

Aligning Expectations and Perceptions: Analyzing Library User Satisfaction in Higher Education in Rural Philippines

Maricel T. Seno-Sanoria

College of Computer Studies, Carlos Hilado Memorial State University-Alijis Campus,
Bacolod City, Negros Occidental, Philippines

Author Email: maricel.sanoria@chmsu.edu.ph

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Abstract. In today's rapidly evolving academic environment, libraries must continually adapt to meet the changing needs of their users to remain practical and relevant. Libraries are vital to academic life, providing key resources and services that support the learning and teaching needs of students and faculty. This study examines the alignment between user expectations and perceptions of academic library services in rural Philippine state universities, with a focus on frontline services, information resources, and facilities. Recognizing academic libraries as pivotal to student learning and research, the research addresses the underexplored context of rural institutions, where infrastructural and digital inequities pose significant challenges. Guided by a gap analysis framework and employing quantitative methods, data were gathered through a validated Likert-scale survey administered to 346 randomly selected undergraduate students who utilized library services during the academic year. Descriptive and inferential statistical analyses revealed that while users hold high expectations, many services meet or exceed these expectations, notably in staff support, digital service provision, resource relevance, and communication channels. However, critical gaps emerged in borrowing policies, user education and training, technology availability, and physical facilities, highlighting areas for targeted improvement. The findings underscore the importance of context-specific assessments in enhancing library service quality and user satisfaction, thereby contributing to academic success and equitable access within rural higher education settings. This study offers valuable insights for library management, educators, and policymakers to develop responsive, user-centered strategies that align with evolving educational needs and support continuous service innovation across the Philippine higher education landscape.

Keywords: Library user satisfaction; Expectation vs. Perception; Higher education libraries; Service quality gaps; User experience analysis.

1.0 Introduction

In the evolving landscape of higher education, libraries play a crucial role in supporting student learning and research, yet understanding how users in rural Philippine universities perceive and experience these services remains limited. Academic libraries are the cornerstones of higher education institutions, functioning as dynamic centers for intellectual exploration, research advancement, and collaborative learning. In the modern academic landscape, contemporary libraries have transformed into dynamic, technology-driven environments

that offer flexible collaborative spaces and diverse information resources, positioning them as essential pillars of academic success (Galagala, 2024). These advancements have enhanced users' ability to access and engage with information, reflecting the critical role of high-quality resources in today's learning ecosystems (Ng et al., 2013). User satisfaction has emerged as a key indicator for evaluating library service quality and institutional performance, providing a foundation for continuous improvement and innovation (Gyau et al., 2021). Evaluating student satisfaction is particularly vital, as it is closely linked to positive academic outcomes and enriched student experiences (Tulung et al., 2024). Central to these evaluations is the concept of service quality, which uncovers the often substantial gap between user expectations and actual experiences—gaps that significantly influence both satisfaction and library utilization (Ghaedi et al., 2020). While global developments have prompted academic libraries to adopt more user-centered and digitally integrated service models, a critical need remains to examine how these shifts manifest within specific local contexts. In rural Philippine universities, persistent challenges such as limited infrastructure and digital inequity make it imperative to understand how users perceive and experience library services. Recognizing this need, the Commission on Higher Education (CHED) has established minimum standards for academic libraries through Memorandum Order No. 22, Series of 2021. These standards mandate the provision of adequate resources, qualified personnel, and modern services that support both learning and research. However, a significant challenge persists in bridging the gap between these institutional standards and the actual perceptions and satisfaction levels of users in rural settings, underscoring the importance of context-specific assessments to ensure equitable and effective library service delivery.

Numerous key studies reveal differing levels of user satisfaction with library services and resources in higher education, providing important insights into both strengths and areas needing improvement. Manguil et al. (2024) found general satisfaction with printed and online resources, ICT provision, and the learning environment; however, aspects related to performance and excitement received more neutral to negative feedback. Similarly, Galagala (2024) noted high satisfaction with frontline services but identified space constraints as an area for enhancement. Ubat and Villalon (2024) emphasized the importance of frontline service quality, linking it to overall student satisfaction and recommending targeted improvements. Ng et al. (2023) and Gyau et al. (2021) underscored the critical role of adequate library resources, facilities, and user treatment in supporting learning and research, with users rating service quality as generally good but with room for improvement. Tulung et al. (2024) pinpointed specific service attributes—such as internet access, collection adequacy, catalog system, and staff responsiveness—as areas with lower satisfaction levels, highlighting the need for attention. Ghaedi et al. (2020) identified a significant gap between user expectations and perceptions of service quality, revealing that many libraries fail to meet minimum user expectations, and stressed the importance of equitable service quality across colleges to foster academic success. Collectively, these studies contribute to a deeper understanding of library user satisfaction, emphasizing the necessity for continuous evaluation and responsive improvements in library services to better meet user needs in higher education.

Past studies have not adequately explored how students perceive frontline library services in Philippine state universities, leaving a significant gap in understanding user experiences and satisfaction in this context. Ubat and Villalon (2024) highlight this gap by sharing insights into students' experiences with frontline services; however, their study focuses mainly on general service satisfaction, without a specific emphasis on library services. This study aims to fill that gap by specifically investigating students' satisfaction with frontline library services, including information resources and facilities, to provide a clearer picture of how these services meet users' needs. Other research, such as Ghaedi et al. (2020), examines service quality dimensions like reliability, responsiveness, and empathy but is confined to religious higher education institutions, limiting its applicability to the broader, more diverse landscape of Philippine public universities, especially those in rural or under-resourced areas. By focusing on state universities, including those located outside well-resourced urban centers, the present study aims to address these limitations and provide insights relevant to a broader academic community. Similarly, Tulung et al. (2024) analyze student satisfaction with frontline services at a single Philippine state university. However, they do not focus on academic support services, such as libraries, nor do they explore variations in satisfaction across different campuses or rural institutions. This study intends to bridge this gap by examining frontline library services specifically and comparing user satisfaction across diverse university settings, including rural areas. Furthermore, Galagala (2024) notes that limited research has focused on user satisfaction regarding information resources, facilities, and services within public university

libraries. This study aims to contribute to this underexplored area by assessing how well these aspects meet students' expectations and needs, thereby informing improvements in library service delivery.

