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INTERNET SEARCH ENGINES' COVERAGE OF LOCAL INFORMATION SOURCES ON SIX TERTIARY INSTITUTIONS IN OYO STATE, SOUTH-WESTERN NIGERIA

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Abstract

This Study comparatively analyzed the extent to which Internet Search Engines (ISEs) index local information sources on six tertiary institutions in Oyo State, Southwestern Nigeria. Specific objectives include: i) building of specific queries and selecting search terms, ii) identifying and selecting some commonly used ISEs, iii) using queries to search the WWW, iv) presenting and iv)reporting the figures of the search results. Controlled practical search experiment was carried out. Comparisons made include subject Areas (ten local information sources), Subject Areas and Oyo State and Comparison of subject Areas for these following six Tertiary Institutions and Oyo State: i)Emmanuel Alayande College of Education, ii) The Polytechnic, Ibadan, iii) Adeseun Ogundoyin Polytechnic, iv) The Oke-Ogun Polytechnic, v) Oyo State College of Education and vi) College of Agriculture and Technology. ISEs used in this study are Bing, Google and Yahoo. The results of the search were as presented in tables and graphs. Google returned the highest local information sources hit in Technology, Education and Culture. Bing came second with its' highest hit in Culture, Education, Religion, Technology and Tourism. Yahoo came third with highest hit in Population and lowest in Indigenous Knowledge. Oyo State, Nigeria was added to the Subject Areas. Google took the lead then Bing and Yahoo. On subject areas on the six institutions:

Keywords: Internet Search Engines, Local Information Sources, World Wide Web, Tertiary Institutions in Oyo State

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Bing returned the highest, then Google and Yahoo. The returns for comparison of Subject Areas Only and Oyo State, Nigeria by the three search engines: Google returned the highest hits. The Study recommended that tertiary institutions in Oyo state should 'leapfrog' stages in ICT and maximize Internet Search Engines' potential for local information sources. Governments should also provide ICT infrastructure, train website developers, information professionals and technicians.

INTRODUCTION

Background to the Study

Ability of tertiary institutions in Nigeria in accomplishing the tripartite goals of teaching, researching and rendering of community services depends on their capacity and capability to access and express information freely. Therefore, accessing, processing, storing and retrieving information are no longer considered luxury commodities but are rather basic needs. However, the number of tertiary institutions in Oyo State to be specific and Nigeria in general with direct link to the internet has expanded rapidly in the past few years. As such, Internet has fast become a hub of information about any topic that lecturers, students and researchers could want. A place to help researchers and scholars find information easily about research topic, term paper, materials for assignment and so on is called "Search Engine". This search engine works a little hard like the "Yellow Pages". Users could type in what they are looking for and the search engine would provide a list of websites where those pieces of information, services or products could be obtained.

Suffice to say, that expanding access to information through the ICT should be a two-way process. While enriching access to global resources it is equally important to promote the web with local-related information. Also, it is noted that too much attention is given to developing the technology and channels for disseminating, rather than the actual content. However, experience especially in Africa shows that accessibility is provided at the expense of developing local content. As such, the production and availability of indigenous content is not guaranteed. Consequently, the information available on the Internet pertaining to activities and ranking of tertiary institutions were dominated overwhelmingly by materials produced by tertiary institutions in the US, Europe and Asia. This partly explains low ranking of tertiary institutions in Oyo State, in Nigeria and in Africa. This is just

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as Oladapo (2006) asserted that experience showed that in Africa access to collection of interconnected documents linked up by hyperlinks and Uniform Resource Locators (URLs) is provided at the expense of developing the local content. As such, the production of indigenous content is not guaranteed.

The popular Internet Search Engines include the following**:** Bing, Yahoo, Duck Duck Go, Startpage.com, Qwant, Swiss cows, Search Encrypt, One Search, Give Water, Ekoru, Ecosia, YouTube, Unsplash, Slideshare, Creative Commons Search, Listen Notes, GIPHY, Wiki.com, Gibiru, StartPage and several others. The dramatic growth in the number Internet Search Engines' content during the recent years appears not to have been matched with the use of web content to advance knowledge in solving local problems. This Study therefore, analyses the extent to which Internet Search Engines cover and index sources of local information on six tertiary institutions in Oyo State, Southwestern Nigeria.

