

INFORMATION AND COMMUNICATION TECHNOLOGIES UTILIZATION FOR RESOURCE MANAGEMENT IN ACADEMIC AND SPECIAL LIBRARIES: A COMPARATIVE STUDY

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Abstract

This study looked into how digital technologies, such as computers, the internet, and mobile devices, are used to manage library resources in academic and special libraries. With a target population of 27,730, the study surveyed 845 librarians, staff members, and users using a descriptive research approach and questionnaires. Notwithstanding the widespread belief that special libraries have more ICT resources than academic libraries, the findings demonstrated that ICTs are underutilized in resource management. The study really discovered that compared to special libraries, academic libraries in South-South, Nigeria have greater ICT resources. ICT adoption in resource management requires more than just having them available; a dependable power source and a motivated workforce are also essential for successful ICT implementation.

Keywords: ICTS, Resource Management, Academic, Special Libraries and Comparative Study

Introduction

Information and communication technology, or ICT, is the umbrella term for a wide range of devices and services that make it easier to create, gather, process, transmit, and store information.

Examples of these tools and resources include computers, the Internet, broadcasting technologies, and telephones (UNESCO, 2020). Improving information availability and streamlining communication between humans, machines, and other machines are the main

objectives of information and communication technology (ICT).

ICT has facilitated the creation, access, sharing, and consumption of information for individuals with the introduction of smartphones and broadband internet.

The ICT landscape is expected to undergo significant transformation in the future thanks to innovations like Web3 and quantum computing, as well as generative AI systems like ChatGPT and 6G networks (Rouse, 2023).

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ICT is not just a technology in the context of libraries; it is also a tool for achieving those goals through ICT use in libraries.

History and Evolution of ICT

Information and Communication Technology (ICT) has its origins in the 19th century, when the telephone and telegraph made it possible to communicate in real time across great distances, revolutionizing social interactions and the workplace.

Mass communication was first made possible by the development of radio and television in the middle of the 20th century.

By the end of the century, the internet had spread throughout society as a means of entertainment, business, and communication. Since then, its explosive expansion has persisted in transforming the way people engage and work online (Rouse, 2023).

Year Technological Advancement

1837	The telegraph and Morse code transform long-distance communication
1876	Real-time voice discussions are made possible by the introduction of the telephone.
1895	Wireless telegraphy pioneers the use of radio waves for communication
1927	The first television broadcasts bring visual entertainment to the masses
1947	The invention of the transistor opens the door to contemporary electronics
1951	The first commercial computer, UNIVAC I, is released
1969	ARPANET establishes the basis for the contemporary internet

1971	Digital communication begins with the sending of the first email
1990	The launch of the World Wide Web facilitates simple access to and sharing of information on the internet.
1991	The Global System for Mobile Communication (GSM) establishes the benchmark for mobile networks.
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1994	The web browser Netscape Navigator gains widespread use
1998	This period saw the founding of Google, which revolutionized online information access and search
2001	Faster mobile internet becomes widely available thanks to commercial 3G networks
2004	Facebook debuts in this year and quickly gains popularity as a major social media network
2007	Mobile computing and smartphones are revolutionized by the iPhone.
2008	Blockchain-based cryptocurrency is first introduced by Bitcoin
2010	Even faster mobile internet speeds are available with 4G networks
2016	This period saw the AI system AlphaGo overcome a world-champion go player, signaling a major advancement in artificial intelligence.
2020	5G networks will provide mobile internet

connectivity that is considerably quicker and more dependable

- 2023 Zoom highlights the move to remote work and virtual communication by reaching 350 million attendees at daily meetings
- 2024 The use of artificial intelligence (AI) tools spreads, changing entire sectors of the economy and drastically altering how we work and live.

Special libraries in librarianship help parent organizations by supplying information to support their operations, such as a government agency, hospital, or industrial enterprise (Ashworth, 1979:9).

The Federal Ministry of Justice in Lagos and the Higher Court of Justice, both founded in 1990, are two instances of special libraries in Nigeria (Nnaji, 1986). Over 32 special libraries were located in Nigeria in 1979, according to Okiy (1998:93), a number that has subsequently greatly risen.

