INFLUENCE OF UTILIZATION OF COLLABORATIVE TECHNOLOGIES ON JOB PERFORMANCE OF LIBRARIANS IN UNIVERSITIES IN IMO STATE.

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Abstract

This study examined the influence of collaborative technologies on job performance of librarians in Universities in Imo State. This study was guided by three research questions. The descriptive design of the correlation type was adopted for the study. The population of the study was 49 so there was no need for sampling technique, so census technique was adopted because the population was manageable. The study instruments were two rating scales made by the researcher titled "extent of use, benefits and challenges to use of collaborative technologies" (EUBCCT) and "Librarians' job performance rating scale" (LJPRS) all answered in a 4-pont Likert format. Reliability coefficients of 0.77 and 0.75 were obtained for the EUBCCT and LJPRS respectively using Cronbach Alpha statistics. The research questions were answered using mean, standard deviation and Pearson product moment correlation coefficient. The major findings of the study are that the extent of utilization of collaborative technologies among Librarians in universities in Imo State is low with grand mean of 2.15; there is a moderate positive relationship of 0.51 between use of collaborative technologies and job performance of librarians; there abound benefits and challenges to the use of collaborative technologies by librarians of 2.87 and 3.71 mean respectively. Based on the findings, the researcher recommends that librarians should embrace the use of the commonest collaborative technologies viz: whatsapp and email in the discharge of their duties for improved job performance.

Keywords: Collaborative technologies, WhatsApp, Email, Librarians

Introduction

A university library is one which is situated or established in an institution of higher learning. Examples include, university libraries, polytechnic libraries, libraries of colleges of education, teaching hospital libraries, and school of nursing libraries among others. They are primarily established to aid teaching, learning and research in its host institution. Librarians are responsible for processing every information material that are domiciled in the institution and use these resources to render services to users. However, the role of library and information science (LIS) professionals has changed as a result of the amount of information and its availability in many forms (Kulkarni, Pandiyan, Raojopadhye & Bhawal, 2023). Several changes have been and are being made to the status and goals of librarians and information professionals, as well as library services, in the twenty-first century. The unprecedented spread of knowledge, as well as the significance of electronic communications and mobile technologies in generating, transferring, and accessing information has spurred a need for library professionals to shift from being record keepers to information administrators and finally to knowledge facilitators of which a key competence in the smooth actualization of their duties is collaboration.

Collaboration is seen as a cooperative approach where individuals unite to achieve a common goal, fulfilling the objectives for which their organizations were established (Igwela, Adomi &Nsirim, 2022). To better meet the needs of their clienteles, librarians often seek to collaborate with one another. Academic librarians are motivated to work together not only to benefit students but also to improve their own job performance and satisfaction. There is therefore need for collaboration among academic librarians particularly through the use of technologies. Libraries and librarians are leveraging developments in computing and telecommunications to enhance their job

performance and collaborate with scholars from various disciplines around the globe. Collaborative tools are a set of technologies and applications that can improve human connection, communication, and collaboration helping the sharing of information, ideas, and knowledge. Echem, Udo-Anyanwu and Ujoumunna (2024) affirmed that collaborative technologies are electronic devices that, regardless of distance or geographical location, enable a teacher to have close interaction with students to impart knowledge effortlessly and efficiently.

There are different types of collaborative technologies at the disposal of Librarians. According to Igwela, Adomi, and Nsirim (2022), various forms of collaborative technologies exist, including institutional repositories, integrated library systems, social media platforms (e.g., LibraryThing, LinkedIn, Facebook), communication tools (e.g., WhatsApp, email, texting), digital tools (e.g., blogs, wikis, digital boards), and mobile devices (e.g., smartphones). For the purpose of this study, WhatsApp and email, as collaborative technologies, will be examined. WhatsApp and e-mail serve as a powerful tool for librarians to keep patrons informed and engaged by allowing them to send notifications about new arrivals, upcoming events, and other essential library-related information, as highlighted by Chowdhury, Chowdhury and Bopp (2018).

