

Improving the Strategies for Quality Services Provision in Technical University Libraries, Ghana

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Abstract

The study was an assessment of improving the strategies for quality services provision in university libraries in Ghana focusing on technical university libraries. The study investigated issues such as the perception of library services, strategies of improving the library services and user satisfaction of libraries services at technical university libraries. The study, used a descriptive survey design with students at levels 100 through to 400 from all the five faculties from a technical university library in Ghana. Out of 100 copies of questionnaire distributed, 60 copies were completed and retrieved. This represented 60% of the sample size. The results show that leisure activities are the main reason students visit the library, however academic reasons certainly play a part. Although issues over out-of-date materials and restricted operating hours were mentioned, positive interactions with library workers and satisfaction with the resources available were acknowledged. The study emphasizes that the most important ways to improve library services is to improve the technology infrastructure, which includes providing computers, internet access, and contemporary resources. By concentrating on infrastructure, user support, and the modernization of academic materials, the study offers practical suggestions for enhancing university library services with the ultimate goal of raising user happiness and assisting students' academic achievement.

Keywords: University library, service quality, user satisfaction, technological infrastructure, Koforidua Technical University.

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1. Introduction

The rapid evolution of distance education craves the provision of quality teaching and learning platforms and knowledge-based services to support students in their academic endeavors. Researchers have shown keen interest and commitment to understanding students' learning behavior and experiences in higher learning to develop the best-supporting systems to help students attain high academic standards (Atuase & Maluleka 2023; Sam-Tagoe & Akuamoah-Boateng, 2018). Academic libraries contribute to students' learning and research process by offering equitable access to relevant information resources to achieve parity in higher education programs, especially in distance learning (Association of College and Research Libraries (ACRL) 2023). University libraries are knowledge hubs with high quality learning resources like print and electronic books, scholarly databases and journals, theses and dissertations, and reference materials. They also provide services to aid students, faculty members, and researchers in making the best use of library resources, which include research support, virtual and physical reference services, lending services, and more (Nnenda, 2022). Academic libraries have also invested in creating learning spaces, such as learning commons and social learning environments to influence research and active learning

Improving the quality of service in university libraries is critical to enhancing the academic experience and supporting research and learning. In a typical technical university library, the need for strategic approaches to library management has become increasingly important to meet the evolving needs of students and staff. University libraries play a key role in providing access to academic resources, yet many institutions in Ghana face challenges in maintaining service quality due to resource constraints, limited technological infrastructure, and changing user expectations (Anaba & Dogbevi, 2018). To address these challenges, implementing innovative

strategies such as the integration of digital platforms, staff training, and user engagement programmes is essential. Recent studies suggest that enhancing service quality in university libraries significantly improves user satisfaction and academic outcomes (Amanfo & Emiri, 2020). In particular, the adoption of information and communication technologies (ICT) can streamline operations, expand access to resources, and facilitate a more user-centric library environment (Acheampong, 2016). In a technical university library focusing on these strategies will contribute to a more effective and responsive library service, ensuring that students and staff can maximise the benefits of available resources.

Research has shown that libraries must adopt user-centred approaches to meet the diverse needs of students and staff, focusing on enhancing resource availability, accessibility, and efficiency (Agyemang & Dzandu, 2017). One of the strategies that can significantly improve library services is the adoption of technology, particularly through digital libraries, which enable wider access to academic materials and databases from remote locations (Asare, 2019).

Furthermore, the training and development of library staff are essential to ensure they are equipped with the skills necessary to manage modern library systems effectively. Studies indicate that continuous professional development and customer service training contribute to better service delivery and user satisfaction (Kwame & Baah, 2020). Another effective strategy is the inclusion of user feedback mechanisms, where students and staff can provide insights into their needs and challenges, helping libraries tailor services more effectively (Owusu-Ansah & Mohammed, 2021). In technical university libraries, these strategies, when effectively implemented, can help position the university library as a centre of academic excellence, offering robust support for teaching, learning, and research. To further improve the quality of service in university libraries, particularly at a technical university, libraries must also focus on creating a conducive and inviting learning environment. Physical infrastructure, such as comfortable reading spaces, modern furniture, and reliable internet connectivity, plays a crucial role in enhancing user experiences (Acheampong & Ampomah, 2018).

A well-maintained library with adequate lighting and quiet study areas can significantly influence student productivity and satisfaction. In addition, the availability of up-to-date resources, including both print and electronic materials, ensures that students and faculty members have access to relevant and current information to support their academic pursuits (Mensah & Osei, 2020).

