

An African Perspective on Ranking in Higher Education

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Abstract

About 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. By 2001, Nigeria had 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. This paper reviews development in higher education ranking in Africa with special focus on Nigeria and the African Quality Rating Mechanism. It explores accountability issues and the uses to which ranking/rating should be put in bolstering the quality of the higher education system in the region. It notes that ranking can be a strong determinant of educational policy thrust insofar as the goal is to engender competition and catalyse improvement in quality. The theory of competition on which ranking rests implies that competing elements strive to improve in order to be the leader in the pack. Thus, if the system-wide or institutional goal is to stimulate improvement in quality, ranking comes in as one of several pathways. The overarching goal of ranking or rating in the African setting is to serve as stimulant for bolstering quality in the higher education system.

Introduction

The African higher education system has grown significantly over the past twenty years in response to demands for admission spaces by secondary school leavers. From about 700, universities, polytechnics, colleges of education and other post-secondary institutions classified within the higher education group in the early 1990s, the system now has well over 2,300 of such institutions. The growth of the system with respect to enrolment is adjudged to be one of the fastest in the world (UNESCO Institute of Statistics, 2010).

The impressive performance on access has failed to be matched by improvement in quality (Materu, 2007; Okebukola and Shabani, 2007; World Bank, 2008). As a way of clustering the good from the bad, stakeholders especially potential students, employers of labour and parents turned to ranking of these institutions to provide a basis for selection. The first port of call is typically the global ranking league tables such as the webometrics, Times Higher Education (THE) and the World University Rankings and Academic Ranking of World Universities (ARWU) commonly called the Shanghai ranking (Salmi, 2011). These rankings are regularly updated and readily available in the public domain hence individuals or groups desiring relative standing of their national institutions find them to be easily-accessible resource. Unfortunately, these global ranking schemes provide little help for the locals, especially potential undergraduates since over 90% of the higher education institutions in Africa are not captured in the top leagues (Salmi and Soroyan, 2007). A sprinkle of universities in Africa shows up in the top 500 of all the global league tables. For instance in the 2010 ARWU only three universities, all from South Africa, were listed in the world's top 500 and only two in the 2011-2012 THE best 400. Even when regional and national tables are extracted from the global data set, many institutions at the national level are not ranked. This presents a need for national and Africa regional schemes that can fill this void. This paper presents an example of a national (ranking) and a regional (rating) system that is developing in response to this need.

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, strictly 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 for 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 section of this paper presents a national example of ranking of higher education institutions while the section that follows this describes a regional rating scheme. The concluding section sees Africa within a global context and suggests ways by which African universities can achieve better ranking on global league tables.

A National Example- The Nigerian experience

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 choices by prospective students. Second, the government wanted a transparent and objective mechanism for identifying centres of excellence to which funds allocation could be preferentially applied. Thirdly, the 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 ranking 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

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

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:

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

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

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

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

By 2009, NUC showed indication to revise the indicators for ranking as shown in Table 1 (Okebukola, 2010).

Table 1 Proposed NUC Ranking Indicators

Common
1. Academic Peer Review
2. Employer Review
3. Faculty /Student Ratio
4. Citations per Faculty
5. Retention: six-year graduation rate and first-year student retention rate
6. Graduation rate performance: difference between expected and actual graduation rate
7. Proportion of international staff
8. Proportion of international students
9. Web impact factor
10. Alumni holding a post of chief executive officer or equivalent in one of the 500 leading international companies

Unique
1. Percentage of academic programmes of the university with full accreditation status
2. Proportion of academic staff of the university at full professorial level

Regional Effort- The African Quality Rating Mechanism

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), 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.

AQRM has clusters of eleven indicators (standards) at the institutional and programme levels. These are shown in Table 2.

Table 2: AQRM Standards/Clusters of Indicators

Standard	No of rating items
1. Institutional Governance and Management	9
2. Infrastructure	8
3. Finance	7
4. Teaching and Learning	8
5. Research, Publications and Innovations	8
6. Community/Societal Engagement	8
7. Programme Planning and Management	8
8. Curriculum Development	7
9. Teaching and Learning (in relation to Curriculum)	7
10. Assessment	6
11. Programme Results	4

The details of the clusters/standards are given in appendix 2.

