

RESEARCH ARTICLE

IMPACT OF LIBRARY SERVICES, FACILITIES, AND RESOURCES ON STUDENTS' SATISFACTION AT UHAS: QUANTITATIVE ANALYSIS AND RECOMMENDATIONS

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Abstract: Surveys designed to evaluate library satisfaction are often used to measure the quality and effectiveness of the services provided to users. These assessments are essential for identifying both strengths and areas that require improvement, thereby enabling library administrators to enhance user satisfaction. This study examined the satisfaction levels of undergraduate students with the libraries at the University of Health and Allied Sciences (UHAS) to identify areas for improvement. A quantitative survey was conducted, with data collected from 273 undergraduate students. The findings revealed a general sense of dissatisfaction among students with the library services, facilities, and resources at UHAS. Additionally, there were no significant differences in satisfaction levels among students from different schools. To improve student satisfaction, it is recommended that UHAS management address the identified deficiencies in library services, facilities, and resources.

Keywords: *Library Service Quality, Facilities, Resources, Student Satisfaction.*

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INTRODUCTION

This study examined the satisfaction levels of undergraduate students with the libraries at the University of Health and Allied Sciences (UHAS), Ho, Ghana to identify areas for improvement.

Library services encompass a variety of programs and assistance designed to meet users' information and educational needs (Baldwin & James, 2017). Library facilities refer to the physical and technological infrastructure that supports these services, including study spaces, computers, and technological resources (Agyemang, 2017).

Library resources consist of all types of materials, such as print and digital content, which are essential for academic success (Oluwunmi, Durodola & Ajayi, 2016). Student satisfaction measures the extent to which these services and facilities meet students' expectations and is influenced by user experience, information literacy, and access to information (Mahmood *et al.*, 2021).

Feedback mechanisms allow users to share their opinions on library services and facilities, while digital resources enhance the accessibility and diversity of materials available (Scoulas & De Groote, 2024). Finally, service quality evaluates how effectively library offerings fulfill user requirements, significantly impacting overall satisfaction (Hossain, 2016).

In developed countries, user satisfaction surveys have become a standard practice for evaluating and enhancing library services. These surveys are crucial for identifying both strengths and weaknesses in library services, offering managers actionable insights to improve user experiences and overall satisfaction. However, this practice is not as prevalent in developing nations, where comprehensive analyses of user perceptions and satisfaction with library services are notably lacking (Boakye *et al.*, 2022). Recent research from various developing countries, including Ghana, underscores the

existing gap in library services. For example, Nyantakyi-Baah (2016) investigated how users perceive the quality of services at academic libraries within the Ghana Institute of Journalism and Ashesi University College. The study found that students' overall satisfaction declined when key services, such as the availability of relevant materials, reliable internet access, and positive interactions with staff, were lacking.

The availability of up-to-date and relevant materials was identified as the most critical factor influencing service quality. Likewise, Tetteh and Nyantakyi-Baah (2019) examined user satisfaction to assess the value of academic libraries in Ghana, reporting general satisfaction but identifying areas in need of further improvement. Their study highlighted the importance of reducing information overload and improving customer service.

Moses *et. al.* (2016) reinforced the necessity of annual user surveys, which are essential for obtaining feedback and improving library services. They noted that sharing survey results with library administrators is crucial for addressing user needs effectively. Becker, Hartle, and Mhlauli (2017) highlighted the role of helpful library staff in building user trust, suggesting that motivated and service-oriented staff is vital for successful library services.

Baffour-Gyau, Liu, and Kwakye (2021) found that student satisfaction was generally high regarding textbook collections and circulation services but recommended user orientation programs to help students fully utilize library resources.

Despite these insights, there is a distinct lack of research focusing on Ghana's University of Health and Allied Sciences (UHAS). No existing studies have specifically investigated student satisfaction with library services, facilities, and resources at UHAS. This gap in research provides a compelling justification for the current study. By assessing the satisfaction levels of undergraduate students at UHAS, the study aims to fill this void and offer valuable recommendations for enhancing library management and services at the university.

The main goal is to assess the extent to which UHAS library services, facilities, and

resources fulfill the needs and expectations of its undergraduate students, with the ultimate aim of enhancing the quality of library offerings and improving the overall educational experience.

Objectives of the Study

The study aimed to:

- Determine the frequency of students' visits to the UHAS library;
- Determine students' reasons for visiting the UHAS library;
- Estimate the level of satisfaction among undergraduate students regarding library services, facilities, and resources.

Hypothesis

The researchers proposed the following hypothesis:

Ho: There is no statistically significant difference in satisfaction level among students selected from the five schools regarding UHAS' library services, facilities, and resources.

Ha: There is a statistically significant difference in satisfaction level among students selected from the five schools regarding UHAS' library services, facilities, and resources.

LITERATURE REVIEW

The effective integration of traditional and digital information sources is crucial for delivering high-quality library services. Rani (2018) emphasizes that digital library services merge digital data management with communication technologies, utilizing specialized software to enhance traditional practices related to physical materials. This integration encompasses comprehensive information management processes, including collection, classification, storage, search, and dissemination.