Moreover, collaboration between libraries and academic departments is key to aligning library services with the curriculum and research needs of the institution. Librarians can work closely with faculty members to develop collections that are tailored to specific courses and research areas, thereby improving resource relevance and usage (Darko & Fosu, 2019). Engaging students through library orientation programmes and information literacy training also empowers them to navigate the library's resources effectively and develop essential research skills (Agyemang & Boateng, 2021). These efforts can significantly contribute to improved academic outcomes and a stronger connection between library services and the university's overall educational mission. The current study builds on the existing information in an attempt to do an assessment of improving the strategies for quality services provision in university libraries, Ghana

Objectives of the study

The purpose of the study was an assessment of improving the strategies for quality services provision in technical university libraries, Ghana. Specifically, the study aims to achieve the following objectives:

- i. To assess the perception of library services in technical university libraries.
- ii. To examine the strategies of improving the quality of library services in technical university libraries.
- iii. To determine the user satisfaction of libraries services in technical university libraries.

2. Literature review

Academic libraries have long-standing traditions of providing multifaceted information resources and innovative services to ensure that remote users are not limited to essential library resources and services for their learning processes (Kumar & Gupta, 2023). These libraries make significant investments in subscriptions of software, academic databases, and other library resources and services to aid academic activities in their institutions. Libraries have further regularized their engagements in social media trends in order to share and disseminate information, establish contact with remote users, respond to student requests, and provide appropriate information for their learning activities (Soltani & Nikou, 2020). These give added advantages to students to achieve their educational aspirations. Notwithstanding, researchers such as Kumar and Gupta (2023) have shown evidence that points to the limited use of library information resources and services among distance learners,

which could be detrimental to students' learning outcomes (Atuase & Maluleka 2022) as they are deprived of relevant learning resources, needed information, and support from library professionals to help shape students' learning experience. The scope and nature of distance learning program should not be a barrier for students to explore relevant learning resources from their institutional libraries for research and independent learning. Academic libraries need to provide opportunities for inclusive access to learning resources and services by all students (Kumar & Gupta, 2023; Atuase & Maluleka, 2022).

Users' main reasons for visiting the library vary, frequently based on their individual tastes and academic requirements. According to studies, a lot of people use libraries mainly to obtain course materials and conduct academic research. According to Tella et al. (2017), for example, students regularly go to libraries to obtain textbooks, journals, and other materials that help them with their assignments and courses. Similarly, Kumar and Singh (2019) underlined that library act as important hubs for group conversations and collaborative learning, particularly during examination seasons. According to Ezennia and Obi (2020), access to computing resources and the internet is another important goal. This is particularly important in areas where individual access to these technologies is restricted. Additionally, libraries frequently offer a calm and comfortable setting for concentrated study, which Bhatti (2018) has identified as a crucial component. These various goals highlight the library's crucial role in supporting academic performance, research, and learning. Notwithstanding, the use of library resources and services among students is influenced by several factors. Researchers such as Banda (2023) and Obasuyi (2020) identified demographic factors such as age, gender, student status, subject of study, race, and geographical characteristics as determinants of the use of online library services and resources among students. Other factors in the use of library resources and services are user knowledge about available library resources and the ability to use those resources and services (Akintola, 2021; Dube, 2023).

Thus, effectively designed library service instructions can alleviate anxiety among adult learners and empower them to access the requisite learning resources to enable them to learn better. Libraries can offer a range of services to entice students to attend and make good use of their resources. Offering cutting-edge technology resources like computer terminals, digital archives, and high-speed internet is a crucial strategy since it has been demonstrated that they draw in tech-savvy pupils (Kumar & Singh, 2019). Libraries can also provide individualised services that help students develop critical academic abilities, such as research support and information literacy training courses (Tella et al., 2017). In order to accommodate a range of learning styles, Bhatti (2018) highlights the significance of establishing a warm and inviting atmosphere with specific areas for both solitary study and group conversations. Additionally, to promote a feeling of community and academic engagement, libraries can hold activities like book clubs, exhibitions, and scholarly seminars (Ezennia & Obi, 2020). Another important factor in encouraging students to visit the library is improved access to online databases and longer hours, particularly during test times (Okiki, 2020). When combined, these tactics turn libraries into thriving hubs for cooperation and learning. Students often express interest in additional services that enhance their library experience, reflecting a growing need for modernisation and convenience. The inclusion of computers, printers, and scanners is particularly valued, as highlighted by Kumar and Singh (2019), who noted that such facilities support students in completing assignments and conducting research. The availability of updated textbooks and e-books is also crucial, enabling students to access the latest academic content (Tella et al., 2017).

