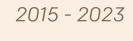


ARUA AT A GLANCE







Volume 3



About the Report

This volume is the result of the third phase of the data gathering and benchmarking project, which was funded by the *Carnegie Corporation of New York*. It presents a synopsis of the findings of the first three rounds of data gathering from ARUA universities over nine years, from 2015 to 2023.

Like the 2nd Edition, this volume shows the research profiles of ARUA universities through a bibliometric analysis of their research output that was indexed in the Web of Science (WoS) database for the periods under consideration. *Professor Gerald Wangende-Ouma* of the

University of Pretoria wrote the report with assistance from two consultants, *Dr. Emmanuel Adu-Danso* and *Dr. Emmanuel Abbey*.

All the indicators of university performance for which data are presented were selected and agreed on through a consultative process that involved all ARUA member universities.

The data collection was an iterative process that entailed continuous engagement with data teams at the universities. The effort of key staff at all universities in providing the data, including their respective management, is acknowledged.

This volume is based on data from all 23 ARUA member universities:

- · Addis Ababa University (AAU),
- University of Ghana (Ghana),
- · University of Ibadan (Ibadan),
- Kwame Nkrumah University of Science and Technology (KNUST),
- · Makerere University (Makerere),
- University of Mauritius (Mauritius) -Associate member,
- University of Nairobi (Nairobi),
- · Obafemi Awolowo University (Obafemi),
- Rhodes University (Rhodes),

- · University of Rwanda (Rwanda),
- · Stellenbosch University (SU),
- · Université Cheikh Anta Diop (UCAD),
- · University of Cape Coast (UCC),
- · University of Cape Town (UCT),
- · University of Dar es Salaam (UDSM),
- Eduardo Mondlane University (UEM) -Associate member.
- · University of KwaZulu-Natal (UKZN),
- Mohammed VI Polytechnic University (UM6P),
- Université de Kinshasa (UNIKIN) -Associate member,
- · University of Lagos (UNILAG),
- University of Nigeria, Nsukka (UNN),
- · University of Pretoria (UP) and
- University of the Witwatersrand (Wits).

All the data used in this report can be found at: https://bit.ly/4nZttbM

Scan to access the Power BI reports:



TABLE OF CONTENTS









- The African Research Universities Alliance (ARUA) is a network of twenty-three (23) leading research universities across Africa, established in 2015.
- ARUA's vision is to enhance the global competitiveness of African researchers and institutions while actively contributing to the generation of knowledge that drives socio-economic transformation on the continent.
- A key motivation behind ARUA's formation is to strengthen the higher education sector within its member universities.
 By doing so, ARUA aims to provide exceptional opportunities for Africa's brightest young minds, enabling them to realize their full potential at home rather

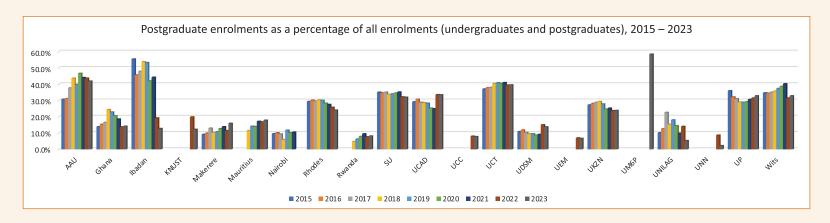
- than seeking opportunities at institutions elsewhere.
- ARUA organizes its activities around four strategic pillars, which guide its mission to enhance research and graduate training across African universities:
 - i. Significantly Expanded and Improved Research Programmes
 - ii. Significantly Expanded and Improved Graduate Programmes
 - iii. Strengthened Research Management
 - iv. Enhanced Research Advocacy



Postgraduate Enrolments as a percentage of total enrolments

- ARUA universities remain predominantly undergraduate-focused, with postgraduate enrolments forming a smaller share of total student numbers.
- AAU, UCT, UP, SU, and Wits record relatively higher postgraduate enrolments, often above 30%, while universities such as Ghana, Makerere, and UNN remain below 20% throughout the period.
- Between 2022 and 2023, Ibadan reported a sharp decline in postgraduate enrolments, while UM6P reached over 50% in 2023.
- Overall, most ARUA universities continue to enrol a relatively small proportion of postgraduate students, though trends vary significantly across institutions. These trends underscore the need to strengthen postgraduate education across the network.

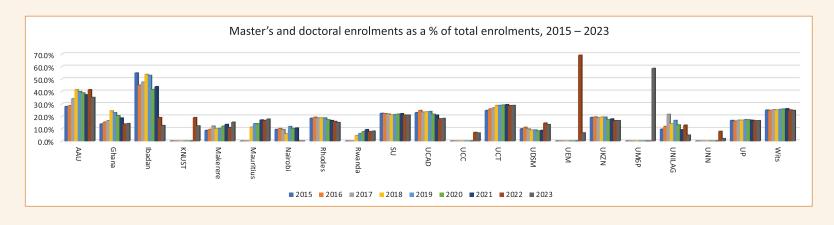






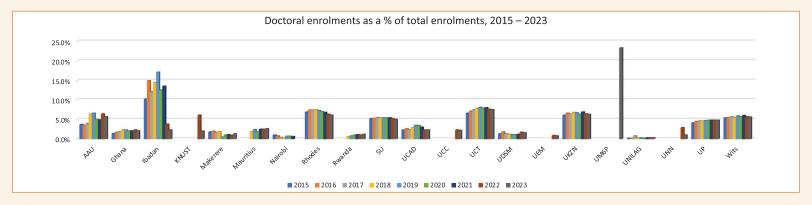
Master's and Doctoral Enrolments as a percentage of total enrolments

- AAU records the highest share of master's and doctoral enrolments, consistently exceeding 40%. In contrast, universities such as Rwanda, Nairobi, and Makerere remain below 15%. Most other institutions fall within the 15–30% range, with some year-to-year fluctuations.
- The six South African universities (Rhodes, SU, UCT, UKZN, UP, and Wits) also show comparatively higher enrolments in postgraduate programmes below master's level than their non-South African counterparts.



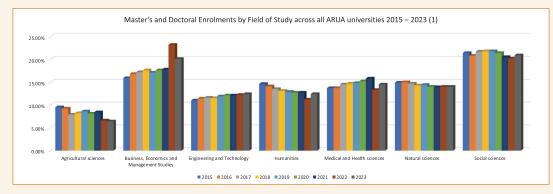
Doctoral Enrolments as a percentage of total enrolments

- Doctoral enrolments have remained relatively stable across most ARUA universities, averaging between 10% and 15% throughout the period.
- Makerere, Rhodes, and Nairobi recorded declines in their proportions of doctoral enrolments, while AAU, Ghana, Mauritius, Rwanda, UCT, UP, and Wits showed steady increases over time.