While Rani's approach highlights the advanced capabilities of digital library services, it is essential to critically evaluate whether this integration genuinely improves the management of physical materials or merely replicates existing practices in a digital format.

Hossain (2016) and Omekwu (2016) define quality library services using four criteria:

excellence, value, attention to detail, and the capacity to meet or exceed user expectations. However, the effectiveness of these criteria within the context of rapidly evolving digital technologies requires further investigation.

The emphasis on diverse library services-including book lending, recommendation desks, information services, library catalogs, and literacy programs-is vital for attracting users, as noted by these scholars. However, a critical analysis indicates that simply offering a range of services may not suffice if these services are not continually adapted to meet the changing needs and expectations of users.

Moreover, Hossain (2016) and Omekwu (2016) underscore the importance of regular library satisfaction surveys for collecting user feedback aimed at service improvement. While this practice is valuable, it is worth questioning whether traditional survey methods adequately capture the nuanced experiences of users in the digital age. The potential limitations of these surveys in addressing the dynamic nature of user needs and expectations warrant consideration.

Overall, while the integration of traditional and digital resources is essential, a more refined strategy is necessary to assess its influence on service quality and user satisfaction. This approach should not only evaluate the success of the integration but also explore how effectively it addresses changing user needs and incorporates feedback to enhance services.

Recent studies by Banleman, Dukper, Dabontin (2024), Banleman (2023), and Baada *et. al.* (2022) highlight significant challenges in Ghanaian library services, including inadequate resources, management issues, and sustainability concerns. While these studies provide valuable localised insights, they lack broader contextualization within global best practices and are not anchored in strong theoretical frameworks.

Additionally, while these studies address challenges such as resource constraints and financial sustainability, they do not offer detailed, practical solutions, leaving significant gaps in addressing these issues. Furthermore, user perspectives, particularly

from disadvantaged groups, are underrepresented in these studies.

Future research should incorporate comparative analyses, strengthen theoretical grounding, and propose actionable strategies to enhance the relevance and applicability of findings to the broader field of library services.

The literature on library services, especially regarding the integration of digital and traditional resources, reveals critical insights and gaps relevant to the current study on "The Impact of Library Services, Facilities, and Resources on Students' Satisfaction at UHAS." Rani (2018) stresses the merging of digital data management with traditional practices, yet it remains unclear whether this integration genuinely enhances service quality or simply replicates existing practices in a digital format. Although Hossain (2016) and Omekwu (2016) define quality services through excellence, value, attention to detail, and user satisfaction, their criteria require further evaluation in the context of evolving digital technologies.

The studies also emphasize the importance of a diverse range of services and regular feedback through surveys. However, the literature does not adequately address how effectively these services adapt to changing user needs, particularly in a digital age, nor does it explore whether traditional survey methods sufficiently capture user experiences.

Additionally, localized studies from Banleman, Dukper, Dabontin (2024), and Baada *et. al.* (2022) identify challenges such as inadequate resources and financial sustainability in Ghanaian libraries but provide limited practical solutions.

Several research gaps emerge from the literature review. First, there is a need to critically assess whether the integration of digital and traditional library services enhances service quality or merely digitises existing practices. Additionally, the effectiveness of Hossain's and Omekwu's criteria for quality library services within the context of evolving digital technologies requires further exploration. Furthermore, research should focus on how library services adapt to changing user expectations,

particularly whether existing feedback mechanisms, such as traditional surveys, effectively capture nuanced user experiences. The literature also lacks actionable strategies to address the challenges faced by libraries, such as resource constraints and financial sustainability, while underrepresenting the perspectives of disadvantaged user groups. Addressing these gaps can significantly enhance our understanding of how integrated library services impact student satisfaction and improve feedback mechanisms for better service quality at UHAS.

Library Facilities

A library is fundamentally designed to create a comfortable and conducive environment for reading and studying. Baada *et. al.* (2019) identify key elements, including reading tables, seating, shelves, library space, computers, air conditioning, and lighting, as essential components of this environment. The incorporation of modern e-learning facilities, such as internet access, radio, and television, is highlighted by Ramanjaneya (2017) as enhancing the learning experience by broadening resource availability.

In Ghanaian libraries, Agyemang (2017) emphasizes the critical role of facility quality in ensuring user satisfaction. Alam (2020) further supports this notion, suggesting that libraries should provide a diverse range of amenities to cater to varying user needs, positing that traditional resources like reading desks and computers remain vital for effective library services.

Moses, Olaleke, and Oluwafunmilayo (2016) categorise university library services into homepage services, basic services, and ancillary services. Basic services encompass the library's webpage, user instruction programs, and online catalogs, while ancillary services include instructional signage, operational hours, and browsing areas. Mahmood *et. al.* (2021) note that these services are integral to students' academic success, significantly impacting their ability to complete coursework and presentations.

