Covenant University

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CONVOCATION LECTURE

World Ranking Parameters: Matters Arising for African Universities

By

Prof. Peter A. Okebukola

Chairman, Strategy / Advisory Committee, National Universities
Commission (NUC), Chairman, National Open University of Nigeria
(NOUN) Governing Council and Pro-Chancellor, Crawford University.

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<u>About Distinguished Lecturer</u>

Professor Peter Okebukola DSc, PhD, FSAN, FSTAN, FIAE, DSSE, OFR   is a Distinguished Professor of Science and Computer Education at Lagos State University, Nigeria. He had his higher education at the University of Ibadan where he obtained his Bachelor's degree in 1973 followed by Master's and Ph.D degrees in Science Education in the same university. He had specialized science and technology training at the Massachusetts Institute of Technology (M.I.T.), and Harvard University, both in Cambridge, USA. He is a Fellow of the Science Association of Nigeria (SAN), Fellow and President of the Nigerian Association for Environmental Education and Fellow and past President of the Science Teachers Association of Nigeria (STAN). He won the prestigious 1992 UNESCO Prize for the Communication of Science.

He has won several international gold medals in science, environmental and computer education. He has served as team leader of several quality assurance projects involving UNESCO, the African Union, the World Bank, Association of African Universities and the Global University Network for Innovation (GUNI-Africa).

He was concurrently the Chairman of Council of four Nigerian universities. He is currently the Chairman of Council of the National Open University of Nigeria (NOUN), Chairman, Board of Trustees of Crawford University, Chairman, Board of Trustees of Caleb University. He is the Executive Chairman, Okebukola Science Foundation. He was Executive Secretary of the National Universities Commission. He has been awarded a number of honorary D.Sc degrees. He is the recipient of the National Honour of the Officer of the Order of the Federal Republic- OFR. He is the Chairman of the Advisory Council of the American Council for Higher Education International Quality Group (CIQG) whose mandate is observatory of quality assurance of higher education across the world.

COVENANT UNIVERSITY

ANTHEM

We're a Covenant Generation | Covenant generation arise
Pursuing excellence | Light and knowledge to shine
Redeemed to reign | Glorious foundation stone
Learning to lead | Leadership skills to show
We are bound by an oath | Departing from knowledge
Obeying rules to rule | To empowerment Legalism
Making Kings of youth | To realism
Flying high on covenant wings | Wisdom's call for change
Wisdom's call for change Inspired | Inspired, on fire
on fire | With Courage Marching on in
With courage Marching on in | grace
grace | God's own arrow
God's own arrow Shot for glory. | Shot for glory.

Our Vision

To be a leading World-Class University, committed to raising a new generation of leaders in all fields of Human endeavour

Our Mission

To create knowledge and restore the dignity of the black man via a Human Development Total Man Concept driven curriculum employing innovative, leading-edge teaching and learning methods, research and professional services that promote integrated, life-applicable , life-transforming education, relevant to the context of Science, Technology and Human Capacity Building

World Ranking Parameters: Matters Arising for African Universities

Preamble

With gratitude to God, I am honoured to deliver the 2019 Convocation Lecture of the great Covenant University, God's own university. My deep appreciation goes to the Chancellor and Chairman, Board of Regents, Dr. David Oyedepo, Vice-Chancellor and Senate for approving my officiating in the 2019 Convocation Ceremonies in this capacity. I am thrilled with the title given to me by the authorities of the University which is "World Ranking Parameters: Matters Arising for African Universities". As you will see during the course of the lecture, when God says "Yes", anyone who says "No" is saying it "for his or her pocket". God has blessed the Vision of Covenant University as "a world-class university that will be a pride of Africa as well as take its place among the Ivy league Universities on the global platform". Right before our very eyes, we are seeing the fulfilment. Today, on the Times Higher Education ranking, Covenant University is West Africa's No. 1 university and 151st in the world.

The 2019 and the 14th set of Eagles are already flapping their wings to be released tomorrow, poised to soar high and claim the world. In the Mighty Name of Our Lord Jesus Christ, you shall ever be the head not the tail wherever you go. You will continue to shine during your NYSC service year, you will shine and be the best of the pack during your postgraduate studies, you will shine in your work places and be among the best husbands and wives, parents and grandparents of wonderful children the world has ever known. So, shall it be in Jesus Mighty Name.

I am exceedingly honoured to have His Academic Eminence, Professor Abubakar Adamu Rasheed, mni, MFR, FNAL the

Executive Secretary of the National Universities Commission (NUC) as special guest at this lecture. It is clear that God has ordained this day. It is no human coincidence but divine ordination that this is the day that a lecture is being delivered on ranking. It is a day when the Africa regional leadership of the Global University Network for Innovation (GUNi-Africa), established by UNESCO 19 years ago, approved to announce the results of its assessment and ranking of the NUC executive leadership.

The ranking team measured all executive heads of NUC since it was established in 1964 on 22 indicators. The ranking result was recently approved by the leadership of GUNi-Africa and I am proud to announce that Professor Abubakar Adamu Rasheed was ranked No. 1 and adjudged the Best Executive Secretary, NUC has ever had. After a few years in office, he has earned the No. 1 position, just like Covenant University after a few years of existence in the Nigerian university space, beating several "oldies" before it. We are confident that Professor Rasheed (Baba Rasheed as we fondly call him) will be the best head of regulatory agencies of universities in Africa in a few years, just as Covenant University is leading Africa in several areas and poised to lead Africa and the world in all areas by 2023.

Introduction

Ranking, the subject of this lecture is all around us. In this auditorium, ranking finds a place as some persons are on the platform and others are in the main bowl. Even on the platform, we are ranked as the Chancellor takes pre-eminence over us all. As we entered the auditorium, the ushers who have the orders to rank and sit us, took us to places which befit our status based on some ranking criteria. The order of procession for this lecture is ranked. The graduation list tomorrow is also ranked as we will have graduands classified as first, second upper, second lower

and third class. Seats in the airplane are ranked as first, business and economy classes. Children in the family are ranked as first born to last born. The recently-concluded AFCON and FIFA Women's World Cup ranked teams as winners of gold, silver and bronze. Anywhere you turn on earth, ranking shows its head.

As it is on earth, so it is in heaven. The hosts of heaven are ranked – angels, cherubim, seraphim. The great God of heaven and earth instituted ranking at the time of creation. On the 6th day, he created man and as we have in Genesis… he created him above all creatures but slightly lower than the angels.

> *Genesis 1:26: And God said, Let us make man in our image, after our likeness: and let them have dominion over the fish of the sea, and over the fowl of the air, and over the cattle, and over all the earth, and over every creeping thing that creepeth upon the earth.*

In this lecture, we shall look at a brief history of ranking of universities. Thereafter, we shall proceed to discuss a number of national, regional and global university ranking schemes and matters arising therefrom. The heart of the matter in this lecture is how African, indeed Nigerian universities can improve on their ranking on global league tables, and more importantly, how they should deploy ranking to contribute to improving their national relevance. I will conclude with some glimpse into the future of ranking of universities and the attainment of Africa's Agenda 2063 which I am sure the Convocation Keynote speaker will address tomorrow.

A note of remembrance

Before proceeding, I wish to pay tribute to Professor Aize Obayan, who was an outstanding scholar and university

administrator who led this University and Landmark University creditably, as Vice-Chancellor. May her soul continue to rest in perfect peace. Amen.

Brief history of global ranking of universities

Down through the ages, the world of universities has been the world of ranking. While national ranking of universities especially in the US has had a fairly long history dating back to 1983, global ranking of universities is a recent phenomenon. Hence, ranking of universities has a short recorded history but a long existential history. While it was only as recent as 2000 that we have the phenomenon of ranking feature in the annals of universities worldwide, it was actually a feature of the very universities. Having just returned from Al-Hazar University in Cairo, founded in its early form in 970 AD, we learned of the comparison of that university with other institutions twenty years later. Reference to such claims as "Al-Hazar offered better training than … in the first century AD" was common narrative.

At the opening ceremony of the 2011 UNESCO Global Forum on University Rankings held in Paris between May 16 and 17, the Director-General of UNESCO, Irina Bokova underscored the importance of university rankings even in the face of controversies which surround them. The Forum was in accord that rankings have come to stay and what needs to be done is to continue to make adjustments to methodologies in a way that most, if not all groups will be happily served. Typically, institutions which are placed low on league tables express non-acceptance of the results and ascribe subjectivity to the methodology. On the other hand, better-ranked universities flaunt the results and accord widest publicity to their good standing on the league tables.

As we can see, there is a love-hate perspective to university ranking. It is applause when the university is well ranked and rejection when not so favoured. The group with positive disposition to ranking ("rankingphilic") is quick to cite its ranks on websites and annual reports. The negatively disposed ("rankingphobic"), on the other hand denounces the methodology and emerging league tables. Over a decade ago when global ranking of universities was primed for unfolding, the African higher education system prepared to take advantage of the utility value of ranking in improving the quality of the system (Okebukola and Shabani, 2007). African universities generally rank low on many of the global university ranking league tables. This has stimulated a perception of deliberate eclipsing of African universities through the application of "western-centric" indicators. A counter-argument is that the concept of the university has trans-boundary characteristics and if any university is good regardless of its geographical location of the university, it has to exhibit these characteristics (Okebukola, 2010, 2014).

As Okebukola (2013) noted, since the 1960s, ranking of universities in Africa has been conjectural rather than empirical. Two indicators have typically featured. These are the age of the institution and employers' perception of the quality of graduates. As reported by Taiwo (1981), in the minds of Kenyans, University of Nairobi (established 1956) should be better in quality of training than Kenyatta University (established in 1965). The same order of ranking emerges when employers of labour rank these universities on the assumption that graduates of University of Nairobi should be better than graduates of other universities in Kenya. Nairobi graduates may have been tried and tested and adjudged good in quality. This may colour and sustain their perception over time. In Nigeria, the University of Ibadan, established in 1948 is generally perceived to be better than other universities established after it.

Regionally, there has been a pervasive perception that the "first generation", post-colonial universities such as Makerere (1922), Ibadan (1948) and Legon (1948) are better than those that were established after them. While there are complex variables implicated in the perceived good ranking of these institutions such as the quality of facilities and staff, strict compliance with standards to match top-rate universities in Europe, quality of leadership, as well as quality and quantity of students, the rankings were not based on verifiable data.