Field of Study (Master's and Doctoral Enrolments)

- The Social Sciences consistently record the highest share of master's and doctoral enrolments, peaking at about 22% before a slight decline in 2023.
- Business, Economics, and Management Studies follow as the second-largest field.
 Agricultural Sciences show the lowest proportions, with a steady decline across the period.
- Enrolments in the Humanities and Natural Sciences also declined, while Engineering and Technology and Medical and Health Sciences displayed gradual growth.



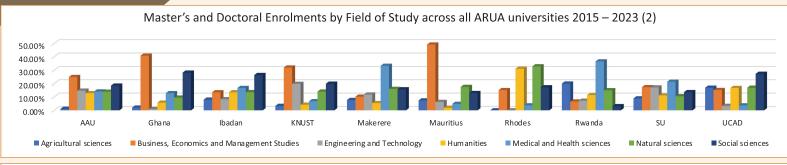


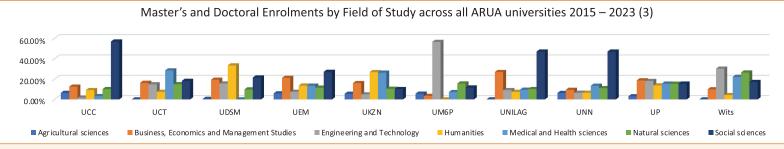


- Business, Economics, and Management Studies and the Social Sciences dominate postgraduate enrolments at many universities, with Ghana and Mauritius reporting particularly high shares in Business, and UCC, UNILAG, and UNN leading in Social Sciences.
- Medical and Health Sciences accounts for the largest share at UCT, while Engineering and Technology is most prominent at UM6P.



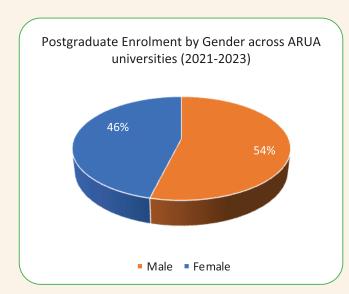
- Natural Sciences and Humanities stand out at Rhodes and UDSM, respectively, though they are less significant across most other universities.
- These patterns highlight the varied disciplinary strengths across the ARUA network.

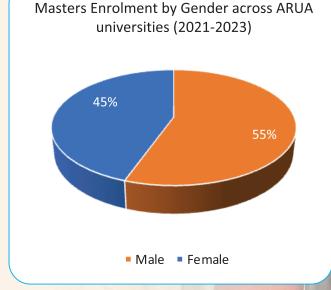


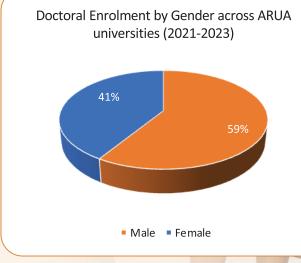


Enrolments by Gender

- Males account for 54% of total postgraduate enrolments, compared to 46% for females.
- At the Master's level, the split is similar (55% male, 45% female), but the gender gap widens at the Doctoral level, where males represent 59% of enrolments and females 41%.
- Across all levels of advanced study, a consistent male majority is observed, with disparities most pronounced at the Doctoral stage.

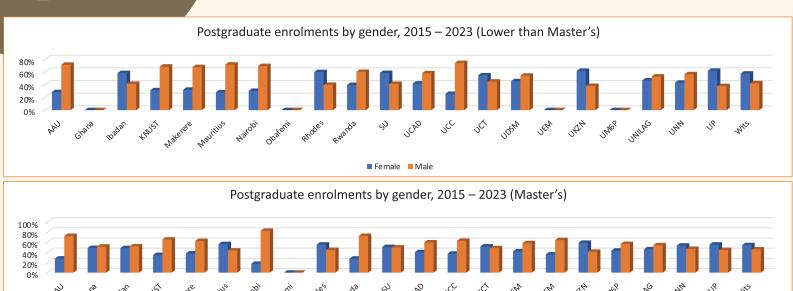








- Across nearly all universities, male enrolments exceed female enrolments at both master's and below master's levels. The gender gap is especially pronounced at AAU, Rwanda, KNUST, UCC, Nairobi, and Mauritius, while at UKZN and Rhodes it is in favour of females.
- Institutions such as UP, Wits, and Rhodes show more balanced enrolments, particularly at the Master's level.
- Female representation is generally higher at the Master's level compared to lowerthan-masters programmes. However, some universities, including Obafemi and UEM, report very low or negligible female participation at both postgraduate levels.

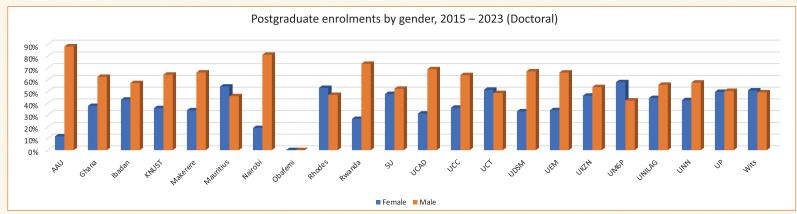


■ Female ■ Male

Postgraduate Enrolments as a percentage of total enrolments

- Most ARUA universities record more male than female doctoral students, with particularly wide gaps at AAU and Nairobi. Mauritius, UCT, and Wits come closest to achieving gender parity, offering encouraging models for progress.
- Overall, these patterns highlight the need for sustained, collaborative action to attract, support, and retain more women in doctoral study—an essential step toward strengthening equity and unlocking the continent's full research potential.



