

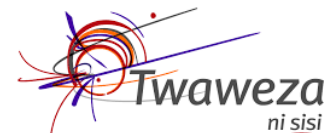
# Factors Associated with Research Productivity in Higher Education Institutions in Africa: A Systematic Review

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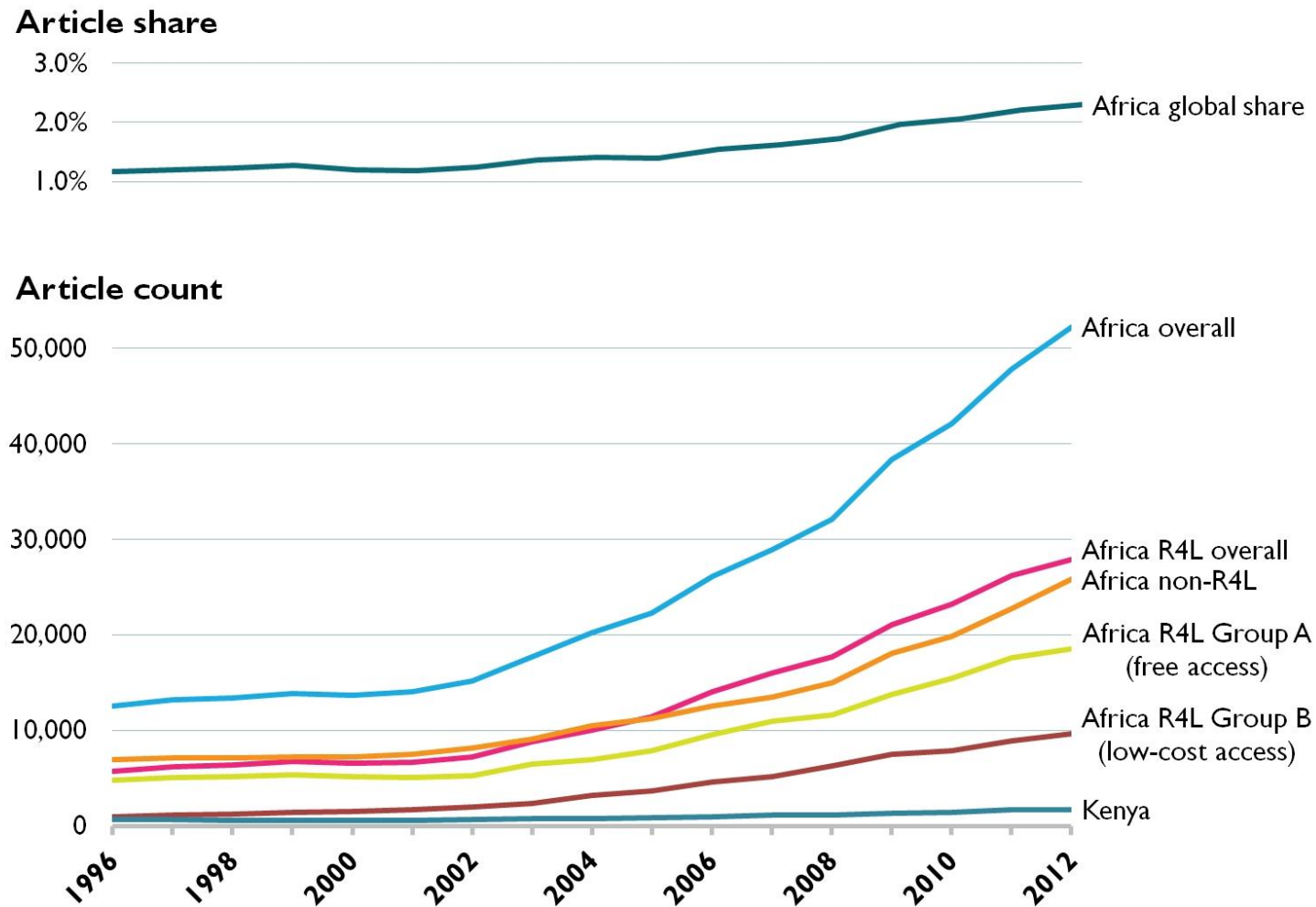
# Presentation plan