WhatsApp is an encrypted instantaneous messaging application that was developed by Brian Acton and Jan Koum in 2009 but owned by Facebook since 2014 (Anderson, 2016). It is an Internet-based application available for both personal computer (PC) and smartphones that is capable of sending text messages, multimedia messages, documents, audio messages, images, contacts, and user location to other users. WhatsApp does not carry advertisements on its platform that are a source of discomfort to many users in other social media technologies (Aharony, 2015), and had over 1.5 billion users by August, 2019 (Lee, 2019).WhatsApp serves as a valuable tool for librarians

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by facilitating virtual reference services, which allow them to assist library patrons with inquiries and provide information without the need for in-person interactions. According to Kwanya, Stiwell and Underwood (2017), this capability becomes particularly significant for those patrons who may be unable to visit the library physically due to various reasons, such as distance, health issues, or time constraints. In addition to WhatsApp, Email is another collaborative technology that plays a vital role in effective service delivery in the library.

Electronic mail popularly known as the Email, is a system for sending and receiving electronic messages, typically consisting of a message body and headers, over a computer network, such as the Internet. An e-mail sent from Chennai now can reach Los Angeles in USA in less than 5 minutes, which may be faster than the wind. The e-mail can be used to send the orders and reminders to book suppliers, which results in speedy acquisitions. It can be used for sending reminders to users to return the books due to be returned, which helps in providing the document to the needy (Cakir &Unal, 2020). Most of the libraries are not able to send the information to the suppliers about non-receipt of periodical issues at regular intervals or with in specified time. E-mail is not only a fast-communicating media but also a very useful tool for efficient management.

As exciting as they sound, there are limitations that hinder the effective utilization of these technologies in library services. Kaplan (2018) outlined some of the limitations as technical issues, information overload, dependence on technology, limited accessibility, security concerns, lack of standardization and resistance to change. It is based on this background that this research on influence of library cooperation on resources development in academic libraries in Imo State is being carried out.

Statement of the Problem

In times past, librarians were faced with the burden of meeting every single library user to ensure that their information needs were met. It was indeed an uphill task considering the number of users, especially in the academic library where students, lecturers and researchers that were always in search of information tailored to their field of interest. The advent of collaborative technologies has undoubtedly made a whole lot difference in the administration of library services – thus making the job performance of academic librarians seamless.

Despite the wonderful prospects which collaborative technologies pose for library services, some librarians are yet to fully utilize these collaborative tools in delivering their services. They have maintained their use of face to face mode of delivering services, and as a result, being less productive as librarians and denying users access to quality and timely information resources. This research therefore aims to examine the extent to which Librarians use collaborative technologies (specifically whatsapp and email) for their work, the influence of its utilization on their job performance and the benefits and challenges involved in the utilization of these collaborative technologies.

Objectives of the Study

The main purpose of the study was to investigate the influence of utilization of collaborative technologies on job performance of librarians in universities in Imo State of Nigeria. The specific objectives were to:

1. To examine the extent to which librarians in universities in Imo State utilize WhatsApp and Email in their work.

2. To investigate the influence of WhatsApp and Email on the job performance of librarians in universities in Imo State, Nigeria.

3. To identify the benefits and challenges associated with the use of WhatsApp and Email among librarians in universities in Imo State.

Research Questions

The following research questions were posed to guide the study;

1. To what extent do librarians in universities in Imo State utilize WhatsApp and Email in their work?

2. What is the extent of relationship between Librarians' use of WhatsApp and Email and their Job performance in universities in Imo State?

3. What are the benefits and challenges associated with the use of WhatsApp and Email among librarians in universities in Imo State?

Literature Review

The last five years have seen accelerated adoption of collaborative technologies in university libraries, driven by remote teaching, research collaboration demands, and the need for more efficient internal workflows. Collaborative technologies — defined here as synchronous and asynchronous digital tools that enable shared work (e.g., Google Workspace, Microsoft Teams, Zoom, institutional repositories, shared annotation platforms, and social/reference management networks) — are positioned as enablers of knowledge sharing, task coordination, and service innovation in academic libraries (Lee, 2024; Wiley study, 2025). Recent empirical work suggests these tools exert both direct and mediated effects on staff productivity and service delivery.

