

A COMPARISON OF INFORMATION NEEDS AND INFORMATION SEEKING BEHAVIOUR OF STUDENTS OF THE OPEN UNIVERSITY OF TANZANIA AND THOSE OF SOKOINE UNIVERSITY OF AGRICULTURE

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Abstract

This study was carried out to examine awareness and use of different sources of information for course-work and research by students of the Open University of Tanzania and those of Sokoine University of Agriculture. Specifically, the study sought to understand students use of the information sources, why they visited the university library, the type of assistance they had received in using the library as well as the type of instruction they would like to receive in the future. A questionnaire was designed and administered to Open University students in the Faculty of Science, Technology and Environment who were attending their summer studies in July 2005 at Sokoine University of Agriculture and students of Sokoine University of Agriculture who were on campus during vacation. The objective was to compare the information needs and information-seeking behaviour of these students. The study highlights the positive aspects of seeking information from the students perspective as well as the kind of assistance they require when seeking information in the library. The findings show that there are differences in the extent to which students of the Open University of Tanzania (OUT) and those of Sokoine University of Agriculture (SUA) use sources of information in the library. The OUT students rely mainly on the use of print books and journals as opposed to electronic information resources, where as SUA students use both print books and electronic resources at varying degrees. The results further show that many of the information services offered in the library are not used effectively due to lack of awareness on availability of these resources among many students. It is recommended that a thorough and intensive training is carried out to both SUA and OUT students to help them use library resources more effectively and efficiently.

Introduction

Information needs of users are important for libraries in re-orienting their collections, services, and activities so as to synchronize them with the information seeking behaviour of users. Studies have indicated that the library provides meaningful information services when the user habits are taken into consideration by librarians (Majid and Tan, 2002). Investigations into the information needs and information seeking patterns of individuals would therefore help improve the current information systems and resources for catering to the ever changing needs of their users.

This study compared the sources of information used by students of the Open University and Sokoine University of Agriculture in Tanzania.

Specifically, the study compared the information needs for doing their course-work, the extent to which they use the library, the types of activities they are likely to use the library for, their awareness and use of the electronic information resources and any assistance they have received in using the library and its resources. Open-ended questions were used to obtain information on the positive and negative aspects of information seeking from the student's perspective, and on the type of library assistance they would like to receive. Similar questionnaires were administered to both the Open University students and students of Sokoine University of Agriculture in an effort to understand the differences that exist (if any) in the information needs and information-seeking behaviour between the two groups of students. The electronic resources included in the questionnaire were online databases and CD-ROM searches.

Literature Review

Research studies have been carried out which examine the information needs and behaviour of different library user groups such as academics, researchers, lawyers, scientists, technologists, medical practitioners, graduate and undergraduate students while other studies distinguish between these groups on the basis of their faculty (Msuya, 2002; Brown, 1999; Fidzani, 1998; Clougherty *et al.*, 1998; Pelzer *et al.*, 1998 cited in Callinan, 2005). There is a broad spectrum of research on library user studies across a variety of disciplines (Majid *et al.*, 2000; Hammond and Mitchell, 1997; Ellis *et al.*, 1993; Fescemyer, 2000). This review focuses primarily on a wide range of information seekers, which provides grounding on important variables that the study examines.

One of the theoretical frameworks used for studies in information seeking behaviour like this is one devised by Wilson. In Wilson's (1981, 1996) models, information-seeking behaviour stems from a perceived need for information by the user. In response to this need the user places demands on the information system (e.g. library or database) and on other sources of information (e.g. textbook, lecturer, handouts and suchlike). Information needs do not operate in a vacuum but in a particular context. The context includes the person (physiological, the affective and cognitive states), the role (the student) and his or her environment.

Information seeking is a broad term encompassing the ways individuals articulate their information needs and the way they seek, evaluate, select and use the needed information (Majid *et al.*, 2000). Many factors contribute to the selection and use of different information sources such as: cost, past success, accuracy, reliability, comprehensiveness, usefulness, currency, response time, accessibility, technical quality and the format (Shanmugan, 1999; Yang, 1998).

