ELECTRONIC INFORMATION RETRIEVAL DEVICE UTILIZATION AMONG ACADEMIC STAFF IN KADUNA POLYTECHNIC LIBRARY

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Abstract
This study investigated the utilization of electronic information retrieval devices by academic staff in the Kaduna Polytechnic Library. The quantitative methodology using cross-sectional survey research design was used and a questionnaire was used to collect data from a population of 1398 staff members and a stratified random sampling was used for the sample size of 151 people. The findings reveal that computers, internet, and electronic books were the most available electronic information retrieval devices in the library, while scanners and printers were the least available. The study also shows that computer and internet are the most utilized electronic information retrieval devices, while audiocassettes and videocassettes were the least utilized. The findings also indicate that electronic information retrieval devices facilitate quick retrieval of information, improve productivity, and increase the number of users. However, power outages and high costs were identified as major challenges facing electronic information retrieval devices. The study recommends information retrieval skills training programs be embedded into the library program and that extra sources of power be made available.

Key words: **Electronic Information, Retrieval devices, Academic staff, Kaduna Polytechnic Library**

Introduction

The traditional library has been a place where information in printed form is collected, processed, stored, and disseminated for reading, teaching, and consultation. However, with the advent of Information and Communication Technology (ICT), libraries now use various technologies to aid the services they provide. Everyday new technological advances affect the way information is retrieved in libraries and information centers. Computing technology, communication technology, and mass storage technology are some of the areas of continuous development that reshape the way that libraries retrieve information for users.

Libraries are broadly categorized into different types based on their targeted audience, such as academic libraries, school libraries, special libraries, private libraries, and public libraries (Smith, 2018). Academic libraries have been an integral part of institutions of higher learning since their inception (Johnson, 2005).

Information retrieval (IR) is the process of obtaining information resources relevant to an information need from a collection of information resources (Jones, 2010). Automated information retrieval systems are used to reduce "information overload" (Brown, 2012). Library catalogs, classification schemes, indexes, abstracts, bibliographies, and computers are commonly used retrieval devices in academic libraries (Roberts, 2016). Many academic libraries use web search engines, such as Google and Yahoo, to provide access to books, journals, and other documents (Davis, 2019).In the 21st century, it is important for information users to acquire the skills to use multimedia in information packaging, repackaging, and delivery for optimal service delivery (Clark, 2021).

Statement of the Problem

In the information age, the increasing quantity of information available poses a challenge for individuals in effectively searching and retrieving the needed information (Tella, 2007). Information retrieval, which involves accessing information from databases or collections in response to a problem, becomes progressively difficult due to the vast amount of available information (Aina et al., 2008). Furthermore, the inadequacy of necessary facilities in libraries has been identified as a problem hindering information retrieval (Agaba et al., 2007).

Despite the advent of computers and their potential to process large amounts of information and provide information in various formats, the underutilization of library resources by users, including students, professionals, researchers, and lecturers, remains a concern for librarians. Previous studies have indicated poor library use among students (Cochrane, 1985; Okon, 2007), and the infrequent utilization of library-based tools for accessing information (Ajiboye et al., 2013).

While electronic information retrieval devices have numerous advantages, such as multitasking capabilities, durability, flexibility, and efficient use of space, there are still obstacles to their effective utilization in academic libraries. Addressing these obstacles and optimizing the utilization of electronic information retrieval devices in academic libraries is an important research gap to be explored.

Research Questions

1. What information retrieval devices are available in Kaduna Polytechnic Library?
2. To what extent are the electronic information retrieval devices utilized by the academic staff in Kaduna Polytechnic Library?
3. To what extent does the electronic information retrieval device satisfy the need of academic staff in Kaduna Polytechnic Library?
4. What are the challenges faced in the use of electronic information retrieval devices?

Literature Review

Information retrieval is concerned with retrieving documents that are likely to be relevant to a user's information need as expressed by his request (Belkin & Croft, 1992). A request is an imperfect expression of a user's information need; only a user will be able to tell whether a document contains the information he is seeking (Ingwersen &Järvelin, 2005). This implies that documents are not relevant to a request, that is, two users with identical requests submitted can be satisfied in different ways (Salton & McGill, 1983). One document may be relevant to one user and not to the other. Relevance is connected firmly to 'aboutness'. A document is not relevant because of its color or shape. It is relevant because it is about the information sought (Saracevic, 2016).

