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# **A COMPARATIVE STUDY OF THE INFORMATION NEEDS, SOURCES, AND USES BY FACULTY OF SCIENCE UNDERGRADUATE STUDENTS IN UNIVERSITY OF IBADAN, NIGERIA**

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## **Abstract**

*This study aims at comparing information needs, sources, and 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 frequency counts, percentages, mean and standard deviation. It was found that Students information needs are basically for completing homework, information professionals are still unable to professionally identify information needs of students, students rely on textbooks, internet, billboards and social gatherings as major sources of information, handbills are highly utilized, preparing of notes was found as the major constraint to the usage of information while the demystification of information needs and sources was found to aid the use of information. The study concluded that information need of faculties of sciences undergraduate students are noted ingredient for student's success in their various departments 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**

People use information to create knowledge, but not just in the sense of data and facts but in the form of representations that provide meaning and context for purposive action. Surprisingly, information science often stops short of examining what people do with the information once it has been received. Information use is one of three core elements of information behaviour, along with information needs and information seeking. Information needs and information seeking have been well studied and characterized (for example, Dervin 1983, Ellis 1993; Marchionini 1995). Information use, however, has received less attention in the research literature. It is often linked to information need, in that information is needed so it can be used, another perspective is to consider what happens with the information once it has been obtained, and how it is applied to accomplishing a specific task or goal. In the case of a goal-oriented information problem, it is essential to explicitly understand how information is used to address the problem. Otherwise we do not know if the actions, the help provided or the systems implemented produce relevant results (to the user). If the information sought for, and returned, is inadequate for the work task then such a system cannot claim to support the user.

Human efforts towards attaining goals depend highly on effective communication of information, and the major ingredient that makes communication possible is information. Information is an important resource for individual's growth and survival. The progress of modern societies as well as individuals depends a great deal upon the provision of the right kind of information, in the right form and at the right time. Information is needed to be able to take a right decision and also reduce uncertainty. If information is this valuable, it must be put to proper use, that is, made available to people or group of people who need it, after

ascertaining the groups' information needs. This compliment the vital roles libraries and other information agencies play in the life of undergraduates in the universities.

There are different categories of information users. Such includes students (undergraduates and post graduates), lecturers, market women, trader, farmers, bankers, journalists etc. this work shall be concentrating on the "faculty of sciences undergraduates" as its information user groups. Faculty of sciences undergraduates then need information that are adequate, up to date, timely and relevant to their fields and that can meet their information needs from the different types of information resources available. These information resources can then be used for academic purpose and to meet their various information needs.

### **Research Questions**

The following research questions were drawn to guide the study:

- i. What are the information needs of faculty of sciences undergraduate students in university of Ibadan?
- ii. What are the constraints to meeting information needs of faculty of sciences undergraduate students in university of Ibadan?
- iii. What are the major information sources utilized by faculty of sciences undergraduate students in university of Ibadan?
- iv. What is the level of information sources used by faculty of science undergraduate students in university of Ibadan?
- v. What are the constraints to the effective utilization of this information by faculty of science undergraduate students in university of Ibadan?
- vi. Will information needs, sources, when taken together, facilitate information use by faculty of sciences undergraduate students in university of Ibadan?

### **Literature Review**

Uttor (1999) defined information as data value in planning, decision making and evaluation of any program. He goes further to say that it is data that have been subjected to some processing function capable of answering user's query be it recorded, summarized, or simply collected that would help in decision making. It is well understood in terms of books, journals, magazines, public and private sector documents of all kinds, whether published for mass circulation or unpublished and restricted or confidential in nature, results of research efforts which are made available to colleagues in form of reports, books, articles and non-printed materials. From all these definitions, it is apparent that information is required in man's daily activities be it in school, home or work situation.

In the cognitive viewpoint of information science (Eskola, 1998), defined information as associated with a text which is the generator's modified by (purpose, intent, knowledge of recipient's state of knowledge) conceptual structure which underlines the surface structure (e.g. language) of the text. Ingwersen (1998) subsequently elaborated by defining information as being the result of transformation of the generator's cognitive structure (by intentionality, model of the recipients' state of knowledge, and in the form of signs), and on the other way round information is something, a structure which when perceived may affect and transform the recipient's state of knowledge (Eksola 1998). And to Dervin and Nilan (1986) information is seen as something constructed by human beings. In the context of this study, information will be conceived based on the definition of (Eskoka, 1998) as something which students need during their studies when they construct meanings about subjects in the process of learning.

Yuexiao (1988) opined that when it comes to defining information, it is really an elusive and controversial concept. The foregoing according to Ajewole (2001) had led to the

categorization of information definition into three (3) strands. The first is the scientific and technical information (STI). This is within the domain of scientific and technological communities. The second strand is socio-cultural. In this context, information is viewed as knowledge, which is transferable in the conduct of various activities. In the final strand, information is perceived as a basic resource and an indispensable and irreplaceable link between variety of activities, intellectual and material, in the service of society, institutions and individuals. However, within each of these strands, there is no consensual definition of the concept. Thus Gilchrist (1992) lamented that one of the difficulties information professionals have always grappled with, within their profession and with which scholars are still trying to cope with, is that of the definition of information.