A pilot run of AQRM was implemented in 2010. An AQRM survey questionnaire was used for collecting data. It is an 80-item instrument with 15 parts. Parts 1 to 13 contain items seeking demographic data on the institution and detailed data on students, staff, facilities and processes. Part 14 requires self-rating of faculty/college characteristics such as management; infrastructure; recruitment, admission and selection; research output; learning materials; curriculum and assessment. The second section of Part 14, requires that the programmes of the institution be ranked from 1st to 5th. Part 15 is the institutional self-rating. The entire institution is to be rated on a 3-point scale- excellent performance; satisfactory performance; and unsatisfactory performance on the 11 clusters of standards.

Each of the 34 participating institutions in the pilot run from all the Regional Economic Communities (RECs) in Africa conducted a self-assessment on the items on the 11 standards. Rating of performance was on a 3-point scale (unsatisfactory performance=1; satisfactory performance=2; excellent performance=3). The release of the results of the pilot run is being awaited. It is unclear if AU will take AQRM beyond the pilot stage but hopes are high in Africa and the rest of the world that AQRM should evolve to a respectable international rating scheme.

AQRM Versus Major Global Ranking Schemes

There are a number of convergences and divergences in the philosophy, methodology and reporting of AQRM and the three global rankings selected for comparative review in this paper- Webometrics, ARWU and THE. The philosophy undergirding AQRM is the fostering of quality in higher education institutions in Africa. This is congruent with the latent philosophies of global world rankings which stimulate a quest for quality through competition. The Plan of Action of the African Union Second Decade of Education envisions that with AQRM in place, African higher education institutions will begin to march forward in improving their performance on the 13 indicators. Such improvements are expected to translate into overall quality improvement of their institutions.

Congruence between AQRM and three global rankings can also be seen in the indicators. Four of the clusters of indicators that are common to the three global rankings feature directly or indirectly in AQRM. These are research and publications, teaching and learning, infrastructure and community/social engagement. The other two- governance and management and finances are not directly measured by the global rankings. The programme-level criteria of AQRM do not directly match the indicator clusters of ARWU, THE and webometrics except of course for teaching and learning which is indirectly related. It is safe to assume therefore, that the measures on AQRM are proximal to the measures on the three global ranking schemes. It can be predicted that a well-performing institution on ARM will have a respectable rank on global league tables if a rigorous verification process is applied to the AQRM methodology.

In spite of this similarity in indicators, the logic of the measurements is different. AQRM is mainly criterion-referenced. An institution does not assess itself against others but against a set of criteria. As an example, in applying AQRM, University of Cape Town in South Africa assesses itself on the criterion of governance and management and come to judgement as to whether it rates its performance as excellent, satisfactory or unsatisfactory. University of Cape Town has no data to make a comparison with the University of Lagos in Nigeria to rank itself higher or lower than University of Lagos on this measure. In this self-assessment mode, it is assumed that the university will be truthful to itself and provide a honest and verifiable score on the different AQRM indicators. The global rankings on the other hand, are largely norm-referenced, comparing performance of one university to the others.

AQRM requires institutions to develop an improvement plan following the assessment process. This aspect of the methodology of AQRM is not a feature of the global ranking schemes whose main intention is to publish league tables and expect users to make whatever use they deem fit. AQRM on the other hand requires performance improvement over a specified time based on the self-assessment scores. AQRM is expected to be complemented by strong internal quality assurance mechanisms to monitor the implementation of the improvement plan.

Perception and effects of ranking

It is difficult to provide an Africa-wide view of the perceptions of stakeholders on ranking of higher education institutions without a regional survey on the subject. However, three data sources permit a fair view of the subject. One of these is the study by the African Union reported by Oyewole (2010) in which subjects especially from the university community were surveyed across Africa. The other is the Nigerian study by Okebukola (2006) and a recent regional survey of newspaper reports on university rankings reported in Okebukola (2011).

Overall, these studies show tremendous enthusiasm by the general public for the “rot in the higher education system to be exposed” as a result of the enduring poor performance in the global league tables and a “firm basis for improved funding for the universities”. As findings in the Okebukola (2006) and Okebukola (2011) showed, employers of labour were quite excited about the ranking. They desire ways of selecting graduates from the best-ranked schools in the midst of graduate glut. Parents and potential students found ranking helpful in the selection of institutions and were quite happy to turn to league tables showing universities with very good rankings in the programmes desired for study.