This study holds significant value in advancing the understanding of library usage and user satisfaction within the specific context of rural Philippine state universities. The area remains underexplored despite the vital role academic libraries play in supporting student learning and research. By focusing on frontline library services, including information resources and facilities, this research provides critical insights into how these services meet or fall short of student expectations in diverse academic environments, particularly those facing infrastructural and digital limitations. The findings are poised to benefit the broader academic community by identifying gaps and opportunities for enhancing library services, thereby directly contributing to improved student academic outcomes and overall satisfaction. For educators and policymakers, this study offers evidence-based data to inform the formulation of policies and resource allocation that address the unique challenges of rural institutions, ensuring equitable access to quality library services across the Philippine higher education system. Moreover, the research will support library management in developing more responsive, user-centered strategies that align with evolving educational practices and technological advancements. Ultimately, this study aims to enrich the discourse on academic library service quality, fostering innovation and continuous improvement that resonate with the current and future educational landscape, thereby strengthening the foundations of academic success in both rural and urban contexts. This study, therefore, seeks to examine the extent to which academic library services in rural Philippine higher education institutions meet user expectations and contribute to meaningful academic engagement.

2.0 Methodology

2.1 Research Design

The study employed a rigorous methodology that integrated a gap analysis framework with quantitative research techniques to evaluate the satisfaction of higher education library users with facilities, services, and resources. An extensive review of the literature was conducted to gather insights and guide the development of data collection tools, notably a structured survey questionnaire utilizing a Likert scale. A pilot test was conducted to validate the reliability and effectiveness of the questionnaire. Using simple random sampling, students were selected as respondents for the survey.

Quantitative data analysis included both descriptive and inferential statistics. The findings were interpreted to identify areas for improvement, resulting in actionable recommendations that aimed to enhance the institution's library services, resources, and facilities. Quantitative methods, combined with descriptive and inferential statistical techniques, were employed because they allow for precise, objective, and generalizable insights into library user satisfaction (Creswell, J. W., & Creswell, J. D., 2018). This approach is particularly valuable in higher education settings in rural areas, where decision-making must be efficient, evidence-based, and impactful. A total of 346 student respondents were randomly selected to provide a representative sample of the target population. Inclusion criteria required participants to be enrolled undergraduate students who had accessed and used the library's services, facilities, or resources during the academic year. The sampling technique employed – simple random sampling – helped minimize bias and enhance the generalizability of the findings. The sample size was determined based on a 5% margin of error and a 95% confidence level, supporting the statistical reliability and precision of the data. This methodological approach strengthens the accuracy and validity of the study's conclusions.

2.2 Data Gathering Procedure

The researcher-developed survey instrument was administered to the target participants face-to-face, depending on their accessibility and convenience. On average, participants required approximately 15 to 20 minutes to complete the survey, ensuring the questionnaire was manageable and respectful of their time. Ethical considerations were carefully observed throughout the study. Prior to participation, informed consent was obtained from all respondents, clearly explaining the purpose of the research, the voluntary nature of participation, and their right to withdraw at any time without penalty. To protect confidentiality, all responses were anonymized, and data were securely stored and accessible only to the research team. The study also adhered to institutional ethical guidelines and received approval from the appropriate Institutional Ethics Committee, ensuring that all procedures met established standards for research involving human participants.

In the data collection process for this study, the researcher developed a survey questionnaire, which was validated by three experts in library and information science and related library management. Their insights were instrumental in refining the questions for clarity and relevance. With the validated questionnaire in hand, the researcher submitted a formal request for permission to conduct the survey, supported by a letter from the College Dean. Upon receiving approval, a face-to-face meeting was held with participants to discuss the study's objectives and potential benefits.

2.3 Data Analysis

Quantitative data analysis involved both descriptive and inferential statistics. Descriptive statistics, such as means, frequencies, and percentages, were used to summarize user expectations and perceptions regarding library resources, facilities, and services. Inferential statistics, including paired sample t-tests, were employed to determine significant differences between users' expectations and their actual experiences, emphasizing the satisfaction gaps. This combination enabled a comprehensive understanding of user satisfaction and the identification of areas needing improvement in the rural higher education library setting.

3.0 Results and Discussion

3.1 Users' Expectations and Perception in the Library

Ensuring user satisfaction within academic libraries necessitates a comprehensive understanding of user expectations. Users consistently prioritize access to reliable technological infrastructure, including seamless availability of computers and internet connectivity, as well as learning environments that are both comfortable and conducive to academic work. Furthermore, the availability of high-quality scholarly resources remains a fundamental expectation. Equally significant is the presence of competent library staff who can provide practical assistance in information retrieval and resource navigation. Collectively, these elements play a pivotal role in shaping user perceptions and levels of satisfaction with library services. Addressing these expectations effectively narrows the gap between anticipated and actual service delivery, thereby contributing to enhanced user satisfaction within the academic library context.

