

Understanding user needs and seeking behavior in the age of information revolution: A case of university library in the southern part of Bangladesh

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Abstract

Background of the study: Information has become a powerful element that shapes our thoughts, decisions, opinions and holistic approach towards life. The requirement for information ranges from personal and professional development to social survival

Purpose: The main purpose of this study is to assess the information needs and information-seeking behavior of the users of a southern public university library in Bangladesh.

Method: A quantitative approach was used to explain the information-seeking behavior of the student-users of the target library. A structured questionnaire was used to collect data from the users/students. A simple random sampling technique was used to reach the target population. The link to the questionnaire was sent to almost 350 students and finally, 205 responses were retrieved with a response rate of 58.5%. The collected data were analyzed using the Statistical Package for the Social Sciences (SPSS) version 25.

Findings: The study discovered that students of Noakhali Science and Technology University (NSTU) mostly use the library for studying and internet access. Library books are the most popular resource. Obstacles to information access, including a scarcity of book copies, inexperience with the library catalog, and a perception of insufficient resources, were major barriers to seeking information. The present study revealed that gender did not have a major impact on the purposes of visiting the library. Significant differences were found between age groups, demonstrating that preferences change as students progress through their academic lives.

Conclusion: The achieved findings are a new discovery for the students of the southern part of Bangladesh, as no previous studies have been published in this part of Bangladesh.

Keywords: Information-seeking behavior, information needs, university library, public university, Bangladesh.

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Introduction

Information has become such a powerful element that shapes our thoughts, decisions, opinions and holistic approach towards life. The requirement for information ranges from personal and professional development to social survival ([Humbhi et al., 2022](#)). However, the variation in information needs and the heterogeneous nature of human beings lead to various channels and approaches used for searching and using information (Shrivastava, 2018). Similarly, university students also come across different information needs. Moreover, the academic and research areas have been witnessing a profound transformation in this age of the information revolution. Hence, people are searching for information on a variety of issues and often struggle to determine which sources to follow and the processes to access those resources. University libraries, therefore, can be the right place to satisfy the needs of students by offering information systems (e.g., OPAC, library website, online databases) as well as traditional sources, such as textbooks, lectures, and other materials ([Howlader & Islam, 2019](#)). In this context, academic libraries need to explore the changing needs of students and what influences their information searching, access, and use ([George et al., 2006](#)). This knowledge would enable libraries to develop user-friendly systems, collections, and services.

[Wilson \(2006\)](#) stated that information need is a ‘primary need’ rather than a secondary need that emerges from basic human needs (i.e., psychological, affective, and cognitive needs). This need for information drives people to go through some stages to get their required information ([Kusuma et al., 2021](#)). All these stages or processes, from searching to gaining the needed information, represent the information-seeking behavior of individuals. According to [Pratap \(2016\)](#), “information-seeking behavior is the application of attitudes through a set of actions to achieve desired information need”. He further stated that performance evolves as attitudes and actions work together. The level of this performance will eventually determine the level of satisfaction with the acquired information. [Tasmim and Atikuzzaman \(2023\)](#) stated that information-seeking is a natural human trait that helps individuals learn, make educated decisions, and contribute to society. Hence, knowledge of users’ information needs and information behavior is necessary for planning, executing, and operating library services as well as providing relevant resources to meet the users’ information needs ([Yaranal & Ramesha, 2016](#); [Gyesi, 2020](#)).

Noakhali Science and Technology University (NSTU) is a regional public university on the southern shore of Bangladesh that started its academic journey in 2006. The university offers separate faculties of law, commerce, education, social sciences, and humanities, despite its focus on science and technology ([Atikuzzaman & Yesmin, 2023](#); [Yesmin & Atikuzzaman, 2023](#)). Around 6432 students are currently enrolled at six faculties, two institutes, and 33 departments in this university (UGC, 2024). The NSTU Central Library, established in 2006, is an important resource for the university community, striving to provide high-quality library and information services. It has consistently enhanced its infrastructure, systems, and services to meet the different needs of its users. With a collection of over 23,000 volumes, 627 hard-copy journals, and a large number of e-books from various suppliers, the library is committed to providing quality services to students, educators, and researchers. It also subscribes to electronic journal services from companies such as JSTOR, Emerald, and IEEE, which enhances its academic resources (NSTU, 2024).