Perhaps the group that is fractionalised in its perception of ranking is the higher education managers and teachers. While some who appear favoured by good placement on ranking tables felt comfortable with ranking, others who are not so favoured have harsh words for ranking. Yet, there is a third group made up predominantly of staff unions that use ranking results to back up requests for improvement in working conditions.

Some details of the Nigerian survey showed that over 68% of students seeking admission into Nigerian universities between 2003 and 2006 and 84% of their parents were guided in the selection of their courses by the NUC rankings published in newspapers. This, of course, is after the variables of proximity of the institution to the home and type of university would have been partialled out. About 76% of the employers of labour surveyed combined the national ranking with global league tables in shortlisting applicants for employment interviews. About 69% of the vice-chancellors made reference to the ranking of their universities or their programmes in their annual reports and convocation speeches.

The effect of ranking has been largely positive. A striking effect is the improvement in funding to the universities to improve facilities for teaching, learning and research. In Nigeria, this increase is over 30% over a 10-year period. In Africa, national quality assurance agencies have increased in number from 10 in 2003 to 22 in 2012 in response among other things to the desire to improve quality and hence bolster global ranking or regional rating. The third effect is the slow but steady increase in the quality of delivery of higher education in the region. While this improvement cannot be adduced solely to ranking, it is obvious that the competition induced by ranking is spurring efforts at improving quality.

It is instructive to examine the issue of rankings, education policies and resource allocation. The overarching goal of any education policy is to foster learning which will ensure that national goals and objectives are met. Beyond this broad statement, there are several determinants of education policy of which ranking could be a minuscule element. Yet it can also be played up to a mega level depending on the pervading needs of the society. The parameters for deciding educational policies include national philosophy, socio-cultural, economic and political contexts and the desire to remain competitive in a globalised world. Such policies have general and specific variants. General policies provide the framework for steering the national agenda while specific variants within this general framework target sub-systems to guide institutional goals. The location of ranking as a stimulus for setting education policy cannot be universally determined as national idiosyncrasies interplay in what gets priority in setting the education agenda.

Ranking can be a strong determinant of educational policy insofar as the goal is to engender competition and act as a catalyst for improvements in quality. The theory of competition on which ranking rests implies that competing elements strive to improve in order to be the leader in the field. Thus, if the system-wide or institutional goal is to stimulate improvement in quality, ranking comes in as one of several pathways.

In Nigeria, the National Policy on Education (2006) aims for an egalitarian society where education plays a pivotal role. It calls for “supporting educational institutions to make them internationally competitive”. One of the strands of the spirit of this “international competitiveness” is ranking where institutions and their programmes are compared among themselves at the national and global level and as a consequence, improve their delivery with international standards in mind. Such national policies are shaped by public opinion which in the last ten years, has swayed in the direction of demanding that educational institutions in Nigeria, especially universities, improve their standings in global league tables. Institutions are responding by enacting policies that will lead to improvement in their teaching and research activities aligned to the indicators in the national and global ranking schemes. For instance, the University of Ilorin, the best Nigerian ranked institution on the 2010 webometrics table, has been driven by a 2007 institutional policy of improving the research and publications activities of its staff. The University of Benin and the Obafemi Awolowo University that had respectable rankings from 2006 to 2008 but which slipped thereafter also took steps through institutional policy enactments to bolster their research standing to be elevated in global league tables. In sum, the decision to use ranking to shape educational policies is taken based on local circumstances, with national and institutional visions often serving as a guide.

One of the major influencing factors for educational policies is the national vision. In 2009, Nigeria signed on to Vision 20-2020 with the aspiration to be one of the 20 leading world economies by 2020. Ghana, Lesotho, South Africa and Kenya are other examples where national visions are set to guide development. The common thread through these national vision statements is ranking as the thrust to emerge among top-ranked economies by a set target date. Consequently, educational policies deriving from these visions look to another form of ranking – of universities.

National and institutional desire to elevate their standing on league tables will be realised by financial allocation mechanisms in one of two directions: lower ranked institutions can be financially supported to improve their delivery process, whereas higher ranked institutions are financially supported to evolve into centres of excellence.