Several studies in Nigerian university contexts provide direct evidence that adoption and use of collaborative tools correlate positively with aspects of librarians' job performance. For example, investigations of university libraries in Rivers State and other South-east Nigerian institutions report statistically significant positive relationships between the use of tools such as Google Meet, Zoom, and electronic mail and measures of information services delivery and work outcomes (Rivers State study, 2024; South-east impact study, 2024). These studies used correlational designs and reported moderate to strong Pearson correlation coefficients, indicating that routine use of synchronous meeting platforms and email supports faster reference transactions, interlibrary coordination, and outreach activities.

A complementary strand of research examines the role of digital literacy and related competencies as conditioning factors. Studies of Nigerian university librarians find that digital literacy (including competence with collaborative platforms, social networking, and basic productivity software) is strongly associated with higher job performance scores, suggesting that technology alone is insufficient — staff skills and training mediate the relationship between tool availability and performance outcomes (Edewor, 2024; Nsirim & Okeke, 2024). In these studies, librarians with higher self-reported digital skills demonstrated better user instruction, more efficient resource management, and higher engagement in research support tasks. This aligns with broader evidence that human capability factors (training, self-efficacy, and organizational support) amplify the positive impact of collaborative technologies on performance. Beyond descriptive correlations, international literature highlights mechanisms by which collaborative technologies improve performance. Organizational studies show that collaboration platforms foster knowledge sharing climates and lower coordination costs — effects that translate to improved service responsiveness

and innovation in work practices (Wiley, 2025). Collaborative technologies can also facilitate distributed work (e.g., remote reference, joint digital curation, collaborative bibliographic projects), thereby expanding the scope of librarians' contributions to teaching and research. Importantly, research indicates that the impact is often indirect: collaboration tools build social capital and collective problem-solving capacity, which in turn enhance individual and group performance.

Researchers therefore call for more rigorous designs (pre/post evaluations, controlled implementation studies) to isolate the effects of collaborative technologies on performance metrics such as turnaround time for reference queries, e-resource uptake, and research support outputs. Practical implications for university libraries emerge consistently: (1) invest in targeted training to raise digital competency among librarians; (2) integrate collaborative tools into formal workflows (e.g., standardized protocols for virtual reference, joint curation, or shared metadata work); (3) ensure robust infrastructure and institutional subscriptions to enterprise collaboration suites; and (4) foster leadership that models and rewards collaborative practice. When these enabling conditions are present, both the Nigerian case studies and broader organizational research indicate notable improvements in responsiveness, collaborative research support, and user satisfaction — all elements of enhanced job performance. Empirical record points to a positive influence of collaborative technologies on librarians' job performance, particularly when combined with digital skills development and organizational support. However, effects vary by context and implementation quality. Future research in university library settings should prioritize rigorous evaluation designs, standardized performance metrics, and comparative studies across institutional types to provide stronger causal evidence and practical guidance for library managers.

Methods

The study is delimited to academic Librarians in Universities in Imo State. Two designs involving survey and correlation designs were adopted for the study. The sample size is made up of 49 academic Librarians in two Universities (precisely University of Agriculture and Environmental Sciences Umuagwo and Federal University of Technology Owerri). The sampling for the study was done in multi stages involving simple random and census sampling techniques. From the five universities in Imo State, two were randomly selected for the study. Two Local Government areas in Owerri Education zone I of Imo State were randomly selected for the study. The two selected universities had a total of 49 academic Librarians i.e. 39 librarians in FUTO and 10 librarians in UAES. The entire librarians in the two schools were used for the study given the few populations of librarians found in the schools. The study instruments were two rating scales made by the researcher titled "extent of use, benefits and challenges to use of collaborative technologies" (EUBCCT) and "Librarians' job performance rating scale" (LJPRS) The EUBCCT is divided into two sections. The first section is made up of made up of 10 items seeking to find out the extent of use of the collaborative technologies such as whatsapp and email by librarians in their work and section two is made up of 12 items on benefits and challenges of using whatsapp and email while the LJPRS contains 10 items on the job performance of academic librarians in universities. The rating scales were answered in a 4-pont likert format of Very High Extent (VHE)/Strongly agree (4points), High Extent (HE)/Agree (3 points), Low Extent (LE)/Disagree (2 points) and Very Low Extent (VLE)/Strongly disagree (1 point). Content and face validation of the instruments were done by three specialists. Two specialists from the Department of Library and Information Science and one from Educational Measurement and Evaluation. Reliability coefficients of 0.77 and 0.75 were obtained for the EUBCCT