1. Introduction: The Position of Africa in world Research productivity
2. Problem statement and rationale
3. Research objectives
4. Methodology
5. Findings
6. Conclusions
7. Recommendations

# 1. Introduction: The Position of Africa in Research productivity

- The continent's share of global research had increased from 2.31% in 2010 to 3.24% in 2016 (Green, 2018).
- Yet, the productivity remains low in relation to the position of Africa in the World population size.
- Africa comes second with 17% of population share
- Many African countries' invest 2% or less (if any) on research. This falls way below that of many of the countries of other continents.
- Africa also lags concerning the number of researchers per million inhabitants in any given country:
- Most of the African countries have less than 1000 researchers per one million inhabitants (UNESCO Institute of Statistics, 2018) (against more than 2000 in many countries in Europe and North America).

# For example, in Research for Life



# In Engineering: Overall



Productivity is concentrated in the **northern region**, with the **exception** of one country each in the **south (SA)** and the **west (Nigeria)**.

Figure 1: The geographic distribution of publications in engineering across the African continent. Legends: ● represents more than 1,000 articles, + more than 100 but less than 1000 and ▲ less than 100

# In Engineering: Overall and regional trends of article production

The northern and Southern regions started to increase their articles like 30 years ago; Western like 10 years ago; What about the Eastern? The Central?

