Assessment of Electronic Records Storage and Retrieval Management Practices for Effective Administration in Higher Institutions.

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Abstract

The research determined the assessment of electronic records storage and retrieval management practices for effective administration of administrative officers and Information communication Technology (ICT) experts in higher institutions. The study was conducted in 5 tertiary institutions in Abia State, Nigeria and two specific objectives, research questions and null hypotheses were formulated to guide the study. The researchers adopted descriptive survey research design. The population of the study is 91 respondents associated with the electronic records management practices in the five (5) higher institutions. The researchers adopted census method by using the entire population for the study. Out of the 91 copies of the instruments distributed only 85 was retrieved and used for analysis. To collect data for analysis of the study a self-structured questionnaire titled 'Electronic Records Storage and Retrieval Management Questionnaire (ERESREMAQ) was used. The instrument was validated by two Business Educators and a Psychometrician. Reliability of the instrument was ensured where twenty copies of the validated instrument were administered to 10 administrative officers and 10 ICTs experts in Rivers State University which is outside the area of the study. Cronbach Alpha method was used to establish the internal consistency of the instrument. Mean and standard deviation was used to answer the research questions while 't' test statistical tool was used to test the hypotheses at 0.95% alpha level. The findings of the study revealed that there is no significant difference in the view and responses of administrative officer and ICT experts on the extent electronic storage and retrieval practices enhance effective management practices of administrative officers and ICT experts in higher institutions in Abia State, Nigeria. The result also showed that the calculated 't' value in the two null hypotheses is lesser than the 't'-critical value therefore all the hypotheses were retained indicating no significance difference in the mean response of the respondents. Consequently, the study recommended among others that management should implement a secured and centralized records management system ensure proper record classification and indexing.

Keywords: Electronic record, e-management practice, record storage, record retrieval, effective administration

Introduction

In the recent past, records were kept in paper form, this method was used for the dissemination of information, communication and record keeping. This form of keeping record has been reduced and in some organization discarded due to its limitations as paper files requires enough physical space that are cost intensive, searching and retrieval of papers in large volumes are difficult, slow, inefficient and hard to manage. This paper records kept in locker, floors or shelves are exposed to theft, destroyed by thermites, water, fire and are easy to deteriorate overtime. Okiridu and Onwudike (2024) assert that the usage of paper record keeping has been minimized to the barest level in organizations and institutions because it is inefficient, space consuming, very risky and not environmentally friendly. Retrieval of records is time consuming, delays in issuance of certificate and transcript processing, missing of students' examination scores, records loss or damage due to instability of storage system. These shortcomings of paper record keeping calls for a system that can take care of these anomalies, which is keeping of records electronically. Electronic records are information created, stored, and used in digital form that serve as evidence of business activities and transactions. According to the International Organization for Standardization [ISO] (2016), records are "information created, received, and maintained as evidence and information by an organization or person, in pursuance of legal obligations or in the transaction of business".

Electronic Record Management (ERM) refers to the systematic control of records in digital formats, from their creation and receipt through processing, distribution, maintenance, and eventual disposition. With the explosion of digital data and the increasing reliance on Information and Communication Technology (ICT), ERM has become crucial for both public and private organizations in ensuring efficient recordkeeping, regulatory compliance, data security, and service delivery (Akor & Udensi, 2013). Electronic Record Management, therefore, is the application of management principles and practices to electronic records to ensure their integrity, reliability, and usability over time.

It involves the use of software tools such as Electronic Document and Records Management Systems (EDRMS) to capture, store, and manage digital content efficiently (Ngulube, 2004). The preference of electronic record-keeping over paper record keeping stems on the features it presents to human such as fastness to access, safer from theft and damages, cheaper to store, reduces physical storage space, reduces paper, ink and physical materials, retrieve instantly using keywords easier to manage. and electronic files are easily or automatically backed up to the cloud for easy storage and retrieval. In today's fast paced digital world the adoption of electronic management (E- Management) practices has become essential for ensuring efficient and effective administration in organizations including higher institutions. These practices leverage digital tools and systems to automate processes, improve communication and enhance decision making. The higher education sector which is responsible for molding future leaders and innovators, requires robust administrative systems to meet the demands of modern governance, accountability and transparency.

