



APPLICATION OF INFORMATION TECHNOLOGY IN THE MANAGEMENT OF RECORDS AND ARCHIVES IN FEDERAL UNIVERSITY LIBRARIES OF SOUTH-SOUTH NIGERIA

Ekemini S. Effiong
University Library,
University of Uyo

Godswill U. Okon PhD.
University Library,
University of Uyo

and

Eboro Umoren PhD.
Department of LIS,
University of Uyo

Abstract

The study investigated the application of information technology in the management of records and archives in federal university libraries, South- South Nigeria. Two research objectives, research questions, and hypotheses were raised, while the descriptive survey research design was adopted for the study. The population of the study comprised 109 academic librarians from eight federal university libraries in South-South Nigeria. The sample size consisted of 109 librarians using a purposive sampling technique. The researcher developed a questionnaire titled "Application of Information Technology and Management of Records and Archives in Libraries, Questionnaire" (AITAMRA), which was used for data collection. The instrument was face validated by three experts, and simple regression analysis was used to answer research questions and to test the null hypothesis at a 0.05 level of significance. The result revealed that the adoption of these technological tools, such as collaborative tools and productivity software, significantly enhanced the management, storage, retrieval, and preservation of records and archives in university libraries. In conclusion, the study indicates that the adoption of information technology can enable university libraries to improve the quality and reliability of records and archives management services. Recommendations were made, among others, that University Librarians and Records managers should adopt modern technological tools for efficient management of records and archives.

Keywords: Information Technology, Archival Records, Management, Federal University Library

1.1 Introduction

University libraries collect, sort, classify, process, and manage records and archives as part of the library resources. In the 21st century, these resources require the adoption of information technology tools for their management. Collaborative tools and productivity software are among the

technologies used in advanced environments to manage these records and archival materials.

Collaborative tools are software platforms or applications that enable multiple users to work together on tasks, projects, or documents either in real time or asynchronously. These tools support

teamwork by facilitating communication, resource sharing, and joint content editing, irrespective of the participants' physical locations. They are widely used in business, education, and various organizational settings. Nazim *et al.* (2022), maintained that they are second-generation development and design through the web that aim to facilitate communication and to secure information sharing, interoperability, and user-centered design. According to Mohapatra (2022) collaborative technology has made librarians serve as facilitators, advisors, consultants, teachers, navigators, searchers, researchers, evaluators, organizers, preservers, promoters, communicators, technical experts, and aggregators. Ucar (2022) described collaborative technologies as blogs, wikis, email, and other social media platforms. They can also be seen as instant messaging tools, cloud storage tools, file-sharing tools, video conferencing tools, wiki tools, and social networking tools. Mohapatra (2022) noted that apart from collaborative tools, information technology also entails the use of productivity software.

Productivity software is a collection of applications designed to assist users in completing tasks efficiently and boosting their productivity. These tools are commonly utilized for creating, editing, managing, and organizing documents, presentations, spreadsheets, and other work-related activities. Typically, productivity software is used in office environments, including both business and educational contexts. As asserted by Lavazza *et al.* (2018), productivity plays a vital role in software development, as it is directly linked to software costs. Enhancements in development productivity can result from the adoption of new techniques frequently introduced in Software Engineering. Additionally, productivity improvements may stem from the growing knowledge and experience gained with established software engineering methods, which continue to

become more refined and standardized over time. Estimating and understanding software development productivity represent crucial tasks for researchers and practitioners (Lambiase *et al.*, 2024). The advancement in the utilization of technology is also helping librarians to manage and preserve archival records electronically with the help of digital preservation tools.

1.2 Objectives of the Study

To determine the extent to which the adoption of

1. Collaborative tools influence the management of records and archives in university libraries in South-South Nigeria.
2. Productivity software influences the management of records and archives in university libraries in South-South Nigeria.

1.3 Research Question

1. To what extent does the adoption of collaborative tools influence the management of records and archives in university libraries in South-South Nigeria?
2. To what extent does the adoption of productivity software influence the management of records and archives in university libraries in South-South Nigeria?

1.4 Hypotheses

1. Adoption of collaborative tools has no significant influence on the management of records and archives in university libraries in South-South Nigeria.
2. Adoption of productivity software has no significant influence on the management of records and archives in university libraries in South-South Nigeria.

2.1 Literature Review

Information Technology (IT) refers to the use, development, and management of computer-based systems, software, hardware, and networks to process, store, retrieve, and transmit information. It encompasses a broad range of technologies and services designed to handle digital data and support various organizational, business, and personal activities. Information Technology is crucial in today's world as it drives innovation, efficiency, and growth across virtually all sectors. It enables the creation of new business models, enhances productivity, and fosters global connectivity, making it an essential pillar of modern society. Information technology (IT) is a set of related fields that encompass computer systems, software, programming languages, information processing, and storage (Cosker, 2023).

Information technology systems play a vital role in facilitating efficient data management, enhancing communication networks, and supporting organizational processes across various industries. According to Hindarto (2023), successful IT projects require meticulous planning, seamless integration, and ongoing maintenance to ensure optimal functionality and alignment with organizational objectives. Yasar (2024) asserted that Information technology (IT) is the use of computers, storage, networking, and other physical devices, infrastructure, and processes to create, process, store, secure, and exchange all forms of electronic data. Typically, IT is used in the context of business operations, as opposed to the technology used for personal or entertainment purposes (Abdullah, 2017). The commercial use of IT encompasses both computer technology and telecommunications.

2.2 Management of Records and Archives

According to Franks (2025), Records are defined as evidence of and information about business activities and transactions,

usually retained for administrative or historical value. University library records document the history and business of the library. These records may include paper documents, born-digital records, digitized records, and email. Some records may have significant historical value and need to be retained permanently. Other records have business or legal value and need to be retained for a specific period until the University library has met federal, legal, or business obligations.

