

Information Retrieval Tools as Predictors for Information Resources Utilization in Academic Libraries in Nigeria

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ARTICLE INFO

Article history:

Received 17 April 2020

Revised 25 June 2020

Accepted 13 July 2020

Keywords:

Information,
Retrieval,
Tools,
Resources,
Utilization,
Academic,
Libraries

ABSTRACT

The study examined information retrieval tools as predictors for information resources utilization, four research questions, and four hypotheses were made to guide the study. A descriptive survey was adopted for the study. Random sampling technique was used to select sample of 393 from a population of 557 academic staff registered in the University of Port Harcourt library. The questionnaire was adopted as a data collection instrument titled Information retrieval as predictors for information resources utilization (IRPIRUQ). Data were analyzed using both simple and multiple regression while analysis of variance (ANOVA) associate with regression was used for testing the hypotheses at 0.05 alpha level. The study revealed that information resources are under utilized as the OPAC and Online Databases are not easily accessed. Further findings showed that the academic staff made use of internet search engines more often than the OPAC and online databases. It was recommended among others that a new library software be installed in place of KOHA for wider connectivity and adequate distribution of software that will aid usage of the online databases and OPAC.

1. Introduction

The academic library is the focal point for academic activities in higher institutions of learning such as universities, polytechnics, colleges of education, etc. They are primarily responsible for the selection, acquisition, and provision of information materials ultimately to support teaching, learning, and research activities. Therefore, academic libraries are categories of information providers and enablers for academic processes, thus, providing information to different types of users in diverse formats for easy access and retrieval. However, the availability of information should not be equated with accessibility. Afebende and Ebaje (2008) noted that the effectiveness of a library does not depend on only its collections, resources, and other facilities, but also on the success of its exploitation and use. Consequently, utilization becomes a pivotal factor in studies on academic library information resources. Hence, retrieval and utilization of the varied information resources determine the usefulness

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International Journal of Knowledge Content Development & Technology, 10(3): 21-31, 2020.
<http://dx.doi.org/10.5865/IJKCT.2020.10.3.021>

of the provided information resources.

Libraries have always been concerned with storing and retrieving of information. As the quantities of information grew widely libraries were forced to make maximum use of information retrieval tools to facilitate the storage and retrieval process (Atanda & Sherrifider, 2018). Information retrieval tools are widely used for library services in locating information resources Rahoo, Nagar, and Bhutto (2019). It also plays a vital role in meeting the functions of the academic library by aiding the retrieval of information easily from the library. For proper utilization of library resources, there is a need for access to the needed information and the ability to retrieve it.

However technological prowess has innovatively strategized and provided some information retrieval tools to assist users in the retrieval and utilization of library information resources. Common among these retrieval tools for this study are; OPAC, Internet search engines, online databases. The online public access catalogue (OPAC) provides facilities for library users to carry out online catalogue searches and then check the availability of the item. It is the fastest way to access information and a searching tool for users by Author, Title Keyword (Saha, 2018). Online databases are large regularly updated files of digitized information which are organized for ease and speed of search and retrieval (Reitz, 2005). Retrieval tools are the simple mechanisms or apparatus that aid library users to locate, retrieve, and use the needed documents from the library or information from a book or document. Internet search engines are crucial for retrieving information for academic, economic, decision-making, and societal developmental purposes. The academic library exists to serve its parent institution to provide information resources to meet the needs of different faculties, students, and researchers,' However if these resources are underutilized the aim of the library is defeated. It is against this backdrop that this paper seeks to study information retrieval tools as predictors of information resources utilization in academic libraries.

Objectives of this study includes:

- (a) To determine the extent to which Online Public Access Catalogue (OPAC) influence information retrieval among academic staff in the University of Port Harcourt.
- (b) To establish the influence of online databases on information retrieval among academic staff in the University of Port Harcourt.
- (c) To assess the influence of Internet search engines on information retrieval among academic staff in the University of Port Harcourt.
- (d) To find out the combined influence of retrieval channels (OPAC, online databases, and Internet search engines) on information retrieval among academic staff in the University of Port Harcourt.