and LJPRS respectively using Cronbach Alpha statistics. To answer research questions one and three, the researcher employed the used of mean and standard deviation scores while research question two was answered using Pearson product moment correlation coefficient.

Results

Table 1: Extent of use of WhatsApp and Email for work among Librarians in Universities in Imo

S/N	Item statements **Librarians in universities in Imo State use WhatsApp and Email to:**	VHE	HE	LE	VLE	Mean	S.D	Remark
1.	provide quick links to online resources or catalog records	9	10	20	10	2.36	0.57	Low
2	share library announcements	13	18	9	9	2.71	0.62	High
3	send reminders about overdue books	0	5	31	13	1.83	0.86	Low
4	offer one-on-one assistance with research queries	0	9	23	17	1.83	0.86	Low
5.	facilitate inter library loan requests	8	9	17	15	2.20	0.49	Low
6.	create informal groups for book discussions or shared reading experiences	6	5	10	28	1.77	0.89	Low
7.	Provide support to distance learners who cannot visit the library physically	7	7	16	19	2.04	0.90	Low
8.	respond to complex research queries requiring detailed explanations	3	8	18	20	1.87	0.83	Low
9.	deliver digital copies of articles or book chapters	10	17	12	10	2.55	0.48	High
10.	send targeted email campaigns to promote specific resources or services to relevant user groups	6	14	19	10	2.32	0.53	Low
	Grand mean					**2.15**		

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Data on table 1 show the extent to which Librarians in Universities in Imo State use collaborative technologies such as whatsapp and email for their work. The data show that the

extent of use of these technologies for work is very low among the respondents as this is seen in the means scores below 2.50 (cut off mean mark) for almost all the items in the rating scale except items 2 and 9 which has mean scores of 2.71 and 2.55 respectively, implying that majority of the respondents do use whatsapp and email to a high extent to share library announcements and deliver digital copies of articles or book chapters. The standard deviation scores are spread apart from the mean, implying a homogeneity in the scores of the respondents. Generally, the cumulative mean score is given as 2.15 which is also low and shows that the extent to which Librarians in universities in Imo State use these technologies for their work are low.

Table 2: Pearson product moment correlation table of relationship between extent of use of whatsapp and email among Librarians in Universities in Imo State and their job performance

Variable	N	Mean	r	MR	p-value	Remark
Extent of use	**49**	2.15	0.51	Moderate positive	.000	Significant
Job performance	**49**	2.43		relationship		

Note: where r=correlation coefficient, MR= magnitude of relationship

Data on table 2 show the relationship between the Librarians responses on the extent of use of collaborative technologies i.e. whatsapp and email and their job performance. From the table, it is seen that the relationship coefficient between extent of use of whatsapp and email and job performance of librarians in universities in Imo state is 0.51 which depicts a moderate positive relationship. The corresponding p-value at 0.05 level of significance is given as .000 which means that the relationship is statistically significant. The implication of this result is that increase in the extent of use of whatsapp and email leads to a moderately equivalent amount of increase in job performance of the librarians and vice versa.

Table 3: Benefits and challenges associated with the use of WhatsApp and Email among librarians in universities in Imo State.