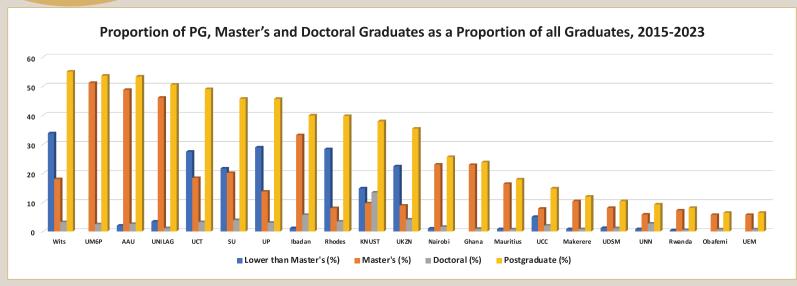






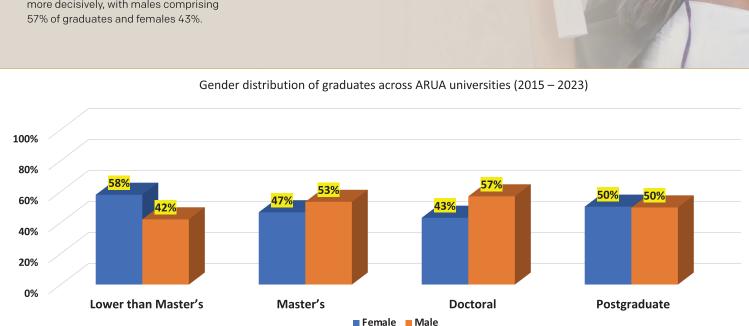
PG, Master's and Doctoral Graduates

- Cumulatively, Wits, UM6P, AAU, and UNILAG produce the largest shares of postgraduate graduates. At UM6P, AAU, and UNILAG, Master's graduates account for more than half of all postgraduate awards.
- Wits, UCT, Rhodes, and UKZN stand out for awarding the highest proportions of lower than master's postgraduate qualifications, each exceeding 20%.
- By contrast, UEM, Obafemi, Rwanda, Makerere, and UNN record fewer than 15% of graduates at the postgraduate level, underscoring the uneven distribution of advanced degree training across the ARUA network.



Gender Distribution of PG, Master's and Doctoral Graduates

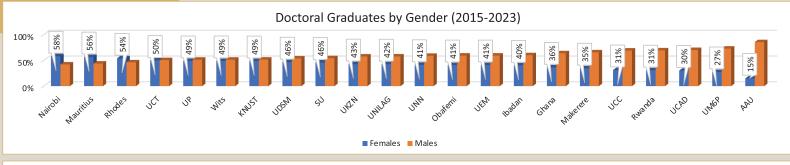
- · At the lower than master's level, females hold a clear majority, representing 58% of graduates compared to 42% for males.
- · At the Master's level, the gap narrows, with females making up 47% and males 53%.
- · At the Doctoral level, the balance shifts more decisively, with males comprising 57% of graduates and females 43%.
- · When aggregated across all postgraduate qualifications, however, the distribution evens out at 50% each, reflecting overall gender parity despite the persistent disparities by qualification type across ARUA universities.

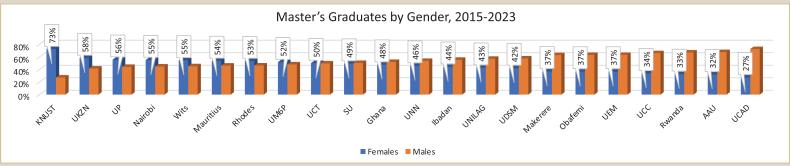




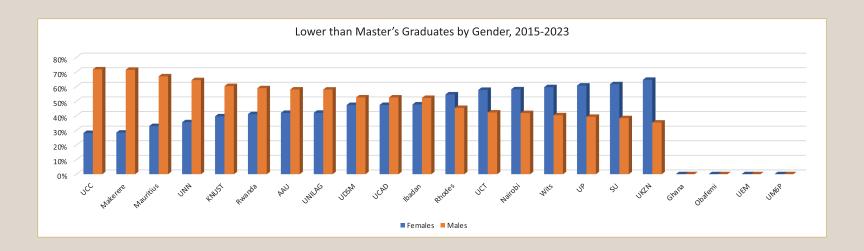


- At the Doctoral level, most universities have more male graduates, with the largest gaps at AAU, UM6P, and UCAD. UCT, Wits, and UP show near parity, while Nairobi, Mauritius, and Rhodes graduate more women than men.
- At the Master's level, females outnumber males at KNUST, UKZN, UP, Nairobi, Wits, Mauritius, Rhodes, and UM6P, though most universities still have a male majority.
- These distributions reflect persistent male dominance at the Doctoral level but a more mixed picture at the Master's level.





At UCC, Makerere, Mauritius, UNN, and KNUST, males account for 60–70% of graduates in lower than Master's postgraduate qualifications. In contrast, Rhodes, UCT, Nairobi, Wits, UP, SU, and UKZN have a female majority, with women comprising over 55% of these graduates. Gender balance at this level varies substantially, with some universities strongly male-dominated and others clearly female-dominated.

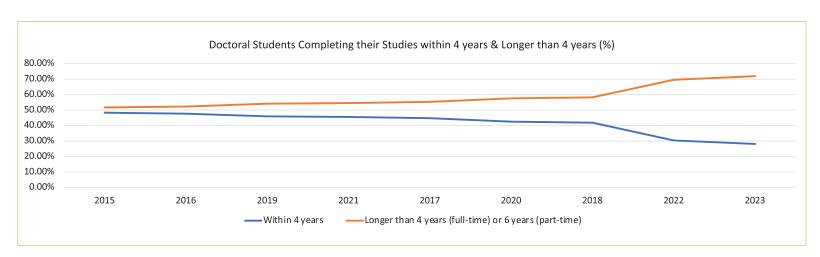




Completion Times for Doctoral Studies

Completion Times for Doctoral Studies

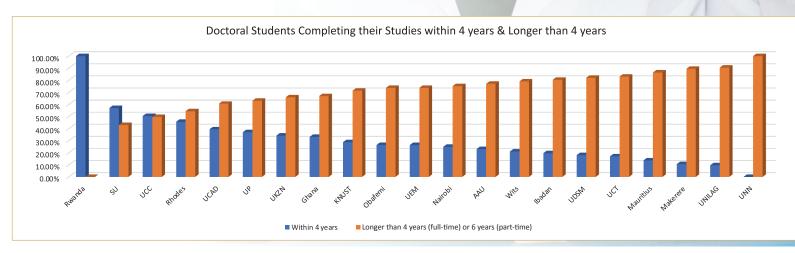
- From 2015 to 2023, the proportion of doctoral students finishing within four years steadily declined—from just under half in 2015 to under one-third in 2023. Over the same period, the share completing beyond four years rose sharply, exceeding 70% in 2023.
- The widening gap between timely and delayed completions suggests that doctoral studies at ARUA universities are increasingly taking longer to finish.



