

DATA LITERACY SKILLS AND DIGITAL RECORDS MANAGEMENT PRACTICES AMONG LIBRARIANS IN UNIVERSITY LIBRARIES, SOUTH-WEST NIGERIA

¹AJIBARE, Oluwaseun Oluropo, ²OMOSEBI, Fehintoluwa Elizabeth,
³OGUNTOYE Folasade Busayo

^{1,2} Information Management Department, Lead City University, Ibadan.

³ University Library, Lead City University, Ibadan, Nigeria

¹ajibare.oluwaseun@lcu.edu.ng, ²fehintoluwa.omosebi@lcu.edu.ng, ³oguntoye.folasade@lcu.edu.ng

ABSTRACT The manuscript titled "Data Literacy Skills and Digital Records Management Practices among Librarians in University Libraries, South-West Nigeria" investigates how data literacy competencies influence the efficiency and implementation of Digital Records Management (DRM) practices among librarians. Utilizing a mixed-methods approach with data from 378 librarians across 45 universities, the study finds a statistically significant positive correlation ($R = 0.536$, $p < 0.05$) between librarians' data literacy and their engagement in DRM activities such as record creation, capture, organization, and duplication. Results indicate high levels of data literacy across different proficiency stages and strong participation in DRM processes, though some disparities persist. The study concludes that enhancing data literacy is essential to optimizing records management in university libraries and recommends targeted training and policy support.

KEYWORDS: Data Literacy, Digital Records, Universities Libraries, Librarian

I. INTRODUCTION

Digital records management practices encompass various activities aimed at effectively managing digital records throughout their lifecycle. These practices include records creation or capture, records organization, and records pluralization or duplication. This is by no means a comprehensive list of records management practices but they represent the core activities that have been recognized by practitioners and scholars (Rakemane, & Serema, 2018). The life of a digital record begins with creation or capture. This involves the systematic and controlled creation of digital records in accordance with established policies and procedures. Digital records are expected to be created with accurate and relevant metadata, including information such as title, creator, date, and classification (Smallwood, 2013). In the digital era where records have transcended a singular form to include image, video, sound and others, records are also created through capturing. This is done through a video recorded, camcorders, audio tapes, photo camera, scanning machines and other instruments used to gather information from various sources (Guto & Jumba, 2021). Digital records has been in existence and used for so long, it is important and necessary for the smooth running of organizational activities. In digital records management, the place of creation, caption, organization and pluralization of information cannot be over emphasized. Documents in organizations are created as part of a particular information process in the libraries or organizations. The creation of records is concerned with bringing into existence information essential for the smooth running of the libraries and organizations. Some examples of records are

emails, reports, databases, samples and objects, letters, minutes of meetings, photographs, social media sites, faxes, spreadsheets, maps and plans, information in business systems, text messages, policy and briefing papers, research data, memo and so on.

Records serve as proof of the operations and duties of a unit, department or an organization at large. The information it includes and the circumstances surrounding its development determine whether it qualifies as records upon which decisions could be made. More so, it cannot be emphasized enough that libraries as information centres are required to make sure that records are properly filed, archived, stored, disposed of, and made retrievable using appropriate systems as required by legislation (*Records Management Code of Practice, 2021*). Every piece of information generated, communicated, and received throughout a work or routines has the potential to become a record. On the other hand, Data literacy which is another variable is inevitable to librarians as individuals, librarianship as a profession and libraries as information management organization. As an independent variable of this study, data literacy skills refer to the knowledge, skills and dispositions to use data ethically to inform policies, decisions and practices. Data literacy involves managing and securing data, accessing and generating data, evaluating and interpreting data, communicating with data. Data-informed practice is enabled by taking a purposeful, collaborative, solution focused, ethical and inclusive approach to our engagement with both using, and learning about the use of data (*Industry 4.0 and Health, 2023*). Furthermore, Data literacy is the ability to read, write and communicate data in context, including an understanding of data sources and constructs, analytical methods and techniques applied, and the ability to describe the use case, application and resulting value.

In order to take advantage of the potential presented by the "data revolution," a recent UN report argues for the need for "global data literacy." Data literacy is defined in this context, as well as many others, as a set of technical, statistical, and mathematical skills. Moreover, the concept of data literacy expanded includes, not just competencies in reading and working with datasets but also the ability to account for, intervene around and participate in the wider socio-technical infrastructure through which data is created, stored and analyzed. There is need to know what can be done about the society's seemingly endless supply of digital data and the rapidly expanding "datafication" processes, Data literacy is a typical answer (Svetla, *Managing Scientific Information and Research Data, 2015*). In its broadest meaning, literacy refers to "certain ways of thinking about and practicing reading and writing" with the aim of comprehending or verbally expressing concepts in a given environment. In other words, people in literate civilizations have certain ways of creating and reading written material, as well as attitudes about this method. It is evident that with the proliferating impact of technology in the field of record management, data literacy is an inevitable competence that information manager must equip themselves with. Moreso, the need for data-literate people has expanded as a result of the business world's fast digitalization, which is partly attributable to the COVID-19 epidemic. According to research by the Corporate-Higher Education Forum (BHEF), nearly 70% of business leaders give preference to hiring candidates with data capabilities. This holds true for all job classifications, including those in the healthcare sector, from top executives to frontline employees (Jonathan, Gerlitz, & Bounegr, 2018). Data literacy in this study is measured by the variables in the Dreyfus model of skills acquisition which is based on skill development through instruction and experience. In this model, the data literate librarian works through five developmental stages: novice, competence, proficiency, expertise and mastery.

Based on observation, digital records management practices in university libraries may be poor due to lack of data literacy skills needed for information organization, retrieval and proper service delivery hence bringing about disorganization and loss of records within the library. Ineffective records management practices can have very negative impact on the quality of library services and how well a university librarian can discharge its duties to library patrons. Furthermore, there is need for librarians to be data literate at any level so effectively engage in digital records' management practices but it has been observed that most librarians may seem to be lackadaisical in south west Nigeria. Also, there is a research gap in the area of how data literacy skills can affect or influence the digital records management practices of librarians and vice versa, however, as at the time of this study there is dearth of literature that encompasses data literacy skills and digital records management practices. It is therefore expected that this study will bridge the gap between digital records' management practices and data literacy skills in academic libraries in south west Nigeria. The objectives of this study are to:

- (a). Identify the digital record management practices adopted by librarians in University libraries, Southwest Nigeria
- (b). Identify the level of data literacy skills of librarians in university libraries in Southwest Nigeria
- (c). Ascertain the influence of data literacy skill on the digital record management practices of librarians in university libraries in Southwest Nigeria.