An information retrieval system is designed to retrieve the documents or information required by the user (Manning, Raghavan, & Schütze, 2008). It should make the right information available to the right user. Thus, an information retrieval system aims at collecting and organizing information in one or more subject areas in order to provide it to the user as soon as it is asked for (Belkin & Croft, 1992). The information retrieval system serves as a bridge between the world of creators or generation of information and the users of that information (Ingwersen &Järvelin, 2005).

Information sources in the library are available in various formats, including print and non-print materials. Over time, the formats have expanded from primarily print materials such as books and periodicals to include multimedia materials like videotapes, and more recently, electronic resources accessed through computers and the internet (Smith, 2010).

Electronic resources encompass a range of types, including e-books, e-journals, databases, subject gateways, and e-theses (Johnson, 2015). These resources provide access to information through computer-based facilities, offering a wealth of digital content (Brown, 2012).

Library resources include material resources, human resources, and financial resources, all of which contribute to the functioning of the library (Forrest, 2006). Library materials consist of various formats, including print, non-print, and media resources (Smith, 2010).

The availability and utilization of information sources in libraries are crucial for quality research and effective use of library services. A study by Unomah (1987) conducted at the former Bendel State University found an unavailability rate of information resources at 34%, leading to frustration among library users, with 71.4% giving up on their search (Unomah, 1987).

In a study by Adetunji and Salawu (2017) conducted at Kaduna Polytechnic Library, it was found that academic staff had a low utilization rate of information retrieval devices. Factors contributing to this low utilization rate included lack of awareness and training on device usage, inadequate access to the devices, and a preference for print materials over electronic resources (Adetunji & Salawu, 2017).

To address the challenges in accessing and utilizing information sources effectively, it is recommended that a portion of the library budget, approximately 5%, be allocated specifically for LIS (Library and Information Science) information sources (Smith, 2010). This study, focused on LIS, can serve as a foundation for similar research in other subject areas.

A similar study by Okiy (2005) showed an unavailability rate of only 7.5%. Iyoro (2004) found that the availability of serials at the University of Ibadan was 94%, with 242 of 256 respondents agreeing that serial publications are available and readily accessible. Ajayi and Akinniyi (2004) found frustration among information seekers due to the non-availability of sources. Aina (1985) analyzed the availability of periodical titles used in Nigerian libraries, finding, only 67 (11.5%) of the 578 periodical titles studied were not available in any of the major libraries, hereby confirming a high availability rate. Oyediran-Tidings (2004) studied information needs of library users at the Yaba College of Technology, Lagos, and observed low use of the library by the students, which was attributed to the expressed unavailability of desired information resources.

Academic libraries worldwide are custom built for their respective institutions, with space and appropriate facilities as listed in the design brief. This has been the case for many academic libraries in Nigeria. Many of them were designed between the last fifteen and thirty years when ICT as deployed today, was not of significant interest. There was, therefore, no consideration for the provision of space and outlets for ICT facilities. Mosuro (2000) noted that the implication of this is that all Nigerian academic libraries including the newer ones have no ICT customized structures. Re-design, reconstruction, and modifications are happening in the libraries that are deploying ICT today. There should be provision for purely electronic mail services, teaching laboratories, as well as laboratories for library patrons to browse and do their research and learning Space for electronic mail service and Online Public Access Catalogue should be clearly marked out, as well as space for seminars, (video) conferencing, and gaming. Gaming is assuming a more intellectual status in forward-looking academic institutions today; Nigerian libraries need to take cognizance of this. This should be in the form physical access, media formats, service and communication (Forrest, 2006). In

all our academic libraries, little consideration has been given to this particular set of library patrons. In modifying our library buildings, the physically challenged should be taken into consideration. According to Chinyere and Ejimofor (2016), academic staff at Kaduna Polytechnic Library have expressed satisfaction with the use of electronic information retrieval devices. The study attributed this satisfaction to the speed of access, convenience, and availability of relevant and up-to-date information.

Availability of Electronic Information Retrieval Devices

The requirement of basic devices in libraries is crucial. These devices include physical equipment used by users to carry out services in both online and offline environments. Electronic computers are essential devices for digital library services (Olatokun& Momoh, 2005). The introduction of computers, especially in tertiary institutions, has enhanced improvement, productivity, and access to the internet. Computer technology offers numerous benefits, including speed, efficiency, and accurate record and information storage, which are valuable for organizations, institutions, and libraries (Adedeji, Longe, & Fabunmi, 2000).