Higher institutions in Nigeria face numerous challenges in their administrative processes, including efficiency, creation, storage, retrieval, control, disposal and accuracies in handling records. Paper recording systems often fail to meet the increasing demand for timely and accurate service delivery. To address these challenges many institutions have adopted electronic management systems to streamline administrative tasks such as student registration, staff payroll, academic record-keeping and communication with stakeholders (Okiridu, Ogwunte & Godpower; 2024). The advent of information and communication technologies (ICTs) has transformed the way many tertiary institutions create, store, disseminate, and use information. Institutions world over are currently and mostly conducting their records management functions using different ICT platforms. Ezenwafor and Okeke (2024) are of the opinion that adoption of electronic management systems in Nigeria tertiary institutions has ensured quality service delivery, this has resulted in quicker generation, storage, and retrieval of records. These records exist in the form of word processing documents, spreadsheets, e-mail, text messages, voicemail, web content, or other forms. The records need to be properly managed for effectiveness and efficiency. Geoffrey (2024) emphasizes that records should be seen as 'persistent representations of activities' encompassing their abilities to serve as evidence and information. This approach recognizes records not just as static artifacts but as dynamic tools that support various affordances of users. Electronic storage systems include encryption, access controls, audit logs, and retention management. These ensure that confidential employee records are protected, unauthorized access is prevented, and compliance with laws such as GDPR, HIPAA, and Nigeria's NDPR is maintained (Ambira, Kemoni & Ngulube, 2019).

The Records Life Cycle (RLC) describes the stages a record goes through from its creation to its eventual destruction. It includes the processes of creating, maintaining, storing, and disposing of records over the course of their useful lifespans. The RLC is an important part of any organization's operations, as it helps to ensure that all documents are properly stored, preserved, and disposed off in a timely manner. The RLC process ensures that information is not lost, is up to date, is available when needed, and is prevented from being misused. In the evolving digital landscape, electronic storage technologies play a pivotal role in managing workforce operations. Organizations leverage systems such as cloud storage, Enterprise Content Management (ECM), and Human Resource Information Systems (HRIS) to maintain secure personnel records, streamline HR processes, and foster data-driven employee administration. For the purpose of this paper the researchers will dwell only on two indices of the record life cycle which is electronic record storage and disposal practices as it affects effective administration of workers (Caroline; 2022).

Electronic Records Storage Practices and Effective Administration

Electronic records are useless if not properly stored for future access. Storage is the physical or digital repository of records while electronic records storage practice is a process by which electronic data is stored in digital form in order to ensure the usability and durability of the information contained therein. Storing electronic records is an activity that stabilizes and protects electronic records in forms that are retrievable, readable and useable over time Electronic record storage improves operational efficiency and supports timely service delivery in both public and private organizations. Storage is essential to electronic records management as it ensures that records are secured, kept intact, accessible for as long as they are needed (Shepherd & Yeo, 2003).

Storage refers to both the physical space and use of dependable media. Records require good storage conditions and handling processes that will consider the physical and chemical properties, no matter the format. The record should be stored in media that, guarantees their accessibility, usability, reliability, authenticity for as long as they are needed. In storing electronic files, folders are created to group related files and unique name given to it using institutions recognized abbreviation, for example 'Dept' for department. Some operating systems limit the length of a filename to eight characters. Records are stored in a secured databases or cloud storage solutions. Modern ERM systems enable quick search and retrieval using keywords, tags, or filters (Ngoepe, 2018). Electronic records can be stored in the institution in many of ways such as databases, hard drives, shared folders, email accounts, magnetic media, optical disks, CD-ROM, and DVD, flash, zip drives, among others. Storage systems are organized alphabetically or numerically, each disk, tapes, CD or DVD labelled so that it can be located quickly as captions are given to the information to help address this. Often, the labels are colour coded to indicate how long the data in the media are kept. Magnetic disks are widely used and information on magnetic disk coded in magnetic spot which can develop read-errors, this is less expensive and can hold more data in a given surface area. (Ibezim (2006).