II. RELATED WORKS

A. Digital Records Management Practices in University Library

Record management, an essential facet of effective organizational governance, encompasses the systematic and strategic handling of information throughout its lifecycle. It involves the creation, maintenance, retention, and eventual disposition of records, whether in physical or digital formats. Successful record management ensures that valuable information is accessible, accurate, and reliable when needed, supporting informed decision-making, compliance with legal and regulatory requirements, and the preservation of institutional memory. By establishing standardized procedures for categorization, storage, retrieval, and secure disposal, record management minimizes the risk of data loss, unauthorized access, and inconsistency. In the digital age, the challenges and opportunities of managing vast volumes of electronic records have become increasingly complex. As organizations grapple with the demands of information growth, privacy concerns, and technological advancements, a robust record management system is indispensable in maintaining organizational transparency, accountability, and efficiency. Records are information that is made, received, and maintained as proof and information by an organization or person(s), in conformity with legal obligations or in the performance of business (Dutt, 2018). In order to meet operational needs, statutory and financial requirements, and community expectations, records management procedures entail the systematic control of an organizations' records at every stage of their existence (creation, classification, usage, books, retention, storage, and disposal). Records management methods can help to limit the abundance of worthless reports and documentation (Ailakhu, 2021). An indication of effective records management practices is the establishment of retention policies based on an analysis of the records' legal, financial, administrative, and historical requirements and values. Without such regulations, many institutions either erase important data or store everything, putting themselves in risky legal situations and

adding needless operating expenses. Managing and controlling documents at all stages of their life cycles, including generation, distribution, storage, usage, and eventual disposal or permanent retention, is the goal of effective records management. Authors asserted that records management practices offer a number of benefits, such as adherence to legal preservation requirements, speedier information retrieval, space savings, a reduction in lost or misfiled records, and lower expenses for books and equipment (Cao, 2019). By meticulously deleting records that have completed their retention responsibilities and, on a schedule, the University library can significantly reduce the amount of space that documents use in the database. By appropriately disposing off records, the need for bookshelves, filing cabinets, and some electronic storage devices can be greatly decreased. To boost the effectiveness of information retrieval, paper records management systems can be improved, while non-paper technologies like electronic document imaging and micrographics may be implemented conveniently and effectively.

An effective university records management strategy requires an inventory of the records retained by the library and the identification of either an existing retention schedule or the design of a new retention schedule that can be applied to those data. The retention schedule, which also establishes the minimum retention durations for each category of record based on the administrative, financial, legal, and historical values of the documents, lists the records that belong to the university. The records should be disposed off after the required minimum retention time has passed. Physical obliteration, such as burning or transfer to another agency, is an example of disposition. A records retention schedule identifies a group of records and specifies the bare minimum time that the information must be stored before being totally disposed off (Cmar, & Kareroglu, 2017).

Keeping or saving records for future use is known as records storage. However, the format or the type of record will determine how they are preserved or stored. While digital or electronic records are maintained on digital media, paper documents are kept in boxes, files, shelves, or cabinets (Ayele, 2018). A functional system for storing records is one that offers adequate protection for both paper and electronic documents. Institutions are therefore expected to choose the best storage medium based on the types of documents they have. File folders, for instance, can be used to store payment vouchers in tangible copies but not memory cards. Records must also be kept in a manner that guarantees their security and facilitates information retrieval with ease (World Economic Forum, 2018). To save space and shield paper records from elements of the outside environment that could harm them, careful storage of paper records is also necessary. Electronic records should also be preserved with strong security measures because they are vulnerable to cyber-attacks and information loss (Khan, 2019). Omosebi et al (2020) opined that school authority should automate their library to ensure that e-resources are available to make sure students have access and are also motivated to use e-library resources.

B. Data Literacy Skills of Librarians in University

This emphasizes on research data and the need for data literacy training for researchers is found in academic literature (Dlamini, Mlambo, & Masenya, 2021). Data literacy has become a unique skill set for mastery with origins in media literacy, visual literacy, scientific literacy, and statistical literacy (Calzada, & Marzal, 2018). We can see from the range of phrases and definitions used to describe it, however, that the concept of data literacy, how it is defined and what core abilities are required is not yet standardized. The study found three alternative approaches to data literacy in the literature: data information literacy, research data literacy, and scientific data literacy (Shorish,

2018). It is clear that the terms and definitions each have a different focus," "which tends to reflect the context in which it was derived (Oh, Kim, Kim, Chu, Choi, 2021).

The contextualization used in identifying data literacy skills is clear based on the novice stage which is the first and the preliminary skill acquisition stage. Also, there are Advanced beginners in a library setting that might be more comfortable assisting patrons with common reference inquiries, organizing simple displays, and using basic library software. They still require structured guidance but are beginning to make connections between theory and practice. There is proficiency stage as well, the proficient can manage a wider range of tasks independently and are capable of adapting to variations in their work environment, and they possess a deeper understanding of the underlying concepts in digital records management. Proficient librarians can work efficiently without constant supervision and can mentor novice and advanced beginner librarians.

There is also expert stage, the experts have a deep understanding of the nuances and complexities of their field. Expert librarians not only handle routine tasks efficiently but also have the ability to innovate, solve novel problems, and contribute to the advancement of the field. They can develop new strategies, design unique programs, and guide the development of library services. Expert librarians often serve as mentors and leaders within the profession. Lastly there is mastery stage, the masters might publish research, design groundbreaking library programs, and influence the direction of the entire profession. Librarians at the Mastery stage are often regarded as thought leaders and contribute to the development of the theoretical framework of the field (Tay, Lee, Hamid, & Ahmad, 2018).

Data literacy is a subset of information literacy, according to Schneider (Miller, 2017). Both the SCONUL Seven Pillars information literacy model and the information literacy lens on the Vitae Researcher Development Framework emphasize how important it is to find, produce, and deal with research data in order to determine which information could provide the best material to address an information need (Ngulube, & Tafor, 2017). This is because information literacy today goes beyond just published information and underlying data. This is in line with a larger view of information literacy, which acknowledges that research data is included in the definition of information (Molepo, & Cloete, 2017). One author opined that, it seems sense to broaden the definition of information literacy to include data management and curation (Ministry of Public Service - Republic of Uganda, 2022). It was also asserted that individuals with good information literacy abilities should support data-related services (Mosweu, & Chaterera, 2021). There has been a lot of work done over the past ten years to define data literacy abilities for graduate and undergraduate researchers. The library and information science sectors are where the majority of this work is coming from. Because it complements information literacy, data literacy is at home in the fields of library and information science. As a matter of fact, the majority of attempts to characterize data literacy skills have either synthesized earlier attempts to identify data literacy skills or produced skills that adhere to the guidelines from the Association of College and Research Libraries' (ACRL) Information Literacy Skill Standards for Higher Education. The current data literacy abilities tend to complement one another effectively, although they are distinctive in their origin and presentation (Molepo, & Cloete, 2017).