In terms of Accessibility & Availability

Table 1 shows that the study's findings indicate that overall, users hold very high expectations (mean = 4.61) and equally high perceptions (mean = 4.52) regarding the library's accessibility and availability. While this suggests intense satisfaction, the slight overall gap of -0.09 still qualifies as a notable service weakness, implying that despite the library's generally positive performance, users perceive a modest shortfall in service delivery. Most aspects of accessibility—including the library's physical location, operating hours, online catalog usability, accommodations for persons with disabilities, and clarity of collection organization—were all rated highly by users (means ranging from 4.50 to 4.69), though each revealed minor negative gaps (-0.03 to -0.04). These results suggest that the library is effectively meeting user needs but could benefit from minor enhancements, such as extended operating hours or improved shelf signage.

Regarding the availability of resources, users expressed intense satisfaction with the breadth and relevance of the collection, as well as the number of available copies for high-demand materials. However, these also revealed slight shortfalls (-0.03 gaps), possibly reflecting intermittent issues during peak academic periods. The only category that met expectations exactly was access to online resources and databases off-campus, which received a perfect score with no gap (4.66 for both expectation and perception). This confirms that the library's digital infrastructure is functioning efficiently and meeting users' growing reliance on remote access.

The most notable area of concern was the borrowing system. While expectations remained high (mean = 4.56), user perception dropped to 4.00, resulting in a gap of -0.56, which is classified as a moderate negative gap, indicating a notable service weakness. This suggests dissatisfaction with borrowing periods or renewal policies, indicating that users may find the current lending limits too restrictive or inflexible.

These findings are supported by existing literature. The use of gap analysis in library service quality assessment, as emphasized by Mamta and Kumar (2023), highlights that even small negative gaps warrant attention for continuous improvement. Dey and Kumar (2021) similarly found that physical access and operating hours often fail to meet user expectations fully. Meanwhile, Vaid et al. (2024) confirmed that reliable digital access is a strong

factor in satisfaction, aligning with this study's zero-gap result on online accessibility. In addressing the borrowing policy gap, Boyce-Gudat (2014) and Sung & Tolppanen (2013) both emphasize that extending loan periods and simplifying renewals not only improve user satisfaction but also enhance perceived fairness and service quality. In summary, while the library performs well across most dimensions, targeted adjustments—especially to borrowing policies—could significantly enhance user experience and satisfaction.

Table 1. Mean Scores of Users' Expectations and Perception in the Library on Accessibility & Availability

User Expectations	Mean	Interpretation	User Perception	Mean	Interpretation	Gap Mean	Gap Interpretation
The physical location of the library is convenient and easily accessible.	4.55	Strongly Expected	The physical location of the library is convenient and easily accessible.	4.52	Strongly Perceived	-0.03	Slight shortfall of service
The library's operating hours are sufficient.	4.54	Strongly Expected	The library's operating hours are sufficient.	4.50	Strongly Perceived	-0.04	Slight shortfall of service
The online catalog is user-friendly and accessible.	4.73	Strongly Expected	The online catalog is user-friendly and accessible.	4.69	Strongly Perceived	-0.04	Slight shortfall of service
The library provides accommodations for users with disabilities.	4.58	Strongly Expected	The library provides accommodations for users with disabilities.	4.54	Strongly Perceived	-0.04	Slight shortfall of service
The library's collection is organized and labeled effectively, making it easy to find resources.	4.67	Strongly Expected	The library's collection is organized and labeled effectively, making it easy to find resources.	4.63	Strongly Perceived	-0.04	Slight shortfall of service
The library has a wide range of resources (books, journals, databases) relevant to your field of study.	4.68	Strongly Expected	The library has a wide range of resources (books, journals, databases) relevant to your field of study.	4.65	Strongly Perceived	-0.03	Slight shortfall of service
The library has sufficient copies of high-demand resources to meet users' needs.	4.54	Strongly Expected	The library has sufficient copies of high-demand resources to meet users' needs.	4.51	Strongly Perceived	-0.03	Slight shortfall of service
The Library's online resources and databases are accessible both on and off campus.	4.66	Strongly Expected	The Library's online resources and databases are accessible both on and off campus.	4.66	Strongly Perceived	0.00	Users Perception matches Expectation
The library offers extended borrowing periods or renewal options for materials.	4.56	Strongly Expected	The library offers extended borrowing periods or renewal options for materials.	4.00	Perceived	-0.56	Notable Service Weakness
Results	4.61	Strongly Expected	Results	4.52	Strongly Perceived	-0.09	Notable Service Weakness

In terms of Staff Support & Approachability

Table 2 presents the study's findings on library staff support and approachability, indicating a highly favorable user experience, with perception scores (mean = 4.93) significantly exceeding already strong expectations (mean = 4.66), resulting in a positive gap of +0.27. This suggests that users not only appreciate but are impressed by the quality of interaction and support they receive from library staff. Specific aspects such as staff availability, responsiveness, and approachability all showed clear strengths, with positive gaps ranging from +0.17 to +0.26. Personalized assistance and guidance in using library resources were particularly well-received. Notably, staff-led training workshops had the highest gap at +0.40, indicating exceptional user satisfaction with information literacy efforts. One area—staff subject expertise—achieved a perfect match between expectation and perception (4.70), showing that while users expected a high level of knowledge, they felt those expectations were precisely met.