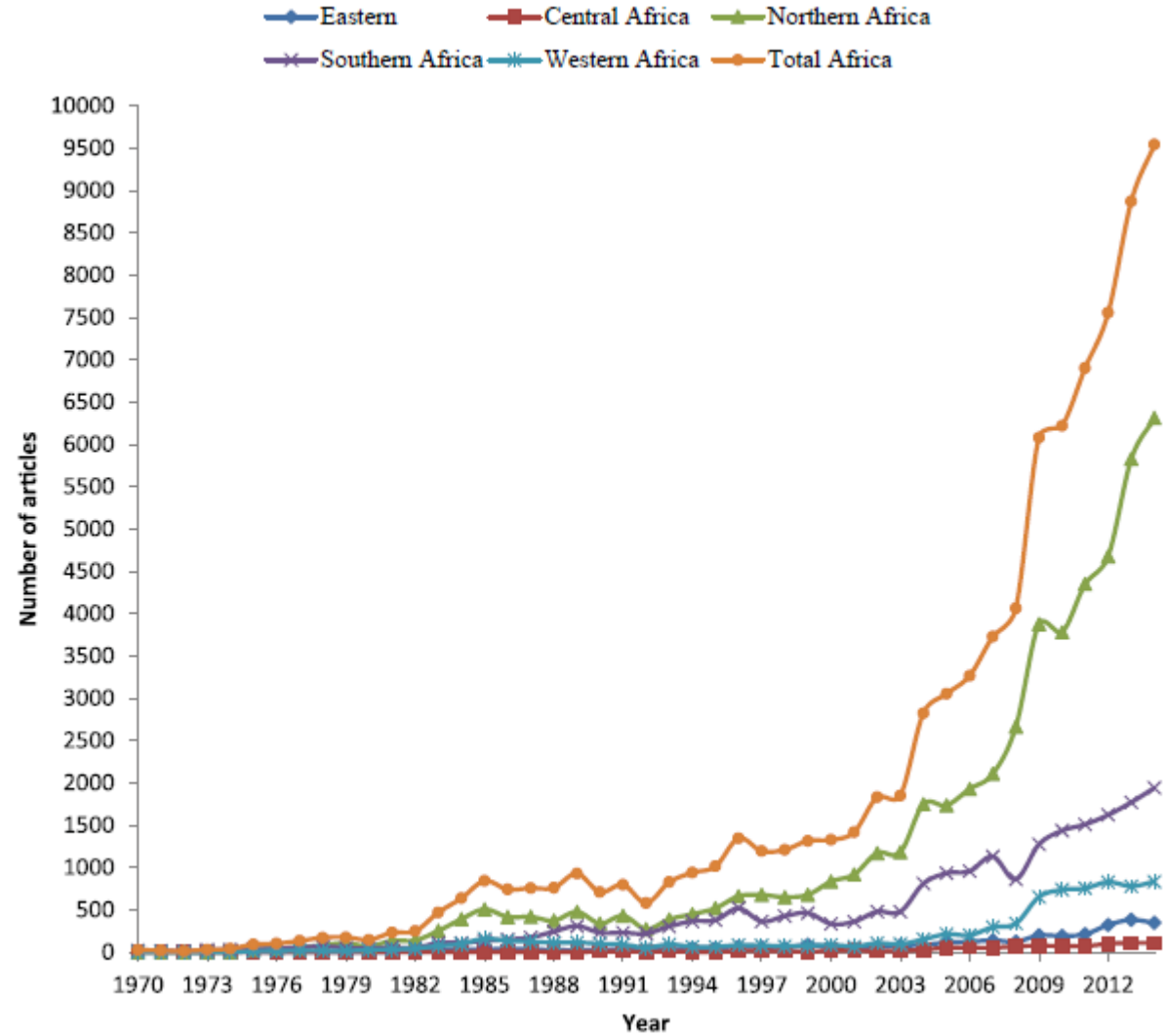


Figure 2: Overall and regional publication profile of countries from different regions of Africa.

## 2. Problem statement

- There is a paucity of knowledge on why research productivity in African high earning institutions remains unacceptably low,
- While, based on our experience and knowledge, we are all aware that:
  1. there is a close association between research and development.
  2. The United Nations, through the SDGs, Target 9.5 of Goal 9, have prioritized enhancement of scientific research, particularly in developing countries.
  3. The role of higher education in the development agenda has been highlighted in the SDGs, Target 4.3 of Goal 4.
  4. HLIs play a crucial role to the advancing of knowledge, skills, and attitudes to research

# **Aim of the study and rationale**

The purpose of this study was to systematically review the existing knowledge to respond to two interwoven objectives.

- i. To determine factors associated with research productivity in higher education institutions in Africa.
- ii. To identify the motivations that researchers in higher education institutions in Africa have when they are conducting research.

The findings potentially inform the management of universities in Africa as well as education decision-makers to address the paucity of research productivity in Africa in general, and HEIs in particular.



## **Methodology**

- **Design:** The study is based on a systematic literature review of papers published on African high learning institutions
- ***Inclusion and exclusion criteria***

We considered the following criteria for a paper to be included for review:

- The setting:* African higher learning institutions, or global including African higher learning institutions
- Type of publication:* Papers based on data analysis: primary or secondary.
- Quality of papers: Peer-reviewed publications only.
- Period:* Included papers were published from 1998-2018
- Language:* French and English (though only papers published in English retained for review)

## Searching and screening the papers

**Keywords:** *research product\* or research output or publication\*, and higher education institution\* or tertiary institution\*.*

Two stages

(i) **Topical search:** @ Social science citation index; British education index; Web of Science; Scopus; Google Scholar, African Journals Online (AJOL), DOAJ and EMERALD.

(ii) **Systematic search:** Through EBSCO host, @ ERIC, Education search complete and academic search ultimate.

Total number of 1085, resulting from the topical and automatic search.