A user needs assessment survey (Clougherty *et al.*, 1998) of undergraduate students was carried out by the University of Iowa in order to determine the purpose of undergraduate visits to the library and overall user satisfaction with the services and resources in the library; thus facilitating feedback on how the library services and resources used by undergraduate students could be improved. Results of this survey indicated that 72 per cent of respondents used the library as a place to study, 70 per cent used the photocopiers and 68 per cent borrowed books, magazines and journals. Students, primarily, turned to library staff for assistance (70 per cent), but they also sought help from each other (56 per cent). A library web-based tutorial was used by only approximately one-fifth of the respondents, almost one-third using printed handouts. Approximately 84 per cent never attended any instructional classes. With regard to library services, however, the undergraduate students indicated a need for more publicity of the available services.

In the University of Washington, undergraduates preferred to visit the library to study rather than to seek journals or books (Hiller, 2002). Seiden *et al.* (n.d.) conducted a focus group with undergraduate students from Skidmore College in New York and found that the students had a strong overall preference for digital resources. These preferences were reinforced by a lack of familiarity for printed sources. Undergraduate students in a focus group (Wei, 1995) revealed themselves to be inexperienced in online systems, and were keen to receive instruction on how to find periodicals (58 per cent), and almost half of them wanted to receive instruction on using electronic resources in the science library.

In a study at the University of Botswana (Fidzani, 1998) to establish the information needs and information-seeking behaviour of graduate students, there was a heavy reliance on library books, textbooks and journals as sources of information used for course-work. Students primarily relied on scanning the shelves or browsing through journals rather than using the index and abstract databases to locate information. Similarly, in a study by Osiobe (1988), it was found that browsing was the most important strategy used by undergraduate students to get references. Respondents in the University of Botswana did seek help from University library staff with 40 per cent receiving help from the reference librarian and approximately 32 per cent from the subject librarian.

Majid and Ai (2002) studied the use of information resources by computer engineering students in Singapore and found that the top five information resources, in order of preference, were books (94 per cent), lecturers (89 per cent), the Internet (86 per cent) and friends (84 per cent). The students relied heavily on printed sources of information and their use of electronic

journals and databases was very low. According to Hartmann (2001), undergraduate students experienced difficulty in locating items from the library collection and did not understand the processes for retrieving journal articles.

Another study of first year undergraduate students reported that all of the participants felt that they had little need to look for information outside what faculty provided for them in their courses, and where information was needed they felt they were able to get it using general search engines (Seamans, 2001). It was also found that student participants were comfortable using technology to learn and that web-based modules could be used in the future to teach library instruction.

In a study of graduate engineering students (Kerins *et al.*, 2004), the majority reported that the Internet was the first source of information they used for a project. Similarly, in a study of incoming first-year undergraduate students in Quebec (Mittermeyer, 2003), many reported that they used the Internet extensively for finding course-related information.

A study to address library user satisfaction survey of graduate students was conducted by Agingu and Johnson (1998) at the South Carolina State University. The survey evaluated the effectiveness of the university library's programs, resources, and services in meeting the informational needs of graduate students at this institution. The objectives of the survey were to: identify the gender and category of the library user; determine how often graduate students used the library; evaluate the effectiveness of the resources and services available in the library; determine the appropriateness of the library hours; and identify the most and the least used services and resources. Results of this study revealed that although most graduate students were satisfied with the resources and services provided, there was still a need for up-to-date materials, more journals, and more computers to expand access the Internet and other services.