Achieving respectable ranking on existing global ranking schemes

In spite of the development of AQRM, African higher education institutions will continue to be on the radar for data collection and ranking by other global ranking schemes. Indeed, most heads of higher education institutions attending a September 2011 event on quality assurance in Bamako would want to cite their rankings on such global league tables as the webometrics, Times Higher Education and Academic Ranking of World Universities as a measure of their global, rather than regional ranking/rating. Some expressed preference for a renaming to Quality Rating Mechanism without the “African” to convey the universality of the application of the rating system. While it is apparent that such higher education managers are unaware of the philosophy and usability of AQRM, it is clear that in the spirit of inclusivity, African higher education institutions should continue to strive to attain respectable ranking on global ranking schemes.

As stated earlier, three of the major global ranking schemes will be in focus. These are the Academic Ranking of World Universities (ARWU), Times Higher Education ranking and webometrics ranking.

The Academic Ranking of World Universities focuses on academic or research performance (Liu, 2011). Ranking indicators include alumni and staff winning Nobel Prizes and Fields Medals, Highly Cited Researchers in twenty-one broad subject categories, articles published in Nature and Science, articles indexed in Science Citation Index-Expanded and Social Science Citation Index and academic performance with respect to the size of an institution.

The Times Higher Education–QS World University Rankings employs 13 performance indicators designed to capture the full range of university activities, from teaching to research to knowledge transfer. These 13 elements are brought together into five headline categories, which are: *Teaching* — the learning environment (worth 30 per cent of the overall ranking score); *Research* — volume, income and reputation (worth 30 per cent); *Citations* — research influence (worth 32.5 per cent); *Industry income* — innovation (worth 2.5 per cent); and *International mix* — staff and students (worth 5 per cent).

The Webometrics Ranking of World Universities applies four indicators obtained from the quantitative results provided by the main search engines. These are (a) **size**: number of pages recovered from four engines: Google, Yahoo, Live Search and Exalead; (b) **visibility**: the total number of unique external links received (inlinks) by a site can be only confidently obtained from Yahoo Search, Live Search and Exalead; (c) **rich files**: after evaluation of their relevance to academic and publication activities and considering the volume of the different file formats, the following are selected: Adobe Acrobat (.pdf), Adobe PostScript (.ps), Microsoft Word (.doc) and Microsoft PowerPoint (.ppt). These data are extracted using Google, Yahoo Search, Live Search and Exalead; and (d) **scholar**: Google Scholar provides the number of papers and citations for each academic domain. These results from the Scholar database represent papers, reports and other academic items.

One of the stiffest indicators for African universities on the ARWU scheme is alumni and staff winning Nobel Prizes and Fields Medals. The environment for conducting ground breaking-research is largely lacking hence steps should be taken to elevate the facilities especially research laboratories to a level that will permit contributions with potential to win the Nobel Prize. While facilities present a side of the coin, capacity of African researchers to undertake top-quality research and sustain this over time as often characteristic of Nobel-winning studies is the other side. Significant efforts should be invested in capacity building of researchers and fostering partnerships with renowned researchers outside Africa. Tutelage under Nobel-prize winners is another pathway. Training graduates from African higher education institutions under the wings of Nobel-prize winners will foster cultivation of research methodologies, attitudes and values needed to be a prize winner. The Association of African Universities (AAU) and national quality assurance agencies 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.

Another step which can add up to ultimately spawning Nobel laureates over a long-term period is to 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. There is also the need to encourage scholars in African 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.

Researchers in African universities should be encouraged to network with their colleagues outside their countries and the Africa region. Since staff cannot nominate themselves for a Nobel Prize, they should make their work known to others. They should be encouraged and sponsored to attend conferences and write articles in newspapers and magazines to promote public understanding of their technical 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.

There is the need to foster collaboration with American universities. Although the Nobel award is not country-subjective, it has been shown that working in a US laboratory statistically improves chances of winning the prize. Prior to 2006, 758 individuals and 18 organisations 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. It should be stressed that this recommendation does not in any way limit a university's scope of such linkages.

Next, we consider how African universities can achieve high scores on the "highly-cited researchers" indicator which features in some form in the three global ranking schemes of interest. The proportion of highly-cited African researchers is unimpressive translating into low scores on this indicator. To boost scores, there is need for research capacity building. African 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 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 list of journals indexed in databases should be communicated 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. 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, Nigeria as well as financial support for further research. Research mentoring by senior colleagues who are active in research should be encouraged by vice-chancellors.

