

# Library Information Resources Use as Predictors of Academic Performance of Library and Information Science (LIS) Undergraduates in Nigeria: Implications for Academic Libraries

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## Abstract

*The study examined library information resources use by library and information science (LIS) undergraduates in Nigeria and ascertained the relationship with the academic performance of the students. The ex-post facto research design was used and 1,526 LIS undergraduates studied. Primary and secondary data collected were analysed using descriptive and inferential statistics. Print library information resources were mostly used and there was a statistically significant relationship between LIS undergraduates' use of library information resources and academic performance. The study established that library information resources use predicts academic performance. University libraries therefore should provide resources to enhance the undergraduates' performance.*

**Keywords:** Library Information Resources, Academic Performance, Library and Information Science Undergraduates, Academic Libraries, Nigeria

## Introduction

Advances in information and communication technologies (ICT) have brought about the explosion of information sources. Information sources ranging from print to electronic formats are easily accessible on the web through the Internet using mobile or other technologies. Academic libraries also collect and provide many information resources to support teaching, research and learning activities in the academic communities. Library and information science (LIS) undergraduates are expected to be equipped with relevant skills and techniques while in the university (Librarians' Registration Council of Nigeria, LRCN, 2017). Therefore, like other undergraduates, they engage in academic activities such as standard structured lectures, assignments, group discussions, seminars, writing term papers, continuous assessments, and examinations. These necessitate the LIS undergraduates to effectively utilise the information resources available to them while engaged in all these activities which are used in the evaluation of their overall performance, culminating in their academic performance.

Academic performance can be defined as the extent to which undergraduates obtain their educational objectives, goals, and outcomes. These include performance measured regarding practical examinations, continuous assessments and assessment of essays, practical exercises, and

reports. Usually, the Grade Point Average (GPA) is used to express the academic performance of undergraduates. That is, the overall performance of each undergraduate in an academic programme is determined by the mean of marks obtained from courses offered after the programme terminates (Richardson, Abraham, and Bond, 2012).

Evidence abounds of the encouraging contributions of the library to the academic performance of undergraduates. Assessment in action project by the Association of College and Research Libraries (ACRL, 2017) showed that students who made use of the library in some ways, for example, accessing online databases and interlibrary loan, achieved better grades than those who did not utilise the library. Shrestha (2008) had earlier reported that undergraduates who regularly use library resources understand that the available information resources in the library are more all-inclusive and scholarly than what most websites offer. Kot and Jones (2015), in a study at Georgia State University, demonstrated that using library information resources has a desirable effect on the academic performance of undergraduates. An earlier study conducted by Wong and Webb (2011) lends credence to this submission.

Although undergraduates use the university library, the studies by Soria, Fransen and Nackerud (2013) and Wenborn (2018) are suggestive of the fact that they do not obtain all the information they need and thus, rely less on the library as the primary source for accessing information. Traditionally, undergraduates use the library to either read or borrow books but in this technology age, their expectations of the library are changing. Users look forward to being able to learn anywhere with continuous access to library information resources and materials in various formats. The implication of this is that within and outside the library, undergraduates must be able to use the information and have information resources delivered to them irrespective of their locations. This study, therefore, is an investigative study into how LIS undergraduates make use of library information resources to support learning in their pursuit of academic success.

### **Statement of the Problem**

Attempts have been made over the years to identify factors that can influence the academic performance

of undergraduates, and the use of the library was not left out. Evaluation of the academic performance of undergraduates is crucial in the assessment of the quality of education received in the university. It is crucial for the accreditation of professional courses like library and information science (LIS). Academic libraries have not demonstrated the value adequately in complementing the university in achieving the goals and expectations. Thus, analysing the connections between library information resources use and academic performance of LIS undergraduates would provide academic libraries with evidence-based data that can inform improved service effectiveness and efficiency. It is against this backdrop that this study set out to investigate library information resources use as a predictor of academic performance with the intent of enhancing learning and thus improving the academic performance of LIS undergraduates in Nigerian universities.

### **Literature Review**

Studies have shown that academic libraries recognise the importance of the academic performance of students (ACRL, 2017). There is a general opinion that the library supports students' academic performance and researchers have suggested investigations into the correlation between the library interactions or use of the library by undergraduates and their GPA (ACRL, 2010; Lance, Rodney and Schwarz, 2010). One of the earliest studies, Kramer and Kramer (1968), researched the relationship between the grades and retention of freshmen students at California State Polytechnic College, Pomona and library borrowing data. They found positive correlations between higher grades, retention and borrowing library materials. Most research in recent times used extensive national data as measures of library impact on the higher education sector (Kuh and Gonyea, 2003; Gratch-Lindauer, 2007; Emmons and Wilkinson, 2011). The subjects of the studies were single institutions that mostly concentrated on the use of library information resources and grades of students to determine the academic performance (Goodall and Pattern, 2011; Wong and Webb, 2011).