Notwithstanding, there seems to be agreement on the capabilities of information and these are well documented in the literature. Information is capable of provoking actions and inaction in the recipient. This may have informed Gordon's (1994) description of information as referring primarily to the human understanding that steers human action and consequently control signals in any living organism. Similarly Shera (1972) has defined information as that which is transmitted by the act or process of communication. According to him, it may be a message, signal or stimulus. It assumes a response in the receiving organism and therefore, possessed a response potential.

However, Davies (1976) gave a broader definition. He defined information as data that has been processed into a form that is meaningful to the recipient and is of real or perceived value in current or future decisions. Hamrefors (1966) opines that information serves as a base for competent development. According to Ginzberg (1980), information reduces uncertainty while Gilad (1996) posits that information reduces risks in decision making. Okeh (1996) posits that information reduces risks in decision making. Okeh (1999) opined that information is needed to solve day-to-day problems such as finding consumer goods, locating appropriate medical facilities for family health, investment opportunities, and government policies and so on. Machlup and Masfields (1983) also defined it as 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.

Information is something that reduces uncertainty in decision-making Aiyepoku (1992). Buckland (1991) defines it as a process which occurs in the mind when a problem is united with data that can help solve it. Ojedokun (2007) as cited by Nwalo and Madukoma (2012) submitted that information is the meaning assigned to data within some context for the use of the data. According to Popoola (2008), information is part of a process of converting messages received into knowledge. Nwalo and Madukoma (2012) opined that information can be characterized by manner/mode of presentation, content, originality and proximity to the source or origin. As a manner of presentation-when words are spoken and not written, it is referred to as oral information. It can be delivered face-to-face, on in form of radio/TV programmes, audio and video presentations. However, when words are in print or written, it is referred to as textual information and can be delivered in the form of: graphics such as pictures, diagrams, charts, maps and atlases and numeric, which is data in form of number i.e. collection of statistics.

Information by content - statement of things done, known to have occurred or to be true or existing, is regarded as facts. Examples are dictionaries, atlases, handbooks, directories, etc. Originality and proximity to the source of origin, this can be classified in three forms; primary, secondary and tertiary form of information. Information in its original form such as raw data or statistics that have been collected but not yet analyzed, first reports, research studies or an eye witness account of event is referred to as "primary information". Primary information includes diaries, letters, newspapers, articles reported from records, speeches, surveys, etc. it is actual evidence presented without any analysis or interpretation

(University of Tennessee Libraries, 2005). When information is removed in some way from its original form and repackaged, it is referred to as “secondary information”.

According to the University of Tennessee Libraries (2005), secondary information source is a literature that analyzes, interprets, relates or evaluates a primary source or other primary sources. It includes textbooks, encyclopedias, dictionaries, any book or article which is an interpretation of events, or of primary sources. Tertiary information according to Oyedokun (2007) are sources which provide information for an overall feel of the subject at initial stages of searching but provide little substance to support academic statements. Example of tertiary information sources include dictionaries, encyclopedia, indexing and abstracting tools used to locate primary and secondary sources, etc, all these may also be secondary sources.

Faculty of Science undergraduate students depend largely on the availability and use of information that are related to science disciplines. These information sources aids their learning, performance, intellect and skills.

## 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. Descriptive statistics of frequency counts and percentages mean and standard deviation was used to analyse data.

## Results

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

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

The table above shows the frequency range of the respondents starting with the gender respondents as follows; male 287(63.7%) was ranked 1<sup>st</sup> position while female with 163(36.3%) was ranked 2<sup>nd</sup> position in the distribution. Age group as indicated above, 40-45years 96(20.2%) was ranked 1<sup>st</sup> position in the distribution; 45 years and above 90(20.2%) was ranked 2<sup>nd</sup> position; 22-27 years 77(17.1%) was ranked 3<sup>rd</sup> position; 34-39years 71(15.7%) was ranked 4<sup>th</sup> position; 28-33 years 62(13.7%) was ranked 5<sup>th</sup> position and lastly, 16-21years 54(12%) was ranked 6<sup>th</sup> position in the distribution; Marital Status of the respondents are as follows: married 280(62.2%) was ranked 1<sup>st</sup> position, singles 170(37.8%) was ranked 2<sup>nd</sup> position respectively. Academic levels of the respondents were ranked and positioned as follows: 300 level 130(28.9%) was ranked 1<sup>st</sup> position, 200 level 108(24%) was also ranked 2<sup>nd</sup> position; 100 level 69(15.3%) was ranked 4<sup>th</sup> position; 400 level 79(17.6%) was ranked 3<sup>rd</sup> position and 500 level 64(14.2%) was ranked 5<sup>th</sup> position respectively in the study.