However, optical storage system can fail completely after a few years especially when not stored in the proper environment. Data stored and retrieved from CD's are slower than data on magnetic disks. CDs and DVD holds more data and they are good for active records. Different media have different storage methods and characteristics, for instance CD-ROM, and DVD recorded one time only, after which the media becomes read-only. Flash memory devices are the most popular portable digital devices but prone to virous problems (Yusof, & Chell; 2000). It is a memory chip that can be rewritten and hold its content without electric power. Information stored in the storage system could be unreadable because of scratches, in some cases the CDs are not properly or carefully handled or kept in the desk drawers, cabinets. IRMT (2012) The internal storage system for most computer system is hard drive. which is used to store programs that run the system and data files, primary and secondary storage system. Primary storage is temporary or working storage while secondary storage is relatively permanent storage. There are storage options namely online, nearline, and offline. Online is to store in the computer system and provide full access to appropriate users this means that the record is accessible immediately through the network to maintain greatest functionality. Nearline includes storage in a system that is not a direct part of institutions' network and accessed through the facility like optical disk, media jukebox that has moderate functionality. Offline refers to storage that is not accessible through the network for example, removable media, such as magnetic tape, flash drive (Hunter, 2000). This retains the least amount of functionality, while still keeping records in an electronic format. Qandle, (2023) asserts that data files can be expensive to create or replace if damaged and no longer usable. Loss of important files, such as students' result, transcripts, receipt can cause serious problems for tertiary institution. Therefore, there is need to back up files in a hard drive, tape, or disk should be labelled in the same manner as their original, perhaps with the word backup added to the label Views on electronic records storage cannot be concluded without reference to how the stored data can be retrieved.

Electronic Records Retrieval Practices and effective administration

Retrieval is a process of locating a file or document and withdrawing a record from a filing system or record centre. It is also the action of accessing information stored on a computer system. Chinyemba and Ngulube (2005) also noted that processed data in the electronic system can only make sense when made available to the intending users. In data operating system files and sub-directories in a given directory, are view by changing to that directory using the c/d command and typing the dir command. According to Comwell Management Consultants (2001), retrieval practices are the ability of the user to search, retrieve files and records from an electronic records management system. The electronic records management system must be able to retrieve an electronic file using implemented naming principles, including file name, file identifier (classification code), unique identifier which is accessible to the user to make it relevant. Furthermore, knowing the specific location of a record makes retrieval easy. Ezeali and Ewulonu (2011) state that records retrieval refers to the activities involved in locating and removing tangible records from the files or storage medium. The record is returned to the storage control area when no longer needed

Electronic records retrieval practices according to IRMT (2012) is seen as an operation that entails searching out and gaining access to specific data element from an electronic system where records are stored. Retrieval is of two stages, first a search for appropriate address in the storage system and second recognition of the item; if the record search is at the wrong category the item may not be contacted. To have a good filing structure a general filing system that has a consistent filing structure should be encouraged and maintained. This consistency will help the higher institutions to coordinate the creation, use and retention of records that will ease retrieval and access of information throughout the institution (Tsabedze; 2022).. Just as documents or records may be organised into files, files may be organised into series. Record series is the arrangement of the files and other records of a higher institution that brings together those relating to the same function or activity or having a common form or some other relationship arising from their creation, receipt or use. Records in a series are linked together because the records are related to the same functions and activities. When electronic records based on series are well devised and consistently applied it facilitates retrieval of records. The methods adopted for retrieval will depend on speed, cost, quality and quietness which may reduce disruption, for example during COVID-19, ERMS allowed staff to access records securely from any location, ensuring uninterrupted administrative processes even when working off-site and cloud-based record storage enhances resilience and enables continuous operational delivery (Pillen & Eckard, 2023).

Statement of the Problem

Electronic records system due to its viability and being a vital asset in ensuring that day to day activities of the organisation is carried out effectively and efficiently especially in the higher institutions replaced the traditional or manual method of record keeping. Electronic records support decision- making, organize documents, provide evidence of transactions and activities of higher institutions by adopting electronic records management practices (ERMP). Electronic records management practices by administrative officers in higher institutions are still in a pathetic state due to its management by mediocre and untrained personnel. Records are misplaced because creation practices are inadequate; there are no well-defined or clear practices to guide the creation of records. There is instability in the storage system as a result of these the retrieval of electronic system is time consuming, inefficient and records are loss or damaged due to instability of storage system. These anomalies begat poor decisions making as a result of inaccurate and incomplete records, time inefficiencies, backlog of students as a result of incomplete result which delays student's graduation. The management of electronic records is a challenging issue and concerns have been raised that if records are not properly managed, it may be difficult to retrieve and access