Records management is a field of management that governs how organizations create, receive, store, use, access, and dispose of records, regardless of whether records are in paper or electronic format (Franks 2025). The ultimate goal of the records management program is to deliver the right information to the right people at the right time, ensuring that employees, researchers, and students have the information and records necessary to succeed in their roles in the university and the library while also limiting potential liabilities and reducing costs by destroying eligible records as needed (Matangira *et al.* 2013).

According to Joshi and Singh (2017), poor records management can lead to adverse consequences, such as flawed decision-making, insecure handling of information, and operational inefficiencies. Moreover, secure records management is not only integral to good data governance but also a legal requirement for data protection. Failing to secure records adequately exposes systems and services to risks, potentially causing significant harm and distress to individuals and institutions alike. Proper records management can help preserve this feature of records (Popoola, 2020). Many organizations are carrying out electronic records management without any policy in place (Umi and Zawiyah, 2019). Oseni (2023) averred proper that records management should entail security of the records. The ability to find the entirety of the records related to a particular subject, and to provide them in a reasonable time frame is

both good management and good policy.

Records and archives management helps in the administration of university records by allowing employees to locate information reliably and efficiently. The benefits of effective archival records are numerous amongst them are; it complies with legal retention requirements, faster retrieval of information, space savings, fewer lost or misfiled records, and reduction of expenditures for records filing equipment are just a few of the benefits that good archival records management can help achieve. Archives collect original unpublished material or primary sources. The records held by archives are unique and irreplaceable. Franks (2025) showed that policy guidelines in records management in the libraries under study positively impact on effective information management. The study also highlighted the existence of policies governing records management, which include stipulations that records should only be handled by designated personnel, should not be destroyed but preserved in the archives, and that non-current records should be appropriately separated.

2.3 Collaborative Tools and Management of Records and Archives

Collaborative technology is a tool or software designed to facilitate working in groups and holding real-time meetings in the office and remotely. This technology reduces the costs and time associated with facilitating group work or performing tasks that require collaboration between different departments. Collaborative technology refers to tools and platforms designed to enhance communication, coordination, and teamwork among individuals or groups. These technologies often operate through digital or web-based systems, allowing users to work together seamlessly, even from different locations. Key features include real-time communication tools like messaging apps and video conferencing, document sharing and co-editing platforms for simultaneous

collaboration, and project management systems for organizing and tracking tasks. Additionally, collaborative tools often incorporate social networking elements, enabling users to create profiles, establish connections, and explore professional networks (Al-Qahtani and Aksoy, 2022).

Collaborative technologies encompass many applications, such as email and voice mail (Nazim *et al.*, 2022). Collaborative technology facilitates information sharing and manipulation by increasing communications within and outside organizations. It allows group members to easily share files, information, and ideas. Collaborative technologies, as web-based services, enable groups of professionals to create semi-public profiles within a defined system. These platforms allow users to identify and list their connections, explore their own network, and navigate the connections established by others within the system. Uche and Udo-Anyawu (2019) viewed it as a group of Internet-based applications that build on the ideological and technological foundations of Web 2.0 and that allow the creation and exchange of user-generated content in collaboration. Mahura and Birolla (2021) described it as a combination of powerful online collaboration software that makes it possible for real-time communication and collaboration between teams regardless of where they may be.

Recent literature highlights the growing importance of collaborative tools in archive and record management within libraries. These technologies have become indispensable for enhancing teamwork, streamlining workflows, and ensuring effective management of archival records. It is imperative to recognize the role of collaborative tools in knowledge sharing, particularly during the design and implementation of archival systems, enabling librarians to exchange ideas and improve record organization. Similarly, Tandfonline (2024) emphasized the use of digital tools in

training library staff, helping them develop collaborative skills crucial for managing large volumes of records efficiently. Research also explores the influence of collaborative technologies on fostering inclusivity and a sense of belonging among library professionals working in diverse and international teams (Scholar Works, 2023).

Additionally, the role they play in project management is well-documented, with technologies such as cloud-based platforms being recognized for improving the organization, accessibility, and security of archival records. The integration of these tools is particularly transformative in specialized areas like e-discovery, where cloud-based systems simplify communication and collaboration for handling sensitive archival data (Everlaw, 2024). Furthermore, a decade-long review of online learner collaboration provides insights into how libraries can adapt collaborative methods to enhance archival research and accessibility for users (Education Resources Information Center – ERIC, 2023). These findings underscore the critical role of collaborative tools in modernizing archive and record management in libraries. These tools are therefore instrumental in supporting group work, especially when managing complex archival projects.

According to Ayanbode and Nwagwu (2021), collaborative technologies can be useful tools for efficient information sharing and can facilitate knowledge sharing in the foundations of Web 2.0 by allowing the creation and exchange of user-generated content. Mahura and Birrola (2021) described it as a combination of powerful online collaboration software that makes it possible for real-time communication and collaboration between teams regardless of where they may be, both in time and space dimensions. Mousa *et al.* (2019) noted that collaborative technologies help to remove the barriers of time, space, and location for librarians who are ready to share their knowledge. The author

reiterated that collaborative technologies are changing how librarians learn and share knowledge with colleagues from both within and distant locations. Ahmed (2020) affirmed that the use of collaborative technologies facilitates knowledge-sharing activities, which are essential sources of practice in modern academic libraries. Tiwari (2022) supported that collaborative technologies lower obstacles to knowledge sharing activities and could save time while collaborating with colleagues using devices or programmes.