Strang (2015) looked into the circumstances that made students choose to use the library resources available to them for research and assignments and

highlighted seven reasons. There is access to a vast array of resources either through the library or at the library and opportunities to read books and journals in print or electronic formats. Although students use the Internet, they prefer using library information resources because they trust the quality of the resources and find it comfortable and convenient to look for information in the library. Students can find accurate and reliable information through libraries' online resources. The students could ask for assistance from the 'Ask library staff' on the library website and get quick answers to their questions with directions to needed materials. Students also chose to use the library because of the conducive and enabling environment to study and do research. The opportunity to accurately cite the information resources used and availability of the Internet and Wi-Fi facilities make studying easier.

### **Library Information Resources Use and Academic Performance of Undergraduates**

The academic library plays a vital role in students learning experience by providing access to information resources. Attesting to this, Hamade and Al Yousef (2010) examined information resources use by LIS postgraduates at Kuwait University by the use of citation counts of references in their research papers. The findings revealed that journal articles, web pages, and books are the most preferred information resources used by the students. Wong and Webb (2011) discovered significant associations between the number of books checked out of the library by students and their GPA at graduation. Rather than using the customary academic library assessment, Wong and Webb (2011) reported an experimental project undertaken by the Hong Kong Baptist University Library (HKBU) by sampling up to 8,701 pairs of data. The study was able to demonstrate positive impact on the learning outcomes of undergraduates by establishing a statistically significant relationship between the use of library materials and the CGPA of undergraduates. A strong association was also discovered by Cox and Jantti (2012) between library information resources use and student grades at the University of Wollongong Library. The investigation was carried out by analysing resource usage data for book loans and online resources used by the undergraduates in

the university using a database called 'Library Cube' which was used to link library use, demographic and academic performance data of the undergraduates.

Brown and Malenfant (2015) noted that higher education effectiveness and quality of LIS undergraduates is increasingly becoming a concern for academic libraries. The academic libraries contribute to assessments in the universities by documenting the value of academic libraries through the creation of approaches, strategies, and practices, hence, promoting their institutions' goals and missions. They noted further that academic libraries could establish the relationship between the various aspects of the library services and factors that influence academic performance by providing an evidence-based demonstration of the various contributions of libraries to the learning and success of undergraduates.

Association of College and Research Libraries (ACRL, 2017) in the recently completed assessment in action team projects that comprised of 55 higher education institutions in North America demonstrated the relationships between the library and undergraduates' academic success. Firstly, undergraduates, who received library instruction as part of their courses, demonstrated better information literacy competencies and achieved better grades than those who did not receive the library instruction-related course. Secondly, library spaces and research rooms foster a social and academic relationship among students. Thirdly, the use of instructional games in the library was to enhance students' engagements, information literacy skills, and improve the attitude of the students toward the library and the staff. Thus, as rightly stated earlier by Wong and Webb (2011), academic libraries, especially in the developing countries, must demonstrate the contributions of library use to student academic performance empirically and, ultimately, to the overall effectiveness of the university.

### **Walberg's Theory of Educational Productivity**

Several authors including Maehr and Sjogren, 1971; Beck, 1978; Sternberg, 1998) have proposed theories that serve as a foundation for understanding factors that influence academic performance of undergraduates. One such tested theory is Walberg's Theory of Educational Productivity (Walberg, 1981).

Walberg identified eight factors that influence student's performance: student ability; motivation; quality of instruction; the quantity of instruction; the socio-psychological environment of the classroom; education-stimulating conditions in the home; peer group and exposure to mass media. Later on, McGrew and Evans (2004) grouped these critical variables identified by Walberg into three. The first three variables (ability, motivation, and age) reflect the characteristics of the student; the fourth and fifth variables indicate instruction (quantity and quality), while the other four variables (classroom climate, home environment, peer group, and exposure to media) represent aspects of the psychological environment.

Student characteristics are essential for academic performance, but they only comprise a small portion of the learning equation. More specifically, psychological environment variables influence about 92% of the time students spend outside class (Walberg, 2003). In summary, if all these key variables are adequately combined in the learning equation, the undergraduates will be academically successful, and their academic performance will be enhanced. Hence, the factor under consideration, library information resources use, is categorised into the supplementary or supportive group, which, according to McGrew and Evans (2004), represents the psychological environment of students. For this reason, the appropriate combination of library information resources use in the learning equation in addition to student characteristics and instruction could significantly influence the academic performance of LIS undergraduates in Nigeria.