Electronic records management practices are not yet fully adopted in the higher institutions, that most times relevant records are missing, .while available records are retrieved with slow rate, because students' data are still processed and kept manually in the higher institutions, while the ones in the electronic system are not securely maintained, students' spend extra years after graduation looking for their results that were declared missing or incomplete because of improper documentation. This scenario brings to doubt the level of ERM practices adopted in those higher institutions in Abia State. In realization of the existing situation of inadequate electronic records management practices in higher institutions, the risk is that the higher institutions will continuously experience delay in provision of needed records, inefficiency in administrative process and backwardness in electronic records keeping. It therefore, becomes necessary to determine how electronic storage and retrieval enhances effective administration of workers in higher institutions. It is expected that with electronic records management system in place effectiveness and efficiency in records keeping would be attained.

Purpose of the Study

The main purpose of this study is to determine the extent to which adoption of electronic records storage and retrieval management practices enhance effective administration of workers in higher institutions in Abia State, Nigeria. Specifically, the study seeks to:

1. Determine the extent electronic records storage practices enhance effective administration of workers in higher institutions in Abia State.
2. Determine the extent electronic records retrieval practices enhance effective administration of workers in higher institutions in Abia State.

Research Questions

The study is guided by two research questions formulated based on the specific purposes of the study.

1. To what extent does electronic records storage practices enhance effective administration of workers in higher institutions in Abia State?
2. To what extent does electronic records retrieval practices enhance effective administration of workers in higher institutions in Abia State?

Hypotheses

The following null hypotheses are formulated to guide the study and were tested at 0.05 level of significance:

1. There is no significant difference in the mean rating of administrative officers and Information and communication technology experts on the extent electronic records storage practices enhance effective administration in higher institutions in Abia State, Nigeria.
2. There is no significant difference in the mean rating of administrative officers and Information and communication technology experts on the extent electronic records retrieval practices enhance effective administration in higher institutions in Abia State, Nigeria.

Methodology

The study adopted a descriptive survey research design to ascertain the opinions of the administrative officers and Information communication technology experts using questionnaire on electronic records management practices adopted for effective administration in tertiary institutions. The study was conducted in five tertiary institutions in Abia State, namely Abia State University (ABSU), Uturu; Abia State Polytechnic, Aba; Abia State College of Education (Tech.), Arochükwu; Micheal Okpara University of Agriculture, Umuahia, and Trinity College Umuahia (Affiliated to University of Calabar). The institutions in the State were chosen because it is identified that they must keep records, store them and retrieve information for smooth running of administration. The population for the study comprised 91 respondents associated with the electronic records management practices in the institutions under study. The researchers adopted census method by using the entire population for the study. The justification for the adoption of the entire population for the study is that the researchers considered the population manageable for the study. The instrument for data collection was a structured questionnaire generated from literature by the researchers in line with the objectives of the study. The structured questionnaire was titled Electronic Records Storage and Retrieval Management Questionnaire (ERESREMAQ). The questionnaire items were organized in a 4-point rating scale with a response options of High Extent (HE) Moderate Extent (ME) Low Extent (LE) and Very Low Extent (VLE) with corresponding values of 4,3,2 and 1 respectively. The instrument was subjected to face validation by three experts. Two Business Educators and one Psychometrician all from Department of Business Education, Rivers State University. To establish the reliability of the instrument for the study, a pilot study was conducted. Twenty copies of the validated instrument were administered to 20 workers in Rivers State University, Rivers State which is outside the area of the study. Cronbach Alpha method was used to establish the internal consistency of the instrument used for the study. A coefficient index of 0.89 was obtained indicating that the instrument was reliable. Out of the 91 copies of the instrument administered to the respondents by the researchers and assistants only 85 copies were retrieved and used for analysis. The information gotten from the filled instrument represented the opinions of the respondents out of the available response alternatives provided in the questionnaire which were used for the analysis. Mean ($\bar{X}$) and Standard deviation was used to answer the research questions, while t-test was used to test the null hypotheses at 0.05 level of significance. Any score up to 2.5 and above was considered 'high' while lesser than 2.5 were considered 'low'. The null hypothesis was retained when the t-calculated value is less than critical t-value at 0.05 level of significance otherwise not retained.