Al-Qahtani and Aksoy (2022) maintained that the use of collaborative tools requires effective strategies in handling the mechanism. Online collaboration tools now serve as crucial media extending beyond individual researchers' place of residence and affiliation, which hitherto presented challenges for effective partnership. Such collaborative tools include social networking platforms such as Google Scholar, ResearchGate, Zotero, Mendeley, and others. (Williams and Woods, 2024). Globally, researchers have started to take advantage of the interconnectedness, collaboration and networking capabilities of the Internet and social media in their research endeavours (Tiwari, 2022). Nevertheless, the satisfaction derived from using these tools has been highlighted as a motivating factor for their adoption. For adequate utilization of these tools, institutions must provide training programmes and sessions to improve research skills and equip them to realize the full possibilities embedded in the online collaborative space (Mba-Aganda *et al.*, 2024).

Since their introduction, collaborative technologies, a key component of e-learning, have sparked a new wave of free online tools, including wikis, word processors, spreadsheets, presentation software, and discussion forums. Collaborative technologies have garnered significant

attention from library and archival scholars, as they offer a platform for professionals to discuss, exchange, and share ideas, as well as collaboratively construct and manage knowledge related to archival records and library resources (Hsu and Shiue, 2018). Due to the rapid development of online collaborative technologies, more archives and record management institutions are now focusing on preparing staff to work in a collaborative environment, where record management tasks can be efficiently accomplished through online platforms. With the support of effective collaborative technologies, knowledge can be transferred not only from archivists to users but also enables users to actively construct and share knowledge through collaboration in the record management process.

Collaborative technologies are increasingly transforming work and organizations, bringing changes to both the work processes and practices of individual employees and organizations, as well as the environments in which work is conducted (Schubert and Williams, 2022). A key use of collaboration tools is to enable individuals and teams to work together to coordinate work, to share information, and to capture and codify project and organizational knowledge. Mosen *et al.* (2020) opined that collaborative tools have provided comprehensive support for different forms of collaborative activities. These tools are in varieties, namely, internet, digital network, library software, library blogs, library databases, and others.

According to Abdulsalami and Ubogu (2018), the internet is constantly moving into a theoretically borderless, potentially infinite space for the production and circulation of information. It is a mechanism for information dissemination and a medium for collaborative interaction between individuals and their computers without regard for the geographic limitations of space. Also, there is email as a collaborative tool for the management of

archival records. E-mail is a system of creating, sending, and storing textual data in digital form over a network. Anike and Echedom (2020) investigated the level of awareness and application of email by academic librarians. It was evident that email can be utilized in archival record management as a collaborative tool for coordinating the acquisition of records, facilitating communication for ordering materials, and managing requests for archival documents and related resources.

Digital networks can be used as a collaborative tool for records management through Electronic Records Management Systems (ERMS). ERMS can help organizations store, organize, and retrieve records in a more efficient and secure way than traditional methods. Writer Information (2023) viewed digital networks as a records management tool that offers a streamlined approach that helps organizations transition from traditional methods to more efficient systems, ensuring that vital information is easily accessible while remaining secure. Notably, archival records management requires storing documents and also making collaborative efforts to ensure that the records are always available and accessible (National Archives, 2024). This is a result of limited access, high storage cost, and loss of physical materials. As the library recognizes the need for digital records management, they have transitioned from traditional to digital records management systems, which has enabled it to collaborate with individual members. This process often includes scanning physical documents for digitization and storing them.

Library software is another collaborative tool with an enterprise-level software package that manages, integrates, and centralizes multiple core library functions and services. Library software systems are designed to help libraries with three primary duties: increase operational efficiency, provide access to a library's collection, and

provide access to lifelong resources. Omeluzor (2020) noted that library software is a series of interconnected operations that streamline input and retrieval of information for both information professionals and researchers. The library software is the use of computers and associated technology to do exactly what has been traditionally done in libraries, with the justification of reducing cost or increasing performance (Ates, 2024).

Collaborative tools, therefore, play a crucial role in modernizing archives and record management by enhancing communication, improving workflow efficiency, and fostering collaboration among professionals. These technologies enable better organization, accessibility, and security of archival records, while also supporting knowledge sharing and collaborative decision-making. Despite challenges such as technical limitations, data security concerns, and resistance to change, the integration of collaborative tools offers significant benefits for the management and preservation of records in libraries and archives. As these tools continue to evolve, their adoption will further streamline processes and improve the overall effectiveness of archival practices (ResearchGate, 2022).

Collaborative tools enhance the management of archival records by enabling seamless communication, teamwork, and information sharing among archivists, researchers, and other stakeholders. Cloud-based document management systems, such as Google Drive or Microsoft SharePoint, allow multiple users to access, edit, and update archival records in real time, improving workflow efficiency. Video conferencing platforms, discussion forums, and project management tools facilitate remote collaboration, enabling archivists to work together on classification, digitization, and preservation projects. Additionally, version control features in collaborative platforms help track changes,

ensuring the integrity and accuracy of archival records. By using these tools, archives can improve coordination, streamline workflows, and enhance accessibility, ultimately leading to more effective management and preservation of valuable records (Akinsola and Munepapa, 2021).

2.4 Productivity Software and Management of Records and Archives

The management of archival records is a critical function for institutions, ensuring the preservation, accessibility, and integrity of historical and administrative information. Productivity software has emerged as an indispensable tool in modern archival practices, aiding the efficient organization, retrieval, and dissemination of records. This literature review explores the intersection of productivity software and archival management, emphasizing the tools and methods employed to enhance archival workflows. Productivity software refers to applications designed to help users perform tasks more efficiently and effectively, particularly in professional or office settings (Mohanani *et al.*, 2018). These tools assist in creating, managing, and organizing information, enhancing collaboration, and automating routine tasks. Productivity software encompasses applications designed to optimize tasks such as document creation, data organization, and collaboration. In archival settings, these tools facilitate various functions, including cataloging, metadata Management, and digital preservation. Word processing software, such as Microsoft Word, is often employed for drafting finding aids, reports, and accession records. Spreadsheet software, like Microsoft Excel, is used extensively for tracking inventory, managing metadata, and analyzing user statistics (Hanna, 2024).

