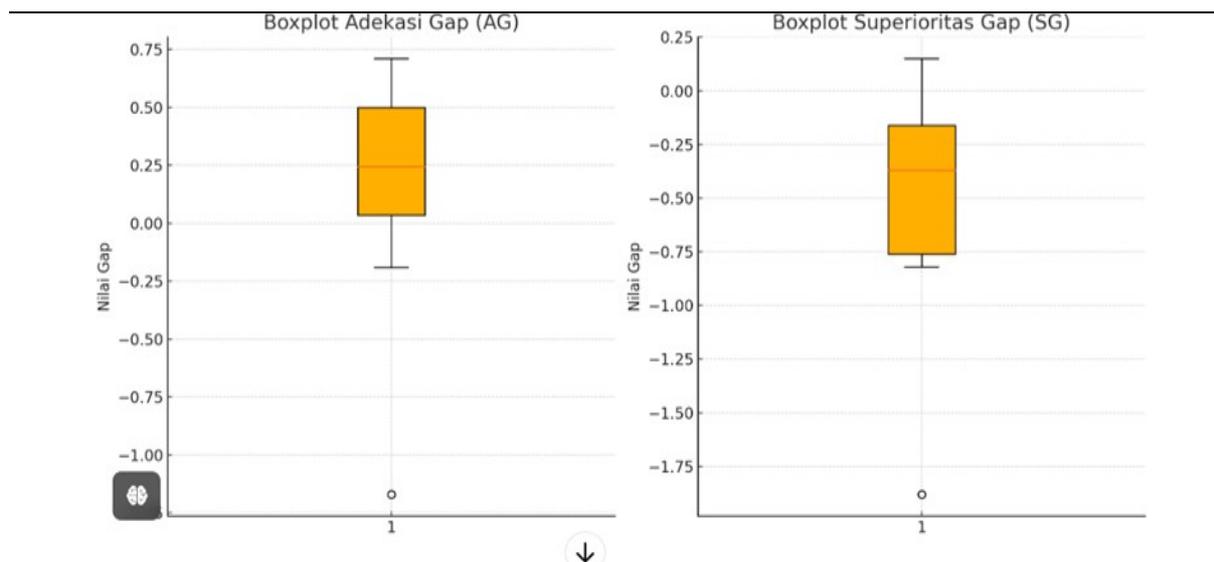


Figure 3. Gap Analysis on the Effect of Service Dimension Using LibQual+™

Figure 3 displays a boxplot illustrating service gaps. In the Adequacy Gap (AG) boxplot, the median value is slightly above zero, indicating that service perceptions generally meet or slightly exceed users' minimum expectations. However, there were some negative outliers, indicating the existence of cases where service perceptions fell well below minimum expectations. On the other hand, the Superiority Gap (SG) boxplot has a median value below zero, implying that service perceptions generally fall below users' ideal expectations.

Information Control

Table 3 below displays a recapitulation of the results of data analysis by calculating the average scores of P (perception), HM (minimum expectations), HI (ideal expectations), AG (adequacy GAP), and SG (superiority GAP) from the Libqual™ information control dimension. From Table 3, it can be explained that the analysis of student satisfaction with multimedia services in the Information Control dimension is as follows: The Information Control dimension is related to the user's ability to access the required information independently. The results of the descriptive analysis show that students feel "Dissatisfied," with an average score of 2.56. The indicators with the highest scores are "Mini Tetaer libraries rarely experience interruptions," "Mini Tetaer libraries rarely experience interruptions," respectively (3.2), and "Online catalog for browsing multimedia collections is easy to use" (2.7). Meanwhile, all other indicators have low scores.

Table 3. Recapitulation of Data Processing Results with LibQUAL+™ information control

Information Control Variable Questions	P	HM	HI	AG	SG
The audiovisual collection available is very complete	2,2	3,92	4,48	-1,72	-2,28
Accessing the FILM collection in the Library is very easy	2,6	3,88	4,58	-1,28	-1,98
I often find the multimedia content I am looking for	2,4	3,75	4,52	-1,35	-2,12
The multimedia collection is always up-to-date	2,2	3,85	4,6	-1,65	-2,4
The online catalog for browsing multimedia collections is easy to use	2,7	3,81	4,46	-1,11	-1,76
The audio and visual quality of the available collections is excellent	2,3	3,88	4,5	-1,58	-2,2
The Mini Museum provides information for me	3,2	3,81	4,42	-0,61	-1,22
The Mini Theater library rarely experiences interruptions	3,2	3,81	4,54	-0,61	-1,34
Libraries provide access to multimedia databases	2,3	3,83	4,33	-1,53	-2,03
I am satisfied with the security of access to multimedia information	2,5	3,9	4,4	-1,4	-1,9
Average Score Value	2,56	3,84	4,48	-1,28	-1,92

