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## Poor Webometrics Ranking of Nigerian Higher Institutions: Causes, Implications and Solutions.

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## **Introduction**

### **Background of Tertiary Institutions in Nigeria**

#### **Universities**

According to the National University Commission (NUC), which oversees the administration of Nigerian University education operating in Nigeria, there are 165 universities in Nigeria. This is made up of 43 federal universities, 47 state universities and 75 private universities. These institutions are listed on the NUC official website as at January 2<sup>nd</sup>, 2019 (<http://nuc.edu.ng>). Majority of universities in Nigeria are privately owned by religious bodies, corporate bodies, individuals or groups. Nigerian universities have grown from only one university in the country in 1948, that is, the University College of Ibadan, which was originally an affiliate of the University of London to 165 in December 31<sup>st</sup>, 2018.

#### **Colleges and Polytechnics**

In addition to universities, there are a large number of polytechnics and colleges under the purview of the National Board of Technical Education (NBTE), the federal government body tasked with overseeing technical and vocational education. As at January 3<sup>rd</sup>, 2019, the NBTE recognized and listed in its website <https://net.nbte.gov.ng/> 28 federal polytechnics, 43 state polytechnics, 51 private polytechnics, 27 accredited specialized institutions, 34 colleges of agriculture, 38 colleges of health science and technology. **These** institutions were established to train students for technical and mid-level employment.

### **Background of Webometrics Ranking**

The Cybermetrics Lab (organization responsible for webometrics ranking) is a research group belonging to the largest public scientific body in Spain, the National Research Council (Consejo Superior de Investigaciones Científicas, CSIC) that is amongst the top 20 most important research centers of the world (Aguillo,2014). Historically, Aguillo (2014) narrated that the Lab started to work on metrics for evaluation of science and technology about 20 years ago, moving from bibliometrics to webometrics in mid-nineties when Internet became an important tool for scholarly communication. The Lab have had a relevant role in the developing of the discipline known as cybermetrics or webometrics, including the edition of the electronic journal

Cybermetrics, first published in 1997, devoted entirely to this scientific field. Furthermore, he noted that about the first years of 2000 decade the Lab developed several collection tools for automatic data extraction from the Web and tested the reliability and usefulness of individual web indicators. Very importantly, the publication in 2003 of the Shanghai Ranking inspired the Lab to adopt two relevant innovations of that initiative namely:

1. To develop a composite indicator combining different web variables; and
2. To build an independent ranking of universities using that composite indicator.

The first edition of the webometrics ranking was published in 2004, and was the second global ranking of the current generation (Aguillo, 2014).

### **Nigerian Higher Institutions ranking**

According to <http://www.webometrics.info/en/africa/nigeria?page=2> two hundred and fifty three (253) Nigerian higher institutions were ranked.

The table below shows the rankings of top ten Nigerian higher institutions in Africa and the world:

Name of Institution	Ranking (Nigeria)	Ranking (Africa)	Ranking (World)
University of Ibadan	1	12	1,076
University of Nigeria Nsukka	2	37	2,189
Obafemi Awolowo University	3	39	2,232
Covenant University	4	42	2,253
Ahmadu Bello University	5	61	2,650
University of Lagos	6	62	2,673
University of Illorin	7	67	2,850
University of Port-Harcourt	8	71	2,897
Federal University of Technology Minna	9	78	3,067
Federal University of Technology Akure	10	79	3,098

Source: [www.webometrics.info](http://www.webometrics.info) July 2018 edition.

Delta State University Abraka ranks 31 in Nigeria and 5677 in the world trailing behind Ebonyi State University which ranks 27 and 4940 in Nigeria and the world respectively.

## **Statement of the Problem**

It is disheartening to discover higher institutions from most countries of the world being ranked far higher than Nigerian universities, polytechnics, and colleges of education as revealed by the July 2018 edition of webometrics world university ranking. It is more worrisome to state that no university or other higher institution in Nigeria was ranked in top ten higher institutions or universities in Africa. In fact, only one Nigerian university which is the University of Ibadan (ranked 12) was ranked in top 35 universities in Africa. Considering the poor show of Nigerian higher institutions, the first question that comes to mind is “is Nigeria truly the giant of Africa in the eyes of the global education community?”