Common categories of productivity software include word processors like Microsoft Word and Google Docs for creating

and editing text documents, spreadsheets like Microsoft Excel and Google Sheets for data analysis and visualization, and presentation software like Microsoft PowerPoint and Google Slides for crafting visual presentations (Team, 2023). Email and communication tools such as Microsoft Outlook and Slack enable efficient communication and collaboration, while project management tools like Trello and Asana help in organizing and tracking projects. Database management systems like Microsoft Access and MySQL are used to store and manage large sets of data and note-taking tools such as Evernote and OneNote are ideal for capturing and organizing information. Applications such as Microsoft Access and specialized archival software like Archives Space provide robust platforms for organizing and retrieving records. These tools support the creation of detailed metadata schemas, ensuring compliance with archival standards like Dublin Core and ISAD(G) (Franklin, 2018). Additionally, project management software, such as Trello and Asana, aids archivists in coordinating digitization projects, exhibitions, and other initiatives.

Furthermore, time management software like Google Calendar helps with scheduling, and graphic design tools like Canva facilitate the creation of visual content. According to Hanna (2024) productivity software is a category of applications that help users create and produce things like documents, spreadsheets, presentations, databases, and graphs. It is also known as personal productivity software or office productivity software. This software could help with automated features and reduce errors in data entry and other tasks. Also, it often provides a range of ways to view and manipulate data, making it easier to find the information you need and tailor it to your specific needs. The key features of productivity software, as posited by Team (2023) included user-friendly interfaces,

integration with other tools, collaboration capabilities, and automation features like templates and macros.

These applications are essential for enhancing personal and professional productivity by streamlining workflows and improving output quality, and the same is applicable in management of archival records in university libraries. In the library applications, productivity software plays a significant role in streamlining operations and improving service delivery. Gbaje (2023) asserted that productivity software is application software that assists staff in regular office jobs such as creating, updating and maintaining records. Libraries use productivity tools for various tasks, including cataloging, managing collections, and communicating with patrons. Word processing software such as Microsoft Word can assist librarians in drafting policies, reports, and correspondence. Spreadsheet applications like Microsoft Excel are crucial for tracking budgets, statistical data, and inventory. Presentation tools such as Microsoft PowerPoint are used for training sessions and community outreach programs.

Additionally, project management software like Trello or Asana can help in planning library events or tracking progress on special projects. Email and communication platforms like Microsoft Outlook facilitate interactions with stakeholders and patrons, while database management systems such as Microsoft Access or Integrated Library Systems (ILS) like Koha are used to organize and manage bibliographic records. Time management tools like Google Calendar assist in scheduling events and managing staff shifts, and graphic design software such as Canva helps in creating promotional materials for library programs. By leveraging productivity software, libraries can enhance operational efficiency and provide better services to their communities (Lavazza and Morasca, 2017). Productivity software plays a vital role in

managing digital records, from ingestion to long-term preservation. For instance, file management tools integrated with cloud storage solutions, such as Google Drive and Microsoft OneDrive, offer scalable options for storing and sharing digital archives (Lavazza, *et al.*, 2018). Furthermore, collaboration tools like Slack facilitate communication among archivists and stakeholders and enhance team coordination during complex projects.

Digital preservation software such as Preservica and Archivematica often interfaces with productivity software to automate processes like format migration and checksum verification. These integrations enable archivists to maintain the integrity and authenticity of digital records over time (Rafiq and Muhammand, 2022). Apparently, despite its advantages, the integration of productivity software into archival management presents challenges. One major concern is ensuring the interoperability of various tools, particularly when dealing with proprietary formats and legacy systems (Ahmed and Bakhshi, 2021). Another significant issue is the need for training and capacity building among archival professionals. Many archivists require specialized skills to effectively utilize advanced productivity tools, necessitating ongoing professional development programs (Zhao, 2023). Productivity software could be termed a cornerstone in the management of archival records, offering tools that enhance efficiency, collaboration, and digital preservation. While challenges remain, ongoing advancements in technology and professional training are poised to address these issues, ensuring the continued evolution of archival practices. As institutions increasingly adopt these tools, the potential for productivity software to revolutionize archival management becomes evident. The integration of productivity software in the management of archival records offers significant benefits in terms of efficiency, organization, and accessibility. Tools such as

spreadsheets, databases, and document management systems streamline processes like record classification, retrieval, and preservation, while reducing manual errors and enhancing collaboration among archivists. Moreover, productivity software enables adherence to compliance standards by ensuring proper documentation and metadata management. However, successful implementation depends on proper training, periodic updates, and alignment with the specific needs of archival practices. By leveraging these technologies effectively, institutions can ensure the longevity and utility of archival records in an increasingly digital landscape (Di Matino *et al.*, 2020).

Productivity tools play a crucial role in the management of archival records by enhancing efficiency, organization, and accessibility. Word processing software, spreadsheets, and database management systems help archivists catalog, index, and update records systematically, ensuring accurate documentation. Task management applications facilitate workflow planning by assigning tasks, setting deadlines, and tracking progress in archival projects. Automation tools streamline repetitive tasks, such as data entry and file organization, reducing manual workload and minimizing errors. Additionally, email and communication platforms improve coordination among archivists, researchers, and stakeholders, ensuring smooth collaboration. By leveraging productivity tools, archives can optimize record-keeping processes, enhance operational efficiency, and improve the long-term preservation and accessibility of historical and institutional records (Lavazza and Morasca, 2017).