These findings are supported by existing literature emphasizing the critical role of library staff in shaping positive user experiences. Cook and Thompson (2001) emphasize that staff competence, courtesy, and

willingness to assist are key factors in determining satisfaction in academic libraries. Saunders (2008) similarly found that users place high value on staff approachability and interpersonal skills, particularly when receiving research help. The strong positive reception of training workshops aligns with Julien and Genuis (2011), who stress that information literacy instruction has become an essential part of academic support, enhancing both student learning and perceptions of library relevance. Additionally, the Association of Research Libraries' LibQUAL+ (2020) results consistently show that among all library service dimensions, users rate their interactions with staff as most important. Overall, the results confirm that a well-trained, approachable, and responsive library team significantly enhances perceived service quality and can even exceed user expectations when efforts are focused on providing personalized, user-centered assistance.

Table 2. Mean Scores of Users' Expectations and Perception in the Library on Staff Support & Approachability

User Expectations	Mean	Interpretation	User Perception	Mean	Interpretation	Gap Mean	Gap Interpretation
Library staff members are readily available to assist users.	4.73	Strongly Expected	Library staff members are readily available to assist users.	4.90	Strongly Perceived	0.17	User perceptions slightly exceeded expectations
Library staff members are approachable and willing to help.	4.66	Strongly Expected	Library staff members are approachable and willing to help.	4.90	Strongly Perceived	0.24	User perceptions clearly exceeded expectations
Library staff members respond promptly to user inquiries and requests.	4.69	Strongly Expected	Library staff members respond promptly to user inquiries and requests.	4.86	Strongly Perceived	0.17	User perceptions slightly exceeded expectations
Library staff members provide personalized assistance based on individual needs.	4.64	Strongly Expected	Library staff members provide personalized assistance based on individual needs.	4.90	Strongly Perceived	0.26	User perceptions clearly exceeded expectations
Library staff members are knowledgeable about the library's resources and services.	4.71	Strongly Expected	Library staff members are knowledgeable about the library's resources and services.	4.90	Strongly Perceived	0.19	User perceptions slightly exceeded expectations
Library staff members possess expertise in various subject areas.	4.70	Strongly Expected	Library staff members possess expertise in various subject areas.	4.70	Strongly Perceived	0.00	User expectations were exactly met by their perceptions
Library staff members can help users use complex research topics and methodologies.	4.63	Strongly Expected	Library staff members can help users use complex research topics and methodologies.	4.80	Strongly Perceived	0.17	User perceptions slightly exceeded expectations
Library staff members guide on effectively using library resources and databases.	4.67	Strongly Expected	Library staff members guide on effectively using library resources and databases.	4.90	Strongly Perceived	0.23	User perceptions clearly exceeded expectations
Library staff members stay updated with current trends and developments in the library field.	4.62	Strongly Expected	Library staff members stay updated with current trends and developments in the library field.	4.80	Strongly Perceived	0.18	User perceptions slightly exceeded expectations
Library staff members offer workshops or training sessions to enhance users' information literacy skills.	4.50	Strongly Expected	Library staff members offer workshops or training sessions to enhance users' information literacy skills.	4.90	Strongly Perceived	0.40	User perceptions clearly exceeded expectations
Results	4.66	Strongly Expected	Results	4.93	Strongly Perceived	0.27	User perceptions clearly exceeded expectations

In terms of Technology & Digital Services

Table 3 presents the study's findings on technology and digital services in the library, revealing that user perceptions (mean = 4.82) slightly exceeded their expectations (mean = 4.73), resulting in an overall positive gap of +0.09. This suggests a generally high level of satisfaction with the library's technological offerings. Most indicators received extreme scores, particularly in areas such as access to electronic resources, ease of use, remote accessibility, and training support, each of which demonstrated small positive gaps ranging from +0.10 to +0.20. Notably, the availability of plagiarism tools scored a +0.20 gap, indicating that users found this service to significantly exceed their expectations, a notable strength in academic support.

However, not all areas met or exceeded expectations. The availability of computer workstations showed a negative gap of -0.29, suggesting that users experience some difficulty accessing these facilities during peak times. Similarly, the availability of hardware, such as printers and scanners, and support for multimedia/audiovisual resources also fell slightly short of expectations, each with a -0.19 gap. While these gaps are classified as slight shortfalls, they indicate opportunities for improvement in physical technology infrastructure.

Table 3. Mean Scores of Users' Expectations and Perception in Technology & Digital Services

User Expectations	Mean	Interpretation	User Perception	Mean	Interpretation	Gap Mean	Gap Interpretation
The library provides access to various electronic resources (e-books, e-journals, databases).	4.77	Strongly Expected	The library provides access to various electronic resources (e-books, e-journals, databases).	4.90	Strongly Perceived	0.13	User perceptions slightly exceeded expectations
The library's electronic resources are easy to search, access, and use.	4.71	Strongly Expected	The library's electronic resources are easy to search, access, and use.	4.90	Strongly Perceived	0.19	User perceptions slightly exceeded expectations
The library offers remote access to electronic resources for off-campus use.	4.74	Strongly Expected	The library offers remote access to electronic resources for off-campus use.	4.90	Strongly Perceived	0.16	User perceptions slightly exceeded expectations
The library provides plagiarism tools.	4.70	Strongly Expected	The library provides plagiarism tools.	4.90	Strongly Perceived	0.20	User perceptions clearly exceeded expectations
The library offers training or support for using electronic resources effectively.	4.78	Strongly Expected	The library offers training or support for using electronic resources effectively.	4.90	Strongly Perceived	0.12	User perceptions slightly exceeded expectations
The library provides sufficient computer workstations for users.	4.78	Strongly Expected	The library provides sufficient computer workstations for users.	4.49	Strongly Perceived	-0.29	Slight shortfall of services
The library offers wireless connectivity for personal devices.	4.70	Strongly Expected	The library offers wireless connectivity for personal devices.	4.80	Strongly Perceived	0.10	User perceptions slightly exceeded expectations
The library has printers, scanners, and other essential hardware available for users.	4.72	Strongly Expected	The library has printers, scanners, and other essential hardware available for users.	4.53	Strongly Perceived	-0.19	Slight shortfall of services
The library's technology infrastructure supports multimedia and audiovisual resources.	4.71	Strongly Expected	The library's technology infrastructure supports multimedia and audiovisual resources.	4.52	Strongly Perceived	-0.19	Slight shortfall of services
Results	4.73	Strongly Expected	Results	4.82	Strongly Perceived	0.09	User perceptions slightly exceeded expectations