Completion Times for Doctoral Studies

Completion Times for Doctoral Studies

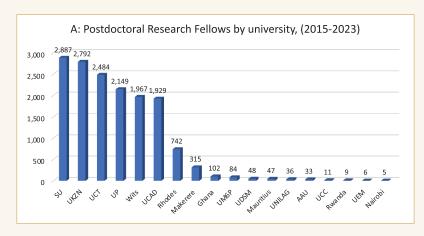
Rwanda stands out, with nearly all doctoral students completing within
four years, whereas at UNN, almost none do. In most universities—
including UNILAG, Makerere, Mauritius, UCT, and Wits—over 60% of
students take longer than four years to graduate. Only a few institutions,
such as SU, UCC, and Rhodes, display a more balanced split between
timely and delayed completions. Overall, the data reveal substantial
variation across universities, though the dominant pattern is that most
students take more than four years to complete their doctorates.

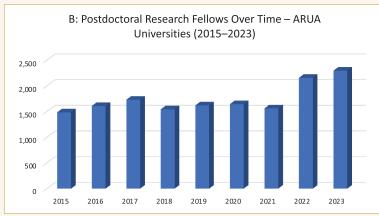




Postdoctoral Research Fellows

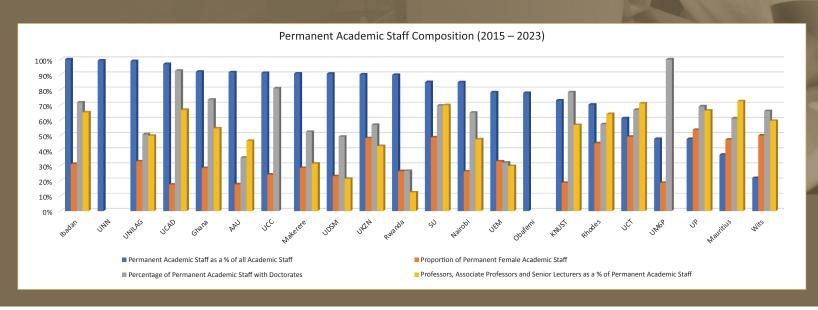
- From 2015 to 2023, SU, UKZN, and UCT consistently hosted the largest numbers of postdoctoral research fellows, each exceeding 2,400. Wits, UP, and UCAD also maintained high counts, while most other universities recorded fewer than 1,000 fellows, with several reporting fewer than 100 (Panel A).
- Over the same period (Panel B), aggregate postdoctoral numbers remained steady until 2021, before rising sharply in 2022 and 2023. By 2023, the network reached its highest total yet.
- The patterns reflecting both marked differences between institutions and significant recent growth in research capacity.





Staffing

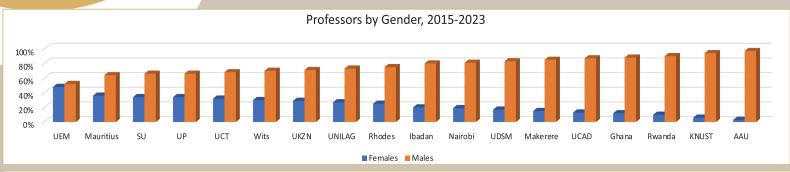
Across most universities, Permanent staff form more than 80% of academic staff, though
UP, Mauritius, and Wits report a much smaller share. The gender distribution within this group
varies considerably: at UCAD and UM6P, women represent less than 20%, while at UP and Wits,
they make up at least half. The share of permanent staff with doctorates is highest at UM6P and
UCAD, both exceeding 90%, but is much lower at UEM and Rwanda, where fewer than 40% hold
doctorates. Senior academic ranks (professors, associate professors, senior lecturers) make up
over 70% of permanent staff at UCT, Mauritius, and Wits.

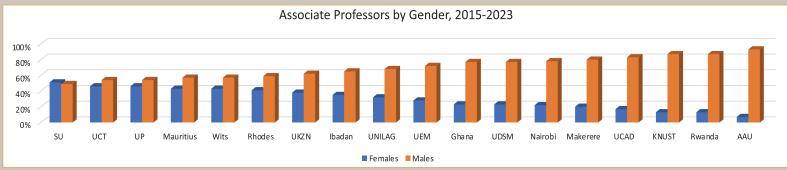




Staffing

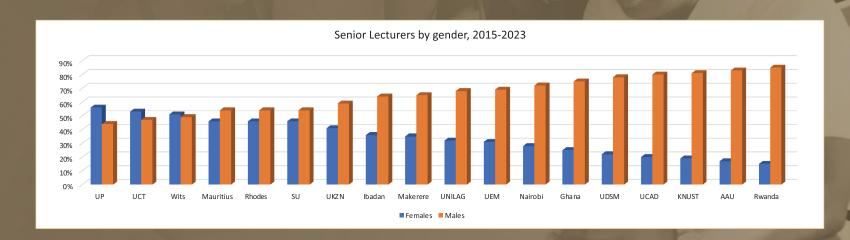
Men significantly outnumber women in both professorial and associate professorial ranks. The
imbalance is most extreme at AAU, Rwanda, KNUST, and UCAD, where male professors exceed
90% and male associate professors surpass 80%. A small number of universities, including
UEM, Mauritius, SU, UP, and UCT, display comparatively higher female participation, particularly
among associate professors, yet men remain the dominant group even in these cases. Taken
together, the data underscores a persistent and wide gender disparity in senior academic
positions across the ARUA network.





Staffing

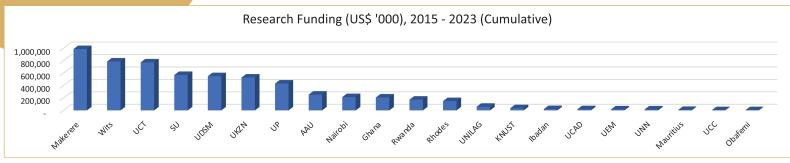
At UP, UCT, and Wits, females make up a little over 50% of senior lecturers, reflecting a female majority. In contrast, most other universities are male-dominated, with the gap especially pronounced at Rwanda, AAU, and KNUST, where men account for over 80% of senior lecturers. Overall, gender representation varies widely, with some institutions reaching parity while others remain heavily male-dominated.

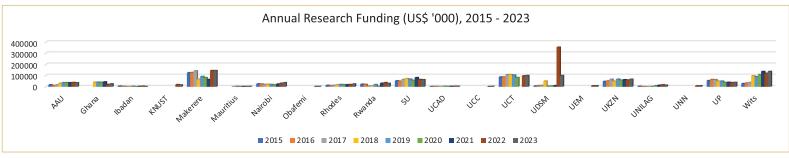




Research Funding

- The top chart shows cumulative research funding (2015–2023), with Makerere, Wits, UCT, SU, UDSM, and UKZN accounting for the largest shares, while most other universities secured comparatively smaller amounts.
- The lower chart highlights steady year-onyear growth at several institutions, with a marked increase at UDSM in 2022.
- Overall, the data reflects variation in funding levels across the network, with a few institutions reporting larger allocations over time.