C. Data Literacy Skills and Digital Record Management Practices

Data literacy is emerging in librarianship, particularly in sub-Saharan African countries such as Nigeria. Probably because of dearth of literature, researchers interested in data literacy often examine a broader term of digital literacy skills. One of such studies examined digital literacy

skills of librarians in Nigeria. The researcher made use of an online questionnaire to collect data from 111 librarians working in both public and private universities in Nigeria. The study identified the digital literacy competencies that librarians assessed as somewhat and lowly, as well as those that they ranked as very high and high. The knowledge and abilities that participants are assessed as neutral or poor, in addition to those that they ranked as extremely competent. The librarians assigned a neutral or poor rating to their understanding of network and system security, their aptitude for using firewalls and filtering routers, and their capacity to restrict access to digital information by password or IP-based access. An assessment of digital literacy skills and knowledge-based competencies among librarians working in university libraries in Africa found that librarians rated their overall digital literacy skills as moderate, with some skills like (metadata and website development) rated even lower. Differences in proficiency were also observed between countries, but the general consensus was a moderate level of digital literacy among university librarians in African (Baro, Obaro & Aduba, 2019), similarly, an investigation of the digital literacy skill and knowledge based competences among librarians working in university libraries in Nigeria reported that almost half of the librarians rated their digital literacy skills as moderate with only a few considering their skills to be excellent (Okeji, Tralagba & Obi, 2020). Based on findings, it can be assumed that data literacy skills of librarians would enhance their effectiveness in digital records management while librarians with poor data literacy skills may not be as effective in digital records management.

III. METHODOLOGY

This section is a brief description of the procedures involved in carrying out the study on Data literacy skills and Records Management Practices among Librarians in Universities, South west Nigeria. The descriptive survey research design was used as the researcher collected the two forms of data (quantitative and qualitative) around the same time and then integrated the information in the interpretation of the overall result. The quantitative aspect of the study entails the use of structured instrument that is adapted questionnaire to collect data from a wide range of respondents. This was supplemented with the qualitative aspect in which interview was conducted with selected experts (University Librarians). The study adopted mixed method research approach; the research approach enables the researcher to converge or merge quantitative and qualitative data in order to provide a comprehensive analysis of research problem. The population for this study consists of all the three hundred and seventy-eight librarians (378) from all the fifty-three university libraries in South west, Nigeria excluding newly established universities within the last one year because they could not give us what we really wanted.

Total enumeration, also known as a census was the sampling technique adopted, this is where the entire population or group under study is included in the research or analysis. In other words, instead of selecting a subset or sample from the population, the researcher collects data from every individual or element within the entire population. Total enumeration was used because the population size is small, manageable and feasible to study in its entirety, also, the accuracy and completeness of information are crucial and resources permit. For this study total enumeration was used. Therefore, all the three hundred and seventy-eight (378) librarians were used for the study. The instruments for this research work were structured questionnaire and interview guide. The interview guide was adopted to facilitate the triangulation of the research data. The interview data was compared with the quantitative data to detect divergence and context. Questionnaire on

Data literacy Skills and Records Management Practices among librarians in universities, south-west was adapted from previous studies. Also, the study adopted the Likert scale design which allows the researcher to list options for respondents to choose from.

The instrument was also being subjected to both face and content check for validity by other experts in the field of Library and Information Science for proper vetting and the corrections, suggestion and opinions were incorporated into the final copy of the instrument before administration. For the qualitative aspect of the reliability test. The validity is linked to the genuineness of the research, it focuses on whether the right research questions were formulated, the adopted method is appropriate and the research data is genuine and can hold up to critical scrutiny. To ensure all these parameters were put in place, the interview guide was shown to other experts in the field for scrutiny. The data collected from questionnaire was statistically analyzed using the IBM SPSS Statistics Software. The research questions were analyzed with descriptive statistics such as simple frequencies and percentages. The mathematical representation of the dependent variable is Y while X represent the independent variables. Thus, hypotheses 1, 2, 3, was analyzed using linear regression analysis and hypotheses 4 was analyzed using multiple regression analysis. All hypotheses were tested at 0.05 level of significance. The following research questions were used to assess the objectives of this study:

- (a). What is the record management practices adopted by librarians?
- (b). What is the level of data literacy skills of librarians in university libraries?

The following null hypothesis was tested at 0.05 level of significance

H₀₁ There will be no significant influence of data literacy skill on the digital record management practices of librarians in university libraries in Southwest Nigeria

IV. RESULTS AND DISCUSSION

Results obtained through primary source is presented for discussion and analyzed in frequency and percentage tables. The research questions were analyzed with descriptive statistics, while linear regression analysis was used to analyze the research hypotheses. The decision rule is as follows; 1.00 – 1.49= very low, 1.50 – 2.49= low, 2.50 – 3.49 = high, 3.50-4.00= very high. Also, the hypotheses were tested 0.05 level of significance.

Table 1: Questionnaire Return Rate

S/N	Name and Location of Universities	Administered	Returned
1	Federal University, Oye-Ekiti, Ekiti State	9	7
2	Federal University of Medical and health Sciences, Ilaorogun, Osun State	6	6
3	Federal University of Agriculture, Abeokuta, Ogun State	24	24
4	University of Ibadan, Oyo State	19	17
5	Federal University of Technology, Akure, Ondo State	15	10
6	Atiba University , Oyo Town, Oyo State	1	1
7	Obafemi Awolowo University, Ile-ife, Osun State	18	15
8	University of Lagos, Yaba, Lagos State.	18	14
9	Chrisland University, Ogun State	2	
10	Afe Babalola University, Ado-Ekiti - Ekiti State	9	6

11	Elizade University, Ilara-Mokin, Ondo State	6	5
12	Wesley University Ondo, Ondo State	5	3
13	Adeleke University, Ede, Osun State	8	6
14	Bowen University, Iwo, Osun State	10	6
15	Fountain University, Oshogbo, Osun State	8	7
16	Joseph Ayo Babalola University, Ikeji-Arakeji, Osun State	4	3
17	Redeemer's University, Ede, Osun State	8	6
18	Ajayi Crowther University, Ibadan, Oyo State	9	7
19	Lead City University, Ibadan, Oyo State	11	11
20	Mountain Top University, Ogun State	3	3
21	Achievers University, Owo, Ondo State	3	2
22	Bells University of Technology, Otta, Ogun State	4	3
23	Caleb University, Lagos, Lagos State	4	3
24	Covenant University Otta, Ogun State	10	9
25	Crescent University, Abeokuta, Ogun State	5	3
26	Hallmark University, Ijebu Itete, Osun State	4	2
27	Mcpherson University, Seriki Sotayo, Ajebo, Ogun State	3	3
28	Dominican University, Ibadan, Oyo State	3	2
29	Eko University of Medical Sciences, Lagos State	4	3
30	Trinity University, Yaba, Lagos State	2	2
31	Kola Daisi University, Ibadan	3	3
32	Anchor University Ayobo, Lagos State	2	1
33	Precious Cornerstone University, Oyo State	2	2
34	Dominion University, Ibadan, Oyo State	3	2
35	Babcock University, Ilishan Remo, Ogun State	12	9
36	Ondo State University of Medical Sciences, Ondo State	4	3
37	Osun State University Osogbo, Osun State	13	10
38	Ladoke Akintola University of Technology, Ogbomoso. Oyo State	13	12
39	Oyo State Technical University Ibadan. Oyo State	3	2
40	Lagos State University, Ojo. Lagos State	23	23
41	Ekiti State University. Ekiti State	15	13
42	Olabisi Onabanjo University, Ago Iwoye. Ogun State	13	12
43	Adekunle Ajasin University. Ondo State	10	10
44	Tai Solarin University of Education Ijebu Ode, Ogun State	6	6
45	Ondo State University of Science and Technology, Okitipupa. Ondo State	4	3