3.1 Research Methodology

The Descriptive survey research design was used for this research, while the area of the study was federal universities in South-south Nigeria, which included the libraries of the University of Uyo, Calabar, Port Harcourt,

Benin, Federal University of Otuoke, Federal University of Petroleum Resources, and Nigerian Maritime University Okerenkoko. The population of the study comprised 109 librarians from eight federal university libraries in the South-South geographical zone of Nigeria. The sample size for the study consisted of 109 librarians using a census sampling technique. The instrument for data collection was a researcher-developed questionnaire titled: “Application of

Information Technology and Management of Records and Archives in Libraries Questionnaire” (AITAMRA). Simple Regression analysis was used to answer research questions as well as test hypotheses at the 0.05 level of significance.

4.1 Results and Data Analysis

Research Question 1: What is the influence of Collaborative Tools Adoption on the Management of Records and Archives in University Libraries in South- South Nigeria?

Table 1: Summary of simple linear regression analysis for the extent to which collaborative tools adoption predicts management of Records and archives in university libraries in South -South Nigeria

Variable	R	R Square	Extent of Prediction	Remark
Collaborative tool Management of archival records	.894	.800	80.0%	High Extent

Source: Field work (2026).

The entries presented in Table 1 report the R for the strength of the relationship and R^2 for the determination of the extent to which collaborative tools adoption predicts the dependent variable. The R-value of .894 indicates a low extent of influence of collaborative tools adoption on the management of Records and archives. The calculated R^2 of .800, which is the coefficient of determination, indicates that only 80.0% of the dependent variable is predicted or determined by collaborative tools adoption. This result means that collaborative tools adoption influences the management of Records and archives to a great extent.

Research Question 2: What is the influence of Productivity Software Adoption on the Management of Records and Archives in University Libraries in South- South, Nigeria?

Table 2: Summary of simple linear regression analysis for the extent to which productivity software adoption predicts management of Records and archives in university libraries in South-South Nigeria

Variable	R	R^2	Extent of Prediction	Remark
Productivity software Management of archival records	.911	.829	82.9%	High Extent

Source: Field work (2025).

The entries presented in Table 2 report the R for the strength of the relationship and R^2 for the determination of the extent to which productivity software predicts management of Records and archives. The R-value of .911 indicates a low extent of influence of productivity software on the management of Records and archives. The calculated R^2 of .829, which is the coefficient of determination, indicates that only 82.9% of the dependent variable is predicted or determined by the productivity tool. This result indicates that productivity software influences the management of Records and archives to a great extent.

Research Hypothesis

H₀: There is no significant influence of collaborative tools on the management of Records and archives in federal university libraries in the South-South, Nigeria.

Table 3: Simple linear regression analysis for the extent to which collaborative tools predict management of Records and archives in university libraries in South-South Nigeria

Source of variation	Sum of square	df	Mean square	F- value	Decision @ $p < .05$
Regression	1088.772	1	1088.772	482.683	.000
Residual	272.935	121	2.256		
Total	1361.707	122			

Source: Field work (2026).

The data presented in Table 3 indicate the F-value of 482.683 with its corresponding P-value of .000 which is less than the .05 level of significance with 1 and 122 degrees of freedom. Based on this result, the null hypothesis, which claims that the extent to which collaborative tools predict management of Records and archives in university libraries in South-South Nigeria, is rejected. As a result, collaborative tools significantly influence the management of Records and archives in university libraries in South-South, Nigeria.

1. **H₀:** There is no significant influence of productivity software on the management of Records and archives in federal university libraries in the South-South, Nigeria.

Table 4: Simple linear regression analysis for the extent to which productivity software predicts management of Records and archives in university libraries in South-South Nigeria,

Source of variation	Sum of square	df	Mean square	F-value	Decision @ $p < .05$
Regression	1128.984	1	1128.984	586.992	.000
Residual	232.724	121	1.923		
Total	1361.707	122			

Source: Field work (2026).

The output in Table 4 reveals that the F-value of 586.992 with its corresponding P-value of .000, which is less than the .05 level of significance, with 1 and 122 degrees of freedom. Based on this result, the null hypothesis, which claims that the extent to which productivity software predicts management Records and archives in university libraries in South-South Nigeria, is rejected. Hence, productivity software significantly influences the management of archival records in university libraries in South-South, Nigeria.

5.1 Discussion of Findings

Collaborative Tools and Management of Records and Archives in University Libraries

The findings of this study revealed that collaborative tools significantly predict the management of archival records in university libraries in South-South Nigeria. This shows that collaborative tools play a significant role in enhancing the management of archival records in university libraries. This finding agrees that the integration and effective use of collaborative tools can greatly improve the efficiency and effectiveness of archival records management in university libraries. Collaborative tools such as shared digital platforms, online communication systems, document-sharing applications, and cloud-based collaboration platforms enable librarians to work together efficiently in organizing, storing, retrieving, and sharing archival records. These tools facilitate real-time communication and coordination among library personnel, thereby reducing delays in accessing or processing archival information.

This finding could be attributed to the fact that collaborative tools provide a digital environment where multiple users can work simultaneously on shared documents and information systems regardless of geographical location. This technological

capability enhances coordination among librarians and enables them to manage records more effectively. For instance, tools such as Google Docs, Google Drive, Zoom, WhatsApp, and other collaborative platforms allow librarians to exchange information, update archival records, and monitor document changes in real time. Consequently, the adoption of collaborative tools helps to improve record accessibility, minimize duplication of efforts, and enhance overall archival record management.

The findings of this study are consistent with the work of Mba-Aganda *et al.* (2024), who investigated the effectiveness of online collaboration tools among researchers in selected university communities in Nigeria. Their study revealed that collaborative tools play an important role in facilitating interaction, communication, and partnership among researchers. The study also highlighted that factors such as user group, age, and frequency of use of collaborative tools significantly influence their effectiveness. These findings support the present study because collaborative technologies that improve communication and coordination can also enhance record management processes in university libraries.

