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INFLUENCE OF INFORMATION SOURCES, NEEDS AND GENDER ON INFORMATION USE OF SCIENCE UNDERGRADUATE STUDENTS IN UNIVERSITY OF IBADAN, NIGERIA

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Abstract

This study aims at determining the influence of information needs, sources and gender on information use by faculty of science undergraduate students in universities in southwest Nigeria. In order to sample all important sub-population of the students, data were collected from seven departments which are Computer science, Chemistry, Microbiology, Industrial Chemistry, Physic, Archaeology, and Anthropology. Data was collected using a questionnaire from 500 students while data were analyzed using Pearson Product Moment Correlation and T-test. It was found that a significant relationship between information needs to their major information sources used, there was significant relationship between information needs and the purpose of use of information sources among the students and there was significant difference in male and female information needs. The study concluded that information needs, sources and gender based preferences should be taken into consideration while planning and implementing information provision for the undergraduates while it was recommended among others that in order to sustain and ensure the high level of accessing materials among undergraduates of science student, all links that will aid them to access materials maximally must be provided by various institution of learning in University of Ibadan, Nigeria.

Introduction

The higher education constituency is growing at a tremendous pace, both within Africa and from outside the continent's borders (Griffin, 2004). Higher education institutions are today recognized by national governments and donor agencies as key agents for social and economic development in view of their inherent capacity to foster knowledge creation, processing and dissemination. Adetoro (2012) noted that information is critical for effective social functioning. Useful, relevant, and timely information is crucial to purposeful living and survival. Information is required for our day-to-day activities and information sources have multiplied. Undergraduates need information for their daily functioning as students. The

extent to which relevant information is available and accessible to students helps determine their academic success.

In Western Nigeria universities, faculty of science is multidisciplinary; so it is crystal clear that faculty of sciences undergraduates need information to obtain higher level of knowledge in their various fields of disciplines for preparing academic course homework and project papers using a variety of information sources and services. Also, part of the primary objectives of the faculty of sciences in universities in western Nigeria are geared towards improving knowledge about science disciplines while providing the basic academic facilities for information needs, sources and use is essential to improving their learning and academic performance (Ikegune, 2013).

Information is a vital resource needed by students to perform well in their academic pursuit. It has been observed by the researcher that faculty of science undergraduate students in universities in western Nigeria are not satisfied with their information needs and that also these needs are not effectively met due to some factors such as age, education level, linguistics ability of the user, the subject field, nature of the institution of the students, size of the institution and the communication structure within the institution.

In spite of the fact that universities are endowed and stocked with information sources (printed and electronic), information sources are still rarely utilized to enrich teaching and learning activities in the universities while the level of use of the information resources by the undergraduates is still very low. This is based on the background that the present study was carried out to determine the influence of information needs, sources and gender on information use by faculty of science undergraduate students in universities in southwest Nigeria.

Research Hypotheses

Ho1 There is no significant relationship between information needs and major information sources used by faculties of sciences undergraduate students in universities in Western Nigeria.

Ho2 There is no significant relationship between information needs and purpose of use of information sources by faculties of sciences undergraduates by institutions.

Ho3 There is no significant difference in male and female information needs of faculties of science undergraduates' students.

Literature review

The information needs of an individual or group of individual's depends highly on the work activities of such an individual or group of individuals (Ukachi, 2006). The information needs of a Medical doctor will definitely be on the treatment of sicknesses and correction of anomalies while that of a student is on his/her academic curriculum. Kumar (1980) opines that determining the needs of the users' means knowing about their requirement for information. In order to determine their requirements, it is essential to know the following; who they are, their background (qualification, knowledge of language, areas of research and specialization) and the purpose they need the information for. Okwilagwe and Opeke (1998) stresses that the five factors which affects the information needs of human beings are; their background, professional orientation, the full array of information sources available, motivation and other individual characteristics such as the social, political, economic and other systems that affect the users and their functions.

Onuoha and Awoniyi (2011) asserted that the need for information is often understood as evolving from a vague awareness of something missing and as culminating in locating information that contributes to understanding and meaning (Kunhthau, 1993). In the search for information, Marchionini (1989) notes that the execution of an individual's information seeking system for a particular information problem is considered an Information-Seeking Strategy (ISS). A well designed strategy will examine the problem and work out the best source of information that will match the information need.

Many researchers have shown interest in undergraduate students' information seeking behavior. Whitmire (2001) in such study found out that undergraduates use the library mostly as a place to study and make photocopies, but do not make great use of some of the available library services, such as interlibrary loan and the reference desk. In another study, Ajiboye and Adeyinka (2007) examined the information seeking behaviour of undergraduate students in the University of Botswana. The result of the study revealed that the internet is the most consulted source, followed by students' class notes and handouts. This finding is further confirmed by Valentine (1993) who conducted a similar study and found out that undergraduates looked for the fastest way that would lead to satisfactory results when doing research by going for electronic information sources first.

