

Demographic factors as correlates of digital information resources use by LIS doctoral students in Southwestern Nigeria

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Abstract

Digital information resources offer enormous benefits to library and information science (LIS) doctoral students in the sense that they are enabled to have access to current information resources as regards their academic activities. However, despite this, previous studies have shown that the use of digital information resources by some doctoral students is low. This could be attributed to their demographic factors such as age, gender and length of stay on the programme. This study therefore examined the relationship between the demographic factors and use of digital information resources by LIS doctoral students in Southwestern Nigeria. Descriptive survey research design of the correlational type was used and the total enumeration technique was adopted. All 235 LIS doctoral students in four universities in South-west, Nigeria participated in the study. The questionnaire was the data collection instrument and data were analysed with the use of frequency counts, percentages, mean, standard deviation and correlation analysis. Findings showed that most of the LIS doctoral students used digital information resources for knowledge update ($\bar{x} = 3.55$). Results showed that out of the three demographic variables, only age ($r=.336^*$; $N=177$; $p<0.05$) and gender ($r=.215^*$; $N=177$; $p<0.05$) had significant relationship with the use of digital information resources by the LIS doctoral students. It can be inferred from the study that the use of digital information resources by LIS doctoral students is imperative because it offers the link to scholarly publications necessary to locate their research within the disciplinary space and assist them to move the frontiers of knowledge. Thus, in order to facilitate the use of digital information resources, further effort should be made to enable more access to digital information resources and the role of demographic factors should not be sidelined.

Keywords: Demographic factors, digital library use, LIS doctoral students, Nigeria

Introduction

Library and information science (LIS) is a field of study that is concerned with the systematic study of information resources and services in order to facilitate retrieval and use. ScienceDirect (2024) defined Library and information science (LIS) as the study of knowledge production in the tangible and intangible forms of documents, the channels used to communicate that knowledge, and its access through the organization and representation of documents. LIS is usually taught in some instances, at professional library schools that are qualified to grant the Bachelor's degree of Library and Information Science and Master of Library and Information Science or Doctor of Philosophy (PhD), which is the focus of this study.

Doctoral students of LIS need to find, manage and view large bodies of secondary, published research resources, most especially when they are at the early stage of their research career during their theses work (JISC and British Library, 2012). LIS doctoral students need to have access to a wider array of information resources than ever before as their academic activities include preparation of course materials for teaching, writing of papers for publication, attendance and organisation of seminars and workshops, working on their theses etc. An information source that could be deployed by the LIS doctoral students to meet their information needs is the digital information resources.

The term, digital information resources, according to InfoSpecipedia (2024), is

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defined as those information resources in an electronic format which are accessible through internet-connected computers or other electronic devices in libraries known as in-house digital resources. Digital information resources are categorised into two parts: information resources that from beginning are produced in digital form such as e-books, e-journals, e-projects, e-reference materials, e-seminar paper, e-books, e-newsletters, e-thesis, e-conference papers, e-technical reports, e-dissertation etc. and information resources and materials which are not digital initially but can be transformed to digital over time (Akinlolu, Awujoola and Olawale, 2023).

However, within the context of this study, digital information resources specifically refers to the resources which include online databases, university specialised catalogue, institutional repositories, e-journal, e-books, e-newspapers, e-reference materials, open educational resources (OERs).

LIS doctoral students can benefit from the use of digital information resources as they could gain round the clock, uninterrupted multiple and constant access to the same information resources and services simultaneously. Despite the benefits associated with the use of digital information resources by LIS doctoral students, the result of the study carried out by Ankrah and Atuase (2018) indicated that electronic resources (key components of the digital information resources) were not used as expected by postgraduate students. Yadav (2023) examined the role of digital libraries as information resources for Scholars and discovered that; (20%) postgraduate respondents used digital information resources for assignment. This seeming low use of digital information resources by the postgraduate students, including some LIS

doctoral students might be a function of their demographic factors.

Demographic factors of interest to this study are; age, gender, and length of stay on the programme. Age, which could be regarded as the length of lifetime of individuals, could influence use of digital information resources by LIS doctoral students. Mashaba and Pretorius (2023) investigated electronic library resource use by postgraduate students at a University of Technology in South Africa. Their findings indicated that; younger students were likely to be more willing to use the information technology. Therefore, it means that age could influence the use of digital information resources by LIS doctoral students.

