

# ASSESSMENT OF ICT-BASED OUTREACH STRATEGIES FOR PROMOTING AWARENESS OF LIBRARY RESOURCES AND SERVICES AMONG UNDERGRADUATE STUDENTS IN SELECTED UNIVERSITIES IN OYO STATE

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## Abstract

This study examined the assessment of ICT-based outreach strategies for promoting library resources and services among undergraduates in Nigerian universities. The research was driven by the need to enhance student engagement and awareness of library services in a digital learning environment. A descriptive survey design was adopted, and data were collected from 152 undergraduates across three universities in Oyo State using a structured questionnaire. The instrument covered demographic characteristics, ICT-based outreach practices, and awareness of library resources, and the data were analyzed using descriptive and inferential statistics with SPSS. Findings revealed that university libraries employ a range of ICT tools such as WhatsApp, Facebook, email alerts, institutional websites, and webinars to promote their services. The grand mean for ICT-based outreach strategies was 3.39, indicating a moderate to high level of utilization, while the grand mean for awareness of library resources was 3.20, reflecting a moderate level of awareness among undergraduates. A positive and statistically significant relationship was found between ICT-based outreach strategies and awareness ( $r = 0.462$ ,  $p < 0.01$ ), with ICT strategies explaining 21.4% of the variance in awareness levels. The study concludes that ICT-based outreach significantly enhances undergraduate awareness and engagement with library services. Therefore, it was recommended that universities strengthen ICT infrastructure, train librarians in digital communication, and institutionalize ICT-based outreach as a core strategy for library user engagement and service visibility.

**Keywords:** ICT-based outreach, library awareness, undergraduates, Nigerian universities, digital communication

## Introduction

The integration of Information and Communication Technologies (ICTs) into higher education has transformed the way academic libraries deliver resources and services to their users. Academic libraries, which traditionally relied on face-to-face engagement, printed notices, and physical exhibitions, are increasingly adopting ICT-based outreach strategies to promote awareness of their resources and services. Globally, university libraries now utilize platforms such as institutional websites, social media networks, email alerts, mobile applications, and virtual learning environments to reach users more effectively and to meet the evolving information needs of digitally inclined students (Abubakar, 2016; Ifijeh & Yusuf, 2020).

In Nigeria, where universities face challenges of large student populations, limited budgets, and infrastructural constraints, ICT-based outreach has become a vital mechanism for sustaining students' engagement with library resources (Odu, 2017; Ukachi & Onuoha, 2021). Despite these efforts, evidence suggests that many undergraduates remain unaware of available electronic databases, e-journals, and other digital services, resulting in underutilization of costly subscribed resources (Adetimirin, 2015; Ilogho & Odu, 2018). This disconnect raises questions about the effectiveness of the ICT platforms deployed by

Nigerian university libraries and the extent to which they succeed in raising student awareness and usage.

Furthermore, previous studies have often focused on the general adoption of ICT in Nigerian university libraries (Baro & Eze, 2017; Oyesiku & Oduwole, 2020) without adequately addressing the relationship between ICT-based outreach strategies and undergraduate awareness of library resources. Equally, the comparative effectiveness of different ICT platforms such as WhatsApp, Facebook, library websites, and email alerts remains underexplored in the Nigerian context (Echezona et al., 2022). Moreover, persistent challenges such as erratic power supply, limited ICT infrastructure, and varying levels of digital literacy among students and staff continue to hinder effective implementation (Ukachi & Onuoha, 2021).

Against this backdrop, the present study seeks to assess the ICT-based outreach strategies employed by Nigerian university libraries, evaluate their role in promoting undergraduate awareness, examine the relative effectiveness of various ICT platforms, and identify the challenges confronting their implementation. By addressing these objectives, the study contributes to ongoing discourse on ICT-driven library services and provides evidence-based recommendations for enhancing library visibility, student engagement, and the sustainable use of information resources in Nigerian universities.

## **Statement of the Problem**

The adoption of Information and Communication Technologies (ICTs) has transformed how academic libraries promote their resources. Nigerian university libraries increasingly use platforms such as social media, websites, email, and mobile applications for outreach. However, despite these initiatives, evidence shows that many undergraduates remain unaware of key library resources such as electronic databases, e-journals, and research support services, leading to underutilization of costly subscriptions.

