



COMPUTER-MEDIATED COMMUNICATION TECHNOLOGIES AND LIBRARIANS' INTERACTION WITH USERS IN GOVERNMENT OWNED UNIVERSITY LIBRARIES IN RIVERS STATE

Eruchi Brown Akpelu

Department of Library and Information Science,
Ignatius Ajuru University of Education
akpelubrown45@gmail.com

Humphrey Igwechi Wiche

Department of Library and Information Science,
Ignatius Ajuru University of Education
humphrey.wiche@iaue.edu.ng

Dorathy Braide CLN

Dame Patience Goodluck Jonathan Automated Library,
Ignatius Ajuru University of Education
dorathy.braide@iaue.edu.ng

ABSTRACT

The study examined computer mediated communication technologies and librarians' interaction with users in government owned university libraries in Rivers State. A correlational research design was adopted, guided by four objectives, corresponding research questions, and null hypotheses. The population of the study comprised thirty-seven (37) librarians from three (3) university libraries. Due to the manageable size of the population, a census sampling technique was employed to include all respondents. A structured questionnaire based on a four-point Likert scale served as the primary instrument for data collection. Data were analyzed using mean and standard deviation for the research questions, and the Pearson Product Moment Correlation (PPMC) for testing the hypotheses at a 0.05 level of significance. The findings revealed a significant relationship between the sub-variables of computer mediated communication technologies; specifically the use of Facebook, WhatsApp, Telegram, LinkedIn and librarians' interaction with users for the provision of quality services. The study however advocates for active utilization of these digital communication platforms by librarians to achieve a seamless interaction with users, promote effective engagement, and expand a wide user reach in 21st century university libraries.

Keywords: CMC Technologies, Librarians/Users Interaction, University Libraries

Introduction

Interaction is the lifeblood of any organization. It involves the exchange of information in the form of messages, symbols, thoughts, signs, or opinions between two or more individuals. It occurs when an organization seeks to create meaning in the minds of its customers or stakeholders through



deliberate use of verbal, nonverbal, or mediated messages directed at individuals or groups interested in its products or services. Every single organization, therefore, must interact effectively with its wide range of stakeholders to operate efficiently and achieve its goals (Oyeniran, Jayesimi, Ogundele & Oyeniran, 2020). Libraries are no exception. Whether national, public, school, special, or university libraries, interaction with users remains fundamental to their success. In university libraries, active interaction with the user community ensures that needed information resources are properly selected, acquired, and organized by librarians for effective service delivery. This however reaffirms that no library can render quality information services without adequate interaction between librarians and users.

Librarian and user interaction refers to the exchange of words, letters, or mediated messages between both parties. In today's digital era, such interaction is most effective when librarians can compose and send messages, receive feedback, and respond promptly through emerging communication technologies (Oyeniran et al., 2020). Before the advent of digital communication media, librarians primarily relied on face-to-face discussions, meetings, letters, circulars, and organized lectures to communicate with users (Mohammed, 2015). Advancements in communication technologies, the rise of online education, and the growing number of remote users have transformed the dynamics of communication. This shift led to the adoption of Computer-Mediated Communication (CMC) technologies to enhance interaction and service delivery.

Computer-Mediated Communication (CMC) is a broad term referring to systems and applications that enable people to communicate via computers and networks. It encompasses all forms of interpersonal communication conducted over the Internet, including email, Facebook, instant messaging, mailing lists, newsgroups, discussion forums, websites, social networking sites, and web chat channels (Herring, cited in Oyeniran et al., 2020). These media foster collaboration, provide innovative ways to reach remote users, promote awareness of library services, and sustain the library's role as the intellectual hub of the university community. They are indispensable for building an online community of users and strengthening technological capacity for effective information service delivery. According to Obar and Wildman (2015), CMC media share common features such as Internet-based applications, user-generated content (text, images, or videos), and data derived from online interactions. Macintosh and Shawn (2015) note that some of the most popular CMC platforms such as Facebook, Twitter, Google, WhatsApp, YouTube, TikTok,



WeChat, Instagram, and Snapchat boast hundreds of millions of registered users. Librarians utilize these platforms to manage their services and engage users through interactive spaces where individuals and institutions can share, create, and modify content (Azolo, 2020).