As for gender, the World Health Organisation (2019) refers to it as the socially constructed characteristics of women and men – such as norms, roles and relationships of and between groups of women and men. It has been perceived that females are more disposed to computer anxiety, less effective when using computers, and have negative disposition towards computer usage. Many studies have suggested that women are less likely to use new technology as compared to men; men are more internet savvy than females (Ajunwon and Popoola, 2014). Mashaba and Pretorius (2023) investigated electronic library resource use by postgraduate students at a University of Technology in South Africa. Their findings indicated that; male students were likely to have better technological ability. This implies that gender could determine or influence use of digital information resources.

Another indicator of personal characteristics that could influence the use of digital information resources by LIS doctoral students is the length of stay on the doctoral programme. Alfonzo and Batson

(2014) opined that doctoral programme being a higher level of study would require doctoral students of an advanced level research whose in-depth research requires the use of technological tools such as databases, content management systems, and citation management programs. For the fact that the capability to use digital information resources is significant to the research crucial to the attainment of doctoral degree, then, LIS doctoral students cannot but make effective use of digital libraries for their research work. The length of stay on the doctoral programme seems, to a large extent, the responsibility of the students, though other administrative delays might not be ruled out. Olubusoye and Olusoji (2014) stated that the minimum period of duration for Ph.D completion is three (3) which is equivalent to six (6) semesters while the maximum duration for Ph.D is six (6) years which is equivalent to twelve semesters.

An LIS doctoral student who had stayed longer on the programme might rely more on the use of digital information resources than a new student. The possibility could also be the other way round as a new LIS doctoral student in an attempt to complete his/her research work on time could rely more on the use of digital information resources. Thus, this study is set to examine the relationship between demographic factors and use of digital information resources by LIS doctoral students in Southwestern Nigeria

Statement of the problem

Digital information resources offer enormous benefits to LIS doctoral students in the sense that they are enabled to have access to current and up-to-date information resources as regards their academic activities. It is equally noteworthy that digital information resources make accessibility to information resources a very

easy experience for their use as well. Undeniable access to enormous and wider range of information resources across the globe is equally a good benefit of digital information resources to doctoral students. However, despite the enormous benefits of digital information resources, previous studies have shown that the use of digital information resources by some doctoral students is low. This could be attributed to their demographic factors such as age, gender and length of stay on the programme. In addition, quite a number of studies have been conducted on the use of digital information resources by undergraduates, with few, perhaps none on LIS doctoral students, especially within the context of Southwestern Nigeria. Therefore, this study is very imperative.

Research questions

The following research questions are answered in the study:

1. What are the demographic factors of LIS doctoral students in South-west, Nigeria?
2. What is the frequency of use of digital information resources by LIS doctoral students in South-west, Nigeria?
3. What is the purpose of use of digital information resources by LIS doctoral students in South-west, Nigeria?
4. What is the relationship between demographic factors and use of digital information resources by LIS doctoral students in South-west, Nigeria?

Literature review

Some studies have been conducted on the use of digital information resources by postgraduate students generally which could provide valuable insights for that of the LIS

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doctoral students. As regards the purpose of use of digital information resources, Yadav (2023) examined the role of digital libraries as information resources for Scholars. The population of study was 1380 including PG Students and Research Scholars with a sample size of 502 respondents. The finding revealed that (20%) PG students utilised digital information resources for assignment, (21%) utilised it for venture work, while (12%) utilised it for composing research papers. Rianty, Hariyati and Juwono (2023) analysed digital library media utilisation during pandemic at State University of Surabaya. The purposive sampling technique was used with a sample size of 100 students scattered across all faculties. Almost all (98%) of the respondents actively used digital information resources for different purposes including; looking for scientific journal references for thesis and/ assignments, coursework completion, accessing information for articles publication and checking reference sources for research.

