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**Utilization of Open Access Journals by Library and Information Science
Undergraduates in Delta State University, Abraka, Nigeria**

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Abstract

The study examined the utilization of open access journals by Library and Information Science (LIS) undergraduate at Delta State University, Abraka. Two research questions and one hypothesis guided the study. A descriptive survey design was used by the researchers. The population of the study comprised 477 LIS undergraduates, and a simple random sampling technique was used to determine the sample size which is 217 students, representing 45% of the total population. The questionnaire was the instrument used for data collection. The questionnaire was validated by two experts and the Cronbach Alpha was used to establish the reliability of the instrument which yielded 0.75. Data were analysed with frequency count, simple percentages, and Statistical Product and Service Solutions (SPSS) version 23 was used to generate the mean, and standard deviation while Pearson's product-moment correlation coefficient was used to test the hypothesis at 0.05 significant levels. The findings revealed that the students had a high level of awareness and a high level of usage of open access journals. From the test of the hypothesis, the study discovered that there is a significant relationship between the level of awareness and the use of open access journals. Hence, the student's level of awareness positively influenced the use of open access journals. Based on the findings, the researchers recommended that the library management and lecturers should continue to promote the use of open access journals generally among the students to sustain its use.

Keywords: Utilization, Open Access Journals, Library and Information Science Students

Introduction

The library is the nerve centre of any academic institution, be it a college, polytechnic, or a university. The university library is the heart of the university because it plays an important role in the achievement of the goals of the university. The library provides all the information resources including subscribing to paid traditional journals which are needed for effective teaching, learning, and research. These journals provide current and relevant information for research. However, the high costs of print journal subscriptions, which have continued to grow without equivalent increases in library budgets (Goodman, 2004), and bad economic conditions, made it extremely difficult for university libraries, especially those in developing countries to subscribe to them. This became a major barrier to information access and a serious concern to the stakeholders of scholarship. These challenges laid the foundation for the open access movement (Salager-Meyer, 2012; Oren, 2008).

Open access journals are defined as journal articles that are freely available online and are not subject to copyright limitations. According to Issa et al., (2014), open access journals, are peer-reviewed journals that are made freely available to the public over the Internet in open access publishing, where the end user is not charged to access journal articles. They are journal articles that have been published electronically on the Internet and are freely accessible to the public for reading, downloading, copying, and distributing, and can also be printed by anyone and from anywhere without discrimination as to their use (Novella, 2013). Open access contents can be in any format like texts, data, audio, video, multimedia, and scholarly articles. The initiative operates on such funding strategies as direct author fees, institutional membership to sponsor all or part of author fees, funding agency payments of author fees, grants to open access publishers, and institutional subsidies to offset the costs of publications (Ivwhighrehweta & Onoriode, 2012).

The primary advantage of open access journals includes free access to information and increased research impact (measured by citations/downloads) of open access articles compared to non-open articles (Antelman, 2004), making them a potential solution to the so-called "serial crisis" or "journal affordability problem." The benefits of using open access journals, according to Okoye & Ejikeme (2011), include increased citation to published scholarly work; free publishing of articles by authors, increasing the impact of researchers' work; online free of charge access to articles; provision of free online access to the literature necessary for one's research; assisting in career development; and online free of charge access to the literature

necessary for one's research. As a result, the introduction of open access journals has however provided leverage to university libraries to increase the visibility of their faculty and institution, reduce their expenses for journals, and advance their mission to share knowledge (Suber, 2015; Jain, 2012). Librarians are in a good position to advocate for the use of open access journals and can leverage the open access journals hosted by their respective libraries to assist in preparing students for careers in academia (Beard, 2016).