The poor or low ranking of Nigerian higher institutions by webometrics and other globally acceptable ranking authorities if unchecked would spell doom for Nigerian educational sector and the products of these higher institutions in the global arena.

Ati (2017) attributes poor ranking to low visibility on the web and inactivity of scholars and researchers to contribute meaningfully to the world of knowledge. In most cases, institutional framework for effective activity is deficient and most research information does not go beyond the four walls of the institution.

It's compulsory for faculty members, researchers, scientists and academicians to know that the worldwide web (www) has emerged as an information hub for conducting research and scientific investigations and a platform for communicating research results and scientific findings to intended audience all over the world in spite of geographic location and distance. The web apart from giving scholars the opportunity to reach larger audience, institutional performance is measured by the activities of the institution that can be accessed from the web. Thus, what an institution makes available and is accessible on the web is what the ranking authorities consider to rank the institution. Ranking authorities do not visit universities they rank physically, but their web presence is what counts. That implies that an institution may parade the highest number of quality academicians coupled with robust infrastructure, publishing regularly and adequately in printed and non open access journals, but what the institution has on the web is few, the ranking will be very low. Webometrics is interested in knowing not only the inventions and achievements you are making, but also interested in knowing how you are communicating these achievements to people all over the world and more so the impacts of your achievements on peoples' lives.

In other words, the World Wide Web is a major tool being used among scholars for enhancing online visibility and publicity of academic findings. The Web has become a key medium for promoting and developing the academic, scientific and educational competence of any educational institution. The Web can hence be used as a way to attract students, scholars and funding from other places, spreading the prestige of these educational institutions all over the world. This has provoked competition among universities to achieve an advantageous visibility on the Web and to improve their position in search engine results (Ortega and Aguillo, 2009).

As a matter of fact, scholars are turning to the Internet to find scientific information and academic institutions are devoting more and more resources to improving their presence on the web. Web presence is a collection of Web files on a particular subject that includes a beginning file called a home page. Webometrics describes the study of web based content using quantitative techniques.

The ranking of higher institutions has a role to play in the way the institutions are viewed in the global academic community. Primarily, webometrics ranking is a measure of the Quality of: Instruction or teaching, Quality of research, Infrastructure and Publication and helps in marketing and PR purposes. The institutions that rank top, presumably, are those that have integrated the web into their research, teaching and learning culture. They tend to have more resources on the web, and also tend to have more links to and from other sites and perceived to be more globalized. This increases their perceived impact, improves their visibility and makes stakeholders perception about them positive. It is based on these factors that this paper was designed to identify the causes of poor ranking of Nigerian higher institutions, the implication of poor ranking with the aim of recommending workable solutions that would subsequently improve their rankings.

### **Objectives of this Paper**

The major objective of this paper is to identify the causes of poor webometrics ranking of Nigerian higher institutions with a view to recommending possible solutions to improving performance in subsequent rankings. The specific objectives are:

1. To identify the factors responsible for poor ranking;
2. To explore the implications of poor ranking;
3. To reveal the methodology of webometrics ranking;
4. To recommend possible solutions to poor ranking with a view to improving performance in subsequent rankings.

### **Causes of low webometrics ranking**

The low performance of Nigerian higher institutions in webometrics ranking is because of certain Institutional and individual factors that are left unattended to. These factors tend to build up overtime until they become almost unbearable. At the institutional level, many African Institutions have not put in place necessary infrastructure to encourage robust web practices.

Sometimes this is due to poor funding by government or individual proprietors or a lack of will-power on the part of management of those Institutions to put up enabling environment for web activities to thrive. Sometimes the reason for the low ranking is due to bad web practices.

According to Aguillo (2014) there are examples of Universities changing their web domains, but maintaining older ones or even organizations with two or more web domains. These practices not only penalize their web ranks but most importantly decrease the visibility of their contents in the search engines. Many institutions in Nigeria do not have existing web policy and where they exist; little is done to enforce them.

Furthermore, the Nigerian Universities Commission (2006) pin-pointed the following as factors responsible for Nigerian universities' poor performance in international rankings:

- i. Little attention is paid to communicating research findings conducted by scholars in Nigerian universities in a web-searchable form which manifests in publishing in low impact local journals without Internet links; and non-publishing in electronic journals especially open access journals.
- ii. Absence of Nigerian universities on the Internet in a form that can be picked by the radar of webometrics and allied organizations.
- iii. Lack of up-to-date and scanty content of the websites of Nigerian universities.

