

## ASSESSMENT OF THE USE OF INTERNET SEARCH ENGINES AMONG ACADEMIC RESEARCH OFFICERS OF NERDC IN ABUJA

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### **Abstract**

*Internet search engines have become a major source for accessing educational materials, especially for research purposes. This descriptive survey research studied the use of internet search engines by research officers of NERDC in Abuja. The population for the study comprised all NERDC research officers in Abuja. A census of all the fifty one research officers was used for the study. The instrument used for data collection was designed by the researchers titled "Use of Internet Search Engine Questionnaire (UISEQ)". The instrument was validated by experts in instructional technology and e-learning, academic researchers and measurement and evaluation. A pilot test was conducted on 15 research officers from a sister organization. Cronbach Alpha reliability coefficient for the three sections of the instrument yielded  $r=0.89$ ,  $0.88$  and  $0.87$ . All the fifty-one questionnaires administered were retrieved. Frequency counts, percentages, mean value of 2.50 and ranking order were used in the data analysis. Findings revealed that the research officers' awareness of the existence of search engines was low. Research officers' lack of knowledge and network congestion were among the major challenges faced in the use of internet search engines. It was recommended that the research officers need to deepen their knowledge of existing search engines to access their desired resources.*

**Keywords:** Internet search engines, Awareness, Challenges and research officers

### **Introduction**

The internet is described as the material superhighway whose contents are usually sourced for learning and other forms of activities by the users (Shahibi & Ku-Rusli, 2017). It serves as the global most resourceful channel of passing information from one person to another. The internet is a network of linked computer systems (Imoniwe, 2018) that makes vast information accessible to people (Chirwa, 2018). Information in the form of documents are easily accessed from any website on the internet using a web address. The address to the website where information is sought if not known by the searcher can be found using an internet search engine. An internet search engine basically creeps through the internet for any information that is identified with a search enquiry, then through a distinct process delivers systematized outcomes for search enquiries.

Internet search engine is a computer software that assists clients to access information by choosing from keywords or phrases (Ross & Bruce, 2012). Specific information is better accessed through search engines and this also help in retrieving

masses of important locations. Though researchers (Jansen, and Spink, 2006; Lauren 2012; Reith 2011 and Kim 2013 cited in Inoniwe, 2018) at different times have identified many search engines, Paul (2014) describe the following seven as the main ones: Google, Google scholar, Bing, Yahoo, Blekko, Ask and Web crawler. For an internet search engine to be effective, the user should be able to navigate the web for useful information. Butters (2009), argued that to source, for materials successfully, search engines render necessary support to users. The structures of search engines are used for different purposes such as modest publication, pleasurable activities, academic purposes, and research. Search engines are engaged by different sets of people, for various objectives. When the internet search engine is used, the user is only penetrating a percentage of the pages of the web that is made available to the public. The use of search engines in communication cannot be overemphasized. It has helped in breaking down the barriers created by distance and space. Information is easily accessed by anyone for either academic or research purposes. Jagboro, (2013) believed that search engines assist in sourcing information. Through this means, researchers can access previous and present academic materials for learning and research. Ample materials are accessed for assignments and research.

Other information that search engines can assist to give access to include published government documents, magazines and newspapers, journals and legislative materials and many others. Electronic copies of academic articles, thesis and dissertations, papers presented by authors can be easily accessed. This has enriched the prospect of extensive operational sourcing and recovery of electronic content without stress. Jonan (2010) argued that the explosion of information was brought about through this means (the advent of search engines).

Although search engines are said to be many, most internet users are not aware of the majority of them. This has often restricted users to the very few that they are aware of, thereby leaving out many that would have been of great benefit to them in their search for either learning or research materials. Abdullahi, Muhammad & Amao, (2021) noted that despite the many available search engines, lack of awareness has prevented users like students, lecturers and researchers from exploiting them. Being aware of different search engines is of great importance. No two search engines are exactly alike especially when it comes to content, size and speed. Familiarity with different search engines is advantageous as not all search engines produce precisely the same search opportunities.