S/N	Item statements	SA	A	D	SD	Mean	S.D	Remark
	Benefits associated with use of WhatsApp and Email among librarians include:							
1.	Instant communication and real-time exchange of messages for urgent queries on whatsapp	21	20	8	0	3.26	0.56	Agree
2	Cost effectiveness for whatsapp and email	20	19	6	4	3.12		Agree
3	Enhanced user engagement on whatsapp	10	30	9	0	3.20		Agree
4	Email is suitable for more formal communication	5	14	19	11	2.26		Disagree
5.	Email enables documentation and archiving	4	28	8	9	2.55		Agree
6	Good internal workflow in libraries	13	22	7	7	2.83		Agree
						2.87		
	Challenges associated with use of WhatsApp and Email among librarians include:							
6.	Informality and lack of professionalism	33	16	0	0	3.67		Agree
7.	Information overload and distractions	28	19	2	0	3.53		Agree
8.	Security and privacy concerns	12	26	11	0	3.02		Agree
9.	Low levels of digital adoption skills by the librarians	30	19	0	0	3.61		Agree
10.	Low level of ICT awareness	12	29	5	3	3.02		Agree
11.	Delayed responses	10	5	20	14	2.22		Disagree
12.	Network issues	22	19	4	4	3.20		Agree
	Grand mean					**3.71**		

Data on table 3 show the opinions of the respondents on the benefits of using whatsapp and email among Librarians in Universities in Imo State. The data show that majority of the respondents agree to a high extent that instant communication and real-time messaging (3.26), cost effectiveness (3.12), enhanced user engagement (3.20), documentation and archiving (2.55) and

good internal workflow in libraries (2.83) are benefits of using whatsapp and email for work in libraries while they majorly disagree on the suitability of email use for formal communication (2.26). On the other hand, the data show that majority of the respondents agree that the challenges bedevilling the use of whatsapp and email among librarians include informality and lack of professionalism (3.67), information overload (3.53), security concerns (3.02), low digital adoption skills (3.61), low level of ICT awareness (3.02) and network issues (3.20).

Discussion of findings

Findings from the first objective reveal that the extent to which librarians in the selected universities in Imo State use WhatsApp and Email for their work is low. The reason for this finding may not be farfetched given the fact that many individuals lack proper ICT awareness and digital adoption skills, librarians inclusive. This low level of digital awareness impacts negatively on the interest in using collaborative technologies for work. This finding is in line with the findings of Kwanya, Stillwell and Underwood (2017) who in their study recorded a low level of adoption of modern collaborative technologies such as whatsapp among librarians. Also, in tandem with the established findings are those of Echem, Udo-Anyanwu and Ujoumunna (2024) who also recorded a low level of use of collaborative technologies among librarians in some universities in Rivers State.

Furthermore, findings from the second objective show that there is a moderate and positive relationship between Librarians' use of collaborative technologies and their job performance. This implies that the job performance of Librarians is greatly determined by their use of collaborative technologies such as whatsapp and email. It is not surprising as the infusion of digital applications and technologies in various works of life have been seen to impactjob productivity mostly on the positive side. Supporting this finding are the findings of Chowdhury, Chowdhury and Bopp (2018)

who established a strong relationship between librarians' use of mobile technologies and their work productivity.

Finally, the findings in the last objective of the study show that instant communication and real-time messaging, cost effectiveness, enhanced user engagement, documentation and archiving etcetera are benefits of using whatsapp and emails for work among librarians. This is in tandem with the findings of Adeleke and Fasanmi (2017) who in a similar study recorded that the use of whatsapp and emails create an environment conducive to the establishment of a community of practice, where librarians can engage with one another, exchange insights, and jointly improve their professional skills allowing for real time connections and easy discussion of challenges.

The findings also show that the challenges to use of whatsapp and email among librarians include low digital adoption skills, low level of ICT awareness, network issues among others. This is also in line with the findings of Kaplan (2018) who conducted a similar study and recorded some of the limitations to use of collaborative technologies as technical issues, information overload, dependence on technology, limited accessibility, security concerns, lack of standardization and resistance to change.

Conclusion

The need to incorporate collaborative technologies in library services cannot be overemphasized. Collaborative technologies have a vast range of advantages such as expansion of librarians' access to a wide range of resources, offering improved virtual reference services, facilitation of joint library programs and workshops, sharing of user data to enable more personalized recommendations and services and so much more.