### **Aims of the Study**

The study aims to examine the extent of library information resources use by library and information science (LIS) undergraduates in Nigerian universities and ascertain the relationship with the academic performance of the undergraduates. Analysing the connections between library information resources use and academic performance would provide academic libraries with evidence-based data. It could also inform service improvements and efficiencies, the development of new services, and the allocation of resources for a positive impact on the academic

performance of undergraduates and all other library users in general.

### **Research Questions**

The following research questions were posed for the study:

- (i) What is the frequency and purpose of library use by undergraduates in Nigerian universities?
- (ii) What are the print and electronic library information resources available in the library for LIS undergraduates in Nigerian universities?
- (iii) What is the frequency of use of the available print and electronic library information resources by LIS undergraduates in Nigerian universities?

### **Hypothesis**

The only research hypothesis for the study was:

H<sub>0</sub>: There is no significant relationship between the use of library information resources and academic performance of LIS undergraduates in Nigerian universities.

### **Research Methods**

The descriptive survey design of *ex-post facto* type was employed for the study. It enabled the researchers to establish the relationship between library information resources use and academic performance of the undergraduates. The multi-stage procedure was adopted and 23 Nigerian universities (federal – 12, state – eight and private – three) (see Appendix) accredited by the Librarians' Regulation Council of Nigeria (LRCN, 2016) to offer LIS degree programme in the six geopolitical zones were purposively selected. The population of the 200 to 400 Levels LIS undergraduates was 7115 (see Appendix). The universities were stratified by university ownership in the six geopolitical zones. One federal university was randomly selected from each of the six zones, while five state and three private owned universities were randomly selected from each of the five and three geopolitical zones that have universities offering LIS degree programme respectively (See Table 1). The stratification and

random selection ensured equal representation of universities in all the zones and university ownerships. Proportionate sampling technique was used to select 40% of the LIS undergraduates (1526) that were studied.

The data collection instruments used were the questionnaire (adapted from Shrestha, 2008) and the

university records bearing the Cumulative Grade Point Average (CGPA) of the undergraduates. The internal reliability of the questionnaire measured by Cronbach's Alpha analysis was 0.959. Data collected for this study were analysed using descriptive statistics like percentages, frequencies, mean, standard deviation and inferential statistics.

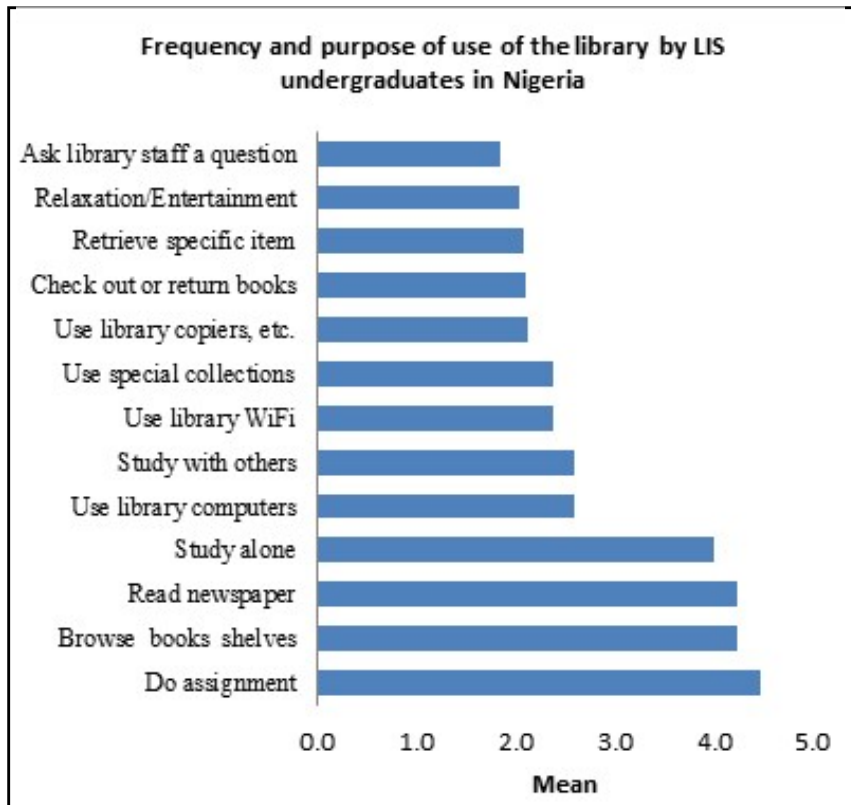
**Table 1: Stratification of university ownership by geopolitical zones**