Previous studies on library users’ information-seeking behavior around the world have revealed diverse findings. For example, while assessing the information needs and seeking behavior of Assam University library users, [Choudhury \(2013\)](#) found that audio-visual sources were most frequently used by the users among electronic resources. Although users were fairly satisfied with the number of collections and variety of information, they were unsatisfied with the services provided by the library. [Horsfall et al. \(2020\)](#) found that the information needs of



the LIS students of Rivers State University, Nigeria were mostly on academics, followed by ICT, and the needs were mainly motivated by examination, assignment, and personal development. Surprisingly, the majority of students preferred lecture notes over the library as sources of information. [Florescu \(2023\)](#) identified a significant correlation between university students' age and their information-seeking behavior patterns, particularly in their choice of information sources. In another research, only a little more than one-third of the students were found to seek information in their university library due to a shortage of books relevant to their discipline. Even more concerning, only 18.6% of the respondents consulted the library staff as a starting point for their search ([Thindwa & Chawinga, 2019](#)). While investigating the information-seeking behavior of undergraduate students of the University of Dhaka, Bangladesh, [Howlader and Islam \(2019\)](#) identified that the most sought-after information pertains to academics and jobs. A large majority of them were good at using the library catalogue and OPAC. However, they reported to be slightly satisfied with library services, indicating a smaller number of reading materials and lack of ICT knowledge as major challenges. Other studies also found that difficulties in formulating keywords as search terms, finding resources from library shelves, and lack of information literacy skills are major barriers among students ([Duncan & Holtslander, 2012](#); [Bhatti, 2008](#); [Chaura, 2014](#)). However, no study has investigated the information needs of a regional public university in a developing country setting.

Additionally, to keep pace with the changing information needs, the NSTU library authority must know how the users search for information, their information needs and preferred formats, their level of awareness regarding available services, as well as the challenges they encounter while accessing information and services. Hence, the study attempted to reduce the gap by investigating the students' information-seeking behavior at the southern regional public university of Bangladesh.

Objective and Research Questions (RQs)

The main purpose of this study is to assess the information needs and information-seeking behavior of the users of a southern public university library in Bangladesh. To meet this objective, we have formulated the following research questions (RQs):

RQ1: What are the users' purposes for visiting the library?

RQ2: How frequently do the users utilize the resources available in the library?

RQ3: What is their level of awareness regarding the services provided by the library?

RQ4: What are the barriers encountered by them in accessing information at the library?

RQ5: Are there any significant differences in users' purposes of visiting the library based on their demographic variables, computer, and internet literacy levels, and frequency of visiting the library?

To obtain the results for RQ5, non-parametric tests, i.e., Mann Whitney U (MWU) tests and Kruskal Wallis (KW) tests were conducted.

Literature Review

Students' information-seeking behavior

An impressive body of academic research has been carried out on information-seeking behaviour among students around the world ([Chikonzo & Aina, 2006](#); [Ilhaq & Tousif, 2021](#)). From the perspective of Bangladesh, Howlader and Islam (2019) conducted a study on the information-seeking behaviour of undergraduate students of the University of Dhaka. They found that students mostly looked for academic and job-related information in the library. Most of the respondents preferred using social media and discussing with friends as their information sources, followed by reading newspapers. The majority of them visited the library once a week,



and studying was the main purpose of their visit. The largest group of students was inclined towards both print and digital formats of information resources. Moreover, many students were found to be good at using library catalogues, which was followed by OPAC. However, the largest number of students opined that they were slightly satisfied with the library services. Among several challenges, lack of ICT knowledge and insufficient copies of materials were selected by most of them.

Students' purposes and frequency of visiting the library

Several studies have identified students' purposes for library visits. For instance, [Moly \(2014\)](#) identified that most of the students of Haramaya University in Ethiopia visited the library for studying and writing assignments, followed by using reference materials. Most of the students were also found to use the libraries for reading newspapers and magazines as well as for preparing research projects ([Yaranal & Ramesha, 2016](#); [Thindwa et al., 2019](#)). In terms of frequency of visiting the library, the users of special libraries in Bhopal city in India responded that they always used the libraries. Moreover, they also indicated that there is no time bound in using the libraries as they visited there according to their free time ([Srivastava, 2018](#)). [Pratap \(2016\)](#) revealed that most university students visited the library once every two weeks, followed by those visiting daily. Most of the international students at the University of Delhi reported that they used the library several times in a semester, followed by those visiting once or twice a week ([Singh et al., 2015](#)).

Users' usage of library tools and resources

In the case of search tools, more than half of the users were found to prefer library OPAC and personal help from library professionals, followed by the card catalogue ([Meher et al., 2022](#)). [George et al. \(2006\)](#) found that 40% of university students from six different disciplines tend to seek help from library professionals to satisfy the technical aspects of their information-seeking activities. The findings also illustrated a huge disparity across disciplines, with the lowest 15% from Engineering to the highest 72% from Business and Policy. While investigating the usage of library resources, library books appeared as the most useful source for satisfying users' needs, followed by back volume journals and e-books and journals ([Yaranal & Ramesha, 2016](#)). Similarly, books and periodicals were the most used materials by the undergraduates of the University of Ilorin in Nigeria. They also sought more print and electronic formats of resources than multimedia ([Olalekan et al., 2015](#)). To investigate the users' awareness of library services, [Jayaraj and Kannappanavar \(2021\)](#) revealed that all the respondents were aware of lending services, followed by reference services offered by the library.