Providing amenities such as water dispensers promotes comfort and encourages longer study periods (Bhatti, 2018). Displaying a list of available books on noticeboards or digitally can improve resource accessibility, ensuring students are aware of the library's offerings (Ezennia & Obi, 2020). Reliable internet and Wi-Fi connections are essential in today's digital age, facilitating seamless access to online resources (Okiki, 2020). Assistance in navigating the library website can further boost usability and ensure that students make the most of digital catalogues and databases. Lastly, extending library hours to include weekends accommodates diverse schedules and increases accessibility for all students (Kumar & Singh, 2019). Implementing these services would significantly enhance the library's appeal and functionality. Encouragement to the librarians from the administration of the university boosts their morale and inspires them to perform innovative services to assist the end-users (Venturella & Breland, 2019). The positive role of the organizations for the betterment of library staff proves useful in the attainment of professional objectives (Anyim, 2021). Pawirosumarto et al. (2017) claimed that the efficient performance of library staff depends upon the level of motivation toward the job and guidance. Kaba (2017) described that the individual freedom of library professionals provides impactful work output. Khoreva and Wechtler (2018) contended that adverse job situations led librarians toward creativity and the

adoption of emerging tools to serve the community. Nawoselng'ollan and Roussel (2017) emphasized sincere leadership to influence library staff to enhance performance through innovative efforts happily. Idiegbeyan (2019) observed that motivated librarians produced better results through significant contributions than demotivated library professionals.

Ghaffari et al. (2017) revealed that there is a significant positive connection between motivation and innovative job performance. Anasi (2020) reported in his study that there is a positive connection between the low stress of academic librarians and high performance because increased job satisfaction produces expected goals that are shaped by top-level management and leadership. Albrow and McElfresh (2021) conducted a study on employee organization relations in academic libraries and suggested that a pleasant work environment should be maintained to receive diverse services from the library staff. The literature on improving the quality of service in university libraries highlights various strategies aimed at enhancing user satisfaction, accessibility, and the overall effectiveness of library services. A key aspect of improving service quality is the adoption of technology, particularly digital libraries and automated systems, which allow for greater access to resources and improve operational efficiency (Acheampong & Amponsah, 2018). Many academic libraries have integrated online databases, e-books, and journal subscriptions to provide remote access to students and faculty members, reducing the limitations imposed by physical collections (Mensah & Osei, 2020). Additionally, user-centred approaches, such as gathering feedback and conducting needs assessments, have proven effective in aligning library services with user expectations, ensuring that resources are relevant and accessible (Darko & Fosu, 2019).

Staff development is another critical area, as well-trained personnel contribute to better service delivery and user engagement. Continuous professional development programmes focusing on customer service, technology skills, and library management are essential for maintaining high service standards (Kwame & Baah, 2020). The literature also emphasises the importance of physical infrastructure in enhancing the library experience. Comfortable study areas, modern furniture, and sufficient internet connectivity are crucial to creating a conducive learning environment (Agyemang & Dzandu, 2017). Moreover, strategic collaboration between libraries and academic departments ensures that the library's collection and services are aligned with the institution's curriculum and research needs (Owusu-Ansah & Mohammed, 2021). Finally, the implementation of information literacy programmes helps equip students with the necessary skills to navigate library resources effectively. Such programmes are designed to teach students how to access, evaluate, and use information ethically, which is essential for academic success (Asare, 2019). Together, these strategies underscore the comprehensive approach needed to improve service quality in university libraries, particularly in resource-constrained settings like Ghana.

3. Research Methods

Research design

Descriptive survey design using quantitative paradigm was adopted for the study. Survey research design was used for the study because surveys have been identified as making it possible to collect large amounts of data from a sizeable population in a highly economical way (Saunders, et al., 2016). The design was considered appropriate for the study as it enabled the questionnaires to be administered to participants with ease.

Study population

Population refers to the complete set of cases or group members a researcher is interested in according to (Romm & Ngulube, 2015; Saunders, et al, 2016). The population of the study was made up of students from the five faculties at the technical university in focus. These were Faculty of Applied Science and Technology (FAST), Faculty of Built and Natural Environment (FBNE), Faculty of Health and Allied Sciences (FHAS), Faculty of Engineering (FOE) as well as Faculty of Business & Management Studies (FBMS). The rationale was that all the students from all the faculties accessed the library.