Source: Results processed by researchers, 2024

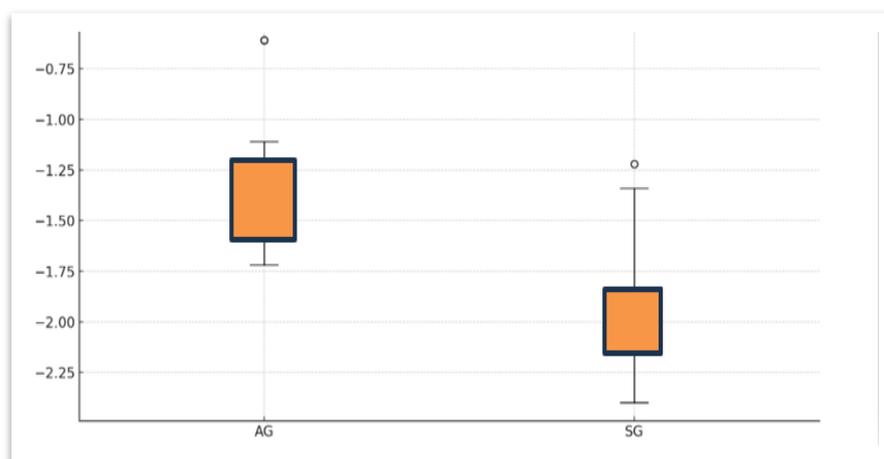


Figure 4. Gap Analysis on the Information Control Dimension Using LibQual+™

Based on Figure 4, the Gap Analysis diagram on the Information Control Dimension Using LibQual+™ shows the analysis based on AG and SG. The AG score showed several significant outliers, indicating several cases where the service was less

than adequate compared to user expectations. Meanwhile, the distribution of SG scores also shows some outliers, although overall, the distribution is relatively more concentrated than AG.

Library as Place

Table 4 below displays a recapitulation of the results of data analysis by calculating the average scores of P (perception), HM (minimum expectations), HI (ideal expectations), AG (adequacy GAP), and SG (superiority GAP) from the dimensions of LibQUAL+TM Library As Place.

Table 4. Recapitulation of Data Processing Results with Libqual+TM Library As Place

Question Variable Library as Place	P	HM	HI	AG	SG
Multimedia facilities are frequently updated according to current needs	2,2	3,75	4,46	-1,55	-2,26
The mini-museum provides an atmosphere conducive to learning	3,71	3,83	4,46	-0,12	-0,75
The multimedia reading room is clean and well-maintained	4,48	4,08	4,63	0,4	-0,15
Finding the location of multimedia services in the Library is very easy	4,33	4,13	4,6	0,2	-0,27
The MINI THEATER room is safe from outside noise	4,04	4	4,56	0,04	-0,52
The multimedia room layout supports learning activities and the use of multimedia facilities	2,8	4,02	4,6	-1,22	-1,8
The mini theater area is very comfortable for watching activities	4,06	3,9	4,54	0,16	-0,48
There is a unique area that is comfortable for discussions or group work on multimedia services	2,3	4	4,6	-1,7	-2,3
Supporting facilities in the MINI MESEUM area are very adequate	2,2	4	4,56	-1,8	-2,36
Over Multimedia Services provides a calming and motivating atmosphere for learning	2,5	3,75	4,46	-1,25	-1,96
Average Score Value	3,26	3,94	4,54	-0,68	-1,28

Source: Data Processing Results with Libqual+TM Library As Place

From the table above, it can be explained that the analysis of the level of student satisfaction with multimedia services in the Library as a Place dimension is as follows: The Library as a Place dimension is related to the user's perception of the Library as a place or physical facility. The results of the descriptive analysis show that students feel "Quite Satisfied" with an average score of 3.26 (Wicaksono & Suwanto, 2019). The

indicators with the highest scores are "The multimedia reading room is clean and well maintained" (4.48) and "Finding the location of multimedia services in the library is very easy" (4.33). Meanwhile, the indicators with the lowest scores are "Current needs frequently update multimedia facilities" and "Supporting facilities in the mini museum area is adequate," each receiving a score of (2.2).