**Research Question 1:** What are the information needs of faculty of science undergraduate students, University of Ibadan?

**Table 3: showing the information needs of faculty of science undergraduate students, University of Ibadan.**

S/N	Items	SA	A	D	SD	Mean	St.Dev
A	To obtain higher level of knowledge in a field for preparing academic course home work	49 (24.6%)	90 (45.2%)	40 (20.1%)	20 (10.1%)	3.97	.761
B	To obtain knowledge for preparing project paper using a variety of information sources and services	49 (24.6%)	108 (54.3%)	28 (14.1%)	14 (7.0%)	3.92	.780
C	Information about the	59 (29.6%)	64 (32.2%)	54 (27.1%)	22 (11.1%)	3.90	.772

	basic academic facilities						
D	To gain knowledge and skills needed to use information technology effectively	73 (36.5%)	93 (46.5%)	28 (14.0%)	6 (3.0%)	2.84	<b>.775</b>
E	To develop and manage information-based systems.	79 (39.5%)	68 (34.0%)	51 (25.5%)	2 (1.0%)	2.97	.824
F	To take full advantages of all the resources of the university (including courses selection)	83 (41.5%)	69 (34.5%)	37 (18.5%)	9 (4.5%)	2.80	.928
G	Overview of the science products that forms parts of the degree programmes	64 (32.0%)	88 (44.0%)	46 (23.0%)	2 (1.0%)	2.51	.766
H	To know their requirement for the courses in which they are enrolled and chose the units taken with some care	77 (38.5%)	75 (37.5%)	34 (17.0%)	9 (4.5%)	2.88	.980

The ranking of items are based on the information needs of faculty of science undergraduate students, University of Ibadan as perceived by the respondents is as follows: To obtain higher level of knowledge in a field for preparing academic course home work ( $x=3.79$ ) was ranked highest by their mean score followed by to obtain knowledge for preparing project paper using a variety of information sources and services ( $x=3.92$ ); information about the basic academic facilities ( $x=3.90$ ); to gain knowledge and skills needed to use information technology effectively ( $x=2.84$ ); to develop and manage information-based systems ( $x=2.97$ ); to take full advantages of all the resources of the university (including courses selection) ( $x=2.80$ ); overview of the science products that forms parts of the degree programmes ( $x=2.51$ ). Also, to know their requirement for the courses in which they are enrolled and chose the units taken with some care ( $x=2.88$ ) respectively in the distribution.

**Research Question 2:** What are the constraints to meeting information needs of faculty of science undergraduate students, University of Ibadan?

**Table 4: showing the constraints to meeting information needs of faculty of science undergraduate students, University of Ibadan.**

S/N	Items	SA	A	D	SD	Mean	St.Dev
A	To surf internet	85 (42.5)	77 (38.5)	37 (38.5%)	1 (0.5%)	4.23	.761
B	To consult textbooks	84 (42.0%)	76 (38.0%)	38 (19.0%)	2 (1.0%)	4.21	.780
C	To consult newspapers and magazines	76 (38.0%)	87 (43.5%)	33 (16.5%)	4 (2.0%)	4.17	.772
D	To consult journal articles	73 (36.5%)	93 (46.5%)	28 (14.0%)	6(3.0%)	4.16	<b>.775</b>
E	To browse through library collections	79 (39.5%)	68 (34.0%)	51 (25.5%)	2 (1.0%)	4.12	.824
F	To consult encyclopedias	83 (41.5%)	69 (34.5%)	37 (18.5%)	9 (4.5%)	4.11	.928

G	To consult technical reports	64 (32.0%)	88 (44.0%)	46 (23.0%)	2 (1.0%)	4.07	.766
H	To consult theses/dissertations	77 (38.5%)	75 (37.5%)	34 (17.0%)	9(4.5%)	4.05	.980
I	To consult project paper	50 (25.0%)	95(47.5%)	54 (27.0%)	1 (0.5%)	3.97	.736
J	To consult statistical reports	66 (33.0%)	74 (37.0%)	42 (21.0%)	15 (7.5%)	3.92	.987
K	To consult handbooks	67 (33.5%)	66(33.0%)	53 (26.5%)	9 (4.5%)	3.90	1.00
L	To consult dictionaries	75 (37.5%)	50 (25.0%)	47 (23.5%)	18 (9.0%)	3.81	1.17
M	To consult bibliographies	49 (24.6%)	90 (45.2%)	40 (20.1%)	20 (10.1%)	2.84	.911
N	To consult conference proceedings	49 (24.6%)	108 (54.3%)	28 (14.1%)	14 (7.0%)	2.97	.818
O	To consult CD-ROM Database and product	59 (29.6%)	64 (32.2%)	54 (27.1%)	22 (11.1%)	2.80	.988
P	To consult Abstract/indexes	26 (13.1%)	80 (40.2%)	62 (31.2%)	31 (15.6%)	2.51	.909
Q	To consult search engines	47 (23.6%)	85 (42.7%)	63 (31.7%)	4 (2.0%)	2.88	.788
R	To browse through online database	41 (20.6%)	61 (30.7%)	77 (38.7%)	20 (10.1%)	2.62	.923
S	To browse through library websites	22 (11.1%)	124 (62.3%)	53 (26.6%)	-	2.93	.859
T	To browse through library online	32 (16.1%)	68 (34.2%)	88 (44.2%)	11 (5.5%)	2.61	.820