Ownership/ Geopolitical Zones	North Central	North East	North West	South East	South-South	South West	Total	Number of universities selected
<b>Federal</b>	2	3	2	2	2	1	12	<b>6</b>
<b>State</b>	2	–	1	2	2	1	8	<b>5</b>
<b>Private</b>	–	–	–	1	1	1	3	<b>3</b>
<b>Total</b>	4	3	3	5	5	3	23	<b>14</b>

## Findings of the Study

It is evident from the findings presented in Fig. 1 that all the respondents used the library at different times and for different purposes. All the respondents visited the library at least once a week to attend to continuous assessments (do their assignment) ( $\bar{x}$  = 4.47, SD = 0.67), to browse books on the shelves or read newspapers ( $\bar{x}$  = 4.23, SD = 0.62) or study

alone ( $\bar{x}$  = 4.00, SD = 0.82). However, almost half of the respondents had never used the facilities in the university libraries like photocopying services, checked out/return books, retrieved specific item (46.6%) or used the library for relaxation/entertainment (46.5%) while 69.8% of the LIS undergraduates did not visit the library to ask question from library staff which had the least mean score ( $\bar{x}$  = 1.85, SD = 1.42).



**Fig. 1:** Frequency and purpose of use of the library by LIS undergraduates in Nigeria

Figure 2 shows that 85.7% of the respondents visited the library at least once in a week to use manuscripts/special collections and newspaper/magazine, 85.6% used archival materials while 66.6% of the respondents made use of books respectively. In addition, more than half of the respondents (57.2%) visited the library to use textbooks. However, only 19.1% and 14.3% of the respondents visited the library at least once a week to use grey literature and journals respectively while none of the respondents visited the library to use projects, theses and dissertations. This pattern of print library information materials use by the respondents is similar in all the universities, as shown in Table 2. In the private universities category, all the respondents in Benson Idahosa University (BIU) visited the library at least once a week to use manuscripts/special collections followed by 89.5% respondents from Adeleke University (AU) while 87.2% and 87.1% of respondents from Kwara State University (Kwasu) (state universities category) and Ahmadu Bello University (ABU) (federal universities category) also used it respectively. None

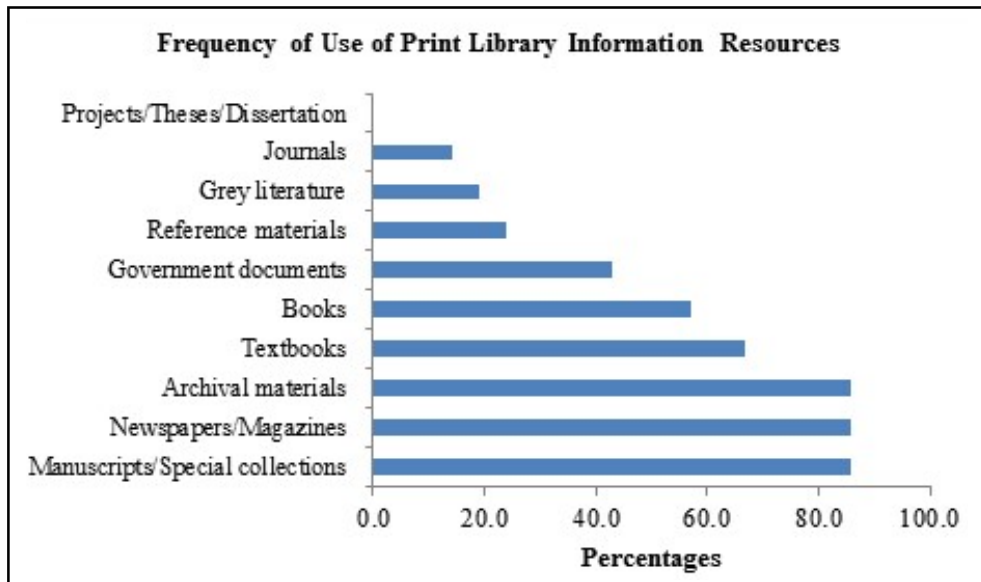
of the respondents in any of the university categories visited the library to use projects, theses or dissertations while less than 15% of all the respondents in all the universities except BIU and AU visited the library to use journals.