Ivwithreghweta and Eireyi-Fidelis (2022) examined the usage of electronic academic database resources among lecturers and postgraduate students in Western Delta University, Oghara, Delta State, Nigeria. The descriptive survey design and total enumerative and accidental sampling methods was used. The population of study comprised 134 lecturers and postgraduate students. Their findings revealed that; 61(47%) used the electronic academic database for research while 31 (24%) used it for seminar/conference paper. Okunlola (2021) surveyed the utilisation of library based electronic resources and services by postgraduates in Nigerian private universities. This study adopted the survey research design of the correlational type and multi-stage sampling procedure. The target population for the study

comprised the entire 1534 Master and Doctor of Philosophy (Ph.D.) degree students in 9 private universities in the South-western Nigeria. Out of the 974 copies of questionnaire administered to the respondents, 764 (78.43%) were properly filled and used for the study. The study revealed that; most of the respondents utilised library based electronic resources for research, seminar presentation, examination, and online reading.

Akinola, Shorunke, Ajayi, Odefadehan and Ibikunle (2018) carried out a study on the awareness and use of electronic databases by postgraduates at the University of Ibadan. The results showed that electronic databases were majorly used for various purposes like research work, literature searching, generation of new information and to update knowledge. Akuffo and Budu (2019) studied the use of electronic resources by students in a premier postgraduate theological university (The Akrofi-Christaller Institute of Theology, Mission and Culture (ACI) in Ghana. It was revealed that the postgraduate students used e-resources for completing assignments, for reviewing literature, for gaining information on specific topics, and for supplementing their study notes.

On the frequency of use of digital information resources, Mungwabi (2023) assessed website based information resources utilisation by students at the University of Dar es Salaam. The survey utilised descriptive research design and a mixed-methods approach with 118 sample size including both undergraduates and postgraduates. The finding revealed that 64 (54%) of the respondents often accessed and used website based information resources. Ruzegwa and Msonde (2021) examined students' electronic information resources utilisation at MUHAS. The survey was purposefully carried out at MUHAS, being

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the only public health university in the country. The stratified random sampling procedure was used to select a sample size of 108 postgraduate students. Their findings revealed that (30.6%) of the respondents utilised online journals and electronic books monthly.

In addition, Mandalia and Parekh (2017) examined awareness and utilisation of digital library by library users of ARIBAS Colleges, Indian. They discovered that (13.79%) research scholars used digital library daily, (45.69%) research scholars used the digital library weekly, (23.28%) research scholars used the digital library monthly, while (11.21%) research scholars also used the digital library occasionally. Pratap and Singh (2018) studied digital literacy skills among students and research scholars of the Law School, Banaras Hindu University, Varanasi, India. Findings revealed that 30(33.33%) out of the entire respondents of 90 (90%) were postgraduates. The study also showed frequency of use of digital resources where the largest group of students and research scholars used digital resources daily 78(86.67%), followed by once in a two days 6(6.67%), once in a week 3(3.33%), twice in a week 2(2.22%) and occasionally 1(1.11%). It is obvious from the findings that a greater part of students and research scholars 78(86.67%) used digital resources daily.

Some studies have also been carried out on the relationship between demographic factors and use of digital information resources. Mashaba and Pretorius (2023) investigated electronic library resources use by postgraduate students at a University of Technology in South Africa. The study adopted the quantitative research method. The population of study was 2040 registered postgraduate students and a sample size of 679 was drawn from the seven faculties

within the university. Their findings revealed that; male students were likely to have better technological ability. Likewise, younger students were likely to be more willing to use the information technology.

Frias-Martinez and Chen (2014) in an empirical study of individual differences in digital library interfaces found out that female users felt it was harder to learn to operate and explore the system where (5.77%) claimed difficulty and (4.23%) never attempted using new information system. However male users recorded (6.94%) in the ease of using new information system, then, (6.76%) indicated consistent usage. In general, female users were less satisfied in all aspects with the interface, being one of the reasons the lack of learning elements. This is in accordance with other studies that showed that females have more problems when interacting with the web. Ahmed (2015) studied gender differences in students' utilisation of electronic information resources in Ramat Library, University of Maiduguri, Nigeria. The result indicated that there was no gender difference because male students had the same usage of electronic information resources with their female counterparts.