Despite Baada *et. al.* (2019)'s comprehensive listing of physical amenities, the rapid advancement of digital resources necessitates a broader evaluation of what constitutes essential library services today. Ramanjaneya (2017) underscores the need

for libraries to evolve technologically to maintain relevance in a digital age.

Agyemang (2017) and Alam (2020) stress the importance of high-quality facilities in Ghanaian libraries but do not fully address critical dimensions such as staff competency and the integration of digital resources. As user expectations shift, libraries must balance traditional amenities with innovative services to meet contemporary needs.

While Moses, Olaleke, and Oluwafunmilayo (2016)'s categorization of university library facilities provides a structured framework, this approach could benefit from incorporating user feedback mechanisms and adaptive service models to better respond to evolving user demands. Additionally, although Mahmood *et. al.* (2021) link library services to academic performance, further research is necessary to investigate how these services align with user expectations.

Overall, the literature highlights the complexity of library services and advocates for a holistic approach that integrates both physical and digital resources. Future research should explore the interaction between traditional facilities and emerging digital services to develop comprehensive strategies for enhancing user satisfaction.

The literature emphasises the importance of both traditional amenities and modern digital resources in fostering a conducive learning environment essential for student satisfaction. However, there is a notable gap in understanding how physical and digital resources interact and how libraries can strategically adapt their services to improve user satisfaction. This gap is crucial for the current research on the impact of library services, facilities, and resources on student satisfaction at UHAS, indicating a need for comprehensive studies that address these dynamics.

Library Resources

The literature on library resources underscores the extensive range of materials available, including documents, databases, electronic books, journals, and multimedia content. Digitised materials, which involve converting various formats into digital forms, constitute a significant component of this array (Oluwunmi, Durodola, & Ajayi, 2016).

However, access to these digital resources is uneven; while some materials are freely available, others are restricted due to operational, cost, and validation issues, creating disparities that can adversely affect user experience and satisfaction (Oluwunmi, Durodola & Ajayi, 2016).

Dadzie and Van Der Walt (2015) discuss the challenges faced by part-time and full-time students in Ghana, who often struggle to access physical libraries due to time constraints. These students express a clear preference for e-resources, highlighting the necessity for libraries to expand and enhance their digital collections.

Supporting this perspective, Asogwa, Ugwu, and Ugwuanyi (2015) argue that the convenience and extensive information provided by e-resources make them particularly effective for students. The ability to access digital resources from various locations and at any time offers notable advantages, including simultaneous access for multiple users, efficient storage, and space-saving benefits.

Baada *et. al.* (2019) highlight the wide variety of resources libraries offer, including electronic journals, books, newspapers, and databases, all of which play a key role in expanding knowledge and meeting user needs.

However, the literature lacks discussion on potential obstacles to accessing these digital resources, such as limitations in technological infrastructure, digital literacy, and financial challenges. In higher education, digital resources are primarily utilized for educational and research purposes (Baada, Baayel, Bekoe & Banbil, 2019).

Gathoni and Van der Walt (2019) further support this by emphasising the range of online resources available in libraries, including electronic databases, journals, books, newspapers, and institutional repositories. Despite their crucial role in academic research and education, there is a notable gap in the literature regarding how effectively these resources address the unique needs of various user groups within academic settings.

While the advantages of digital resources are well-documented, there is a significant gap in

understanding their impact on academic performance and user satisfaction. Additionally, existing literature inadequately addresses the role of library staff in facilitating access to and promoting the effective use of digital resources. There is a demand for more in-depth research that evaluates user satisfaction and the quality of digital library services across different educational environments.

Scoulas and De Groot (2024) provide valuable insights into how academic library resources support faculty research productivity, emphasising the importance of digital resources such as databases and e-journals. The study's strengths include its empirical focus on faculty needs, comprehensive resource assessment, and mixed-methods approach.

However, it has notable gaps, including insufficient global contextualisation, underrepresentation of physical resources, and a lack of analysis on barriers to resource access and interdisciplinary differences in resource use. Future research should address these gaps by exploring access barriers, user diversity, and the balance between digital and physical resources to optimise library services and satisfaction.

Nnenda's (2022) study offers insights into the provision of library services and the utilisation of resources by undergraduate students in federal universities in South-South Nigeria, emphasising the significance of available resources and staff support in shaping user experience.

While the study comprehensively evaluates traditional library services, it lacks a deeper exploration of digital resources and does not adequately address challenges hindering resource utilisation, such as poor infrastructure and internet access. Furthermore, the absence of comparative analysis and practical recommendations limits its broader applicability.

Nonetheless, the study is relevant for understanding the impact of library services on student satisfaction, particularly in developing countries, and could serve as a basis for further research in similar contexts.

While the existing literature highlights the benefits and growing importance of digital

library resources, it reveals several critical gaps. Future research should focus on barriers to digital resource access, the effectiveness of these resources in meeting diverse user needs, and the role of library staff in supporting digital resource utilisation. Addressing these gaps will contribute to a more comprehensive understanding of how to optimise library services in the digital age.