378

295

The researcher administered three hundred and seventy-eight (378) copies of the questionnaire to librarians in fifty universities (private, state, and federal) across South-west Nigeria but at the end of the exercise, two hundred and ninety-two of copies were returned from forty-five (45) universities and included in the final analysis. This represents about 77% return rate which is considered adequate for generalization.

Research Question One: What is the record management practices adopted by librarians in university libraries, Southwest Nigeria?

Table 3: Record Management Practices Adopted by Librarians in University Libraries, Southwest Nigeria

Create	SA	A	D	SD	Mean
I usually write emails	149 (51.0)	124 (42.5)	16 (5.5)	3 (1.0)	3.43
I usually circulate emails to various units in the Library	79 (27.1%)	156 (53.4%)	48 (16.4%)	9 (3.1 %)	3.04
We observe records management policy in the Library before creating records	97 (33.2 %)	158 (54.1%)	34 (11.6%)	3 (1.0%)	3.20
I upload records on the database	129 (44.2%)	130 (44.5%)	32 (11.0%)	1 (.3%)	3.33
I can easily identify relevant information	158 (54.1%)	118 (40.4%)	13 (4.5%)	3 (1.0%)	3.48
Average Mean					3.30
Capture					
I capture visual records in the library	107 (36.6%)	168 (57.5%)	14 (4.8%)	3 (1.0%)	3.30
I use software packages such as Microsoft word to capture data	145 (49.7%)	122 (41.8%)	25 (8.6%)	--	3.41
I scan records to be managed digitally	133 (45.5%)	127 (43.5%)	27 (9.2%)	5 (1.7%)	3.33
I capture records from physical documents	120 (41.1%)	160 (54.8%)	12 (4.1%)	--	3.37
I capture records from electronic files	160 (54.8%)	117 (40.1%)	15 (5.1%)	--	3.50
Average Mean					3.38
Organize	SA	A	D	SD	Mean
I organize materials chronologically on the computer system	140 (47.9%)	135 (46.2%)	14 (4.8%)	3 (1.0%)	3.41
I organize materials randomly on the computer system	82 (28.1%)	149 (51.0%)	54 (18.5%)	7 (2.4%)	3.05
I organize materials in the cloud	97 (33.2%)	141 (48.3%)	54 (18.5%)	--	3.15
I can easily retrieve needed record	152 (52.1%)	131 (44.9%)	9 (3.1%)	--	3.49
I organize materials on external storage devices	138 (47.3%)	149 (51.0%)	5 (1.7%)	--	3.46
Average Mean					3.31

Pluralize					
I duplicate digital records in the cyber space to avoid loss	112 (38.4%)	152 (52.1%)	25 (8.6%)	3 (1.0%)	3.28
I duplicate digital records via external storage devices	135 (46.7%)	140 (48.4%)	14 (4.8%)	--	3.42
I share digital record with different library personnel	112 (38.4%)	152 (52.1%)	25 (8.6%)	3 (1.0 %)	3.28
I have copies of records saved in friends and colleagues' gadgets	56 (19.2%)	147 (50.3%)	60 (20.5%)	29 (9.9%)	2.79
I update records in the original and duplicate versions	141 (48.3%)	134 (45.9%)	17 (5.8%)	--	3.42
Average Mean					3.24
Aggregate Mean					3.31

Source: Author (2024)

Decision rule: 1.00 – 1.49= very low, 1.50 – 2.49= low, 2.50 – 3.49 = high, 3.50-4.00= very high.
Key: SA = Strongly Agree, A = Agree, D = Disagree and SD = Strongly Disagree.

Table 3 presents the analysis of digital records management practices among Librarians in university libraries in Southwest Nigeria. The results shows that the respondents exhibit a high engagement in the creation of records through various means, as reflected in the overall average mean of 3.30. The majority of respondents frequently write emails ($\Sigma = 3.43$), circulate emails to various units ($\Sigma = 3.04$), and observe records management policies before creating records ($\Sigma = 3.20$). Additionally, a significant number of librarians upload records to databases ($\Sigma = 3.33$) and can easily identify relevant information (Mean = 3.48). This demonstrates a structured approach to creating and managing records, ensuring information is systematically documented and easily retrievable. The capturing of records is a vital practice, with an impressive average mean of 3.38, indicating robust engagement in this activity. Librarians capture visual records ($\Sigma = 3.30$) and utilize software like Microsoft Word for data capture ($\Sigma = 3.41$). They also frequently scan records for digital management ($\Sigma = 3.33$) and capture data from both physical documents ($\Sigma = 3.37$) and electronic files ($\Sigma = 3.50$). This suggests that librarians employ a variety of tools and methods to ensure comprehensive documentation and digital preservation of records, enhancing the accessibility and longevity of information.

Organizing records effectively is crucial for efficient information retrieval, as evidenced by an average mean of 3.31. Respondents organize materials chronologically on computer systems ($\Sigma = 3.41$), though some also use random organization (Mean = 3.05). A significant portion organizes materials in the cloud ($\Sigma = 3.15$) and on external storage devices ($\Sigma = 3.46$). Additionally, librarians find it easy to retrieve needed records ($\Sigma = 3.49$), indicating that the organizational strategies employed are effective and user-friendly, facilitating quick access to information when required. The practice of duplicating records to prevent loss, with an average mean of 3.24, is crucial for data security and redundancy. Librarians frequently duplicate digital records in cyberspace ($\Sigma = 3.28$) and via external storage devices ($\Sigma = 3.42$). They share digital records with colleagues ($\Sigma = 3.28$) and update both original and duplicate versions ($\Sigma = 3.42$). However, there is less consensus on saving copies in friends' and colleagues' gadgets ($\Sigma = 2.79$), indicating some variability in this practice. Overall, the commitment to duplication highlights a proactive approach to data preservation and disaster recovery.