Sampling and sample size

Sampling provides a valid alternative to a census when it would be impracticable to survey the entire population, or when budget constraints or time constraints prevent the researcher from surveying the entire target population for the study (Saunders et al, 2016). Convenient sampling technique was adopted for the study. The study distributed 100 copies to the identified population for the study. Out of the 100 copies, 60 copies were retrieved valid for analysis.

Data collection instrument

Questionnaire was the instrument adopted for the study. The researchers designed their own questionnaire based on the objectives of the study. The variables were measured using the Likert Scale five-point measurement scale. The questionnaire was divided into sections, section A-demographic while sections B, C & D covered the objectives of the study. Sample of the questionnaire is attached as appendix A.

Data collection procedure

Convenient sampling was adopted to distribute the questionnaire to the respondents. The researchers distributed the protocols to the students who visit to the library. The respondents were given tags indicating a specific number to avoid duplication and multiple selection of respondents. Researchers provided boxes at vantage points for the collection of the questionnaire.

Ethical consideration

The researchers sought permission from the research and quality assurance directorate of the university in focus to collect the data from the participants. The principles of confidentiality of information were strictly adhered to. In this instance, no information provided during the period of data collection was divulged, and no participant was forced to provide information and data against their wish (Saunders et al, 2016).

Data analysis

The data collected was cleaned and sorted out. This was executed to match the objectives of the study. IBM SPSS version 26 data analysis software was used for quantitative data matrices (Ngulube, 2023). Data from survey questionnaires was integrated into themes to get a more comprehensive picture of the results. The results were presented using Tables with frequency and descriptive statistics such as mean and standard deviation.

4. Results

The results of the sheds light on the gender, levels, and the faculties of respondents. It also shows results from the questionnaire developed based on the objectives for the study.

Table 4.1: Gender of Respondents

Gender	Frequency	Percent (%)
Male	36	60.0
Female	24	40.0
Total	60	100.0

Source: Survey data, 2024.

Table 4.1 shows the gender of respondents with the majority being 36 respondents constituting 60.0% of the total respondents being male students. This was followed by 24 respondents as female students constituting 40.0% of the total population. This implies that the majority of the respondents for the study were male students

Table 4.2: Level of Respondents

Level	Frequency	Percent (%)
200	22	36.7
300	20	33.3
100	14	23.3
400	4	6.7
Total	60	100.0

Source: Survey data, 2024.

Table 4.2 shows the range of the level of the respondents with the majority being 22 respondents constituting 36.7% of the total respondents being level 200 students. This was followed by 20 respondents as level 300 students constituting 33.3% of the total population. At third place was 14 respondents from level 100 which also constitutes 23.3% and 4 respondents from level 400 constituting 6.7% came last. This implies that the majority of the respondents for the study were continuing students in level 200 and 300.

Table 4.3: Faculty of Respondents

Faculty	Frequency	Percent
FAST	20	33.3
FBNE	20	33.3
FHAS	10	16.7
FOE	6	10.0
FBMS	4	6.7
Total	60	100.0

Source: Survey data, 2024.

Table 4.3 reveals the various faculties of the respondents for the study. The study reveals that the majority of the respondents were from Faculty of Applied Science and Technology (FAST) and Faculty of Built and Natural Environment (FBNE) with a total of 20 respondents constituting 33.3% respectively of the total population of the study. This was followed by Faculty of Health and Allied Sciences (FHAS) with a total of 10 respondents constituting 16.7% of the total population. Again, 6 respondents constituting 10.0% from the Faculty of Engineering (FOE) and 4 respondents constituting 6.7% from the Faculty of Business & Management Studies (FBMS). This reveals that the majority of the respondents were from the FAST and FBNE with a total of 20 respondents which constitutes 33.3% respectively.

Objective 1. Perception of Quality of Services at the University Library

With regards to the objective one, the respondents were asked to provide information on the purposes of visiting the library, factors encouraging students to visit the library and personal experience(s) with the library staff when they visit the library,

Table 4.4: Purpose of visiting the library

Statement	Mean	Std. Deviation
For pleasure	4.3667	2.76152
For personal interest	3.6500	2.07344
Reading of my notes/learning	3.0667	1.10264
Access to internet	2.0833	1.02992
Total	13.1667	6.96752

Source: Survey data, 2024, M=Mean, SD=Standard Deviation

Table 4.4 reveals the various purposes the respondents visit the library. The study revealed that majority of the respondents visited the library for pleasure with an M of (4.3667) and SD of (2.76152). This was followed by those who visited for personal interest with an M of (3.6500) and SD of (2.07344). At third place was those visited the library for reading of my notes/learning with an M of (3.0667) and SD of (1.10264) and those who visited the library for access to internet with an M of (2.0833) and SD of (1.02992) came last. The results revealed that among the variables measured, most of the respondents visited the library for pleasure whereas others visited for personal interest.