Objectives of the Study

This Study analyzed the extent to which Internet Search Engines cover and index sources of local information on six tertiary institutions in Oyo State, Southwestern Nigeria. The specific objectives include the following.

i. Building of specific queries and selecting search terms from selected subject areas.
ii. Identifying and selecting some of the major and commonly used Internet Search Engines suitable for this Study.
iii. Using queries to search the WWW for information through the identified search engines.
iv. Presenting the figures of the search results.
v. Reporting the findings.

This Study hopes to be one of those seeking development of local content within and outside tertiary institutions and present opportunities to give Internet an indigenous voice. The controlled search experiment would focus on selected terms and search engines. However, what obtains in the Study could be extended to all tertiary institutions in Nigeria, Africa and indeed to other developing countries of the world.

Operational definition of Terms as used in this Study

The following concepts were defined as used in this Study.

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i. *Information:* any communication or representation of knowledge such as facts, data, or opinions in any medium or form, including text, numeric, alpha-numeric, graphic, pictorial, cartographic, narrative or individual forms.
ii. *Information Sources:* can be written, oral, visual, aural, and may include research materials about the needs, views or issues at hand (written, graphic or audio-visual), research and general literature about the situation of people and particular groups (written, graphic or audio-visual), verbal reports about matter relating to CCD, radio, television and Internet reports, stakeholders and specialists.
iii. *Internet:* is a collection of interconnected computer networks, linked by copper wires or fiber-optic cables.
iv. *Local Information:* is the expression of locally owned and adapted knowledge of a community, where the community is defined by its location, culture, language or area of interest.
v. *Local Information Sources:* describes the sources of local information.
vi. *Internet Search Engine:* a computer program that retrieves documents or files or data from a internet, database or from a computer. A search engine is either a Robot or a directory.
vii. *World Wide Web (WWW):* is a collection of interconnected documents, linked by hyperlinks and URLs (Uniform Resource Locators).

Literature Review

The literature is chockfull of scholarly materials on use of Internet search engines by academics. For example, Nwokedi & Sani (2010) investigated the Internet Search Engine use behaviour and experiences of lecturers at the University of Jos. 148 academic staff members in the Faculty was adopted for the research using descriptive survey. The instrument used for data collection was questionnaire. The findings revealed that Google and Yahoo were the most popular search engines among the lecturers. However, the academics admitted that they learned how to use the search engines through seminars and workshops organized by the University management. The findings further revealed that the lecturers relied heavily on the search engines for their academic activities. However, only few of the lecturers were aware of the Advanced and Boolean Search Options provided by the engines, the lecturers also indicated that coping with too much information hits and formulating search terms were some of their major problems in using the

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search engines. It was therefore, recommended that the University Management should continue to organize workshops and seminars for the lecturers on how to use the various search engines to effectively access information in the internet.

In another article titled "Local Internet Content: the Case of Ethiopia" Atnafu (2014) identified the problems and analyzed the status of local Internet content in the Ethiopian context. It has selected a metrics of measuring local content availability and used the same to present what is available as local content for Ethiopia. The work presents some comparisons to other African Countries to show the status of Ethiopian local content availability. With no adequate previous related work on this topic, the work, as a first initiative, has given a broad presentation of the local content availability and development in Ethiopia. The output of the research is expected to: serve in designing appropriate policies and strategies for local Internet content development and to promote local content usage for the socioeconomic development of the country.

Scholars such as Sivasubramanian and Gomathi (2019) attempted to analyse the perspective of the search engines among the faculty members of autonomous colleges in the Coimbatore. The study also analysed the level of computer and internet proficiency of the faculty members, purpose of using the search engines and evaluation of the search engines. It was revealed that most of the respondents were using the Google, Bing, Baidu and Yahoo. Moderate level of preference was given to Ask.com, Aol.com, lesser people were using Altavista and Web Crawler ranked eighth.

Finally, Cavus and Alpan (2010) revealed the most widely used search engine among university students in Near East University. The results obtained were analyzed using descriptive methods. The results indicated that Google was the most widely used search engine by students. To enlarge the scope of the research, number of universities and students might increase. The results of this study added empirical data to the relevant field and are expected to help computer science students, experts, instructors, and everyone else who wants to reach information via the internet.