Considering the frequency of use of electronic library information resources by the respondents, Figure 3 shows that most of the respondents rarely used electronic information resources made available by the library. The most frequently used electronic library resources were used by less than 20% of the respondents at least once a week. They were e-archival materials, library website and e-projects/e-theses/e-dissertation and e-manuscripts/e-special collections. The least used electronic library resources were e-reference materials like encyclopaedia, dictionary (1.3%), e-newspaper/e-magazine (4.3%) and e-textbooks (5.4%). This pattern is similar in all the university categories, as shown in Table 3.

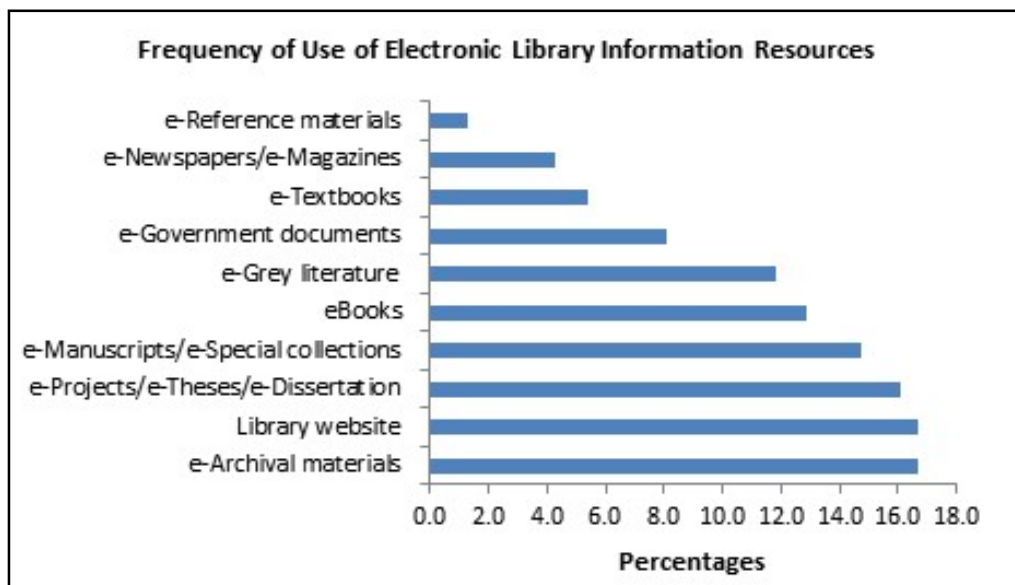
In the federal universities category, respondents in University of Calabar (UNICAL) (68.4%) used e-archival materials, library website

and e-project/thesis/dissertation while only respondents in KWASU (37.5%) in the state universities category used at least one of the electronic library information resources. None of the

respondents in the private universities category used any of the electronic library information resources except Madonna University (MU) (13.3%) that used eManuscript and special collections.



**Fig. 2:** Frequency of Use of Print Library Information Resources by LIS Undergraduates in Nigerian Universities



**Fig. 3:** Frequency of Use of Electronic Library Information Resources by LIS Undergraduates in Nigerian Universities

Table 2: Use of Print Library Information Resources by LIS Undergraduates in Nigerian Universities

S/N	Universities	MS		NM		AR		T		B		GD		RM		GL		J		PTD	
		N	%	N	%	N	%	N	%	N	%	N	%	N	%	N	%	N	%	N	%
1	ABU	61	87.1	60	85.7	61	87.1	48	68.6	40	57.1	30	42.9	15	21.4	3	4.3	10	14.4	0	0.0
2	ATBU	284	85.8	282	85.2	284	85.8	221	66.8	188	56.8	141	42.6	77	23.3	71	21.5	48	14.4	0	0.0
3	UNICAL	67	84.8	67	84.8	67	84.8	54	68.4	45	57.0	36	45.6	18	22.8	16	20.3	11	13.9	0	0.0
4	UI	49	86.0	50	87.7	49	86.0	36	63.2	33	57.9	22	38.6	15	26.3	12	21.1	8	14.0	0	0.0
5	UNILORIN	32	84.2	33	86.8	32	84.2	25	65.8	22	57.9	16	42.1	10	26.3	7	18.4	5	13.7	0	0.0
6	UNN	39	84.8	40	87.0	39	84.8	29	63.0	28	60.9	17	37.0	14	30.4	9	19.6	6	13.9	0	0.0
7	AAU	134	85.9	133	85.3	133	85.3	106	67.9	89	57.1	70	44.9	36	23.1	31	19.9	22	14.3	0	0.0
8	IMSU	115	85.8	116	86.6	116	86.6	88	65.7	76	56.7	57	42.5	32	23.9	25	18.7	20	14.6	0	0.0
9	KWASU	41	87.2	41	87.2	41	87.2	29	61.7	26	55.3	18	38.3	12	25.5	8	17.0	7	14.7	0	0.0
10	TASUED	100	84.7	101	85.6	100	84.7	80	67.8	68	57.6	52	44.1	29	24.6	23	19.5	17	14.1	0	0.0
11	UMYU	114	85.1	114	85.1	114	85.1	90	67.2	78	58.2	57	42.5	33	24.6	26	19.4	19	13.8	0	0.0
12	AUE	17	89.5	16	84.2	16	84.2	13	68.4	10	52.6	9	47.4	3	15.8	4	21.1	3	15.8	0	0.0
13	BIU	5	100.0	4	80.0	5	100.0	4	80.0	2	40.0	3	60.0	0	0.0	2	40.0	1	20.0	0	0.0
14	MUA	12	80.0	13	86.7	12	80.0	9	60.0	9	60.0	6	40.0	5	33.3	2	13.3	2	13.3	0	0.0
N		1249																			