From the early 2000, conjectural ranking began to yield to the empirical. Global rankings provided a template for transparent and objective data collection, analysis and reporting. They also provided a menu of indicators that can be adapted or adopted for local context. The first Times Higher Education ranking in 2004 which showed the big names in the higher education system in Africa by the conjectural ranking not listed in the Times league tables jolted stakeholders. Governments, university managers, students and parents reacted angrily. The call to improve quality and hence global ranking was thick in the air. This call has persisted and has been a major driver for improving the delivery of higher education in the region. The next part of the lecture will present some narration on three global ranking schemes. This is followed by a short historical context of ranking of universities in Africa and a Nigerian national example and the emergence of the African Quality Rating Mechanism. The findings of a study on the perception of African university managers and scholars on the issue of ranking is then reported. The next section provides tips on how African Universities can be better ranked on global league tables. As stated earlier, it will conclude with a peep into the future of ranking of universities in Africa.

Case studies of three global ranking schemes

By July 2019, there are about 10 global ranking schemes of universities. When we rank the rankers, three stand out. These are the Academic Ranking of Universities (ARWU), the Times Higher Education (THE) Ranking and Webometrics Ranking. Let us examine the common and special features of these trio.

All ranking schemes are rested on a set of indicators. An indicator is a criterion against which you can measure performance. For instance for the procession list of the lecture, the ranking indicator is status in the university. This is measurable and you can put some quantity on it. On a 10-point scale for instance, the Chancellor is 10 and it goes down the chain of command to perhaps 1. So, when we are recessing after the lecture, try, in your mind's eye try to see who or which group scores 9, 8, 7 and so on.

Three indicators or sets of indicators that are common to the three big names in world ranking of universities are (a) research excellence; (b) internationalisation; and (c) quality of graduates. This implies that if a university is "A" grade in research, is able to attract a good mix of international students and staff and its graduates are well-regarded nationally, regionally and globally, chances of zooming to the top of the league table are high.

Let us take a dive into the technical world of global university ranking schemes. As agreed, we will concentrate on three of these- Academic Ranking of World Universities (ARWU), Times Higher Education (THE) ranking, and Webometrics Ranking. I will provide highlights of the history, objectives, methodology and the latest results of the three global schemes as reported on their websites and my recent interactions with IREG Observatory on Academic Ranking and Excellence.

Academic Ranking of World Universities (ARWU)

The Academic Ranking of World Universities (ARWU) was first published in June 2003 by the Center for World-Class Universities (CWCU), Graduate School of Education (formerly the Institute of Higher Education) of Shanghai Jiao Tong University, China, and updated on an annual basis. Since 2009 the Academic Ranking of World Universities (ARWU) has been published and copyrighted by ShanghaiRanking Consultancy. ShanghaiRanking Consultancy is a fully independent organization on higher education intelligence and not legally subordinated to any universities or government agencies.

Selection of Universities

ARWU considers every university that has any Nobel Laureates, Fields Medalists, Highly Cited Researchers, or papers published in Nature or Science. In addition, universities with significant amount of papers indexed by Science Citation Index-Expanded (SCIE) and Social Science Citation Index (SSCI) are also included. In total, more than 1500 universities are actually ranked and the best 500 are published. In 2018, those universities ranked between 501 and 1000 are also published as ARWU World Top 500 Candidates (see
http://www.shanghairanking.com/ accessed July 17, 2019)

Ranking Criteria and Weights

Universities are ranked by several indicators of academic or research performance, including alumni and staff winning Nobel Prizes and Fields Medals, highly cited researchers, papers published in Nature and Science, papers indexed in major citation indices, and the per capita academic performance of an institution. For each indicator, the highest scoring institution is

assigned a score of 100, and other institutions are calculated as a percentage of the top score. The distribution of data for each indicator is examined for any significant distorting effect; standard statistical techniques are used to adjust the indicator if necessary. Scores for each indicator are weighted to arrive at a final overall score for an institution. An institution's rank reflects the number of institutions that sit above it.

Indicators and Weights for ARWU

Criteria	Indicator	Code	Weight
Quality of Education	Alumni of an institution winning Nobel Prizes and Fields Medals	Alumni	10%
Quality of Faculty	Staff of an institution winning Nobel Prizes and Fields Medals	Award	20%
	Highly cited researchers in 21 broad subject categories	HiCi	20%
Research Output	Papers published in Nature and Science*	N&S	20%
	Papers indexed in Science Citation Index-expanded and Social Science Citation Index	PUB	20%
Per Capita Performance	Per capita academic performance of an institution	PCP	10%
Total			100%

* For institutions specialized in humanities and social sciences such as London School of Economics, N&S is not considered, and the weight of N&S is relocated to other indicators.

Definition of Indicators

Indicator	Definition
Alumni	The total number of the alumni of an institution winning Nobel Prizes and Fields Medals. Alumni are defined as those who obtain bachelor's, master's or doctoral degrees from the institution. Different weights are set according to the periods of obtaining degrees. The weight is 100% for alumni obtaining degrees in 2001-2010, 90% for alumni obtaining degrees in 1991-2000, 80% for alumni obtaining degrees in 1981-1990, and so on, and finally 10% for alumni obtaining degrees in 1911-1920. If a person obtains more than one degrees from an institution, the institution is considered once only.
Award	The total number of the staff of an institution winning Nobel Prizes in Physics, Chemistry, Medicine and Economics and Fields Medal in Mathematics. Staff is defined as those who work at an institution at the time of winning the prize. Different weights are set according to the periods of winning the prizes. The weight is 100% for winners after 2011, 90% for winners in 2001-2010, 80% for winners in 1991-2000, 70% for winners in 1981-1990, and so on, and finally 10% for winners in 1921-1930. If a winner is affiliated with more than one institution, each institution is assigned the reciprocal of the number of institutions. For Nobel prizes, if a prize is shared by more than one person, weights are set for winners according to their proportion of the prize.
HiCi	The number of Highly Cited Researchers selected by Clarivate Analytics. The Highly Cited Researchers list issued in 2017 (2017 HCR List as of December 15, 2017) was used for the calculation of HiCi indicator in ARWU 2018. Only the primary affiliations of Highly Cited Researchers are considered.
N&S	The number of papers published in Nature and Science between 2013 and 2017. To distinguish the order of author affiliation, a weight of 100% is assigned for corresponding author affiliation, 50% for first author affiliation (second author affiliation if the first author affiliation is the same as corresponding author affiliation), 25% for the next author affiliation, and 10% for other author affiliations. When there are more than one corresponding author addresses, we consider the first corresponding author address as the corresponding author address and consider other corresponding author addresses as first author address, second author address etc. following the order of the author addresses. Only publications of 'Article' type is considered.
PUB	Total number of papers indexed in Science Citation Index-Expanded and Social Science Citation Index in 2017. Only publications of 'Article' type is considered. When calculating the total number of papers of an institution, a special weight of two was introduced for papers indexed in Social Science Citation Index.
PCP	The weighted scores of the above five indicators divided by the number of full-time equivalent academic staff. If the number of academic staff for institutions of a country cannot be obtained, the weighted scores of the above five indicators is used. For ARWU 2018, the numbers of full-time equivalent academic staff are obtained for institutions in USA, UK, France, Canada, Japan, Italy, China, Australia,

Data Sources

Indicator	Data Source
Nobel laureates	http://nobelprize.org/
Fields Medals	http://www.mathunion.org/
Highly cited researchers	https://clarivate.com/hcr/
Papers published in Nature and Science	http://www.webofscience.com/
Articles indexed in Science Citation Index-Expanded and Social Science Citation Index	http://www.webofscience.com/
Others	Number of academic staff data is obtained from national agencies such as National Ministry of Education, National Bureau of Statistics, National Association of Universities and Colleges, National Rector's Conference.

Academic Ranking of World Universities 2018

Top 500	501-1000	Methodology	Statistics				

World Rank	Institution*	By location All	National/Regional Rank	Total Score	Score on Alumni
1	Harvard University	🇺🇸	1	100	100
2	Stanford University	🇺🇸	2	75.6	44.5
3	University of Cambridge	🇬🇧	1	71.8	82.3
4	Massachusetts Institute of Technology (MIT)	🇺🇸	3	69.9	70.9
5	University of California, Berkeley	🇺🇸	4	68.3	65.6
6	Princeton University	🇺🇸	5	61	55.8
7	University of Oxford	🇬🇧	2	60	50.8
8	Columbia University	🇺🇸	6	58.2	62.8
9	California Institute of Technology	🇺🇸	7	57.4	53.5
10	University of Chicago	🇺🇸	8	55.5	59.2

Times Higher Education (THE) World University Rankings

THE made its first ranking outing in 2004. Today, it provides a ranking list of the top universities globally, including more than 1,250 institutions across 86 countries. It is the only global university league table to judge research-intensive universities across each one of their core missions: teaching (the learning environment); research (volume, income and reputation), international outlook (staff, students and research); citations (research influence); industry income (knowledge transfer). It uses 13 carefully calibrated performance indicators to provide the most comprehensive and balanced comparisons, and all data is independently audited by professional services firm PricewaterhouseCoopers (PwC), making the THE World University Rankings the only global university rankings to be subjected to full, independent scrutiny of this nature (see https://www.timeshighereducation.com/world-university-rankings. Accessed July 17, 2019.)

The THE World University Rankings portfolio is completed with a suite of eleven separate detailed subject rankings which include: engineering; computer science; business and economics; life sciences; clinical and health; psychology; law; education; physical science; social science; and arts and humanities. In addition to the 15-year-old THE World University Rankings, THE has also developed a range of international university rankings based purely on teaching and learning.

Let us see the University Impact Rankings of THE. These are the only global performance tables that assess universities against the United Nations' Sustainable Development Goals. THE uses carefully-calibrated indicators to provide comprehensive and balanced comparisons across three broad areas: research, outreach, and stewardship. This first edition includes more than

450 universities from 76 countries.

The metrics were developed in partnership with Vertigo Ventures.

The list is led by New Zealand's University of Auckland, while Canada's McMaster University and the University of British Columbia, and the UK's University of Manchester complete the top three. Japan is the most-represented nation in the table with 41 institutions, followed by the US with 31 and Russia with 30.

THE evaluates performance on 11 of the 17 SDGs in the first edition (2019) of the ranking. These are:

- SDG 3 – Good health and well-being
- SDG 4 – Quality education
- SDG 5 – Gender equality
- SDG 8 – Decent work and economic growth
- SDG 9 – Industry, innovation, and infrastructure
- SDG 10 – Reduced inequalities
- SDG 11 – Sustainable cities and communities
- SDG 12 – Responsible consumption and production
- SDG 13 – Climate action
- SDG 16 – Peace, justice and strong institutions
- SDG 17 – Partnerships for the goals

Universities can submit data on as many of these SDGs as they are able. Each SDG has a series of metrics that are used to evaluate the performance of the university in that SDG. Any university that provides data on SDG 17 and at least three other SDGs is included in the overall ranking. As well as the overall ranking, THE also publishes the results of each individual SDG in 11 separate tables. This enables it to reward any university that has participated with a ranking position, even if they are not eligible to be in the overall table (see https://www.timeshighereducation.com/world-university-rankings. Accessed July 17, 2019.).