Challenges faced by students while using the library

A few studies identified several challenges faced by students inhibiting library users' information-seeking activities ([Fasola & Olabode, 2013](#); [Murugesan & Balasubramanian, 2020](#); [Gyesi, 2020](#)). Lack of sufficient computer consoles, some obsolete materials, and lack of knowledge in using the library were the barriers faced by most university students ([Singh et al., 2015](#)). Similarly, a lack of up-to-date books and poor infrastructure were reported as difficulties in accessing information ([Makinde et al., 2019](#)). Slow internet speed, poor ICT facilities, and lack of knowledge to use OPAC were identified as the common difficulties faced by students ([Humbhi et al., 2022](#)). A dearth of indexing and abstracting services appeared as the major challenge faced by library users, followed by a lack of updated information and network failure ([Omah & Urhiewhu, 2019](#)).



In Bangladesh, the information behavior of different types of information consumers has been a focus of the investigation by researchers for the last decade (see, for example, [Tasmim & Atikuzzaman, 2023](#); [Tonmoy & Islam, 2023](#); [Atikuzzaman et al., 2023](#); [Shuva, 2022](#); [Chisty et al., 2021](#); [Rahman et al., 2020](#); [Howledar & Islam, 2019](#); [Kabir et al., 2014](#); [Mostofa, 2013](#)), but the authors of the present study found no work that has been conducted considering the information needs of the student users of a remote public university. This gap drew the attention of the authors of the present study.

Method

In the present study, the previous literature was reviewed about information-seeking behavior from national and international perspectives. A search was conducted on a combination of terms such as “information needs and seeking behavior,” “information needs and strategies,” “information seeking behavior of students,” etc., in various databases, i.e., (Emerald, Scopus, and Google Scholar) database. A quantitative approach was used to explain the information-seeking behavior of students of the target university library.

Instrument design and validation

For this study, a structured questionnaire was used to collect data from the target population. The questionnaire had three sections. The first section included questions regarding users' academic and demographic variables and their frequency and purposes of visiting the library. The second section included questions related to the library resources and services used by the students, including the methods of obtaining the services. Five-point Likert scale item questions were included in this section. The last section included questions on the challenges they faced while using the library. Survey items were chosen from previous studies ([Ijiekhuamhen et al., 2015](#); [Jayaraj & Kannappanavar, 2021](#); [Mia, 2019](#); [Tiemmo & Ateboh, 2016](#); [Yaranal & Ramesha, 2016](#)) and then modified to suit the needs of the study. Before starting the survey, the questionnaire was evaluated by a library representative to ensure the validity of the constructs of the questionnaire. After making the necessary corrections, the questionnaire was finalized and ready for the final survey.

Study population and sample

Student users from a public university library located in the southern part of Bangladesh were the target population for the present study. A simple random sampling technique was used to reach the students.

Data collection process

The study used an online survey method to collect data. The distribution of questionnaires was online using Google Forms (<https://forms.gle/uSmvYPH6DU9mhTm49>). The survey was conducted from October 2023 to December 2023. The link to the questionnaire was distributed through various means, such as personal chatting and dissemination into student chat groups, such as WhatsApp groups and Messenger groups. The questionnaire was sent to almost 350 students and finally, 205 responses were retrieved with a response rate of 58.5%. This response rate is considered quite acceptable for an online survey, especially in an academic setting ([Nulty, 2008](#)). Besides, this response rate is relatively high considering the situation of the target university.

Data validation and analysis

To validate the collected data, responses were checked for completeness and consistency. All the responses were complete and valid. Additionally, to measure the internal



reliability of the survey items, Cronbach's Alpha was calculated. The test result ($\text{Alpha} = 0.899$) indicated that the items were quite reliable. The collected data were analyzed using SPSS version 25. Descriptive statistics, including frequency distributions, means, and standard deviations, were used to summarize participants' responses to each question. To assess the differences in users' purposes of using the library based on their demographic variables, computer, and internet literacy levels, and frequency of visiting the library, non-parametric tests, i.e., Mann Whitney U tests and Kruskal Wallis tests were conducted.