The literature highlights the significance of digital library resources but reveals critical gaps in understanding access barriers, the effectiveness of these resources in meeting diverse user needs, and the role of library staff in facilitating their use. There is a need for further research that explores these dimensions, especially considering the unique challenges faced by different user groups in academic settings. Addressing these gaps will enhance our understanding of how library resources can be optimised to improve user satisfaction and overall service quality in the digital age.

REVIEW OF STUDENTS' SATISFACTION ON LIBRARY RESOURCES, FACILITIES AND SERVICES

The literature underscores the crucial role of libraries in providing environments conducive to reading and information access, which significantly influences user satisfaction (Baada, Baayel, Bekoe & Banbil, 2019). Essential facilities such as reading tables, seating arrangements, shelves, and digital amenities like computers and internet access contribute to this environment. The role of electronic media in expanding learning and engagement opportunities is also noted (Ramanjaneya, 2017).

User satisfaction in libraries is a complex phenomenon influenced by several factors, including the quality of resources, the effectiveness of information systems, and service accessibility (Amin *et al.*, 2017). Satisfaction is achieved when these factors meet or exceed user expectations (Tiemo *et. al.*, 2016).

Thuannadee (2023) emphasises that user satisfaction improves when library facilities align with user expectations, highlighting the importance of well-maintained and relevant resources. Kaushamalika and Weerakoon

(2020) further corroborate this by noting that users express higher satisfaction when libraries offer well-organised materials and employ competent staff, thus underscoring the importance of human resources in enhancing user experiences.

The physical design and environment of libraries also play a significant role in user satisfaction. Baffour-Gyau, Liu, and Kwakye (2021) observed that library space design can impact user behavior and emotions, which aligns with Walton and Leahy's (2013) findings on users' preference for quiet study areas. Tiemo and Ateboh (2016) argue that a clean, quiet environment promotes user satisfaction by facilitating uninterrupted communication and concentration.

Timeliness and quality of service are additional critical factors affecting user satisfaction. Hossain (2016) highlights that prompt and courteous service from library staff is crucial for positive user experiences. Becker, Hartle, and Mhlauli (2017) found that users value staff who provide personal attention and display confidence.

The appropriateness and availability of library collections play a crucial role in determining user satisfaction. Hossain (2016) found a positive link between the satisfaction of users and the adequacy of library resources and services. Joy and Idowu (2014) noted that individuals often visit libraries to borrow books, access e-journals, and read newspapers, emphasizing the need for varied and easily accessible collections.

However, several gaps in the literature are evident. Oluwunmi, Durodola, and Ajayi (2016) and other studies (Moses *et. al.*, 2016; Joy and Idowu, 2014) reveal persistent dissatisfaction with research journals and library facilities, indicating an ongoing issue with outdated or inadequate resources that fail to meet evolving user needs in the context of modern technology (Hossain, 2016).

Alam (2020) further highlights user dissatisfaction with specific aspects of library collections, such as audio-visual materials and Internet services, suggesting that libraries have not fully adapted to shifting user expectations. Joy and Idowu (2014) argue that without high-quality facilities,

resources, and services, libraries struggle to meet user expectations and maintain perceived efficiency.

Baada *et. al.* (2019) and Ramanjaneya (2017) discuss the importance of both traditional and digital library services, yet there is a lack of research on effectively integrating these services. There is a need for studies that explore the challenges and best practices in merging digital resources with traditional amenities. Agyemang (2017) and Alam (2020) focus on facility quality but offer limited exploration of integrating user feedback into service design, indicating a need for dynamic feedback mechanisms for continuous improvement.

Moses, Olaleke, and Oluwafunmilayo (2016) categorise services but overlook the impact of digital transformation on user satisfaction, highlighting the necessity of understanding how digital services affect user perceptions and engagement.

Mahmood *et al.* (2021) recognise the importance of library staff but neglect the need for training in the digital era. Research should identify the skills required for supporting both traditional and digital services. Ramanjaneya (2017) highlights the benefits of e-learning resources but lacks detailed analysis of user engagement, indicating the need for studies on how users interact with e-learning tools to enhance satisfaction.

The current literature often focuses on isolated components of library services, suggesting a need for comprehensive models that assess overall service effectiveness. Furthermore, the literature is predominantly region-specific, such as focusing on Ghana, and lacks comparative studies across different developing countries that could reveal unique challenges and successful strategies.

Most current research offers only brief overviews of user satisfaction, highlighting the need for longitudinal studies that monitor trends over time and assess the lasting effects of service enhancements. Filling these gaps demands a user-focused, thorough, and comparative strategy to improve library services across both traditional and digital platforms.

Problem Statement

University libraries are vital for academic success, providing undergraduate students with a variety of resources and services such as research materials, study spaces, technological support, and librarian expertise. The impact of these services can greatly affect students' academic performance, research abilities, and overall satisfaction with their educational journey.