It is pertinent to note that the appropriate use of these technologies goes a long way in improving the job productivity or performance of academic librarians. The findings of this study expose a gap in the utilization of these collaborative technologies among academic librarians. Academic librarians are therefore enjoined to make adequate use of collaborative technologies such as whatsapp and email to enhance their job performance.

Recommendations

Based on the findings, the researcher recommends that:

1. Librarians should embrace the use of the commonest collaborative technologies viz:whatsapp and email in the discharge of their duties for improved job performance.

2. Librarians in various universities should improve their digital awareness and adoption skill levels for use of collaborative technologies, considering the benefits of collaborative technologies.

References

Adeleke, D. S., & Fasanmi, O. O. (2017). Use of WhatsApp messenger for information dissemination and collaborative learning among librarians. *Journal of Library and Information Science*, 9(1), 1-10.

Aharony, N. (2015). Why do students use WhatsApp? – an exploratory study. *Aslib Journal of Information Management*, 67 (2), 136–158.

Anderson, K.E. (2016). Getting acquainted with social networks and apps: WhatsAppening with mobile instant messaging? *Library Hi Tech News*, 33 (6), 11-15.

Çakır, H., & Ünal, E. (2020). Use of Collaborative Technologies in Engineering Education. In *EngineeringEducation Trends in the Digital Era* (pp. 125–149). Retrieved from https://doi.org/10.4018/978-1-7998 2562-3.ch006

Chowdhury, G. G., Chowdhury, S., & Bopp, R. E. (2018). Mobile technology and libraries. *Library Hi Tech News*, 35(6), 1-5.

Echem, M. E., Udo-Anyanwu, A. J., &Ujoumunna, J. C. (2024). Adoption of collaborative technologies in library and information science teaching: A study of tertiary institutions in Rivers and Imo States, Nigeria. *Asian Journal of Information Science and Technology*, 14(2), 11-19.

Edewor, N. (2024). Digital Literacy Skills and Job Performance of Librarians in Federal and State University Libraries in South-South Nigeria. JATLIM International. https://jatlim.org/volumes/Volume%2010%20No%202/5%20Nelson-1.pdf?utm_source=chatgpt.com

Igwela, J. N. B., Adomi, E., &Nsirim, O. (2022). Collaborative technologies for knowledge sharing in sustaining LIS education in Nigeria: A survey of library schools in Rivers State. Paper presentedat the National Association of Library and Information ScienceEducators' Conference, March 2022. https://www.researchgate.net/publication/359193903

Impact of collaborative technology for information services in South-East Nigeria (2024). ITL Journal / regional studies. https://www.itljournal.nlaitsection.ng/index.php/itl/article/view/50?utm_source=chatgpt.com

Kaplan, A. M. (2018). WhatsApp: A review of the literature. *Journal of Business Research*, 89, 101-113.

Kulkarni, A.M., Pandiyan, M., Rajopadhye, M.S., &Bhawal, S.B. (2024)Application of Collaborative Technologies in Academic Libraries: Perception of College Librarians in Maharashtra. *American Journal of Information Science and Technology,*7(3), 135-144.

Kwanya, T., Stilwell, C., & Underwood, P. G. (2017). WhatsApp as a platform for library reference services. *Mousaion*, 35(2), 1-15.

Lee, D. (2019), "WhatsApp flaw 'puts words in your mouth''. Retrieved from https://www.bbc.com/news/technology-49273606 (Accessed on 27/08/2019).

Lee, S. (2024). The Effect of Collaborative Learning Service Quality on Job Outcomes. Governance/MDPI. https://www.mdpi.com/2076-3387/14/12/317?utm_source=chatgpt.com

Rivers State study: Collaborative Technologies and Information Service Delivery in University Libraries in Rivers State (2024). https://www.researchgate.net/publication/387946933_Collaborative_Technologies_and_Information_Service_Delivery_in_University_Libraries_in_Rivers_State?utm_source=chatgpt.com

Wiley (2025). The Role of Collaboration Technology and Knowledge Sharing in Organizational Performance. Wiley online publication. https://onlinelibrary.wiley.com/doi/10.1002/kpm.1801?utm_source=chatgpt.com