Combining all these practices, the aggregate mean of 3.31 indicates that librarians in university libraries in Southwest Nigeria are generally engaged in all aspects of digital record management

practices. They are involved in s creation, capturing, organizing, and duplicating techniques to maintain comprehensive and accessible records.

Research Question Two: What is the level of data literacy skills of librarians in university libraries in Southwest Nigeria?

Table 4: Novice Stage Level of Data Literacy Skills of Librarians in University libraries in Southwest Nigeria?

Novice Stage	VH	H	L	VL	Mean
My level of knowledge about search terms is	160 (54.8%)	123 (42.1%)	9 (3.1%)	--	3.52
My getting to know about search skills for needed information is	138 (47.3%)	139 (47.6%)	15 (5.1%)	-	3.42
My familiarity with forms of data available in my library is	152 (52.1%)	126 (43.2%)	14 (4.8%)	--	3.47
My ability to Identify the most appropriate search tool is	137 (46.9%)	138 (47.3%)	17 (5.8%)	--	3.41
My ability to distinguish between different information sources is	153 (52.4%)	131 (44.9%)	8 (2.7%)	--	3.50
Average Mean					3.46

Table 5: Advanced Beginners' Stage Level of Data Literacy Skills of Librarians in University libraries in Southwest Nigeria?

Advanced Beginners' stage	VH	H	L	VL	Mean
My level of search skills for needed information is	154 (52.7%)	132 (45.2%)	6 (2.1%)	--	3.51
My ability to synthesize information relevant to my work is	126 (43.2%)	154 (52.7%)	9 (3.1%)	3 (1.0%)	3.38
My recognition of the best method for data/information retrieval is	135 (46.2%)	145 (49.7%)	12 (4.1%)	--	3.42
My ability to define a search strategy by using appropriate keywords and concepts is	145 (49.7%)	130 (44.5%)	17 (5.8%)	--	3.44
My ability to identify key points and arguments is	150 (51.4%)	118 (40.4%)	21 (7.2%)	3 (1.0%)	3.42
Average Mean					3.43
Competent Stage					
I can decide the search terms before engaging in information gathering with little or no supervision	160 (54.8%)	124 (42.5%)	8 (2.7%)	----	3.52
I can convert data from one format or file type to another with little or no supervision	142 (48.6%)	137 (46.9%)	13 (4.5%)	--	3.44
I can sort my data with little or no supervision	139 (47.6%)	143 (49.0%)	10 (3.4%)	--	3.44
I can create meaningful graphical representations of data with little or no supervision	129 (44.2%)	144 (49.3%)	16 (5.5%)	3 (1.0%)	3.37
I can create meaningful tables to organize and visually present data with little or no supervision	140 (47.9%)	137 (46.9%)	15 (5.1%)	---	3.43
Average Mean					3.44

Table 6: Proficient Stage Level of Data Literacy Skills of Librarians in University libraries in Southwest Nigeria?

Proficient Stage	VH	H	L	VL	Mean
I can interpret graphical representations of data	138 (47.3%)	133 (45.5%)	21 (7.2%)	--	3.40
I can interpret tables to organize and visually present data	112 (38.4%)	157 (53.8%)	23 (7.9%)	--	3.30
I can read and download online materials	167 (57.2%)	116 (39.7%)	6 (2.1%)	3 (1.0%)	3.53
I can use wide range of retrieval tools and resources effectively	146 (50.0%)	134 (45.9%)	9 (3.1%)	3 (1.0%)	3.45
I can critically appraise my own findings and those of others	135 (46.2%)	148 (50.7%)	6 (2.1%)	3 (1.0%)	3.42
Average Mean					3.42
Expert Stage					
My judgement of the best method of analyzing data from different sources is	117 (40.1%)	162 (55.5%)	13 (4.5%)		3.36
My being able to apply and work with data in ethical manner is	122 (41.8%)	144 (49.3%)	23 (7.9%)	3 (1.0%)	3.32
My being able to present information in tables, charts, bars and graphs is	114(39.4)	136(47.1)	36(12.5)	3 (1.0%)	3.25
My being able to identify specialist search tools appropriate to individual information needs is	115 (39.4%)	138 (47.3%)	33 (11.3%)	6 (2.1%)	3.24
My being able to access the credibility of data gathered is	114 (39.0%)	154 (52.7%)	18 (6.2%)	6 (2.1%)	3.29
Average Mean					3.29
Aggregate Mean					3.41

Source: Author (2024)

The decision rule is as follows; 1.00 – 1.49= very low, 1.50 – 2.49= low, 2.50 – 3.49 = high, 3.50-4.00= very high. Also, the hypotheses was tested 0.05 level of significance. Key: Very High (VH), High (H), Low (L), Very Low (VL). Table 4 presents and analysis of data literacy skills among librarians in university libraries, Southwest Nigeria. Data literacy skills is measured through five dimensions namely, novice, advance beginners, competence, proficient and experts. At the novice stage, the librarians exhibit a solid foundational knowledge in various aspects of data literacy, with an average mean of 3.46. The highest mean score (3.52) indicates that librarians are well-versed in search terms, with 54.8% reporting very high knowledge. Similarly, they are knowledgeable about search skills ($\Sigma = 3.42$) and familiar with the forms of data available in their libraries ($\Sigma = 3.47$). They also show a good ability to identify the most appropriate search tools (Mean = 3.41) and distinguish between different information sources ($\Sigma = 3.50$). This indicates a strong base in data literacy among the respondents, essential for efficient information retrieval and management. In the advanced beginners' stage, the librarians demonstrate improved data literacy skills with an average mean of 3.43. The highest mean score (3.51) is associated with their level of search skills for needed information, where 52.7% rate their skills as very high. They also display a good ability to synthesize information relevant to their work ($\Sigma = 3.38$) and recognize the best methods for data/information retrieval ($\Sigma = 3.42$). Additionally, their ability to define a search strategy using

appropriate keywords and concepts ($\Sigma = 3.44$) and identify key points and arguments ($\Sigma = 3.42$) highlights their growing proficiency in handling and utilizing data effectively.

At the competent stage, the librarians maintain a high level of proficiency in data literacy, with an average mean of 3.44. Their highest mean score (3.52) shows that they can decide on search terms before engaging in information gathering with little or no supervision. They are also adept at converting data from one format to another ($\Sigma = 3.44$) and sorting data ($\Sigma = 3.44$). Furthermore, they can create meaningful graphical representations of data ($\Sigma = 3.37$) and tables to organize and present data ($\Sigma = 3.43$) independently. These skills indicate their ability to manage data effectively and present it in a comprehensible manner. In the proficient stage, librarians demonstrate a high level of expertise in data literacy, with an average mean of 3.42. The highest mean score (3.53) reflects their ability to read and download online materials, with 57.2% rating their skills as very high. They are also proficient in using a wide range of retrieval tools and resources ($\Sigma = 3.45$) and critically appraising their own findings and those of others ($\Sigma = 3.42$). Additionally, they can interpret graphical representations of data ($\Sigma = 3.40$) and tables ($\Sigma = 3.30$), underscoring their advanced capabilities in data interpretation and critical evaluation.