Nevertheless, there is a significant gap in understanding how undergraduate students view and feel about the various library services, facilities, and resources. This lack of detailed insight impedes efforts to optimize library resources, facilities, and services to better align with student needs and expectations. A thorough examination of undergraduate students' satisfaction with university library services, resources, and facilities is crucial. This study aims to pinpoint areas needing improvement, enhance the overall quality of library offerings and, in turn, enrich the educational experience for undergraduate students.

METHODOLOGY

Research Design

To meet the objectives of the study, a survey methodology was utilised, employing a structured questionnaire to collect data from Level 400 undergraduate students who are registered users of the UHAS library. The research followed a quantitative approach rooted in a positivist framework, emphasizing objectivity and realism. Positivism seeks to generalize findings, predict outcomes, and establish cause-and-effect relationships, with the quality of research evaluated through internal and external validity, replicability, and reliability (Scotland, 2012).

The study assumes that all registered undergraduate students using UHAS library services, resources, and facilities are conscious of the factors affecting their satisfaction or dissatisfaction. A cross-sectional descriptive design was applied, involving the collection of data from the academic library's natural setting at a single point in time without any manipulation of the environment. This method allowed for comprehensive insights into students' interactions with library services, facilities, and resources (Grove *et. al.*, 2015).

The focus was placed on Level 400 undergraduate students from the five schools at UHAS to gain a detailed understanding of their library experiences.

Setting

The research was conducted at the University of Health and Allied Sciences in Ho. Since its establishment in January 2013, the UHAS Library has continually grown its collections, encompassing both print and digital resources. The library provides a variety of services, including reference assistance, information services, information literacy instruction, lending of resources, library orientation, and general support to the UHAS community.

The main library is situated on the Sokode Lokoe campus, with supplementary satellite libraries at the Southern Campus and the Fred Newton Binka School of Public Health in Hohoe. The UHAS library features a collection of over 6,000 printed monographs and a range of subscribed online and digital resources across fields such as Public Health, Nursing, Midwifery, Medicine, Pharmacy, Allied Health, and Basic and Biomedical Sciences. Professional staff offer guidance and training to assist with research, reference management, and information ethics.

The library's primary function is to support teaching, learning, and research activities. It holds about 6,000 volumes of monographic literature that cover all academic disciplines and maintains an array of electronic resources. The library is overseen by five professional librarians and is supported by seventeen additional staff members.

Data Collection Instrument and Procedure

Population and Sampling

In this study, the total population comprised 1,798 active registered members from five

different schools. Due to logistical challenges such as time and resource constraints, including the entire population was not feasible. To ensure the sample was representative of the larger population and yielded meaningful results, a stratified random sampling technique was employed.

This method was chosen as it allowed the population to be divided into distinct subgroups, or strata, based on specific characteristics like school or department, ensuring that all relevant groups were adequately represented and minimizing sampling bias.

A total of 273 students were selected from the 1,798, focusing specifically on Level 400 students from five major schools: Nursing and Midwifery, Allied Health Sciences, Medicine, Pharmacy, and the Fred Newton Binka School of Public Health. These students were chosen because they are nearing the end of their academic programs, making their perspectives particularly valuable for the study's objectives.

To select 300 students from the 2023 Level 400 undergraduate cohort, a non-proportionate quota sampling method was used. This approach was applied to ensure that a sufficient number of students from each school were included, regardless of their proportional size, capturing a broad range of experiences and perspectives for more comprehensive study results.

In summary, the selection of 273 participants from the total population of 1,798, with a focus on Level 400 students, was a well-considered and strategic choice. It ensured a manageable sample size while maintaining both diversity and representativeness, enabling reliable and valid conclusions to be drawn from the study. Details of this sample selection can be found in Table 1.

Table 1: Sample size

Participating Schools	Number of Participants	Percentage
School of Nursing and Midwifery	36	13.2
School of Allied Health Sciences	36	13.2
School of Medicine	168	61.5
School of Pharmacy	26	9.5
Fred Newton Binka School of Public Health	7	2.6
Total	273	100

Source: Survey data December 2023

Data Collection and Instrumentation

In this study, the main data collection instrument was a questionnaire, designed with five core sections. Out of the 300 questionnaires distributed, 273 were completed and returned, yielding a response rate of 91%. To evaluate user satisfaction with library services, facilities, and resources, the Likert scale method was used. The questionnaire was divided into four primary sections: library services, library facilities, library resources, and demographic information.

Pre-testing of Instrument

A pilot test was conducted with a group of 20 second-year undergraduate nursing students from the university. The objective was to evaluate whether the students understood the questionnaire items and to assess the

time needed to complete it. The questionnaire was found to take about 15-20 minutes to complete. Participants were invited to ask questions and provide feedback if they faced any challenges. The feedback collected during this pre-test was utilized to refine and improve the questionnaire.

Reliability and Validity

To assess the reliability of the questionnaire and ensure it met standard instrument reliability criteria, Cronbach's Alpha Coefficient was utilised. This reliability assessment measured undergraduate students' satisfaction with library services, resources, and facilities. The alpha values for library services, resources, and facilities all surpassed the minimum acceptable Cronbach's Alpha Coefficient of 0.70, as shown in Table 2.