### **Implications of poor ranking**

Low webometrics ranking could lead to lowering of the esteem of the staff in the eyes of stakeholders, especially potential students and funding authorities. May be only a handful of parents would whole-heartedly send their children to institutions with low ranks. It is common

knowledge that Nigerian universities in the top ten ranking attract the candidates with the highest JAMB scores and with a more sound academic background. Also, academic exchange with reputable universities from other parts of the world for teaching and research may suffer.

Collaboration at the institutional level will always be between institutions that share similar reputation. Staff of institutions with poor ranks are most likely to experience low attention and interest from the global labour community. As the scriptures says 'Iron Sharpens Iron'.

According to the Times Higher Education website

<https://www.timeshighereducation.com/student/where-to-study/study-in-nigeria>, If you want to study in Nigeria, then you need to know which of its institutions are right for you. The website further advised potential stakeholders to take the top institutions in the country, and look at their performance across all of their core objectives: teaching, research, knowledge transfer and international outlook.

### **Webometrics Ranking Methodology**

The original aim of webometrics ranking is to promote academic web presence, supporting the Open Access initiatives for increasing significantly the transfer of scientific and cultural knowledge generated by research and academic institutions to the whole Society. In order to achieve this objective, the publication of rankings is one of the most powerful and successful tools for starting and consolidating the processes of change in the academia, increasing the scholars' commitment and setting up required long term strategies. The objective of webometrics ranking is not to evaluate websites design or usability or the popularity of their contents according to the number of visits or visitors. Web indicators are considered as proxies in the correct, comprehensive, deep evaluation of an institution's global performance, taking into account its activities and outputs and their relevance and impact ([www.webometrics.info](http://www.webometrics.info)).

According to Aguillo, Ortega & Fernández (2008), institutions are ranked using four basic parameters namely:

1. Number of pages linking to university web pages representing visibility:
2. Number of web pages on university web site representing size of university web.

3. Number of published rich files in Adobe Acrobat, Adobe Postscript, Microsoft Word and Microsoft PowerPoint formats representing the number of educational materials that the institution publishes.
4. Number of scientific papers indexed by Google Scholar representing university scientific production/publications.

### **Visibility**

Visibility considers two parameters namely: number of external links and number of referring domain. This indicator contributes 30% to the ranking features. Referring domains: This is also known as ref. domain; they are pages on different websites that point to resources in the University domain. It is a main domain for links that redirect visitors to the University website. One referring domain can have more than one link to different pages in an institution's website. Webometrics considers the number of Backlinks also known as incoming links, inbound links, inward links and inlinks i.e. links received by a web page from another web page as very crucial for ranking visibility. The number of backlinks is one indicator of the popularity or importance of a website as it is a major factor in ranking.

Emphatically, the quality of the contents is evaluated through a "virtual referendum", counting all the external inlinks that the University webdomain receives from third parties. Those links are recognizing the institutional prestige, the academic performance, the value of the information, and the usefulness of the services as introduced in the webpages according to the criteria of millions of web editors from all over the world. The link visibility data is collected from the two most important providers of this information: Majestic SEO and ahrefs.

**Furthermore**, the total number of webpages hosted in the main webdomain (including all the subdomains and directories) of the institution is indexed by the largest commercial search engine (Google). It counts every webpage, including all the formats recognized individually by Google, both static and dynamic pages and other rich files. It is not possible to have a strong presence without the contribution of everybody in the university as the top contenders are already able to publish millions of webpages.

### **Size**

This is regarded as the volume of information published. It comprises of two parameters with a total weight of 50% apportioned to it out of the percentage of the ranking features. The parameters involved are:

- i. Number of pages: This entails the number of web pages on a university's website. These pages may include primary pages which are pages on the website that can be accessed directly with menu or link on the site, and secondary pages; which are pages that are accessible or reached from primary pages. This constitutes 25% of the ranking features.
- ii. Number of rich files: Rich files describe the forms in which scholarly literatures exist, which includes PDFs, power points (PPT), word documents (DOC), and web documents (HTML). These rich files depict how vast a particular file can target audience or the level of content rendering preferences it possesses. This data is gathered from Scimago group ([www.scimagoir.com/](http://www.scimagoir.com/)) that has details regarding the domain of discourse for 5200 Universities and Google Scholar. Number of rich files contributes 25% to the ranking features.