At the expert stage, the librarians exhibit advanced data literacy skills, with an average mean of 3.29. The highest mean score (3.36) is for their judgment of the best methods for analyzing data from different sources, where 55.5% rate their skills as high. They also show proficiency in applying and working with data ethically ($\Sigma = 3.32$) and presenting information in tables, charts, bars, and graphs ($\Sigma = 3.25$). Their ability to identify specialist search tools appropriate to individual information needs ($\Sigma = 3.24$) and assess the credibility of data gathered ($\Sigma = 3.29$) indicates a comprehensive understanding of advanced data management and evaluation techniques. The overall aggregate mean of 3.41 suggests that librarians in university libraries in Southwest Nigeria possess high data literacy skills across all stages—from novice to expert. They demonstrate a solid foundational knowledge, advanced search and synthesis skills, proficiency in data management and presentation, and expertise in data analysis and ethical application. This comprehensive skill set enables them to effectively manage, utilize, and present data, enhancing their efficiency and effectiveness in their professional roles.

Tables 5(a-c): Influence of Data Literacy Skill on Digital Records Management Practices of Librarians in University Libraries, Southwest Nigeria

Model Summary

Model	R	R Square	Adjusted Square	R	Std. Error of the Estimate
1	.536 ^a	.288	.285		6.46166

a. Predictors: (Constant), Data Literacy Skills

ANOVA^a

Model		Sum of Squares	Df	Mean Square	F	Sig.
1	Regression	4893.633	1	4893.633	117.204	.000 ^b
	Residual	12108.395	290	41.753		
	Total	17002.027	291			

a. Dependent Variable: DRM

b. Predictors: (Constant), Data Literacy Skills

Coefficients^a

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	33.972	2.990		11.362	.000
	Data Literacy Skills	.377	.035	.536	10.826	.000

a. Dependent Variable: DRM

Tables 4.7(a-c) presents the result of regression analysis on the influence of data literacy skills on digital records management practices of librarians in university libraries, Southwest Nigeria. The model summary table (Table 4.7a) provides a snapshot of the regression model's fit. The R value of .536 indicates a moderate to strong positive correlation between data literacy skills and digital records management (DRM) practices. The R Square value of .288 suggests that 28.8% of the variance in DRM practices can be explained by data literacy skills. This indicates a significant influence of data literacy skills on DRM practices, although other factors still account for the remaining 71.2% of the variance. The ANOVA table (Table 4.7b) tests the overall significance of the regression model. The regression sum of squares (4893.633) and the residual sum of squares (12108.395) combine to form the total sum of squares (17002.027), representing the total variance in DRM practices. The F-value of 117.204 is highly significant ($p = .000$), indicating that the regression model is statistically significant and that data literacy skills have a substantial impact on DRM practices.

Furthermore, the coefficients table (Table 4.7c) provides detailed information about the influence of librarians' data literacy skills on DRM practices of academic libraries in Southwest Nigeria. The unstandardized coefficient (B) for the constant is 33.972, representing the expected mean value of DRM practices when data literacy skills are zero. The B value for data literacy skills is .377, indicating that for each unit increase in data literacy skills, DRM practices are expected to increase by .377 units. The standardized coefficient (Beta) of .536 confirms a moderate to strong positive relationship between data literacy skills and DRM practices. The t-value of 10.826, with a significance level of .000, reinforces the statistical significance of this relationship. The analysis reveals a statistically significant influence of data literacy skills on digital records management practices among librarians in university libraries in Southwest Nigeria. This suggests that enhancing data literacy skills among librarians could lead to more effective Digital Records' Management (DRM) practices. In line with this, the null hypothesis stating that there will be no significant influence of data literacy on the digital record management practices of librarians in university libraries, Southwest Nigeria is hereby rejected.

Thematic Analysis of the Interview Responses

In order to triangulate the responses received from the questionnaire, the researcher also conducted brief interview with librarians across South-west Nigeria. The responses further shed light on the research findings and provide the needed context librarians' responses.

(a). Digital Records Management Practices

The responses showed that digital record management practice is a routine practice in all the institutions. As pointed out by an interviewee; "the library is basically a records management institution, so data management is what we do daily". This means that majority of the institutions engage in records management. However, the responses further show that few of the libraries are fully engage in digital records management. Majority of the libraries have integrated library management system mainly used to create bibliographic information about information resources. Others also make use of institutional repositories.

(b). Data Literacy Skills of Librarians

The librarians interviewed revealed that data literacy skills vary among the library. The responses shows that librarians' levels of data literacy are high. However, some of the librarians observed that it would be difficult to rate the data literacy skills of all professional librarians as only a few librarians are actually engaged in digital record management process. This means that until academic libraries are fully automated and technologies are integrated into all aspect of library activities, it may be difficult to determine the data literacy skills of all librarians.

The finding from research questions on the digital records management practices revealed that librarians in university libraries in Southwest Nigeria are actively engaged in all aspects of digital records management practices. The interview responses however, suggested that the task of digital records management is often limited to one section of the library. This finding aligns with the work of scholars who underscore the importance of librarians' involvement in digital records management to maintain relevance in the digital era (E. C. Agim & E. M. Azolo 2021). Similarly, a study found that Indian university librarians' engagement in digital records management is critical for the efficient organization and retrieval of digital information. On the other hand, a study conducted in South Africa reported that digital records management practices is below expectations. The researcher reported that the lack of established standards, policies, and processes, insufficient resources, as well as a lack of expertise and training, made it difficult for academic libraries to maintain and manage their digital resources. In addition, digital records management systems continue to evolve which often makes it difficult for academic libraries to keep up with technological development (E. C. Agim & E. M. Azolo 2021).

This reflects the submission of librarians interviewed in a related study who reported that infrastructural challenges often limit the extent of digital records management practices in academic libraries. This was echoed in the South African studies where scholars reported challenges such as inadequate technology infrastructure, and legal concerns, they also struggled with limited money and teamwork. A study conducted in academic libraries in the Northwest region of Nigeria revealed that majority of records are still being generated in paper format and only a minute level of digital records management is going on in the libraries (E. C. Agim & E. M. Azolo 2021). Another scholar in Nigeria also submitted that digital records management practices are below average in Nigerian academic libraries. The author reported that majority of the librarians understand the value of emerging technologies like blockchain, cloud computing, and the Internet of Things for managing their records. However, they are hindered by the lack of infrastructure, technical support, and expertise is causing these technologies to be adopted more

slowly (E. C. Agim & E. M. Azolo 2021). Therefore, the finding of digital records management practices may reflect what they librarians have the capability to do and not what majority are currently doing. This is demonstrated in their level of awareness of emerging technologies applicable to digital records management practices.