Results

Research Question 1 To what extent does electronic records storage practices enhance effective administration of workers in higher institutions in Abia State?

Table 1: Mean and Standard Deviation Scores of Respondents on the Extent electronic records storage practices enhance effective administration of workers in higher institutions in Abia State (N=85)

S/N	Questionnaire Items	Admin. Officer (60)			ICT Experts (25)		
		$\overrightarrow{X}$	SD	RMK	$\overrightarrow{X}$	SD	RMK
1.	Electronic storage of records improves the security of administrative data	3.01	0.44	HE	3.22	0.36	HE
2.	Electronic record storage makes administrative information more accessible when needed...	3.24	0.27	HE	3.05	0.55	HE
3.	Storing records electronically reduces the risk of data loss or damage	3.00	1.69	HE	3.21	0.64	HE
4.	Electronic storage helps in organizing administrative records more efficiently	2.45	1.39	ME	3.06	0.80	HE
5.	Electronic record storage supports compliance with regulatory and auditing requirements in administration	3.55	0.14	HE	3.45	1.19	HE
	Total Mean/SD	15.25	3.93		15.99	3.54	
	Grand Mean/SD	**3.05**	**0.78**	**HE**	**3.19**	**0.71**	**HE**

Source: *Research Data (2025).*

Data presented in Table 1 above had a grand mean of 3.05 and 3.19, this reveals that electronic record storage practices among administrative staff and ICT experts in the 5 higher institutions under study is to a high extent. And there is no deviation in the opinions of the two groups because they had a standard deviation of 0.78 and 0.71.

Research Question 2 To what extent does electronic records retrieval practices enhance effective administration of workers in higher institutions in Abia State?

Table :2 Mean and Standard Deviation Scores of Respondents on the Extent electronic records retrieval practices enhance effective administration of workers in higher institutions in Abia State (N=85)

S/N	Questionnaire Items	Admin. Officer (60)			ICT Experts (25)		
		$\overrightarrow{X}$	SD	RMK	$\overrightarrow{X}$	SD	RMK
1.	Electronic record retrieval allows for faster access to needed administrative information.	3.21	0.64	**HE**	3.00	0.36	**HE**
2.	Efficient retrieval of electronic records improves the quality of administration	3.28	0.97	**HE**	3.06	0.55	**HE**
3.	Electronic retrieval systems reduce the time spent searching for documents	2.90	0.72	**ME**	3.45	0.64	**HE**
4.	Retrieving records electronically enhances decision-making in administrative operations.	2.85	0.58	**ME**	3.11	0.50	**HE**
5.	Electronic record retrieval supports effective tracking and monitoring of administrative activities.	3.15	0.26	**HE**	3.25	1.19	**HE**
	Total Mean/SD	**15.40**	**3.17**		**15.87**	**3.24**	
	Grand Mean/SD	**3.08**	**0.63**	**HE**	**3.17**	**0.65**	**HE**

Source: *Research Data (2025).*

Data presented in Table 2 had a grand mean of 3.08 and 3.17, this implies that data electronic record retrieval practices among administrative staff and ICT experts is to a high extent. And there is no deviation in the opinions of the two groups which had a standard deviation of 0.63 a and 0.65.

Hypothesis 1: There is no significant difference in the mean ratings of Administrative officers and Information and communication technology experts on the extent electronic records storage practice enhances effective administration in higher institutions in Abia State, Nigeria.

Table 3: Summary of t-Test Analysis on the extent electronic records storage practice enhances effective administration of Administrative officers and Information and communication technology experts in higher institutions in Abia State, Nigeria.

Groups	N	Mean	SD	Df.	P. Value	t-cal.	t-crit.	Decision	Remark
Admin. Officers	60	3.05	0.78						
				83	0.05	-0.49	2.00	Retained	Not Significant
ICT Expert	25	3.19	0.71						

Source: *Research Data (2025).*

From table 3 above, it is observed that the calculated t-value of -0.49 was below the critical t-value of 2.00 at 0.05 levels of significance. Hence, the null hypothesis is retained meaning that the mean responses of Administrative officers and Information and communication technology experts on the extent electronic records storage practice enhances effective administration in higher institutions in Abia State, Nigeria is not significant.