The following questions guided the study:

- (a) To what extent does Online Public Access Catalogue (OPAC) influence information retrieval among academic staff in the University of Port Harcourt?
 - (b) To what extent do online databases influence information retrieval among academic staff in the University of Port Harcourt?
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- (c) How do Internet search engines influence information retrieval among academic staff in the University of Port Harcourt?
- (d) Does the combined effect of retrieval tools (OPAC, online databases, and Internet search engines) influence information retrieval among academic staff in the University of Port Harcourt?

The following null hypotheses tested at 0.05 alpha level guided the study:

- (a) Online Public Access Catalogue (OPAC) does not significantly influence information retrieval among academic staff in the University of Port Harcourt.
- (b) Online databases do not significantly influence information retrieval among academic staff in the University of Port Harcourt.
- (c) There is no significant influence of Internet search engines on information retrieval among academic staff in the University of Port Harcourt.
- (d) The combined effect of retrieval tools (OPAC, Online databases, and Internet search engines) does not significantly influence information retrieval among academic staff in the University of Port Harcourt.

2. Literature Review

In order to retrieve information resources in the library, the necessary tools have to be in place for effective utilization. Information retrieval tools can be in print or digitized form. Akanwa and Udo-Ayanwu (2017) described information retrieval tools as those concerned with the exploitation and extraction of information and other contents of documents from different information sources, equipment, or sources. Extolling the importance of information retrieval tools, Edom (2012) opined that they are the simple mechanisms or apparatuses that aid the library user to locate, retrieve and use the needed documents from the library or information from a book or document. He further outlined the tools OPAC, CD-ROMS, online databases, internet search engines, among others. There are various kinds of tools used in libraries, and they include; abstracts, indexes, online databases, search engines, OPAC, etc. Presently, the proliferation of technology made various tools available at the disposal of users for accessing the information they need.

A study from Rout and Panigrahi (2018) found that the OPAC is not functioning properly because of inadequate distribution from the software. Fabunmi and Asubioyo (2013) studied awareness of the use of OPAC by students at Obafemi Awolowo University in Nigeria. The study used a questionnaire to elicit data from respondents. The study revealed that most of the respondents are unaware of the information searching skills for various reasons. The majority of respondents are using a manual system for their library work because they lack the basic knowledge on how to use the OPAC. Kumar (2015) conducted a study on the using patterns of OPAC among faculty members in the great lakes institute of management at Chennai. The study revealed that there is a persistent need to improve OPAC of this library. it is clear that utilization cannot be complete until the individual with a specific information need has identified the type of information to get at a particular point

in time in order to accomplish the purpose for which it is needed.

Online databases consist of e-journals, eBooks, web publishing, and internet resources. It is databases that are delivered online, be it text, graphical or time based, numerical, etc. (Chandra, Sankaranarayana, & Nagarajan, 2014). Online databases are reliable content and information technology providers. They provide an outstanding track record of hosted solutions, on-time services, delivery, and superior communications with partners (Kinner & Rigda, 2009).

Wu and Chen (2012) investigated how graduate students perceive, use and manage electronic resources at the National University of Taiwan. The study revealed usage varied according to the background of the student. The study asserts that disciplinary differences can influence the use of database. Hong Sinh and Hong Nhung (2012) argued that user behavior will influence usage of online databases, and the factors that influence usage of databases are the purpose of usage, preferred types of materials, ways to learn the search, searching technics and difficulties and expectation in using the database. Thus, in their survey on searching behavior of users of six online databases subscribed by the central Vietnam National university in 2011 reported that 875 requested full-text articles as compared to 125 requested for the abstract.

The ability to retrieve information from the online database forms a prerequisite for information resources utilizations. The practical and maximum use of library materials helps a user in solving a problem of information need.