The main objective of the open access journal campaigns is to create an open knowledge society, in which knowledge is viewed as a common human legacy that should be freely accessible and available to all. Without a doubt, the open access journals efforts arrived at a time when libraries around the world, particularly those in developing countries, were facing difficult times as a result of escalating library budget cuts and soaring subscription fees, crippling their performance. However, despite the huge benefits presented by open access journals, it has been observed that there is a gross reduction in the usage of open access journals by students in Nigeria as compared to their contemporaries (Ayeni, 2017). This may be a result of the low level of awareness and perceptions about the quality and usefulness of open access journals among the students. The optimal use of open access journals is determined by the student's level of awareness. Many students may not be able to locate them or even use them for their academic work if they are unaware of the presence of open access journals. It is on this note, therefore, that this study examined the utilization of open access journals by Library and Information Science undergraduates at Delta State University, Abraka, Nigeria.

Statement of the Problem

Open access journals have arisen as a potential alternative to expensive print commercial journals, providing equitable access to scholarly publications without the barrier of a subscription or access fees. The characteristics of open access journals distinguish them from the traditional print journals in that they are legally free to access, copied, download, distributed, and print by anyone and from anywhere without discrimination as to their use. However, despite open access journals growing popularity, benefits, and ability to contribute to developing countries' educational growth, it has been found that open access journals are underutilized by undergraduate students in Nigeria. This may be due to the low level of awareness of open access journals among the students. Students who are aware of open access journals will be able to locate them for their use because the optimal use is determined by the student's level of awareness. Consequently, no study has been conducted regarding the

utilization of open access journals by Library and Information Science undergraduates at Delta State University, Abraka, Nigeria and this is the gap the study intends to cover. It is on this note, therefore, that this study examined the utilization of open access journals by Library and Information Science undergraduates at Delta State University, Abraka, Nigeria.

Objectives of the Study

The main objective of this study is to examine the utilization of open access journals by Library and Information Science undergraduates at Delta State University, Abraka, Nigeria. The specific objectives are:

- i. To ascertain the level of awareness of open access journals by Library and Information Science undergraduates
- ii. To examine the level of usage of open access journals by Library and Information Science undergraduates
- iii. To identify the challenges in the use of open access journals by Library and Information Science undergraduates

Research Questions

The following questions guided the study:

- i. What is the level of awareness of open access journals by Library and Information Science undergraduates
- ii. What is the level of utilization of open access journals by Library and Information Science undergraduates

Hypothesis

- i. There is no significant relationship between the level of awareness and utilization of open access journals by Library and Information Science undergraduates

Literature Review

Few studies have been conducted on the utilization of open access journals by undergraduate students. In this section, a review of some of these studies is presented. For instance, Beard (2016) investigated graduate student knowledge and usage of open-access journals at Kansas State University (K-State) libraries. The survey instrument was created using an online questionnaire and 53 students completed the survey. The study reveals that the student showed greater awareness and usage of open access journals.

Iqbal & Naushad (2017) did a study on the awareness and use of open access journals by library users of Cochin University of Science and Technology and Pondicherry University. The findings revealed that the majority of respondents were familiar with and made use of open access journals.

Ivwithreghweta & Onoriode (2012) conducted a study on the awareness and use of open access journals by Library and Information Science students at the University of Ibadan, Nigeria. The study employed a descriptive research method using an ex-post-factor type of design and covered the entire population of 144 master's degree students of the Department of Library, Archival and Information Science, University of Ibadan, Nigeria. The study disclosed that students' use of open access journals is still far from expected even though the students show great willingness to use free sources of information. It was recommended that stakeholders intensify efforts in the creation of awareness of the importance and usage of open access journals.

Mohammed & Garba (2013) examined open access academic journals awareness and use by postgraduate students at Ahmadu Bello University Zaria (ABU) in Kaduna State, Nigeria. The survey research design was used to drive the study, which was guided by four research objectives. The study's participants are all postgraduate students at Ahmadu Bello University Zaria's Faculty of Science. A random sample of 100 people was chosen from each of the faculty's departments. The data was collected via a questionnaire, of which 97 were successfully retrieved and analyzed using descriptive statistics. The majority of postgraduate students at Ahmadu Bello University Zaria's Faculty of Science learned about open access journals via haphazardly surfing/searching the Internet. However, the majority of the respondents were unaware of the primary sources of open access scholarly publications. The majority of the responders rely on open access journals to support their theses and dissertations, among other things. However, it is suggested that libraries provide frequent training on the value of open access publications to both faculty and postgraduate students in the faculty of science.