Methodology

The aim of this study is to comparatively analyse Internet Search Engines' coverage of local information sources on six tertiary institutions owned and financed by Oyo State Government. The institutions in no particular order are the following: i) Emmanuel Alayande College of Education, Oyo, ii) The Polytechnic

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Ibadan, Ibadan, iii) Adeseun Ogundoyin Polytechnic, Eruwa, iv) The Oke-Ogun Polytechnic, Saki, v) Oyo State College of Education, Lanlate and vi) College of Agriculture and Technology, Igboora. In realization of this aim, this study was investigative in its approach. Attempt was made to analyse the coverage of local information sources on the six tertiary institutions by selected Internet search engines' *viz-a-vis* the content of searchable web and hence identifies bias or disparities if any, through comparison of search results for the search processes to be conducted. The main objects of investigation were the figures reported by search engines' during practical experiments.

Data collection instrument and procedures

In this segment the practical search experiment was carried out. Various means and tools were employed for the purpose of gathering data so as to ensure credibility and reliability of the discussion of findings and the conclusion that was drawn thereafter in the study. This actual search processes were conducted in the form of a controlled experiment. Inputs were gotten from different sources to support the search experiment. This helped in arriving at a good number of options required to make up for the formulation of search terms for the search processes. All these were done to meet up the aim and objectives highlighted earlier on in the study.

Selection of Search Terms and Search Engines'

For the purpose of this study, examining a summarized list of subject areas or categories arrived at the search terms used for the search process. Most of the common Internet search engines' have predefined list of directories of topics for the different categories of field of endeavor and it is made available to users for their information search need. The search queries used for the search process took the form of topical search queries in which subject categories (e.g. community development and Oyo State), were used as keywords in the queries.

The Search Process

The search process herein refers to actual search activity undertaken after the search terms and search engines' to be used had been determined. The search process was directed at comparatively analyzing Internet search engines' coverage of local information sources on the six tertiary institutions. To this end, three main comparisons were made.

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- Comparison of search results returned for using queries containing:
  - The subject Areas Only,
  - The Subject Areas Only and Oyo State, Nigeria.
  - Subject Areas Only and each of the Tertiary Institutions.
- Comparison of Subject Areas Only and Oyo State, Nigeria
- Comparison of subject Areas Only for Tertiary Institutions and Oyo State, Nigeria.

In achieving the above stated comparisons, the advanced search aspect of the search engines was exploited. This advanced search has options to enable one define some other properties for the search query and of typical relevance in this particular experiment is the option to request for the search terms to be contained in the title of the returned sources. This is so to avoid having sources that just mentioned the terms in passing within their content. It is assumed that for the terms of the query to be in the title of the sources and then the content of the sources is definitely about the keywords that make up the query. The selected search engines were those with advanced search options that have the required features i. e. are able to restrict search to sources with the query terms in the titles. The internet search engines used in this study are Bing, Google and Yahoo.
It is to be noted therefore, that the study focused on information sources that corresponds to the queries used, being in mind however that there are information sources that may have been titled differently and still mainly talking about the same topic used in the queries but which the queries could not cater for. To capture every information source on the surface web or the entire web that relates to a subject area and the same time pertains to Oyo State, Nigeria. The number of returned sources corresponding to each search was taken down as the search result for each search query as used for each search engine. This is possible because each of the search engines can report the number of web pages found for each search session. In the presentation and analysis of findings, tables, cross tabulations, graphs were drawn to present the results and these guided the discussion of findings and conclusion made at the end of this study.

Actual search experiment: Comparative Analysis of Internet Search Engines' coverage of Local Information Sources

Selected search Terms and Search Engines

In building the queries, ten subject areas were selected from the list of important types of information respondents often use Internet Search Engines to search about each of the tertiary institutions owned and financed by Oyo State, Government. The local information sources of subject areas were: i) Community Development, ii) Culture, iii) Education, iv) Geography, v) Corona Virus Disease, vi)

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Population, vii) Religion, viii) Technology, ix) Tourism and x) Indigenous Knowledge. The three commonly used Internet Search Engines used are Bing, Google and Yahoo. The results of the actual controlled search process of subject areas were as presented in Table 1.