Table 2: Test of reliability of items on the library services, resources, and facilities

Aspects of Satisfaction	Cronbach's Alpha	Number of Items
Services	0.83	19
Resources	0.98	20
Facilities	0.88	12

Source: Survey data, December 2023

Data Analysis

Descriptive and inferential statistics were utilized for data analysis, with the Statistical Package for the Social Sciences (SPSS) software providing support. Descriptive statistics examined demographic profiles, levels of student satisfaction, and evaluations of library resources and facilities. This involved calculating satisfaction percentages, as well as mean scores, medians, and standard deviations, with results displayed in tables for clarity.

The mean score, or "average," assessed student satisfaction using a scale ranging from "Very dissatisfied" (1.00-1.99) to "Very satisfied" (5.00). If the median score exceeds the mean score, it reflects higher satisfaction levels; if the median is lower, it indicates less satisfaction. The median, representing the middle value, provides additional context by

showing how many responses are at or above the selected score, helping to validate the mean score. A notable difference between

median and mean suggests that extreme values might be distorting the mean, potentially leading to misleading conclusions. Inferential analysis was carried out to test hypotheses using rank data, with a one-way analysis of variance (ANOVA) applied to evaluate statistically significant differences in student satisfaction with library services, resources, and facilities.

Ethical Considerations

Before taking part in the study, participants were asked to sign an informed consent form. The study followed ethical guidelines, ensuring principles such as the right to self-determination, anonymity, confidentiality, beneficence, and justice were upheld.

RESULTS

Demographic Characteristics of Respondents

Demographic variables can impact library usage, information-seeking behaviours, and informational needs. The demographic information of respondents is presented in Tables 3 and 4.

Table 3: Respondents' age differences

Age range	Frequency	Percentage
19 - 25 years	184	67
26 -30 years	79	29
31 - 35 years	10	4
Total	273	100

Source: Survey data December 2023

Table 4: Gender analysis

Gender	Frequency	Percentage
Male	179	65.6
Female	94	34.4
Total	273	100

Source: Survey data December 2023

The demographic traits of respondents can affect their library usage, information-seeking habits, and needs. According to the data in Table 3, the majority of respondents (67%) are aged between 19 and 25 years, 29% are between 26 and 30 years, and just 4% are between 31 and 35 years. This suggests that the UHAS library primarily serves younger

students, with a smaller portion of older students also using the library. Regarding gender, Table 4 reveals that 65.6% of respondents were male, and 34.4% were female. This gender disparity may reflect the gender distribution within the university or specific programmes, impacting library usage trends and preferences.

Table 5: The regularity of students' library visits

The regularity of visits to the library	Frequency	Percentage
Weekly	20	7.3
Two times per week	44	16.1
Three times per week	181	66.3
One time per month	28	10.3
Total	273	100

Source: Survey data December 2023

Table 5 offers an overview of how often students visit the library. The data reveals that most students (66.3%) visit the library three times a week, highlighting its importance as a key resource for many. Additionally, 16.1% visit twice a week, 7.3% once a week, and 10.3% once a month.

These statistics highlight the importance of library access to students' academic activities, although some students use the library more sporadically, possibly due to a range of factors, such as access to alternative study spaces or reliance on digital resources.

Table 6: Students reasons for visiting the library

Motivations for library visits	Frequency	Percentage
Do printing/photocopy	84	30.8
Get specific information	67	24.5
Surf Internet	122	44.7
Total	273	100

Source: Survey data December 2023

Table 6 outlines the reasons for visiting the library. The primary reason, chosen by 44.7% of respondents, was to use the internet, indicating that internet access is a major

factor driving library visits. Additionally, 30.8% of students visit the library for printing and photocopying services, while 24.5% seek specific information, such as

materials for assignments. These findings suggest that while the library is being used for practical services, more could be done to encourage students to engage with a broader range of academic resources.

Students' Satisfaction towards UHAS Library Service, Resources and Facilities

Table 7 Satisfaction with UHAS library Services

S.No	Statement	Median	Mean	Standard Deviation
1	The library's operating hours are convenient	6	5.1	1.82
2	Displays adequate signage	5	4.8	1.59
3	Provides an inquiry/reference service	4	4.3	1.37
4	Delivering services effectively	5	4.9	1.35
5	Readiness to assist library users	5	4.4	1.83
6	Preparedness to address user inquiries	6	5.6	0.97
7	Interacting with users in a considerate manner	5	5.0	1.18
8	Offer photocopying services	4	3.3	1.90
9	Provide inter-library borrowing services	4	3.8	1.32
10	The self-service checkout machine is operational.	4	2.9	1.63
11	Ensure records are free from errors	4	2.9	1.56
12	Reference staff are approachable	5	3.8	2.00
13	Provide access to printed theses	4	4.0	0.62
14	Offer document delivery services	4	3.4	0.78
15	Act in the best interest of users	4	3.7	1.48
16	Offer extended hours for Internet access	4	3.6	0.99
17	Deliver services without errors	4	4.1	0.35
18	Provide services for students with disabilities	4	3.6	0.93
19	Ensure books are accessible on shelves	5	4.0	2.12
Overall Mean= 3.98; Overall SD= 0.61				

Source: Survey data December 2023

Satisfaction with UHAS library services is presented in Table 7, with an overall mean of 3.98 on a 7-point Likert scale. This score reflects a neutral level of satisfaction, suggesting that students do not feel particularly satisfied or dissatisfied with the library's services.