Moreover, Mungwabi (2023) assessed website based information resources utilisation by students at the University of Dar es Salaam. The survey utilised descriptive research design and a mixed-methods approach with 118 sample size including both undergraduates and postgraduates. The survey revealed that; 34(28.8%) of the first year undergraduates were aware and accessed website based information resources, 38(32.2%) of the Second year undergraduates were aware and accessed website based information resources, while 36(30.5%) of the Third year undergraduates were also aware and accessed the website based information

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resources. The finding established that; there is a relationship between the respondents' year of study and awareness of the website based information resources. This is evident in the increased level of awareness of the second year undergraduates.

Methodology

The descriptive survey research design of the correlational type was used for

this study. The population of this study consisted of 235 LIS doctoral students in all universities offering LIS in Southwestern Nigeria. From investigation, four universities run doctoral programme in LIS in Southwestern Nigeria. According to the data collected from these universities, the total number of LIS doctoral students was 235. This number formed the population for the study (Table 1).

Table 1 Population of the study

Num.	University	Number of doctoral students
1	University of Ibadan, Ibadan	86
2	Adeleke University, Ede	12
3	Babcock University, Ilishan-Remo	130
4	Tai Solarin University of Education, Ijagun	7
Total		235

The total enumeration technique also called the census method was used for this study. This technique was adopted because the number of the respondents was manageable and the researcher could collect data within the allotted time. Thus, all 235 LIS doctoral students participated in the study. The research instrument that was used for data collection in this study was the questionnaire. The questionnaire was tagged "Demographic Factors and Use of Digital Library (DFUDL)". The details of the questionnaire are: Section A: This section elicited information on the demographic factors (DF) of the LIS doctoral students with items such as; name of university, age, gender and length of stay on programme. There were two open ended questions and two close ended questions. Section B: This section covered use of digital information resources (UDIR) and was developed based on a comprehensive review of the relevant literature. The section contains two questions focusing frequency of use of digital information resources (fifteen items) and purpose of use of digital information

resources (thirteen items). The response format for frequency of use ranged from daily=5 to never=1, while that of purpose ranged from strongly agree =4 to strongly disagree =1.

In order to ascertain the face validity of the instrument, a copy of the questionnaire was submitted to four subject experts in LIS in the department of Library, Archival and Information Studies, University of Ibadan, Nigeria, who read through and made necessary corrections. The reliability of the questionnaire was also done through a pre-test. Thirty copies of the questionnaire were administered to LIS doctoral students in University of Ilorin, Kwara State, Nigeria, who were not part of the actual study sample. The Cronbach-alpha method was used to determine the reliability coefficient of the instrument. The details of the results obtained on the sections are as follows; ($\alpha=.914$) for the frequency of use of digital information resources and ($\alpha=.898$) for the purpose of use of digital information resources.

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The analysis of the data collected through the questionnaire was based on the use of simple descriptive statistical analysis of frequency counts, percentages, mean and standard deviation for research questions 1-3. The Pearson Product Moment Correlation (PPMC) was used to answer research question 4. The results were presented in figures and tables and inferences and recommendations were also drawn from them. The software that facilitated the data analysis was the Statistical Package for the Social Sciences (SPSS).

A total of 235 copies of the questionnaire were administered to the LIS doctoral students in the universities in Southwestern Nigeria. However, 177 copies were returned and found useful for analysis giving a response rate of 75.3%(Table 2).

Results

Answers to research questions

Research question one: What are the demographic factors of LIS doctoral students in South-west, Nigeria?

The demographics of the respondents are presented in Table 3.

Table 2 Questionnaire administration and return rate

University	Distribution	Return
Adeleke University, Ede, Osun State	12	12
Babcock University, Ilishan-Remo, Ogun State	130	106
Tai-Solarin University of Education, Ijebu-Ode, Ogun State	7	6
University of Ibadan	86	53
Total	235	177

Table 3 Demographics of respondents

Demographic Characteristics	Freq.	%
Age		
18-25	3	1.7
26-34	13	7.3
35-41	46	26.0
42-49	59	33.5
50 and above	56	31.6
Total	177	100.0
Gender		
Male	78	44.1
Female	99	55.9
Total	177	100.0
Length of stay on programme		
1 year	48	27.1
2 years	43	24.3
3 years	59	33.3
4 years	19	10.7
5 years	3	1.7
6 years and above	5	2.8
Total	177	100.0

Findings revealed that most of the respondents - 59 (33.3%) - were between 42-49 years of age. Majority of respondents 99 (55.9%) were females, while 78 (44.1%)

were males. More than two-fifths of the LIS doctoral students - 59 (33.3%) - had spent about 3 years on the programme, while only

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3 (1.7%) indicated that they had spent about 5 years.