These findings are supported by existing literature on academic library services. Tenopir et al. (2008) highlight that access to and ease of using electronic resources are primary contributors to user satisfaction in digital libraries, confirming the high ratings in this study. Joint (2010) also emphasizes the growing importance of remote access and online learning tools, which aligns with the strong perception scores for off-campus accessibility. The notable satisfaction with plagiarism tools and training aligns with Julien and Barker (2009), who found that information literacy and academic integrity tools significantly enhance the library's educational role. However, the lower satisfaction with physical technology (e.g., hardware and workstations) is consistent with findings by Sharma and Sharma (2021), who argue that while digital services improve rapidly, physical infrastructure often lags, especially in resource-constrained institutions. Overall, the results suggest that while the library excels in digital service delivery, investment in hardware and workstation access could further elevate user satisfaction.

In terms of User Education & Training

Table 4 presents the findings from the study on User Education and Training in the library, revealing a substantial disparity between users' expectations and their actual perceptions of the services received. With a mean expectation score of 4.76 (strongly expected) and a perception score of 4.43 (perceived), the resulting gap of -0.33 indicates a slight shortfall of services. This suggests that while users place a high value on information literacy and research support, the current offerings are not meeting their needs sufficiently. Particularly alarming are the notable service weaknesses in areas such as guiding research strategy formulation (-0.62), offering workshops on information literacy topics (-0.54), and supporting students in evaluating sources and avoiding plagiarism (-0.54). Even individual instruction, support for literature searches, and guidance on research ethics fell short of user expectations, signaling a need for significant improvement.

Table 4. Mean Scores of Users' Expectations and Perception in the Library on User Education & Training

User Expectations	Mean	Interpretation	User Perception	Mean	Interpretation	Gap Mean	Gap Interpretation
The library provides resources and materials to enhance information literacy skills.	4.80	Strongly Expected	The library provides resources and materials to enhance information literacy skills.	4.32	Perceived	-0.48	Slight shortfall of services
The library offers information literacy workshops or training sessions.	4.74	Strongly Expected	The library offers information literacy workshops or training sessions.	4.20	Perceived	-0.54	Notable Service Weakness
The library offers individual or personalized instruction on information literacy topics.	4.79	Strongly Expected	The library offers individual or personalized instruction on information literacy topics.	4.43	Perceived	-0.36	Slight shortfall of services
The library's information literacy training covers evaluating sources, citing references, and avoiding plagiarism.	4.75	Strongly Expected	The library's information literacy training covers evaluating sources, citing references, and avoiding plagiarism.	4.21	Perceived	-0.54	Notable Service Weakness
The library offers guidance on developing research questions and formulating research strategies.	4.82	Strongly Expected	The library offers guidance on developing research questions and formulating research strategies.	4.20	Perceived	-0.62	Notable Service Weakness
The library assists in locating and accessing relevant research materials.	4.74	Strongly Expected	The library assists in locating and accessing relevant research materials.	4.23	Perceived	-0.51	Notable Service Weakness
The library offers support for conducting effective literature searches.	4.74	Strongly Expected	The library offers support for conducting effective literature searches.	4.27	Perceived	-0.47	Slight shortfall of services
The library guides data management and research ethics.	4.73	Strongly Expected	The library guides data management and research ethics.	4.26	Perceived	-0.47	Slight shortfall of services
The library promotes the development of research skills, catering to both beginners and experienced researchers.	4.69	Strongly Expected	The library promotes the development of research skills, catering to both beginners and experienced researchers.	4.23	Perceived	-0.46	Slight shortfall of services
Results	4.76	Strongly Expected	Results	4.43	Perceived	-0.33	Slight shortfall of services

These findings are echoed in the academic literature. Gross and Latham (2009) argue that while students often overestimate their information literacy abilities, they frequently lack core skills like source evaluation, citation, and plagiarism avoidance—areas that this study found to be underserved. Similarly, Julien and Barker (2009) emphasize that students rarely seek out library instruction unless it is embedded within their academic curriculum, underscoring the importance of making such services more visible and integrated. Bury (2016) supports this by noting that students show greater improvement when information literacy training is embedded directly into coursework rather than offered in isolation. Bent and Stockdale (2009) also stress that libraries need to adopt a more proactive, curriculum-embedded approach to education, promoting sustained engagement rather than one-off sessions. The shortfalls identified in this study affirm these conclusions and

suggest that the library should prioritize targeted, personalized, and embedded educational interventions to bridge the expectation gap and enhance the academic success of its users.

In terms of Communication & Feedback Mechanisms

Table 5 presents the study's findings on Communication and Feedback Mechanisms in the library, demonstrating a positive user experience with a strong alignment—and in many cases, an exceeding—of user expectations. The mean expectation score is 4.73, indicating that users strongly expect effective communication and feedback systems. Notably, the mean perception score is 4.90, resulting in a positive gap of +0.17, indicating that user perceptions exceed expectations.