Result and Discussion

Participants' demographic information

Table 1 highlights the demographic information of the respondents. There were 109 male (53.2%) and 96 (46.8%) female participants. The table reveals that the proportion of male students was higher than that of female students in the selected library. According to UGC's (2024) 49th annual report, male students (5,07,928) represented the largest number of students compared to female students (3,09,779) in the 46 public universities in Bangladesh. Most of the respondents, 82 (40%), were from the 22-23 years age group. About one-third of them, 71 (34.6%), were more than 24 years old. The remaining 52 (25.4%) were from the 21 years or less age group. Most respondents were undergraduate students (181, 88.3%), and only a few of them had graduated (24, 11.7%).

Table 1. Demographic profile of the respondents

Demographic	Frequency (N=205)	Percentage (%)
Gender		
Male	109	53.2
Female	96	46.8
Age		
21 years or less	52	25.4
22-23 years	82	40.0
24 years or more	71	34.6
Level of Education		
Undergraduate	181	88.3
Graduate	24	11.7
Total	205	100.0
Source(s): Prepared by the authors		

Computer and internet literacy levels of the respondents

The data in Table 2 shows the computer and internet proficiency level of the users. Most of the respondents (49.3%) have an average level of computer literacy. 35 (17.1%) respondents have above-average computer literacy skills. Among the respondents, 27 (13.2%) are beginners, followed by 24 (11.7%) with below-average computer literacy levels. The table also reveals that 16 (7.8%) of them are experts in computer literacy. On the other hand, most of the respondents, 86 (42%), have an average level of internet literacy. 50 (24.4%) respondents have above-average computer literacy skills. Among the respondents, 45 (22%) are efficient users with internet literacy levels. The table also reveals that 13 (6.3%) are below average, followed by beginner 8 (3.9%) levels. Only 3 (1.5%) students were unsure about their internet literacy level.

Table 2. Computer and internet literacy level

Literacy level	Computer literacy		Internet literacy	
	Frequency	Percent	Frequency	Percent

I am not sure	2	1.0	3	1.5
Beginner	27	13.2	8	3.9
Below average	24	11.7	13	6.3
Average	101	49.3	86	42.0
Above average	35	17.1	50	24.4
Expert/ Efficient	16	7.8	45	22.0
Total	205	100.0	205	100.0
Source(s): Prepared by the author				

Frequency of visiting the library

Table 3 revealed that about one-fourth of the students, 57 (27.8%), used the library “once a semester,” followed by “every week” 36 (17.6%). 31 (15.1%) students used the library “almost every day,” followed by 25 (12.2%) and 20 (9.8%) used the library twice a week and twice a month, respectively. The remaining 8 (3.9 %) used the library “less often.”

Table 3. Frequency of visiting the library

Frequency of library visit	Frequency	Percent
Almost everyday	31	15.1
Twice in a week	25	12.2
Every week	36	17.6
Twice in a month	20	9.8
Once a month	28	13.7
Once in a semester	57	27.8
Less often/ others	8	3.9
Total	205	100.0
Source(s): Prepared by the authors		

Users' purposes for visiting the library

Table 4 indicates that most users always visit the library for study purposes (68, 33.2%) followed by 42 (20.5%) users who always visit the library to use the internet. Results also revealed that 23 (11.2%) users always visit the library for personal development, followed by preparing assignments (21, 10.2%), borrowing books (20, 9.8%) and entertainment (18, 8.8%). In general, the mean and SD values indicate that the most frequent purposes of library visits were to study (mean 3.63) and to use the internet (mean 3.03). However, except for these two purposes, the users rarely visit the library for other purposes as the mean scores were below the average score of 3.

Table 4. Purposes of visiting the library

Purposes	Never	Rarely	Sometimes	Frequently	Always	Mean (SD)
To study	9(4.4%)	25(12.2%)	67(32.7%)	36(17.6%)	68(33.2%)	3.63(1.188)
To borrow books	54(26.3%)	44(21.5%)	65(31.7%)	22(10.7%)	20(9.8%)	2.56(1.257)
To use reference materials	86(42%)	41(20%)	57(27.8%)	14(6.8%)	7(3.4%)	2.10(1.129)
To use photocopy service	133(64.9%)	38(18.5%)	20(9.8%)	8(3.9%)	6(2.9%)	1.61(1.011)
To use documentation service	121(59%)	43(21%)	31(15.1%)	2(1%)	8(3.9%)	1.70(1.022)
To read newspapers	67(32.7%)	36(17.6%)	65(31.7%)	24(11.7%)	13(6.3%)	2.41(1.232)
To use the internet	36(17.6%)	35(17.1%)	62(30.2%)	30(14.6%)	42(20.5%)	3.03(1.359)
To use electronic resources	95(46.3%)	37(18%)	43(21%)	17(8.3%)	13(6.3%)	2.10(1.254)