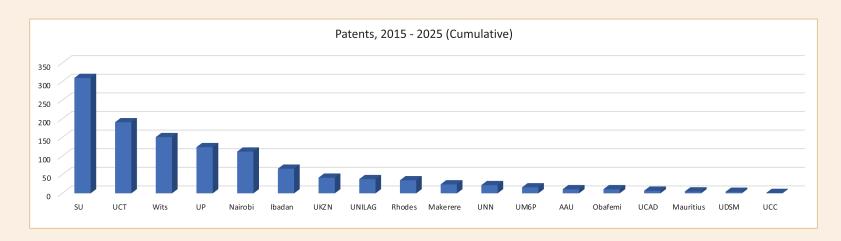




Patents

 SU recorded the highest patent output, with over 300 patents, followed by UCT and Wits, which each registered more than 150 during the period. UP, Nairobi, and Ibadan also exceeded 100 patents apiece. Most other universities, including UKZN, UNILAG, Rhodes, and Makerere, reported fewer than 100 patents, while several institutions—such as UCC, UDSM, and Mauritius—registered only a handful. The data points to wide variation in patent activity across the ARUA network, with some universities contributing substantially more to innovation outputs than others.

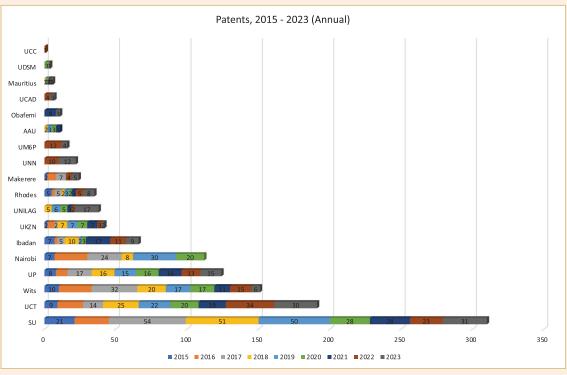






Patents

- The annual patent data show SU consistently recording the highest outputs year after year, with UCT and Wits also maintaining strong activity across the period.
- At the lower end, Rhodes, Makerere, UNN, and AAU typically produce fewer than 10 patents annually, with UDSM, Mauritius, UCAD, and
- Obafemi registering very limited activity in most years.
- The patterns indicate sustained leadership by a few universities, alongside modest but important contributions from others across the network.



Introduction

- This section presents a bibliometric analysis
 of ARUA universities based on Web of Science
 (WoS) data. The review covers research output,
 impact, subject fields, collaborations, and funding
 agencies, highlighting both emerging strengths
 and areas of disparity.
- By situating ARUA universities within regional and global research landscapes, the analysis provides insights into their growing visibility and contributions to knowledge production, as well as their positioning for future partnerships.



Inclusion Criteria

Identification

All 23 ARUA Universities: Université de Kinshasa, Addis Ababa University, University of Ghana, Kwame Nkrumah University of Science and Technology, University of Cape Coast, University of Nairobi, University of Mauritius, Université Mohammed VI Polytechnique, Eduardo Mondlane University, Obafemi Awolowo University (lie-Ife), University of Ibadan, University of Ragos, University of Nigeria (Nsuka), University of Rwanda, Université Cheikh Anta Diop, University of the Witwatersrand, Stellenbosch University, Rhodes University, University of Cape Town, University of FwaZulu-Natal, University of Cape Town, University of Dar Es Salaam. Makerere University

Eligibility

"Academic" "articles" and "reviews" published betwen 2015 and 2023

Included

224,557 documents

IDENTIFICATION

23 ARUA Universities:

- Addis Ababa University
- · University of Cape Coast
- · Universite Cheikh Anta Diop
- Obafemi Awolowo University
- · University of Mauritius
- University of Witwatersrand
- Stellenbosch University
- Disaster University
- Rhodes University
- University of Pretoria
- University of KwaZulu-NatalUniversity of Cape Town
- University of Dar Es Salaam
- Makerere University
- · University of Rwanda
- · University of Ghana
- · University of Ibadan
- · University of Lagos
- University of NairobiUniversite de Kinshasa
- · Kwame Nkrumah University of Science & Technology
- · Eduardo Mondlane University
- · University of Nigeria, Nsukka
- · Université Mohammed VI Polytechnique

ELIGIBILITY

Academic "articles" and "reviews" published between 2015 and 2023

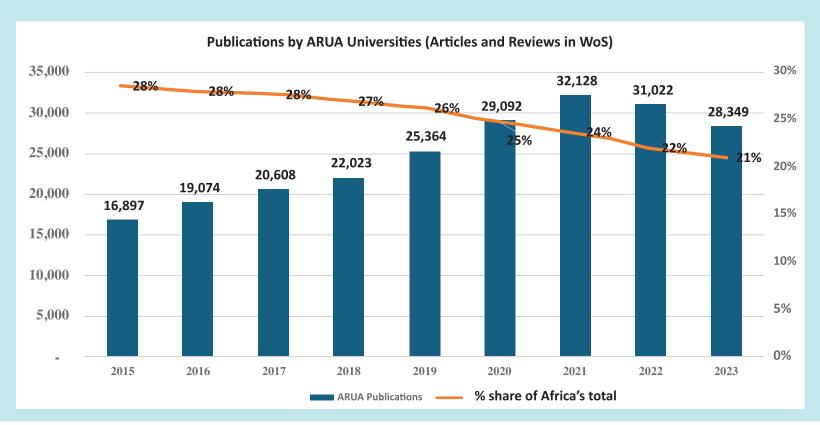
ANALYSIS

224,557 documents



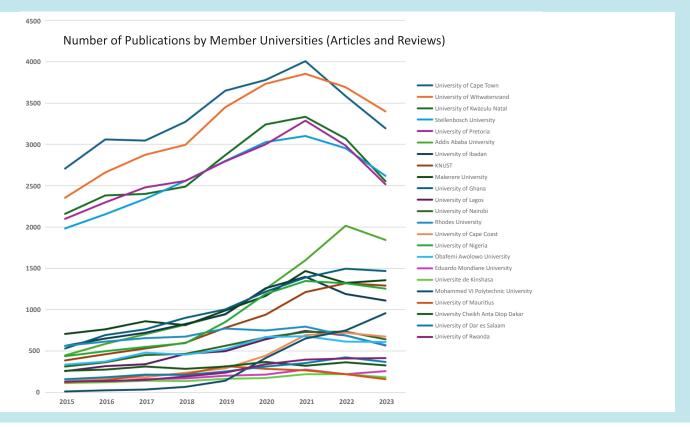
Number of Publications

- Publication output by ARUA universities shows a clear upward trend, rising from 16,897 in 2015 to a peak of 32,128 in 2021, reflecting an average annual growth rate (AAGR) of 7%. After 2021, output declined moderately, reaching 31,022 in 2022 and 28,349 in 2023.
- Despite this growth in absolute numbers, ARUA's share of Africa's total publications has steadily decreased—from 28% in 2015 to 21% in 2023.
- The trend highlights the broadening of Africa's research base, even as ARUA institutions remain among the most significant contributors.