Table 5. *Mean Scores of Users' Expectations and Perception in the Library on Communication & Feedback Mechanisms*

User Expectations	Mean	Interpretation	User Perception	Mean	Interpretation	Gap Mean	Gap Interpretation
The library provides clear and easily accessible information on its resources, services, and policies.	4.77	Strongly Expected	The library provides clear and easily accessible information on its resources, services, and policies.	4.82	Strongly Perceived	0.05	Users Perception exceeds Expectation
The library effectively communicates updates and changes in its services or operations.	4.70	Strongly Expected	The library effectively communicates updates and changes in its services or operations.	4.85	Strongly Perceived	+0.15	Users Perception exceeds Expectation
The library offers multiple communication channels (e.g., website, email, social media) to reach users.	4.75	Strongly Expected	The library offers multiple communication channels (e.g., website, email, social media) to reach users.	4.90	Strongly Perceived	+0.15	Users Perception exceeds Expectation
The library promptly responds to user inquiries or feedback.	4.70	Strongly Expected	The library promptly responds to user inquiries or feedback.	4.95	Strongly Perceived	+0.25	Users Perception exceeds Expectation
The library seeks user feedback on its resources, facilities, and services.	4.78	Strongly Expected	The library seeks user feedback on its resources, facilities, and services.	4.92	Strongly Perceived	+0.14	Users Perception exceeds Expectation
The library provides convenient ways to submit feedback or suggestions (e.g., online forms and suggestion boxes).	4.78	Strongly Expected	The library provides convenient ways to submit feedback or suggestions (e.g., online forms and suggestion boxes).	4.86	Strongly Perceived	+0.08	Users Perception exceeds Expectation
The library acknowledges and appreciates user feedback.	4.69	Strongly Expected	The library acknowledges and appreciates user feedback.	4.95	Strongly Perceived	+0.26	Users Perception exceeds Expectation
The library takes appropriate action based on user feedback to improve its services.	4.70	Strongly Expected	The library takes appropriate action based on user feedback to improve its services.	4.90	Strongly Perceived	+0.20	Users Perception exceeds Expectation
The library communicates the outcomes of user feedback and the improvements made.	4.70	Strongly Expected	The library communicates the outcomes of user feedback and the improvements made.	4.95	Strongly Perceived	+0.25	Users Perception exceeds Expectation
Results	4.73	Strongly Expected	Results	4.90	Strongly Perceived	+0.17	Users Perception exceeds Expectation

Among the individual indicators, the most significant positive gaps were observed in the areas of prompt response to user inquiries (+0.25), acknowledgment and appreciation of user feedback (+0.26), and communication of the outcomes of user feedback (+0.25). These results suggest that the library not only effectively collects feedback but also acts on it, informing users of the changes made, which significantly contributes to overall user satisfaction. This strong performance is supported by the literature, which emphasizes the importance of responsive and transparent communication in library services. According to Wittkowski and Scaglione (2021), timely responses and clear communication channels are critical for enhancing user satisfaction and trust in academic libraries. Similarly, Murray (2015) suggests that users are more likely to engage with library services when they feel their feedback leads to tangible improvements. Schmidt and Etches

(2014) emphasize that feedback mechanisms must be accompanied by visible action and acknowledgment to promote a user-centered service model. The findings from this study reflect these insights, showing that the library has successfully cultivated a culture of open communication and responsiveness that exceeds user expectations.

Furthermore, the effective use of multiple communication channels, such as websites, emails, and social media (with a gap of +0.15), also aligns with Yi and Hwang's (2013) recommendation that academic libraries adopt multi-platform communication strategies to meet users where they are. By embracing this approach, the library enhances accessibility and responsiveness, further improving user engagement and satisfaction. Overall, the results indicate that the library's communication and feedback mechanisms are a strong area, serving as a model for best practices in user-centered service delivery. Continued investment in these mechanisms is likely to sustain and even enhance user trust and engagement.

In terms of Resource Quality & Relevance

Table 6 reveals that the study findings on Resource Quality and Relevance in the library reveal that users perceive the library's resources as meeting or exceeding expectations. The mean expectation score was 4.63 (Strongly Expected), while the mean perception score was 4.80 (Strongly Perceived), resulting in a positive gap mean of +0.173, indicating that user perception exceeded expectations.

Table 6. Mean Scores of Users' Expectations and Perception in the Library on Resource Quality & Relevance

User Expectations	Mean	Interpretation	User Perception	Mean	Interpretation	Gap Mean	Gap Interpretation
The library's resources (books, journals, databases) are up-to-date and relevant.	4.69	Strongly Expected	The library's resources (books, journals, databases) are up-to-date and relevant.	4.80	Strongly Perceived	0.11	Users Perception exceeds Expectation
The library provides resources from reputable and authoritative sources.	4.62	Strongly Expected	The library provides resources from reputable and authoritative sources.	4.60	Strongly Perceived	-0.02	Slight shortfall of services
The library's resources are accurate and reliable.	4.64	Strongly Expected	The library's resources are accurate and reliable.	4.50	Strongly Perceived	-0.14	Slight shortfall of services
The library's resources are comprehensive and cover a wide range of topics.	4.57	Strongly Expected	The library's resources are comprehensive and cover a wide range of topics.	4.55	Strongly Perceived	-0.02	Slight shortfall of services
The library's resources are well-maintained and in good condition.	4.66	Strongly Expected	The library's resources are well-maintained and in good condition.	4.89	Strongly Perceived	0.23	Slight shortfall of services
The library offers resources specifically tailored to my field of study.	4.66	Strongly Expected	The library offers resources specifically tailored to my field of study.	4.88	Strongly Perceived	0.22	User perceptions clearly exceeded expectations
The library provides resources that align with my field's current trends and developments.	4.55	Strongly Expected	The library provides resources that align with my field's current trends and developments.	4.85	Strongly Perceived	0.30	User perceptions clearly exceeded expectations
The library's resources cover diverse perspectives and approaches within my field.	4.62	Strongly Expected	The library's resources cover diverse perspectives and approaches within my field.	4.88	Strongly Perceived	0.26	User perceptions clearly exceeded expectations
The library helps me find resources relevant to my research and coursework.	4.64	Strongly Expected	The library helps me find resources relevant to my research and coursework.	4.77	Strongly Perceived	0.13	User perceptions slightly exceeded expectations
Results	4.63	Strongly Expected	Results	4.80	Strongly Perceived	0.173	User perception exceeds expectations