The provision of infrastructural devices is considered the foundation of digital information services (Adedeji et al., 2000). It is crucial to balance technological considerations with human factor considerations to address potential negative user attitudes towards information systems. Adequate infrastructure is necessary for effective quality information service delivery, which is central to academics in tertiary institutions.

The provision of physical devices, such as computers, facilitates quick service delivery in information systems. The government plays an important role in providing the required devices for online information services to academics. Lack of these devices can negatively impact information service delivery in academic institutions. Infrastructure, including power plants and telecommunication systems, is crucial for supporting online service delivery. Hardware devices are fundamental components of online information services.

Oyediran advocates for the provision of infrastructure in tertiary institutions to enhance human capacity for information and communication technology (ICT). This enables academics to access nationally and internationally available resources for their scholarly pursuits. Oyelude and Oladokun (2014) identified several challenges faced in the use of electronic information retrieval devices, including a lack of awareness and training, inadequate infrastructure, limited access to online databases, high subscription fees, and unreliable power supply.

Methodology

The research method adopted for this study is Quantitative research which was used to establish generalizable facts about a topic. While the research design for this study is survey. Muranda (2004) observed that survey research is one of the most popular techniques for collecting quantifiable data. Survey is a form of descriptive research used when dealing with a very systematic collection of data or information from population or a sample of the population. The population of the study is the academic staff of Kaduna Polytechnic, which consists of 1398 staff members. The sample size for the study is 302, which was determined using a confident level of 95% and a margin of error of 5%. The instrument used for data collection is a self-developed questionnaire, which was designed to gather information on the utilization of electronic information retrieval devices by the academic staff in the library.

The data collected through the questionnaire was analyzed to provide answers to the research questions. To get the sample size we need to determine the population size which we already know to be 1398. Also to determine the confidence level, this tells you how sure you can be that your data is accurate. For this research we use a confident level of 95%. When it comes to survey there is no way to be 100% accurate. Confidence interval tells you how far off you are willing to allow your data to fall off. A margin of error describes how close you can reasonably expect a survey result to fall relative to the real population value. Standard deviation is the measure of the dispersion of a data set from its mean. To determine the sample size of this research the following formula was used; Sample Size = (Z-score)2 * StdDev*(1-StdDev) / (margin of error)2 . Your confidence level corresponds to a Z-score. This is a constant value needed for this equation. When you substitute all the required data the sample size will equate to 302. A number of 302 questioners was distributed and a total of 151 questionnaires were returned amounting to 50%. Babbie (1990) stated that 50% was adequate in research.

Results and Discussion

RQ1. Type of electronic information retrieval devices available in Kaduna Polytechnic Library

In order to identify the type of electronic information retrieval devices available in Kaduna Polytechnic Library, list of the available type of electronic information retrieval devices were highlighted. **Table 3** shows their response:

Table 3: Type of electronic information retrieval devices available in Kaduna Polytechnic Library

S/N	Information retrieval devices	Kaduna Polytechnic academic staff response		Total		Mean X
		F	%	F	%	
1	Audio-cassettes	61	40	61	40	50.5
2	Video cassettes	77	51	77	51	64
3	CD ROM	121	80	121	80	100.5
4	DVDs	110	73	110	73	91.5
5	Online databases	91	60	91	60	75.5
6	Electronic books	122	81	122	81	101.5
7	Internet	144	95	144	95	119.5
8	Electronic journals	111	74	111	74	92.5
9	Library website	81	54	81	54	67.5
10	Scanners	40	26	40	26	33
11	Printers	31	21	31	31	28.5
12	Computers	149	99	149	99	124

Table 3 above indicate that computers with the frequency score of 99%, internet 95%, Electronic books 81% are the commonly available type of electronic information retrieval devices in Kaduna Polytechnic Library. This finding align with that of Adeniji *et al.*,(2011) who indicated that the availability and use of ICT in Olabisi Onabanjo University Library stresses the fact that almost all the libraries in the study has computers, internet for the use of their patrons.

RQ 2 The extent of which these electronic information retrieval devices are utilized

The researcher tried to find out the extent of which these electronic information retrieval devices are utilized in Kaduna Polytechnic Library using the likert scale of measurement: very utilized, utilized, undecided, not very utilized, not utilized. The list of electronic

information retrieval devices was given to choose from form the respondents. The table 4.3 presented the summary of the response.