Government-Owned University Libraries in particular, play a central role in supporting teaching, learning, and research in public universities (Anyaegebu, 2016). CMC platforms like Google Classroom, Google Hangout, Skype, Zoom, etc. can enable Librarians interact and respond to inquiries instantly regardless of geographical barriers, share information, conduct virtual learning, and deliver reference services remotely while users can access library resources conveniently using their Internet-enabled devices from any location (Adayi, Kudu, Dutse & Oche, 2021). Preliminary observations however indicate that many librarians in GOU Libraries in Rivers State have not fully harnessed CMC platforms for user interaction and service delivery. This situation underscores the need to investigate the relationship between Computer-Mediated Communication technologies and librarians' interaction with users in Government-Owned University Libraries in Rivers State.

Statement of the Problem

In today's world, it is crucial for librarians to have effective communication with their patrons. This cannot be achieved without the use of computer-based interaction in recent times. As more and more users continue to rely on the use of communication media to interact with librarians and access library services remotely, it's important for librarians to adapt and offer a range of digital communication options. Platforms like WhatsApp, Facebook, and Telegram can be especially useful for providing recommendations, answering questions, and connecting users with the resources they need. Additionally, online discussion boards and forums can help facilitate conversations and collaboration among librarians and their users. By embracing these digital tools, librarians can better meet the evolving needs of their patrons in the 21st century. A preliminary investigation has however shown that many librarians use diverse CMC platforms in the library, but there has been a lack of focus on utilizing these platforms for user interaction and no study has been able to address how the use of these digital media correlates to librarians' interaction with users in GOU libraries in Rivers State. It is against this backdrop the study seeks to establish the relationship between the use of CMC technologies and librarians' interaction with users in GOU libraries in Rivers State to fill the knowledge gap.



Objective of the Study

The main objective of this study was to determine the relationship between the use of computer mediated communication media and librarians' interaction with users in government owned university libraries in Rivers State. The specific objectives were to:

1. establish the relationship between the use of Facebook communication technology and librarians' interaction with users in GOU libraries, Rivers State.
2. determine the relationship between the use of WhatsApp communication technology and librarians' interaction with users in GOU libraries, Rivers State.
3. establish the relationship between the use of Telegram communication technology and librarians' interaction with users in GOU libraries, Rivers State.
4. determine the relationship between the use of LinkedIn communication technology and librarians' interaction with users in GOU libraries, Rivers State.

Hypotheses

The following null hypotheses were tested at 0.05 level of significance:

- Ho₁ There is no significant relationship between the use of Facebook and librarians' interaction with users in GOU libraries, Rivers State.
- Ho₂ There is no significant relationship between the use of Whatsapp and librarians' interaction with users in GOU libraries, Rivers State.
- Ho₃ There is no significant relationship between the use of Telegram and librarians' interaction with users in GOU libraries, Rivers State.
- Ho₄ There is no significant relationship between the use of Linkedin and librarians' interaction with users in GOU libraries, Rivers State.

Literature Review

The changing information-seeking behavior of 21st-century library users has compelled libraries to explore innovative ways of delivering services and interacting with users with greater ease. Libraries are evolving to meet the dynamic needs of modern information seekers, leveraging various communication media to reconnect with users who increasingly rely on the Internet. To



remain relevant, libraries now incorporate diverse digital tools for communication and service delivery, among which Facebook stands out as a prominent platform.

Facebook is a social networking utility designed to facilitate information sharing and effective communication among users (Nguyen, 2017). Founded in 2004 by Mark Zuckerberg for Harvard students, it expanded globally and, by July 2022, had over 2.93 billion monthly active users (Facebook – Statistics & Facts, n.d.). Its wide reach and popularity have made it an effective medium for academic engagement and collaboration, transforming how students, researchers, and librarians interact and learn (Nguyen, 2017). Most research on “libraries using Facebook” has focused on academic settings, where libraries utilize the platform to enhance communication with students and faculty. Shinde (2016) observed that Facebook enables librarians to identify user needs and deliver services remotely, while Akeriwa, Penzhorn, and Holmner (2015) noted that it fosters continuous engagement and media-based library services accessible 24/7. Similarly, Rossmann and Young (2015) emphasized that Facebook allows libraries to disseminate content, promote services, and engage users effectively beyond physical boundaries.