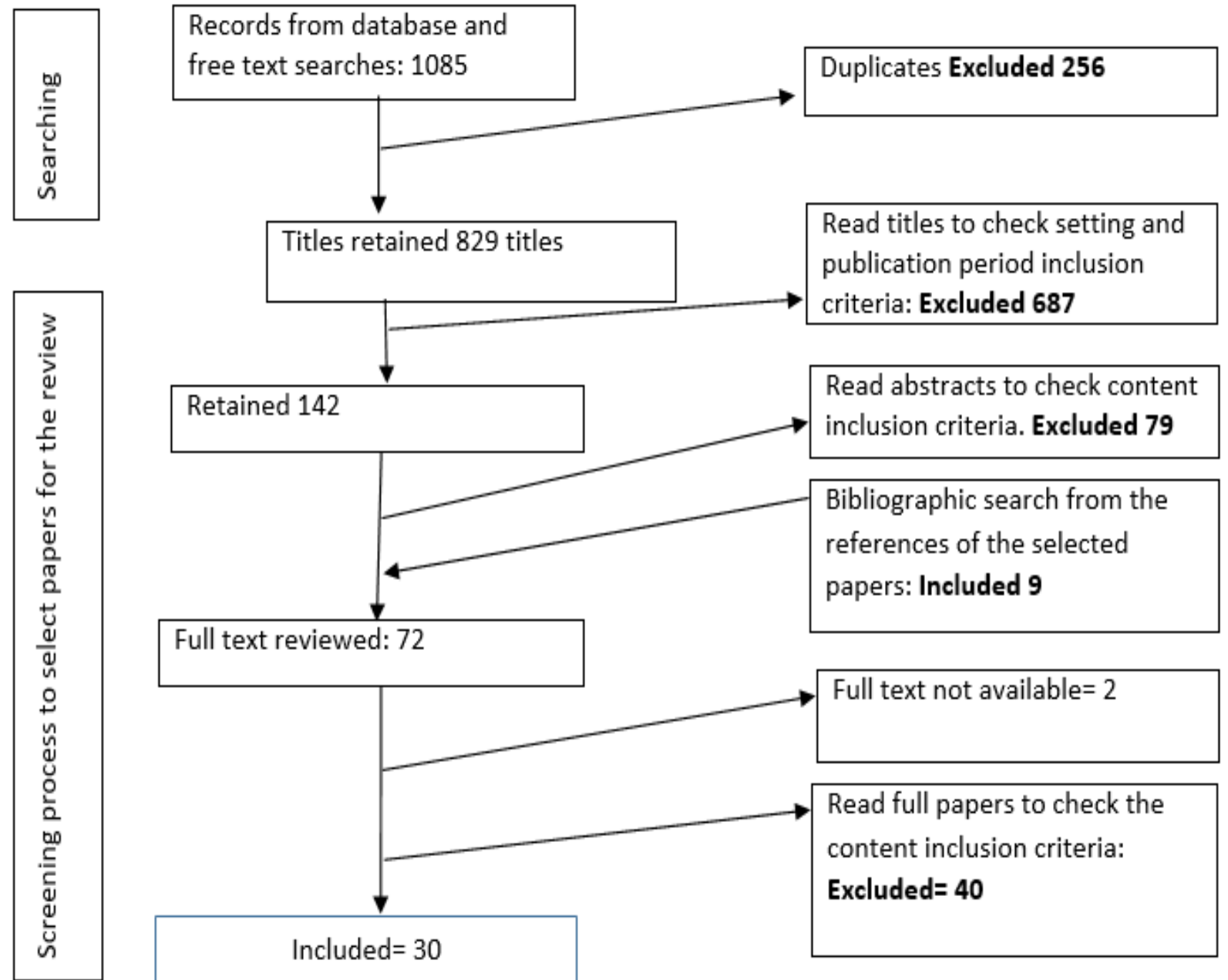


Figure 1. Flow diagram for the identification of publications

# Analysis approach

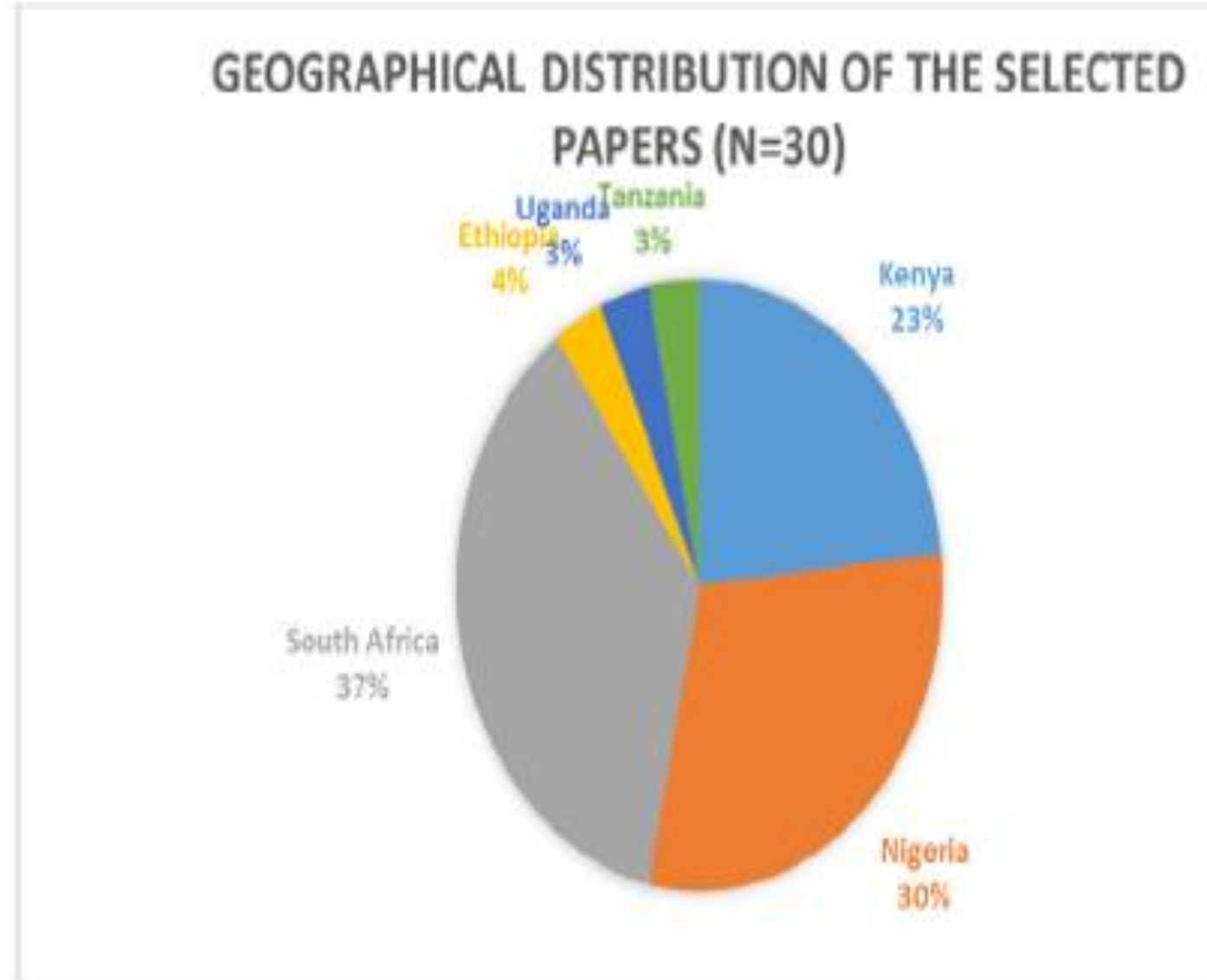
- For analysis, we first examined a pool of variables that had been identified in the previous studies, and
- we classified the variables per similarities into category titles as in Figure 1.
- We considered the results and conclusion sections of the papers as the source of data.