Ayeni (2017) evaluated master's degree students' attitudes and use of open access journals at two universities in Nigeria's south-western region. The study utilized a descriptive survey design with a population of 7,423 master's degree students from the University of Ibadan and 1,867 from Obafemi Awolowo University. A structured questionnaire was utilized to collect data and a multistage random selection procedure was employed to choose a sample size of 249 people. Frequency counts, percentages, mean, standard deviation, correlation, and regression analysis

were used to analyse the data. Open access journals were discovered to be used for learning, dissertation writing, personal research, and development. The regression analyses showed that there was a significant relationship between positive perception and students' use of open access journals. The author recommended that quality assurance of open access journals should be ensured to boost users' positive perceptions to increase their patronage and usage of these scholarly outlets for various academic activities, which will in turn encourage research and development across the various institutions of higher learning in Nigeria. The challenges in the use of open access journals are download delays, a lack of Internet connectivity, and limited access to computer terminals, among other concerns.

Aiyebilehin et al. (2017) investigated awareness and use of open access journals by LIS undergraduates at Ambrose Alli University, Ekpoma. A descriptive survey research design was adopted and the questionnaire was used for data collection. The sample for the study was drawn from the population through a simple random sampling technique, and a total sample size of 250 students was drawn from the total population of 620 students. A total of 213 copies of the questionnaire were retrieved and analysed with simple percentages, mean and standard deviation. The findings reveal that there is a low level of awareness of open access journals. It was discovered that the majority of the respondents use open access journals to a high extent for carrying out searches for relevant literature for projects and seminars, downloading articles, and searching for research topics/ideas. The major hindrances to the use of open access journals were found to be a lack of Internet search skills; and limited access to computer terminals. Recommendations include that librarians, lecturers, and others stakeholders in the faculty should intensify efforts in creating awareness of the importance of open access publications.

Ambrose et al. (2021) examined the use of electronic resources among undergraduate students of Library and Information Science (LIS) at the University of Benin, Benin City amid the COVID-19 pandemic lockdown in Nigeria. Two (2) research questions guided the study. The researchers adopted a descriptive survey design. The population of the study comprised 93 undergraduate students. Convenience sampling was done, as the entire respondents who filled the questionnaire were used for the study. An online questionnaire was the instrument used for data collection. Data were analysed with frequency count, simple percentages, and mean. The findings revealed that the students mostly used Internet resources, e-books, and e-journals. It was also established that erratic power supply, slow internet access, and high cost of data subscription were the three major challenges to the effective use of e-resources during the COVID-19

lockdown. Based on the findings, the researchers recommended the government should provide adequate power supply, build a robust IT Infrastructure and prevail on network providers to provide cheap data subscriptions so that students can enjoy more access to the internet for effective learning even while at home.

Wiche & Ogunbodede (2021) investigated students' awareness and use of open educational resources (OER) at Ignatius Ajuru University of Education, Port-Harcourt. The population of the study comprised 248 undergraduate and postgraduate students. Three (3) research questions guided this study. Data were collected using the questionnaire. Data were analysed with descriptive statistics such as frequency count and simple percentages. The findings established that the students mostly used YouTube videos, open access journals/databases, open textbooks, etc. It was also discovered that inadequate information literacy skills, poor electricity supply, poor internet connectivity, lack of library sensitization, and lack of support from lecturers on the use of OER were some of the challenges to the effective use of OER.