Facebook’s impact on libraries is profound. Anwar and TangZhiwei (2020) described it as a powerful communication tool that helps librarians interact with users, create virtual environments, and bridge gaps between users and library resources. Shafawi and Hassan (2018) also noted that Facebook enables libraries to build virtual communities where users are constantly aware of available services and resources. In the same vein, Kenchakkanavar (2015) reported that Facebook and Twitter have become integral to library operations, facilitating user and librarian interaction through multimedia content. According to Howard et al. (2018), Facebook provides a convenient avenue for librarians to understand user needs, disseminate relevant information, and promote active information-seeking conversations.

Empirical studies in Nigeria corroborate these global trends. Emmanuel and Osuolale (2019) found that Facebook and blogs are the most frequently used social media platforms for promoting library resources and services in tertiary institutions. Their study revealed that these platforms enhance two-way communication, foster user connections, and provide feedback mechanisms for improving library usage. Similarly, the Taylor and Francis Group (2016) reported that over 70% of academic libraries use social media, particularly Facebook, as their primary online engagement tool (Cheng et al., 2020). More recent studies, including Chugh and Ruhi (2018), confirm that



academic libraries employ Facebook to promote resources, reach users, deliver virtual services, and support teaching and learning.

Content analyses of academic library Facebook pages also reveal diverse uses across contexts. For example, Phuong-Chi (2021) found that Vietnamese academic libraries mainly used Facebook for announcements and reading promotion, though user engagement levels were relatively low. Likewise, Al-Daihani and Abrahams (2018) discovered minimal user engagement in libraries across the U.S., Canada, the U.K., and Australia, as reflected in limited likes, shares, and comments. Nonetheless, these findings highlight Facebook's potential as a dynamic platform for interaction, visibility, and community building in modern libraries. In recent years, the vision of modern libraries has shifted from requiring users to visit physically to ensuring that library services reach users wherever they are. WhatsApp communication technology has become a vital tool in achieving this transformation by mediating effective interaction between librarians and users. Stephen (2019) explained that WhatsApp Inc. was founded by Brian Acton and Jan Koum, former Yahoo employees, and later acquired by Facebook in 2014. According to Ansari (2016), WhatsApp is a cross-platform instant messaging application that enables users to exchange text, images, videos, audio messages, and real-time location information at no cost. With over 500 million messages sent daily and half a billion active users globally, WhatsApp remains one of the most popular communication tools across mobile platforms.

WhatsApp allows users to communicate instantly through their smartphones and offers features such as group chats, delivery notifications, and end-to-end encryption (Stephen, 2019; Kudnekar & Mulgaonkar, 2021). These attributes make it an effective medium for promoting library services and facilitating two-way communication. Kudnekar and Mulgaonkar (2021) further emphasized that WhatsApp supports voice and video calls, file sharing, and document exchange, making it useful in libraries and information centers for quick, interactive communication.

Librarians are increasingly leveraging WhatsApp to interact with users and provide real-time reference and information services. Hussain (2022), in a study at the National Defence University Library, Islamabad, found that WhatsApp enhances the delivery of quality library services, though technical and human resource challenges must be addressed for optimal performance. Similarly, Niranjana and Chanda (2018) revealed that instant messenger apps like WhatsApp are effective for delivering library information and promoting professional knowledge sharing among



librarians. Ansari and Tripathi (2017) also reported that both librarians and users have a positive attitude toward WhatsApp as a tool for library alerts, virtual reference, and notifications. Several studies highlight the growing influence of WhatsApp in academic and library settings. Mohammad et al. (2019) found that university students use WhatsApp as one of the fastest and most accessible means for communication and idea sharing. Nanda (2019) demonstrated that WhatsApp can enhance collaborative learning and engagement, particularly among slow learners. Etebu and Orumah (2019) also observed that students in South-South Nigeria now prefer chat-based reference interactions, with WhatsApp emerging as a dominant medium for instant responses.

According to Ansari (2016), WhatsApp facilitates direct interaction between users and librarians for quick factual inquiries, while Manna and Ghosh (2017) highlighted its ease of use in creating library communication groups. Bajpai (2016) confirmed that WhatsApp is widely used among LIS professionals and students as a professional networking and communication tool. Similarly, Adomi and Soloman-Uwakwe (2019) noted that work-related WhatsApp groups serve as effective knowledge-sharing platforms among librarians in Nigerian universities. Overall, WhatsApp's accessibility, simplicity, and popularity, especially among younger generations (Nyasulu & Chawinga, 2019), make it an indispensable communication tool for enhancing library and information service delivery in the 21st century.