The ranking of items are based on information needs of faculty of science undergraduate students, University of Ibadan as perceived by the respondents is as follows: to surf internet ( $x=4.23$ ) was ranked highest by their mean score followed by to consult textbooks ( $x=4.21$ ); to consult newspapers and magazines ( $x=4.17$ ); to consult journal articles ( $x=4.16$ ); to browse through library collections ( $x=4.12$ ); to consult encyclopedias ( $x=4.11$ ); to consult technical reports ( $x=4.07$ ).

Also, to consult theses/dissertations ( $x=4.05$ ); to consult project paper ( $x=3.92$ ); to consult statistical reports ( $x=3.92$ ); to consult handbooks ( $x=3.90$ ) respectively. to consult dictionaries ( $x=3.81$ ) mean score followed by to consult bibliographies ( $x=2.84$ ); to consult conference proceedings ( $x=2.97$ ); to consult CD-ROM database and product ( $x=2.80$ ); to consult abstract/ indexes ( $x=2.51$ ); to consult search engines ( $x=2.88$ ); to browse through online database ( $x=2.61$ ).to browse through library websites ( $x=2.93$ ) mean score followed by to browse through library online ( $x=2.61$ ) respectively in the distribution.

**Research Question 3:** What are the major information sources utilized by faculty of science undergraduate students, University of Ibadan?



**Table 5: showing the major information sources utilized by faculty of science undergraduate students, University of Ibadan.**

<b>S/N</b>	<b>Information sources</b>	<b>MF</b>	<b>F</b>	<b>LF</b>	<b>N</b>	<b>Mean</b>	<b>St.Dev</b>
A	Radio	50 (25.0%)	80 40.0%)	36 (18.0%)	29 14.5%)	4.31	.780
B	Television	98 (49.0%)	70 35.0%)	30 (15.0%)	1 (.5%)	4.17	.785
C	Friend	67 (33.5%)	89 44.5%)	40 (20.0%)	2 (1.0%)	4.08	.813
D	Colleges	70 (35.0%)	64 32.0%)	44 (22.0%)	18 (9.0%)	3.89	1.05
E	Relations	60 (30.0%)	66 (33.0%)	65 (32.5%)	5 (2.5%)	3.86	.944
F	Libraries	81 (40.5%)	74 (37.0%)	44 (22.0%)	1 (.5%)	3.85	.889
G	Lectures	54 (27.0%)	70 (35.0%)	54 (27.0%)	16 (8.0%)	3.81	1.12
H	Seminars	54 (27.0%)	74 (37.0%)	60 (30.0%)	12 (6.0%)	3.75	1.03
I	Workshops	66 (33.0%)	69 (34.5%)	33 (16.5%)	26 (13.0%)	3.74	1.06
J	Textbooks	51 (25.5%)	84 (42.0%)	32 (16.0%)	28 (14.0%)	3.70	1.07
K	Monographs	47 (23.5%)	65 (32.5%)	61 (30.5%)	23 (11.5%)	3.64	1.02
L	Newspapers	47 (23.6%)	94 (47.2%)	58 (29.1%)	-	2.95	.726
M	Magazines	22 (11.1%)	124 (62.3%)	53 (26.6%)	-	2.84	.595
N	Posters	70 (35.2%)	85 (42.7%)	44 (22.1%)	-	3.13	.747
O	Bulleting	46 (23.1%)	102 (51.3%)	51 (25.6%)	-	2.98	.699
P	Handbills	52 (26.1%)	116 (58.3%)	31 (15.6%)	-	3.11	.638
Q	Internet	80 (40.2%)	81 (40.7%)	23 (11.6%)	15 (7.5%)	3.14	.897
R	Billboards	79 (39.7%)	67 (33.7%)	39 (19.6%)	39 (19.6%)	3.06	.935
S	Information centers	83 (41.7%)	88 (44.2%)	22 (11.1%)	6 (3.0%)	3.25	.769
T	Journals	32 (16. %)	119 (59.8%)	48 (24.1%)	-	2.92	.631
U	Campus social groups/organizations	11 (58.8%)	48 (24.1%)	34 (17.1%)	-	3.42	.767
V	Government publications	7 (28.6%)	82 (41.2%)	50 (25.1%)	10 (5.0%)	2.93	.859
W	Non-government organizations (NGOs)	11 (5.5%)	12 (61.3%)	66 (33.2%)	-	2.72	.559

The ranking of items are based on the constraints in the meeting information needs of faculty of science undergraduate students, University of Ibadan as perceived by the respondents is as follows: to surf internet ( $x=4.23$ ) was ranked highest by their mean score followed by to consult textbooks ( $x=4.21$ ); to consult newspapers and magazines ( $x=4.17$ ); to consult journal articles ( $x=4.16$ ); to browse through library collections ( $x=4.12$ ); to consult encyclopedias ( $x=4.11$ ); to consult technical reports ( $x=4.07$ ).