Conversely, tertiary institutions such as universities, colleges of education, and polytechnics have academic libraries. This study's concentration is on university libraries.

Resource management and resource development are two different but related ideas. Resource management includes organising, storing, and making the resource accessible, while resource development deals with choosing and acquiring materials to suit users' present and future needs (Singh, 2004:17).

According to Branin (1994:25), librarians' responsibilities are now more closely aligned with resource management than resource

development, with an increased focus on information interpretation and user accessibility.

In Nigeria, the application of Information and Communication Technologies (ICTs) in libraries has been a topic of discussion since the 1970s, but actual implementation has been limited (Daniel et al., 2003:83).

The Nigerian Library Association has recognized the importance of ICTs in libraries, commissioning a survey on their use in 2002.

The advent of the internet has increased global communication and access to information, but the impact of ICTs on library operations like resource management depends on their effective use. For example, online networks could be used to expedite book selection and processing, but if ICTs are not properly utilized, their benefits will be minimal (Anao, 2003).

To be relevant in the ever evolving world of today, both individuals and organizations need to be able to adapt and pick up new skills. This is especially true for those working in libraries and information centres, who help teachers convey the skills necessary to stay up to date with the rest of the world (Anao, 2003).

Emmanuel and Alfred's (2008) study on ICT management for education in Tanzania highlights the substantial hurdles associated with implementing ICT services in African libraries.

Information and communication technology (ICT) integration in libraries is beset by a number of issues, such as ICT acquisition, digital resource preservation, maintenance and security issues, user training, and a general lack of commitment and understanding among library stakeholders.

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According to a 2009 study by Walmiki and Ramakrishnegowda on the ICT infrastructure in academic libraries in Karnataka, the majority of libraries did not make full use of their campus LANs to capitalize on the advantages of digital information and lacked proper hardware, software, and internet access.

Given these results, the researchers hope to learn more about how ICTs affect resource management in Nigerian academic and special libraries. Some have even suggested that special libraries may do better in this area than public ones.

Statement of the Problem

Information and Communication Technologies (ICTs) are available to academic and special libraries in the South-South area of Nigeria.

These technologies are anticipated to improve library services. Users, however, complain about the services they get and point to a lack of sufficient information provided.

The use of ICTs can help to improve inefficient resource management, which may be the cause of this discontent. This study looks into how ICTs are used and available in various libraries, as well as how they affect resource management.

Hypotheses

In the investigation, the following null hypotheses were examined.

1. ICT for resource administration is equally available in South-South Nigerian academic and special libraries.
2. Academic and special libraries in the area have the same resource management facilities.
3. Academic and special libraries in the area use ICTs for resource management in a comparable manner.
4. The region's academic and special libraries receive comparable financing for ICTs used in resource management.
5. Academic and special libraries in the area face the same resource management issues as a result of ICTs.

Methodology

This study uses questionnaire as its main instrument and an ex-post-facto descriptive research design. Three separate sections comprise the questionnaire: one for users, one for library workers, and one for library administrators.

The questionnaire was subjected to expert review and pretesting to guarantee its validity and reliability; the outcome was a reliability coefficient of 0.71. Out of the 27,730 participants in the target demographic, 845 individuals were chosen at random.

Chi-square analysis was used to examine the study hypotheses, with a significance level of 0.05.

Results

Hypothesis 1:

ICT for resource administration is equally available in South-South Nigerian academic and special libraries.

Table 1: The availability and use of Information and Communication Technologies (ICTs) in managing resources across academic libraries and special libraries will be compared statistically using the chi-square test (X²).

Variables	Agreed	Disagreed	Total	Df	X ² - Cal	X ² - Crit	Level of sig	Decision
University libraries	125	357	482					
Special libraries	49	219	268	1	5.512	3.84	0.05	Significant
Total	174	576	750					

The results show that there is a statistically significant difference ($5.512 > 3.84$) at the 0.05 level of significance between the computed X² value of 5.512 and the crucial X² value of 3.84.

As a result, the null hypothesis is rejected, indicating that academic and special libraries differ significantly in terms of the availability and application of ICTs for resource management.