In another study conducted by Koss (1996) to address the information needs of MBA students at the Kent State University (Ohio), data was collected from the students using a focused information needs questionnaire. The results were analysed to determine which tools were being used by MBA students when they research business related topics. The findings showed that these students use the University library more than other libraries. Despite numerous resources available for use specifically for business related research, the MBA students, primarily, used current periodicals and ABI/Inform. The study also showed that the students were familiar with the use of Internet as well as computers in general. The students noted that formal research training about business

resources would be highly useful. The most prominent finding in the study was related to the fact that the students take their professors' advice in regards to accessing business research tools and apparently few academics were aware of the existence of a wide variety of applicable technologies and business-specific reference books in the Kent State University library. As a result, these resources were not being recommended to students. Because of this general lack of awareness about business related research tools available in the University library, the author recommended that both MBA students and professors could benefit from graduate level bibliographic instruction.

A survey carried out amongst veterinary medical students in the University of Iowa sought to understand their information-seeking behaviour in the electronic environment (Pelzer *et al.*, 1998). The results indicated that their main reasons for visiting the library were to photocopy and to study course material. Handouts, textbooks and assistance from their peers, or instructors, followed by computerised indexes were the main sources used when seeking current information. The Internet was reportedly used as a resource by 59 per cent of students and over 80 per cent of them used computerised indexes for seeking current information.

Osiobe (1988) surveyed a random sample of 850 students at the University of Port Harcourt, Nigeria, to study their information seeking behaviour. The study established that the first five sources of references to literature for the undergraduates were: browsing (23.9 percent), lecturers (17.53 percent), library card catalogue (17.53 percent), librarians (13.15 percent), references in articles and books (12.35 percent), and abstracts and indexes (7.97 percent). Browsing, which requires no technical skill, was found to be more common among the first and second year students. Lecturers were ranked second, as, in addition to delivering lectures, they would give references to the students.

A study by Badu (1991) at the University of Ghana revealed that most of the graduate students first consulted their personal collections, followed by department libraries, and finally the university library. It was also found that the respondents had a very limited knowledge of library resources and services. The study recommended that a library user education programme should be integrated into the university curriculum.

A study by Adeibu and Adio (1997) on the information seeking patterns and information needs of medical students at Lautech, Ogbomoso, found that 70 percent of the respondents spent three to eight hours in the library to consult materials that were relevant to their areas of specialisation. Of the respondents, 44 percent revealed that they depended mostly on textbooks

for getting information required for their coursework while another 24 percent relied on their lecturers. Based on the findings, the study recommended improving collections, extending library hours and implementing a library orientation programme. Another case study on the information seeking behaviour of multicultural students by Liu and Redfern (1997) showed a relationship between success in library usage and the frequency of library visits. Those students who frequently visited the library were more successful in locating the needed information when compared to those who visited it infrequently.

The information technology (IT) of the Internet and its tools is expected to bring significant changes in information seeking behavior of users. According to Fidzani (1998), modern technology is resulting in new services, targeting the specialized and unique information needs of users. Similarly, electronic journals have brought many exciting opportunities for libraries and users. Studies by Majid and Abazova (1999) cited in Fidzani (1998) showed a positive relationship between the level of computer literacy and the use of electronic information sources by academics. However, some studies suggest that the use of IT-based sources and facilities by library users was much lower than expected (Curtis *et al.*, 1997; Rollins, 1996). In a study by Marcella and Baxter (1999) in the UK, only a small proportion of the respondents expressed a preference for using computers for information seeking. Similarly, a study by Hammond and Mitchell (1997) showed limited use of electronic databases by scientists and engineers. It was surprising to note that these individuals, despite of their technological background, failed to take full advantage of electronic information sources.

Although there have been numerous studies on the information seeking behaviours of different user groups such as academics, physicians, scientists, lawyers and different categories of students, no study was found on comparative analysis of open university students and convention students attending a full time course in a university in Tanzania. This study compares the information needs and information seeking behaviour of students of the Open University of Tanzania (OUT) and full time students at Sokoine University of Agriculture (SUA), also in Tanzania. The findings of this study were expected to provide an insight into the use and non-use of different information resources in the library and allow the library management to review its collection development and information access policies.