Also, to consult theses/dissertations ( $x=4.05$ ); to consult project paper ( $x=3.92$ ); to consult statistical reports ( $x=3.92$ ); to consult handbooks ( $x=3.90$ ) respectively. to consult dictionaries ( $x=3.81$ ) mean score followed by to consult bibliographies ( $x=2.84$ ); to consult conference proceedings ( $x=2.97$ ); to consult CD-ROM database and product ( $x=2.80$ ); to consult abstract/ indexes ( $x=2.51$ ); to consult search engines ( $x=2.88$ ); to browse through online database ( $x=2.61$ ).to browse through library websites ( $x=2.93$ ) mean score followed by to browse through library online ( $x=2.61$ ) respectively in the distribution.

**Research Question 4:** What is the level of information sources used by faculty of science undergraduate students, University of Ibadan?

**Table 6: showing the level of information sources used by faculty of science undergraduate students, University of Ibadan.**

S/N	Items	VHU	HU	LU	NU	Mean	St.Dev
A	Radio	50 (25.0%)	95 (47.5%)	54(27.0%)	1(0.5%)	3.97	.736
B	Television	66 (33.0%)	74 (37.0%)	42 (21.0%)	15 (7.5%)	3.92	.987
C	Friend	67 (33.5%)	66 (33.0%)	53(26.5%)	9(4.5%)	3.90	1.00
D	Colleges	75 (37.5%)	50 (25.0%)	47 (23.5%)	18 (9.0%)	3.81	1.17
E	Relations	49 (24.6%)	90 (45.2%)	40 (20.1%)	20 (10.1%)	2.84	.911
F	Libraries	49 (24.6%)	108 (54.3%)	28 (14.1%)	14 (7.0%)	2.97	.818
G	Lectures	59 (29.6%)	64 (32.2%)	54 (27.1%)	22 (11.1%)	2.80	.988
H	Seminars	26 (13.1%)	80 (40.2%)	62 (31.2%)	31 (15.6%)	2.51	.909
I	Workshops	47 (23.6%)	85 (42.7%)	63 (31.7%)	4 (2.0%)	2.88	.788
J	Textbooks	41 (20.6%)	61 (30.7%)	77 (38.7%)	20 (10.1%)	2.62	.923
K	Monographs	22 (11.1%)	124 (62.3%)	53 (26.6%)	-	2.93	.859
L	Newspapers	32 (16.1%)	68 (34.2%)	88 (44.2%)	11 (5.5%)	2.61	.820
M	Magazines	36 (18.0%)	58 (29.0%)	88 (44.0%)	10 (5.0%)	2.60	.976
N	Posters	22 (11.1%)	150 (75.4%)	20 (10.1%)	7 (3.5%)	2.68	.592
O	Bulleting	96 (48.2%)	71 (35.7%)	32 (16.1%)	-	2.63	.737
P	Handbills	134 (67.3%)	9 (4.5%)	42 (21.1%)	14 (7.0%)	2.62	1.03
Q	Internet	15 (7.5%)	113 (56.8%)	71 (35.7%)	-	2.72	.596
R	Billboards	44 (22.1%)	94 (47.2%)	50 (25.1%)	11 (5.5%)	2.86	.823
S	Information centers	9 (4.5%)	117 (58.8%)	53 (26.6%)	20 (10.1%)	2.58	.734
T	Journals	21 (10.6%)	76 (38.2%)	89 (44.7%)	13 (6.5%)	2.53	.771

U	Campus social groups/organizations	61 (30.7%)	40 (20.1%)	87 (43.7%)	11 (5.5%)	2.76	.955
V	Government publications	71 (35.7%)	85 (42.7%)	31 (15.6%)	12 (6.0%)	3.08	.867
W	Non-government organizations (NGOs)	22 (11.1%)	150 (75.4%)	20 (10.1%)	7 (3.5%)	2.94	.592

The ranking of items are based on the of information sources used by faculty of science undergraduate students, University of Ibadan as perceived by the respondents is as follows: radio ( $x=3.79$ ) was ranked highest by their mean score followed by television ( $x=3.97$ ); friend ( $x=3.90$ ); colleges ( $x=3.81$ ); relations ( $x=2.84$ ); libraries ( $x=2.97$ ); lectures ( $x=2.80$ ). Also, seminars ( $x=2.51$ ); workshops ( $x=2.88$ ); textbooks ( $x=2.62$ ); monographs ( $x=2.93$ ) respectively. Newspapers ( $x=2.61$ ) mean score followed by magazines ( $x=2.84$ ); posters ( $x=2.68$ ); bulleting ( $x=2.63$ ); handbills ( $x=2.62$ ); internet ( $x=2.72$ ); billboards ( $x=2.86$ ). Information centers ( $x=2.58$ ) mean score followed by journals ( $x=2.53$ ) respectively in the distribution. Campus social groups/organizations ( $x=2.76$ ); government publications ( $x=3.08$ ); non-government organizations (NGOS) ( $x=2.94$ ) respectively.