Internet search engines are internet facilities that assist information seekers to find the required information on the ever-growing web (Ozonuwa et al., 2018). Also, internet search engines are gateways used to track various information needs by students. Some research results show that some students depend on search engines and other online learning resources (Al-Hariri & Al-Hattami, 2015). Accessibility to information materials is one of the prerequisites of information utilization. Therefore, the effectiveness of a library is determined by the extent to which users can access their information resources using the provided retrieval tools to retrieve and utilize information.

3. Methodology

The study investigated information retrieval tools as predictors for information resources utilization among academic staff in the University of Port Harcourt. A descriptive survey design was adopted for the study. The population of the study includes all the 557 academic staff that are duly registered in the University of Port Harcourt Library, for the academic session of 2018/2019 (University of Port Harcourt Library Registration Data, 2019). A sample of 393 respondents across sexes were randomly sampled using the minimum suitable sample size from the population by Kpolovie (2018). The author utilized a self-constructed instrument titled “Information Retrieval as Predictors for Information Resources Utilization Scale” (IRPIRUS). Data was collected using a structured questionnaire administered to a select population. The instrument was administered on a face-to-face basis. Data were analyzed using both simple and multiple regression while Analysis of Variance (ANOVA) associated with regression was used for testing null hypotheses at 0.05 alpha level.

4. Data analysis and discussion

4.1 Answering Research question

Research Question 1: What extent does Online Public Access Catalogue (OPAC) influence information retrieval among academic staff in the University of Port Harcourt?

Table 1 reveals that the Mean (\bar{X}) scores of OPAC and information retrieval are 3.50 and 2.81 respectively, which is greater than the criterion mean (\bar{X}) of 2.50 indicating that there is the influence of OPAC on information retrieval among academic staff in University of Port Harcourt.

Table 1. Mean (\bar{X}) Score of influence of Online Public access on information retrieval among academic staff in University of Port Harcourt

Variable	\bar{X}	St.D	Criterion Mean	Result
OPAC	3.50	0.52	2.50	Positive Influence
Information Retrieval	2.81	0.48		

Research Question 2: What extent do online databases influence information retrieval among academic staff in the University of Port Harcourt?

Table 2 shows that the Mean (\bar{X}) scores of online databases and information retrievals are 3.33 and 2.81 respectively, which is greater than the criterion mean (\bar{X}) of 2.50. This means that there is a positive influence of online databases on information retrieval among academic staff at the University of Port Harcourt.

Table 2. Mean (\bar{X}) score of influence of Online database on information retrieval among academic staff in University of Port Harcourt

Variable	\bar{X}	St.D	Criterion Mean	Result
Online Database	3.33	0.51	2.50	Positive Influence
Information Retrieval	2.8_1	0.48		

Research Question 3: How do Internet search engines influence information retrieval among academic staff in the University of Port Harcourt?

Table 3 x-rays that the mean (\bar{X}) scores of Internet search engines and information retrieval are 2.56 and 2.81 respectively, which is greater than the criterion mean (\bar{X}) of 2.50 showing that there is a positive influence of Internet search engines and information retrieval among academic staff in University of Port Harcourt.

Table 3. Mean (\bar{X}) score of influence of search engine on information retrieval among academic staff in University of Port Harcourt

Variable	\bar{X}	St.D	Criterion Mean	Result
Search Engine	2.56	0.47	2.50	Positive Influence
Information Retrieval	2.81	0.48		

Research Question 4: Does the combined effect of retrieval tools (OPAC, Online Databases and Internet Search Engines) influence information retrieval among staff in the University of Port Harcourt?

Table 4 reveals that the mean (\bar{X}) scores of combined retrieval tools (OPAC, On databases and Internet search engines) and information retrievals are 3.04 and 2.81 respectively, which is greater than the criterion mean (\bar{X}) of 2.50. This indicates that there is a positive influence of the combined retrieval tools (OPAC, Online-databases, and Internet search engines) and information retrieval among academic staff of the University of Port Harcourt.