Methodology

A questionnaire was designed and self-administered to Open University of Tanzania (OUT) students in the faculty of science, technology and environment who were attending their summer studies (July, 2005) at Sokoine University of Agriculture and students of Sokoine University of Agriculture (SUA) who visited the library during the long vacation. Several questionnaires used by earlier studies were examined in developing a survey instrument for this study.

The questionnaire consisted of mainly close-ended questions with a few open-ended questions. For convenience, only students that visited the library were given questionnaires to fill in at their convenient time and return them at the issue desk in the library. 40 questionnaires were distributed and 24 of them (60 percent) were returned.

Results and Discussion

Demographic Profile of Respondents

Twenty one males and three females responded to the questionnaire. 69 percent of SUA students were in the age range of 20-35 years and 72 percent of OUT students were in the age range of 31-45 years.

Sources of Information Used by Students in the Two Universities

From a list of various information resources present in the library, students from the two universities were asked to tick all what apply. Results are presented in Table 1.

Table 1 Information sources for coursework and research used by students

Information Source	Sokoine University Students		Open University Students	
	Frequency	Percent	Frequency	Percent
Library Books	11	44	11	52.5
CD-ROM	2	8	2	9.5
Lecture Notes	3	12	2	9.5
Print Journals	0	0	2	9.5
Lecturers Hand outs	2	8	0	0
Online (internet) search	4	16	2	9.5
Dissertations	3	12	2	9.5
Total	25	100	21	100

Table 1 gives the sources of information used by both students for coursework and project or research. 44 percent of SUA students used books for course work, 12 percent used lecture notes and 8 percent used lecturer's handouts. 52.5 percent OUT students used books for course work and 9.5 percent used lecture notes. There were no big differences on the level of use of CD-ROM search among the students in the two universities. However, apparent differences were noted in online searches where 16 percent of SUA students reported to use online materials for coursework and research as compared to 9.5 percent OUT students.

Other differences were observed in terms of usage of Print Journals and Lecture Hand outs. Of the interviewed SUA students, none used Print Journals. Similarly, none of OUT students interviewed used Lecture Hand outs. It was expected that because SUA students use a conventional university with a permanent campus which is supported by all facilities including an automated library they would full utilize all the available information resources more than what was expected of OUT students who have no permanent campus.

These findings show that SUA students were not aware of the potential that exists from CD-ROM and Print Journals as information resources for both their coursework and research. The findings are not different from the pattern of usage of CD-ROMs and Academic databases (online) subscribed by the library from the daily records kept by the library on a regular basis. Thus, there must be a deliberate effort by library staff to train and keep the students aware of these resources. The best way to do this is to conduct regular information literacy tutorials to students and possibly, incorporate such training programs in the University curriculum to get full support from relevant authorities. These tutorials should also be extended to OUT students when they visit the campus libraries during long vacations of SUA students.

Other studies such as the one by Majid and Ai (2002) have found a similar pattern among students in their usage of information resources. For example, when they studied the use of information resources by computer engineering students in Singapore they found that the top five information resources in order of preference were books (94 per cent), lecturers (89 per cent), the Internet (86 per cent) and friends (84 per cent). They also found that students relied heavily on printed sources of information and that their use of electronic journals and databases was very low.

Level of Use of Other Library Resources by Students

Students were also asked to indicate their level of usage of other resources such as card catalogue, Online Public Access Catalogue (OPAC), librarians, abstracts and indexes, bibliographies and encyclopedias.

The response showed that a majority of SUA students (58 percent) used the library catalogue whenever they entered the library. On the other hand 55 percent of OUT students did not use the library catalogue whenever they visited the library. The reason for this could be due to infrequent visit the library by OUT students and a lack of thorough training on the use of these facilities. A similar trend was observed in terms of other services (Librarians, abstracts and indexes) especially abstracts and indexes online and in CD-ROM. Some OUT students reported to use abstracts and indexes in print format. The level and ability to use bibliographies and encyclopedias were low in both cases. A majority of SUA students reported that before they visited the library they sought assistance on relevant books from lecturers. Whenever they visited the library for the first time they often asked assistance from librarians on how to locate books. They also indicated that they still needed assistance from librarians, especially on how to use electronic resources when they visit the library. This indicates that the librarians will, for a long time to come, play a crucial role in improving the information literacy skills even in this ICT era when libraries are going online.