**Table 1. Factors associated with research productivity in high institutions of learning**

INDIVIDUAL RELATED	INSTITUTIONAL RELATED
<b>Demographic characteristics:</b> Gender Age Tenure status Academic discipline	<b>Capacity support and partnership building:</b> Membership in professional body Networking/ research collaboration Research mentorship/coaching leadership structures Research time secured Friendly research environment/ leadership Supervision of postgraduate
<b>Researcher's psychological factors:</b> Attitude/perception of research Culture of research Job satisfaction Motivation Research self-efficacy	<b>Research funding:</b> Financial incentives to encourage research Research funding Consultancies
<b>Individual competencies:</b> Experience as a researcher Qualification and research training Research style	<b>Infrastructural research enabling support:</b> Campuses structure (expansion, the proximity of researchers) Institutional administrative structure Administrative workload Policies including intellectual property policy Internet connectivity Office space Ownership (public vs. Private) Salary

# Findings

- Three countries dominate the list of the selected papers:
- Among 30 selected papers, South Africa had 11 papers (37%), followed by Nigeria (9\_30%) and Kenya (7\_23%) respectively.
- Ethiopia, Uganda and Tanzania has one each.



# Factors associated with research productivity in higher education institutions in Africa

Table 2. Factors that the selected papers reported

- The analysis considered three countries as they had a relatively good number of the selected papers
- Individual, research capacity related and Institutional factors
- Research capacity related factors, are relatively primarily reported

		Reported factors	Kenya (7)	Nigeria (9)	South Africa (11)
Individual related factors	Research capacity-related	<i>Gender</i>	***	*****	*****
		<i>Academic discipline</i>	*	**	***
		<i>Age</i>	**	****	****
		<i>Coaching</i>	***	**	*****
		<i>Motivation</i>	**	**	*****
		<i>Qualification</i>	**	**	*****
		<i>Research Training</i>	***	**	****
		<i>Research mentorship</i>	****	**	*****
		<i>Research time</i>	****	****	*****
		<i>Institutional support</i>	****	****	****
Institutional related factors	Research capacity-related	<i>Research environment</i>	****	****	****
		<i>Research collaboration</i>	****	**	***
		<i>Financial incentives</i>	****	**	****
		<i>Research funding</i>	****		***
		<i>Teaching workload</i>	*****	**	*****

\* Indicates the frequency of reporting

# Motivation for research in the African HEIs

Table 3. The reported rationale of researching African HEIs

	Kenya	Nigeria	South Africa
Recognition	*	***	**
To earn money	***	**	*
Requirement	***	***	****
Funding	*****	*****	*****
Job tenure	*****	*****	***
Scholarly resources	**	**	***

*\* Indicates the frequency of reporting*

**Six factors emerged as the main factors motivating academic staff to conduct research:**

- i. Funding came the most frequently reported
- ii. Job tenure: i.e Publishing to keep their jobs, or
- iii. It is a requirement in the institutions.

# Conclusions

- There is a paucity of studies investigating factors associated with research productivity in African high education institutions.
- In some countries, the problem of research productivity in HEIs has not yet attracted researchers.
- The few available evidence came from just few countries.
- From the available data, we know that faculty research productivity is mainly influenced by **research capacity related factors**: qualification, research training, research mentorship and
- **Institutional factors** such as providing research time, institutional support, and research collaboration.
- **Individual factors** such as gender, age, academic discipline, and motivation, also influence research productivity to some extent.

# Recommendations

- *It emerged that few studies investigated factors associated with research productivity:* The study urges the management of HEIs in Africa to avail funding for research to determine factors associated with research productivity.
- *Research capacity related factors emerged as the leading associates of research productivity:* We recommend the HEIs in Africa and in Kenya in particular to provide structured mentorship, and consistent trainings in research.
- *Institutional support and research collaborations also emerged:* We recommend the HEIs leadership in Africa and specifically in Kenya to institutionalize collaborative research, involving junior and senior researchers, and institutionalize knowledge sharing platforms to strengthen the research environment in their institutions.
- Institutions are recommended to avail designated time for research and hold staff accountable for the time.



## Africa's future needs a better research culture and not just for scientists

November 5, 2018

Blog

A. Mokoop 40



**“Research can only thrive in an atmosphere that prioritizes, supports and appreciates its importance. An atmosphere of political or cultural intolerance to research has a stifling effect on research efforts.”**

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Source: Next Einstein forum website

<https://nef.org/2018/11/05/africas-future-needs-a-better-research-culture-and-not-just-for-scientists/>

# Thank you