To read magazines	97(47.3%)	35(17.1%)	47(22.9%)	15(7.3%)	11(5.4%)	2.06(1.217)
For research purpose	97(47.3%)	40(19.5%)	43(21%)	18(8.8%)	7(3.4%)	2.01(1.161)
For preparing assignment	48(23.4%)	36(17.6%)	64(31.2%)	36(17.6%)	21(10.2%)	2.74(1.279)
For personal development	69(33.7%)	39(19%)	49(23.9%)	25(12.2%)	23(11.2%)	2.48(1.36)
For entertainment	109(53.2%)	33(16.1%)	32(15.6%)	13(6.3%)	18(8.8%)	2.01(1.319)
Source(s): Prepared by the authors						

Frequency of utilizing library resources to satisfy information needs

Table 5 indicates that most users always use library books to satisfy their needs (28, 13.7%). At the same time, 16 (7.8%) users always use the library catalogue, followed by databases (15, 7.3%), periodicals (13, 6.3 %), and journal articles (11, 5.4%) to satisfy their needs. The mean and SD values indicate that the most used library resource was books (mean 3.00). Except for this resource, the users generally did not use the other resources as their mean values were less than the average mean value of 3.00.

Table 5. Frequency of using the resources to satisfy user information needs

Resources	Never	Rarely	Sometimes	Frequently	Always	Mean (SD)
Library books	29(14.1%)	35(17.1%)	75(36.6%)	38(18.5%)	28(13.7%)	3.00(1.215)
Periodicals	76(37.1%)	48(23.4%)	45(22%)	23(11.2%)	13(6.3%)	2.26(1.244)
Library book catalogue	55(26.8%)	49(23.9%)	60(29.3%)	25(12.2%)	16(7.8%)	2.50(1.227)
Library OPAC	95(46.3%)	39(19.0%)	42(20.5%)	19(9.3%)	10(4.9%)	2.07(1.217)
Journal articles	81(39.5%)	33(16.1%)	61(29.8%)	19(9.3%)	11(5.4%)	2.25(1.221)
Reference materials	88(42.9%)	40(19.5%)	43(21%)	24(11.7%)	10(4.9%)	2.16(1.236)
Non-book materials	97(47.3%)	42(20.5%)	43(21%)	15(7.3%)	8(3.9%)	2.00(1.155)
Database						
Source(s): Prepared by the authors	96(46.8%)	37(18%)	41(20%)	16(7.8%)	15(7.3%)	2.11(1.279)

Level of awareness regarding different library services

The users were asked to rate their level of awareness regarding different library services on a 5-point Likert scale. According to Table 6, the majority of the users are fully aware of the internet service (58, 28.3%) provided by the library, followed by general library service (37, 18%), newspaper service (32, 15.6%), and issue and renew service (28, 13.7%). However, the mean and SD values indicate that most users are more aware of the two services only, i.e., internet service (mean 3.37) and general library service (mean 3.08). The other services are still not very familiar to the users as their mean values fall under the average mean value of 3.00.

Table 6. Awareness regarding library services

Library services	Not at all aware	Slightly aware	Somewhat aware	Moderately aware	Fully aware	Mean (SD)
General library service	29(14.1%)	37(18%)	65(31.7%)	37(18%)	37(18%)	3.08(1.285)
Documentation service	51(24.9%)	54(26.3%)	53(25.9%)	33(16.1%)	14(6.8%)	2.54(1.219)
Reference service	55(26.8%)	53(25.9%)	56(27.3%)	22(10.7%)	19(9.3%)	2.50(1.251)
New arrival service/ CAS	68(33.2%)	57(27.8%)	49(23.9%)	19(9.3%)	12(5.9%)	2.27(1.185)
Newspaper service	40(19.5%)	49(23.9%)	55(26.8%)	29(14.1%)	32(15.6%)	2.82(1.328)

Issue and renew service	46(22.4%)	43(21%)	56(27.3%)	32(15.6%)	28(13.7%)	2.77(1.329)
Photocopy service	78(38%)	49(23.9%)	41(20%)	19(9.3%)	18(8.8%)	2.27(1.295)
Internet service	17(8.3%)	45(22%)	46(22.4%)	39(19%)	58(28.3%)	3.37(1.321)
Source(s): Prepared by the authors						

Preferred catalogue for searching for information

The respondents were asked to indicate their preferred catalog for searching information in the library. Table 7 shows that more than half of the respondents, 135 (65.9%), preferred library book catalogs for searching information, while only 66 (32.2%) users preferred library OPAC for searching information.

Table 7. Preferred catalogue to search for information

Preferred catalogue	Frequency	Percent
Library book catalogue	135	65.9
Library OPAC	66	32.2
None	4	2.0
Total	205	100.0
Source(s): Prepared by the authors		

Format of materials students prefer to satisfy their information needs

The respondents were asked to indicate their preferred information format. Table 8 shows that 60 (29.3%) preferred print format, 27(13.2%) preferred electronic format, 8 (3.9%) preferred the use of audio-visual, and 74(36.1%) preferred to use both print and electronic media (Table 6). The table also reveals that 36 (17.6%) students preferred all four formats for their information searching regarding academic purposes.