Another finding from this study is that students, amongst themselves, assist each other in locating relevant readings from the library. These findings support very well the findings by Clougherty *et al.*, (1998) who found that 56 percent of undergraduate students at the University of Iowa used friends in addition to turning to library staff for assistance.

Perceived Level of Stocking of SNAL With Respect to Levels of Specialization of Students

Library assessment is one of the techniques that help to understand existing strengths and weaknesses in order to re-orient and improve library collections, services and activities to effectively meet the information needs of the patrons. One way that has been used over a long time has been to ask the users of the services about their satisfaction of the library services.

As a way of evaluating the library in terms of services offered to its patrons therefore, students were asked to tell whether they were satisfied with the current level of information resources held in the library in terms of their specialization. The results of their perceptions are indicated in Table 2.

Table 2. Perceived level of stocking of SNAL Library by students

	University				Total
	SUA	%	OUT	%	
Very adequately stocked	1	8	2	18	3
Adequately stocked	4	31	4	36	8
Moderately stocked	4	31	4	36	8
Inadequately stocked	3	23	1	9	4
Don't know	1	8	0	0	1
Total	13	100	11	100	24

As indicated in Table 2, 54 percent of OUT students indicated high satisfaction of the level of stocking of SNAL in respect to their carriers and only 39 percent of SUA students reported that the library meets their information needs in terms of stocking. The higher percentage of OUT students as opposed to SUA students may be explained by the fact that the OUT students interviewed belong to only one faculty, whose major purpose for bringing OUT students was to exploit the opportunity of science collection in the library. But SUA students, although studying in a campus based university equipped with an automated library, could not realize the high level of stocking of information resources in respect to their areas of specialization because many of them were not aware that a lot of information was held in electronic formats (both CD-ROM and Online databases subscribed by the library).

Reasons for Ineffective Use of Library Resources by Students

When students were asked why they did not use the library services in the most effective and efficient way, some of them said that they did not need the services; some did not know that the services exist and some had difficulties in using the services.

As a result both SUA and OUT students perceive a need to be instructed on how to use information services in the library as indicated in Table 3.

Table 3 Perceived need for instructions on how to use information services in the Library

	University				Total
	SUA	%	OUT	%	
Strongly agree	8	67	6	55	14
Agree	3	25	4	36	7
Neutral	1	8	1	9	2
Total	12	100	11	100	23

Library services that students needed help

Students were also asked on the kind of library services that they needed most help in understanding how to access. The results are shown on Table 4

Table 4. Services in the library that students need most help

	UNIVERSITY				Total
	SUA	%	OUT	%	
Special collection	2	15	2	18	4
General collection	2	15	3	27	5
Reserve desk	1	8	0	0	1
Reference desk	1	8	0	0	1
CD-ROM search	4	31	4	36	8
Online search	3	23	2	18	5
Total	13	100	11	100	24

From the results in Table 4, it can be seen that most of the students need help in the use of CD ROM and Online search. (31 and 23 percentages respectively). The results support most other findings by researchers in information science such as the one by Malone and Videon (1997), who argue that there is a need to train students in information search techniques to enable them to find information on the Internet. For example, they examined citation patterns of undergraduate student papers and found that students who took Internet training classes referenced more electronic resources in their papers compared to students who had no training, an indication that training might increase students' utilization of information resources (particularly electronic information resources).

Conclusions and Recommendations

Information needs of users are important for libraries in re-orienting their collections, services and activities to synchronize them with the information seeking behavior of users. Studies have indicated that the library provides meaningful information services when the user habits are taken into consideration by librarians. Investigations into the information needs and information seeking patterns of individuals would help improve the current information systems and resources for catering to the ever changing needs of their users.