As a repository of human experience, not subject to the barriers of space and time, the major purpose of the library is to provide information. According to Lawal and Udofia (1994), the library meets the information needs of the users in the following four categories:

i   Education: to develop society, adults and children and to fill gaps in human memory.

ii   Information: to develop executive activities such as economics, social and commercial development.

iii   Aesthetic: to cultivate appreciation for culture, art, truth and judgment.

iv   Recreation: to provide amusement and hobbies.

The function of the library, therefore, is to implement, to enrich, to vitalize and humanize the educational programmes, as it strives to attain excellence in content, process and product. An information service is concerned with identifying and meeting users' need or as an ability to satisfy real information needs (UNESCO 1997). Adeleke (2005) asserted that library must not only provide the resources but also ensure effective use of the resources by its clienteles/community. Okiy (2000) corroborated this and posited that for the library to perform its role adequately, its resources must be effectively utilized. Thus, access to relevant information resources is very necessary. Accessibility of information sources is an important recurring theme in the literature. According to Aguolu and Aguolu (2002), resources may be available in the library and even identified bibliographically as relevant to one's subject of interest, but the user may not be able to lay hands on them. Sciences undergraduate students tend to use information sources that require the least effort to access.

Olowu (2004) attributed natural and artificial barriers to free access to information as the problem that makes the utilization of library difficult. The library's poor reputation arose from the lack of accessibility of information sources. Neelamegham (1981) identified accessibility as one of the prerequisites of information use while Kuhlthau (1991) argued that the choice of information seeking depends on the needs, the perceived accessibility, sources, and information seeking habits. They further noted that in seeking information, the user is usually confronted with five possible types of inaccessibility, that is, conceptual, linguistic, critical, bibliographic, and physical inaccessibility. This inevitably leads to low use of library resources. Iyoro (2004) examined the contribution of accessibility to learning processes and reported that respondents made use of the library when information was easily and conveniently accessible to them.

Madden and Fulton (2004) examined the information seeking patterns of final year undergraduate engineering students split evenly between two engineering institutes in Irish universities. It was reported that engineering students seem to have a preference for channels that require the least effort, such as the internet. They explained that the result was due to the fact that student engineers viewed the internet as a speedy, current information source which fed initial information needs quickly. Ellis, Cox and Hall (1993), on the other hand, compared the information seeking patterns of physical and social scientists and found out that there is

no essential difference between the two disciplines. Covi (1999) analyzed information seeking behavior of academic researchers in the field of molecular biology, literacy theory, and computer science and their use of digital libraries. The result of the study indicated difference in the search strategies employed and the types of material selected among the researchers in the various academic disciplines.

Researchers like (Bates, 1996; Broadus, 1987) also investigated the information-seeking behaviors of people in the humanities. They generally reported that humanities scholars did not use indexes and abstracts or consult librarians. Kamanda (1999) in a study at the East African School of Library and Information Science Library, Makerere University, Uganda observed that more than half of the students experience problems locating library information materials. He noted that the majority of them either located materials through browsing the shelves or sought assistance from library staff, but they did not make full use of the card catalogue. Ssendikadiwa (1996) made similar observation at Makerere University Library. The author noted that although the catalogue was the most essential library tool in accessing library collections, it was the most avoided and least consulted by undergraduates. Taylor (19991), on the other hand identified problems associated with availability and access to resources.

According to the author, what a user actually needs may not tally with what is practically available, due to constraints either within the stock or due to the users own inability. Hartmann (2001) in his study concluded that undergraduate students experienced difficulty in locating items from the library collection and did not understand the process for retrieving journal articles. An information service is concerned with identifying and meeting users' need or as an ability to satisfy real information needs (UNESCO 1997). Faculty of science undergraduate students benefit maximally from the use of library information sources and services when they actually use them continuously for information and updating of their skills.

The literature review covered information needs, information sources and uses. It analyzed and gave the dimension of the information needs in universities, sources and the use of the sources by the faculty of science undergraduates who are potential users of the information sources, this automatically result into improved academic achievement of the students. The review, therefore, tries to fill the gap in existing literature as far as information needs and sources are concerned especially. The literature revealed that most of the available literature was more on information sources, availability and use, use of library information resources, use of information resources, accessibility and use of information sources,

information need and information seeking behavior. There was little or no literature on information needs and sources by faculty of sciences undergraduate students most especially in Western Nigerian.