Theoretical Framework

The study used Rogers' Diffusion of Innovation Theory. The idea is centred on the transition from formation to the usage of new tools/technologies, approaches, ideas, etc. The theory describes how an idea acquires traction over time and spreads across a people or social system before being adopted. Five primary characteristics that drive innovation adoption are:

- **Relative Advantage** – The level at which an invention is assumed to be superior to the idea, or program it is intended to replace.
- **Compatibility** - How well does the innovation align with the potential adopters' standards, capabilities, and desires.
- **Complexity** – The level at which new technology is believed to be difficult to comprehend and use. Simpler-to-understand ideas are accepted more quickly than advances that need the user to acquire new skills and knowledge.
- **Triability** - The level at which an idea can be tried before deciding to embrace it.
- **Observability** - The level at which a novelty has a measurable impact.

For an invention like open access journals to achieve acceptance and be utilized by university students, it must seem to be valuable and superior to printed traditional journals. It must be perceived as being in line with the beliefs and desires of university students and user-friendly. Students' awareness of an innovation's utility and simplicity of use, such as Open Access Journals, may inspire them to use it, thereby enhancing their academic performance.

Methodology

The study employed a descriptive survey design. The population of the study comprised 477 undergraduate students out of which 217 were randomly selected. The Taro Yamane sample size formula was used to determine the sample size of the study. The questionnaire was the instrument used for data collection. A total of 250 questionnaires were distributed to the respondents and 217 were retrieved and found usable. The response to each of the items was weighted on a 4-points Likert-type scoring scale. The respondents were free to choose Strongly Agree (SA) = 4 points, Agree (A) = 3 points, Disagree (D) = 2 points and Strongly Disagree (SD) = 1 point. From the scale, a criterion score of 2.5 was adopted. The criterion score was obtained as follows: $\text{Criterion score} = ((4+3+2+1))/4 = 2.5$. For Research Question 1, the response below 2.5 was adjudged as low-level awareness, while the mean response of 2.5 and above was adjudged as high-level awareness. For Research Question 2, a mean response below 2.5 was adjudged low-level usage, while a mean response of 2.5 and above was adjudged as high-level usage. Finally, for research question e, items having a mean score above the criterion score of 2.5 and above were accepted while those below 2.5 were not accepted.' Data were analyzed with frequency count, and simple percentages and SPSS version 23 was used to generate the mean and standard deviation while Pearson's product-moment correlation coefficient was used to test the hypotheses at 0.05 significant levels.

KEY: SA= Strongly Agree; A=Agree; SD=Strongly Disagree; D=Disagree.

Results

The findings of the study are presented in the following tables with explanations

Section A: Demographics Characteristics of Respondents

Table 1: Gender of the Respondents

Gender	No. of Respondents	Percentage (%)
Male	57	26
Female	160	74
Total	217	100

Table 1 shows that 160(74%) of the respondents were female while 57(26%) were male. This implies that the majority of the respondents under study were female.

Table 2: Age Range of the Respondents

Age Range	Frequency	Percentage (%)
21-30	150	69
31-40	51	24
41-50	16	7
Total	217	100

Table 2 revealed that 150(69%) of the respondents were within the age bracket of 21-30years, 51(24%) were within the age bracket of 31-40years while 16(7%) were within the age bracket of 41-50years. This implies that the majority of the respondents were within the age bracket of 21-30year

Table 3: Year of Study of the Respondents

Year of Study	Frequency	Percentage (%)
100	47	22
200	58	27
300	67	31
400	45	20
Total	217	100

Table 3 shows that 67(31%) were in 300 levels, 58(27%) were in 200 levels while 47(22%) and 45(20%) were in 100 and 400 levels respectively.

Research Question 1

What is the level of awareness of open access journals by LIS undergraduate students?