Subject Areas only

Table1: Subject Areas only (Bing, Google and Yahoo)

S/N	Subject	Bing	Google	Yahoo
1.	Community Development	953,000,000	4,620,000,000	111,000,000
2.	Culture	2,440,000,000	9,660,000,000	2,435,032,704
3.	Education	2,430,000,000	15,589,000,000	915,098,112
4.	Geography	857,000,000	2,970,000,000	773,000,000
5.	Corona Virus Disease	620,000,000	244,000,000	613,000,000
6.	Population	2,410,000,000	4,990,000,000	2,950,000,000
7.	Religion	2,430,000,000	4,920,000,000	1,155,098,112
8.	Technology	2,430,000,000	16,650,000,000	1,215,098,112
9.	Tourism	2,430,000,000	3,830,000,000	2,550,000,000
10.	Indigenous Knowledge	41,000,000	350,000,000	15,000,000

Source: Actual search Experiment (conducted from 20th to 25th, January, 2023).

To appreciate the trend, the data therein contained in Table 1 were presented graphically in Figure 1.

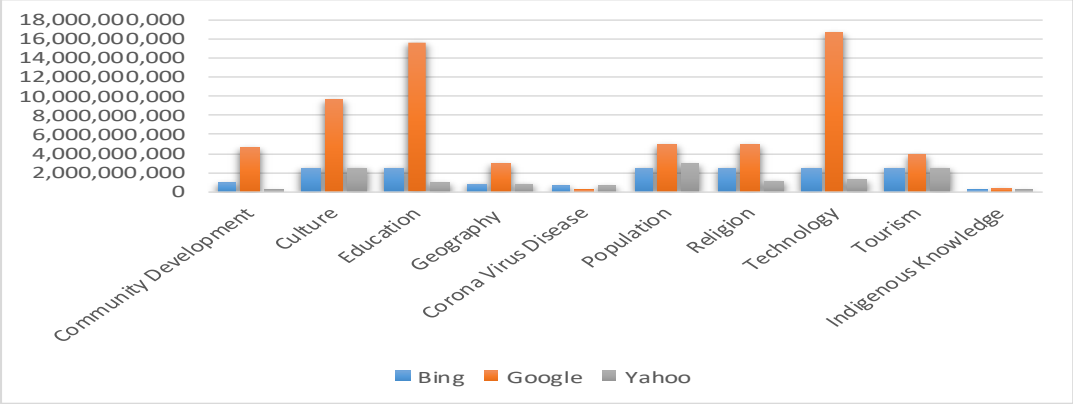

Fig 1: Subject Areas only (Bing, Google and Yahoo)

At a glance, in both Table 1 and Figure 1, Google returned the highest hit of 16.65 billion (16,650,000,000) for technology, followed by Education 15.58 billion (15,589,000,000) and 9.66 billion (9,660,000,000) for Culture. These are quite a

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vast amount of data being the greatest in the search experiment. In the same experiment, Google returned only 244 million hits (244,000,000) for Corona Virus Disease and 350 million (350,000,000) for Indigenous knowledge. Another search engine Bing, returned 2.44 billion (2,440,000,000) hits for culture and 2.43 million (2,430,000,000) each for Education, Religion, Technology and Tourism respectively. Interestingly, Yahoo the third search engine returned its highest hit of 2.95 billion (2,950,000,000) in Population and lowest hit of 15million (15,000,000) in Indigenous Knowledge.

Subject Areas only and Oyo State, Nigeria

Table 2: Subject Areas Only and Oyo State, Nigeria (Alta Vista, Google and Yahoo)

S/N	Subject Area only and Oyo State	Bing	Google	Yahoo
1.	Community Development	24,800,000	4,760,000	30,900,000
2.	Culture	16,500,000	12,100,000	13,300,000
3.	Education	24,300,000	11,300,000	13,800,000
4.	Geography	8,320,000	1,040,000	19,100,000
5.	Corona Virus Disease	21,500,000	815,000	2,850,000
6.	Population	8,600,000	4,760,000	5,900,000
7.	Religion	12,000,000	8,320,000	8,090,000
8.	Technology	23,700,000	101,000,000	12,400,000
9.	Tourism	9,780,000	16,800,000	16,700,000
10.	Indigenous knowledge	10,600,000	423,000	8,990,000

Source: Author's Analysis, January, 2023.