Table 8. Format of information materials sought

Formats of materials	Frequency	Percent
Print materials	60	29.3
Electronic materials	27	13.2
Audio-visual materials (CD, DVD)	8	3.9
Both print and electronic materials	74	36.1
All of the above formats	36	17.6
Total	205	100.0
Source(s): Prepared by the authors		

Overall satisfaction with library services

Table 9 shows the overall satisfaction level with the library services. Most of the respondents, 73 (35.6%), were neither satisfied nor dissatisfied. However, 67 (32.1%) and 35 (17.1%) respondents were dissatisfied and very dissatisfied with the library services, respectively.

Table 9. Overall satisfaction with library services

Overall satisfaction	Frequency	Percent
Very dissatisfied	35	17.1
Dissatisfied	67	32.7
Neither satisfied nor dissatisfied	73	35.6
Satisfied	26	12.7
Very satisfied	4	2.0

Total	205	100.0
Source(s): Prepared by the authors		

Methods of locating information

The users were asked to mention the methods they usually follow for locating information in the library. Table 10 indicates that almost half of the users locate information in the library solely by themselves (102, 50.7%) and with the assistance of the library staff (100, 49.8%). However, some of the users used a library catalogue (73, 36.3%) and took help from a friend (63, 31.3%).

Table 10. Methods of locating information (multiple responses)

Methods	Yes	%	No	%
Assistance of library staff	100	49.8%	105	50.2%
Self-help	102	50.7%	103	49.3%
Using library OPAC	35	17.4%	170	82.6%
Using the library catalogue	73	36.3%	132	63.7%
The help of a friend	63	31.3%	142	68.7%
Others	05	2.4%	200	97.6%
Source(s): Prepared by the authors				

Barriers faced by users while searching the library materials

In a multiple-response question, the users were asked to mention the barriers they usually face while searching for materials in the library. Table 11 shows that lack of electronic resources (123, 60%), a smaller number of copies of materials (107, 52.2%), and lack of knowledge to use the library's OPAC (106, 51.7%) are the major barriers encountered by users while searching for materials in the library. Inadequacy of library resources (100, 48.8%) and lack of computer and internet facilities in the library (99, 48.3%) were also found to be significant barriers.

Table 11. Barriers faced while searching for materials in the library (multiple responses)

Barriers	Yes	%	No	%
Lack of knowledge to use OPAC	106	51.7%	99	48.3%
Lack of electronic resources in the library	123	60%	82	40.0%
Difficulties in locating materials in the library	94	45.9%	111	54.1%
Inadequacy of library resources	100	48.8%	105	51.2%
Fewer copies in the library	107	52.2%	98	47.8%
Lack of ICT knowledge	85	41.5%	120	58.5%
Lack of knowledge in search strategies	63	30.7%	142	69.3%
Shyness in asking for assistance	42	20.5%	163	79.5%
Lack of updated information in the library	90	43.9%	115	56.1%
Lack of skills in library staff	98	47.8%	107	52.2%
Lack of computer and Internet facilities in the library	99	48.3%	106	51.7%
I do not face any barriers while using the library	25	12.2%	180	87.8%
Other	2	1.0%	203	99.0%
Source(s): Prepared by the authors				

Differences in users' purposes of visiting the library based on their demographic variables, computer and internet literacy levels and frequency of visiting the library

To see the differences in users' purposes of visiting the library based on their demographic variables, computer and internet literacy levels, and frequency of visiting the

library, different non-parametric tests, i.e., Mann Whitney U (MWU) tests and Kruskal Wallis (KW) tests were conducted.

Mann-Whitney U tests were conducted to see the differences in users' purposes of visiting the library based on their gender and education level. Table 12 shows that there were no significant differences in male and female students' purposes for visiting the library. However, significant differences were found in only one purpose, i.e., *to study* ($MWU=1298.500$, $Z=-3.333$, $p=.001$) based on their education levels.

Separate Kruskal Wallis tests were conducted to see the differences in users' purposes of visiting the library based on their age groups, computer literacy, internet literacy and frequency of visiting the library. As shown in Table 12, there were significant differences in four out of thirteen purposes based on students age groups, i.e., *to study* ($\chi^2=15.962$, $df=2$, $p=.000$), *to use photocopy service* ($\chi^2=13.670$, $df=2$, $p=.001$), *to use documentation service* ($\chi^2=10.416$, $df=2$, $p=.005$) and *for research purpose* ($\chi^2=7.193$, $df=2$, $p=.027$). However, no differences were found in the other seven purposes.