Teacher/student ratio is an indicator in the Times ranking. It is assumed for instance that staff/student ratio will tell a story on the quality of teaching insofar as classes are small or of the right size and with commensurate staff strength, teaching is expected to be of good quality. The hurdle to scale on teacher/student ratio is low since many universities in countries in Africa with well-established quality assurance agencies have endeavoured to keep within prescribed teacher/student ratio minimum standards for most programmes in order to stay on the side of full accreditation. The professional bodies for medicine, engineering and law also keep teacher/student ratios in check through enforcement of their respective minimum standards on enrolment. It is important to stress the danger to which some universities in francophone countries such as Mali are

exposed over gross over-enrolment in programmes in the social sciences. The reverse is largely true for many private universities whose subscription level by students is still generally low. In sum, the first thing to do is to keep teacher/student ratios well reined in within minimum standards.

Institutional income scaled against academic staff numbers is assumed to give a broad sense of the general infrastructure and facilities available to students and staff. The overall picture in the African university system is grim. Most state and private universities are in dire financial straits and inability to meet financial needs is a recurring theme. Low institutional income translates in the view of the Times ranking scheme to inability to provide adequate resources for teaching and learning hence the indicator of institutional income is taken as proxy for teaching.

The final category of THE ranking looks at diversity on campus — a sign of how global an institution is in its outlook. The ability of a university to attract the very best staff from across the world is key to global success. THE assigns 60 per cent weighting to the ratio of international to domestic staff, making up 3 per cent of the overall score. The market for academic and administrative jobs is international in scope, and this indicator suggests global competitiveness. The other indicator in this category is based on the ratio of international to domestic students. Again, this is a sign of an institution's global competitiveness and its commitment to globalisation.

African higher education institutions can improve on the scores on the diversity indicator through improvement in the 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. 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.

There is also the need to improve hostel conditions to attract international students. Hostel facilities in many universities are not conducive for foreign students especially those from Europe and North America. A national *“Operation Fix the Hostels”* is canvassed to be implemented with vigour so that by 2013, most of the hostels are in better shape for habitation by foreign students with the issue of security guaranteed. Vice-Chancellors should embark on marketing fairs to countries in Africa and other parts of the world to publicise their universities and their programmes to potential foreign students.

Webometrics ranking has some special demands (Aguillo 2008; 2010). Isidro Aguillo, head of the webometrics laboratory offers the following tips which can be shared by African universities:

1. 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 words, like the name of the city, in the domain name.

2. 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:

- Central organisation can be responsible of the design guidelines and institutional information
- Libraries, documentation centres and similar services can be responsible of large databases,

including bibliographic ones but also large repositories (thesis, pre-prints, and reports)

■ Individual persons or teams should maintain their own websites, enriching them with self archiving practices.

Hosting external resources can be interesting for third parties and increase the visibility: Conference websites, software repositories, scientific societies and their publications, especially electronic journals.

3. 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.

4. 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.

5. 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.

6. 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. 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.

7. 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.

8. Popularity and statistics: Number of visits is important, but it is 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.

9. 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.

10. 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.

Conclusion

This paper reviewed developments in higher education ranking in Africa with special focus on Nigeria and the African Quality Rating Mechanism. It examined the potential impact of ranking on improving the quality of delivery of university education. It highlighted the start-off effort at regional rating of higher education institution. Some suggestions are provided on how African higher education institutions can take steps to improve their ranking on global league tables.

The Africa regional effort at rating of higher education institutions through AQRM is poised to be a potent mechanism at fostering quality. There is an on-going effort at strengthening the African Higher Education and Research Space (AHERS) where AQRM will play some role. AHERS is the vista of opportunity for members of the higher education community in Africa to seamlessly interact among themselves in the quest to fulfil their teaching, research and service functions. The emphasis on research within the “space” underlines the accent placed on the congregation of African scholars to finding solutions, through research, to problems inhibiting Africa’s development. AHERS is to permit unhindered collaboration among students and staff of higher education institutions in Africa regardless of linguistic and other barriers.