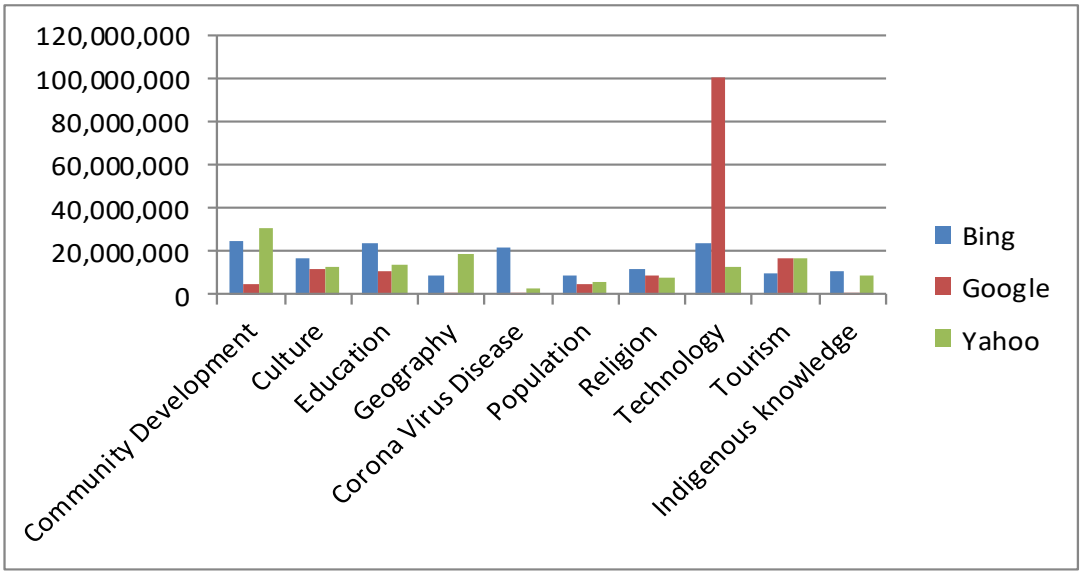

Fig 2: Subject Areas Only and Oyo State, Nigeria (Alta Vista, Google and Yahoo)

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The next stage of the search experiment added Oyo State, Nigeria to the Subject Areas. The returns by Bing, Google and Yahoo were as presented in Table 2 and graphically shown in Fig 2. Google also took the lead with its highest return of 101 million (101,000,000) in Technology and returned just 423,000 hits for Indigenous Knowledge. Bing had its highest hit of 24.8 billion (24,800,000) in Community Development, 24.3 million (24,300,000) in Education and 21.5 million (21,500,000) in Corona Virus Disease. Yahoo had its highest of 30.9 million (30,900,000) in Community Development, 19.1 million (19,100,000) in Geography and 16.7 million (16,700,000) in Tourism. Yahoo returned the least hit of 2.85 million (2,850,000) in Corona Virus Disease, 5.9 million (5,900,000) in Population and 8.09 million (8,090,000) in religion.

Subject Areas Only and Tertiary Institutions in Oyo State, Nigeria

Table 3: Subject Areas only and Tertiary Institution in Oyo State, Nigeria (Bing)

S/N	Subject Areas	EACOED	TPI	AOPE	TOOPS	OSCEL	CATI
1.	Community Development	16,900,000,	136,000,000	5,250,000	9,690,000	37,800,000	36,400,000
2.	Culture	43,800,000	86,200,000	22,400,000	3,820,00	72,300,000	82,300,000
3.	Education	44,500,000	2,190,00	1,100,000	236,000	64,800,000	88,700,000
4.	Geography	26,600,000	734,00	261,000	110,000	56,200,000	71,000,000
5.	Corona Virus Disease	22,300,000	10,700,00	9,280,000	2,290,000	32,900,000	31,500,000
6.	Population	28,600,000	50,200,000	342,000	1,020,000	56,000,000	72,600,000
7	Religion	34,800,000	55,800,000	3436,000	30,500,000	65,600,000	74,300,00
8.	Technology	46,400,000	89,100,000	1,040,000	58,600,000	60,400,000	79,100,000
9.	Tourism	28,500,000	48,400,000	337,000	938,000	60,400,000	73,500,000
10.	Indigenous Knowledge	11,300,000	71,200,000	1,630,000	29,400,000	29,400,000	23,600,000

Source: Author's Analysis, January, 2023.