The KW test results found no significant differences in any of the purposes based on students' computer and internet literacy. On the other hand, significant differences were found in eleven out of thirteen purposes based on students' frequency of visiting the library. These purposes are- *to study* ($\chi^2=40.654$, $df=6$, $p=.000$), *to borrow books* ($\chi^2=27.974$, $df=6$, $p=.000$), *to use reference materials* ($\chi^2=17.890$, $df=6$, $p=.007$), *to use photocopy service* ($\chi^2=13.630$, $df=6$, $p=.034$), *to use documentation service* ($\chi^2=20.110$, $df=6$, $p=.003$), *to read newspapers* ($\chi^2=20.757$, $df=6$, $p=.002$), *to use electronic resources* ($\chi^2=19.924$, $df=6$, $p=.003$), *to read magazines* ($\chi^2=13.791$, $df=6$, $p=.032$), *for research purpose* ($\chi^2=20.922$, $df=6$, $p=.002$), *for preparing assignment* ($\chi^2=19.758$, $df=6$, $p=.003$) and *for personal development* ($\chi^2=28.913$, $df=6$, $p=.000$) (Table 12).

Table 12. Differences in users' purposes of visiting the library based on their demographic variables, computer and internet literacy levels, and frequency of visiting the library

Purpose of visiting the library	Gender ^a	Education level ^a	Age ^b	Computer literacy ^b	Internet literacy ^b	Library visit frequency ^b
To study	.560	.001***	.000***	.317	.666	.000***
To borrow books	.216	.168	.426	.688	.193	.000***
To use reference materials	.353	.649	.074	.588	.798	.007**
To use photocopy service	.294	.446	.001***	.612	.520	.034*
To use documentation service	.216	.236	.005**	.578	.160	.003**
To read newspapers	.508	.391	.237	.904	.789	.002**
To use the internet	.665	.058	.795	.935	.077	.343
To use electronic resources	.213	.237	.319	.278	.405	.003**
To read magazines	.109	.521	.090	.578	.959	.032*
For research purpose	.488	.304	.027*	.177	.777	.002**
For preparing assignment	.848	.422	.378	.976	.591	.003**
For personal development	.327	.180	.068	.365	.195	.000***
For entertainment	.495	.997	.908	.800	.955	.296

Source(s): Prepared by the authors

Notes: ^aMann–Whitney U test, ^bKruskal–Wallis test; * $p \leq 0.05$; ** $p \leq 0.01$; *** $p \leq 0.001$

Discussion and recommendations

The primary goal of the current study was to assess the information demands and information-seeking behavior of the users of a southern public university library in Bangladesh.

To address this objective, five research questions were formulated to guide the whole study. The results of the study revealed some significant findings that are discussed below with some recommendations.

The RQ1 examined users' purposes for visiting the library. Findings showed that the users use the library mainly to study and to use the internet. However, the users ignored some important purposes, such as using photocopy service, documentation service, and using the library for research. Using the internet in the library is not surprising but the underutilization of photocopy and documentation services is interesting because it suggests that users may not fully recognize the resources available to them. The reasons for this might be a lack of knowledge among the users about these services' availability, their limited accessibility, their perceived value concerning other needs like internet use and studying, and a lack of technological proficiency. This finding is quite similar to the findings of the study of [Ijekhuamhen et al. \(2015\)](#), where the authors found that the majority of the users of the academic library at the Federal University of Petroleum Resources used the library mainly for the availability of the Internet in the library.

RQ2 measured the users' frequency of utilizing the resources available in the library. Results showed that library books are the most used resource, whereas databases, the OPAC, periodicals, journal articles, and non-book materials are mostly overlooked by the users. One possible cause for this finding could be that users might be unaware of the availability and benefits of these other resources. Users might believe that obtaining these materials is more difficult or time-consuming than merely renting a book. Besides, there is a possibility that the users are dissatisfied with these resources. This finding is consistent with the results of the study by [Tiemo and Ateboh \(2016\)](#), where the authors found that the users of the College of Health Sciences Library, Nigeria, were dissatisfied with the library databases, e-resources, and research collections. However, this finding is not in agreement with the findings of [Saikia and Chandel \(2012\)](#), who found that the users of the Tezpur University Library in India were satisfied with the electronic database of the library.