Awareness is a vital factor in the utilization of search engines. Taiwo (2009), stated that awareness connotes knowledge or understanding. Its absence impedes the utilization of many search engines. Otemuyiwa, (2016) believed that awareness is the exposure of someone to services and the ability to utilize such services efficiently and effectively. Otemuyiwa, (2016) conducted a study on 'Teachers' awareness and use of mobile phone applications for teaching in public senior secondary schools in Kwali Area Council, Abuja and reported that the public senior secondary school teachers' level of awareness of the use of mobile phone applications for teaching was low. Akporido, (2005) studied 'internet use in Nigeria's suburban setting and reported that most of the students and faculty members who were respondents in the study indicated that they were

familiar with Google and Yahoo search engines. Also, Oresanya, 2018 studied teachers' awareness and use of ICT for teaching in public junior secondary schools in Kwali Area Council, FCT and reported that teachers' level of awareness was high. Therefore, although search engines have been identified as a major source for accessing educational materials on-line, many internet users do not access many of them either because they are not aware of their existence or they want to avoid the challenges of using them. This study is a survey of research officers' awareness of 15 search engines and the challenges of using them.

Research officers' awareness of search engines would precede their use of such search engines. The study by Ozonuwe, Nwaogu, Ifijeh and Fagbonhum (2018) on the assessment of the use of internet search engines in an academic environment revealed that the most used search engines was Google. The use of search engines is not without challenges such as research offices' lack of adequate knowledge on the existence of most search engines, inadequate skill to use search engines, network congestion, retrieving too much information from a single search, irrelevant information nipping, and the cost of using search engines. Ozonuwe, Nwaogu, Ifijeh and Fagbonhum (2018) student users of search engines in Delta State University access too much information from a single search and find it difficult to retrieve needed information as both relevant, irrelevant information are accessed at the same time.

The study purposed to examine research officers' use of search engines and the challenges faced in the use of search engines in conducting research. Specifically, the study sought to:

- i. examine NERDC research officers' awareness of existing search engines;
- ii. determine the search engines used by the research officers for research purposes; and
- i. identify the challenges encountered by the research officers in the use of search engines.

### **Research Questions**

The following research questions were raised for the study:

1. Are research officers of NERDC aware of existing search engines?
2. Which research engines do the research officers use mostly for research purposes?
3. What are the challenges encountered by the research officers in the use of the search engines?

### **Methods**

This paper sought to determine the use of internet search engines among research officers of NERDC using the descriptive survey research design. The population for the study comprised all the Research officers in NERDC, who were all participants in the study. The instrument used for data collection was designed by the researchers and titled "Use of Internet Search Engine Questionnaire (UISEQ)". The instrument had four sections. The first section was on the demographic information of the respondents. Section 2 dealt with the respondents' awareness; section 3 was on the search engines used by the

respondents while section 4 was on challenges encountered in the use of the search engines. The instrument was face validated by three experts in instructional technology and e-learning, three academic researchers and three experts in measurement and evaluation. Their observations were applied to enrich the instrument. A pilot test was conducted on 15 researchers from a sister organization. Cronbach Alpha was employed to determine the reliability coefficient which yielded  $r=0.89$ ,  $0.88$  and  $0.87$  for sections 2, 3 and 4 respectively. The administration of 51 copies of the questionnaire was carried out by the researchers. Retrieval of the instrument was a hundred per cent as the entire 51 copies were dully completed and used for the study. Frequency counts, percentages and ranking order were employed for the analysis of data.

## Results

### Research Questions 1:

Are research officers of NERDC aware of existing search engines?