Key

EACOED = Emmanuel Alayande College of Education, Oyo.

TPI = The Polytechnic Ibadan.

AOPE = Adeseun Ogundoyin Polytechnic Eruwa.

TOOPS = The Oke-Ogun Polytechnic, Saki.

OSCEL = Oyo State College of Education, Lanlate.

CATI = College of Agriculture and Technology, Igboora.

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From Table 3, Bing search engine returns of subject areas and each of the six tertiary institutions in Oyo State, Nigeria were as contained in Table 3. Bing returned the highest of 136 million (136,000,000) at The Polytechnic, Ibadan (TPI) and Community Development, 89.1 million (89,100,000) in Technology and 86.2 million in Culture. The search engine returned the lowest hits of 236,000 and 938,000 in Education and Tourism at The Oke-Ogun Polytechnic, Saki (TOOPS).

Subject Areas Only and Tertiary Institutions in Oyo State, Nigeria

Table 4: Subject Areas only and Tertiary Institutions in Oyo State, Nigeria (Google)

S/N	Subject Areas	EACOED	TPI	AOPE	TOOPS	OSCEL	CATI
1	Community Development	34,500	648,000	24,200	11,400	26200	24500
2	Culture	15,700	1,050,000	4,080	76,100	26,200	70,300
3	Education	169,000	1,640,000	75,880	154,000	7,920	81,300
4	Geography	19,000	709,000	4,240	18,700	91,800	12,600
5	Corona Virus Disease	4,140	228,000	23,900	8,350	36,300	37,100
6	Population	48,200	444,000	18,500	28,400	14,200	70,200
7	Religion	33,200	980,000	5,700	60,800	71,900	141,000
8	Technology	118,000	1,170,000	68,000	148,000	82,900	54,400
9	Tourism	30,600	974,000	25,600	55,800	34,500	23,850
10	Indigenous Knowledge	10,800	138,000	1,150	11,400	16,410	10

Source: Author's Analysis, January, 2023.

From Table 4, Google search engine returned its highest hits of 1.6 million (1,640,000) at The Polytechnic, Ibadan (TPI) at Education as Subject Area. At the same institution, Google returned 1.1 million (1,170,000) with Technology as Subject Area. Google also returned its least hit of just 10 at College of Agriculture and Technology, Igboora (CATI) with Indigenous Knowledge as it Subject Area,

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1,150 at Adeseun Ogundoyin Polytechnic, Eruwa also with Indigenous Knowledge as its Subject Area.

Table 5: Subject Areas Only and Tertiary Institutions in Oyo State, Nigeria (Yahoo)

S/N	Subject Areas	EACOED	TPI	AOPE	TOOPS	OSCEL	CATI
1	Community Development	55,500,000	139,000,000	7,410,000	12,400,000	38,000,000	31,800,000
2	Culture	57,000,000	87,700,000	2970,000	4,730,000	27,100,000	21,900,000
3	Education	42,600,000	2,570,000	1,600,000	265,000	25,200,000	70,300,000
4	Geography	36,300,000	765,000	293,000	128,000	25,300,000	53,000,000
5	Corona Virus Disease	23,900,000	10,600,000	12,700,000	3,150,000	32,900,000	67,100,000
6	Population	39,100,000	10,400,000	417,000	1,000,000	25,000,000	70,200,000
7	Religion	45,200,000	49,3000,000	1,660,000	46,000,000	22,400,000	12,200,000
8	Technology	52,900,000	83,200,000	1,360,000	73,200,000	27,000,000	4,470,000
9	Tourism	38,700,000	49,700,000	396,000	963,000	27,300,000	73,500,000
10	Indigenous Knowledge	39,000,000	70,900,000	2,140,000	54,200,000	29,700,000	23,600,000

Source: Author's Analysis, January, 2023.