According to THE (as conveyed on its website), a university's final score in the overall table is calculated by combining its score in SDG 17 with its top three scores out of the remaining 10 SDGs. SDG 17 accounts for 22 per cent of the overall score, while the other SDGs each carry a weighting of 26 per cent. This means that different universities are scored based on a different set of SDGs, depending on their focus. The score from each SDG is scaled so that the highest score in each SDG in the overall calculation is 100. This is to adjust for minor differences in the scoring range in each SDG and to ensure that universities are treated equitably whichever SDGs they have provided data for.

There are three categories of metrics within each SDG:

Research metrics are derived from data supplied by Elsevier. For each SDG, a specific query has been created that narrows the scope of the metric to papers relevant to that SDG. As with the World University Rankings, we are using a five-year window between 2013 and 2017. The only exception is the metric on patents that cite research under SDG 9, which relates to the timeframe in which the patents were published rather than the timeframe of the research itself. The metrics chosen for the bibliometrics differ by SDG and there are always at least two bibliometric measures used.

Continuous metrics measure contributions to impact that vary continually across a range – for example, the number of graduates with a health-related degree. These are usually normalised to the size of the institution.
When we ask about policies and initiatives – for example, the existence of mentoring programmes – our metrics require universities to provide the **evidence** to support their claims. In these cases we give credit for the evidence, and for the evidence being public. These metrics are not usually size normalised.
Evidence is evaluated against a set of criteria and decisions are

cross validated where there is uncertainty. Evidence is not required to be exhaustive – we are looking for examples that demonstrate best practice at the institutions concerned.

Timeframe
Unless otherwise stated, the data used refer to the closest academic year to January to December 2017.

Exclusions
Universities must teach undergraduates and be validated by a recognised accreditation body to be included in the ranking.

Data collection
Institutions provide and sign off their institutional data for use in the rankings. On the rare occasions when a particular data point is not provided, we enter a value of zero.

University Impact 2019 rank	World University Rankings 2019 rank	Institution	Country/region	Overall score
1	201-250	University of Auckland	New Zealand	97.2
2	77	McMaster University	Canada	96.6
=3	37	University of British Columbia	Canada	96.2
=3	57	University of Manchester	United Kingdom	96.2
5	38	King's College London	United Kingdom	95.1

6	201-250	University of Gothenburg	Sweden	95.0
=7	187	KTH Royal Institute of Technology	Sweden	94.6
=7	90	University of Montreal	Canada	94.6
9	180	University of Bologna	Italy	94.3
10	36	University of Hong Kong	Hong Kong	94.1

THE University Impact Rankings 2019 by SDG: quality education methodology

(see   https://www.timeshighereducation.com/world-university-rankings. Accessed July 17, 2019.)

This ranking focuses on universities' contribution to early years and lifelong learning, their pedagogy research and their commitment to inclusive education. As early years provision and lifelong learning are not the main focus of education at universities, this table should not be used to assess the overall quality of teaching at a university.

Research on early years and lifelong learning education (27%)

- Proportion of research papers that are viewed or downloaded (10%)
- Proportion of research papers in the top 10 per cent of journals as defined by Citescore (10%)
- Number of publications (7%)
- This focuses on research that is relevant to pedagogy, measuring paper views, the proportion of papers in the top 10 per cent of cited journals, and the volume of

research produced.

- The data are provided by Elsevier's Scopus dataset, based on a query of keywords associated with SDG 4 (quality education). The data include all indexed publications between 2013 and 2017 and are normalised across the range using z-scoring.

Proportion of graduates with teaching qualification (15.4%)

- To understand how a university is supporting early years education we measure the proportion of its graduates who receive a degree that would enable them to teach at primary school level in their country.
- The data relate to the number of graduates in the 2017 academic year.
- The data and evidence were provided directly by universities. The data were normalised across its range using z-scoring.

Lifelong learning measures (26.8%)

- Access to educational resources for those not studying at the university (4.85%)
- Educational activities that are open to the general public, such as lectures or specific educational courses (4.85%)
- Educational events that provide vocational training for those not studying at the university (4.85%)
- Educational outreach activities in the local community, including schools (4.85%)
- Policies to ensure that these activities are open to all (7.4%)
- We asked universities for evidence of commitment to providing lifelong learning opportunities to people who are not directly members of the university, and whether this was open to all, without discrimination.
- The data and evidence for these metrics were provided

directly by universities. The evidence was evaluated and scored by Times Higher Education and is not normalised.

Proportion of first-generation students (30.8%)

- This is defined as the number of students starting a first (bachelor's) degree who identify as being the first person in their immediate family to attend university, divided by the total number of students starting a first (bachelor's) degree. All data is provided as full-time equivalents.
- This data and evidence were provided directly by universities. It is normalised across its range using z-scoring.

Evidence

THE metrics require universities to provide the evidence to support their claims. Evidence is evaluated against a set of criteria and decisions are cross-validated where there is uncertainty. Evidence is not required to be exhaustive – we are looking for examples that demonstrate best practice at the institutions concerned.

Timeframe

Unless otherwise stated, the data used refer to the closest academic year to January to December 2017.

Exclusions

Universities must teach undergraduates and be validated by a recognised accreditation body to be included in the ranking.

Data collection

Institutions provide and sign off their institutional data for use in the rankings. On the rare occasions when a particular data point is not provided, we enter a value of zero.

THE University Impact Rankings 2019 by SDG: good health and well-being methodology

(see   https://www.timeshighereducation.com/world-university-rankings. Accessed July 17, 2019.)

This ranking focuses on universities' research on the key conditions and diseases that have a disproportionate impact on health outcomes across the world, their support for healthcare professions, and the health of students and staff. It is not a general measure of a university's medical teaching and research.

Research on health and well-being (27%)
- Proportion of research papers that are viewed or downloaded (10%)
- Proportion of research papers that are cited in clinical guidance (10%)
- Number of publications (7%)
- This focuses on research that is relevant to key diseases and conditions, measuring paper views, clinical citations and the volume of research produced.
- The data are provided by Elsevier's Scopus dataset, based on a query of keywords associated with SDG 3 (good health and well-being). The data include all indexed publications between 2013 and 2017 and are normalised across the range using z-scoring.

Proportion of health graduates (34.6%)
- In order to understand how a university is supporting health professions we measure the proportion of graduates who receive a degree associated with a health-related profession out of the institution's total number of
- graduates.
  The data relate to the number of graduates in the 2017 academic year. The degree does not necessarily give them

the ability to practice directly; additional qualifications may be required.

·   ▪ These data and evidence were provided directly by universities. The data were normalised across the range using z-scoring.

Collaborations and health services (38.4%)

- Collaborations with local or global health institutions to improve health and wellbeing outcomes (8.6%)
- Outreach programmes in the local community to improve health and wellbeing (8.6%)
- Free sexual and reproductive health services for students (8.6%)
- Free mental health support for students and staff (8.6%)
- Community access to university sports facilities (4%)
- We asked universities for evidence of local health collaborations and community outreach programmes.
- We also asked for evidence that local residents could access university sports facilities and that the university provided free sexual health support to students and mental health support for staff and students.
- The data and evidence for these metrics were provided directly by universities. The evidence was evaluated and scored by Times Higher Education and is not normalised.

Evidence

When we ask about policies and initiatives, THE metrics require universities to provide the evidence to support their claims. Evidence is evaluated against a set of criteria and decisions are cross validated where there is uncertainty. Evidence is not required to be exhaustive – we are looking for examples that demonstrate best practice at the institutions concerned.

Timeframe

Unless otherwise stated, the data used refer to the closest academic year to January to December 2017.

Exclusions

Universities must teach undergraduates and be validated by a recognised accreditation body to be included in the ranking.

Data collection

Institutions provide and sign off their institutional data for use in the rankings. On the rare occasions when a particular data point is not provided, we enter a value of zero.

THE University Impact Rankings 2019 by SDG: gender equality methodology

(see https://www.timeshighereducation.com/world-university-rankings. Accessed July 17, 2019.)

This ranking focuses on universities' research on the study of gender, their policies on gender equality and their commitment to recruiting and promoting women. The SDG itself phrases this explicitly as supporting women. We cannot hope to develop the world sustainably if the needs of more than half its population are not addressed.

Research (27%)
- Proportion of a university's total research output that is authored by women (10%)
- Proportion of papers on gender equality in the top 10 per cent of journals as defined by Citescore (10%)
- Number of publications on gender equality (7%)
- This focuses on research that is relevant to the study of gender, measuring the proportion of papers in the top 10 per cent of cited journals and the volume of research

produced. We also look at the proportion of publications authored by women.

- The data are provided by Elsevier's Scopus dataset and based on a query of keywords associated with SDG 5 (gender equality). It includes all indexed publications between 2013 and 2017. The gender of authors is estimated by Elsevier. The data are normalised across its range using z-scoring.

Proportion of first-generation female students (15.4%)

- This is defined as the number of women starting a first (bachelor's) degree who identify as being the first person in their immediate family to attend university, divided by the total number of women starting a first (bachelor's) degree. All data are provided as full-time equivalents.
- This data and evidence were provided directly by universities. The data are normalised across the range using z-scoring.

Student access measures (15.4%)

- Tracking application, acceptance and completion rates for female students (1.6%)
- Taking account of regional issues when developing policies on women's participation (4.6%)
- Provision of appropriate women's access schemes, such as mentoring (4.6%)
- Encouraging applications in areas where women are under-represented (4.6%)
- We asked for evidence of approaches for recruiting more female students, including evidence that applications are tracked by gender, and that the university makes additional effort in areas where women are under-represented.
- The data and evidence for these metrics were provided directly by universities. The evidence was evaluated and

scored by Times Higher Education and is not normalised.

Proportion of senior female academics (15.4%)

- This is defined as the number of women in senior roles, divided by the total number of senior roles in the university. Senior roles can include professorships, deanships, and senior university leaders. It does not include honorary positions. All data are provided as full-time equivalents.
- The data and evidence were provided directly by universities. The data are normalised across the range using z-scoring.

Proportion of women receiving degrees (11.5%)

- This is defined as the number of women who are awarded a first (bachelor's) degree, divided by the total number of students who are awarded a first (bachelor's) degree. The data are provided as headcounts. The data is subject-weighted against three broad areas: STEM; medicine; and arts, humanities and social sciences.
- The data and evidence were provided directly by universities. The data are normalised across the range using z-scoring.