**Table 1: Researchers' Responses on the Awareness of the Existence of Search Engines**

S/N	Search Engines	Aware		Not Aware		Total	
		Freq.		Freq.		Freq.	
1	Bing	16	31.4	35	68.6	51	100
2	Doaj	2	4	49	96	51	100
3	Duckduckgo	1	2	50	98	51	100
4	Ebsco host	0	0	51	100	51	100
5	Google	51	100	0	0	51	100
6	Googlescholar	20	39.2	31	60.8	51	100
7	Web crawler	0	0	51	100	51	100
8	Mama	0	0	51	100	51	100
9	Schematicscholar	8	15.7	43	84.3	51	100
10	MNS	0	0	51	100	51	100
11	Researcher	4	7.9	47	92.1	51	100
12	Ask jeeves	0	0	51	100	51	100
13	Blekkko	2	4	49	96	51	100
14	Yandex	0	0	51	100	51	100
15	Yahoo	23	45.1	28	54.9	51	100

Table 1 revealed the research officers’ awareness of the existence of the search engines covered in this study for research purposes. The result of the analysis showed that only item 5 (google) had 100 of awareness by the respondents. Items 1, 2, 3, 6, 9, 11, 13 and 15 representing bing, doaj, duckduckgo, google scholar, schematic scholar, researcher, blekko, and yahoo had staggering percentages between 2 and 45.1 while items 4, 7, 8, 10, 12 and 14 representing Ebsco host, Web crawler, mama, MNS, Askjeeves and Yandex had 0. This implies that the research officers were not aware of most of the existing search engines covered in this study. Only google had a 100 awareness following by yahoo with 45.1.

**Research Questions 2:**

Which research engines do the research officers use mostly for research purposes?

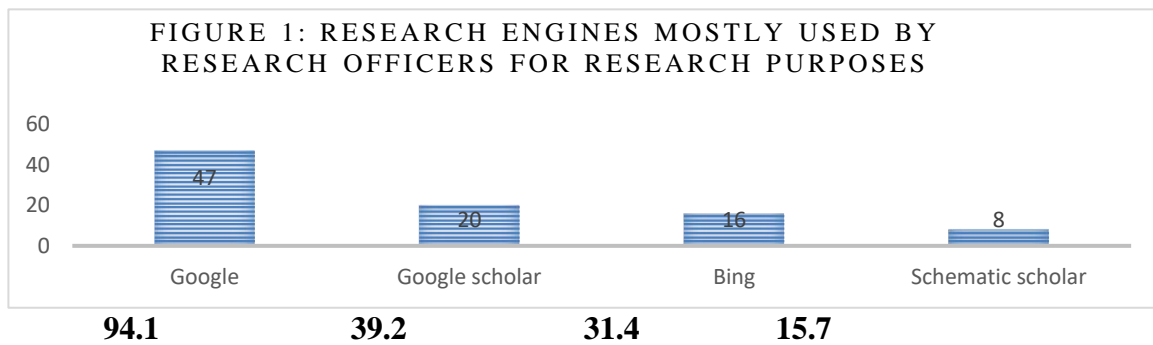


Figure 1 showed that out of the fifteen search engines covered in this study, only four were indicated as being used by the research officers. Item 1, representing google, has the greatest number of users (47 – 94.1), nextare item 2, representing Google scholar, with (20 - 39.2), item 3, representing Bing, with (16 – 31.4) and item 4, representing schematic scholar,with (8 – 15.7).

What are the challenges encountered by the research officers in the use of search engines?

**Table 3: Legends, Meaning, Frequencies and Percentages of the Challenges Encountered by the Research Officers**

S/N	Legends	Meaning	Freq	%
1	Lb	Low bandwidth	26	10
2	Irim	Inability to retrieve indigenous relevant materials	19	7
3	Roisuse	Research officers’ inadequate skill to use search engines	37	14
4	Nc	Network congestion	36	14
5	Uipu	Unrelated information popping up	34	13
6	Amiss	Accessing too much information from a single search	34	13

7	Lakroemse	Lack of adequate knowledge of Research officers on the existence of most search engines	43	17
8	Hcuse	High cost of using search engines	32	17