### **The Number of Published Rich Files**

These are publications on the institution's website that appear in rich formats such as Microsoft word, PowerPoint presentations, portable data file (PDF), etc.

**Number of Scientific papers and research impact:** this refers to the quantity of published papers in high impact factor journals indexed by Google Scholar representing the institution's scientific production. The research impact measures the international collaboration, scientific talent pool, excellence with leadership, specialization and normalized impact of each institution. In addition to the aforementioned parameters which are the objective indicators, the subjective indicators are also taken into consideration in webometrics ranking. Subjective parameters measure an institution's social contributions to the society, especially to their closest communities. It depicts the level of academia and social services influence on the people in and out of their community. The service includes social media presence, beneficiary programs to government, and education impact programs on the society. The subjective feature, contributes 15% to the entire ranking features.

## **Recommended Solutions to Poor Webometrics Ranking**

The solution to poor webometrics ranking requires a synergy between the institution and staff members. It begins with a positive attitude to embrace change for the provision of a strong ICT infrastructure (hardware, software, peopleware, internet bandwidth) by management and effective utilization of web services by staff. This can be achieved through:

### **a. Formulation and implementation of a good web Policy:**

According to Nwabueze and Anyira (2011) a good web policy will include the following:

1. A purpose statement, outlining why the policy is being issued.
2. An applicability and scope statement, describing who the policy affects and which actions are permitted by the policy for example
3. An effective date which indicate when the policy came into force.
4. Background information (indicating reasons and history that led to the creation of the policy).
5. Definition of concepts found in the policy document.
6. Life span of the policy (stating timeframe for the review and the conditions to be considered for the review).

### **b. Improving Institution's Web Visibility:**

To improve web visibility, efforts should be made to:

- i. Increase the activities on the institution's website including the documentation of all staff profiles and issuance of e-mail addresses to all staff.
- ii. Improve publicity of social and academic activities online.
- iii. Engage in activities that academically impact the immediate community, the country and the world at large. This will interest and attract people outside the institution thereby increasing the institutions external links (trainings, consultancy, external collaborations etc).

### **c. Increasing the Size of the web content:**

Size of web content can be improved through:

- i. Involvement of the entire staff and students in growing content on the institution's domain.
- ii. Activation of the online staff profiles and advertisement of such profiles on linked In, Facebook and other social media as much as possible.

- iii. Updating the Website constantly with contributions coming from all Deans, HOD's, Directors and Heads of Units, scholars and consultants.
- iv. Publishing of Research Activities on the website. Including the introduction of open access journals to be hosted on the institutions website.
- v. Uploading news stories and notices. Archiving old pages rather than deleting them is encouraged.
- vi. Using keywords in the content on your pages, to make it easy for Google to index your pages and rank them high. For example, including the name of your faculty, department, or unit in the text, instead of just in the heading, and use other keywords or keyword phrases that people would typically search for.
- vii. Using hyperlinks as an opportunity to emphasize keywords.
- viii. Having and maintaining ONLY one official website.

#### **d. Uploading documents in Rich Files Formats**

Information considered rich on institution's web are those that appear as Word Documents, PowerPoint Presentations, Portable Data Files (PDF) and hypertext Mark-up Language files.

#### **e. Improving Scholarly/research endeavours**

Scholarly activities can be improved by:

1. Mandating all academicians to publish a minimum of three articles yearly in highly rated open access journals in their fields. This should have a policy statement backing it up for effective implementation.
2. Registration of all Teaching staff on Google scholar and research gate platforms.
3. Making it compulsory for all staff publications and students projects/thesis/dissertations to be in the institution's open access repository.
4. Encouraging all scholars to place all their publications (pre-prints and post-prints) on their web domains. The cost of scanning and related spending should be the responsibility of the institution.
5. Funding of research activities should be taken very seriously by management of higher institutions.

6. Attaching promotion of staff and other welfare packages to publications in high impact factor open access journals.
7. Uploading every document/information meant for staff or students or the public on the institutions websites. Thus, lecture notes, staff CV's, official bulletins etc. should be made available online.

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