

Developing research culture in Nigerian Universities

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Outline of the presentation

- The role of research in Universities and national development.
- The current research quality context in Nigerian universities
- How research culture develops in universities
- Obstacles to developing a research culture
- Solution on how to increase the quality and quantity of research output in Nigerian universities for national development and global competitiveness.
- Institutional research leadership and advice on how to enhance the quantity, quality and impacts of research undertaking at FUNAI

Introduction

- Some of the world's most famous discoveries have been made through university research.
- From the invention of the telegraph, the discovery of AIDS, the origination of the internet, and current advances in stem cell research
- In the USA, 56% of the nation's basic research is being conducted at universities.
- <http://www.bestcollegereviews.org/top-research-universities/>

It is important to entrench a research culture because:

- It enhances the global visibility of the university
- It enhances the ranking of the university
- It enhances the global visibility and ranking of individual staff members of the university
- It attracts income to the university and the individual researchers
- It attracts world class faculty to the university
- It keeps staff and students busy
- It enhances teaching and other academic activities
- Research outputs are essential for evidence-based decision making and for economic development

Current situation in Nigeria

- Lots of small to medium research projects in Nigerian universities
- Low level of large scale research projects
- Low research skills
- Paucity of funds for all types of research
- Lack of appreciation of research and use of evidence for decision making
- Limited connection of universities with the industry and other spheres of economic development
- Low level of patents and other cutting-edge research outputs
- No entrenched research culture in most post-primary and tertiary institutions
- Low visibility and global ranking of Nigerian universities

Martin Luther King, Jr.

- An individual has not started living until he can rise above the narrow confines of his individualistic concerns to the broader concerns of all humanity.
 - a university system has not started functioning properly until it starts generating research outputs that will enhance institutional and national development

What do we need to do? Global university ranking systems as a pointer

WEBOMETRICS Ranking Methodology

- **PRESENCE.** Total number of web pages, **including all the rich files (like pdf)**, according to Google (georeferred at our facilities).
Weight: 10%
- **VISIBILITY.** Inlinks information and their corresponding backlinks from the calculation. Weight: 50%
- **OPENNESS.** Uses data from the Google Scholar Citations institutional profiles - Weight: 10%.
- **EXCELLENCE.** The Scimago data (top 10% most cited papers by discipline) for the five year period 2010-2014. Weight: 30%

Times Higher Education Ranking Methodology

- Teaching (the learning environment) = 30%
- Research (volume, income and reputation) = 30%
- Citations (research influence) = 30%
- International outlook (staff, students and research) = 7.5%
- Industry income (knowledge transfer) = 2.5%

Teaching (the learning environment): 30%

- Reputation survey: 15%
- Staff-to-student ratio: 4.5%
- Doctorate-to-bachelor's ratio: 2.25%
- Doctorates-awarded- to-academic-staff ratio: 6%
- Institutional income: 2.25%

Research (volume, income and reputation): 30%

- Reputation survey: 18%
- Research income: 6%
- Research productivity: 6%

Citations (research influence): 30%

- This indicator looks at universities' role in spreading new knowledge and ideas.
- By capturing the number of times a university's published work is cited by scholars globally.
- THE bibliometric data supplier Elsevier examined more than 56 million citations to 11.9 million journal articles, conference proceedings and books and book chapters published over five years.
- The data include the 23,000 academic journals indexed by Elsevier's Scopus database and all indexed publications between 2011 and 2015.
- Citations to these publications made in the six years from 2011 to 2016 are also collected.
- The citations help to show us how much each university is contributing to the sum of human knowledge:

International outlook (staff, students, research): 7.5%

- International-to-domestic-student ratio: 2.5%
- International-to-domestic-staff ratio: 2.5%
- International collaboration: 2.5%

Industry income (knowledge transfer): 2.5%

- A university's ability to help industry with innovations, inventions and consultancy has become a core mission of the contemporary global academy.
- How much research income an institution earns from industry scaled against the number of academic staff it employs.
- It suggests the extent to which businesses are willing to pay for research and a university's ability to attract funding in the commercial marketplace – useful indicators of institutional quality.