**Keys**

AR – Archival materials B – Books GD – Government documents GL – Grey literature J – Journals MS – Manuscripts/Special collections NM – Newspapers/Magazines PTD – Projects/Theses/Dissertations RM – Reference materials T – Textbooks



Table 3: Use of Electronic Library Information Resources by LIS Undergraduates in Nigerian Universities

S/N	Universities	eArch. Material		Lib. Website		eProject/Thesis/Diss		eManus./Spec. Coll		eBooks		eGrey Literature		eGov. Documents		eTextbooks		eNewspaper/Magazines		eRef. Materials		
		N	%	N	%	N	%	N	%	N	%	N	%	N	%	N	%	N	%	N	%	
1	ABU	70	0.0	0	0.0	0	0.0	9	13.4	0	0.0	0	0.0	0	0.0	25	36.2	30	43.5	0	0.0	
2	ATBU	331	29.1	102	31.0	86	26.0	52	15.8	69	20.9	72	21.8	41	12.4	0	0.0	0	0.0	17	5.1	
3	UNICAL	79	54	68.4	54	68.4	54	68.4	12	15.2	42	53.2	36	45.6	27	34.2	15	19.0	15	19.0	0	0.0
4	UI	57	26	45.6	24	42.1	24	42.1	8	14.0	17	29.8	18	31.6	9	15.8	27	47.4	10	17.5	0	0.0
5	UNILORIN	38	19	50.0	23	60.3	23	60.3	6	15.5	20	53.4	12	32.8	15	39.7	2	5.2	1	1.7	0	0.0
6	UNN	46	1	2.0	1	2.0	1	2.0	6	14.0	1	2.0	1	2.0	1	2.0	0	0.0	0	0.0	0	0.0
7	AAU	156	0	0.0	0	0.0	0	0.0	22	14.3	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
8	IMSU	134	0	0.0	0	0.0	0	0.0	19	14.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
9	KWASU	47	18	37.5	18	37.5	18	37.5	7	14.6	14	29.2	12	25.0	9	18.8	5	10.4	5	10.4	0	0.0
10	TASUED	118	0	0.0	0	0.0	0	0.0	17	14.8	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
11	UMYU	134	0	0.0	0	0.0	0	0.0	19	14.5	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
12	AUE	19	0	0.0	0	0.0	0	0.0	3	15.8	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
13	BIU	5	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
14	MUA	15	0	0.0	0	0.0	0	0.0	2	13.3	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
		<b>1249</b>																				

### Level of Academic Performance

To determine the level of the academic performance of LIS undergraduates in Nigeria, the respondents were asked to state their CGPA for the previous session (2016/2017). The self-reported

CGPAs of the undergraduates were then validated using the academic records collected from each university that bears the CGPA of the undergraduates. The level of the academic performance of the respondents based on their CGPA is presented in Table 4.