While previous studies have examined ICT adoption in libraries, few have assessed the specific outreach strategies employed, the extent of undergraduate awareness, or the effectiveness of different ICT platforms. Equally, challenges such as poor infrastructure, inadequate ICT skills, and low digital literacy continue to hinder successful implementation. Most importantly, the relationship between ICT-based outreach and undergraduate awareness remains unclear, raising concerns about whether ICT platforms truly enhance students' engagement with library resources and services.

This gap underscores the need for a systematic assessment of ICT-based outreach strategies in Nigerian university libraries, their effectiveness in raising awareness, and the barriers limiting their impact.

## **Research Questions**

1. To what extent are undergraduates aware of library resources and services in Nigerian universities?
2. What types of ICT-based outreach strategies are employed by university libraries in Nigeria?
3. What is the relationship between the use of ICT-based outreach strategies and undergraduate awareness of library resources and services?

### **Hypothesis**

**H<sub>0</sub>1:** There is no significant relationship between the use of ICT-based outreach strategies and undergraduate awareness of library resources and services.

### **Literature review**

#### **Overview of ICT Adoption in Nigerian Academic Libraries**

The transformation of higher education in the 21st century has been profoundly influenced by advances in Information and Communication Technologies (ICT). University libraries, traditionally seen as academic knowledge hubs, now rely on ICT to enhance visibility, service delivery, and user engagement. In Nigeria, this shift has become essential for promoting awareness of library resources and services among undergraduates, whose information-seeking behaviours are increasingly shaped by digital and mobile platforms. ICT-based outreach strategies including social media platforms, institutional websites, virtual orientations, and email alerts are now central to how libraries connect with

students. Okonoko and Eruvwe (2020) found that ICT-driven initiatives significantly enhance awareness and participation in digital learning environments. Despite these achievements, challenges such as limited funding, unreliable connectivity, and varying digital literacy levels among librarians and students still hinder effective implementation (Rutto, Bosire, & Munge, 2025). Addressing these issues requires a user-centered approach that integrates technology with pedagogical strategies and institutional support.

### **ICT in Library Outreach and Awareness**

In Nigerian universities, ICT has redefined how libraries communicate with undergraduates. Libraries increasingly adopt social media, email systems, and institutional websites to promote services and engage users. Okonoko and Eruvwe (2020) reported that web-based tutorials, WhatsApp channels, and virtual orientations in Nigerian colleges of education improved students' awareness of electronic resources. Akintola (2021) also observed that university websites now serve as active outreach platforms, hosting updates on e-resources and training programs. Social media has become particularly impactful. However, success depends on librarians' digital competence and consistent engagement. Persistent barriers including weak infrastructure, poor internet access, and limited institutional funding still affect program sustainability (Ogo, Wiche, & Kikiri, 2025). Yet ICT remains a vital enabler, helping libraries transcend spatial limits through online exhibitions, virtual help desks, and digital user education (Ani et al., 2020).

### **Librarians' ICT Competence and Outreach Effectiveness**

The success of ICT-based outreach largely depends on librarians' digital competence. Akintola (2021) revealed that insufficient ICT skills among librarians in Southwestern Nigeria restricted the adoption of innovative outreach methods. Similarly, Ogo et al. (2025) found that few librarians were proficient in using analytics, content management systems, or multimedia tools effectively. Continuous training has been identified as a key success factor. Kareem and Lukman (2025) added that when librarians are empowered with social media management skills, platforms like Facebook and X become cost-effective and far-reaching tools for awareness creation.

### **ICT-Based Outreach Strategies**

Libraries in Nigeria and across Africa employ multiple ICT-based strategies to reach students. Social media marketing remains one of the most prominent, allowing real-time interaction and feedback (Kareem & Lukman, 2025). Okonoko and Eruvwe (2020) demonstrated that integrating online tutorials within these platforms enhances students' self-directed learning. Email and SMS alerts also personalize communication by sending reminders, resource updates, and event notices (Akintola, 2021). Additionally, WhatsApp and Telegram facilitate informal yet effective communication, with Ani et al. (2020) emphasizing that such platforms promote inclusivity by reaching students in familiar digital spaces.