Women's progress measures (15.3%)

- Policies of non-discrimination against women (1.95%)
- Policies of non-discrimination against transgender people (1.95%)
- Maternity and paternity policies that support women's participation (1.9%)
- Accessible childcare facilities for students (1.9%)
- Accessible childcare facilities for staff (1.9%)
- Women's mentoring schemes with broad participation (1.9%)
- Women's graduation rates, with appropriate action plans

(1.9%)
- Policies protecting those reporting discrimination (1.9%)
- These measures look at the ability of women to progress in the university.
- The data and evidence for these metrics were provided directly by universities. The evidence was evaluated and scored by Times Higher Education and is not normalised.
- Evidence
- When we ask about policies and initiatives, our metrics require universities to provide the evidence to support their claims. Evidence is evaluated against a set of criteria and decisions are cross validated where there is uncertainty. Evidence is not required to be exhaustive – we are looking for examples that demonstrate best practice at the institutions concerned.

Timeframe
Unless otherwise stated, the data used refer to the closest academic year to January to December 2017.

Exclusions
Universities must teach undergraduates and be validated by a recognised accreditation body to be included in the ranking.

Data collection
Institutions provide and sign off their institutional data for use in the rankings. On the rare occasions when a particular data point is not provided, we enter a value of zero.

Results of 2019 Rankings

Figures 1 to 4 show excerpts of the 2019 THE ranking.

Fig. 1 Young University Ranking of Covenant University

Fig. 2 2019 THE Ranking of Nigerian Universities

Fig 3: 2019 THE Ranking of Covenant University
(Industry Income)

Fig 4: 2019 THE Ranking of Covenant University
(Engineering and Technology)

Ranking web of universities (Webometrics Ranking)
(see http://www.webometrics.info/en Accessed July 17 2019.

The "Webometrics Ranking of World Universities" is an initiative of the Cybermetrics Lab, a research group belonging to the Consejo Superior de Investigaciones Científicas (CSIC), the largest public research body in Spain. Cybermetrics Lab, part of the CSIC, is devoted to the quantitative analysis of the Internet and Web contents specially those related to the processes of generation and scholarly communication of scientific knowledge. This is a new emerging discipline that has been called Cybermetrics or Webometrics.

Since 2004 and every six months an independent, objective, free, open scientific exercise is performed by the Cybermetrics Lab for providing reliable, multidimensional, updated and useful information about the performance of universities from all over the world based on their web presence and impact.

The original aim of the ranking is to promote academic web presence, supporting the Open Access initiatives for increasing significantly the transfer of scientific and cultural knowledge generated by the universities 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 badly needed long term strategies

The objective is not to evaluate websites, their 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 the university global performance, taking into account its activities and outputs and their relevance and impact. At the end a reliable rank is only possible if the web presence is a trustworthy mirror of the

university. In the second decade of the 21st century the Web is key for the future of all the university missions, as it is already the most important scholarly communication tool, the future channel for the off-campus distance learning, the open forum for the community engagement and the universal showcase for attracting talent, funding and resources. Webometrics is continuously researching for improving the ranking, changing or evolving the indicators and the weighting model to provide a better classification.

Webometrics also measure, in an indirect way, other missions like teaching or the so-called third mission, considering not only the scientific impact of the university activities, but also the economic relevance of the technology transfer to industry, the community engagement (social, cultural, environmental roles) and even the political influence.

Webometrics uses link analysis for quality evaluation as it is a far more powerful tool than citation analysis or global surveys. In the first case, bibliometrics only counts formal recognition between peers, while links not only includes bibliographic citations but also third parties involvement with university activities. Surveys are not a suitable tool for World Rankings as there is not even a single individual with a deep (several semesters per institution), multi-institutional (several dozen), multidisciplinary (hard sciences, biomedicine, social sciences, technologies) experience in a representative sample (different continents) of universities worldwide.

Research output is also key topic for Webometrics, but including not only formal (e-journals, repositories) publications but also informal scholarly communication. Web publication is cheaper, maintaining the high standards of quality of peer review processes. It could also reach much larger potential audiences, offering access to scientific knowledge to researchers and

institutions located in developing countries and also to third parties (economic, industrial, political or cultural stakeholders) in their local community.

Design and Weighting of Indicators

Webometrics uses an "a-priori" scientific model for building the composite indicator. Other rankings choose arbitrary weights for strongly dependent variables and even combine raw values with ratios. None of them follow a logical ratio between activity related and impact related variables, i.e. each group representing 50% of the total weighting. Referring to the individual variables, some of them have values larger than zero for only a few universities and others segregate universities according to differences so small that they are even lower than their error rates. Prior to combination the values should be normalized, but the practice of using percentages is mostly incorrect due to the power law distribution of the data. Webometrics log-normalize the variables before combining according to a ratio 1:1 between activity/presence and visibility/impact groups of indicators.

January 2019 Results

ranking	World Rank ▼	University	NIGERIA January 2019	Det.	Presence Rank*	Impact Rank*	Openness Rank*	Excellence Rank*
1	1148	University of Ibadan		📧	249	1078	1395	1685
2	2129	University of Nigeria		📧	1945	3123	1501	2542
3	2247	Obafemi Awolowo University		📧	3785	3728	2598	2230
4	2294	Covenant University Ota		📧	1480	3178	2690	2599
5	2344	Ahmadu Bello University		📧	2137	3967	2909	2344
6	2589	University of Lagos		📧	5304	4653	2737	2518
7	2789	Federal University of Technology Minna		📧	415	4811	2929	3081
8	2791	University of Ilorin		📧	5926	6038	1429	2716
9	3005	University of Port Harcourt		📧	6468	4130	2684	3482
10	3123	Federal University of Technology Akure		📧	6628	8247	2623	2632

Fig 5: Overall webometrics ranking of Nigerian universities, January 2019

Fig 6: Webometrics Ranking by Excellence, January 2019

Developments in university ranking in Africa and the Nigerian Example

University ranking in Africa has had a very recent history. The emergence of global ranking of universities in the early 2000s was a spur for the process. Global ranking led to the creation of indicators which formed basis for the development a few national ranking schemes. The object at the national level was to be aligned with what was widely regarded as globally-accepted indicators for ranking universities. In the early days of the rise of the ranking phenomenon, only a few countries ventured which were supported by national agencies. In recent times, a number of non-governmental organisations have established ranking systems which are quite popular and thriving and gleefully cited by rankingphilic groups.

By 2001, Nigeria signed up as the first sub-Saharan Africa country to rank its universities. Tunisia in North Africa is listed as one of the early birds embracing the scheme. By 2010, the Africa Union endorsed a regional initiative - the African Quality Rating Mechanism (AQRM) with 34 higher education institutions from all the Regional Economic Communities (RECs) in Africa

participating in its inaugural edition.

In September 2001, Nigeria, through the National Universities Commission (NUC), initiated steps towards a national ranking of its universities. There were three major drivers for this effort. The first was a desire among the population to know more about the relative standing (performance) of the universities and their programmes in order to guide career choice by prospective students. Second, government wanted a transparent and objective mechanism for identifying centres of excellence to which funds allocation could be preferentially applied. Thirdly, NUC whose mandate includes the orderly development of universities needed a basis for advising government on programmes and universities that should be strengthened to address projected human resource needs of the country. Coincidentally, consultations on a World Bank facility for improving the Nigerian university system was about to be concluded and the league table of universities and programmes was to be a key factor in implementing the project. Taken together, the atmosphere was ripe for a university ranking scheme. The national programme accreditation exercise of 2000 provided data derived through an objective and transparent methodology for drawing up the league tables. Since 2001 annual university rankings by programmes and institutions have been conducted. By 2004 and 2005, additional indicators were included in the data to align the national ranking with three global ranking schemes- THE, Webometrics and ARWU (Okebukola, 2006; 2010). The ranking indicators were:

1. **Percentage of academic programmes of the university with full accreditation status:** This is to measure the overall academic standing of the university. It is computed by dividing the number of academic programmes of the university with full accreditation status by the total number of programmes offered by the university and

expressing this as a percentage. It will be recalled that the first two raking exercises of Nigerian universities used only programme accreditation data.

2. **Compliance with carrying capacity (measured by the degree of deviation from carrying capacity):** This indicator measures how well enrolment of the university matches available human and material resources. Universities that over-enrol (exceed carrying capacity) are penalised on this measure. It is computed as

$$\frac{\text{Deviation from carrying capacity}}{\text{Carrying Capacity}} \text{ X } 100\%$$

3. **Proportion of the academic staff of the university at professorial level:** This is an assessment of the quality of academic staff in the university. The full professorial category is selected as it is the zenith of academic staff quality in a university. It is calculated by dividing the number of full professors in the university by the total number of academic staff and expressing this as a percentage.

4. **Foreign content (staff): proportion of the Academic staff of the university who are non-Nigerians:** Designed to measure how well the university is able to attract expatriate staff. The indicator is important in a globalising world and within the context of a university being an institution with a universal framework of operations. It is computed by dividing the number of non-Nigerian teaching staff by the total number of academic staff in the university and expressing this as a percentage.

5. **Foreign content (students): proportion of the students of the university who are non-Nigerians:** This indicator

measures how well the university is able to attract foreign students. As stated for the staff component, the indicator is important in a globalising world and within the context of a university being a universal institution where students from all over the world are free to enrol. It is derived as the percentage of the quotient obtained by dividing the number of non-Nigerian students in the university by the total number of students.

6. **Proportion of staff of the university with outstanding academic achievements:** such as Nobel Prize winners; National Merit Awardees; and Fellows of Academies e.g. Academy of science; Academy of Letters, Academy of Education, Academy of the Social Sciences: The indicator gives the standing of the staff of the university when normed with colleagues at national and international levels. Further, it measures how well the university is able to stimulate and retain quality staff. It is computed by dividing the number of staff with such academic achievements by the total number of academic staff and expressing the quotient as a percentage.

7. **Internally–generated Revenue:** This measures the ability of the university to generate funds from non-governmental/proprietor sources. It is derived as the amount of revenue generated internally, divide by the total revenue of the university X 100.

8. **Research output:** A very important measure of the esteem and relevance of a university, this indicator provides information on how well the staff of the university are able to contribute to knowledge through research. Only research published through international outlets and indexed in acclaimed Abstracts and Indexes are to be counted. For the 2004 ranking, only books and

journal articles that are published in outlets with Editorial Offices in Europe, North America, Japan, India, Australia and New Zealand will be accepted. Nigerian publications with proof of abstracting or indexing in world-renowned Abstracting and Indexing services will be accepted. This measure is computed as the total number of such publications contributed by staff of the university in 2004 up to a maximum of 100. Proofs of the publications are to be submitted at the time of filing data for the university.

9. **Student completion rate:** A measure of the internal efficiency of the university, student completion rate in 2004 is calculated by dividing the number of students of the university who graduated in 2004 (for the cohort that enrolled in 1999/2000) by the total number of students in the graduating class in 2004. The quotient is expressed as a percentage.