Librarians have increasingly adopted communication media to enhance interaction and service delivery, with Telegram emerging as one of the most valuable tools. Developed by Pavel and Nikolai Durov in Berlin, Germany, Telegram is a free, ad-free messaging application that supports the exchange of text, images, audio, video, and various document formats such as Word, Excel, and PDF (Ibrahim et al., 2016). These features make it particularly relevant in academic settings where lecturers and librarians frequently share learning materials, tutorials, and assignments in such formats. Telegram also allows the creation of discussion groups of up to 200 members, facilitating interactive communication and collaboration, which enhances teaching, learning, and library service delivery (Ibrahim et al., 2016).

Telegram is known for its speed, user-friendliness, and strong security features. Its cloud-based system ensures permanent access to shared files across multiple devices, while end-to-end encryption and self-destructing messages guarantee user privacy. The ability to correct or delete messages promotes confidence and active participation among users, encouraging free expression



and collaboration. Telegram's multi-device accessibility also allows seamless continuity of interaction between librarians and users across smartphones and computers. Users can join or create channels and groups at no cost, making it easy for libraries to build online communities and engage with their patrons effectively. Nurvembrianti, Arianti, and Noftalina (2022) found that Telegram chatbot services enhanced user satisfaction and knowledge among mothers with toddlers, emphasizing the app's ease of use and reliability. Similarly, Ibrahim et al. (2016) reported that Telegram supports teaching and learning enhancement by offering a quick and simple platform for information sharing. Owusu-Mensah, Pufaa, and Sakyi (2020) also found that Telegram facilitated timely delivery of learning modules and improved convenience for distance learners, recommending its integration into distance education programs.

Research in academic library contexts further validates Telegram's potential. Asnafi et al. (2017) revealed that Telegram-based mobile services significantly influenced academic library operations in Iran, while Ebrahimpour et al. (2016) found that 85% of students at seven Iranian universities used Telegram daily to strengthen academic communication. In a comparative study, Manna and Ghosh (2018) highlighted Telegram's advantage over WhatsApp in supporting the transfer of large files such as e-books, articles, and multimedia lectures, making it particularly suitable for library environments. Overall, Telegram stands out as an effective medium for enhancing library communication, resource sharing, and user engagement in the modern digital age.

LinkedIn, launched in 2003 as a professional networking site, has evolved into one of the most popular and profitable social media platforms for career development and knowledge sharing. Originally designed to connect professionals virtually, LinkedIn has expanded its features to include a newsfeed, user-generated content, and the ability to follow thought leaders, all of which enhance user engagement. The platform now boasts over 900 million members and 58 million registered companies across more than 200 countries, with nearly 40% of users engaging daily (Osman, 2023). It is particularly popular among students and recent graduates, over 40 million of whom use the platform for professional networking and career advancement (Santiago et al., 2017).

LinkedIn enables users to create digital resumes that highlight their education, skills, and experience, while its algorithms connect users with potential employers, mentors, and professional groups. Unlike Facebook or Instagram, LinkedIn focuses on professional identity rather than



personal life, allowing users to establish credibility through recommendations and endorsements. From a branding perspective, it serves as a powerful tool for building professional visibility and showcasing expertise in a structured, employer-friendly format.

In the context of libraries, LinkedIn offers opportunities for outreach, knowledge sharing, and user engagement. Ezeani and Igwesi (2012, as cited in Awurdi, 2019) noted that libraries use LinkedIn for marketing their collections, disseminating information, and promoting lifelong learning. The LinkedIn Team (2023) also highlighted that libraries can leverage the platform to support patrons' career development and professional growth. However, studies such as Uwandu and Osuji (2022) revealed that LinkedIn remains underutilized for library service delivery in Nigerian academic libraries, despite its potential. According to Mahadeva, Shashikiran, and Sharma (2017), libraries employ LinkedIn mainly for promotion, visibility, and the enhancement of library services and resources. By fostering professional connections, sharing information, and promoting learning opportunities, LinkedIn stands out as a vital platform for librarians to engage users and extend the reach of library and information services in a knowledge-driven environment.