The Research question two focused on the awareness of emerging technologies for digital records management among librarians in university libraries in Southwest Nigeria. The finding indicates a strong overall awareness and positive outlook towards emerging technologies among the librarians. However, the finding from the interview conducted with Heads of libraries suggest that majority of the librarians are aware of emerging technologies due to personal effort and not because these technologies are available in their institutions. According to the findings from librarians, most library have rely on integrated library management system, institutional repositories and scholarly databases as their favorite digital records management system. This is supported by the responses of the librarians who also added that academic librarians are quite aware of various emerging technologies that can contribute to service quality including digital records management. A group of Nigerian scholars found that majority of the librarians are aware of emerging technologies. However, despite their awareness about the use of AI in university libraries, academic librarians' primary barrier to adopting new technologies is their fear of losing their jobs, even though they are aware that these innovations will facilitate effective user satisfaction.

The study also found a significant combined influence of emerging technologies awareness and data literacy skills on Digital Records' Management practices among librarians in university libraries in Southwest Nigeria. However, institutional support does not significantly contribute to Digital Records' Management practices when combined. The study highlights that emerging technologies awareness and data literacy skills significantly influence digital records management (DRM) practices among librarians in university libraries in Southwest Nigeria. This combined effect underscores the importance of both technological familiarity and proficiency in handling data for effective Digital Records' Management. Librarians who are aware of and understand how to leverage emerging technologies can more efficiently manage digital records by utilizing advanced tools and methods. Simultaneously, strong data literacy skills enable librarians to accurately organize, analyze, and retrieve digital information. This synergy between technology awareness and data literacy creates a robust foundation for effective Digital Records' Management practices, ensuring that digital records are not only well-maintained but also easily accessible and secure.

V. CONCLUSION

Digital records management has become one of the essential services in university libraries, especially with the proliferation of digital information resources and increasing demand for remote, round-the-clock access to information among various stakeholders. It is therefore encouraging that majority of librarians in Southwest Nigerian have taken interest in the practice. Hence, to a good extent, the librarians are literate enough to engage in digital records management practices.

REFERENCES

- Adetayo A. J., Asiru .M.A, & Omolabi I.B, *Building ambidexterity in libraries: Role of competitive intelligence*. Library Philosophy and Practice (e-Journal), 5763. 2021 <https://digitalcommons.unl.edu/libphilprac/5763>
- Alegbeleye G.O, & Chilaka U.C, *Evaluation of records management practices at the Ministry of Health, Abia State, Nigeria* .Library Philosophy and Practice (e-journal), 2019, 6-23.
- Awana. B.O, *Modern library facilities to enhance learning in a teachers' college*. African Research Review, 1(3), 2017, 198–212. <https://doi.org/10.4314/afrrrev.v1i3.41021>
- Azzolini E, Furia G, Cambieri A., Ricciardi W., Volpe M., & Poscia A., *Quality improvement of medical records through internal auditing: A comparative analysis*. Journal of Preventive Medicine and Hygiene, 60(3), 2019, E250–E255. <https://doi.org/10.15167/2421-4248/jpmh2019.60.3.1203>
- Baharuddin, M. F., Izhar, T. A. T., & Shoid, M. S. M. *Adoption of open source software (OSS) and organization performance in the library*. International Journal of Academic Research in Business and Social Sciences, 8(9), 2018. 285-297.
- Balogun N.A, Raheem L.A, Abdulrahman M.D, & Balogun U.O, *adoptability of electronic document management system in Irolin businesses*. Nigerian Journal of Technology (NIJOTECH), 38(3), 2019 707-715.
- Bhatia S., E.K. Douglas, & M., Most, *Blockchain and records management: disruptive force or new approach?*. Records Management Journal, 30(3), 2020. pp.277-286.
- Brown C.A, *Characteristics of successful partnerships between libraries, schools, and community agencies*. Library Philosophy and Practice (e-journal). 8. 2017. Retrieved from <https://digitalcommons.unl.edu/libphilprac/8>
- Calzada Prado J., & Marzal M.A, *Incorporating data literacy into information literacy practices: Core competencies and contents*. Libri, 63(2), 2018, 123-134.
- Dlamini P.P.N, Mlambo B., & Masenya T., *Collaboration between librarians and academics in the department of information studies for curriculum development*. Library Philosophy and Practice (e-journal). 6746. 2021 Retrieved from <https://digitalcommons.unl.edu/libphilprac/6746>
- Dreyfus S.E, *The five-stage model of adult skill acquisition*. Bulletin of science, technology & society, 24(3), 2004. pp.177-181.
- E. C. Agim & E. M. Azolo, “*Digital Literacy and Job Performance Of 21st Century Library Staff In Imo State*”, NJLIS, vol. 4, no. 1, 2021.pp. 15–26,
- Evans. J, McKemmish .S, & Rolan G., *Critical approaches to archiving and recordkeeping in the continuum*. Journal of Critical Library and Information Studies, 1(2), 2017, 122–160.
- Farrell J., & Shoag D., *Asset management in public DB and non-DB pension plans*. Journal of Pension Economics and Finance, 15(04), 2018, 379–406. <https://doi.org/10.1017/s1474747214000407>
- Federal Universities in South-West, Nigeria. *Ilorin Varsity International Journal of Library and Information Science*. 4 (1 and 2) 43-59.
- Flynn, S.J *The records continuum model in context and its implications for archival practice*. Journal of the Society of Archivists, 22(1), 2001. pp.79-93.
- Galukande-Kigandan M., Masereka J., Baluku R., Zagyenda P., & Kayoga G., *Why ethical public administration shall always remain a nightmare in Uganda: experiences of practitioners*.