Table 4.5: Adequacy of library materials

Statement	Mean	Std. Deviation
Enough	3.6833	1.18596
Many	3.3333	1.54773
Too old	3.2500	1.17351
Few	2.8667	1.08091
Too few	2.7667	1.15519
Total	15.9	6.1433

Source: Survey data, 2024, M=Mean, SD=Standard Deviation

Table 4.5 illustrates the adequacy of library materials in the library. With respect to the adequacy of library materials in the library, the variables measured were, enough, many, too old, few, and too few. Among the variables measured, enough with an M of (3.6833) and SD of (1.18596) came first and was followed by many with an M of (3.3333) and SD of (1.54773). Again, too old with an M of (3.2500) and SD of (1.17351) came third whereas few with an M of (2.8667) and SD of (1.08091) came fourth. Also, too few came last with an M of (2.7667) and SD of (1.15519). The results revealed that, among the variables measured, it could be stated that the resources / materials in the library are enough with some old copies.

Table 4.6: Services to encourage students to visit the library

Statement	Mean	Std. Deviation
Fix internet cables	4.3667	2.76152
Current textbooks	3.3667	1.48400
Internet/Wi-Fi	3.6500	2.07344
Assistance to students	3.2833	1.34154
Photocopying services	3.0667	1.10264
Extension of closing hours	2.4667	1.26848
Orientation sessions	2.4500	1.06445
Book club meetings	2.0833	1.02992
Total	24.7334	12.11897

Source: Survey data, 2024, M=Mean, SD=Standard Deviation

Table 4.6 revealed the strategies that can help encourage students to visit the library. With regards to encouraging students to visit the library, the variables measured were, fix internet cables, internet/wi-fi, current textbooks, assistance to students, photocopying machine, extension of closing hours, orientation session, and book club meetings. Among the variables measured, fix internet cables with an M of (4.3667) and SD of (2.76152) came first and was followed by current textbooks with an M of (3.3667) and SD of (1.48400). internet/Wi-Fi with an M of (3.6500) and SD of (2.07344) came third and assistance to students with an M of (3.2833) and SD of (1.34154) was fourth. Again, this was followed by photocopying machine with an M of (3.0667) and SD of (1.10264) came fifth whereas extension of closing hours with an M of (2.4667) and SD of (1.26848) came sixth. Also, orientation session came seventh with an M of (2.4500) and SD of (1.06445) and Book club meetings with an M of (2.0833) and SD of (1.02992) came last. The results revealed that among the variables measured, fix internet cables, internet/Wi-Fi and current textbooks were the major issues that respondents believe can encourage students to visit the library.

Table 4.7: Personal experience(s) with the library staff

Statement	Mean	Std. Deviation
Helpful/interactive	4.3667	2.76152
Supportive	3.6500	2.07344
Humble	3.2833	1.34154
Calm	2.4500	1.06445
Friendly	2.2333	1.15519
Unfriendly	2.1500	.95358
Excellent	2.0833	1.02992
Aggressive with laws governing the library	1.8833	.88474
Total	22.0999	11.26438

Source: Survey data, 2024, M=Mean, SD=Standard Deviation

Table 4.7 revealed the personal experience(s) with the library staff by the respondents. With focus on personal experience(s) with the library staff, the variables that were measured were, helpful/interactive, supportive, humble, calm, friendly, unfriendly, excellent, and aggressive with laws governing the library. Among the variables measured, majority of the respondents revealed that the library staff are helpful/interactive with an M of (4.3667) and SD of (2.76152). Also, this was followed by the staff being supportive with an M of (3.6500) and SD of (2.07344). At third place was humble with an M of (3.2833) and SD of (1.34154) and calm with an M of (2.4500) and SD of (1.06445) at fourth place. Again, friendly came fifth with an M of (2.2333) and SD of (1.15519). At sixth place was unfriendly with an M of (2.1500) and SD of (.95358). Excellent with an M of (2.0833) and SD of (1.02992) came at seventh place and lastly, aggressive with laws governing the library came eighth with an M of (1.8833) and SD of (.88474). The results revealed that, the library staff are helpful and interactive, supportive and humble, calm, friendly, accommodating but not bias in the process of providing services to the users/ students.