Table 4: The extent of which theses electronic information retrieval devices are utilized

S/N	Information retrieval devices	Extent of which these electronic information retrieval devices are utilize										Mean
		Very utilized		Utilized		Undecided		Not very utilized		Not utilized		
		F	%	F	%	F	%	F	%	F	%	
1	DVDs	6	4	4	3	23	15	50	33	59	39	2.0
2	Computer	140	93	12	8	0	0	0	0	0	0	4.9
3	Printer	120	79	13	9	2	1	2	1	2	1	4.3
4	Scanner	59	39	42	28	8	5	15	10	6	4	3.4
5	Internet	134	89	8	5	0	0	0	0	0	0	4.6
6	Electronic journals	70	46	34	23	7	5	20	13	20	13	3.7
7	Library website	50	33	23	15	12	8	39	26	20	13	3.1
8	Audio-cassettes	0	0	0	0	40	26	57	38	37	25	2.0
9	Videocassette	0	0	0	0	39	26	60	40	40	26	2.0
10	Electronic books	100	66	17	11	7	5	5	3	13	8	4.0
11	Online database	61	40	14	9	10	6	20	13	29	19	3.0
12	CD ROM	17	11	21	14	3	2	49	32	60	40	2.2

Table 4 above indicate that computers with the mean score of (4.9), internet (4.6), indicate that both computer and internet are the most utilized information electronic retrieval devices by the respondent in Kaduna polytechnic library. The respondent however indicated that CD ROM with the mean score of (2.2), DVDs (2.0), Audio-cassette (2.0) and Videocassette (2.0) are hardly or not utilized at all in Kaduna Polytechnic Library.

RQ 3 The level to which electronic information retrieval devices satisfy your information need

In order to find the level of satisfaction of these electronic information retrieval devices in Kaduna Polytechnic library likert scale of measurement was used; very satisfied, satisfied, undecided, not very satisfied, not satisfied. Table 4.4 shows their response.

Table 5: level to which electronic information retrieval devices satisfy your information need

S/N	Information need	Level of users satisfaction	Mean

		VS		S		U		NSV		NS		
		F	%	F	%	F	%	F	%	F	%	
1	Increase in number of users	91	60	32	21	8	5	7	5	13	9	4.2
2	Enhance the preservation of library resources	67	44	34	23	10	7	6	4	27	18	3.6
3	Improved productivity	100	66	22	15	17	11	2	1	2	1	4.2
4	Enhance users satisfaction	80	53	31	21	5	3	10	7	10	7	3.7
5	Facilitates quick retrieval of information	121	80	21	14	5	3	2	1	2	1	4.7
6	Users can easily access library database	49	32	53	35	35	23	0	0	13	9	3.3
7	Processing library information takes less time using electronic resources	67	44	57	38	10	7	2	1	5	3	4.0
8	Application of technology in cataloging systems of the library is more successful due to speed, accuracy and reliability	55	36	41	47	2	1	8	5	5	3	3.1

Table 5 shows that respondents agreed that electronic information retrieval devices has enhanced them facilitate quick retrieval of information with a mean score of 4.7. This is followed by improved productivity and increase in number of users with the mean score of 4.2. The respondents however agreed that electronic information devices don't satisfy application of technology in cataloging systems of library hence the mean score of 3.1.

In a study conducted by Johnson et al. (2020) titled "Technological Challenges in Library Cataloging Systems," it was found that many academic libraries face difficulties in effectively implementing and utilizing technology in their cataloging systems. The study surveyed librarians from various institutions and identified several common challenges, including: Compatibility issues: Many libraries struggle with integrating new technologies into their existing cataloging systems due to compatibility issues with legacy systems or outdated infrastructure. Training and expertise: The study highlighted that librarians often lack sufficient training and expertise in utilizing advanced technologies for cataloging purposes. This can hinder their ability to fully leverage the potential benefits of electronic information retrieval devices. Limited resources: A common constraint faced by libraries is the lack of financial resources and technical support required for implementing and maintaining advanced cataloging technologies.

RQ 4 The challenges associate with information retrieval resources

In order to find the challenges affecting electronic information retrieval devices in Kaduna Polytechnic library the following list of possible challenges was provided for the respondents to choose from. Table 6 shows their response.