Number of Publications by Member Universities

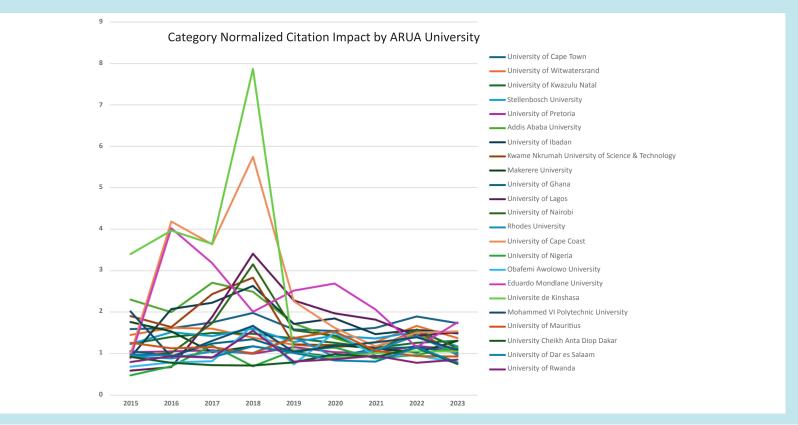
- The University of Cape Town and the University of the Witwatersrand consistently record the highest publication outputs across the period, with both institutions peaking in 2021 before experiencing a modest decline thereafter.
- A similar trend is evident across most ARUA universities, where publication counts rose steadily until 2021, followed by a general decrease in 2022 and 2023.
- Other institutions, including the University of KwaZulu-Natal, Stellenbosch University, and the University of Pretoria, also maintained relatively high levels of publication output throughout the period under review.
- By contrast, universities such as the University of Rwanda and Eduardo Mondlane University reported comparatively lower volumes of publications, but demonstrated steady year-on-year growth.



Citation Impact

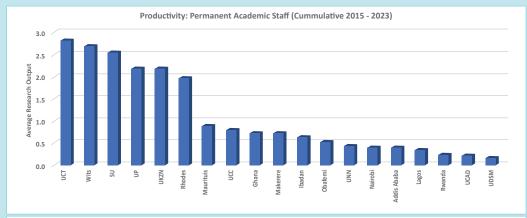
- Most ARUA universities fall within a citation impact range of 1 to 3, indicating that their research generally achieves average to above-average citation performance compared to global field norms..
- The University of KwaZulu-Natal and the University of the Witwatersrand recorded

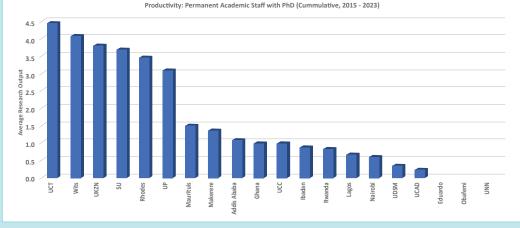
- dramatic increases in 2018, reaching citation impacts of approximately 8 and 6, respectively, before returning to more typical levels.
- Similarly, Eduardo Mondlane University registered a marked rise in 2016, peaking above 4, which subsequently declined in the following years.
- Across the network, the majority of universities have maintained relatively stable citation impact scores over time, with only modest variations.
- This suggests that while a few universities experience exceptional years, the broader trend is one of steady, moderate citation impact.



Research Productivity

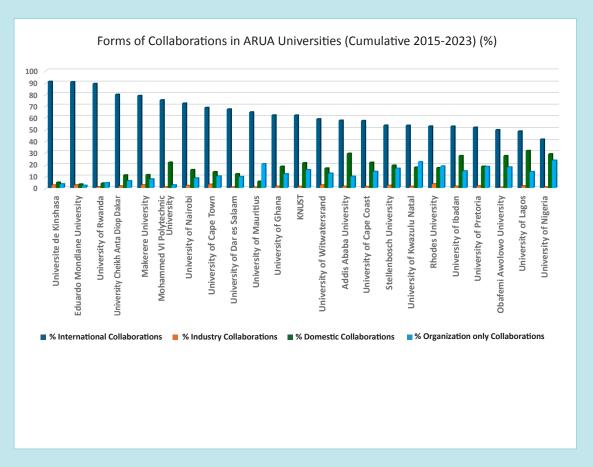
- UCT demonstrates the highest levels of research productivity, measured both as average output per staff member and per PhD holder. Other universities that also rank highly on this measure include Wits, SU, and UKZN.
- When research productivity is assessed only among staff with PhDs, the average output rises markedly across all institutions. At UCT, PhD holders produce more than four publications on average, a level well above the network-wide norm. Wits and UKZN also perform strongly in this regard
- In contrast, UCAD, Eduardo Mondlane, and UNN record comparatively low levels of productivity, particularly among staff with PhDs.
- These disparities highlight the strong correlation between holding a PhD and higher research output across the ARUA network.