Research question two: What is the frequency of use of digital information

resources by LIS doctoral students in South-west, Nigeria?

Results on the frequency of use of digital information resources by the respondents are presented in Table 4.

Table 4 Frequency of use of digital information resources by LIS doctoral students

Digital information resources	Daily		Weekly		Monthly		Quarterly		Annually		Never		Mean	S.D
	F	%	F	%	F	%	F	%	F	%	F	%		
Online databases (e.g. OARE, AJOL, HINARI, EBSCOHOST, SCOPUS, DOAJ, JSTOR OAPEN etc.)	74	41.8	66	37.3	17	9.6	18	10.2	-	-	2	1.1		
University Open Access Catalogue	65	36.7	69	39.0	14	7.9	8	4.5	-	-	21	11.9	4.72	1.569
Institutional repository	68	38.4	65	36.7	13	7.3	11	6.2	-	-	20	11.3	4.73	1.568
Open access resources	97	54.8	49	27.7	17	9.6	6	3.4	2	1.1	6	3.4	5.21	1.177
E-databases	86	48.6	74	41.8	5	2.8	6	3.4	2	1.1	4	2.3	5.27	1.024
E-books	85	48.0	66	37.3	14	7.9	8	4.5	2	1.1	2	1.1	5.23	.987
E-dictionaries	91	51.4	60	33.9	11	6.2	9	5.1	2	1.1	4	2.3	5.23	1.095
E-encyclopedias	81	45.8	64	36.2	13	7.3	6	3.4	6	3.4	7	4.0	5.06	1.269
E-thesis and dissertation	72	40.7	69	39.0	15	8.5	11	6.2	4	2.3	6	3.4	4.99	1.222
E-journals	86	48.6	60	33.9	18	10.2	5	2.8	6	3.4	2	1.1	5.18	1.077
E-manuscript	62	35.0	71	40.1	15	8.5	5	2.8	7	4.0	17	9.6	4.71	1.539
E-images/sounds	87	49.2	46	26.0	22	12.4	7	4.0	5	2.8	10	5.6	4.98	1.394
E-newspapers	102	57.6	44	24.9	12	6.8	11	6.2	1	0.6	7	4.0	5.21	1.241
Multimedia collections	73	41.2	59	33.3	25	14.1	8	4.5	3	1.7	9	5.1	4.93	1.306
Open educational resources (OERs)	68	38.4	59	33.3	31	17.5	7	4.0	1	0.6	11	6.2	4.86	1.324

Results show that most of the respondents 102 (57.6%) noted that they used e-newspapers on a daily basis. Also, a significant number of the LIS doctoral students 97 (54.8%), 91 (51.4%), 87 (49.2%) and 86 (48.6%) pointed that out they used open access resources, e-dictionaries, e-images/sound and e-databases respectively. Moreover, about two-fifths 71 (40.1%) acknowledged that they used e-manuscripts on a weekly basis. From the

results, it can be inferred that most of the LIS doctoral students used the different forms of digital information resources either daily or weekly.

Research question three: What is the purpose of use of digital information resources by LIS doctoral students in South-west, Nigeria?

Table 5 presents the results on the purpose of use of digital information resources by the respondents.

Table 5 Purpose of use of digital information resources by LIS doctoral students

Statements	SA		A		D		SD		Mean	SD
	F	%	F	%	F	%	F	%		
I use digital information resources: to access information to write background to the study and literature review of my thesis	95	53.7	76	42.9	6	3.4	-	-	3.51	.575
to update my knowledge	101	57.1	73	41.2	2	1.1	1	0.6	3.55	.553
for personal development	102	57.6	69	39.0	5	2.8	1	0.6	3.54	.584
to download information materials in preparation for seminar, conference and	93	52.5	80	45.2	4	2.3	-	-	3.50	.545