The present finding is in line with that of Ateş and Köroğlu (2024), who examined the impact of online collaborative tools on learning outcomes, engagement, and motivation in science education. Their findings showed that students who utilized collaborative tools demonstrated improved performance and higher levels of engagement. Although their study was conducted in an educational setting, it provides further evidence that collaborative tools can enhance participation, efficiency, and productivity in different environments. In the context of university libraries, such improvements can translate into more efficient management and organization of archival records.

The finding also agrees with Adeoye *et al.* (2021), who examined social media as a collaborative tool for research among library and information science professionals in Nigeria. Their study revealed that social media platforms such as WhatsApp, Google Docs, Google Drive, Facebook, Telegram, and Zoom are widely used for research collaboration among librarians. The study further indicated that these platforms enable professionals to communicate, network, and share documents regardless of location. This observation supports the present finding because such collaborative platforms can also be utilized for sharing, updating, and managing archival records in university libraries. Schubert and Williams (2022) also examined the impact of collaborative tools utilization on group performance among university students. Their findings revealed that collaborative tools significantly improved group performance and teamwork among students. This observation further supports the present study because improved collaboration among library staff can enhance coordination in the organization, updating, and preservation of archival records.

Productivity Software and Management of Records and Archives in University Libraries

The findings of this study revealed that productivity software significantly predicts the management of archival records in university libraries in South-South Nigeria. This implies that productivity software plays a significant role in improving the management of archival records in university libraries. This finding suggests that the use of productivity software enhances the efficiency and effectiveness of archival record management in university libraries. Productivity software such as Microsoft Word, Microsoft Excel, database applications, and cloud-based storage systems assists librarians in creating, organizing, storing, retrieving, and sharing

archival records with greater accuracy and speed. These software tools also enable proper documentation, data organization, and secure storage of records, which are essential for effective archival management.

The possible reason for this finding is that productivity software simplifies the processes involved in record management by providing automated features that support data entry, document formatting, file organization, and electronic storage. Through these features, librarians can easily update, track, and retrieve archival records when needed. The use of productivity software also reduces the risk of data loss and enhances the preservation of valuable institutional records. As a result, libraries that effectively integrate productivity software into their operations are more likely to achieve efficient record management practices. The finding affirms with Lambiase *et al.* (2024), who conducted a study on the influence of cultural and geographical dispersion of software communities on productivity. The study adopted a mixed-method empirical approach and developed a statistical model relating dispersion metrics with the productivity of 25 open-source communities on GitHub. A confirmatory survey involving 140 practitioners was also conducted, and regression analysis was used to analyze the data. The findings revealed that cultural and geographical dispersion significantly influence productivity in software development communities. Although the focus of their study was on software development teams, the result supports the present study by emphasizing the importance of technological systems and software tools in improving productivity and coordination in digital work environments.

Similarly, the finding collaborates with Eniekebi (2023), who examined information management and librarians' productivity in university libraries in South-South Nigeria. The results revealed that

librarians adopted various strategies for information management and that there was a positive and significant relationship between information management and librarians' productivity. This finding supports the present study because effective information management practices often rely on the use of digital and productivity software tools that facilitate record organization and accessibility.

The finding also agrees with Okute and Etim (2023), who examined database application, Microsoft Word usage, and the management of students' academic records in universities in Cross River State, Nigeria. The result revealed that the use of database applications and Microsoft Word significantly influenced the management of students' academic records. This finding supports the present study because database and document-processing software are important components of productivity software that enhance the organization and management of institutional records.

The present finding is in support of Gasigwaet *al.* (2022), who investigated the effectiveness of Excel software integration in teaching and learning statistics among secondary school students in Rwanda. The results revealed that students who used Excel software performed significantly better than those who used traditional methods. Although the study focused on educational outcomes, it demonstrates how productivity software can improve efficiency, organization, and performance in various professional contexts, including archival record management.

Conclusion

This study made several discoveries and observations regarding the influence of application of information technology on the management of records and archives in university libraries in South-South Nigeria. Based on the findings of the study, it is concluded that the adoption and utilization of

information technology will significantly enhance the effective management of records and archives in university libraries within the region. The integration of technological tools in records management practices improves the storage, retrieval, preservation, and accessibility of records, thereby promoting efficiency, accuracy, accountability, and long-term preservation of valuable institutional information. Consequently, the effective use of information technology can enable university libraries in South-South Nigeria to improve the quality and reliability of archival record management services.

The results of the study further revealed that the various information technology components examined namely productivity software, collaborative tools, predicted the management of records and archives in university libraries. Collaborative tools and productivity software enhanced coordination and efficiency among library personnel. These findings indicate that the effective integration and management of these technological tools provide a strong framework for improving records and management. Therefore, university libraries that actively adopt and harmonize this information technologies are more likely to achieve effective, efficient, and sustainable management of archival records in South-South Nigeria.

References

- Abdullah, L. (2017). Records and information management (RIM) – *ARMA International*. www.arma.org
- Abdulsalami, T. L. and Ubogu, J. O. (2018). A comparative study of internet and library usage for academic purposes among students of Federal University Lafia. *International Journal Academic Libraries, Information Science*. 7(1). <https://www.academicresearchjournals.org/cgi-sys/suspendedpage.cgi>.