This study compared the sources of information used by students of Open University and Sokoine University of Agriculture. The findings shed light on the kind of training that is required to both SUA and OUT students in order to increase the level of use of library resources by these groups.

Moreover, it highlighted the lack of understanding, by both groups of students, of the potential role that electronic resources can offer to them in their endeavor to do their coursework and research. On the part of SNAL, the study revealed that it is to some extent, well stocked to satisfy its users, many of whom are in the applied sciences.

The study recommends that the library intensifies its efforts in training programs in information literacy skills to students and carries out massive awareness campaigns of its services to attract users beyond its boundaries.

Limitations of the Study

The research used only a fraction of students available at the time of study, but results shed some light on how students in the two universities differ in the ways they seek information in the library. Similar research should be done to include a wider sample so as to be able to make fair and strong generalizations.

References

- Agingu, B.O and Johnson, M.M. (1998). "Graduate Students Library Satisfaction Survey: Miller F. Whittaker Library, South Carolina State University". Research Report (143). <http://SearchERIC.org/ericdc/ED426704.htm> (Accessed 2005 July 17).
- Brown, C.M. (1999). "Information seeking behaviour of scientists in the electronic information age: astronomers, chemists, mathematicians, and physicists." *Journal of the American Society for Information Science*. Vol; 50 No. 10. 929-43.
- Callinan, J.E. (2005). "Information-seeking behaviour of undergraduate biology students: A comparative analysis of first year and final year students at the University of Dublin". *Library Review*; Vol. 54 No.2. pp. 86-99
- Clougherty, L.et al., (1998). "*The University of Iowa Libraries' undergraduate user needs assessment*". *College and Research Libraries*, 59, 6, 572-84.
- Fescemyer, K., (2000). "Information-seeking behavior of undergraduate geography students". *Research Strategies*; Vol. 17. pp. 307-17.
- Fidzani, B.T. (1998). "Information needs and information-seeking behavior of graduate students at the University of Botswana". *Library Review*; Vol. 47 No. 7. pp. 329-340.

- Hammond, C., Mitchell, E. (1997). "Library instruction for the professions: information needs and libraries". *Reference Services Review*; Vol. 25 No. 2. pp. 79-86.
- Hartmann, E., (2001). "Understandings of information literacy: the perceptions of first year undergraduate students at the University of Ballarat". *Australian Academic and Research Libraries*, 32, 2 <http://alia.org.au/publishing/aarl/32.2/full.text/hartmann.html>. (Accessed 2005 Jul20).
- Koss, A.I. (1996). Information Needs of Kent State University Masters of Business Administration Students. Master's Research Paper, Kent State University. <http://SearchERIC.org/ericdb/ED401911.htm> (Accessed 2005 July 17).
- Malone, D. and Videon, C. (1997). "Assessing undergraduate use of electronic Resources: a quantitative analysis of works cited". *Research Strategies*; 15 (3), 151-158. Retrieved August 18, 2005 from the World Wide Web: <http://www.alledacademics.org/education/aelg3-2.pdf>. (Accessed 2005 August 18).
- Msuya, J. (2002). "Information seeking behavior of library users in a changing library environment: the case of faculty of law staff members, University of Dar es Salaam". *University of Dar es Salaam Library Journal*, Vol. 4 Nos. 1 and 2, 2002.
- Pelzer, L.N., Leysen, J.M. (1988). "Library use and information-seeking behavior of veterinary medical students". *Bulletin of the Medical Association*; Vol. 76 No. 4. pp. 328-33.
- Shanmugan, A. (1999). "Information seeking behavior of trainee teachers in selected teacher-training colleges in Malaysia". *Malaysian Journal of Library and Information Science*; Vol. 4 No.1. pp. 1-26.
- Yang, H.W. (1998). "Information-seeking behavior of the scientists". *Bulletin of Library and Information Science*; Vol. 25 No. 24-43.