Standard deviation values indicate minimal variability in the data, with most responses clustered around the mean, suggesting a consensus among respondents. Areas for improvement include photocopy services, self-check machines, and access to printed theses.

Table 8: Students' contentment with the standard of facilities provided by the UHAS library

S.No	Statement	Median	Mean	Standard deviation
1	Lighting is suitable	7	5.3	2.13
2	Restrooms are available and well-maintained	4	4.2	1.51
3	Conveniently located	6	4.3	2.24
4	Secure and safe environment	6	5.1	1.85
5	A conducive space for focus	7	5.4	2.27
6	Areas designated for group or individual study	4	3.1	1.41
7	Spaces that support a quiet atmosphere	6	5.0	2.07
8	Equipped with safety features	4	4.1	1.71
9	A hub for intellectual exchange	5	4.8	1.84
10	Comfortable and welcoming environment	6	4.8	1.93
11	Links to library resources are available	5	4.5	2.28
12	The reference desk is strategically located	4	4.5	1.86
13	A getaway for relaxation	4	4.1	1.81
14	A venue for contemplation	4	4.7	1.65
15	Comfortable seating options are available	6	5.0	1.86

16	Temperature is ideal	7	5.3	1.92
17	A fully-equipped ICT workspace	4	4.3	1.88
18	Amenities provided for distance learners (e.g., private study rooms)	4	3.4	1.11
19	Dedicated research rooms	4	4.0	0.00
20	Accessible facilities for users with disabilities	4	4.0	1.30
Overall Mean = 4.60; Overall SD= 1.36				

Source: Survey data December 2023

Table 8 reveals that the overall satisfaction with library facilities is slightly higher, with an overall mean of 4.60, indicating that students are somewhat satisfied with the facilities provided. High mean scores were seen in areas such as lighting, concentration

space and comfort, while lower scores were recorded for group study space, facilities for distance learners, and provisions for users with disabilities. A standard deviation of 1.36 indicates a higher level of variability in responses compared to the satisfaction with services.

Table 9: Contentment with the quality of resources

S.No	Statement	Median	Mean	Standard Deviation
1	Previous exam papers are available for access	4	3.5	2.11
2	Online Public Access Catalog (OPAC) stations are provided	4	3.2	1.40
3	Catalog is user-friendly	4	3.6	1.64
4	Extensive online databases	4	4.6	0.82
5	The digital collection is readily accessible	4	5.0	1.00
6	The library portal provides current information	4	4.4	1.29
7	Wide range of multimedia resources	4	4.4	1.29
8	Extensive collection of books	4	4.4	1.03
9	A thorough collection of theses	4	3.9	0.69
10	Complete and relevant journal collection	4	4.4	0.78
11	The collection is regularly updated with new resources	4	3.8	0.90
12	Information at the library kiosk is current	4	3.8	1.24
Overall Mean= 3.90; Overall SD= 1.05				

Source: Survey data December 2023

As shown in Table 9, the overall mean satisfaction score for library resources is 3.90, indicating a neutral stance from students regarding the quality of resources. Standard deviation values are relatively low (1.05), indicating that responses were clustered

around the mean. Students expressed the most satisfaction with the digital collection and online databases, while Online Public Access Catalog (OPAC) stations and availability of past exam papers received lower scores. This suggests that while some resources are appreciated, others need improvement or greater visibility.

Table 10: Variations in satisfaction levels regarding library services, facilities, and resources among different schools

ANOVA					
Library Services	Sum of squares	Degrees of freedom	Mean square	F	p-value
Between groups	0.63	4	0.16	0.42	0.7953
Within groups	101.31	268	0.38		
Total	101.94	272	0.37		
Library Facilities					
Between groups	0.88	4	0.21		

Within groups	502.19	268	1.87	0.12	0.9765
Total	503.06	268	1.85		
Library Resources					
Between groups	1.14	4	0.28	0.25	0.9065
Within groups	299.19	268	1.12		
Total	300.33	272	1.10		

Source: Survey data December 2023

Hypothesis Testing

Null Hypothesis (H_0): There is no statistically significant difference in satisfaction levels with UHAS library services, facilities, and resources among students from the five different schools.

Alternative Hypothesis (H_a): There is a statistically significant difference in satisfaction levels with UHAS library services, facilities, and resources among students from the five different schools.

The ANOVA results (see Table 10) reveal no significant differences in satisfaction levels concerning library services, facilities, and resources among students from various schools within UHAS. The p-values for services (0.7953), facilities (0.9765), and resources (0.9065) are all greater than 0.05, supporting the null hypothesis. This indicates that satisfaction levels are relatively uniform across different schools, suggesting that any necessary improvements should address the needs of the entire student population rather than focusing on specific groups.