Objective 2. Strategies of Improving Quality Services at the University Library

With regards to the objective two, the focus was on strategies of improving the quality of services at the university library, the respondents were quizzed on issues of strategies of improving the quality of services in the library and additional useful strategies on improving service quality in library.

Table 4.8: Improving the quality of services in the library

Statement	Mean	Std. Deviation
Sufficient good chairs	4.3667	2.76152
Providing adequate computers	4.3667	2.76152
Increasing the internet services/Wi-Fi	3.2833	1.34154
Availability of resources for staff	2.4667	1.26848
User surveys of services	2.4667	1.26848
Textbooks current and updated	2.0833	1.02992
Lightening external and internal	2.0833	1.02992
Solicit feedback from users	2.0833	1.02992
Total	23.2	12.4913

Source: Survey data, 2024, M=Mean, SD=Standard Deviation

Table 4.8 revealed the strategies of improving the services at the university library. The variables were measured were, good chairs(more), provide computers, internet services/wi-fi, availability of resources for staff, surveys, textbooks (current version), lightening, and solicit feedback from users. Among the variables measured, good chairs(more) and provide computers came first with an M of (4.3667) and SD of (2.76152) respectively. This was followed by internet services/Wi-Fi with an M of (3.2833) and SD of (1.34154) came third. Availability of resources for staff with an M of (2.4667) and SD of (1.26848) came fourth whereas surveys with an M of (2.4667) and SD of (1.26848). This was followed by current and updated textbooks with an M of (2.0833) and SD of (1.02992) and lightening with an M of (2.0833) and SD of (1.02992) came sixth. At last place was solicit feedback from users with an M of (2.0833) and SD of (1.02992). The results revealed that, among the various variables measured, good chairs(more), provide computers and internet services/Wi-Fi were the most influential strategies that the users prefer to be introduced to improve the quality of services at the university library.

Table 4.9: Additional strategies of improving university library services

Statement	Mean	Std. Deviation
Providing computers, printers and canners	4.3667	2.76152
More current textbooks	3.6500	2.07344
More E-books	3.6500	2.07344
Water dispenser	3.0667	1.10264
List of books on notice boards/website	2.4500	1.06445
Off campus access	2.4500	1.06445
Help to navigate the library website	2.2333	1.15519
Weekend openings	2.1500	.95358
Total	24.0167	12.24871

Source: Survey data, 2024, M=Mean, SD=Standard Deviation

Table 4.9 depicts the additional services the respondents would like to be added to the existing services of the library. With respect the additional services the respondents would like to be added to the existing services of the library, the variables measured were, providing computers/printers/scanners, current textbooks, e-books, water dispenser, list of books on notice boards, internet/wi-fi, help to use library website. Among the various variables measured, providing computers/printers/scanners came first with an M of (4.3667) and SD of (2.76152) whiles Textbooks(new) and E-books followed with an M of (3.6500) and SD of (2.07344) came second respectively. Furthermore, water dispenser followed with an M of (3.0667) and SD of (1.10264) and list of books on notice board with an M of (2.4500) and SD of (1.06445) came fifth. This was also followed by off campus access with an M of (2.4500) and SD of (1.06445) sixth. Next, help to use library website with an M of (2.2333) and SD of (1.15519) seventh and last was weekend opening with an M of (2.1500) and SD of (.95358). The results revealed that, among the variables measured, providing computers, printers, scanners, current textbooks and E-books were the other services the respondents would like to be added to the services of the university library.

Objective 3: User Satisfaction with the Library Services

With regards to the objective three which focus on how satisfied the respondents were with the quality of services provided. The respondents were questioned on the opening hours of the library as well as the overall satisfaction with the quality of services provided.

Table 4.10: Satisfied with the opening hours of the library

Statement	Mean	Std. Deviation
Very satisfied	2.6667	1.34878
Satisfied	2.6167	1.36657
Indifferent	2.5667	1.40660
Dissatisfied	2.2667	1.23325
Very dissatisfied	1.9833	1.32117
Total	12.1004	6.67637

Source: Survey data, 2024, M=Mean, SD=Standard Deviation

Table 4.10 revealed how satisfied the respondents were with the opening hours of the library. Among the variables measured, very satisfied with an M of (2.6667) and SD of (1.34878) came first. This was followed by satisfied with an M of (2.6167) and SD of (1.36657). Also, indifferent came next with an M of (2.5667) and SD of (1.40660). In the same regard, dissatisfied came fourth with an M of (2.2667) and SD of (1.23325) and very dissatisfied came last with an M of (1.9833) and SD of (1.32117). The results revealed that, among the variables measured, very satisfied, satisfied and indifferent were the most influential variables of the study.