The literature also showed that Universities in Western Nigeria and the library should put into consideration and maximize the library budget judiciously in acquiring information materials to the library especially materials for faculty of science undergraduate with science related disciplines to aid their performance and to meet their academic needs.

Methodology

The descriptive survey method of investigation was adopted for this study. The population for this study comprised all faculties of sciences undergraduate students of university of Ibadan, Ibadan, Nigeria from 100 level-500 level who offered at least seven of the core disciplines in the Faculty of Science and these includes (Computer Science, Chemistry, Microbiology, Industrial Chemistry, Physics, Archaeology and Anthropology) as follows in the distribution in sampling techniques.

Stratified sampling technique with equal allocation method was used to select the whole faculties of Sciences undergraduate from university of Ibadan, making a total of 500 students out of 2,435 populations. The sampled respondents are (20.5%) of the total population of the faculty of sciences that are to be used as sample size for this study. Table 1 presents the study sample:

Table 1: Population of faculties of sciences undergraduate students in University of Ibadan

S/N	Respondents by Departments	Total Numbers	Selected % (20.5)
1	Computer science	319	65.4
2	Chemistry	398	81.6
3	Microbiology	341	69.9
4	Industrial Chemistry	329	67.4
5	Physic	426	87.3
6	Archeology	331	67.9
7	Anthropology	291	59.7
	Grand Total	2435	500

Sources: Joint Admission and Matriculation Board (2017)

Questionnaire was used as the main instrument for data collection. Data was coded and analyzed using the Statistical Package for Social Sciences (SPSS) software, for descriptive and inferential statistics. Inferential statistics of Pearson Product Moment Correlation was used to determine hypothesis 1 and 2 while T-test was used to analyse the third hypothesis.

Results

Table 2: Summary of descriptive statistics table showing participants' sex, age, marital status, and level etc.

Gender	Frequency	Percentage (%)	Ranking
Male	287	63.7	1st
Female	163	36.3	2nd
Age group			
16-21 years	54	12	6th
22-27 years	77	17.1	3rd
28-33 years	62	13.7	5th
34-39 years	71	15.7	4th
40-45 years	96	21.3	1st
45 years and above	90	20.2	2nd
Marital status			
Single	170	37.8	2nd
Married	280	62.2	1st
Levels			
100 level	69	15.3	4th
200 level	108	24	2nd
300 level	130	28.9	1st
400 level	79	17.6	3rd
500 level	64	14.2	5th

The table above shows the frequency range of the respondents starting with the gender respondents as follows; male 287(63.7%) was ranked 1st position while female with 163(36.3%) was ranked 2nd position in the distribution. Age group as indicated above, 40-

45years 96(20.2%) was ranked 1st position in the distribution; 45 years and above 90(20.2%) was ranked 2nd position; 22-27 years 77(17.1%) was ranked 3rd position; 34-39years 71(15.7%) was ranked 4th position; 28-33 years 62(13.7%) was ranked 5th position and lastly, 16-21years 54(12%) was ranked 6th position in the distribution; Marital Status of the respondents are as follows: married 280(62.2%) was ranked 1st position, singles 170(37.8%) was ranked 2nd position respectively. Academic levels of the respondents were ranked and positioned as follows: 300 level 130(28.9%) was ranked 1st position, 200 level 108(24%) was also ranked 2nd position; 100 level 69(15.3%) was ranked 4th position; 400 level 79(17.6%) was ranked 3rd position and 500 level 64(14.2%) was ranked 5th position respectively in the study.

Research Hypotheses

Hypothesis 1: There is no significant relationship between information needs and major information sources used by faculties of sciences undergraduate students in universities in Western Nigeria.

Table 3: PPMC summary table showing the relationship between information needs and major information sources used.

Variables	N	Mean	Std. Dev	Df	R	P	Sig
Information needs	450	30.8133	7.49526				
Major information sources used	450	32.4889	6.59764	448	.406**	<.05	Sig.

The above table shows high moderation of information needs to their major information sources used by faculties of sciences undergraduate students in universities in Western Nigeria (Df= 448, N=450, r= .406, P < 0.05). Based on this, the null hypothesis is rejected. Therefore, there is a significant relationship between information needs to their major information sources used. It implies that a unit increase in information needs by students will increase the major information sources used by students plan for success. Moreso, to further understand the coefficient of determinant r^2 $(406)^2$ was estimated=0.1648. This implies that information needs accounted for 16.5% variation for the prediction of major information sources used by students.

Research hypothesis 2: There is no significant relationship between information needs and purpose of use of information sources by faculties of sciences undergraduates by institutions.

Table 4: PPMC summary table showing the relationship between needs and purpose of use of information sources

Variables	N	Mean	Std. Dev	Df	R	P	Sig
Information needs	450	30.8133	7.49526				
Purpose of use of information sources	450	29.0422	9.23634	448	.317**	<.05	Sig.