Methodology

A correlational research design was adopted, guided by four objectives, corresponding research questions, and null hypotheses. The population of the study comprised thirty-seven (37) librarians from three (3) university libraries (Rivers State University Library, Dame Patience GoodLuck Jonathan Automated Library and Donald E.U Ekong Library respectively). Due to the manageable size of the population, a census sampling technique was employed to include all respondents. A structured questionnaire based on a four-point Likert scale served as the primary instrument for data collection. The instrument was adjudged reliable through a trial testing technique that was analysed using Cronbach Alpha coefficient which yielded the coefficient of 0.96. Data were analyzed using simple percentages for demographic information, mean and standard deviation for the research questions, and the Pearson Product Moment Correlation (PPMC) for testing the hypotheses at a 0.05 level of significance.



Results and Discussion

Research Question 1: What is the relationship between use of Facebook communication technology and librarians' interaction with users?

Table 1: Mean scores and Standard deviation of Facebook communication technology and librarians' interaction with users in government owned university libraries, Rivers State

S N	ITEM	SA	A	D	S D	$\bar{x}$	$\pm$	Decisio n
1	I use Facebook to compose messages and attach information as text, voice, video, image, doc, etc for library users	6	2 0	6	3	2. 7	.79 1	Agreed
2	I use Facebook to send information (as text, voice, video, image, doc, etc) to a user or group of remote users	5	2 0	6	4	2. 7	.71 4	Agreed
3	Use of Facebook communication channel helps me to receive prompt voice, video, image, doc and text-based feedbacks, queries, comments or complaints from library users.	7	2 2	5	1	2. 8	.82 6	Agreed
4	I use Facebook channel to respond to users' requests, feedbacks, queries, comments or complaints instantaneously	4	1 6	1 0	5	2. 6	.68 9	Agreed
5	Use of Facebook channel helps me to communication with users 27/4	8	1 8	5	4	2. 8	.82 7	Agreed
Weighted $\bar{x}$						2.7 >2.50		Agreed

The analysis on Table 1 shows that all the respondents agreed to the following as presented in the order of magnitude from the items: Item 5 (use of Facebook channel helps me to communication with users 24/7) with mean score of 2.8 and standard deviation of .827; item 3 (Facebook communication channel helps me to receive prompt voice, video, image, doc and text-based feedbacks, queries, comments or complaints from library users) with a mean score of 2.8 and standard deviation of .826; item 2 (I use Facebook channel to send information as text, voice, video, image, doc, etc to a user or group of users) with a mean score of 2.7 and standard deviation of .714; item 1 (I use Facebook channel to compose messages and attach information as text, voice, video, image, doc, etc for users) with mean score of 2.7 and standard deviation of .791; item 4 (I use Facebook channel to respond to users' requests, feedbacks, queries, comments or complaints instantaneously) with mean score of 3.8 and standard deviation of .969; The weighted mean of 2.7 indicates that librarians use Facebook technology to enhance their interactions with users in university libraries.



Research Question 2: What is the relationship between use of WhatsApp and librarians' interaction with users?

Table 2: Mean scores and Standard deviation of WhatsApp communication technology and librarians' interaction with users in government owned university libraries, Rivers State

SN	ITEM	SA	A	D	SD	$\bar{x}$	$\pm$	Decision
1	I use WhatsApp communication channel to compose messages and attach information (as text, voice, video, image, doc, etc) for library users	5	20	6	4	2.8	.841	Agreed
2	I use WhatsApp to send information as text, voice, video, image, doc, etc to a user or group of users remotely	8	19	6	2	2.9	.894	Agreed
3	WhatsApp communication channel helps me to receive prompt voice, video, image, doc and text-based feedbacks, queries and complaints from library users.	9	19	5	4	2.8	.829	Agreed
4	WhatsApp communication channel helps me to respond to users' requests, feedbacks, queries and complaints instantaneously	11	9	3	2	2.9	.863	Agreed
5	Use of WhatsApp channel helps my communication with users 24/7	5	20	6	4	2.8	.897	Agreed
Weighted $\bar{x}$						2.8	>2.50	Agreed