### **Impact on Student Awareness and Resource Usage**

Empirical evidence shows that ICT-based outreach improves student awareness and use of library resources. Baayel (2023) reported a 45% rise in e-resource downloads among Ghanaian undergraduates following sustained digital campaigns, while Rutto et al. (2025) recorded a 30% increase in participation after virtual orientations in Kenyan universities. However, Nigerian studies indicate that engagement remains limited in some contexts due to poor connectivity, lack of personal devices, and low digital confidence (Ogo et al., 2025). Mungwabi (2018) further highlighted infrastructural challenges such as inconsistent Wi-Fi access and limited computer availability, underscoring the need for improved digital inclusion and institutional investment.

In conclusion, ICT-based outreach strategies have become indispensable for promoting awareness and usage of library resources among Nigerian undergraduates. The integration of social media, institutional websites, virtual orientations, and instant messaging platforms has transformed how libraries communicate and engage with students. Nonetheless, barriers such as inadequate infrastructure, limited ICT competence, and weak institutional policies continue to impede progress. To sustain this transformation, universities must invest in digital infrastructure, capacity building, and policy frameworks that encourage innovation and inclusivity. Effective ICT-based outreach should aim not only to inform students but also to cultivate active learning communities reinforcing the library's central role in advancing teaching, research, and lifelong learning in the digital age.

## Research method

This study employed a descriptive survey research design to examine the relationship between ICT-based outreach strategies and undergraduate awareness of library resources and services in Nigerian universities. The design was appropriate for describing current practices and relationships among variables without manipulation. The population comprised undergraduates from selected universities in Oyo, with functional ICT-enabled libraries, while a sample of 152 students was drawn using a stratified random sampling technique to ensure representation across faculties and academic levels (100–500). Data were collected through a structured questionnaire divided into four sections: demographics, ICT outreach strategies, awareness levels, and perceived effectiveness. Responses were rated on a four-point Likert scale. Data were collected both physically, ensuring ethical compliance through informed consent and confidentiality assurances. Analysis was conducted using SPSS version 25, applying descriptive statistics such as mean and standard deviation. Inferential statistics Pearson's Product-Moment Correlation was used to test the relationship between ICT outreach and awareness at a 0.05 significance level.

## Analysis of data

**Table 1: Demographic Characteristics of Respondents**

Gender	Frequency	Percent
Male	78	51.3
Female	74	48.7

<b>Total</b>	<b>152</b>	<b>100.0</b>
<b>Age</b>	<b>Frequency</b>	<b>Percent</b>
16-20	44	28.9
21-25	42	27.6
26-30	30	19.7
31 and above	36	23.7
<b>Total</b>	<b>152</b>	<b>100.0</b>
<b>Level</b>	<b>Frequency</b>	<b>Percent</b>
100 Level	46	30.3
200 Level	40	26.3
300 Level	18	11.8
400 Level	32	21.1
500 Level	16	10.5
<b>Total</b>	<b>152</b>	<b>100.0</b>

The demographic characteristics of the respondents are presented in Table 1. The gender distribution was fairly balanced, with males accounting for 51.3% and females 48.7%. The majority of respondents (56.5%) were aged between 16 and 25 years, reflecting the typical undergraduate population. With respect to level of study, most respondents were in the lower levels (100–200), which together constituted 56.6% of the sample.

## Results and discussions

**Research question 1:** What types of ICT-based outreach strategies are employed by university libraries in Nigeria?

**Table 2: ICT-Based Outreach Strategies**

<b>Item</b>	<b>Mean</b>	<b>Std. Deviation</b>
My university library uses WhatsApp groups to promote library services.	3.57	.572
Facebook is used by my library to share updates on resources.	3.32	.614
The library uses Twitter/X to engage students about services.	3.25	.712

I receive email alerts from the library about resources/services.	3.41	.694
SMS/text messages are used by the library to reach undergraduates.	3.46	.574
The university library website regularly updates students on services.	3.49	.527
Webinars/virtual workshops are organized to create awareness.	3.42	.495
Online exhibitions or digital displays are used for outreach.	3.24	.761
<b>Grand Mean</b>		

Table 2 shows that WhatsApp groups recorded the highest mean score ( $M = 3.57$ ), followed by the library website ( $M = 3.49$ ) and SMS/text messages ( $M = 3.46$ ), indicating that libraries rely mainly on mobile and easily accessible platforms for outreach. This pattern aligns with the findings of Okon and Umoren (2021), who reported that Nigerian university libraries increasingly prefer WhatsApp and Facebook due to their low cost, high student adoption, and suitability for informal communication. Similarly, Ukachi and Onuoha (2021) observed that although social media tools play an important role in promoting awareness of electronic resources, their adoption remains inconsistent across institutions, which may explain the relatively lower use of platforms such as Twitter/X and online exhibitions.