**Table 4: Breakdown of the Data on CGPA from the LIS Departments**

CGPA	200L		300L		400L		Total	
	N	%	N	%	N	%	N	%
1st Class Grade	9	0.7	8	0.6	11	0.9	28	2.2
2nd Class Upper Grade	177	14.2	113	9.0	154	12.3	444	35.5
2nd Class Lower Grade	229	18.3	152	12.2	203	16.3	584	46.8
3rd Class Grade	56	4.5	68	5.4	44	3.5	176	14.1
Pass Grade	7	0.6	6	0.5	12	1.0	25	2.0
<b>Total</b>	<b>478</b>	<b>38.3</b>	<b>347</b>	<b>27.8</b>	<b>424</b>	<b>33.9</b>	<b>1249</b>	<b>100</b>

Table 4 showed that the level of the academic performance of close to half of the respondents (46.8%) fell within the 2nd Class Lower grade, 35.5% were within the 2nd Class Upper grades while 14.1% of the respondents were within the 3rd Class. Those within 1st Class and Pass grades were 2.2% and 2.0% respectively. It is therefore evident from the result that the academic performance of the majority of the respondents is on the average.

### Test of the Hypothesis

The null hypothesis postulated was tested at 0.05 level of significance using the Spearman's correlation. From the analysis in Table 5, there was a statistically significant relationship between the use of library information resources and academic performance with  $p = .001$  ( $p < .05$ ). Moreover, the table also revealed that there was a correlation ( $r_s = -.099$ ) between the use of library information resources and academic performance. Therefore, the hypothesis was rejected.

**Table 5: Spearman's Rank-Order Correlation Table showing the Relationship between Library Information Resources Use and Academic Performance of LIS Undergraduates in Nigerian Universities**

			CGPA	LIRU
Spearman's rho	CGPA	Correlation Coefficient	1.000	-.099**
		Sig. (2-tailed)	.	.001
		N	1249	1249
	LIRU	Correlation Coefficient	-.099**	1.000
		Sig. (2-tailed)	.001	.
		N	1249	1249

\*\* . Correlation is significant at the 0.01 level (2-tailed).

## Discussion

All the respondents used the library at different intervals and for different purposes but mostly used print library information resources. The findings of this study showed that all the respondents used the library at different intervals and for different purposes. The purpose of their visit was to browse books on the shelves or study alone while all of the respondents visited the library at least once a week to do their assignments. However, the majority of the LIS undergraduates did not make use of charging services, and reprographic services, provided by the library; neither did they visit the library to ask questions from library staff. These findings corroborate previous studies (Odeh, 2012; Lee, Paik and Joo, 2012; Lacoviæ, 2014; Olajide and Adio, 2017) on the use of library information resources, the frequency of visits and purpose of use of the library.

Furthermore, the study revealed that all the LIS undergraduates made use of the library information e-resources like journals, projects/theses/dissertations, reference materials (e.g., encyclopaedia, dictionary), books and textbooks online. However, in all the universities, the LIS undergraduates mostly visited the library to use print information resources like manuscripts/special collections, newspaper/magazine, archival materials, books, and textbooks but rarely visited the library to use grey literature, journals and projects/thesis/dissertation. It could be because most journals are now available through open access and are easily accessible to the undergraduates (Owusu-Acheaw and Larson, 2014; Dumebi, 2017). It could also be that the undergraduates do not have access to projects/thesis/dissertation in their university libraries. It is essential also to note that the use of textbooks by the LIS undergraduates in all the universities except BIU is not as high as other library information resources. It is an indication that the undergraduates prefer digested information rather than seeking information from texts.

Although the LIS undergraduates mostly visited their university libraries to use print library information resources, the findings indicated that the undergraduates' preferred electronic information resources to print. This submission is contrary to Yamson, Appiah and Tsegah (2018) findings that the majority of the undergraduates in their study preferred

to use print library resources. However, the finding of this study is in tandem with Madondo, Sithole and Chisita (2017) opinion, that, undergraduates continue to rely on electronic resources because they are made available by libraries at no cost to them. Accessibility to a vast array of library information resources, either print or electronic, reliable online sources through the library, assistance from library staff, conducive and enabling environments are some of the reasons that make undergraduates use the library (Strang, 2015).

In this study, there is a statistically significant relationship between the use of library information resources and academic performance. This relationship indicates that the more the LIS undergraduates use the library's information resources, the more significant the impact it has on their academic performance. This lends credence to Walberg Educational Productivity Theory that the appropriate combination of library information resources use in the learning equation could significantly influence the academic performance of LIS undergraduates. This finding also supports an earlier study at Georgia State University, United States of America, where it was found that the use of library information resources has a positive impact on the academic performance of undergraduates (Kot and Jones, 2015). The observation of Wong and Webb (2001) in their study further substantiates the credibility of this finding.