Hypothesis 2: There is no significant difference in the mean ratings of Administrative officers and Information and communication technology experts on the extent electronic records retrieval practice enhances effective administration in higher institutions in Abia State, Nigeria.

Table 4: Summary of t-Test Analysis on the extent electronic records retrieval practice enhances effective administration of Administrative officers and Information and communication technology experts in higher institutions in Abia State, Nigeria.

Groups	**N**	**Mean**	**SD**	**Df.**	**P. Value**	**t-cal.**	**t-crit.**	**Decision**	**Remark**
Admin. Officers	60	3.08	0.63						
				83	0.05	0.45	2.00	Retained	**Not Significant**
ICT Expert	25	3.17	0.65						

Source: *Research Data (2025).*

Discussion of Findings

From table 4 above, it is observed that the calculated t-value of 0.45 was below the critical t-value of 2.00 at 0.05 levels of significance. Hence, the null hypothesis is retained meaning that the mean responses of Administrative officers and Information and communication technology experts on the extent electronic records retrieval practice enhances effective administration in higher institutions in Abia State, Nigeria is not significant.

Electronic record storage practices among administrative staff and ICT experts enhances effective administration of Administrative officers and ICT experts. There responses are to a high extent. The hypotheses result revealed no significant difference. The grand mean responses of the respondents are 3.05 and 3.19 on a 4-point rating scale. Thus, with the grand average mean of 3.05 and 3.19, this implies that data electronic record storage practices among administrative staff and ICT experts is to a high extent. From table 3 it is observed that the calculated t-value of -0.49 was below the critical t-value of 2.00 at 0.05 levels of significance. Hence, the null hypothesis is retained meaning that the mean responses of administrative officers and Information and communication technology experts on the extent electronic records storage practice enhances effective administration in higher institutions in Abia State, Nigeria is not significant.

The grand mean of 3.08 and 3.17, indicates high extent which implies that data electronic record retrieval practices among administrative staff and ICT experts enhances their effective administration and there is no deviation in the opinions of the two groups, this implies that data electronic record retrieval practices among administrative staff and ICT experts is to a high extent. From table 4, it is observed that the calculated t-value of 0.45 was below the critical t-value of 2.00 at 0.05 levels of significance. Hence, the null hypothesis is retained meaning that the mean responses of administrative officers and Information and communication technology experts on the extent electronic records retrieval practice enhances effective administration in higher institutions in Abia State, Nigeria is not significant.

From the study of Beagrie and Jones (2008) is in line with the study as they assert that successful digital preservation involves managing a combination of policies, strategies and technologies to ensure digital objects remain authentic and accessible, including preserving the software and hardware environments necessary to interpret them. The findings of this study is in line with the assertion of Zhang (2023) who averred that retrieval of historical performance records helps with evaluation, training plans, and promotion decisions. AI tools automatically surface relevant documents when needed. Retrieval logs and version history support audit trails and control verification during inspections or legal reviews. Studies in Nigeria and other settings show that digital skills especially in database management and electronic retrieval are essential for secretaries and HR administrators to perform effectively and that lack of staff training hampers retrieval efficacy and slows adoption (Zhang 2023). Research on EHR systems in Malaysia underscores that poor system interface or slow performance undermines user adoption and retrieval efficiency, which degrades overall administrative performance. A similar principle applies in HR systems: intuitive design and fast response times are prerequisites for effective retrieval usage.

Conclusion

Based on the findings of the study, the researchers conclude as follows: that that electronic record storage practices, enhance effective administration of Administrative Officers and Information Communication experts in the five higher institutions in Abia State, secondly electronic record retrieval practices, enhance effective administration of Administrative Officers and Information Communication experts in five higher institutions in Abia State. The two groups share the same views because there was no deviation in their opinions.

Recommendations

In view of the findings made in this study, the following were recommended:

1. Implement a secure and centralized records management system to avoid duplication and improve access.
2. Ensure proper record classification and indexing, this will help to develop a standardized classification and indexing system to make it easy to search and retrieve records.

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