- Adeoye, A. A., Onuoha, C., Obiano, D. C. and Motunrayo, O. (2021). Social media as a collaborative tool for research among library and information science (LIS) professionals in Nigeria. *Library Philosophy and Practice (e-journal)*. 5137. (Retrieved on 12th December, 2024).
- Mba-Aganda, M. O., Toluwalashe M., Ujunwa, M. D., Oboakore, O. B., John, J. O. (2024), The effectiveness of online collaboration tools for researchers in poor resource settings: A study of researchers in selected university communities in Nigeria. *Ianna Journal of Interdisciplinary Studies*, 6(3): 90 - 104.
- Ahmed, H. and Bakhshi, S. I. (2021). Library automation software packages: A comparative study of virtua, Alice for Windows, SOUL and LIBSYS. *Library Philosophy and Practice (e-journal)* 6168. <https://digitalcommons.unl.edu/libphilprac/6168/> (Retrieved on 20th March, 2024).
- Ahmed, T., Khan, M. S., Thitivesa, D., Siraphattada, Y. and Phumdara, T. (2020). Impact of employees' engagement and knowledge sharing on organizational performance: Study of human resource challenges in COVID-19 pandemic. *Human Systems Management*, 39(4): 589-601.
- Al-Qahtani, M. A. and Aksoy, M. S. (2022). Collaborative tools and techniques of knowledge sharing: a literature review. *Journal of Computer and Communications*, 10(5): 45-54.
- Anike, A. N. and Echedom, A. U. (2020). Awareness and application of organizational knowledge management by academic librarians in university libraries in South-East Nigeria. *Information and Knowledge Management*, 10(6): 26-34.
- Ateş, H. and Köroğlu, M. (2024). Online collaborative tools for science education: Boosting learning outcomes, motivation, and engagement. *Journal of Computer Assisted Learning* 40 (3), <https://doi.org/10.1111/jcal.12931> (Retrieved on 5th July, 2025).
- Cosker, G. (2023). What is information technology? A beginner's guide to the world of IT. *Technology Blog, Rasmussen University*. <https://www.rasmussen.edu/degrees/technology/blog/what-is-information-technology/> (Retrieved on 5th July, 2025).
- Di-Martino, S., Ferrucci, F., Gravino, C. and Sarro, F. (2020). Assessing the effectiveness of approximate functional sizing approaches for effort estimation. *Information and Software Technology*, 54(8): 820–827.
- Eniekebi, E. (2023). Information management and librarians' productivity in university libraries in South-South, Nigeria. *Library and Information Perspectives and Research*, 5(10): 61-74.
- Everlaw, G. (2024). How collaborative tools are changing the face of e-discovery. <https://www.everlaw.com/guides/novel-data-types/how-collaborative-tools-are-changing-the-face-of-ediscovery>. (Retrieved on 5th July, 2025).
- Franks, P. C. (2025). *Records and information management*. American Library Association.

- Gasigwa, T., Maniraho, J. F. and Habimana, O. (2022). Effectiveness of excel software integration in teaching and learning statistics on students' performance in selected Kicukiro District Upper Secondary Schools in Rwanda. *Journal of Research Innovation and Implications in Education*, 6(3):194 – 200.
- Gbaje, E. S. (2023). Library software packages. [https://nou.edu.ng/courseware/content/LIS% 20402%20.pdf](https://nou.edu.ng/courseware/content/LIS%20402%20.pdf) (Retrieved on 10th April, 2025).
- Hanna, K. T. (2024) what is productivity software? [https://www.techtarget.com/whatis/ definition/productivity-software #:~: text=Productivity% 20software% 20is% 20a% 20 category,efficiency% 20by%20facilitating%20people's%20as ks](https://www.techtarget.com/whatis/definition/productivity-software#:~:text=Productivity%20software%20is%20a%20category,efficiency%20by%20facilitating%20people's%20tasks) (Retrieved on 8th August, 2025).
- Hindarto, D. (2023). The management of projects is improved through enterprise architecture on project management application systems. *International Journal Software Engineering and Computer Science (IJSECS)*, 3 (2):151–161.
- Joshi, C. and Singh, U. K. (2017). Information security risks management framework - A step towards mitigating security risks in university network. *Journal of Information Security and Applications*, 35, 128- 137. doi:10.1016/j.jisa.
- Lambiase, S., Catolino, J., Pecorelli, F., Tamburri, D. A., Palomba, F., Heuvel, W. and Ferrucci, F. (2024). An empirical investigation into the influence of software communities' cultural and geographical dispersion on productivity. *Journal of Systems and Software*, 208, <https://doi.org/10.1016/j.jss.2023.11187> 8(Retrieved on 10th April, 2025).
- Lavazza, L. and Morasca, S. (2017). On the evaluation of effort estimation models. *In Proceedings of the 21st International Conference on Evaluation and Assessment in Software Engineering*. ACM, 41–50.
- Lavazza, L., Morasca, S. and Tosi, D. (2018). An empirical study on the factors affecting software development productivity. *E-Information Software Engineering Journal*, 12:27-49. [https:// www.doi.org.10.5277/e-Inf180102](https://www.doi.org.10.5277/e-Inf180102) (Retrieved on 10th April, 2025).
- Mba-Aganda, M. O., Toluwalashe, M., Ujunwa, M. D. Oboakore, O. B. and John, J. O. (2024). The effectiveness of online collaboration tools for researchers in poor resource settings: A study of researchers in selected university communities in Nigeria. *Journal of Interdisciplinary Studies*, 6 (3): 90-104.
- Mahura, A. and Birollo, G. (2021). Organizational practices that enable and disable knowledge transfer: The case of a public sector project-based organization. *International Journal of Project Management*, 39(3): 270-281. [https://doi.org/10.1016/j.ijproman.2020. 12.002](https://doi.org/10.1016/j.ijproman.2020.12.002)(Retrieved on 5th July, 2025).
- Matangira, V., Katjiveri-Tjiuoro, M., & Lukileni, N. H. (2013). Establishing a university records management programme: A case study of the University of Namibia.
- Mohamad, S. R. and Hussin. N. (2021). The usage of Microsoft One Drive among the professional college staff. *Journal of Information and Knowledge*