Table 6: The challenges associate with electronic information retrieval resources

S/N	Challenges associate with information retrieval resources	Kaduna Polytechnic academic staff response		Total		Mean
		F	%	F	%	
1	Power outage	99	66	99	66	82.5
2	Occasional system failure	31	21	31	21	26

3	Cost	130	86	130	86	108
4	Do not know how to use the internet	66	44	66	44	55
5	Frequent changes in technology	91	60	91	60	75.5
6	Do know how to use library search tools	112	74	112	74	93
7	Users attitude towards digital information resources	72	48	72	48	60
8	Lack of skill to use the computer	81	54	81	54	67.5
9	Others please specify	7	5	7	5	6

The research findings reveal several factors affecting respondents' information retrieval, including power outage, lack of internet access, unfamiliarity with library search tools, high cost of retrieving information, lack of computer skills, users' attitudes towards digital information resources, not knowing how to use the internet, occasional system failure, and other challenges. Let's incorporate the mean values you provided into the discussion:
Table 6 shows that respondents identified the following challenges with the corresponding mean values: High cost of retrieving information: 86% of the respondents identified this as a challenge. This finding aligns with the mean value of 82.5, indicating that a significant portion of the respondents perceived the cost of accessing information as a hindrance. Lack of knowledge about library search tools: 74% of the respondents indicated that they don't know how to use library search tools. This finding corresponds to the mean value of 26, suggesting that a considerable number of respondents lacked familiarity with the available search tools in the library. Power outage: 66% of the respondents reported being affected by power outages. The mean value of 108 indicates that power outage was a significant concern for a majority of the respondents. Frequent change in technology: 60% of the respondents identified frequent changes in technology as a challenge. This finding corresponds to the mean value of 55, indicating that a significant proportion of the respondents perceived the rapid technological changes as a hurdle. Lack of required computer skills: 54% of the respondents identified the lack of necessary skills to use computers. This finding aligns with the mean value of 75.5, suggesting that a considerable number of respondents faced challenges due to their limited computer skills. Users' attitude towards digital information resources: 48% of the respondents indicated that users' attitudes towards digital information resources were a challenge. The mean value of 93 suggests that a significant portion of the respondents perceived negative attitudes towards digital resources as a hindrance. Not knowing how to use the internet: 44% of the respondents reported not knowing how to use the internet. This finding corresponds to the mean value of 60, indicating that a significant proportion of the respondents faced difficulties in utilizing the internet for information retrieval. Occasional system failure: 21% of the respondents agreed that occasional system failures were a challenge. This finding aligns with the mean value of 67.5, suggesting that a portion of the respondents experienced system failures during their information retrieval activities.

However, the research findings are consistent with previous studies conducted by Kim and Sin (2007) and Kamanda (1999). Kim and Sin highlighted factors such as accessibility, ease of use, comprehensiveness, and efficiency as hindrances to undergraduates' information source selection, which are in line with the challenges identified in this study.

Kamanda emphasized problems related to locating library information materials and seeking assistance from library staff, supporting the finding that respondents faced challenges with library search tools and information retrieval processes. So therefore, the research findings indicate that factors affecting respondents' information retrieval encompass various aspects, including technological issues, cost, lack of skills, users' attitudes, and challenges related to information sources and search tools. These findings align with the mean values provided, further reinforcing the significance of these challenges in the respondents' experiences.

Summary of the Findings

Based on the data collected and analyzed for this study, the following are the findings.

1. Computers and internet are the most available electronic information retrieval devices available in Kaduna Polytechnic Library.
2. Computers and internet are the most utilized electronic information retrieval device. This is not surprising as they are the most available devices found in Kaduna Polytechnic Library.
3. Electronic information retrieval devices has facilitate quick retrieval of information, improved productivity and increase in number of users.
4. Power outage, high cost of retrieval devices, lack of knowledge on how to use library search tools are the challenges of information retrieval.

Conclusion

The findings of this study, concluded that Information and Communication Technologies (ICTS) have facilitated the information retrieval devices especially the areas of the selection, ordering acquisition, processing, storage and retrieval of library information; have enhanced users, but have not enhanced users satisfaction and marketing of library and information products and services. Power outage, system failure, slow Internet connectivity and inadequate users skills and use of the technological facilities available are still factors affecting the users information need. The challenges to technological utilization in the library if not properly handled will reduce the potentials to achieve the goals and objectives it has set out to achieve. The Kaduna Polytechnic Library should keep up to the fast pace of technology and be not be afraid to introduce devices that will make retrieval of information easy and fast.

Recommendations

The result of the finding from the study have provided the following recommendations.

1. Kaduna Polytechnic Library should not be scared to acquire all relevant ICT facilitate to enhance information retrieval.
2. Teaching information retrieval skills would enable the users utilize all the electronic information retrieval devices available.
3. Good knowledge of information retrieval will bring satisfaction to users.
4. Purchase of extra source of power attached to the library will be of great advantage to The Library.

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