Table 4.11: User satisfaction of quality of services in the library environment

Statement	Mean	Std. Deviation
Furniture and furnishing	3.3667	1.48400
Access to the internet	3.2833	1.34154
Lending	3.0667	1.10264
Lighting System	2.4667	1.26848
Size of the library	2.4500	1.06445
Photocopying	2.2333	1.15519
Information and research services	2.1500	.95358
Electronic information and resources	1.8833	.88474
Total	20.9	9.23547

Source: Survey data, 2024, M=Mean, SD=Standard Deviation

Table 4.11 revealed the how satisfied the respondents are with the services of the university library. With regards to services satisfaction by user on university library services, the various variables that were measured were furniture and furnishing, access to the internet, lending, lighting system, size of the library, photocopying, information and research services, and electronic information and resources. very satisfied, satisfied, indifferent, dissatisfied, very dissatisfied were used as a gauge for the responses. Among the various variables measured, furniture and furnishing with an M of (3.3667) and SD of (1.48400) came first whereas access to the internet with an M of (3.2833) and SD of (1.34154) came second. Furthermore, lending followed with an M of (3.0667) and SD of (1.10264) and at fourth place was lighting system with an M of (2.4667) and SD of (1.26848). This was also followed by size of the library with an M of (2.4500) and SD of (1.06445) at fifth place. Again, photocopying with an M of (2.2333) and SD of (1.15519) followed in sixth place and information and research services came seventh with an M of (2.1500) and SD of (.95358) and at the last place was electronic information and resources with an M of (1.8833) and SD of (.88474). The results revealed that, among the variables measured, furniture and furnishing, access to the internet, and lending were the most influential variables measured in the study.

5. Discussion

The purpose of the study was an assessment of strategies of improving the quality of services in a technical university library in Ghana. Majority of the gender for the study were male, thus, 36 respondents constituting 60.0% of the total respondents and female being 24 respondents constituting 40.0% of the total population. The study's respondents were primarily level 200 students, comprising 36.7% (22 respondents) of the total, followed by level 300 students at 33.3% (20 respondents). Level 100 students accounted for 23.3% (14 respondents), while level 400 students were the least represented at 6.7% (4 respondents). This indicates that the majority of respondents were continuing students in levels 200 and 300. Regarding faculties, the largest groups were from the Faculty of Applied Science and Technology (FAST) and the Faculty of Built and Natural Environment (FBNE), each contributing 33.3% (20 respondents) of the total sample size. The Faculty of Health and Allied Sciences (FHAS) followed with 16.7% (10 respondents), while the Faculty of Engineering (FOE) and the

Faculty of Business & Management Studies (FBMS) accounted for 10.0% (6 respondents) and 6.7% (4 respondents), respectively. The findings highlighted that FAST and FBNE had the highest representation among respondents.

5.1 Perception of Quality of Services at the University Library

With regards to the objective one, the respondents were asked to provide information on the purposes of visiting the library, factors encouraging students to visit the library and personal experience(s) with the library staff when they visit the library. The result suggest that while leisure-related activities dominate library visits, academic purposes such as reading notes/learning are also significant, albeit less so. Accessing the internet was ranked lowest, indicating a gap in library infrastructure or users' preference for external sources of connectivity. The findings align with Tella et al. (2017), who assert that libraries support diverse user needs ranging from academic to leisure activities, as well as Kumar and Singh (2019), who emphasise libraries' collaborative and social role. Table 4.5 highlights the importance of technological infrastructure, with fixing internet cables and providing internet/Wi-Fi emerging as the top strategies. Textbooks and assistance to students also ranked highly, suggesting a dual emphasis on improving physical resources and user support. Strategies such as photocopying machines and book club meetings were ranked lower, indicating lesser interest in these areas. The prioritisation of technology is consistent with Kumar and Singh (2019), who highlight the appeal of cutting-edge resources, and Ezennia and Obi (2020), who advocate for engaging activities to foster a sense of community (Ezennia & Obi, 2020; Kumar & Singh, 2019). Table 4.5 reveals that respondents' interactions with library staff were largely positive, with helpfulness/interaction and supportiveness as the most notable experiences. Conversely, experiences such as aggression with library rules ranked lowest. These findings suggest that library staff generally enhance users' experiences, with notable room for improvement in addressing perceptions of strictness.