RQ3 measured the level of awareness regarding the services provided by the library. Findings showed that the users were mostly aware of the library's internet service and general library services. On the contrary, they were not aware of some significant services such as current awareness service, reference service, and photocopy services, though [Tasmim and Azad \(2022\)](#) found that reference service, issue, and loan service, and OPAC services are the most common services provided by the academic libraries of Bangladesh. This finding is interesting because it identifies a gap in students' awareness of critical library services such as current awareness, reference, and photocopying. Despite the importance of these services to academic performance, a lack of awareness shows that the library is not successfully promoting or conveying their availability. This finding is in line with the findings of [Tiemo and Ateboh \(2016\)](#), who found that the users of the College of Health Sciences Library were highly satisfied with the library's internet service and lending services. However, the study by [Anmol et al. \(2021\)](#) found that the users of academic libraries of the Khyber Pakhtunkhwa-Pakistan were satisfied with issue and return services but dissatisfied with the library's internet, photocopying and cataloguing services.

RQ4 identified the major barriers encountered by users while accessing information from the library. Findings revealed that fewer copies in the library, lack of knowledge to use OPAC and inadequacy of library resources were the major barriers. This finding is supported by the findings of Tabassum (2023), who found that lack of updating, lack of student enthusiasm, and knowledge gaps are the main issues of Dhaka University library services. The study by [Mia \(2019\)](#) found that lack of relevant resources and lack of IT facilities are the major barriers to the NSTU library.



RQ5 found that while gender did not have a major impact on the purposes of visiting the library, differences arose between undergraduate and graduate students, indicating varied academic needs. Significant differences were found between age groups, demonstrating that preferences change as students progress through their academic lives. Surprisingly, computer and internet literacy did not influence students' purposes for visiting the library. This finding is quite interesting because, given the growing reliance on digital technologies in academic contexts, it was believed that improved levels of digital literacy would result in the increased use of library databases and online resources. However, library visit frequency had a significant impact on users' purposes, highlighting the significance of personalized services for both frequent and infrequent visitors. These findings emphasize the complex nature of library usage behavior and call for tailored efforts to fulfill varied user demands, thereby boosting overall user satisfaction and library service delivery.

Based on the findings and the above discussion, the present study suggests the following recommendations for the NSTU library: Develop effective communication techniques to promote awareness of the entire range of library resources and services available. Regularly arrange user education programs to introduce the resources and services to novice users. These programs may focus on demonstrating how to access and use databases, electronic resources, and specialized services such as current awareness and reference aids. Make sure that all library resources and services are easily accessible and displayed throughout the library. This could include restructuring physical areas, upgrading signage, and providing clear instructions for finding items via the library's online catalog (OPAC). Create a method for gathering input from users to discover areas for improvement and fix any ongoing issues. Regular assessments of user satisfaction and needs can help in decision-making and prioritizing service improvements. Allocate resources to address identified barriers, such as a lack of sufficient copies of materials and insufficient library resources. Consider expanding collections, purchasing additional copies of popular materials, and improving IT capabilities to better meet users' information needs. To guarantee that library employees have the information and abilities needed to effectively help users and provide them with continual training and professional development opportunities. This could involve instruction in user-centered service delivery methods, reference services, and new technology. Through the implementation of these guidelines, the library can strive to enhance user satisfaction, raise awareness of its services, and efficiently adapt to the varied information requirements of its users.

Conclusion

The study revealed that students of NSTU mostly use the library for studying and internet access. However, essential services like photocopying, document delivery, and research assistance are underutilized. This indicates a lack of awareness or a belief that certain services are less necessary. Library books are the most popular resource, whereas databases and electronic resources are often overlooked, maybe due to their unfamiliarity or perceived difficulty in accessing them. The study also discovered that most users are ignorant of specific services such as reference and current awareness. Finally, obstacles to information access, including a scarcity of book copies, inexperience with the library catalog, and a perception of insufficient resources, were major barriers to seeking information. These findings highlight the importance of improving user education and promoting underutilized services to ensure that students are aware of the full range of library resources available.

The study's implications for research, practice, and society are significant. For research, it provides useful insights about students' information-seeking habits and library usage patterns, which can be used to guide future library science studies. In practice, the findings suggest areas where libraries should improve communication and promote knowledge of underutilized



resources to better serve their patrons. For society, ensuring students' access to and understanding of all accessible library resources can improve academic performance and contribute to their overall educational development, resulting in a more informed and resourceful generation.

This study has some limitations that may affect the generalizability of the findings. First, the study was done at a single university in southern Bangladesh, which may limit its applicability to other institutions or locations. Second, the sample size may not have been large enough to represent the library's full user community. Finally, the study relied on self-reported data from users, which is susceptible to bias because participants may not always provide correct information about their behaviors and understanding. Future study that addresses these constraints may provide a more comprehensive knowledge of user information-seeking behavior in Bangladesh's university libraries.

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Authors' Contributions

All authors have contributed to the final manuscript. The contribution of all authors: conceptualization, methodology, formal analysis, writing original draft preparation, writing review, and editing. All authors have read and agreed to the published version of the manuscript.

Conflict of Interest

All authors have no conflict of interest related to this study.

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