The result from table 2 shows Summary of Mean Rating and Standard Deviation of WhatsApp communication technology and librarians' interaction with users in government owned university libraries shows that all the items 1-5 have mean scores above the weighted mean. Presenting the result in order of higher scores, Item 2 has mean score of 2.8 and standard deviation of .864. This shows that use of WhatsApp enable librarians to send information as text, voice, video, image, doc, etc to a user or group of users remotely. Item 4 has mean score of 2.9 with a standard deviation of .863. This shows that use of WhatsApp enable librarians to respond to users' requests, feedbacks, queries and complaints instantaneously. Item 3, has a mean score of 2.8 with standard deviation of .829. This means that Librarians use WhatsApp communication channel to receive prompt voice, video, image, doc and text-based feedbacks, queries and complaints from library users. Item 1 has means score of 2.8 with standard deviation of .841. This shows that Librarians use WhatsApp communication channel to compose messages and attach information as text, voice, video, image, doc, etc for library users. Item 5 has a mean score of 2.8 with a standard deviation of .897. This means that use of WhatsApp channel helps librarians to communication with users 24/7. The weighted mean of 2.8 shows that librarians use WhatsApp communication technology to enhance their communication with users in university libraries.



Research Question 3: What is the relationship between use of Telegram communication technology and librarians' interaction with users?

Table 3: Mean scores and Standard deviation of Telegram communication technology and librarians' interaction with users in government owned university libraries, Rivers State

SN	ITEM	SA	A	D	SD	$\bar{x}$	$\pm$	Decision
1	I use Telegram to compose messages and attach information (as text, voice, video, image, doc, etc) for library users.	6	20	6	3	2.7	.791	Agreed
2	I use Telegram channel to send information as text, voice, video, image, doc, etc to a user or group of remote users.	5	20	6	4	2.7	.714	Agreed
3	Use of Telegram helps me to receive prompt voice, video, image, doc and text-based feedbacks, queries, comments or complaints from library users.	7	22	5	1	2.8	.826	Agreed
4	Use of Telegram channel helps me to respond to users' requests, feedbacks, queries and complaints instantaneously	4	16	10	5	2.6	.689	Agreed
5	Use of telegram channel enhances my communication with library users 24/7	8	18	5	4	2.8	.827	Agreed
Weighted $\bar{x}$						2.7	>2.50	Agreed

Presenting the result in order of magnitude, the result of table 3 shows that Items 1-5 have means above the weighted mean of 2.50. This shows that on item 5, the respondents agreed that use of telegram channel enhances their communication with library users 24/7 (with the mean score of 2.8 and standard deviation of .827). On item 3, use of telegram helps librarians to receive prompt voice, video, image, doc and text-based feedbacks, queries, comments or complaints from library users (with the mean score 2.8 and standard deviation .826). On item 2, use of telegram helps librarians to send information as text, voice, video, image, doc, etc to a user or group of remote users (with the mean score of 2.7 and standard deviation .714). Item 1, librarians use telegram to compose messages and attach information as text, voice, video, image, doc, etc for library users (with mean score of 2.7 and standard deviation of .791). The weighted mean of 2.7 indicates that Librarians use telegram channel to enhance their interactions with users in government owned university libraries in Rivers State.

Research Question 4: What is the relationship between use of LinkedIn communication technology and librarians' interaction with users?

Table 4: Mean scores and Standard deviation of LinkedIn communication technology and librarians' interaction with users in government owned university libraries, Rivers State

SN	ITEM	SA	A	D	SD	$\bar{x}$	$\pm$	Decision
1	I use LinkedIn to compose messages and attach information (as text, voice, video, image, doc, etc) for library users	6	12	10	7	2.5	.599	Agreed



2	I use LinkedIn to send information as text, voice, video, image, doc, etc to a user or group of remote users	8	11	11	5	2.5	.511	Agreed
3	I Use of LinkedIn to receive prompt voice, video, image, doc and text-based feedbacks, queries, comments or complaints from library users.	9	10	10	6	2.5	.587	Agreed
4	I use LinkedIn to respond to users' requests, feedbacks, queries and complaints instantaneously	9	10	10	6	2.5	.567	Agreed
5	Use of LinkedIn enhances my communication with library users 24/7	8	9	10	8	2.3	.469	Disagreed
Weighted $\bar{x}$						2.4 < 2.50		Disagreed

The result of table 4 as presented in the order of magnitude shows that item 1 has a mean score of 2.5 and standard deviation of .599 which implies that majority of the respondents use LinkedIn to compose messages and attach information as text, voice, video, image, doc, etc for library users. Item 3 has a mean score of 2.5 and standard deviation of .587. This means that most respondents use LinkedIn to receive prompt voice, video, image, doc and text-based feedbacks, queries, comments or complaints from library users. Item 2 has mean score of 2.5 and standard deviation of .511. This means that most of the respondents use LinkedIn to send information as text, voice, video, image, doc, etc to a user or group users remotely. Item 4 has a mean score of 2.5 and standard deviation of .567. This means that most respondents use LinkedIn to respond to users' requests, feedbacks, queries and complaints instantaneously. The weighted mean of 2.4 shows that LinkedIn technology is not used by majority of the respondents to interact with library users in university libraries.