5.2 Strategies for Improving Library Services

The top-rated strategies for improvement in Table 4.7 include providing more chairs and computers. Internet services/Wi-Fi and availability of resources for staff were also highlighted as key areas. This indicates a preference for infrastructural improvements over softer strategies, such as soliciting user feedback. Acheampong and Amponsah (2018) emphasise the importance of such measures for enhancing operational efficiency, while Mensah and Osei (2020) underscore the role of digital resources in reducing physical limitations (Acheampong & Amponsah, 2018; Mensah & Osei, 2020). According to Table 4.8, the addition of computers, printers, scanners was the most requested service, followed by new and current textbooks and e-books. Other services such as water dispensers and weekend opening were less emphasised. Physical infrastructure, such as comfortable reading spaces, modern furniture, and reliable internet connectivity, plays a crucial role in enhancing user experiences (Acheampong & Amponsah, 2018; Owusu-Ansah & Mohammed, 2021). This highlights a focus on technological and academic resources over auxiliary services. Table 4.9 shows that the majority of respondents considered the library materials to be sufficient. This suggests it covers a considerable percentage of the programmes offered in the technical university by receiving high rankings. However, the perception of materials being "too old" reflects a need for updated resources (Agyemang & Boateng, 2021; Acheampong & Amponsah, 2018; Owusu-Ansah & Mohammed, 2021).

5.3 User Satisfaction with the Quality of Library Services

With regards to the objective three on the focus on how satisfied the respondents were with the opening hours of the library as well as the actual satisfaction with services provided, satisfaction with library hours (Table 4.10) was moderate, with "very satisfied" and "satisfied" ranking highest. Lower rankings for "very dissatisfied" suggest general acceptance, though improvements could still be made to accommodate more diverse schedules. Recent studies suggest that enhancing service quality in university libraries significantly improves user satisfaction and academic outcomes (Amanfo & Emiri, 2020; Acheampong, 2016). Table 4.11 indicates that respondents were most satisfied with furniture and furnishings and internet access. Services like electronic resources and photocopying were rated lower, suggesting areas for enhancement in digital offerings and auxiliary services (Amanfo & Emiri, 2020; Acheampong, 2016).

5.4 Comparative Insights

Across the Tables, the consistency in higher mean values for infrastructural and technological improvements highlights their critical role in enhancing library experiences. For example, fixing internet cables (Table 4.6) and providing computers (Table 4.9) align with respondents' preferences for robust technological resources (Acheampong & Amponsah, 2018). Meanwhile, positive experiences with library staff (Table 4.7) and the

adequacy of materials (Table 4.5) suggest that the library already meets basic expectations, though additional efforts in modernisation and accessibility are needed.

6. Limitations

Along with suggestions for improvement, the study offers insightful information about the goals, experiences, and satisfaction levels related to library use. However, there are a number of limitations to the study. First of all, it mostly represents the opinions of present library patrons, leaving out the opinions of non-users whose feedback may offer a more comprehensive picture of difficulties and obstacles. Second, the accuracy of responses may be impacted by biases like social desirability or recollection problems that are introduced by relying solely on self-reported data. Furthermore, the study did not investigate the underlying causes of preferences, such as the predominance of leisure-related activities over academic ones. Additionally, although the study emphasises the necessity of infrastructure and technology advancements, it skips over resource limitations and viability issues, which restricts the usefulness of the suggested tactics. Finally, because a technical university library is the sole focus of the study, the results cannot be applied to other universities with varied populations and levels of infrastructure.

7. Conclusion

In summary, this study presents a complex picture of library usage, pointing out both its advantages and disadvantages. Even while the library is a valuable resource for both academic and recreational reasons, the prevalence of leisure-related activities points to a chance to better match library services with student requirements. Though modest satisfaction with opening hours and worries about out-of-date resources point to opportunities for improvement, positive interactions with library staff and the sufficiency of items show that the library meets users' basic expectations. The results highlight how important it is to upgrade infrastructure and technology in a typical technical university library in Ghana such as adding more computers, printers, scanners, internet access, and contemporary resources, in order to increase user happiness. The library can be further positioned as a key component of student achievement by implementing tactics including expanding the availability of academic materials and improving digital offerings. The need for diversification is indicated by the lower ratings for electronic resources and auxiliary services, despite the comparatively high satisfaction levels with services like furniture and internet connection. All things considered, this study offers practical advice to direct the modernisation and optimisation of library services, guaranteeing their continued relevance and influence for a varied and changing user base.

Disclosure Statement

No potential conflict of interest was reported by the author(s).

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