In Table 5, Yahoo returned its highest hits of 138 million at The Polytechnic, Ibadan with Community Development as The Subject Area, followed by 87.7 million in the same institution with Culture at its Subject Area and 67.1 million at College of Education, Igboora with Corona Virus Disease as its Subject Area. The lowest hits of 128,000 were returned at The Oke-Ogun Polytechnic, Saki (TOOPS) with

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Geography as its Subject Area; 293,000 at Adesun Ogundoyin Polytechnic, Eruwa (AOPE) with Geography as Subject Area and 396,000 at AOPE with Tourism as Subject Area.

Comparison of Subject Areas Only and Oyo State, Nigeria (Bing Google and Yahoo)

Table 6: Comparison of Subject Areas Only and Oyo State, Nigeria (Bing Google and Yahoo)

S/N	Subject	Bing		Google		Yahoo	
		Subject Area only	*Oyo State*	*Subject Area only*	*Oyo State*	*Subject Area only*	*Oyo State*
1.	Community Development	953,000,000	24,800,000	4,620,000,000	4,760,000	111,000,000	30,900,000
2.	Culture	2,440,000,000	16,500,000	9,660,000,000	12,1000,000	2,435,032,704	13,300,000
3.	Education	2,430,000,000	24,300,000	15,589,000,000	11,300,000	915,098,112	13,800,000
4.	Geography	857,000,000	8,320,000	2,970,000,000	1,040,000	773,000,000	19,100,000
5.	Corona Virus Disease	620,000,000	21,500,000	244,000,000	815,000	613,000,000	2,850,000
6.	Population	2,410,000,000	8,600,000	4,990,000,000	4,760,000	2,950,000,000	5,900,000
7.	Religion	2,430,000,000	12,000,000	4,920,000,000	8,320,000	1,155,098,112	8,090,000
8.	Technology	2,430,000,000	23,700,000	16,650,000,000	10,1000,000	1,215,098,112	12,400,000
9.	Tourism	2,430,000,000	9,780,000	3,830,000,000	16,800,000	2,550,000,000	16,700,000
10.	Indigenous Knowledge	41,000,000	10,600,000	350,000,000	423,000	15,000,000	8,990,000

Source: Author's Analysis, January, 2023.

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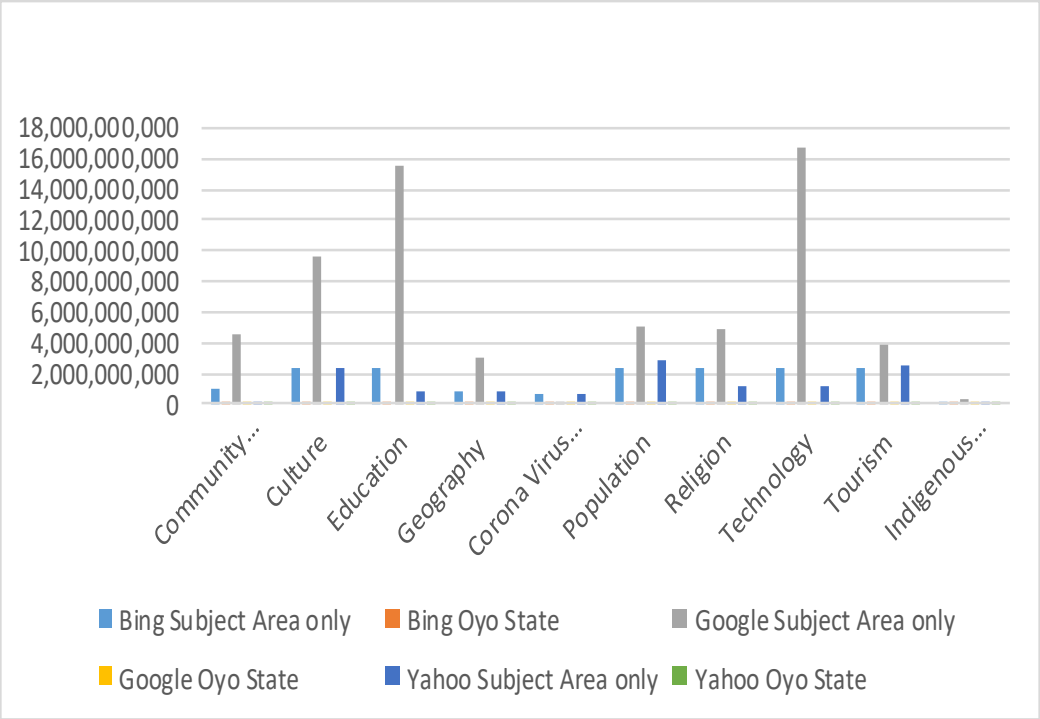