- Management (JIKM)*, 11 (184): 84-94.
- Mohanani, R., Salman, I., Turhan, B., Rodríguez, P. and Ralph, P. (2018). Cognitive biases in software engineering: A systematic mapping study. *Transactions on Software Engineering. IEEE*, 7(4):195–202.
- Mohapatra, U. (2022). *Voluntary organizations and rural development in South Asia: assumptions and realities*. London: Springer Nature, 28p.
- Mousa, T. S., Jameel, A. S. and Ahmad, A. R. (2019). The impact of attitude, subjective norm and information communications technology on knowledge sharing among academic staff. *International Journal of Psychosocial Rehabilitation*, 23(2): 704-717
- Mosen, J, Williams, S. P. and Schubert, P. (2020). Visualizing Social documents as traces of collaborative activity in enterprise collaboration platforms. *53rd Hawaii International Conference. System Science*, 5369–5378.
- National Archives (2024) National archives and records management. <https://nationalarchives.nic.in/record-management/records-management-rm>(Retrieved on 5th July, 2025).
- Nazim, M., Munshi, S. A. and Ashar, M. (2022). Librarian's self-efficacy in ICT-based library operations and services: A survey of librarians working in libraries of Aligarh Muslim University Library System. *Journal of Librarianship and Information Science*, [https://doi.org/10:09610006221111199](https://doi.org/10.09610006221111199)(Retrieved on 5th July, 2025).
- Okute, A. L. and Etim, A. S. (2023). Database application, MicrosoftWord usage and management of students' academic records in universities in Cross River State, Nigeria. *Journal of Association of Vocational and Technical Educators of Nigeria (Javten)*, 29(1):44-55. <https://www.avten-edu.org.ng/journal/index.php/javten/issue/download/15/66>. (Retrieved on 8th March, 2024).
- Omeluzor, S. (2020). Evaluation of integrated library system (ILS) use in university libraries in Nigeria: An empirical study of adoption, performance, achievements, and shortcomings. *Evidence Based Library and Information Practice*. 15. 49-67. 10.18438/eblip29604. doi:10.18438/eblip29604.
- Oseni, S., Bakare O. D. and Alli, A. Z. (2023). Impact of electronic records management system on the security of records among administrative staff. *Wukari International Studies Journal*, 7 (5). <https://wissjournals.com.ng/index.php/wiss/article/download/255/234/256#:~:> (Retrieved on 8th March, 2024).
- Popoola, U. (2020). *Organization and management of records in the public sector*, 2nd ed. London: Longman.
- Rafiq, A. and Muhammad, R. (2022). Assessing the preparedness of university libraries for digital preservation. *The Journal of Academic Librarianship*, 48, (6). <https://doi.org/10.1016/j.alib.2022.102617>.
- Research Gate (2022). Collaborative tools and techniques of knowledge sharing: A literature review. https://www.researchgate.net/publication/360944442_Collaborative_Tools_and_Techniques

- of Knowledge Sharing A Literature Review(Retrieved on 8th March, 2024).
- ResearchGate (2024). Collaborative tools for project management: A technological review. https://www.researchgate.net/publication/378385667_Collaborative_Tools_for_Project_Management_A_Technological_Review(Retrieved on 20th March, 2023).
- Scholar Works (2023). The influence of online collaboration tools on international students' sense of belonging during groupwork. (Retrieved on 8th March, 2025).
- Schubert, P. and Williams, S. P. (2022). Enterprise collaboration platforms: An empirical study of technology support for collaborative work. *Science Direct Procedia Computer Science*, 196 305–313. doi:[10.1016/j.procs.2021.12.018](https://doi.org/10.1016/j.procs.2021.12.018)
- Tandfonline (2024). The effectiveness of digital tools in developing collaborative skills: A systematic review. <https://www.tandfonline.com/doi/full/10.1080/1044731.8.2024.2348227>. (Retrieved on 8th March, 2024).
- Team, T. (2023). The four main types of productivity software (with examples). <https://www.timely.com/blog/productivity-software> (Retrieved on 8th March, 2025).
- Tiwari, S. P. (2022). *Information and communication technology initiatives for knowledge sharing in agriculture*.<https://doi.org/10.48550/arXiv.2202.08649>(Retrieved on 8th March, 2024).
- Umi, K. and Zawiyah, I. P. (2019). Managing records-related risks. [Online] Available from <http://www.findarticles.com>. (Retrieved on 8th March, 2024).
- Uçar, S. (2022). New technologies in education: Basic web 2.0 applications for classrooms. Toov, R. and Wick, A. (2018). Making it work – understanding and expanding the utility of archives space. *Research and Reviews in Educational Sciences*. 1 (1):43-55.
- Uche, Angelina C. and Udo-Anyanwu, Adaora J. (2019). Awareness and utilization of social media by tertiary institutions' librarians in Abia and Imo States, Nigeria. *Library Philosophy and Practice* (e-journal). 2307.<https://digitalcommons.unl.edu/libphilprac/2307> (Retrieved on 8th March, 2024).
- Writer Information (2024). Records management in a digital world: best practices for success. <https://www.writerinformation.com/insights/records-management-in-a-digital-world> (Retrieved on 8th May, 2025).
- Yasar, K. (2024). *Definition: Information Technology IT*. <https://www.techtarget.com/searchdatacenter/definition/IT#:~:> (Retrieved on 8th March, 2025).
- Zhao, G., YuEl-Gayar, O. and Zhiling, Tu, C. (2023). Is artificial intelligence attractive? An empirical study on user's intention to use AI-enabled applications. *Proceedings of the 56th Hawaii International Conference on System Sciences*. 6550–6559 <https://hdl.handle.net/10125/103426>(Retrieved on 8th March, 2025).