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workshop										
to access information materials in order to write journal articles	83	46.9	90	50.8	4	2.3	-	-	3.45	.542
to access information materials in order to write book chapters	66	37.3	77	43.5	29	16.4	5	2.8	3.15	.794
to access information materials in order to write festschrifts	54	30.5	77	43.5	39	22.0	7	4.0	3.01	.829
to access information materials in order to write a book	65	36.7	76	42.9	28	15.8	8	4.5	3.12	.834
for examination preparation	81	45.8	82	45.2	15	8.5	1	0.6	3.36	.661
to prepare course materials	84	47.5	78	44.1	14	7.9	1	0.6	3.38	.657
for teaching preparation	92	52.0	73	41.2	11	6.2	1	0.6	3.45	.638
to complete assignment	96	54.2	68	38.4	12	6.8	1	0.6	3.46	.648
to supplement print resources	77	43.5	78	44.1	21	11.9	1	0.6	3.31	.707

Key: Strongly Agree (SA), Agree (A), Disagree (D), Strongly Disagree (SD)

The rating of the responses on the purpose of use of digital information resources by the LIS doctoral students showed that the most important reason why they used digital information resources was for update of knowledge ($\bar{x} = 3.55$). This was followed by; personal development ($\bar{x} = 3.54$); to access information to write background to the study and literature review of thesis ($\bar{x} = 3.51$); to download information materials in preparation for seminar, conference and workshop ($\bar{x} = 3.50$); to complete assignment ($\bar{x} = 3.46$); for teaching preparation ($\bar{x} = 3.45$); to access information materials in order to write journal articles ($\bar{x} = 3.45$); to prepare course materials ($\bar{x} = 3.38$); for examination preparation ($\bar{x} = 3.36$); to

supplement print resources ($\bar{x} = 3.31$); to access information materials in order to write book chapters ($\bar{x} = 3.15$); to access information materials in order to write a book ($\bar{x} = 3.12$) and to access information materials in order to write festschrifts ($\bar{x} = 3.01$).

Research question four: What is the relationship between demographic factors and use of digital information resources by LIS doctoral students in South-west, Nigeria?

The results of the relationship between demographic factors and use of digital information resources by the respondents were presented in Table 6a, 6b and 6c.

Table 6a Relationship between age and use of digital information resources by LIS doctoral students

Variables	Mean	Std. Deviation	N	R	Sig. (P)	Remarks
Age	1.075	1.075				
Use of digital library	43.79	5.517	177	.336*	.000	Sig.

Findings showed that there is a positive significant relationship between age and use of digital information resources by the respondents ($r=.336^*$; $N=177$; $p<0.05$). This implies that the use of digital information

resources by LIS doctoral students is determined by age (Table 6a). Table 6b presents the results of the correlation analysis done between gender and use of digital information resources by LIS doctoral students.

Table 6b: Relationship between gender and use of digital information resources by LIS doctoral students

Variables	Mean	Std. Deviation	N	R	Sig. (P)	Remarks
Gender	1.59	.526				
Use of digital library	43.79	5.517	177	.215*	.000	Sig.

From Table 6b results revealed that there is a positive significant relationship between gender and use of digital information resources by the respondents ($r=.215^*$;

$N=177$; $p<0.05$). Thus, the use of digital information resources by the LIS doctoral students is determined by the gender of the respondents.

Table 6c Relationship between length of stay on the programme and use of digital information resources by LIS doctoral students

Variables	Mean	Std. Deviation	N	R	Sig. (P)	Remarks
Length of stay on the programme	2.44	1.205				
Use of digital library	43.79	5.177	177	-.005	.124	Not Sig.

Results showed that there is a negative and no significant relationship between length of stay on the programme and use of digital information resources by LIS doctoral students in universities in South-west, Nigeria ($r = -.005$; $df = 176$; $p > 0.05$). This implies that the pattern of use of digital information resources by the respondents is not determined by how long they have stayed on the doctoral programme (Table 6c).