10. **Ph.D. graduate output for the year:** This is an indicator which combines the postgraduate standing of a university with the internal efficiency of postgraduate education. It is computed by dividing the number of PhDs graduated in 2004 by the total number of postgraduate students in that year and multiplying by 100.

11. **Stability of university calendar:** It is in an atmosphere of peace and stability that good quality teaching, learning and research can prevail. It is when the university calendar is stable that foreign staff can fit the schedule of their parent university to a target local university and be able to offer service including contribution to research in that local university. Also, stability guarantees local staff a long vacation period that can be used to cool off or be engaged in research activities in a target foreign university. Exciting vacation courses for students can be

run during such periods. This indicator is computed as follows:

$$. \quad \frac{12 - \text{No of Months of Closure}}{12 \text{ Months}} \times 100$$

12. Student to PC Ratio: In an ICT-enabled higher education world, the student-to-PC ratio becomes important. This indicator is given as:

i.e. $\frac{\text{Total No of computers available to students}}{\text{Total Number of Students}} \times 1000$

PCs available to students in commercial Internet cafes are not counted.

Africa Regional Effort: The African Quality Rating Mechanism

The emerging direction to which Africa is turning is rating rather than ranking as a way of blotting out the major weaknesses of the global ranking schemes as they relate to African universities. The thin line between rating and ranking has to do with normative cross-institutional comparisons. In rating, there is intra-institutional comparison of programme performance. By way of example, the programme in medicine in a university is assessed for performance on a scale such as excellent, good, fair and poor. The findings stop there and not extrapolated for comparison with the medical programme in other universities. The findings form basis for programme improvement within the university. It is likened to the rating of hotels as 5-star, 4-star, 3-star and 1-star. 5-star hotels for instance are not aggregated together for the purpose of ranking from the best to the worst.

In ranking, the comparison is inter-institutional. Institutions and their programmes are scored and then ranked from the best to the least performing. Using the example of the medical programme, all universities having medical programmes whose data can be collected on the variables of interest are scored and then ranked in a league table. The league table is not rendered as the rating scheme as excellent, good, fair and poor but as 1st, 2nd 3rd all the way to the least scoring programme.

The driver of the rating scheme for African universities is the African Union Commission. One of the manifestations of the commitment of the African Union to improving quality of higher education in the region is the development and adoption of the African Strategy for Harmonisation of Higher Education. The Pan African Quality Assurance and Accreditation Framework (PAQAF) is a key thrust in this regard. The Pan African University (PAU) and the African Quality Rating Mechanism (AQRM) are among the success stories of the thrusts of the Strategy which are already being implemented. AQRM has been accepted region-wide as a template for quality improvement and not for ranking.

The African Quality Rating Mechanism (AQRM) was instituted to ensure that the performance of higher education institutions in Africa can be compared against a set of criteria that takes into account the unique context and challenges of higher education delivery on the continent. Higher education has been identified as a major area of focus in the African Union (AU) Plan of Action for the Second Decade of Education for Africa (2006-2015) and the Africa Vision 2063, with quality as an area essential for revitalisation of higher education in the region. The AU Commission has developed a framework for Harmonisation of Higher Education Programmes in Africa, with the specific purpose of establishing harmonised higher education systems across Africa, while strengthening the capacity of higher

education institutions to meet the many tertiary educational needs of African countries (AUC, 2008; Oyewole, 2010). This is mainly through innovative forms of collaboration and ensuring that the quality of higher education is systematically improved against common, agreed benchmarks of excellence and facilitates mobility of graduates and academics across the continent. In this connection, the AQRM is also envisioned to facilitate improvements in quality of delivery of institutions across the continent and allow for an objective measure of performance.

Quality assurance of higher education institutions is a core area for revitalising higher education and research in Africa. The Commission of the African Union therefore spearheaded the development of an African Quality Rating Mechanism (AQRM) to establish an African system that will ensure the performance of higher education institutions can be compared against a set of common criteria and to help the institutions carry out self-evaluation exercises to support the development of institutional cultures of quality. A pilot self-rating exercise was conducted in 2010 where 32 institutions were participated. Based on the experience and feedback gained from the pilot survey, the Commission of the African Union in collaboration with the Association of African Universities developed a revised version of AQRM questionnaire and rating instrument.

AFRICAN UNION
الاتحاد الأفريقي

UNION AFRICAINE
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DEPARTMENT OF HUMAN RESOURCES, SCIENCE AND TECHNOLOGY

African Quality Rating Mechanism (AQRM)

Survey Questionnaire

REVISED VERSION

August 2013

The African Quality Rating Mechanism Survey Questionnaire has three main sections: institutional general information, self-rating at institutional level and self-rating at programme level. The elements in the three sections are as shown in Table 1.

Institutional General Information	Self-Rating at Institutional Level	Self-Rating at Programme Level
Institutional Profile Student Profile Facilities Faculty/Staff Profile Governance and Management Teaching and Learning Linkage with Industry Sector Research and Community Outreach Internalisation Rating of Best Three Departments/Subject Areas	Governance and Management Infrastructure Finance Teaching and Learning Research, Publication and Innovation Community/Societal Engagement Rating Summary at Institutional Level	Programme Planning and Management Curriculum Development Teaching and Learning Assessment Programme Results Rating Summary at Programme Level

These components are embedded in the quality standards in Table 2.

Table 2: AQRM Quality Standards

Standards of AQRM
Governance and Management
Infrastructure
Finance
Teaching and Learning
Research, Publication and Innovations
Community/Societal Engagement
Programme Planning and Management
Curriculum Development
Teaching and Learning (in relation to Curriculum)
Assessment
Programme Results

It is expected that African higher education institutions will take ownership of their own quality assurance processes and use the AQRM questionnaire as a means of supporting continuous quality improvements and as a tool for strategic planning in quality assurance. Hopes are high in Africa and the rest of the world that AQRM should evolve to a respectable continental and eventually international higher education quality rating scheme.

Perception of African scholars, university managers and students on ranking

Most global university ranking schemes such as the Academic Ranking of World Universities (ARWU), the Times Higher Education (THE) ranking and the Webometrics ranking are commonly viewed by members of the university community in Africa as being selective of indicators which do not favour higher education delivery in the region. For instance, the grouse against ARWU is having number of Nobel prize winners as an indicator. Many African university managers and scholars believe that the sparse representation of Africans on the list of Nobel laureates is by itself discriminatory and will consign African universities to the bottom of global league tables for a rather long while.

An Africa regional survey of university managers, scholars and students was undertaken between January and July 2015 to gauge perception on university ranking. Thirty-three vice-chancellors from east, southern and west Africa, 45 teaching staff and 68 students from 12 universities with regional geographical spread were surveyed. Interview and questionnaire data collected yielded a broad spectrum of views whose modal position was one of wariness of global ranking schemes as they would appear to have an afrophobic agenda. Table 5 provides a summary of the data from the questionnaire survey. tems across Africa, while strengthening the capacity of higher

Table 5: Perception of African Vice-Chancellors, Scholars and Students on Global Ranking Schemes

S/No.	Perception	% agreement		
		Vice-Chancellors N=33	Scholars N=45	Students N=68
1	Methodologies are transparent and the process is inclusive for all universities in the world.	39	48	65
2	Indicators reflect attributes of 21st century universities regardless of geographical location.	19	23	59
3	Too selective of indicators which put African universities at a disadvantage	72	29	16
4	Weighting of the indicators is skewed in favour of what will elevate the scores of non-African universities	76	31	18
5	Ensures global comparability of universities.	63	86	92
6	Africans like the Germans should develop their ranking/rating schemes which take cognisance of local context	84	22	9
7	The mission and vision of universities are different and not given consideration by the rankers.	91	89	76
8	African universities should take part in global ranking schemes to avoid the label of inferiority complex.	52	94	98
9	They are too disparate in their measurement and the agreement among the league tables is low.	69	78	51
10	The ranking schemes are designed to achieve the self-fulfilling prophecy of Africa being under-developed.	74	12	9
11.	They facilitate global mobility of students and teachers.	87	94	99
12.	The periodic refinement of the indicators is praiseworthy.	75	98	87

The findings showed that heads of universities sampled (vice-chancellors, rectors and presidents) hold strong negative views of the global ranking schemes with students at the polar opposite. The teachers (scholars) are largely positively inclined. For instance, more than three quarters of the heads of universities

agreed with the statements: "Weighting of the indicators is skewed in favour of what will elevate the scores of non-African universities"; "Africans like the Germans should develop their ranking/rating schemes which take cognisance of local context"; "The mission and vision of universities are different and not given consideration by the rankers". On the contrary, over two-thirds of the scholars did not share these views. Over 90% of them believed that "African universities should take part in global ranking schemes to avoid the label of inferiority complex." The student data were quite strong in favour of African universities participating in global ranking schemes.

Interview component of the study was equally revealing. Responding to the interview question: What do you have against global league tables of universities? typical responses from the subjects of the subject were:

Vice-Chancellor of a university in Tanzania (54-year old; male): The rankings present African universities as rubbish. We are doing tremendous amount of good work in our universities in spite of the odds yet the rankers fail to recognise it.

Student of a first generation university in Nigeria (21, female): I have nothing against the rankings. They are available for anybody who wishes to use them. If you don't want to use them, you are not forced to. For me, they are useful to guide my choice of university for postgraduate studies.

Professor of Science Education from a university in South Africa (62, male): Global ranking league tables are great, I have nothing against them. Indeed in the last ten years, my university is ranked among the top five in Africa and we always celebrate our success.

Vice-Chancellor of one of the oldest universities in Nigeria (62, male): What I found rather distasteful is where some universities that I know in Nigeria being ranked better than my university. It is clear that there must be errors made by the rankers, else how can you explain a university that was established just a few years ago being ranked better than mine that is one of the oldest in Nigeria. I also feel uncomfortable with some universities in some countries in Africa that are war torn that we all know are battling with huge challenges including funding and quality staff being better ranked than many respectable universities in Africa. This weakens the respectability of the ranking results.

What do you like about ranking tables?

Professor of Medicine in a university in Ghana (51, male): Global ranking is good to show our governments that they have under-invested in university education, and are sadly still under-resourcing the system. You cannot reap where you have not sown. The league tables present the real picture of the state of university education in Africa. Anybody who says something to the contrary is being parochial and not truthful.

Vice-Chancellor of a university in South Africa (54, male): Although I am not a fan of ranking but my university being ranked among the best in Africa gives me much joy. What delights me about them is their transparency in terms of the indicators they use and how the data are collected and used. One can do the ranking on his own based on the data which are publicly available. In a few cases, I found some errors in the computation for my university and I informed the rankers accordingly. The error was corrected in the next ranking results.