Most notably, the highest positive gaps were recorded in the items: The library provides resources that align with my field's current trends and developments (+0.30), the library's resources cover diverse perspectives and approaches within my field (+0.26), and the library offers resources specifically tailored to my field of study (+0.22). These findings underscore the library's strength in maintaining a relevant, diverse, and up-to-date

collection that directly supports the academic and professional needs of its users. This result aligns with Togia and Tsigilis (2009), who found that academic users value the currency and subject relevance of library materials as primary indicators of service quality. Moreover, Lonsdale (2003) emphasized that subject-specific collections enhance students' academic performance and research engagement by improving access to field-relevant materials. The positive perception also resonates with Tenopir et al. (2012), who argued that when academic libraries focus on aligning their resources with the evolving needs of the academic curriculum, user satisfaction and utilization improve significantly.

However, minor gaps were observed in perceptions of accuracy (-0.14) and authoritativeness (-0.02) of resources, suggesting slight areas for enhancement. This implies that, while users are overall satisfied, there remains a need for continuous evaluation and assurance of the academic rigor and reliability of certain materials. Koufogiannakis and Slater (2014) suggest that maintaining high scholarly standards across all resource types, particularly in open-access and digital collections, is essential for sustaining trust in library offerings. In conclusion, the library's resource collection is widely regarded and consistently exceeds user expectations, particularly in terms of relevance, comprehensiveness, and alignment with current academic trends. Continued focus on accuracy, authority, and scholarly integrity will further reinforce the library's role in supporting high-quality academic outcomes.

In terms of Facilities & Technological Infrastructure

Table 7 shows the findings on Facilities and Technological Infrastructure, revealing a generally high level of expectation among users, with a mean expectation score of 4.67 (Strongly Expected). However, the mean perception score was slightly lower at 4.59, resulting in a negative gap mean of -0.08, indicating a slight shortfall of services in this area.

Table 7. Mean Scores of Users' Expectations and Perception in the Library on Facilities & Technological Infrastructure

User Expectations	Mean	Interpretation	User Perception	Mean	Interpretation	Gap Mean	Gap Interpretation
The library provides a comfortable and conducive environment for studying.	4.70	Strongly Expected	The library provides a comfortable and conducive environment for studying.	4.80	Strongly Perceived	0.10	User perceptions slightly exceeded expectations
The library has a sufficient seating capacity to accommodate users.	4.64	Strongly Expected	The library has a sufficient seating capacity to accommodate users.	4.40	Perceived	-0.24	Slight shortfall of services
The library offers designated quiet study areas.	4.68	Strongly Expected	The library offers designated quiet study areas.	4.50	Strongly Perceived	-0.18	Slight shortfall of services
The library provides adequate lighting and ventilation.	4.60	Strongly Expected	The library provides adequate lighting and ventilation.	4.50	Strongly Perceived	-0.10	Slight shortfall of services
The library's facilities are clean and well-maintained.	4.68	Strongly Expected	The library's facilities are clean and well-maintained.	4.70	Strongly Perceived	0.02	User perceptions slightly exceeded expectations
The library has reliable and high-speed internet access.	4.59	Strongly Expected	The library has reliable and high-speed internet access.	4.84	Strongly Perceived	0.25	User perceptions slightly exceeded expectations
The library offers sufficient computer workstations for users.	4.65	Strongly Expected	The library offers sufficient computer workstations for users.	4.40	Perceived	-0.25	Slight shortfall of services
The library offers remote access to its electronic resources and databases.	4.80	Strongly Expected	The library offers remote access to its electronic resources and databases.	4.56	Strongly Perceived	-0.24	Slight shortfall of services
Results	4.67	Strongly Expected	Results	4.59	Strongly Perceived	-0.08	Slight shortfall of services

Several areas showed notable shortfalls. These include the availability of computer workstations (-0.25), remote access to resources (-0.24), and seating capacity (-0.24). While users still rated these services relatively high, they perceived them as not fully meeting their expectations. These findings suggest the need for improved infrastructure planning and a better match between demand and supply of both physical and digital access

points. In contrast, positive perceptions were reported for the library's internet connectivity (+0.25) and cleanliness and maintenance (+0.02), suggesting satisfaction with core facility upkeep and digital infrastructure.

These results align with the study of Hernon and Altman (2010), which emphasized that students place significant value on quiet, comfortable, and technologically equipped study spaces and perceive deficiencies in these areas as hindrances to academic productivity. Similarly, Shill and Tonner (2004) found that the quality of physical and digital infrastructure strongly correlates with user satisfaction, especially in institutions where learning is increasingly reliant on digital tools and online access. Furthermore, Applegate (2009) noted that while students appreciate modern amenities, they are also susceptible to space constraints and noise levels, both of which can impact their choice of study locations. This echoes the users' concerns in the current findings regarding seating and quiet study areas, which had slight shortfalls of -0.24 and -0.18, respectively. In summary, while the library is performing well in areas such as cleanliness and internet connectivity, the results indicate critical areas for improvement, particularly in space allocation, computer availability, and remote access services. These findings highlight the growing need for libraries to adopt a user-centered approach to space planning and digital access.