Fig 3: Comparison of Subject Areas Only and Oyo State, Nigeria (Bing Google and Yahoo)

The returns for comparison of Subject Areas Only and Oyo State, Nigeria by the three search engines: Bing Google and Yahoo were presented in Table 6 and as graphically shown in Figure 3 respectively. At a glance, Google returned the highest hits of 16.65 million (16,650,000,000) with technology at its Subject Area followed by 15.58 million (15,589,000,000) with Education and 9.66 million (9,660,000,000) with Culture as Subject Areas. Google as returned its lowest hits of 423,000 with indigenous Knowledge as its Subject Area and 815,000 with Corona Virus Disease as its Subject Area.

Discussion of Topical findings

As regards Subject Areas only returned by Bing, Google and Yahoo, Google returned the highest local information sources hit for technology, followed by Education and for Culture. Bing came second with its returned hit in Culture Education, Religion, Technology and Tourism. Interestingly, Yahoo the third search engine returned its highest hit in Population and lowest hit in Indigenous

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Knowledge. At the next stage of the search experiment, Oyo State, Nigeria was added to the Subject Areas. Google also took the lead with its highest return in local information sources in Technology and Indigenous Knowledge. Bing had its highest hit in Community Development, in Education and in Corona Virus Disease. Yahoo had its highest in Community Development, in Geography and in Tourism. Yahoo returned the least hit in Corona Virus Disease, in Population and in Religion. This is in line with Nwokedi & Sani (2010) who asserted that Google and Yahoo were the most popular Internet Search Engines among the lecturers.

In the three search engines' returns of local information sources on subject areas and each of the six tertiary institutions in Oyo State, Nigeria, Bing returned the highest hit at The Polytechnic, Ibadan on local information sources on Community Development, Technology Culture. It returned the lowest hits in local information sources on Education and Tourism at The Oke-Ogun Polytechnic, Saki. Google search engine returned its highest hits on local information sources at The Polytechnic, Ibadan at Education.as Subject Area of local information sources followed by Technology. Google also returned its least hit at the College of Agriculture and Technology, Igboora with Indigenous Knowledge at Adeseun Ogundoyin Polytechnic, Eruwa also with Indigenous Knowledge as Subject Area of local information sources. Yahoo returned its highest hits at The Polytechnic, Ibadan with Community Development as local information source of the Subject Area, in the same institution with Culture at its Subject Area and at College of Agriculture and Technology, Igboora with Corona Virus Disease as its Subject Area. The lowest hits were returned at The Oke-Ogun Polytechnic, Saki with Geography as its Subject Area; followed by Adesun Ogundoyin Polytechnic, Eruwa with Geography as Subject Area and at AOPE with Tourism as Subject Area of local information source.

As regards the returns for comparison of Subject Areas Only and Oyo State, Nigeria by the three search engines, Google returned the highest hits with technology at its Subject Area of local information sources followed by Education and Culture. Google returned the lowest hits with indigenous Knowledge as its Subject Area and with Corona Virus Disease as its Subject Areas of local information source.

Conclusion

This Study concluded that the unprecedented explosion of information occasioned by the use of Internet search engines in the recent years should be

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matched with the use of web content to advance knowledge in solving local problems.

Recommendations

This Study puts forward the following recommendations.

i. Tertiary institutions of education in Oyo State to be specific and in Nigeria in general should be made to 'leapfrog' stages in ICT.

ii. Tertiary institutions should endeavor to maximize the Internet Search Engines' potential for capturing, processing, storing and disseminating local information sources on subject areas in their pursuit of teaching, learning and community as well as in the overall sustainable development of the country.

iii. Greater efforts should be put in place to provide necessary infrastructure for ICT.

iv. Train users in Web site development and usage of Internet Search Engines.

v. Internet search engines' users should be taught about building of search queries as well as providing the enable environment for creation and recognition of sites useful local content-building service.

vi. Governments should train more Information professionals and technicians.

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