In the early 1960s, there existed opportunities where students and teachers crossed national boundaries within Africa to participate in teaching, learning and research. University of Ibadan in Nigeria and University of Ghana, both in West Africa had active collaboration in teaching and research with universities in East and Central Africa. Between 1970 and 1984, there was a sizeable traffic of students from University of Nairobi and University of Tanzania and University of Cameroun to the University of Ibadan especially for postgraduate degrees. Teachers in these institutions collaborated actively in research. Universities in francophone Africa especially in Cote d’Ivoire, Mali and Senegal have a fairly long history of collaboration in teaching and research. These interactions did not exist within a formal regional framework. The recent initiative by the Association for the Development of Education (ADEA) through its Working Group on Higher Education (WGHE) and the African Union Commission is to formalise the framework for these interactions at the regional level and to strengthen existing pockets of national and sub-regional “spaces”.

Also worthy of mention in relation to rating of higher education institutions in Africa is the establishment of the Africa Regional Quality Assurance Framework (ARQAF). ARQAF is being designed to have three key elements. These are the benchmark/minimum standards, regional accreditation mechanism and the strengthening of institutional quality assurance. The basis of measurement in the quality assurance process is the degree of deviation from a set of minimum standards. This, therefore implies that consensus should be reached on what the minimum standards should be for every academic programme and for the operations of the entire institution. Consensus is built by relevant professional bodies and experts in various disciplines. The resultant of this consensus is the regional minimum standards and benchmarks which will be the lodestone to guide regional ratings/rankings.

Ranking of higher education institutions especially universities in Africa has had a 10-year history (Okebukola, 2011). Within the decade, methodologies have improved and the need to adapt to the African context has been stressed. The outlook is that many more national efforts will emerge in the coming years with the upwelling of numbers of national quality assurance agencies. Resistance to

ranking will not totally disappear but the queue behind the adherents will likely lengthen. Expectations are high that before the close of the next two decades, African higher education institutions will rise to the top of global league tables if the current quality improvement process is sustained.

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Appendix 1

Details of rating items for the African Quality Rating Mechanism

Institutional-level criteria

Governance and Management

1. The institution has a clearly stated mission and values with specific goals and priorities.
2. The institution has specific strategies in place for monitoring achievement of institutional goals and identifying problem areas.
3. Clear accountability structures for responsible officers are in place.
4. Staff, students and external stakeholders, where appropriate, are represented on governance structures. Governance structures are representative in terms of gender.
5. The institution has developed quality assurance policies and procedures.
6. Appropriate mechanisms are in place to monitor staff in line with performance agreements with relevant authorities.
7. The institution has put a management information system in place to manage student and staff data, and to track student performance.
8. The institution has specific policies in place to ensure and support diversity of staff and students, in particular representation of women and the disabled.
9. The institution has a policy and standard procedures in place to ensure staff and student welfare.

Infrastructure

1. The institution has sufficient lecturing spaces to accommodate student numbers taking the institutional mode of delivery into account.
2. The institution provides sufficient learning/studying space for students including access to electronic learning resources, as required for the institutional mode of delivery.
3. Staff (academic and administrative) have access to computer resources and the internet.
4. Students have access to computer resources and the internet at a level appropriate to the demands of the institutional mode of delivery.
5. The institution has sufficient laboratory facilities to accommodate students in science programmes, taking institutional mode of delivery into account.
6. Laboratory equipment is up to date and well maintained.
7. The institution invests in maintaining an up to date library to support academic learning and ensures that appropriate access mechanisms are available depending on the mode of delivery.
8. The institution makes provision for managing and maintaining utilities and ensuring that appropriate safety measures are in place.

Finances

1. The institution has access to sufficient financial resources to achieve its goals in line with its budget and student unit cost.
2. The institution has procedures in place to attract funding, including from industry and the corporate sector.
3. Clearly specified budgetary procedures are in place to ensure allocation of resources reflects the vision, mission and goals of the institution.
4. Financial and budgetary procedures are known and adhered to by the institution.
5. The institution provides financial support to deserving students (institutional bursaries and/or scholarships).

Teaching and Learning

1. The institution encourages and rewards teaching and learning innovation.
2. The institution has procedures in place to support the induction to teaching, pedagogy, counseling and the upgrading of staff teaching and learning skills through continuing education and/or life long learning.
3. Students have sufficient opportunity to engage with staff members in small groups, individually or via electronic platforms.
4. Student: staff ratios and academic staff average workloads are in line with acceptable norms for the particular mode of delivery, and are such that the necessary student feedback can be provided.
5. The institution has policies/procedures in place to inform the development, implementation and assessment

of programmes offered by the institution and these policies take account of how higher education can contribute to socio-economic development.