Postgraduate student of a university in Mozambique (36, female): They foster competition among universities which is good for improvement.

What will you like the rankers do differently?

Vice-Chancellor of one of the oldest universities in Nigeria (62, male): The rankers sit somewhere in Europe and Asia and rank African universities based on criteria which favour them. They should make the process more inclusive and less Eurocentric. They should include Africans in their teams who can share with them, indicators which does not discriminate against the African context.

Vice-Chancellor of a university in Kenya (57, male): For too long, the rankings have failed to recognise the changing landscape of higher education. Today, we have an increasing use of distance and open education delivery systems including massive open online courses (MOOCs), non-traditional providers and new ways of rewarding teaching, learning and research success. Most, if not all the ranking schemes fail to factor these recent developments into their methodology. This they must do to improve their relevance and utility value.

Ranking and Accountability

Whether the African university community likes it or not, ranking results have been liked and hugely commented upon by the popular media and the general public in almost all countries where universities are sited in Africa. As soon as league tables are released, the press is quick to lament or praise the standing of the universities in their country relative to others in Africa and the rest of the world. More often than not it is a lament and a heaping of blame on university authorities and government. Universities upswing the blame on government. Staff and student unions use the data from the league tables to canvass more funding attention from government. Herein lies the import of ranking on accountability.

On the side of the universities, society demands accountability for whatever large or small investment government or the private proprietor would have made in the years preceding the ranking of the university. In 2014, following the release of the Academic Ranking of World Universities and the Times Higher Education ranking, what the Nigerian society considered lacklustre performance of Nigerian universities was voiced in the press by vitriolic attacks and the need for the universities to show greater accountability for huge funds released two years earlier following a demand by staff unions. This reaction was a repeat of what happed in 2012. In 2012, as a consequence of growing worry over the last eight years that the universities had deficiencies in their managerial competence and funds usage leading to low ranking on global league tables, a national agency in charge of anti-corruption undertook a pilot run of a survey of corrupt practices in Nigerian universities. Data showed accountability issues being prominent in the list of challenges weighing down better performance of Nigerian universities. Students, parents, teachers, vice-chancellors, council and proprietors were implicated in the depressed accountability profiles.

In the 2012 survey, students were found to be slack in their responsiveness to learning. Academic corrupt practices among students included examination malpractice, plagiarism, non-attendance to classes, tardiness in submitting assignments and poor study habits. These variables were extrapolated to depress performance of Nigerian universities on global ranking league tables. With respect to teaching staff, the survey found corrupt practices such as non-attendance at classes, tampering with examination results and inducement by students for undeserved academic rewards to predominate. Parents were found to connive with unscrupulous teachers to alter grades in favour of some students. Vice-Chancellors of public universities generally scored low on prudential management of resources,

accountability in financial and non-financial resources of the university and high tendency to subvert due process in the award of contracts. Council's oversight of accountability of management was found to be largely compromised and government was found to dither on issues demanding action which can promote probity and accountability. Among other things, the findings of the study led to the establishment of a national Anti-Corruption Academy. Since its establishment in 2014, the Academy has been vigorous in capacity building to promote accountability and reduce corruption which are hindrances to better performance of Nigerian universities.

Intra-university demand for better accountability based on ranking has also been topical. Since 2010, in Ghana, Kenya, Nigeria and Tanzania as examples, following release of global ranking results, universities have introspected and strived to see how they can improve on their performance, especially following public outcry. Even when outwardly, vice-chancellors try to diminish the importance of the ranking results and claim they were cheated by the rankers, steps are taken at the departmental and faculty level to improve on the delivery system especially research. Some universities in Ghana and Nigeria have hiked the minimum score for appointment and promotion to senior faculty positions for published works in top-rate journals referenced by the global ranking schemes. This has triggered an increase in research funding and in turn, translated to higher research output by African scholars in the last five years. While such improvement in output cannot be totally ascribed to the stimulus of ranking, the desire to be better ranked can be said to play a major role in the increased vigour of the research efforts. The support of the World Bank through the centres of excellence project is predicted to lead to a tremendous increase in the research output of African scholars in the years ahead.

Still within the university, departments are seeking that

university teachers be more accountable to their students through paying greater attention to quality teaching. Council is demanding that vice-chancellors and university management be more transparent in the use of funds. Senate and academic boards are demanding the development and implementation of policies which can dispose them to earn higher scores on ranking indicators including web presence of research activities and proportion of international students and staff.

Ranking and quality assurance

Down through the ages, competition is largely known as a catalyst for improvement and less for collateral negatives. The Darwinian theory of survival of the fittest, made popular by Herbert Spencer hinges largely on competition and its effect in promoting the evolution of the very fit species. Ranking in this wise propels individuals or groups to strive to be better and leap to greater rungs of the ranking league table. The Olympics and other global sports provide examples where athletes strive to attain peak performance in order to be placed high on league tables. Only the very (naturally) fit win coveted medals and the not-so-fit drop out of the competition to make themselves fit for another round. The process of striving to meet or exceed minimum standards for the sport is part of quality assurance.

Morton Deutsch theory of cooperation and competition is also relevant in this context. Deutsch (1949; 2006) identifies two basic types of goal interdependence -- positive and negative. Positive interdependence means that each side's goals are tied together in such a way that the chance of one side attaining its goal is increased by the probability of the other side successfully attaining its goal. Positively interdependent goals normally result in cooperative situations because any participant can "attain his goal if, and only if, the others with whom he is linked can attain their goals." On the other hand, negative interdependence means

that each side's goals are tied together in such a way that the probability of one side attaining its goal is decreased by the probability of the other side successfully attaining its goal. Negatively interdependent goals force competitive situations because the only way for one side to achieve its goals is for the other side not to.

The Darwinian and Deutschian theories endorse the view that quality can be bolstered at least in part, through the instrumentality of competition through ranking. In turn, quality assurance and ranking can be mutually reinforcing. Through ranking, universities and quality assurance agencies are gingered to oil the machinery of quality improvement so as to be better placed in future rankings. On the other side of the equation, through improvement in quality assurance processes, the ranking of a university has a high chance of improving.

Data from the results of accreditation, an aspect of quality assurance have been used in deriving ranking for university programmes in Nigeria. Programme accreditation involves assessing the performance of an academic programme against established minimum academic standards. The minimum standards include those on quality of students, quality and quantity of staff, quality, relevance and quantity of facilities and quality of the teaching-learning process. In the Nigerian example, all the universities had the benefit of having their programmes worked through the accreditation process of self-study and onsite peer review. The onsite peer review generates the data on all the variables in the minimum academic standards for all universities and their programmes. The high inter-rater reliability of the peer reviewers gives confidence of the reliability of the scores across all the universities. The data then provided basis for ranking all the universities by programmes.

Ranking using the results of accreditation in Nigeria provided a

stimulus for improvement in quality by each university. It is recalled the medical programme of one of the oldest universities ranked much lower than the medical programmes of some newer universities. The older university, though embarrassed by the results, accepted it as true reflection of the status and confirmed that some years before the accreditation exercise, quality had slipped in programme delivery. The public comments which followed led to a mustering of efforts by the authorities of the university to improve quality. A strategic plan was developed, resources were mobilised and all staff and students reached an accord to take steps to improve the quality of facilities, delivery process and they addressed all other elements of the minimum standards. Visitors to the university during the course of the year following the release of the results of the ranking were amazed at the dramatic transformation in the medical programme. Within a few years, the university had "bounced back" and its medical programme leapt to the top of the ranking league table. This narration repeated itself in other universities that found themselves in awkward locations on the league tables relative to their traditional fame.

Ranking on the basis of accreditation scores has a beneficial impact on the quality of university education in Nigeria and on the standing of Nigerian universities on global league tables. As a consequence of the flurry of improvement activities which attended the release of the first ranking results in 2002 and subsequent editions, several universities made efforts to improve the quality of their delivery process, a move whose lingering effect translated into better ranking of Nigerian universities on global ranking league tables. An assessment of the National Universities Commission confirmed at least a 30% hike in quality improvement of Nigerian universities as shown in the number of programmes which earned the full accreditation status.

Ranking Academic integrity

At the July 2015 national workshop organised by the Anti-Corruption Academy of Nigeria, the proposal of ranking universities on the basis of academic integrity was endorsed. This was necessary to serve as lever for promoting academic integrity through competition induced by ranking. Integrity, regardless of the qualifier adjective is a state of steadfastly adhering to high moral principles or professional standards. It can be defined as *"adherence to a state of high moral principles and professional standards and values in scholarship especially in teaching, learning and research."* Embodied in this definition is honesty and responsibility in scholarship.

Some behaviours which are forms of academic misconduct relating to academic integrity. These include:

- Knowingly representing the work of others as one's own.
- Using, obtaining, or providing unauthorised assistance on examinations, papers, or any other academic work.
- Fabricating data in support of laboratory or field work.
- Forging a signature to certify completion of a course assignment or a recommendation to graduate school.
- Unfairly advancing one's academic position by hoarding or damaging library materials.
- Misrepresenting one's academic accomplishments

Indicators of and measuring academic integrity

The indicators being contemplated in the academic integrity ranking model include:

- Number of proven cases of examination misconduct/malpractice in a given year relative to total student population.

- Proportion of plagiarised undergraduate project reports and higher degree projects, dissertation and theses in a given year.
- Number of proven cases of fudged research data by staff of the university per session.
- Number of proven cases of certificate/academic document falsified in a given year.
- Proportion of dishonest reporting on academic staff by supervising officers in the Annual Performance and Evaluation Report (APER).
- Percentage of examination scripts reported by external examiners to be wrongly graded in favour of or against some candidates.
- Percentage of lecturers who are late to or absent in class per session.
- Percentage of altered ("doctored") mark sheets proven by faculty boards and Senate in a given session to favour or disfavour candidates.
- Percentage of false claims by students in a session to secure academic advantage e.g. false claim of hospitalisation to explain absence from a scheduled examination.
- Stability index of the academic calendar.
- Proportion of students expelled for certificate forgery relative to total student population.