Table 4. Mean (\bar{X}) scores of combined retrieval tools (OPAC, Online Databases and search engines) on information retrieval among staff in University of Port Harcourt.

Variable	\bar{X}	St.D	Criterion Mean	Result
Combined retrieval channels (OPAC, electronic databases and Internet search engines)	3.04	0.50	2.50	Positive Influence
Information Retrieval	2.81	0.48		

4.2 Test of hypotheses

Table 5 above showed that OPAC obtained a relationship coefficient of 0.814 which indicates a positive relationship. In the interest of the study, it was discovered that OPAC obtained an adjusted r square of 0.634 indicating 63.4% effect size of OPAC on the utilization of library resources. The corresponding null hypothesis was tested and the obtained Fishers score (ANOVA) indicates an F of 3.578 which a sig. of 0.000 which is statistically significant at 0.05 alpha level ($F = 3.578, sig. 0.000 < P = 0.05$). Thus, OPAC as a retrieval tool significantly relates and affects the utilization of library resources positively.

Table 5. The extent to which Online Public Access Catalogue (OPAC) influence information retrieval among academic staff in University of Port Harcourt and its significance

S/N	R	Adjusted R Square	F	Sig.	Unstandardized Coefficient	
					B	Std.Error
1	0.814 ^a	0.634	3.578	0.000 ^b	1.208	0.274

a. Predictors: (Constant), Online Public Access Catalogue (OPAC)

Analysis in Table 6 shows that online databases relate positively to information retrieval with a correlation coefficient of 0.756. The coefficient of determination was realized as 54.6% (Adjusted R Square = $0.546 \times 100 = 54.6\%$) indicating 54.6% of variation in information retrieval was accounted for by online databases. Importantly, for the null hypotheses, the obtained F ration of 1.629 was significant at 0.05 alpha level ($F = 1.629$, $Sig = 0.007 < P = 0.05$). The obtained values show that online databases significantly influence information retrieval to a 54.6% rate.

Table 6. The extent to which Online databases influence information retrieval among academic staff in University of Port Harcourt

S/N	R	Adjusted R Square	F	Sig.	Unstandardized Coefficient	
					B	Std.Error
1	0.756 ^a	0.546	1.629	0.007 ^b	0.426	0.333

a. Predictors: (Constant), Online databases

Examining the extent to which Internet search engines influence information retrieval, result from Table 7 shows that there is a correlation coefficient of 0.571 between Internet search engines and information retrieval, indicating a positive correlation. Also, the coefficient of determination was obtained as an Adjusted R square of 66.0% indicating the influence effect of Internet search engines on information retrieval. Furthermore, the F ration obtained as 0.846 with a sig of 0.036 was below 0.05 alpha level showing a statistically significant influence of search engines on information retrieval. Thus, the null hypothesis showed that there is no significant influence of search engines on information retrieval among academic staff at the University of Port Harcourt was rejected.

Table 7. The extent to which Internet search engines influence information retrieval among academic staff in University of Port Harcourt

S/N	R	Adjusted R Square	F	Sig.	Unstandardized Coefficient	
					B	Std.Error
1	0.571 ^a	0.660	0.846	0.036 ^b	0.426	0.256

a. Predictors: (Constant), Internet search Engines

Table 8 shows the result of the tested combined effect of the retrieval tools of OPAC, online databases, and Internet search engines and their influence on the information retrieval process. The trio of OPAC, online databases, and Internet search engines obtained a correlation coefficient of 0.847 with the information retrieval process. This coefficient of relationship indicates a high positive relationship. For the purpose of the research question, the effect of OPAC, online databases, and Internet search engines on information retrieval was obtained with an Adjusted R square of 0.700, indicating a 70.0% effect rate ($0.700 \times 100 = 70.0\%$). Aptly put, it means that 70.0% of variations that occur in information retrieval are accounted for by the influence of OPAC, online databases, and Internet search engines. In testing the corresponding null hypotheses, the ANOVA associated with the multiple regression showed an F value of 4.840 with a sig of 0.000 which is statistically

significant at an alpha level of 0.05 ($F = 4.840$, $\text{sig} = 0.000 < P = 0.05$). Thus, the 70.0% effect of the pairs of OPAC, online databases, and search engines on information retrieval is statistically significant.