**Research Question 5:** What are the constraints to the effective utilization of these information by faculty of science undergraduate students, University of Ibadan?

**Table 7: showing the constraints to the effective utilization of these information by faculty of science undergraduate students, University of Ibadan.**

S/N	Purpose of use of use of information sources	SA	A	D	SD	Mean	St.Dev
A	Reading for examination	76 (38.0%)	81 (40.7%)	41 (20.6%)	1 (.5%)	4.16	.763
B	Preparing notes	83 (41.7%)	63 (31.7%)	51 (25.6%)	1 (.5%)	4.13	.850
C	General awareness	76 (38.0%)	70 (35.0%)	41 (20.5%)	11 (5.5%)	4.03	.947
D	Discussions	75 (37.5%)	71 (35.5%)	40 (20.0%)	9 (4.5%)	4.01	.992
E	Research work	56 (28.0%)	84 (42.0%)	50 (25.0%)	10 (5.0%)	3.93	.853
F	Written assignment	61 (30.5%)	69 (34.5%)	57 (28.5%)	9 (4.5%)	3.87	.968
G	Information searching	56 (28.0%)	64 (32.0%)	75 (37.5%)	4 (2.0%)	3.85	.872
H	To improve general knowledge	58 (29.0%)	76 (38.0%)	32 (16.0%)	22 (11.0%)	3.73	1.16
I	To prepare for competitive examination	78 (39.2%)	53 (26.6%)	38 (19.1%)	16 (8.0%)	3.62	1.23
J	Reading for pleasure	74 (37.2%)	81 (40.7%)	32 (16.1%)	8 (4.0%)	3.07	.934

The ranking of items are based on the constraints to the effective utilization of these information by faculty of science undergraduate students, University of Ibadan as perceived by the respondents is as follows: reading for examination ( $x=4.16$ ) was ranked highest by their mean score followed by preparing notes ( $x=4.13$ ); general awareness ( $x=4.03$ ); discussions ( $x=4.01$ ); research work ( $x=3.93$ ); written assignment ( $x=3.87$ ); information searching ( $x=3.85$ ). Also, to improve general knowledge ( $x=3.73$ ); to prepare for competitive examination ( $x=3.62$ ) and for reading for pleasure ( $x=3.07$ ) respectively.

**Research Question 6:** Will information needs, sources, when taken together, facilitate information use by faculties of sciences undergraduate students in universities in Western Nigeria?

**Table 8: showing the information needs, sources, when taken together, facilitate information by faculty of science undergraduate students, University of Ibadan.**

S/N	Location of information sources used	SA	A	D	SD	Mean	St.Dev
A	Home	79 (39.5%)	78 (39.0%)	43 (21.5%)	-	4.18	.761
B	Office	67 (33.5%)	91 (45.5%)	40 (20.0%)	2 (1.0%)	4.11	.751
C	Cyber Café within institution	73 (36.5%)	76 (38.0%)	34 (17.0%)	17 (8.5%)	4.02	<b>.937</b>
D	Cyber Café outside the university	62 (31.0%)	62 (31.0%)	74 (37.0%)	2 (1.0%)	3.92	.846
E	Science laboratory	47 (23.5%)	87 (43.5%)	49 (24.5%)	12 (6.0%)	3.85	.947
F	Parents Office	67 (33.5%)	57 (28.5%)	59 (29.5%)	11 (5.5%)	3.84	1.04
G	Mobile phones	65 (32.5%)	72 (36.0%)	34 (17.0%)	18 (9.0%)	3.81	1.14
H	Friends homes	53 (26.5%)	88 (44.0%)	37 (18.5%)	21 (10.5%)	3.79	.952
I	Relatives homes	74 (37.2%)	66 (33.2%)	43 (21.6%)	7 (3.5%)	3.64	1.06
J	Resource center on Campus	53 (26.6%)	54 (27.1%)	65 (32.7%)	23 (11.6%)	3.61	1.05
K	University Library	56 (28.1%)	73 (36.7%)	55 (27.6%)	13 (6.5%)	3.54	.943
L	Department/Faculties	82 (41.2%)	70 (35.2%)	30 (15.1%)	13 (6.5%)	3.07	1.00

The ranking of items was based on the information needs, sources, when taken together, facilitate information use by faculties of sciences undergraduate students in universities in Western Nigeria as perceived by the respondents is as follows: home ( $x=4.18$ ) was ranked highest by their mean score followed by office ( $x=4.11$ ); cyber café within

institution ( $x=4.02$ ); cyber café outside the university ( $x=3.92$ ); science laboratory ( $x=3.85$ ); parents office ( $x=3.84$ ); mobile phones ( $x=3.81$ ). Also, friends homes ( $x=3.79$ ); university library ( $x=3.51$ ) and for department/faculties ( $x=3.07$ ) respectively.