DISCUSSIONS

Library Environment and Facilities

Baada *et. al.* (2019) and Ramanjaneya (2017) emphasize the importance of both traditional and digital library facilities in enhancing user satisfaction. This is supported by the current study's findings, which indicate a moderate level of satisfaction with UHAS library facilities overall. The high satisfaction scores for aspects such as lighting and concentration space align with the notion that well-maintained and relevant facilities contribute significantly to user satisfaction. However, the lower satisfaction scores for group study spaces and facilities for distance learners highlight a gap between user expectations and the current provision of library spaces, reflecting similar concerns

found in previous studies regarding the alignment of facilities with user needs.

Thuannadee (2023) and Kaushamalika and Weerakoon (2020) emphasize that satisfaction increases when library facilities align with user expectations. The findings from the UHAS study suggest that while general satisfaction is moderate, specific areas such as group study spaces and accessibility for distance learners require improvement to better meet user expectations. This indicates a need to enhance facilities in these areas to align with user needs more effectively.

Baffour-Gyau, Liu, and Kwakye (2021) highlight the importance of the physical design of library spaces in influencing user behaviour and satisfaction. The current study's results, which show varying satisfaction levels with different library facilities, support this by indicating that design aspects like concentration space receive higher satisfaction, whereas group study areas are less appreciated. This underscores the importance of a well-designed library environment in fostering user satisfaction.

Library Services

Hossain (2016) and Becker, Hartle, and Mhlauli (2017) assert that prompt and courteous service from library staff significantly contributes to user satisfaction. The moderate overall satisfaction with library services in the current study reflects the need for improvement in service areas such as photocopying and self-check machines. Enhancing these services to be more prompt and user-friendly could address some of the dissatisfaction expressed by students, aligning with the findings of Hossain and Becker *et al.*

Amin *et al.* (2017) and Tiemo *et. al.* (2016) suggest that satisfaction is influenced by the quality of resources and the effectiveness of information systems. The current study shows that while there is some satisfaction with digital collections and online databases, there is room for improvement in areas such as OPAC stations and the availability of past exam papers. This highlights a need to enhance these information systems to meet user expectations more effectively.

Library Resources

Mairaj and Naseer (2013) and Saikia and Gohain (2013) emphasise the importance of diverse and accessible library collections. The current study reflects mixed satisfaction with library resources, with higher satisfaction for digital collections and lower for physical resources like past exam papers. This suggests that while digital resources are meeting user needs, there is a need to improve the availability and quality of physical resources to enhance overall satisfaction.

Oluwunmi, Durodola, and Ajayi (2016) and Moses *et. al.* (2016) highlight persistent issues with outdated or inadequate resources. The dissatisfaction with certain aspects of UHAS library resources, such as audio-visual materials, echoes these findings. Addressing these gaps by updating and expanding the collection to better align with evolving user needs is crucial for improving satisfaction.

Integration of digital and traditional services

Baada *et al.* (2019) and Ramanjaneya (2017) discuss the importance of integrating digital and traditional library services. The current study indicates that while digital services are appreciated, there is room for improvement in integrating these with traditional services. This aligns with the need for a more comprehensive approach to merging digital and traditional resources to enhance overall user satisfaction.

Agyemang (2017) and Alam (2020) emphasise the importance of incorporating user feedback into service design and addressing the evolving needs of users. The current study's findings suggest that while some aspects of library services are satisfactory,

there is a need for a more dynamic approach to service design that incorporates user feedback and addresses emerging needs.

Staff Training and Engagement

Mahmood *et. al.* (2021) and Ramanjaneya (2017) highlight the importance of library staff and their training needs in a digital era. The current study does not specifically address staff training but suggests that improved service delivery could enhance user satisfaction. Future research should explore the skills required for staff to support both traditional and digital services effectively.

In summary, the current study's results are consistent with many aspects of the literature reviewed, particularly regarding the importance of library facilities, services, and collections in influencing user satisfaction. However, there are areas where the UHAS library could improve, such as enhancing group study spaces, updating physical resources, and better integrating digital and traditional services. Addressing these gaps aligns with the recommendations from previous research and can help improve overall user satisfaction with library services at UHAS.

CONCLUSION AND IMPLICATIONS

The authors of this article have highlighted several quality issues related to student satisfaction with UHAS library services, facilities, and resources. Their findings indicate that UHAS needs to enhance its library services, facilities, and resources. The study points out deficiencies in how undergraduate students perceive the quality of these aspects. The results suggest that UHAS Management should improve its library offerings to better meet the needs of undergraduate students.

The authors propose that if UHAS libraries are stocked with high-quality resources in adequate amounts and timely, students will develop specific expectations and beliefs about the libraries before visiting. Their satisfaction will be influenced by how the actual library experience compares to these expectations. Positive evaluations will lead to continued library use, while negative experiences may result in students discontinuing their visits.

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