Hypothesis One: There is no significant relationship between the use of Facebook communication technology and librarians' interaction with users in government owned university libraries, Rivers State

Table 6: Summary of Pearson Product Moment Correlation between Facebook communication technology and librarians' interaction with users

SN	Variables	Facebook Communication Technology	Librarians' Interaction with Users
1	Facebook Communication Technology	Pearson Correlation Sig. (2-tailed) N	1 .631 35
2	Librarians' Interaction with Users	Pearson Correlation Sig. (2-tailed) N	.0631 .001 35

*. Correlation is significant at the 0.05 level (2-tailed).



The result from table 6 shows that the use of Facebook communication technology and Librarians' interaction with users has a coefficient correlation of $r = 0.631$, which shows a positive and strong relationship. This is significant at 0.05 ($r = .631, P = 0.001 < 0.05$) Therefore, the null hypothesis which stated that there is no significant relationship between use of Facebook communication technology and librarians' interaction with users is rejected. Hence, Facebook communication technology significantly relates to librarians' interaction with users.

Hypothesis Two: There is no significant relationship between the use of WhatsApp communication technology and librarians' interaction with users.

Table 7: Summary of Pearson Product Moment Correlation between WhatsApp communication technology and librarians' interaction with users

SN	Variables	WhatsApp Communication Technology	Librarians' Interaction with Users
1	WhatsApp Communication Technology	Pearson Correlation Sig. (2-tailed) N	1 .691 35
2	Librarians' Interaction with Users	Pearson Correlation Sig. (2-tailed) N	.691 .001 35

*. Correlation is significant at the 0.05 level (2-tailed).

Table 7 shows that the use of WhatsApp communication technology and Librarians' interaction with users has a coefficient correlation $r = 0.191$ which indicates a positive and strong relationship and significant at 0.05 ($r = .691, P = 0.001 < 0.05$) Therefore, the null hypothesis which stated that there is no significant relationship between the use of WhatsApp communication technology and Librarians' interaction with users is rejected. Thus, it can be stated that WhatsApp communication technology significantly relates to Librarians' interaction with users.

Hypothesis Three: There is no significant relationship between the use of Telegram communication technology and librarians' interaction with users.

Table 8: Summary of Pearson Product Moment Correlation between Telegram communication technology and librarians' interaction with users



SN	Variables	Telegram Communication Technology	Librarians' Interaction with Users
1	Telegram Communication Technology	Pearson Correlation Sig. (2-tailed) N	1 .671 35
2	Librarians' Interaction with Users	Pearson Correlation Sig. (2-tailed) N	.671 1 35

*. Correlation is significant at the 0.05 level (2-tailed).

Table 8 shows that the use of Telegram communication technology and Librarians' interaction with users has a coefficient correlation $r = 0.671$ indicates a positive and strong relationship and significant at 0.05 ($r = .671$, $P=0.001 < 0.05$) Therefore, the null hypothesis which stated that there is no significant relationship between Telegram communication technology and Librarians' interaction with users is rejected. Thus, it can be stated that Telegram communication technology significantly relates to Librarians' interaction with users.

Hypothesis Four: There is no significant relationship between the use of LinkedIn communication technology and librarians' interaction with users.

Table 9: Summary of Pearson Product Moment Correlation between LinkedIn communication technology and librarians' interaction with users

SN	Variables	LinkedIn Communication Technology	Librarians' Interaction with Users
1	LinkedIn Communication Technology	Pearson Correlation Sig. (2-tailed) N	1 .131 35
2	Librarians' Interaction with Users	Pearson Correlation Sig. (2-tailed) N	.131 1 35

*. Correlation is significant at the 0.05 level (2-tailed).