**Research question 2:** To what extent are undergraduates aware of library resources and services in Nigerian universities?

### Table 3: Awareness of undergraduate of library resources and services

Item	Mean	Std. Deviation
I am aware of the electronic databases subscribed to by my library.	3.00	.949
I know how to access e-journals provided by my university library.	3.37	.874
I am aware of the availability of e-books in the library collection.	3.37	.648
I know about library-provided online past questions/exam papers.		
I am aware of virtual reference services (e.g., WhatsApp, chat, email).	2.89	.823
I am aware of plagiarism detection/Turnitin services offered by the library.	3.33	.679
I know about interlibrary loan/document delivery services online.	3.20	.651
I am aware of research support services (e.g., citation guides, referencing tools).	3.22	.643
<b>Grand Mean</b>		

Table 3 indicates that the highest levels of awareness among undergraduates were recorded for e-journals and e-books ( $M = 3.37$  respectively). This suggests that students are most familiar with electronic resources that directly support their academic work. Overall, the findings show that awareness is strongest for core electronic resources, while other library services receive comparatively less attention. The findings show that undergraduates were more familiar with e-journals, e-books, and plagiarism detection services, while awareness of interactive support tools such as virtual reference services was relatively low. This supports Adeleke and Abdulraheem (2020), who observed that students engage more with resources that directly meet academic needs than with advisory services. Similarly, Ezeani and Igwesi (2021) noted that although awareness of electronic

resources among Nigerian undergraduates is increasing, effective communication and outreach remain crucial for optimal utilization.

### Analysis of hypothesis

**H<sub>01</sub>:** There is no significant relationship between the use of ICT-based outreach strategies and undergraduate awareness of library resources and services.

Variable	B	Std. Error	Beta	t	Sig.	R	R Square
(Constant)	9.686	2.554					
ICT-Based Outreach Strategies	.593	.093	.462	6.344	.000	.462 <sup>a</sup>	.214

#### a. Dependent Variable: Awareness

The Pearson Product Moment Correlation analysis revealed a positive significant relationship between ICT-based outreach strategies and undergraduate awareness of library resources and services ( $r = 0.462$ ,  $p < 0.01$ ). Consequently, the null hypothesis was rejected. This indicates that increased use of ICT-based outreach strategies significantly improved undergraduate awareness of library resources and services. The result aligns with the growing body of evidence that ICT integration enhances information dissemination, user engagement, and library visibility in higher education (Echezona, Ugwuanyi, & Nwabueze, 2022; Ifijeh & Yusuf, 2020). The significant correlation between ICT-based outreach and awareness observed in this study supports the theoretical position that ICT serves as a strategic driver for user engagement and information literacy.

According to Akinbobola and Okonedo (2022), libraries that adopt dynamic ICT communication method such as webinars, digital exhibitions, and chat-based reference services tend to record higher visibility and student participation. This relationship suggests that ICT tools do not merely facilitate communication but actively shape how students perceive and access library resources.

### **Recommendations**

1. Universities should provide reliable internet connectivity, modern communication tools, and digital systems that support continuous outreach and service delivery.
2. Libraries should adopt planned and interactive social media strategies to communicate resources and updates directly to students.
3. Continuous professional training should be organized for librarians on emerging ICT tools, content creation, and digital engagement strategies.
4. University administrations should develop policies and allocate funding to strengthen ICT-based outreach as a core component of library operations.
5. Libraries should periodically assess the effectiveness of their ICT outreach efforts through surveys, analytics and user feedback to guide improvements.

### **Conclusion**

This study examined the role of ICT-based outreach strategies in promoting awareness and utilization of library resources and services among undergraduates in Nigerian universities. The findings revealed that university libraries increasingly employ digital tools such as social media platforms, email alerts, websites, and online workshops to reach and engage students. These ICT initiatives were found to have a meaningful and positive influence on students' awareness and understanding of available library resources. The results demonstrated that when libraries actively utilize ICT-based communication channels, undergraduates become more informed about available services, e-resources, and learning opportunities. This underscores the strategic importance of ICT in bridging the gap between libraries and users in an age characterized by digital learning and virtual engagement. The study therefore concludes that ICT-based outreach is not only a communication tool but also a transformative strategy that enhances access, visibility, and student participation in library activities.

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