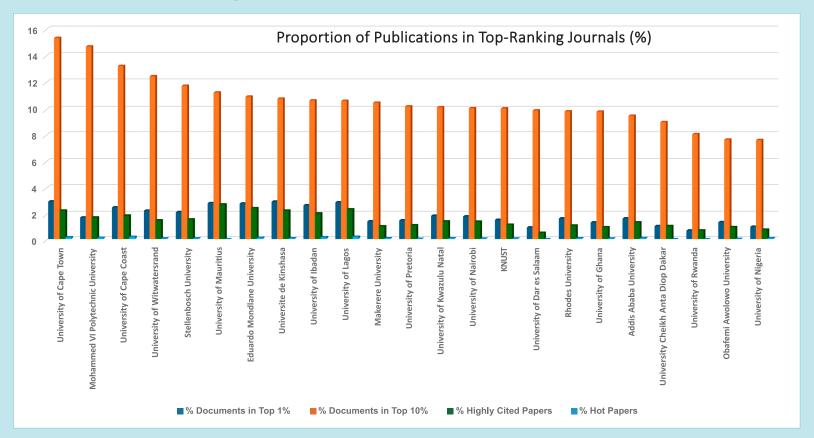




Co-Authorships

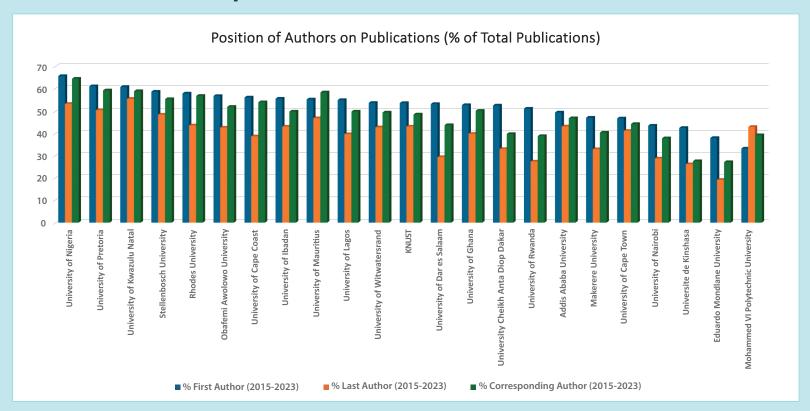
- International collaboration is the most common form of research partnership, with several institutions—such as Université de Kinshasa, Eduardo Mondlane University, and the University of Rwanda—showing more than 85% of publications produced with international partners.
- Domestic collaborations represent a smaller proportion of co-authorships across the network. Even at their highest levels—at the University of Nigeria, Addis Ababa University and the University of Lagos—they do not exceed 30%.
- Industry collaborations are minimal, with all universities recording less than 5% of outputs involving industry partners.
- Organization-only collaborations which involve researchers from the same institution, are generally modest but somewhat more visible at universities where international engagement is lower, such as the University of Nigeria and the University of Lagos.





Proportion of Publications in Top-Ranking Journals

- The University of Cape Town and Mohammed VI Polytechnic University record the highest shares of documents in the top 10% of journals, each exceeding 14%.
- The percentage of documents in the top 1% of journals is considerably smaller, ranging from about 0.5% to 2.5% at most institutions. Within this category, the University of Mauritius and the University of Cape Town record the strongest results.
- Across the network, universities record higher shares of "highly cited papers" than of "hot papers". However, both indicators remain relatively modest, below 2.5% at all institutions. South African universities and Mohammed VI Polytechnic University stand out with higher proportions of outputs in these influential categories.



Position of Authors

 First authorship shares are highest at the University of Nigeria, the University of Pretoria, and the University of KwaZulu Natal, each exceeding 60%. In contrast, Mohammed VI Polytechnic University records comparatively low levels of first authorship, below 40%, while Eduardo Mondlane University shows similarly low levels for both first and last authorship. At institutions with higher levels of author leadership, such as those in Western and Southern Africa, corresponding author shares often exceed 50%.

 Overall, the data illustrates significant differences in author leadership roles across the ARUA network, with Western and Southern African universities more frequently occupying first, last, and corresponding author positions.

Top 20 Journal	s with t	he Most	Documents
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100	20 Journals with the Wost Bocaments				
	Name	Web of	Times	Rank	% Docs
		Science	Cited		Cited
		Documents			
1	Plos One	4453	61527	1	89.31
2	Scientific Reports	1410	23252	2	89.79
3	SAMJ South African Medical Journal	1195	7702	3	82.68
4	BMC Public Health	1154	15658	4	89.51
5	Heliyon	1121	8425	5	81.45
6	BMJ Open	1085	7768	6	81.01
7	Pan African Medical Journal	921	4780	7	76.44
8	Monthly Notices of the Royal Astronomical Society	909	18435	8	92.63
9	HTS Teologiese Studies-Theological Studies	893	1530	9	55.32
10	Malaria Journal	783	10544	10	91.95
11	Sustainability	772	7429	11	86.53
12	South African Journal of Botany	745	6611	12	87.25
13	International Journal of Environmental Research and	726	8628	13	91.87
	Public Health				
14	BMC Health Services Research	699	7763	14	87.27
15	Scientific African	648	3580	15	76.7
16	BMC Infectious Diseases	628	8832	16	92.83
17	African Health Sciences	623	3470	17	95.83
18	Clinical Infectious Diseases	542	13691	18	96.31
19	Plos Neglected Tropical Diseases	489	8831	19	92.64
20	Journal Of High Energy Physics	477	11707	20	92.24

Note: Document types are articles and reviews from 2015 - 2023.

Top Journals (Most Documents)

- This distribution highlights the journals in which ARUA universities have published the largest number of papers over the review period, underscoring their strong contributions to global and regional scientific literature, especially in health and life sciences.
- Plos One records the highest number of documents, with 4,453 publications and 61,527 citations. It is followed by Scientific Reports and the South African Medical Journal, which also account for substantial shares of ARUA research output.
- Most of the leading journals are concentrated in the fields of health, medicine, and environmental sciences, aligning with the main areas of research strength across ARUA universities.

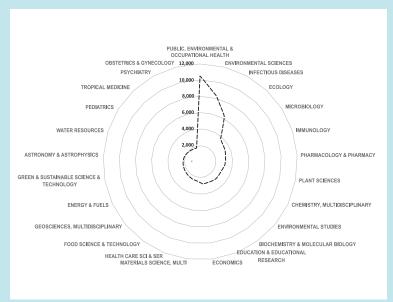
 The percentage of documents cited is consistently high, with several journals—such as Malaria Journal, BMC Infectious Diseases, and Clinical Infectious Diseases—recording citation rates above 90 percent.
- Among the top-ranked journals, Monthly Notices of the Royal Astronomical Society stands out with the highest proportion of documents cited, at 92.63 percent.

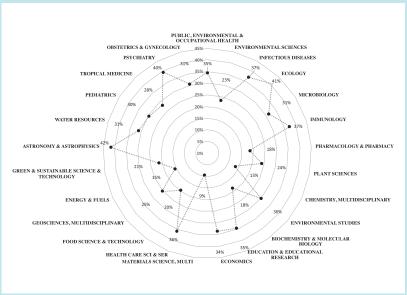
Top Journals (Most Citations)

- This section shows the journals in which ARUA universities' papers have received the highest total citation counts.
- The Lancet leads with 271 documents but an exceptionally high 145,558 citations, with all its published documents cited.
- Plos One ranks second, recording 4,453 documents and 61,527 citations, with nearly 90 percent of its publications cited.
- Other highly cited journals include the New England Journal of Medicine, Astronomy & Astrophysics, and Nature, each surpassing 30,000 citations and with more than 95 percent of documents cited.
- Scientific Reports and BMC Public Health are also notable, combining high document volumes with substantial citation impact, although the percentage of cited documents for both stands at about 89 percent.