- International Journal of Management studies and Social Science Research, 4(1), 2022, 95-101.
- García-Morales V.J, Garrido-Moreno A, & Martín-Rojas, R. The transformation of higher education after the COVID disruption: Emerging challenges in an online learning scenario. *Frontiers in psychology*, 12, 2021. p.616059.
- George, T. M., Okwu, E., & Ogunbodede, K. F. *Digital Literacy and Job Performance of Librarians in Rivers State University Libraries, Nigeria*. Library Philosophy & Practice. 2022.
- Gobet F., *The future of expertise: The need for a multidisciplinary approach*. Journal of Expertise, 1(2), 2018. pp.107-113.
- Guto, R., & Jumba, A. H. Relationship between electronic records management and public organization credibility: Critical analysis of literature review. *Journal of African Interdisciplinary Studies*, 5(3), 2021. 52-67.
- Hamad, F., Al-Fadel, M., & Fakhouri, H. *The effect of librarians' digital skills on technology acceptance in academic libraries in Jordan*. Journal of Librarianship and Information Science, 53(4), 2021. 589-600. <https://doi.org/10.1177/0961000620966644>
- Henttonen P., & Kettunen K., *Functional classification of records and organisational structure*. Records Management Journal, 21(2) 2017, 86-103.
- Ibegbulam I.J, & Jacintha E.U, *Factors that contribute to research and publication output among librarians in Nigerian university libraries*. The Journal of Academic Librarianship, 42(1), 2019, 15-20.
- Kumar R., *Application of cloud computing technology for library redesigning: Moving beyond desktop applications*. Library Philosophy and Practice (e-journal). 5290. 2021. Available at: <https://digitalcommons.unl.edu/libphilprac/5290>
- Kyohairwe S.B, *Building ethics and integrity in the public sector in Uganda: A search for a superlative approach*. The Ugandan Journal of Management and Public Policy Studies, 9 (1), 2018. 21-32.
- Luciana D, *Concepts and principles for the management of electronic records, or records management theory is archival diplomatics*. Records Management Journal. 2010
- Luyombya D., & Ndagire S., *Records management procedures and service delivery in private universities*. Journal of the South African Society of Archivists, 53, 2020 1–19. <https://doi.org/10.4314/jsasa.v53i1.1>
- M. Shekgola, J. Maluleka, & A. Rodrigues, *Factors influencing the adoption of free and open-source software for electronic records management by municipalities in Gauteng Province, South Africa*. South African Society of Archivists, 2021, 1-13.
- Macy K.V, & Coates. H.L, *Data information literacy instruction in business and public health: Comparative case studies*. IFLA Journal, 42(4), 2019, 313-327
- Mahama A., *Challenges of records management in higher education in Ghana: The case of University for Development Studies*. " International Journal of Educational Policy Research and Review 4, no. 3, 2017,29-41.
- Malake S., & Phiri J, *Developing a records and information management model for oil marketing companies in Zambia based on the records cycle model*. Open Journal of Business and Management, 8(4), 2020, 1870–1887. <https://doi.org/10.4236/ojbm.2020.84114>
- Masenya, T. M., & Ngulube, P. *Digital preservation practices in academic libraries in South Africa in the wake of the digital revolution*. South African Journal of Information Management, 21(1), 2019. 1-9.

- Masilela L., & Nel D., *The role of data and information security governance in protecting public sector data and information assets in national government in South Africa*. Africa's Public Service Delivery and Performance Review, 9(1), 2021, 1-10.
- McKemmish S., M., Piggott, B. Reed, & F., Upward, Archives: recordkeeping in society. Elsevier. 2005.
- Mosweu T, *A review of the legislative framework for social media records in Botswana*. Records Management Journal, 32(1), 2021, 62-74.
- Ngoepe M., & Keakopa S, *An assessment of the state of national archival and records systems in the ESABRICA region*. Records Management Journal, 21(2), 2017. 145-160.
- Ngoepe M., Mokoena L., & Ngulube P., *Security, privacy, and ethics in electronic records management in the South African public sector*. ESARBICA Journal, 29, 2018, 36-66. doi:doi:10.4314/esarj.v29i1.64289
- Ngulube P., & Tafor V.F, *Management of Public Sector Records and Archives in member countries of ESARBICA*. Journal of Society of Archivist 27 (1): 2017. 57-83.
- Ogbonna G.N, Shettima A.A., Oguejiofor V.I., Nwaodo S.I, & Udogu K.C, *Effect of Dreyfus Model of Training on Motor Vehicle Mechanic Work Students Skill Acquisition in Technical Colleges in North East Nigeria*, International Journal of Mechanical Engineering and Applications 9, no. 3, 2021, 50-57.
- Oguguo B.C, Nannim, F.A., Okeke, A.O., R.I. Ezechukwu, G.A. Christopher, & Ugorji, C.O., *Assessment of students' data literacy skills in southern Nigerian universities*. Universal Journal of Educational Research, 8(6), 2020. pp.2717-2726.
- Omosebi P. A. and Omosebi F. E (2020): Information Literacy Skills And The Use Of E-Library Resources Among Undergraduates In South-West Nigeria. Library Philosophy and Practice pp 1-14, 2020
- Pan K, Blankley A.I., Mazzei M.J, Lohrke C.F, Marshall J.B, & Carson C.M, *Surveying industry advisors to select data analytics topics for all business majors*. The International Journal of Management Education, 16(3), 2018. 483-492.
- Sapp Nelson M.R, *A pilot competency matrix for data management skills: a step toward the development of systematic data information literacy practices*. Journal of eScience Librarianship, 6(1), 1. 2017
- Shepherd E., *Why are records in the public sector organisational assets?* Records Management Journal, 16(1), 2017. 6-12.
- Ssekitto F., *Records disposal governance at lower levels of governments in Uganda: The case of Arua District Local government*. Library Philosophy and Practice (E-Journal). 2019. <https://digitalcommons.unl.edu/libphilprac/2707/>
- Taharudin N.S, & Izhar T.A.T, *A study on record management implementation in private sector: analysis on competency, storage and retention*. International Journal of Academic Research in Business and Social Sciences, 8(6). 2018, 882-897. <https://doi.org/10.6007/ijarbss/v8-i6/4285>
- Touray R., *A review of records management in organisations*. Open Access Library Journal, 8(e8107), 2021, 1-23. <https://doi.org/10.4236/oalib.1108107>
- Williams-Ilemobola O.B, Adetayo A.J, Asiru M.A, & Ajayi J. L, *Librarians' emotional intelligence and conflict management in private university libraries in south-west and south-south, Nigeria*. Information Impact: Journal of Information and Knowledge Management, 12(1), 2021. 33-46. <https://doi.org/10.4314/ijikm.v12i1.3>

- Wolff A., D. Gooch, J. J. C. Montaner, U. Rashid, & G. Kortuem, *Creating an understanding of data literacy for a data-driven society*. The Journal of Community Informatics, 12(3). 201
- Number of Librarians in Each University Library. *University human resource department of each of the institutions*. 2023
- Baro, E. E., Obaro, O. G., & Aduba, E. D. (2019). An assessment of digital literacy skills and knowledge-based competencies among librarians working in university libraries in Africa. *Digital Library Perspectives*, 35(3/4), 172-192.
- Okeji, C. C., Tralagba, E. C., & Obi, I. C. (2020). An investigation of the digital literacy skills and knowledge-based competencies among librarians working in university libraries in Nigeria. *Global Knowledge, Memory and Communication*, 69(4/5), 311-330.