Current state of ranking of African universities

We can summarise the current state of ranking of African universities within global league tables as follows:

- Steady improvement since 2004. In 2004, less than 8 African universities featured in the list of 500 universities in THE ranking. By July 2019, this figure has risen to 15.
- Stimulated by awareness of the ranking schemes, desire o

avoid the shame of low ranking, need to produce better quality graduates to drive national economies, to enhance prestige of the university and attract more students and international scholars.
- Greater investment by government and the private sector in university education in **Africa.**

Seven reasons why African universities are not well ranked

There are several reasons why African universities are poorly ranked in global league tables. Seven of these are:

1. Low investment in the research enterprise
2. Research capacity deficits- institutional and human
3. Inefficiencies in the system
4. Sharp practices in research
5. Weak attraction of international staff and students
6. Low ICT use in promoting visibility
7. Poor data collection and management capabilities

Seven ways for improving global ranking of African universities

By way of summary, there are at least seven ways of improving the standing of African universities on global league tables. These are:

1. Familiarity with the most-recent ranking indicators
2. Encouraging national ranking of universities so as to prepare the local for the global
3. Improving investment in research that will strengthen institutional and human research capacities
4. Attracting international staff and students
5. Steering programme delivery towards the SDGs
6. Massive national, regional and global publicity (use social media)
7. Providing learner-friendly infrastructure

Forty Strategies for improving ranking of Nigerian universities on global league tables

The Magic Bullet
The magic bullet for improving the ranking of Nigerian universities on global league tables is the full implementation of the NUC 2019-2023 Blueprint on the Revitalisation Plan for the Nigerian University System (otherwise known as the Rasheed Plan).

It is not in doubt that if the Rasheed Plan is implemented with a high degree of fidelity, in 2023, not less than five Nigerian universities will be among the top 200 in the world.

Let us now describe the demands of the three global ranking schemes and propose strategies which will ensure that Nigerian universities attain respectable ranking among the top league of universities in the world.

Attaining respectable ranking on ARWU

The quality of education in AWRU is measured by the total number of alumni of an institution winning Nobel Prizes and Fields Medals. Alumni are defined as those who obtain bachelor, Master's or doctoral degrees from the institution.

1. **Tutelage under Nobel-prize winners:** Training Nigerian graduates under the wings of Nobel-prize winners will foster cultivation of research methodologies, attitudes and values needed to be a prize winner. NUC and AVCNU need to undertake a study of institutional location of Nobel Prize winners and seek partnership with such institutions and centres where the laureates are serving. Bright graduates, preferably first class degree holders can be carefully selected to undertake postgraduate education in such centres. We should begin to fade out the vogue of partnerships with little known universities and laser focus on one or two outstanding universities and programmes where Nobel Prize winners serve.

2. **Admit the best from the secondary school system:** Admitting the cream of products from the secondary school system will enhance the chances of good quality graduates who in turn will deploy their sharp intellect to win the Nobel Prize someday. This is a call for greater rigour in the selection process of candidates to our universities. The efforts of the Oloyede-led JAMB should be commended in this regard. The harvest of candidates is rich. On the average, there is one admission space for about three UTME candidates. We have no reason not to select the best and expect that these candidates will be one of those who will win the Nobel prize in another 20 years making the university earn high score on the quality of

education measure of ARWU.

Quality of faculty is assessed using two indicators. These are (a) staff of an institution winning Nobel Prizes in Physics, Chemistry, Medicine and Economics and Fields Medal in Mathematics and (b) highly-cited researchers in 21 broad subject categories. Staff is defined as those who work at an institution at the time of winning the prize.

Potential laureates are saddled with administration and some are busy chasing the post of vice-chancellor, director-general, executive secretary or minister. Facilities that are currently in place are not supportive of research to earn the prize. Intellectually able frontline researchers abort research when post of professorship is attained.

3. **Encourage scholars in Nigerian universities to target global problems:** Many Nobel prizes are won which address problems facing the entire human race rather than a subset of humanity. Vice-Chancellors should encourage their staff to think global while seeking research problems. Such research which target global but nationally-relevant problems should be preferentially funded by the university, NUC and TETFund. For example, global warming is big news at the moment so solving climate change or the forthcoming energy crisis should score points towards winning the Nobel Prize. Equally, cure for diseases such as HIV/AIDS and cancer are always a popular area and they attract the attention of Nobel Prize nominators.

4. **Encourage networking with researchers outside Nigeria:** Vice-Chancellors should encourage their staff who are focussed on research to network with their

colleagues outside Nigeria. Since your staff cannot nominate themselves for a Nobel Prize, they must make their work known to others. They should be encouraged and sponsored to attend conferences and write articles in newspapers and magazines about their work. The more they make their work known, the better their chances of earning a nomination especially if the work gets the attention of a Nobel Prize nominator.

5. **Foster collaboration with American universities:** Although the Nobel award is not country-subjective, it has been shown that working in a US laboratories statistically improves chances of winning the prize. Prior to 2006, 758 individuals and 18 organizations have been honoured by the Nobel Foundation and almost 300 of those recipients have been American or worked in the US. Vice-Chancellors may wish to be preferentially selective in favour of US universities while looking for academic and cultural exchanges. I should stress that this recommendation does not in any way limit our scope of such linkages.

6. **Talent hunt:** We should undertake a talent hunt for top-rate scholars who are on the starting line of the long road to winning a Nobel prize through active and sustained research. The winners of NUC doctoral thesis award in physics, chemistry, medicine, literature and economics can be part of the stock.

7. **Re-energise national merit award winners for sustained productive work:** The Nigerian National Order of Merit (NNOM) is an award to outstanding scholars. Recipients have a long history of noteworthy contributions to knowledge but hardly disposed to continue active research owing to the weight of non-

scholar duties. We should encourage winners of NNOM to continue active pursuit of research especially with colleagues within and outside Nigeria so as to build capacity.

8. **Conducive research environment and incentive:** We should provide laboratory/work environment for scholars in the special talent pool to support research and travels and provide incentives for ground-breaking work.

9. **Intensive publicity for research done by Nigerian scholars:** As told by numerous Nobel laureates, at the end of the day, all you have to do is convince somebody else that your research is really important and ground-breaking through conferences, journal articles and popular media reports. Many Nobel winners are not recognised for decades after conducting the key experiment for which they will ultimately be recognised. The Nigerian university community through the joint efforts of NUC and AVCNU should scout for ground-breaking research findings by Nigerian scholars and keep blowing the trumpet to the ears of local and international audiences.

10. **Research capacity building:** Nigerian scholars have great potential to be top-rate and able to contribute hugely to citable literature if their research skills are continually upgraded. This underscores the need for constant research capacity building conducted at the level of the university and as a collective at the national level. While trusting the ability of local senior academics to lead such capacity-building efforts, injection of renowned and highly-cited researchers from other countries will be a productive venture. The better model of research-capacity building is programme/faculty based; the other

being university-based. This demands that staff in the department or faculty receive training in their disciplines as a homogeneous unit. Commonalities in problem identification; research methodology; data gathering and analysis; and report writing are shared and upon which training is based.

The national-level effort led by NUC and AVCNU with funding support from TETFund should involve clustering training around disciplines. Researchers in specific disciplines such as agriculture, education, medicine and science are brought together in a location for training in modern methods of research. The NUC initiative in this direction is applauded. The training site should be rotated among universities that are top-rate in the discipline targeted for the training.

11. **Research Newsletter:** Universities should publish quarterly research newsletter highlighting contemporary developments in research within and outside the university in specific disciplines. A national publication by NUC is also recommended that will aggregate efforts by all universities in the system.

12. **Citing Nigerian Scholars:** Encourage students doing research especially for postgraduate studies and other colleagues in the field to cite research reports by Nigerian scholars. Efforts should be made to publish such reports.

13. **Communicate list of journals indexed in databases to all staff:** Some staff are unaware of journals which are indexed in Science Citation and Social Science Citation indexes. The University Librarian should extract the list relevant to each department/faculty and forward to heads of department and deans of faculty for wide

dissemination to their staff. Since this list is also available on the web, staff should be informed of the site to visit to extract the list relevant to their discipline and area of research. Staff should then be encouraged to consider such journals as first choice when seeking publication outlets for their research.

14. **Reward staff who publish in journals indexed in Science Citation and Social Science Citation indexes:** Incentives should be given to staff whose publications appear in journals indexed in Science Citation and Social Science Citation indexes including financial reward for every article published as practised by Covenant University as well as financial support for further research.

15. **Training of staff by Editors of Science, Nature and other high-impact journals:** NUC and AVCNU should collaborate to bring to Nigeria, the editors of Science, Nature and other high-impact journals to conduct workshops on techniques for publishing in these journals. On my invitation, in November 2010, NUC was able to support the Editor of the No.1 journal in science teaching based in the US- the Journal of Research in Science Teaching (JRST) to Abuja. Science-education researchers from all Nigerian universities participated in the training workshop many of whom are now close to publishing some of their works in JRST. This practice should be expanded and sustained.

16. **Strengthen journals with editorial** base in Nigeria to qualify for indexing in databases: Many journals with editorial base in Nigerian universities have great potential to have their contents indexed in Science Citation and Social Science Citation indexes. Improvement in the

review process and internationalisation of board of editors will go a long way to make this happen. NUC and AVCNU should support the strengthening of such journals as furtherance of the initiative of NUC in the same direction in 2005.

17. **Encourage collaborate research especially with international partners:** University staff should be encouraged to work on a research project as a team not solo. Such teams should, as much as possible, include researchers in the same area from other countries of the world. The diversity will enhance the quality of research, acceptability of its findings and chances of its citation by numerous researchers.

18. **Mentoring by senior colleagues:** Research mentoring by senior colleagues who are active in research should be encouraged by vice-chancellors. Some incentive for such mentoring practice is worthwhile.

Improving Performance on the Times Higher Education World Ranking of Universities

19. **The advice of the authorities of THE are worth reflecting on. The email below provides a summary.**

From: Tes Help <profilerankings@timeshighereducation.com>
Sent: Sunday, 14 July 2019 5:41 PM
To: pokebukola@yahoo.com;
profilerankings@timeshighereducation.com
Cc: pokebukola@yahoo.com
Subject: Re: Request for ranking of Covenant University, Nigeria

Dear Peter,

Please see the ranking list at https://www.timeshighereducation.com/world-university-rankings/2019/world-ranking. You can search by country 'Nigeria'.

There are many reasons why a university is not featured in our rankings. First of all an institution needs to submit a complete set of data to us. Second, there are a few inclusion criteria that institutions need to fulfill in order to be included in the World University Rankings. The details are available on our methodology page at: https://www.timeshighereducation.com/world-university-rankings/methodology-world-university-rankings-2019

Because our rankings are research-focused rankings, a certain level of research output is needed in order to be included in the rankings. This is the most important inclusion criteria.

Below the three main inclusion criteria;
1) Universities can be excluded from the World University Rankings if they do not teach undergraduates, or;
2) If their research output amounted to fewer than 1,000 relevant publications between 2013 and 2017 (with a minimum of 150 a year);
3) Universities can also be excluded if 80 per cent or more of their research output is exclusively in one of our 11 subject areas.
Many thanks,
Danae

We should now proceed with other suggestions.

20. Keep teacher/student ratio in check: Through the programme accreditation process, NUC and relevant

professional bodies should keep enforcing the minimum standards for teacher/student ratio.