The above table shows high moderation of information needs and the purpose of use of information sources by faculties of sciences undergraduate students in universities in Western Nigeria (Df= 448, N=450, r= 317, P < 0.05). Based on this, the null hypothesis is rejected. Therefore, there is a significant relationship between information needs and the purpose of use of information sources among the students. It implies that a unit increase in information needs by students will increase the purpose of use of information sources by students. Moreso, to further understand the coefficient of determinant r^2 $(317)^2$ was estimated=0.1004. This implies that information needs accounted for 10% variation for the prediction of purpose of use of information sources by students.

Research Hypothesis 3: There is no significant difference in male and female information needs of faculties of science undergraduates' students.

Table 5: T-test summary showing gender differences in the information needs of faculties of science undergraduates

Variables	Gender	N	Mean	Std. Dev	Df	t	P	Sig
Information needs by science students	Male	332	31.636	7.8956				
	Female	118	28.500	5.6489	448	3.967**	<.05	Sig.

Table 4 above reveals that there is a significant difference in male and female information needs; t(448)= 3.967**, p<.05.hence the null hypothesis is rejected. The table further reveals that male participant (x=31.635, N=332) displayed higher information needs than their

female counterparts (x=28.500, N=118). To understand the percentage of variance in information needs explained by gender size of effect was computed; Eta Square=15.737. This implies that gender had small effect in information needs variations; that is, it accounts for 15.7% in the variation of participants' information needs.

Discussion of Findings

Research Hypothesis 1: There is no significant relationship between information needs and major information sources used by faculties of sciences undergraduate students in universities in Western Nigeria.

The outcome of this hypothesis was supported by Madden and Fulton (2004), who examined the information-seeking patterns of final year undergraduate engineering students split evenly between two engineering institutes in Irish universities. It was reported that engineering students seem to have a preference for channels that require that least effort, such as the internet. Uhegbu (2007) believes that corporate bodies as sources of information have the advantage of disseminating mostly authentic and factual information. The degree of reliability of information from this source is much higher compared to individual sources because information is not released to the public until it is properly authenticated. The outcome was supported by Machlup and Masfields (1983), who believed on all published and unpublished knowledge about any given subject.

Information is the resource, which allows us to change and improve the society we live in. Olanlokun (1995) found that journal articles, textbooks, theses and dissertation, monographs and treaties and government documents were considered very important to the job functions of the Nigeria academic.

Research Hypothesis 2: There is no significant relationship between information needs and purpose of use of information by faculties of sciences undergraduates by institutions

Drabenstott (2003) as cited by Sookhtanlo, Mohammadi and Rezvanfar (2010) who examined strategies used by fourteen undergraduates in a single search session employing a so-called information gateway, a university library's home page on the web that provided one entry point for access to the library's online resources. Kim (2006) in his study about student use of library databases found that convenient access was an important determinant of database use which reflects parts of the purpose of of use of information among the studied students. Some students preferred open internet searches to web-based subscription databases simply because of their convenience.

According to Aguolu and Aguolu (2002), resources may be available in the library and even identified bibliographically as relevant to one's subject of interest, but the user may not be able to lay hands on them. Sciences undergraduate students tend to use information sources that require the least effort to access.

Research Hypothesis 3: There is no significant difference in male and female information needs of faculties of science undergraduates' students.

The outcome of this hypothesis reflects the inevitability of information which leads to low use of library resources. Iyoro (2004) examined the contribution of accessibility to learning processes by gender and reported that respondents made use of the library when information was easily and conveniently accessible to them also other sources of information that equally aids their career in life.

Ssendikadiwa (1996) made similar observation at Makerere University Library. The author noted that although the catalogue was the most essential library tool in accessing library collections, it was the most avoided and least consulted by undergraduate students. Taylor (19991), on the other hand identified problems associated with availability and access to resources made female students to withdraw from searching while with patience and endurance, the male students get well documented information which in turns aids the profitability of their academic pursuits.

Summary and Conclusion

The study found that there was no significant relationship between information needs and purpose of use of information by faculties of sciences undergraduates by institutions and there was a significant difference in male and female information needs of faculties of science undergraduates' students. it therefore concluded that **t**he study contributes to the growing literature on information needs, sources and use by undergraduate science students in university of Ibadan, Oyo state, Nigeria.

Recommendations

From the discovery made so far the following are recommended that information needs, sources and gender based preferences should be taken into consideration while planning and implementing information provision for the undergraduates and in order to sustain and ensure the high level of accessing materials among undergraduates of science student, all links that

will aid them to access materials maximally must be provided by various institution of learning in University of Ibadan, Nigeria.

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