WEBOMETRICS Ranking of Universities in Africa

1	323	<u>University of Cape Town</u>
2	473	<u>Stellenbosch University</u>
3	547	<u>University of the Witwatersrand</u>
4	561	<u>University of Pretoria</u>
5	579	<u>Alexandria University</u>
6	652	<u>University of Kwazulu Natal</u>
7	693	<u>Cairo University</u>
8	728	<u>University of Nairobi</u>
9	855	<u>University of the Western Cape</u>
10	985	<u>University of Johannesburg</u>

Times Higher Education Ranking of Universities

1. [California Institute of Technology](#) United States
2. [Stanford University](#) United States
3. [University of Cambridge](#) United Kingdom
4. [Massachusetts Institute of Technology](#) United States
5. [Harvard University](#) United States
6. [Princeton University](#) United States
7. [Imperial College London](#) United Kingdom
8. [ETH Zurich – Swiss Federal Institute of Technology Zurich](#) Switzerland
9. [University of California, Berkeley](#) United States
10. [University of Chicago](#) United States

THE BRICS ranking

1. [Peking University](#), China
2. [Tsinghua University](#), China
3. [Lomonosov Moscow State University](#), Russian Federation
4. [University of Cape Town](#), South Africa
5. [National Taiwan University](#), Taiwan
6. [University of the Witwatersrand](#), South Africa
7. [University of Science and Technology of China](#), China
8. [Zhejiang University](#), China
9. [University of São Paulo](#), Brazil
10. [Shanghai Jiao Tong University](#), China
11. [Stellenbosch University](#), South Africa

African ranking of Universities based on GSC

- UCT = 1st in Africa
- UNN = 18th in Africa and 1st in Nigeria

Top 5 Universities in Africa based on Researchgate

1. [University of Cape Town](#), Cape Town, RG Score 29,505.87
2. [Cairo University](#), Cairo, RG score 25,913.63
3. [Stellenbosch University](#), Stellenbosch, RG Score 22,525.27
4. [University of the Witwatersrand](#). Johannesburg: RG Score 22,489.21
5. [University of Pretoria](#), Pretoria, RG Score 21,707.07

Top 5 Universities in Nigeria based on ResearchGate (RG)

1. University of Ibadan, Ibadan: RG score 8,351.14

2. University of Nigeria, Nsukka: RG Score 8,236.03

3. Obafemi Awolowo University, Ile Ife: RG Score 5,681.56

4. University of Lagos, Lagos: RG Score 4,249.87

5. Ahmadu Bello University, Zaria: RG Score 3,419.05

How can we entrench research and development in the University?

Sai Baba

A house must be built on solid foundations if it is to last. The same principle applies to man, otherwise he too will sink back into the soft ground and becomes swallowed up by the world of illusion.

FUNAI – on the road to entrenched world class research

- A faster and more effective approach to achieving world-class status is to establish a new institution.
- But new universities can grow into top quality research institutions within two or three decades when:
 - academic talent,
 - financial resources
 - and governance - particularly autonomy and academic freedom - are present from the start

The World Bank, *The Road to Academic Excellence: The making of world class research universities.*

Steps in entrenching world class research culture

- The university has at least one research center or institute that functions under the jurisdiction of the university, but as a separate entity.
- There are opportunities for undergraduates (and postgraduates) to participate directly in research (beyond their basic required research to graduate)
- The university receives federal research funds.

<http://www.bestcollegereviews.org/top-research-universities/>

Software to develop: on the road to world class research culture

- Harness talents innovatively
- Develop a written University Research Policy
- Awareness of and channel resources and thinking into global competitiveness – not just for staff appraisal and promotion
- Involvement of students, especially PG students in University Research
- PhD by research and publications – helped propel many universities especially in South Africa

Talent is key

Top-performing research universities share three common characteristics:

- a high concentration of talented academics and students
- significant budgets
- strategic vision and leadership,

"Global talent search seems to be one of the most powerful accelerating factors" towards world-class status for research universities whether they are in a poor or rich country, and whether they are small or big, said Salmi. "It is all about talent."

Philip Altbach and Jamil Salmi (eds) (2011) [*The Road to Academic Excellence: The making of world class research universities*](#). World Bank.

Hardware for entrenching a research culture

- Establish formal research governance and implementation infrastructure – a functional Research office embedding research funds generating activities
- Develop a strategy for communication of research findings
- Develop an international and industry focused research and publication culture
- Develop a Getting Research into Policy and Practice (GRIPP) strategy so that research contributes for decision making and national development
- Start innovative Institutes, centers and departments
- Strive to publish in very visible journals – at least those that have Thomson Reuters impact factor or indexed by SCOPUS and ranked by SJR or SNIP

Money drives research...

- Internal funding sources – establish FUNAI Research Trust Fund
- Maximise funding opportunities from federal government agencies :
NUC, TETFUND, PTDF etc
- Local Research grants
- International Research grants
- Local collaborations
- International collaborations

As we strive to entrench a research culture in the Nigerian university system to aid personal, institutional and national development

- Unleash the Giant within (Anthony Robbins)
- Nothing in the world is more dangerous than **sincere ignorance** and **conscientious stupidity** (Martin Luther King Jr)
- We should get rid of rigidity, sincere ignorance and conscientious stupidity if we are to achieve the goal of starting and sustaining world class research in our university system

Thank you