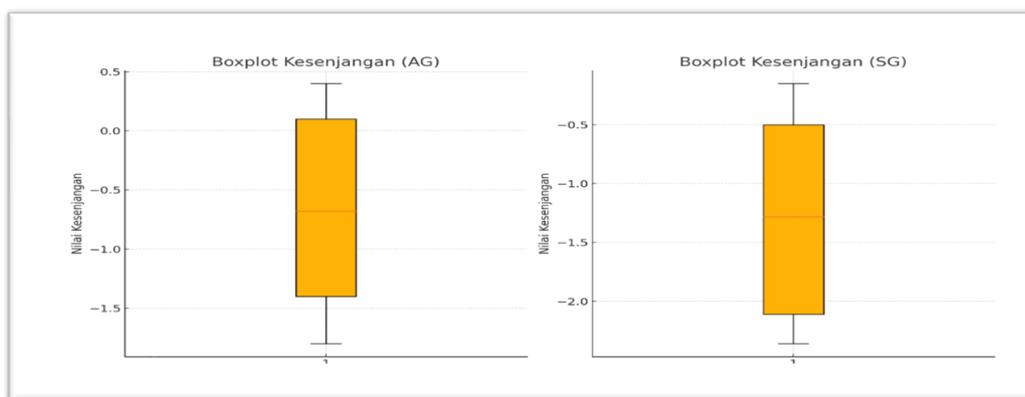


Figure 5: Gap Analysis on the Library As Place Dimension Using LibQual+™

Based on Figure 5, Gap Analysis on the Library As Place Dimension Using LibQual+™ shows the distribution of service gaps based on AG and SG. The AG box plot shows some shallow values, indicating a significant gap between perceptions and minimum expectations of some users, with outliers indicating very dissatisfied users. The SG box diagram also shows a relatively large gap between perceptions and ideal expectations, with several outliers indicating significant differences for some users.

Analysis of User Satisfaction With Multimedia Services

Table 5 below displays a recapitulation of the results of data analysis by calculating the average scores of P (perception), HM (minimum expectations), HI (ideal expectations), AG (adequacy GAP), and SG (superiority GAP) from the LibQual+™ dimensions. From the Table 5, it can be explained that the analysis of the overall level of student satisfaction with multimedia services in the LibQual+™ dimension shows that students feel "Quite Satisfied" with an average score of 3.26. The indicators with the highest scores are "effect of service" (3.96) and "library as place" (3.26). Meanwhile, the dimension with the lowest score is "information control" (2.56).

Table 5. Recapitulation of LibQUAL+™ Data

Dimensi Libqual TM	P	HM	HI	AG	SG
Affect Of Service	3,96	3,81	4,47	0,15	-0,513
Information Control	2,56	3,84	4,48	-1,28	-1,92
Library As Place	3,26	3,94	4,54	-0,68	-1,28
Average Score	3,26	3,86	4,96	-0,603	-1,23

Source: Overall Data Processing Results with LibQUAL+™

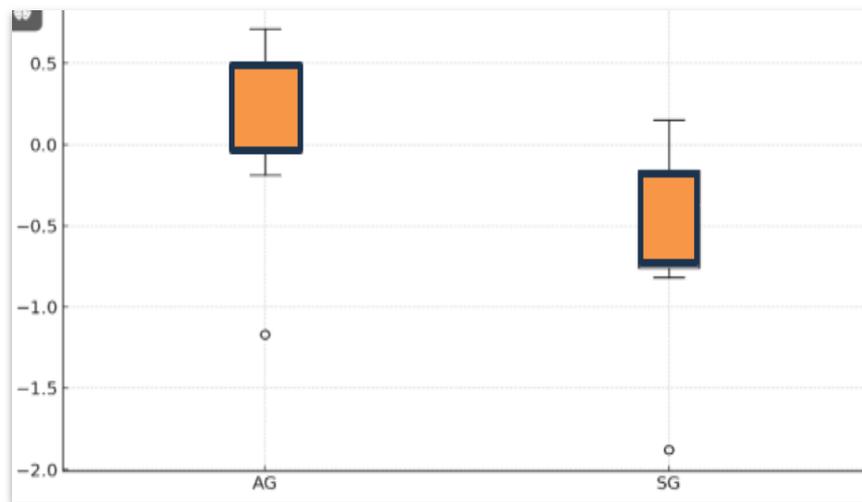


Figure 6: Gap Analysis of LIBQUAL+™ in General

Based on Figure 6, the Gap Analysis on LibQual+™ generally shows the service gap through AG and SG. AG described a gap between the service received and minimal expectations, with some outliers but generally insignificant. SG showed a more significant gap between the service received and ideal expectations, with significant outliers. This indicates that even though the service meets minimum standards, there is room for improvement to achieve the ideal service according to users.

CONCLUSION

This study analyzed student satisfaction with ITS Library's multimedia services using the LibQUAL+™ indicator. The research revealed varying levels of satisfaction across the three dimensions: Effect of Service, Information Control, and Library as Place. Students were generally satisfied with the effect of the Service dimension, particularly staff empathy and problem-solving skills. However, dissatisfaction was

noted in the Information Control dimension with accessing and finding up-to-date content. The Library as a Place dimension also showed room for improvement regarding the physical environment and facilities.

Gap analysis indicated that while perceptions often exceeded minimum expectations, they fell short of ideal expectations across all dimensions. This research provides valuable insights for ITS library management to develop targeted strategies for enhancing multimedia services better to meet student needs and expectations in the digital age.

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