Table 8. The combined effect of retrieval channels and their influence on information retrieval among academic staff in University of Port Harcourt and its significance

S/N	R	Adjusted R Square	F	Sig.
1	0.847 ^a	0.700	4.840	0.000 ^b

a. Predictors: (Constant), OPAC, electronic databases, and Internet search engines

5. Discussion of findings

The finding reveals the positive influence of Online Public Access Catalogue OPAC. online database, Internet search engines on information retrieval among academic staff at the University of Port Harcourt. This implies that online databases, internet search engines, e-journals, e-books, web publishing influences information retrieval among academic staff for effective dissemination of knowledge to the learner. In line with the findings, Edom (2012) agrees that retrieval tools aid the library user to locate, retrieve, and use the needed documents from the library or information from a book or document. The scholar outlined the tools-OPAC, CD-ROMs, Online databases, internet search engines, among others to be effectively utilized by the users (Rout & Pamigrahi, 2018; Kumar, 2015). Findings of this study revealed that OPAC and Online databases are underutilized because it is not easily accessed based on migration from VIRTUAL software to KOHA. This means that for Online Public Access Catalogue (OPAC) and Online databases to be accessed it must be effectively operational, information seekers need to effectively and efficiently utilize its tools to improve human capacity as well as societal development.

Also, Chandra, Sankaranarayana, and Nagarajan (2014), Kinner and Rigda (2009) assert that online databases are reliable content and information technology provider of a track record of hosted solutions, online services delivery and superior communications with partners. This coincided with the findings of Wu and Chen (2012), Ozoneuwe et al. (2018) who posits that since the uninformed is deformed it becomes apparent that all individuals must stay afloat with developmental trends through obtaining the needed information to be informed.

The findings also reveal that there is a positive influence of Internet search engines on information retrieval among academic staff at the University of Port Harcourt. The study also revealed that scholars utilize Internet search engines more often. This implies that the effective utilization of internet search engines, web publishing, management of e-resources by users makes for effective information retrieval among academic staff leading to effective teaching and learning processes geared towards learners' behavioral change. Hong Sinh and Hong Nhung (2012) contended that user behavior will influence the usage of internet search engines leading to effective information retrieval by users. This means that users need to learn ways to use the internet search engine for effective information retrieval resulting in effective dissemination of information to the learner in

the teaching and learning process. Thus, David-West, Effiong, and Ig-Worlu (2014) maintained that at every point in time information resources utilization aids in solving information problems. This is to say that the effective utilization of the internet search engine is a function of effective information retrieval among academic staff of the University of Port Harcourt leading to effective teaching and learning process. The utilization of all the retrieval tools identified in this study (OPAC, online databases, and Internet search engines) make for effective dissemination of knowledge to the learner in the teaching and learning process among academic staff at the University of Port Harcourt. Therefore, the effectiveness of a library is determined by the extent to which users can access and utilize their information resources using the provided retrieval tools.

6. Conclusion and Recommendations

Due to the information explosion, information seekers are looking out for easy access to information. It is therefore pertinent for the library to be very proactive when it comes to information retrieval. The information seekers should be educated on how to make use of information tools, which will enable the user to locate, retrieve, and utilize information effectively.

- (a) There should be a regular orientation for academic staff in order to sharpen their skills on how to use information retrieval tools.
- (b) There should be training and retraining of library staff on the use of information retrieval tools in order to effectively assist academic staff in accessing and retrieving information for research.
- (c) A new library software should be installed in place of KOHA, for wider connectivity and adequate distribution of software.
- (d) Library management should ensure that they always subscribe to online databases and make it available to users for effective information resources utilization.

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