The findings also showed that the LIS undergraduates utilised both the print and the electronic resources available in the library, and most of the information resources used were related to their academic activities. Thus, with better learning processes, the use of library information resources would have a more significant impact on the academic performance of the undergraduates. This implies that within and outside the library, undergraduates can make use of information and can have information materials delivered to them irrespective of their locations. The professional ways in which these information resources are organised can help undergraduates in accessing and retrieving information needed for their learning.

Moreover, the exploration by Kelly, Montenegro, González, Jara, Alarcón, Saurina and Cano (2014), of the relationship between the use of library information resources and learning outcomes by undergraduates, led to the discovery that the use of electronic information resources provided by the

library has an impact on undergraduates' learning outcomes. Shrestha (2008) had earlier noted that undergraduates who regularly use the library understand that the information resources that are available in the library are more reliable, comprehensive and scholarly than what most websites provide. Thus, the use of library information resources can greatly enhance purposeful learning and improve the academic performance of undergraduates and help academic libraries to fulfil their core mission (Soria, Fransen and Nackerud, 2013).

### Conclusion and Recommendation

The study has demonstrated that the use of library information resources predicts the academic performance of the LIS undergraduates in Nigeria. University libraries therefore should be well equipped with both print and electronic information resources to provide up-to-date information to undergraduates in a professional way in order to enhance students' academic performance. This study has established the relationship between the use of library information resources and academic performance, thus providing evidence-based data for academic libraries. In light of this, the study, therefore, recommends that:

1. It is expedient for academic libraries to acquire up-to-date print and electronic information resources that can support the academic activities of the LIS undergraduates.
2. Academic libraries in Nigeria should also endeavour to have these information resources available in different formats that are easily accessible to the undergraduates.
3. University libraries need to be well equipped with both print and electronic information resources to provide up-to-date information to undergraduates in a professional way to enhance their performance.
4. Improved funding and effective use of library information resources are critical to improving the academic performance of undergraduates.

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## Appendix

### List of approved/accredited universities in Nigeria offering Library and Information Science programmes

S/N	Universities	University Ownership	Geopolitical Zones	Year of Establishment	200L	300L	400L	Undergraduates Population
1	Abubakar Tafawa Balewa University, Bauchi (ATBU)	Federal	NE	1988	62	54	118	234
2	Ahmadu Bello University, Zaria (ABU)	Federal	NW	1962	420	218	277	915
3	Bayero University, Kano (BUK)	Federal	NW	1975	244	225	220	689
4	Federal University of Technology, Minna (FUTM)	Federal	NC	1982	80	80	38	198
5	Federal University of Technology, Yola (FUTY)	Federal	NE	1981	77	57	42	176
6	Nnamdi Azikiwe University, Akwa (NAU)	Federal	SE	1992	35	63	44	142
7	University of Calabar (UNICAL)	Federal	SS	1975	92	65	63	220
8	University of Ibadan (UI)	Federal	SW	1948	47	41	62	150
9	University of Ilorin (UNILORIN)	Federal	NC	1975	69	26	57	152
10	University of Maiduguri (UNIMAD)	Federal	NE	1975	167	121	142	430
11	University of Nigeria, Nsukka (UNN)	Federal	SE	1960	47	41	41	129
12	University of Uyo, Akwa Ibom (UNIYO)	Federal	SS	1991	58	51	40	149
13	Abia State University, Uturu (ABSU)	State	SE	1981	82	46	114	242
14	Ambrose Ali University, Ekpoma (AAU)	State	SS	1980	126	185	155	466
15	Benue State University, Makurdi (BSU)	State	NC	1992	185	285	320	790
16	Delta State University, Abraka (DELSU)	State	SS	1992	143	144	198	485
17	Imo State University, Owerri (IMSU)	State	SE	1992	177	121	157	455
18	Kwara State University, Malete (KWASU)	State	NC	2009	68	32	65	165
19	Tai Solarin University of Education, Ijebu-Ode (TAUSED)	State	SW	2005	155	140	58	353
20	Umaru Musa Ya'adua University, Katsina (UMYU)	State	NW	2006	147	133	181	461
21	Adeleke University, Ede (AU)	Private	SW	2011	11	24	32	67
22	Benson Idahosa University, Benin City (BIU)	Private	SS	2002	5	3	5	13
23	Madonna University, Okija (MU)	Private	SE	1999	10	14	10	34
<b>Total</b>					2507	2169	2439	7115

**Source:** *Librarians' Registration Council of Nigeria (LRCN), 2016 and Academic Planning Establishments of the Universities, 2016.*

**(NB:** NC – North-central, NE – North-east, NW – North-west, SE – South-east, SS – South-south, SW – South-west)

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