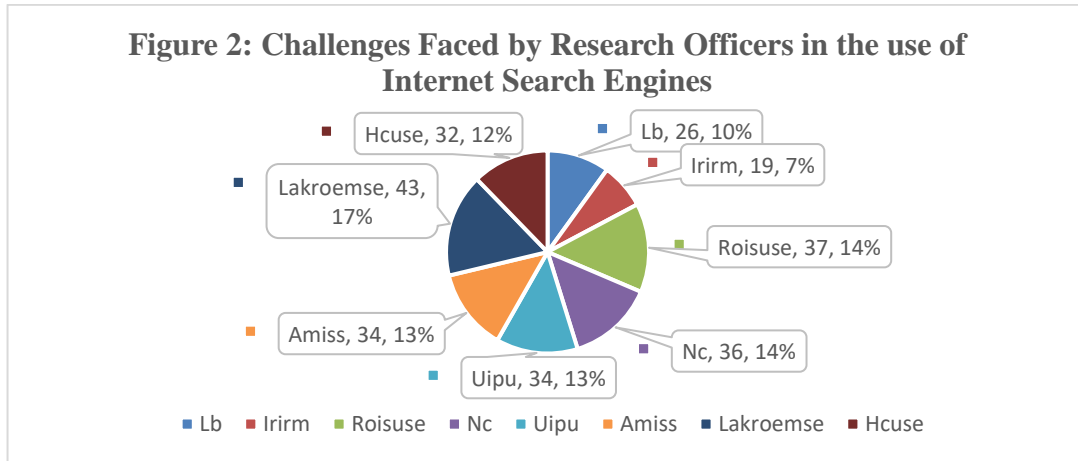


Figure 1 showed a pie chart with legends, frequencies and percentages of the challenges encountered by the research officers, the mean, and the ranking order of the challenges encountered by the research officers in the use of search engines for research purposes.

**Discussion**

The result in Table 1 indicated that the research officers’ awareness of the existence of searching engines, especially the 15 covered in this study, was low. The finding agrees with the report by Imoniwe, (2018) from a study on Awareness and the use of search engines by undergraduate students in Delta State University, that students of Delta State University had a low level of awareness of search engines.

Respondents, in this study, were only aware of eight out of the fifteen search engines. These are Google, Google scholar, Bing, Schematic scholar, Researcher, Yahoo, Scihub and Doaj. This finding is in agreement with Akporido, (2005) who reported from a study on ‘internet use in Nigeria Suburban Setting, that most of the students and faculty members who were respondents in the study indicated that they were aware of and familiar with Google and Yahoo search engines. The finding of this study also agrees with the assertion of Abdullahi, Muhammad & Amao, (2021) that the awareness of many researchers was only on Google and Yahoo.

The result in Table 2 shows that Google was the most used out of the four frequently used search engines in the study. This finding is in agreement with that of Ozonuwe, Nwaogu, Ifijeh and Fagbonhum (2018) that the most used search engine was Google.

On challenges encountered by research officers in the use of search engines for research studies, results indicated that the officers lacked adequate knowledge of most search engines. Other challenges were inadequate search engine skills, network

congestion, accessing too much information from a single search, unrelated information popping up, and high cost of using search engines. Low bandwidth and Inability to retrieve indigenous relevant materials were also found to be minor challenges. These findings agree with Ozonuwe, Nwaogu, Ifijeh and Fagbonhum (2018) that one of the major challenges faced by researchers in the use of internet search engines was accessing too much information from a single search. This causes information overload and difficulty in retrieving the needed information, as both relevant, irrelevant information is accessed at the same time. However, the findings of this study disagreed that low bandwidth was not a major challenge. And that is where the expertise of the research officers' technicality in the use of search engines for sourcing materials for research studies is required

### Conclusion and Recommendations

This study showed that the research officers in this study had low awareness of the different search engines. They mostly used Google and Yahoo and were faced with the challenges of network congestion, accessing too much information from a single search, and high cost of using search engines. From the results of this study, the following recommendations are made:

1. Research officers need to deepen their knowledge of existing internet search engines by reading books on the subject.
3. Research officers should embark on studying how to search for only the needed materials by entering the topic required and either typing (+) between variables or using (" ") after each variable.
4. The volume of results from search engines can be reduced by clicking on the tool button, selecting the period from the options or clicking on customize, then, entering the desired period in years in the provided dialogue boxes.
5. The various network providers should step up their services to the public for effective communication.

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