### **Discussion of Findings**

**Research Question 1:** What are the information needs of faculty of science undergraduate students, University of Ibadan?

The outcome of this research question shows in table 1 from A to H that, that to obtain higher level of knowledge in a field for preparing academic course home work has been very good and delightful. Also, to take full advantages of all the resources of the university (including courses selection). This result support the view of 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.

Moreso, people use information to create knowledge, “but not just in the sense of data and facts but in the form of representations that provide meaning and context for purposive action” (Choo 2002). Surprisingly, information science often stops short of examining what people do with the information once it has been received. Information used is one of three core elements of information behaviour, along with information needs and information seeking (Wilson 1999). This result also corroborates

He further buttressed that all their activities, services and products, that is the totality of their functions are geared toward this purpose. Thus, for any educational establishment to function effectively, it must not be starved of any kind of information resources to be found in a library (Gojeh, 1995). Adequate knowledge about information needs of users is vital for developing library collections, services and facilities to meet their information needs effectively (Majid and Kassim 2000).

**Research Question 2:** What are the constraints to meeting information needs of faculty of science undergraduate students, University of Ibadan?

The outcome of this research question two shows that Thus Gilchrist (1992) lamented that one of the difficulties information professionals have always grappled within their profession and with which scholars are still trying to cope with, is that of the definition of information. This may have informed Gordon’s (1994) description of information as referring primary to the human understanding that steers human action and consequently control signals in any living organism Hamrefors (1966) opines that information serves as a base for competent development. According to Ginzberg (1980), information reduces uncertainty while Gilad (1996) posits that information reduces risks in decision making. Okeh (1996) posits that information reduces risks in decision making.

Okeh (1999) opined that information is needed to solve day-to-day problems such as finding consumer goods, locating appropriate medical facilities for family health, investment opportunities, government policies and so on. Taylors theory have been discussed by Hjørland (1997). It is argued that information needs probably do not develop continuously because given pieces of information disturb the understanding of the problem underlying the need.

Pors (1990) found that user-studies typically find that users are overall satisfied by library services. Their answers may, however, be explained by a low level of expectations. Library users normally have little knowledge about what they might expect because they have little knowledge, which again determines their answers in user misleading.

**Research Question 3:** What are the major information sources utilized by faculty of science undergraduate students, University of Ibadan?

The outcome of this research question shows 3 that, information is indispensable for human development. It can be considered as an important resource that contributes towards the development of a nation. It provides the core for the development of knowledge, the basis for innovations, the resources for informed citizenry, and as a result, becomes the key commodity for the progress of a society. Acknowledging the impact of information in human development, Mooko and Aina (2007) opined that every individual, whether literate or illiterate, needs information for a variety of issues essential for his or her survival.

Information need is an individual or group's desire to locate and obtain information to satisfy a conscious or unconscious need. The 'information' and 'need' in 'information need' are an inseparable interconnection. Needs and interest call forth information (Taylor, 1962). Also, part of the primary objectives of the faculties of sciences in universities in western Nigeria are geared towards improving knowledge about science disciplines or courses, providing the basic academic facilities for information needs, sources and use is essential to improve their learning and academic performance (Ikegune, 2013).

Recent research shows that the younger generation is the frequent user of the internet (Jones & Madden, 2002). Some researchers and educators are concerned that students tends to be overly relying on information from the internet sources, and that the students often fail to properly evaluate the information they obtained from the internet (Grimes &Boening, 2001; Herring, 2001). Example of tertiary information sources include dictionaries, encyclopedia, indexing and abstracting tools used to locate primary and secondary sources, etc, all these may also be secondary sources.

**Research Question 4:** What is the level of information sources used by faculty of science undergraduate students, University of Ibadan?

The outcome of this research question 4 divulge from the cognitive viewpoint of information science (Belkin, 1977) as cited by (Eskola, 1998) access information as associated with a text which is the generator's modified by (purpose, intent, knowledge of recipient's state of knowledge) conceptual structure which underlines the surface structure (e.g language) of the text. Ingwersen (1998) subsequently elaborated by the concept information as being the result of transformation of the generator's cognitive structure (by intentionality, model of the recipients' state of knowledge, and in the form of signs), and on the other way round information.