In terms of Physical Space & Ambiance

Table 8 presents the findings regarding the Physical Space and Ambiance of the library, indicating that users have strong expectations for a comfortable, well-maintained, and functional environment, as reflected in a high mean expectation score of 4.77. However, the mean perception score of 4.52 reveals a slight shortfall of services (-0.25 gap), indicating that users perceive that the library's physical space and ambiance do not fully meet their expectations.

Table 8. Mean Scores of Users' Expectations and Perception in the Library on Physical Space & Ambiance

User Expectations	Mean	Interpretation	User Perception	Mean	Interpretation	Gap Mean	Gap Interpretation
The library provides comfortable seating and study areas.	4.80	Strongly Expected	The library provides comfortable seating and study areas.	4.80	Strongly Perceived	0.00	User expectations were exactly met by their perceptions
The library has sufficient space to accommodate a large number of users.	4.76	Strongly Expected	The library has sufficient space to accommodate a large number of users.	4.40	Perceived	-0.36	Slight shortfall of services
The library offers quiet zones for focused study or research	4.81	Strongly Expected	The library offers quiet zones for focused study or research	4.50	Strongly Perceived	-0.31	Slight shortfall of services
The library provides collaborative spaces for group work or discussions.	4.76	Strongly Expected	The library provides collaborative spaces for group work or discussions.	4.50	Strongly Perceived	-0.26	Slight shortfall of services
The library's physical space is well-maintained and clean.	4.83	Strongly Expected	The library's physical space is well-maintained and clean.	4.70	Strongly Perceived	-0.13	Slight shortfall of services
The library has proper lighting to support reading and studying.	4.82	Strongly Expected	The library has proper lighting to support reading and studying.	4.84	Strongly Perceived	0.02	Users Perception exceeds Expectation
The library's temperature and air quality are comfortable.	4.77	Strongly Expected	The library's temperature and air quality are comfortable.	4.40	Strongly Perceived	-0.37	Slight shortfall of services
The library provides access to natural light and outdoor views.	4.77	Strongly Expected	The library provides access to natural light and outdoor views.	4.56	Strongly Perceived	-0.21	Slight shortfall of services
The library offers amenities such as coffee shops or snack areas.	4.71	Strongly Expected	The library offers amenities such as coffee shops or snack areas.	4.30	Perceived	-0.41	Slight shortfall of services
The library creates a welcoming and inclusive environment for all users.	4.67	Strongly Expected	The library creates a welcoming and inclusive environment for all users.	4.60	Strongly Perceived	-0.07	Slight shortfall of services
Results	4.77	Strongly Expected	Results	4.52	Strongly Perceived	-0.25	Slight shortfall of services

While users were delighted with the comfort of seating and study areas (0.00 gap) and lighting conditions

(positive gap of +0.02), there were notable perceived shortfalls in key areas such as sufficient space to accommodate users (-0.36 gap), quiet zones for focused study (-0.31 gap), temperature and air quality (-0.37 gap), and amenities like coffee shops or snack areas (-0.41 gap). These areas are essential for creating a conducive learning environment, and the shortfalls suggest the need for further improvements to enhance user comfort and convenience. The findings are consistent with studies, such as those by Jowkar and Sadeghi (2013), which emphasize that library users highly value physical environments that support both individual quiet study and collaborative work. Their research highlights that space constraints and poor ambiance hurt user satisfaction and library usage. Similarly, Rosa and Pinheiro (2015) discussed the importance of adequate lighting, temperature control, and access to natural light in creating an inviting library atmosphere that supports cognitive functioning and prolonged study.

The slight shortfall in amenities aligns with Applegate's (2009) observations, who noted that modern library users increasingly expect amenities like cafes or informal meeting spaces as part of a holistic library experience. In conclusion, while the library meets expectations in areas such as seating comfort and lighting, the study identifies critical areas for improvement, particularly in expanding quiet study spaces, enhancing environmental comfort, and providing user-friendly amenities. Addressing these gaps will likely enhance user satisfaction and promote more frequent and effective use of the library.

4.0 Conclusion

The study reveals that users hold very high expectations for the library, and overall, most services meet or exceed these expectations, reflecting intense satisfaction. Key strengths include the exceptional support and approachability of library staff, which significantly enhance user experience, as well as the effective digital services—particularly remote access and plagiarism tools—that align well with users' academic needs. The library's communication and feedback mechanisms also stand out, fostering trust and engagement by ensuring timely responses and visible improvements based on user input. Additionally, the quality and relevance of resources are highly rated, with collections that are current and well-tailored to users' fields of study. However, some critical areas require attention. Borrowing policies were identified as restrictive, leading to dissatisfaction and suggesting a need for more flexible lending rules. User education and training services reveal notable gaps, underscoring the need for more personalized and curriculum-integrated information literacy support. Physical technology resources, such as computer workstations and printers, are insufficient during busy periods, and the physical facilities—seating capacity, quiet study zones, temperature control, and amenities—fall short of user expectations, impacting comfort and convenience. Addressing these areas, particularly borrowing policies, educational support, and infrastructure improvements, will be crucial to enhance user satisfaction further and strengthen the library's role as a vital academic resource.

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Sole-authorship.

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All authors declare that they have no conflicts of interest.

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