Table 9 shows that the use of LinkedIn communication technology and Librarians' interaction with users has a correlation coefficient of $r = .131$ which indicates a positive and weak relationship at alpha level 0.05 ($r = .131$, $P=0.031 < 0.05$). Therefore, the null hypothesis which stated that there is no significant relationship between use of LinkedIn communication technology and librarians' interaction with users is rejected. Therefore, LinkedIn communication technology



significantly relates to librarians' interaction with users in government owned university libraries, Rivers State.

Discussion of the Findings

The findings from research question one revealed that librarians in government-owned university libraries use Facebook communication technology to enhance their interactions with users, thereby improving information service delivery. Similarly, the result of hypothesis one indicated a positive and strong relationship between the use of Facebook and librarians' interaction with users in university libraries. Since many library users are already familiar with Facebook, librarians are encouraged to actively engage with users through this platform to facilitate effective communication and service delivery. This finding aligns with the study of Emmanuel and Osuolale (2019), which examined the utilization of social media platforms for promoting library resources and services in tertiary institutions in Cross River State, Nigeria, and found that Facebook and blogs were the most frequently used platforms for two-way communication, collaboration, and service delivery.

The findings from research question two revealed that the use of WhatsApp communication technology enhances librarians' interaction with users. Correspondingly, the result of the hypothesis showed a positive and strong relationship between the use of WhatsApp and librarians' interaction with users. This suggests that librarians use WhatsApp to compose and share information, receive feedback, and respond to users' queries in real time, fostering effective communication and collaboration. This outcome supports the study of Stephen (2019), who found that librarians in North East India use WhatsApp to reply to users' queries and maintain real-time communication. Similarly, Etebu and Orumah (2019) observed that chat-based reference services are becoming more prevalent, as users now prefer WhatsApp for immediate responses over traditional face-to-face interactions. Librarians can utilize WhatsApp platforms to enhance communication and strengthen user engagement.

The findings from research question three showed that the use of Telegram facilitates librarians' interaction with users. Respondents indicated that the technology enables them to compose, send, and receive messages, and respond instantly to feedback, queries, and complaints using various media formats such as text, audio, video, and documents. The corresponding hypothesis also



revealed a positive and strong relationship between the use of Telegram and librarians' interaction with users. This aligns with the study of Owusu-Mensah et al. (2020), which found that the Telegram application was efficient and convenient for interactive distance learning among postgraduate students. It is therefore suitable in strengthening interaction and service delivery between librarians and users.

The findings from research question four revealed that most librarians do not use LinkedIn to interact with library users. The corresponding hypothesis also indicated a positive but weak relationship between the use of LinkedIn and librarians' interaction with users. This may be attributed to the fact that LinkedIn is relatively new and less popular among librarians in this region. This finding corroborates the study of Uwandu and Osuji (2022), who maintains that although library staff in Imo State used LinkedIn, its application for user interaction and service delivery remained low. To promote broader adoption, there is a need for awareness creation, sensitization, and capacity building to encourage librarians to explore LinkedIn as a professional platform for effective library service delivery.

Conclusion

In conclusion, the use of computer-mediated communication (CMC) technologies has become essential for effective communication and service delivery in university libraries. As academic library users increasingly rely on digital platforms to interact with librarians and access services remotely, it is crucial for libraries to adapt by offering diverse digital communication channels. This study has empirically established a significant relationship between the use of CMC technologies, specifically Facebook, WhatsApp, Telegram, LinkedIn and librarians' interaction with users in government-owned university libraries in Rivers State. The findings however shows that platforms such as WhatsApp, Facebook, and Telegram have proven particularly effective for user engagement, enabling librarians to provide recommendations, respond to inquiries, and connect users with relevant information resources. By embracing these tools, librarians can enhance user experience and meet the dynamic information needs of 21st-century library patrons.



Recommendations

The following recommendations were made based on the findings:

1. The study however advocates for active utilization of digital communication platforms (Facebook, WhatsApp, Telegram, LinkedIn) by librarians to achieve a seamless interaction with users, promote effective engagement, and expand a wide user reach in 21st century university libraries.
2. Need for policy formulation on the use of emerging CMC technologies to regulate their effective use for users' interactions.
3. Capacity building on the use of CMC platforms for users' interactions and services delivery should be considered essential for librarians in government-owned university libraries in Rivers State to achieve effective interactions and better services delivery to users.

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