Ojedokun (2007) as cited by Nwalo and Madukoma (2012) submitted that information is the meaning assigned to data within some context for the use of the data. According to Popoola (2008), information is part of a process of converting messages received into knowledge. Nwalo and Madukoma (2012) opined that information can be characterized by manner/mod of presentation, content and originally and proximity to the source or origin. As a manner of presentation-when words are spoken not written, it is referred to as oral information. It can be delivered face-to-face, on in form of radio/TV programmes, audio and video presentations.

According to the University of Tennessee Libraries (2005), secondary information source is a literature that analyzes, interprets, relates or evaluates a primary source or other primary sources. It includes textbooks, encyclopedias, dictionaries, any book or article which is an interpretation of events, or of primary sources. Tertiary information according to Oyedokun (2007) are sources which provide information for an overall feel of the subject of initial stages of searching but provide little substance to support academic statements

**Research Question 5:** What are the constraints to the effective utilization of these information by faculty of science undergraduate students, University of Ibadan?

The outcome of this research question 5, which was observed from table 6 that the effectiveness to access to information, therefore, is a basic necessity that enhances full participation of every citizen in decision making. Okeh (1999) opined that information is needed to solve day-to-day problems such as finding consumer goods, locating appropriate medical facilities for family health, investment opportunities, government policies and so on. He however lamented that ability to obtain and use relevant information is affected by many factors such as place of abode, mobility, level of literacy, previous experience and awareness of the individual of the availability of information resource and services within the immediate environment.

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.

In the same vein, K. Mathacidesona (1997) submitted that the major personality traits which influence the information requirement of library users are qualification, motivation and interest. Forest and Robb (2000) argued that the most important requirement an information user must possess to meet his information needs include time to find and obtain information and obtain information and better access to information sources. Adeleke (2005) as cited by Popoola and Haliso (2009) asserted that if the library is to contribute to the advancement of knowledge, it must not only provide the resources but also ensure effective use of the resources by its clientele. Okiy (2000), in support of this claim, posited that for the library to perform its role adequately, its resources must be effectively utilized.

Findings of Fidzani (1998) indicated that guidance in the use of library resources and services is necessary to help students meet some of their information requirement. The study found that: journals, library books and textbooks are the most popular sources of information for course work and research and those students need to be taught how to use available library resources and services. In another study, Whitmire (2001) examined the difference in library use attributed to students at different class levels. The survey investigated the library experiences of undergraduate students during their three years of study. Overall, library use was low for students in first, second and third year. However, the extent of participation by students in the various library activities did increase during the three years of study for 7 of the 11 library experiences. Asking the librarian was the one experience that decreased between the activity for undergraduates students.

**Research Question 6:** Will information needs, sources, when taken together, facilitate information use by faculties of sciences undergraduate students in universities in Western Nigeria?

The outcome of this research question 6 corroborates with the findings of Haliso and Okwilagwe (2003) who found that information is an asset that everyone should acquire. The level of information consciousness depends on individual perception and need. The information available to users also determines their use. Choo (2011) observed that organizations develop their own culture of information seeking and use, establishing values and norms about, for example, how accurate the data should be, how much search is necessary, what kind of editing and manipulation is permissible and so on. In the same vain,

Diso (1994) is of the opinion that information must as a matter of policy, be seen as a basic resource for development if durable structure are to be provided for effective access and utilization, which entails information capturing, coordination, processing, and dissemination.

Dervin's (1983; 1992) Sense-Making Theory views information behaviour in terms of situation, a gap and an outcome, with information being used to bridge the gap and achieve the outcome. This framework, with its recognition of the importance of understanding how the information helps the user "make sense" of a situation, highlights the role of information use. Paisley (1987) as cited by 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). Adeleke (2005) asserted that library must not only provide the resources but also ensure effective use of the resources by its clientele/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.

## **Conclusions**

The data were analysed to obtain the result as presented in the summary of the findings.

1. That information need of faculties of sciences undergraduate students are noted ingredient for student's success in their various department in University of Ibadan, Nigeria.
2. That the outlined constraint to meeting information needs is easy with the solution provided by various institution of learning across the south west universities in Nigeria.
3. That a robust source of information utilized for effective utilization of these information towards the success they claimed to in their prospective institution of learning
4. It was concluded that information needs, sources, when taken together facilitate information use by faculties of sciences undergraduate students.

## **Recommendations**

From the discovery made so far the following are recommended

1. It is recommended that in order to sustain and ensure the high level of accessing materials among undergraduates of science student, all links that will aids them to access materials maximally must be provided by various institution of learning in university of Ibadan, Nigeria.
2. Federal government is enjoined to raise a follow up team or body to see how far they could monitor the progress institution ICT centre, University resources centre, provision of all manners of textbooks, Journal, encyclopedia and so on for the consumption of all science students across the faculties of university of Ibadan, Nigeria.



3. The universities should stage a workable seminar for all students for the use and accessibilities of this information coupled with the links for effective browsing methods among students for quick and prompt access to materials.

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