Discussion

The results showed that most of the respondents used e-newspapers, open access resources, e-dictionaries, e-images/sound and e-databases respectively on daily basis while about two-fifths of the respondents also used e-manuscripts on a weekly basis. The reason for this different frequencies at which most of the LIS doctoral students used the different forms of digital information resources may be due to their urgent need of information among many other reasons. Mungwabi (2023) corroborate the result of this finding in a survey on the assessment of website information resources utilisation by students at the University of

Dar es Salaam. The finding revealed that most of the postgraduates respondents often accessed and used website based information resources. Similarly, Okunlola (2021) substantiate the result of this finding in a survey on the utilisation of library based electronic resources and services by postgraduates in Nigerian private universities. The study revealed that; Multimedia, Online magazines and E-databases were the most frequently utilised information resources by the postgraduate respondents. Contrariwise, Ruzgea and Msonde (2021) disagree with the result of this finding in a study on students' usage of electronic information resources at MUHAS. Their findings revealed that (30.6%) of the respondents utilised online journals and electronic books monthly.

The results of this finding revealed that most of the LIS doctoral students used digital information resources for; update of knowledge, personal development, to access information to write background to the study and literature review of thesis, to download information materials in preparation for seminar, conference and workshop, and to complete assignment. The reason why the

result of the findings showed that most of the LIS doctoral students used the digital information resources for these purposes could be hinged on its round the clock availability, up-to-datedness and quick accessibility features. The results of this study agrees with that of Akuffo and Budu (2019) where it was revealed that the postgraduate students used e-resources for completing assignments, for reviewing literature, for gaining information on specific topics, and for supplementing their study notes. Similarly, the results from the study carried out by Rianty, Hariyati and Juwono (2023) also revealed that most of the respondents actively used digital information resources for different purposes including; looking for scientific journal references for thesis, assignments, coursework completion, accessing information for publishing articles and checking reference sources for research.

The results of the finding showed that out the three indicators of personal characteristics- age, gender and length of stay on the programme, it is only age and gender that have positive significant relationship with the use of digital information resources by LIS doctoral students in universities in South-west, Nigeria, while there is a negative and no significant relationship between length of stay on the programme and use of digital information resources by LIS doctoral students in universities in Southwestern Nigeria. Mashaba and Pretorius (2023) also validated the result of this findings in a study on electronic library resource use by postgraduate students at a University of Technology in South Africa. Their findings revealed that; younger students were likely to be more willing to use the information technology.

To substantiate the result of this study, Mashaba and Pretorius (2023)

surveyed electronic library resource use by postgraduate students at a University of Technology in South Africa. Their findings showed that; male students were likely to have better technological ability. Frias-Martinez and Chen (2014) also confirmed the result of this finding in an empirical study on individual differences in digital library interfaces where; it was found out that female users felt it was harder to learn to operate and explore the system, claimed difficulty, and never attempted using new information system. However, male users recorded ease using new information system, and consistent usage. In general, female users were less satisfied in all aspects with the interface, being one of the reasons for the lack of learning elements. This is in accordance with other studies which show that female have more problems than male counterparts when interacting with the web.

The results showed that there is a negative and no significant relationship between length of stay on the programme and use of digital information resources by LIS doctoral students in universities in Southwestern Nigeria. Contrariwise, Mungwabi (2023) assessed website based information resources utilisation by students at the University of Dar es Salaam. The survey utilized descriptive research design and a mixed-methods approach with 118 sample size including both undergraduates and postgraduates. The finding established that; there is a relationship between the respondents' year of study and awareness of the website based information resources. This is evident in the increased level of awareness of the Second year undergraduates.

Conclusion

The use of digital information resources by LIS doctoral students is imperative as it offers the link to scholarly publications

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necessary to locate their research within the disciplinary space and assist them to move the frontiers of knowledge. A LIS doctoral student who jettisons the use of digital information resources will find it very difficult to access recent and up to date information and may hinder such an individual to complete the research process on time. Thus, the use of digital information resources by LIS doctoral students is a mandatory requirement in this age and time.

However, it is recommended that:

1. The LIS doctoral students, regardless of their age, gender and length of stay on the programme should cherish the use of the digital information resources so as to fastrack the completion of their Ph.D. programme within the minimum duration.
2. As much as the LIS doctoral students need to use e-newspapers, they should use more of other digital information resources that are more relevant to their Ph.D programme.
3. LIS doctoral students should be encouraged to make more effective use of digital information resources for their Ph.D programme.
4. The LIS doctoral students, irrespective of their demographic characteristics should make good use of the digital information resources.

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