21. **Increase proportion of postgraduate students in first and second generation public universities:** NUC should encourage a handful of first and second generation universities with capacity and resources (human and material) to deliver quality postgraduate education to increase enrolment into postgraduate programmes. Of course, this recipe has to be taken alongside the availability of staff who are qualified to teach and supervise postgraduate programmes.

22. **Increase efficiency of postgraduate schools:** Senate of our universities should evolve and enforce policies that will lead to improved efficiency of postgraduate schools. Examples are replete of postgraduate students spending more than double the time needed for postgraduate degrees for a motley assortment of reasons.

23. **Improved funding for capital development to aid teaching and learning:** Proprietors of universities-government and private, should continue to be urged and lobbied to improve funding for capital development in the universities. TETFund should continue to play its financial interventionist role with greater vigour. A 20% annual improvement in capital funding, prudentially and transparently managed by the universities for enhancing teaching and learning will translate to respectable scores on the teaching indicator of the THE ranking in the next ten years.

24. **Strengthen university-industry partnership:** Universities should work in concert under the umbrella of NUC-NESG Partnership and AVCNU to win the

confidence of industry regarding the competence of university researchers to conduct research that will enhance production. It is recalled that previous efforts by CVC on the subject has not translated into significant gains. A little more push and commitment are required at this time.

25. **Apply transparent sharing formula on university researchers engaged with industry:** A good number of university staff are engaged in research with industry and are off the radar of university administration. These staff should be documented and requested to pay some percentage of earnings from industry research to university coffers.

26. **Strengthen university consultancy services:** University consultancy service is an important rallying point for university-industry linkage. The unit should be given annual targets by its governing board on revenue to be derived from industry through research.

27. **Improve salaries and work environment to attract international staff:** In a market-driven economy, attraction is towards where maximum benefit can be derived by the international staff in terms of salary and other conditions of service. Salaries of university staff should be made internationally competitive, even as much as what legislators earn! Work environment including facilities for quality teaching and research should be significantly improved. Special accommodation facilities should be provided with due attention paid to security and regular supply of water and electricity.

28. Improve hostel conditions to attract international

students: Over 80% of hostel facilities in the Nigerian university system are not conducive for foreign students especially those from Europe and North America. A national "Operation Fix the Hostels" should be implemented with vigour so that by 2023, most of the hostels are in better shape for habitation by foreign students. Maintenance of the hostels should be outsourced.

29. **International road show and fairs to attract foreign students:** AVCNU should embark on marketing fairs to countries in Africa and other parts of the world to publicise Nigerian universities and their programmes to potential foreign students. Since all universities cannot be present at every fair, literature and other publicity materials should be deposited with NUC and AVCNU headquarters by each university. For a little fee paid by the university to AVCNU, these materials are conveyed by any team of VCs or senior officers on tour of other countries for such fairs. We can model the example of British universities (even "roadside" ones) that cart away our students every year for undergraduate and postgraduate studies.

Improving Performance on the Times Higher Education Webometric Ranking

Isidro Aguillo, head of the webometrics lab offer the following tips which can be applied by Nigerian universities:

30. **URL naming:** Each institution should choose a unique institutional domain that can be used by all the websites of the institution. It is very important to avoid changing the institutional domain as it can generate confusion and it has a devastating effect on the visibility values. The alternative or mirror domains should be disregarded even

when they redirection to the preferred one. Use of well known acronyms is correct but the institution should consider including descriptive word, like the name of the city, in the domain name.

31. **Contents:** Create: A large web presence is made possible only with the effort of a large group of authors. The best way to do that is allowing a large proportion of staff, researchers or graduate students to be potential authors. A distributed system of authoring can be operative at several levels:

32. **Contents:** Convert: Important resources are available in non electronic format that can be converted to web pages easily. Most of the universities have a long record of activities that can be published in historical web sites. Other resources are also candidate for conversion, including past activities reports or pictures collections.

33. **Interlinking:** The Web is a hypertextual corpus with links connecting pages. If your contents are not known (bad design, limited information, or minority language), the size is scarce or they have low quality, the site probably will receive few links from other sites. Measuring and classifying the links from others can be insightful. You should expect links from your "natural" partners: Institutions from your locality or region, web directories from similar organisations, portals covering your topics, colleagues or partners personal pages. Your pages should make an impact in your common language community. Check for the orphaned pages, i.e. pages not linked from another.

34. **Language, especially English:** The Web audience is truly global, so you should not think locally. Language

versions, especially in English, are mandatory not only for the main pages, but for selected sections and specially from scientific documents.

35. **Rich and media files:** Although html is the standard format of web pages, sometimes it is better to use rich file formats like Adobe Acrobat pdf or MS Word doc as they allow a better distribution of documents. PostScript is a popular format in certain areas (physics, engineering, mathematics) but it can be difficult to open, so it is recommended to provide an alternative version in pdf format.

36. Bandwidth is growing exponentially, so it is a good investment to archive all media materials produced in web repositories. Collections of videos, interviews, presentations, animated graphs, and even digital pictures could be very useful in the long term.

37. **Search engine friendly designs:** Avoid cumbersome navigation menus based on Flash, Java or JavaScript that can block the robot access. Deep nested directories or complex interlinking can block robots too. Databases and even highly dynamic pages can be invisible for some search engines, so use directories or static pages instead or as an option.

38. **Popularity and statistics:** Number of visits is important, but it as much as important to monitor their origin, distribution and the causes why they reach your web sites. Most of the current log analysers offer a great diversity of tables and graphs showing relevant demographic and geographic data, but make sure there is an option to show the referrers, the web pages from which the visit arrives or the search term or phrase used if the

visit came from a search engine. Most popular pages or directories are also relevant.

39. **Archiving and persistence:** To maintain a copy of old or outdated material in the site should be mandatory. Sometimes relevant information is lost when the site is redesigned or simply updated and there is no way to recover easily the vanished pages.

40. **Standards for enriching sites:** The use of meaningful titles and descriptive metatags can increase the visibility of the pages. There are some standards like Dublin Core that can be used to add authoring info, keywords and other data about the web sites.

Scenarios for the Future and Conclusion

There are high hopes that after a decade of use of AQRM accompanied with quality-enhancing remediation, the quality of higher education in Africa would have received a boost significant enough to pop up many more African universities on global league tables. With such improvement in fortune, interest in global league tables will hike and the ranks of the rankophobic will begin to thin.

Another scenario which will unfold in the future is the refinement of AQRM within the African Quality Assurance and Accreditation Framework (PAQAF). PAQAF is an emerging mechanism for continental harmonisation of quality assurance processes. It is expected to play a major role in shaping the tenor of delivery of higher education in the continent, especially the issue of quality—its definition, assurance and improvement. Since AQRM will be a key ingredient of the framework, its continued use in refined states is guaranteed. Within the context of the first scenario, we are likely to find the use of the refined

AQRM featuring side by side the participation of African universities in global ranking schemes and an increase in the number of national ranking of universities.

The third scenario which will be driven largely by the forces of globalisation is the desire of many heads of higher education institutions in Africa, electing to be part of national and global ranking schemes in response to the demands of institutions in Asia, Europe and North America to which they seek academic and cultural partnerships. In the last five years, such partnerships had demanded a statement on the international ranking of the African university and its would-be partner, on academic programmes to which the memorandum of understanding would be hinged. A blank in such data especially from the African side had led in some cases to aborting the process of exchange. It is envisaged that in the coming years, vice-chancellors of African universities seeking international partnerships will not be averse to being part of national and international ranking exercises. A fourth scenario which will trigger a swing to competitive ranking rather than rating is the push for centres of excellence.

The fifth future scenario is the rise of pockets of ranking schemes by the media and non-governmental organisations. By mid-2019, there were twelve of such ranking schemes from two in 2012. The major difference in the scheme is the selection and weighting of indicators. As should be predicted, the slightest change in the weighting even if indicators are the same, can translate to dramatic shift in the league tables. The resultant is a great deal of variability in the rankings from the league table of one ranker to the other. This presents an interesting scenario where most universities are ranked well in one scheme or the other. Because of the increased popularity of the ranking schemes, a ten percent growth is envisaged in the next ten years after which the number is expected to plateau.

There are a number of emerging features of the African higher education system that may impact ranking. These include the Addis Ababa (formerly Arusha) Convention, the increase in the number of national quality assurance agencies, the increasing adoption of the credit transfer system, the African Higher Education and Research Space (AHERS) and the Pan-African Quality Assurance and Accreditation Framework (PAQAF).

The Addis Ababa Convention is on recognition of certificates, diplomas and degrees and intentioned to facilitate the mobility of staff and students across higher education institutions in Africa. Students and staff will largely base their mobility decision to go to another university in the same or a different country on the academic standing of the target university . The standing will more likely than not be provided by the ranking of the university of a national, regional or global scheme. In the study reported earlier, over 90% of the students surveyed showed likeness for university ranking to guide their choice of school for postgraduate education. It needs to be mentioned that ranking will play a less than visible role in the mutual recognition of the certificate component of the Addis Ababa Convention. State parties to the Convention are obligated to recognise certificates, diplomas and degrees from all countries that have ratified the Convention regardless of the ranking of their universities.

The anticipated increase in the number of national quality assurance agencies could encourage the development and use of new ranking schemes. The agencies are apt to develop assessment criteria for their quality assurance process that may be inclined towards ranking. The demand for accountability by the public may ginger competition among the institutions which may translate to some form of ranking or rating unintentioned by accreditation by national quality assurance agencies. In addition, in an environment with diminishing financial resources, ranking may be turned to as basis for resource allocation.

The continental credit-transfer agreement can also impact ranking. By the agreement, mutual recognition of certificates and equivalence of credits embedded in the letter and spirit of the Addis Ababa Convention will mean students from across Africa can have their credits transferred from one institution to another in order to continue their studies. Beyond the paper agreement, senate and academic boards of universities may show preference for students coming from universities that are better ranked than the others. Today, even with similar provisions in the academic regulations of some universities that "transfer will be approved for candidates from universities recognised by Senate", such transfers are hardly approved for students coming from universities that are poorly ranked even though they are recognised by Senate.

Another set of developments which may implicitly impact ranking is the Continental Education Strategy for Africa (CESA 16-25), the HAQAA initiative and PAQAF. Because the initiatives are owned by the African Union with its preference for rating through AQRM rather than ranking, they are explicitly configured against ranking. However, activities within the African higher education space will be largely dominated by players from well-ranked institutions. This is not to say that the less well-known universities with research-active scholars may not feature. The activities of such scholars are likely to be eclipsed by the bigger players from the better ranked universities and research institutes. This phenomenon is predicted to catalyse a swing towards ranking in spite of its unintended application. PAQAF which has AQRM as its lumbar, may not easily succumb to the idea of ranking for a long time to come.

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