Table 4: Level of Awareness of Open Access Journals by LIS Undergraduate Students

S/N	Awareness of Open Access Journals (OAJs)	SA	A	D	SD	Mean	S.D
1.	I am aware of open access journals	59	131	18	9	3.1	0.72
2.	I know that open access journals are freely available online to be used by members of the public	56	135	22	4	3.1	0.65
3.	I know that open access journals are very easy to access on the Internet	64	124	17	12	3.1	0.77
4.	I know open access journals are journals licensed under an open copyright license	53	137	16	11	3.0	0.72
5.	I know that open access journals provide free quality materials for learning and research	33	145	29	10	2.9	0.68
	Grand Mean					3.0	0.71

Table 4 shows the level of awareness of open access journals by LIS undergraduates. All the items in table 4 have mean values that are above the criterion mean of (2.5), more so, the grand

mean (3.0) is greater than the criterion mean (2.5), which shows that the students have a high level of awareness of open access journals.

Research Question 2

What is the level of utilization of open access journals by LIS undergraduate students?

Table 5: Level of Utilization of Open Access Journals by LIS Undergraduate Students

S/N	Use of Open Access Journals (OAJs)	SA	A	D	SD	Mean	S.D
1.	I use open access journals in carrying out my research activities (assignments, seminars & project writing)	86	121	7	3	3.3	0.61
2.	I make use open access journals to research topics/ideas for my projects	65	144	5	3	3.2	0.56
3.	I use open access journals to prepare for my tests and examinations	70	134	13	-	3.2	0.56
4.	I use open access journals to update my knowledge	54	145	3	5	3.1	0.61
5.	I use open access journals as an alternative to expensive commercial print journals	39	160	10	8	3.0	0.60
	Grand Mean					3.1	0.59

Table 5 reveals the level of usage of open access journals by LIS undergraduates. All the items in table 5 have mean values that are above the criterion mean of (2.5), more so, the grand mean (3.1) is greater than the criterion mean (2.5), which shows that the students have a high level of usage of open access journals.

Hypothesis: There is no significant relationship between the level of awareness and utilization of open access journals by Library and Information Science undergraduates

Table 6: Relationship between the level of awareness and utilization of open access journals

Variable	Mean	Standard Deviation	N	R	p-value	Remark
Awareness	15	3.6	217	0.673	0.001	Significant
Use	16	2.9				

$\alpha = 0.05$

Table 6 shows the relationship between the level of awareness and utilization of open access journals by Library and Information Science undergraduates. The table shows a positive correlation coefficient of 0.673 and a p-value of 0.001. Testing the hypothesis at 0.05, the p-value is less than the alpha value of 0.05. This means that the null hypothesis is rejected. Therefore, there is a significant relationship between the level of awareness and utilization of

open access journals by Library and Information Science undergraduates. Hence, the level of awareness positively influences the level of usage of open access journals by LIS undergraduate students in this study.

Discussion

The study examined the utilization of open access journals by Library and Information Science undergraduates at Delta State University, Abraka, Nigeria. The study revealed that the students had a high level of awareness of open access journals. The high level of awareness could be credited to the fact that the concept of open access journals is gaining more popularity among students in Nigeria generally. This finding is not consistent with that of Aiyebilehin et al. (2017) who found a low level of awareness of open access journals among LIS students. The study also discovered that the students had a high level of usage of open access journals. The high level of usage could be a result of the usefulness of open access journals to support their learning, research, and projects/seminar writing among others. This finding is in agreement with that of Ivwighreghweta & Onoriode (2012) who also found high-level usage of open access journals among LIS students. Lastly, the test of the hypothesis shows that there is a significant relationship between the level of awareness and utilization of open access journals by LIS undergraduates. Hence, the level of awareness positively influences the level of usage of open access journals by LIS undergraduate students in this study. The finding conforms to many studies that have reported a significant relationship between awareness and the use of open access resources.

Conclusion and Recommendation

The study found that LIS students had a high level of awareness and usage of open access journals. The study also established that there is a significant relationship between the level of awareness and utilization of open access journals by LIS undergraduates. Based on the results obtained from the study, the researchers recommended that the library management and lecturers should continue to promote the use of open access journals generally among the students to sustain its use.

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