6. The institution has developed a policy or criteria for staff recruitment, deployment, development, succession planning and a system of mentorship and/or apprenticeship.
7. Student support services, including academic support and required counseling services are provided, in line with the institutional mode of delivery.
8. The institution has mechanisms in place to support students to become independent learners, in line with the institutional mode of delivery.

Research, Publications and Innovation

1. The Institution has a research policy and publications policy, strategy and agenda. The research policy includes a focus (amongst others) on research supporting African socio-economic development.
2. The institution has a policy and/or strategy on Innovation, Intellectual Property Ownership and Technology Foresight.
3. The institution has demonstrated success in attracting research grants from national or international sources and in partnership with industry.
4. The institution has procedures in place to support academic staff to develop and enhance their research skills, including collaborative research and publication.
5. Staff and students publish their research in accredited academic journals and apply for patents (where relevant).
6. Researchers are encouraged and supported to present their research at national and international conferences.
7. Researchers are encouraged and facilitated, using Research and Development budget, to engage in research relevant to the resolution of African problems and the creation of economic and development opportunities.
8. The institution encourages and rewards research whose results are used by society.

Community/Societal Engagement

1. The institution has a policy and procedure in place for engaging with the local community or society in general.
2. The institution encourages departments and staff to develop and implement strategies for community engagement.
3. Students are required to engage with communities through their academic work.
4. The institution has forged partnerships with other education sub-sectors to enhance the quality of education in the country and region.
5. The institution provides access to an increasingly diverse range of students, taking account of additional support needs.
6. The Institution disseminates information on its community engagement activities to the local community.
7. 7. The institution offers relevant short courses to the community/broader society based on identified needs and supporting identified economic opportunities.

Programme-level criteria

Programme Planning and Management

1. The programme is aligned with the overall institutional mission and vision.
2. The programme meets national accreditation criteria.
3. The institution allocates sufficient resources to support the programme.
4. There is a programme coordinator(s) responsible for managing and ensuring quality of the programme.
5. The mode of delivery takes account of the needs and challenges of all targeted students.
6. Staff teaching on the programme have the appropriate type and level of qualification.
7. The programme is regularly subjected to internal and external review in a participatory manner to reflect developments in the area of study.
8. Programme planning includes a strategy for the use of technology in a manner appropriate to the programme, facilities available, and target students.

Curriculum Development

1. The curriculum clearly specifies target learners and learning outcomes/competencies for each

- module/course and for the programme as a whole.
2. The curriculum is regularly updated to take account of new knowledge and learning needs to support African development.
 3. Modules/courses are coherently planned and provide a sequenced learning pathway for students towards attainment of a qualification.
 4. The curriculum includes an appropriate balance of theoretical, practical and experiential knowledge and skills (where applicable) as well as core and elective areas.
 5. The curriculum has been developed to maximize student career pathways, opportunities for articulation with other relevant qualifications, and employment prospects.
 6. Curriculum development has been informed by thorough research and consultation with relevant stakeholders (for example, employers).
 7. The curriculum reflects positive African values, gender sensitivity and the needs of society.

Teaching and Learning

1. A clear strategy is in place to identify the learning materials needed to support programme delivery.
2. Learning materials have been clearly presented, include reference to the learning aims and outcomes and an indication of study time.
3. The language level of the learning materials is appropriate for the targeted students.
4. The learning materials have been designed with the purpose of engaging students both intellectually, ethically and practically.
5. The range of learning materials used in the programme are integrated and students are guided through their use.
6. Programme review procedures include materials review and improvement.
7. Innovative teaching and learning materials are provided for students.

Assessment

1. Clear information about mode of assessment is provided for all courses/modules making up the programme.
2. Assessment is used as an integral part of the teaching and learning process and seeks to ensure that students have mastered specific outcomes.
3. The level of challenge of assessments is appropriate to the specific programme and targeted students.
4. A variety of assessment methods are used in the programme.
5. Staff qualified in assessment have been identified and trained to provide competent assessment.

Programme Results

1. Student progress is monitored throughout the programme and early warning is provided for students at risk.
2. Completion rates per cohort conform to established norms for the subject area and mode of delivery and strategies to increase completion rates are in place.
3. Quality student feedback is provided.
4. Expert peers and/or professional bodies review the relevance and quality of learning achieved by students.