Hypothesis 2

Academic and special libraries in the area have the same resource management facilities.

Table 2: The facilities used for resource management in university libraries and special libraries were compared statistically using the chi-square test (X²).

Variables	Not/A	A/Not Funct	A/funct	Readily A/funct	Total	Df	X ² - Cal	X ² - Crit	Level of sig	Decision
University libraries	152	113	136	81	482					
Special libraries	110	74	35	49	268	3	22.92	7.82	0.05	Significant
Total	262	187	171	130	750					

Not/2

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Hypothesis 3

Academic and special libraries in the area use ICTs for resource management in a comparable manner.

Table 3: Applying the Chi-Square statistical test to examine how Information and Communication Technologies (ICTs) affect resource management procedures at academic institutions and special libraries.

Variables	Agreed	Disagreed	Total	Df	X2- Cal	X2- Crit	Level of sig	Decision
University libraries	343	139	482					
Special libraries	46	222	268	1	20.12	3.84	0.05	Significant
Total	389	361	750					

The null hypothesis is rejected because the computed X2 value of 201.2 is more than the crucial X2 value of 3.84, showing a statistically

significant difference ($p < 0.05$) in the use of ICTs on resource management between academic and special libraries.

Hypothesis 4

The region's academic and special libraries receive comparable financing for ICTs used in resource management

Table 4: Using a statistical test known as chi-square, this study examines the funding differences between special libraries and universities for resource management technology.

Variables	Agreed	Disagreed	Total	Df	X2-Cal	X2- Crit	Level of sig	Decision
University libraries	33	48	81					
Special libraries	12	2	14	1	8.38	3.84	0.05	Significant
Total	45	50	95					

Attained X2 = 8.38, critical X2 = 3.84, df = significance level = 0.05 Significant decision; null hypothesis rejected. Table 4 shows that there is a substantial gap between the computed X2 value of 8.38 and the critical X2 value of 3.84. As

a result, the null hypothesis is disproved, indicating that academic and special libraries support ICTs for resource management in very different ways.

Hypothesis 5

Academic and special libraries in the area face the same resource management issues as a result of ICTs.

Table 5 compares the limits of information and communication technologies (ICTs) in managing resources between university libraries and special libraries through statistical analysis using the Chi-square test (X2).

Variables	Agreed	Disagreed	Total	Df	X2-Cal	X2- Crit	Level of sig	Decision
University libraries	59	22	81					
Special libraries	13	1	14	1	1.96	3.84	0.05	Significant
Total	72	23	95					

$X^2 = 1.96$, $df = 1$, significance level = 0.05, critical $X^2 = 3.84$ were obtained. Conclusion: Acceptance of the null hypothesis, not significant.

Table 5 shows that, at the 0.05 level of significance and 1 degree of freedom, the computed X^2 value of 1.96 is less than the critical X^2 value of 3.84, suggesting that there is no statistically significant difference in the ICT constraints for resource management between academic and special libraries.

Findings

The study's main conclusions are as follows:

1. In the South-South region of Nigeria, academic and special libraries have considerably different access to information and communication technologies (ICTs) for resource management.

2. The facilities used by special and academic libraries in the area for resource management vary greatly.

3. There are notable differences in how academic and special libraries in the area use ICTs for resource management.

4. Funding for ICTs used for resource management varies significantly between academic and special libraries.

5. In the region, academic and special libraries encounter comparable challenges when utilizing ICTs for resource administration, notwithstanding variations in other domains.

Conclusion

Information services, operations, and distribution have expanded and changed as a result of the integration of computer technology and information communication technology (ICT) into library operations. The world is going through a huge information revolution, and libraries need to change with the times to be relevant in the global information economy.

Information is a useful tool that is essential to planning and decision-making. Making better use of data from different economic sectors helps improve decision-making and user information distribution.

The study does, however, show that there is a limited availability and use of ICTs for resource management. In contrast to special

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libraries, academic libraries in South-South Nigeria have more ICT resources.

Furthermore, the study demonstrates that having ICT resources alone does not guarantee

their utilization for resource management and that a sufficient supply of electricity and having an inspired workforce is crucial.

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