100	20 Journals with the Most Citations							
		Web of						
		Science						
		Docum	Times		% Docs			
	Name	ents	Cited	Rank	Cited			
1	Lancet	271	145558	1	100			
2	Plos One	4453	61527	2	89.31			
3	New England Journal Of Medicine	115	38909	3	100			
4	Astronomy & Astrophysics	435	35369	4	95.86			
5	Nature	154	34482	5	99.35			
6	Science	110	24965	6	99.09			
7	Scientific Reports	1410	23252	7	89.79			
8	Lancet Neurology	29	22351	8	100			
9	Lancet Infectious Diseases	162	19626	9	98.77			
10	Lancet Global Health	234	19188	10	97.86			
11	Nature Communications	323	18891	11	93.5			
12	Monthly Notices Of The Royal Astronomical Society	909	18435	12	92.63			
13	European Physical Journal C	404	15798	13	95.05			
14	BMC Public Health	1154	15658	14	89.51			
15	Clinical Infectious Diseases	542	13691	15	96.31			
16	Jama Oncology	13	12756	16	100			
17	Physical Review D	413	12119	17	93.46			
18	Journal Of High Energy Physics	477	11707	18	92.24			
19	Science Of The Total Environment	410	11526	19	94.88			
	Proceedings Of The National Academy Of Sciences Of The							
20	United States Of America	181	11264	20	98.9			
B. T. 4	N. 4. D							

Note: Document types are articles and reviews from 2015 - 2023.





Leading Research Topics

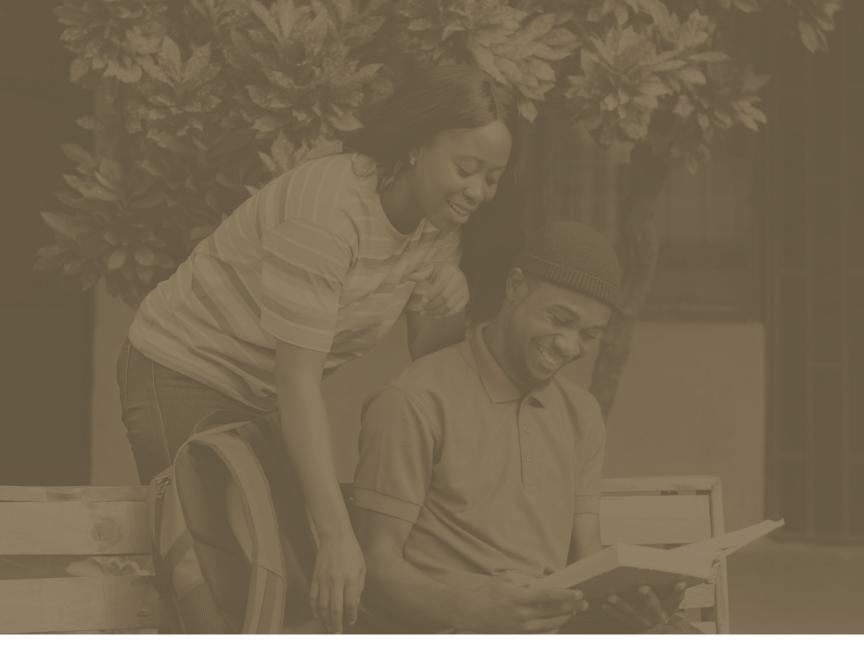
- ARUA universities publish most extensively in Public, Environmental & Occupational Health, with publication counts exceeding 10,000 in this category. Other major fields include Environmental Sciences, and related health and science areas.
- In terms of research share within Africa's total output, ARUA universities demonstrate the greatest concentration in Public, Environmental & Occupational Health (49%), Ecology (41%), and Microbiology (37%).
- By contrast, fields such as Materials Science and Energy & Fuels show much smaller shares, underscoring ARUA's comparative strength and leadership in health and environmental sciences.



- The period from 2015 to 2023 marks a phase of notable development and differentiation among ARUA member universities, as revealed through benchmarking and bibliometric analysis.
- While ARUA institutions remain largely undergraduate in enrolment profile, several universities—notably Ibadan, Addis Ababa, and the South African institutions—have recorded steady growth in postgraduate and doctoral enrolments. Even so, the overall share of postgraduate students remains modest, and gender disparities are evident at advanced study levels.
- Significant gender gaps persist across the network, especially in senior academic positions and postgraduate education.
 Male dominance is particularly marked at institutions such as Ghana, Nairobi, and Mauritius, whereas universities like Pretoria, Wits, and Rhodes show a more balanced gender distribution, especially at the Master's level. Among doctoral graduates, males continue to outnumber females in most universities, with the gap especially wide at AAU, UM6P, and UCAD. Some institutions notably Nairobi, Mauritius, Rhodes, and Cape Town—achieve near parity.
- In academic staffing, males substantially outnumber females among professors and associate professors at nearly all universities. A few institutions (UEM, Mauritius, SU, UP, and UCT) record relatively higher female representation, though parity has yet to be achieved. The gender gap is also evident among senior lecturers, with most universities male-dominated, except for UP, UCT, and Wits, where women constitute a majority.
- While there are encouraging improvements in female enrolment and staff representation, particularly in South African universities, substantial disparities remain at many non— South African institutions.



- Research productivity has grown steadily, with leading universities such as the University of Cape Town, the University of the Witwatersrand, Stellenbosch University, and the University of KwaZulu-Natal sustaining high publication outputs. However, the overall share of ARUA universities in Africa's research output has declined, reflecting faster growth in publications from other African institutions.
- In terms of impact, ARUA universities generally achieve citation rates at or above global averages, with notable spikes at the University of Lagos, the University of Nairobi, Addis Ababa University, and the University of Ibadan, underscoring both the quality and rising influence of ARUA research.
- International collaboration remains the dominant form of research partnership, with most universities reporting over 60% of publications co-authored with foreign partners. By contrast, industry engagement is minimal, and domestic collaborations are limited, though they vary across institutions.
- Research across the network is strongly concentrated in health, environmental, and life sciences, where ARUA universities contribute a significant share of Africa's output. Their visibility is reinforced by substantial publication in high-impact international journals.
- Despite these advances, persistent challenges remain. Gender imbalances in student enrolments and academic staffing endure, doctoral completion rates are slow, and there are significant disparities in research funding, patenting, and postgraduate training. These findings highlight the continuing need for targeted interventions to strengthen institutional capacity, promote equity, and consolidate research leadership across the ARUA network.













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