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Transition to Open Science: HEIs, National, and Global Perspective

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UNIVERSITY OF THE WITWATERSRAND, JOHANNESBURG

Transition to Open Science: HEIs, National, and Global Perspective

Navigating the Research Metrics Work, 12-13 Sept, 2024
Chinhoyi University, Zimbabwe

UNIVERSITY OF THE WITWATERSRAND, JOHANNESBURG

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Research, Scholarly Communications,
Digital Systems & Services
Wits Libraries

Definitions: Open Science

"Open science is a collaborative culture enabled by technology that empowers the open sharing of data, information, and knowledge within the scientific community and the wider public to accelerate scientific research and understanding"

Grand, A., Wilkinson, C., Bultitude, K., & Winfield, A. (2012). Open Science. Science Communication, 34, 679 - 689. https://doi.org/10.1177/1075547012443021.

"Open science promotes the sharing of research materials [research outputs], collaboration, and peer review, benefiting all stakeholders, including researchers, funders, and the public"

Rahman, N. (2019). The Need for Open Science. , 2, 22-30. https://doi.org/10.22452/JRMG.VOL2NO1.3.

Open Science Movement

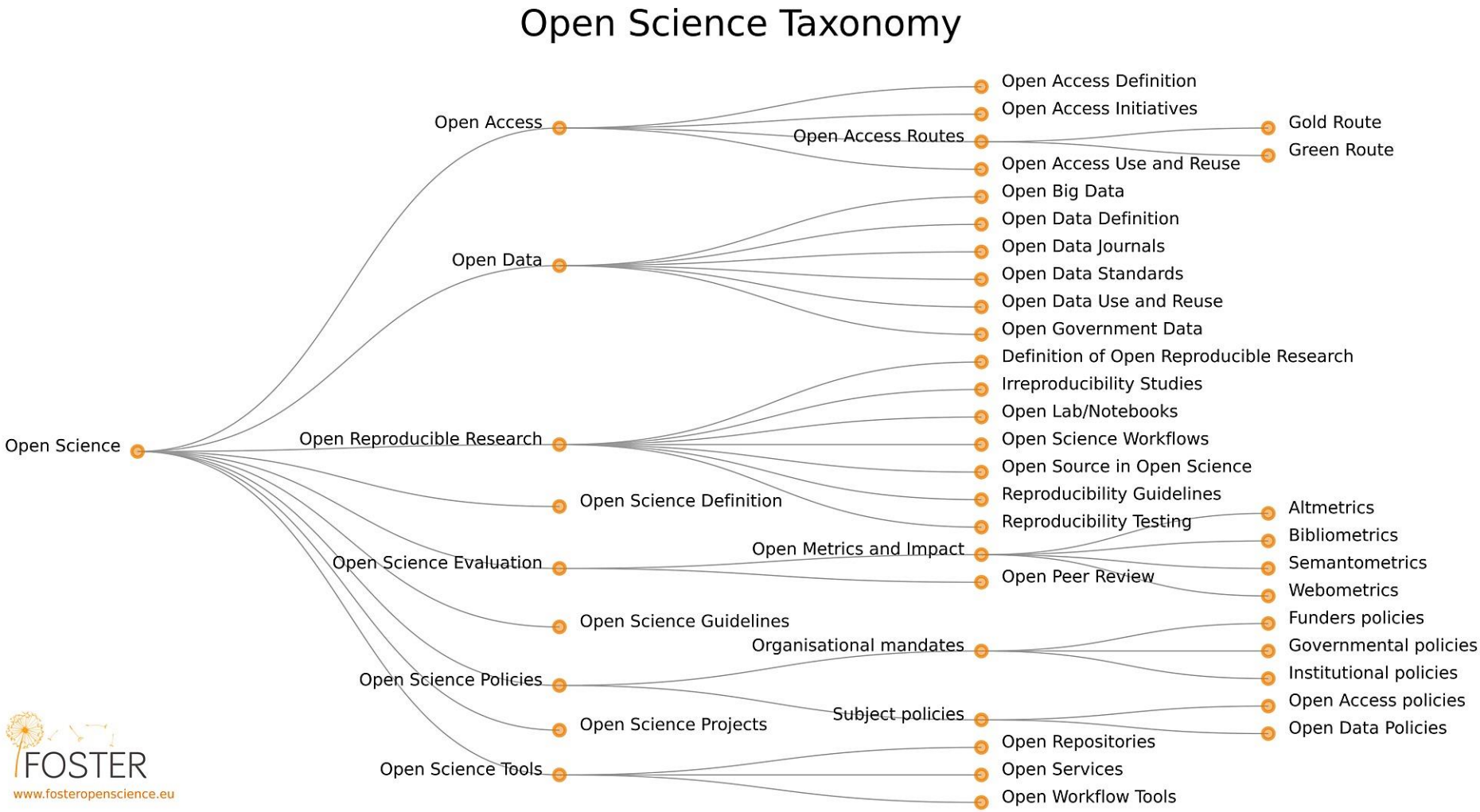
Open Science Movement

Open Access movement is tracked to these OA Declarations:

- Open Access formally started with the Budapest Open Access Initiative in February 2002,
- the Bethesda Statement on Open Access Publishing in June 2003, and
- the Berlin Declaration on Open Access to Knowledge in the Sciences and Humanities in October 2003.

(Suber, 2012)

OPEN SCIENCE: OA, OD, ORR, OSE, OSPs, OSTs



FOSTER
www.fosteropenscience.eu

Open science is a global movement aimed at making scientific research more accessible, transparent, and collaborative. Here are some key global players in the open science landscape:

UNESCO





OpenAIRE

COAR
Confederation of Open Access Repositories

COMMITTEE ON DATA
CODATA
INTERNATIONAL
SCIENCE COUNCIL

Berlin 10 Open Access Conference, Stellenbosch University, 6-8 November 2012

The was an international conference that stimulated the library sector in Africa, as the first time in history that that a Berlin OA conference was hosted in Africa. The conference was based on open access and disseminating research output using the internet as a medium.

In bridging the divide the Berlin Declaration of Open Access to Knowledge in the Sciences and Humanities, created the platform for scientists (HEIs) to share research output – presently ETDs, Books, Book chapters, Journal articles, Conference proceedings, open datasets, etc. https://scholar.sun.ac.za/items/3f7f0897-c7f1-4d6b-bc13-1621213e052f

Berlin Declaration on Open Access to Knowledge in the Sciences and Humanities

290 30.09.2010 Universiteit Stellenbosch – Stellenbosch University
309 27.05.2011University of Johannesburg
317 12.08.2011 University of Pretoria
333 24.10.2011 University of the Free State
345 01.11.2011 University of Cape Town
383 21.05.2012 University of South Africa
399 25.09.2012 Academy of Science of South Africa (ASSAf)
403 22.10.2012 University of KwaZulu-Natal
406 30.10.2012 National University of Science and Technology (NUST)
408 09.11.2012 University of the Witwatersrand
410 19.11.2012 Midlands State University
472 11.02.2014 North-West University (NWU), Potchefstroom
569 13.09.2016 Solusi University
570 13.09.2016 Great Zimbabwe University
575 27.10.2016 Bindura University of Science Education
679 17.05.2021 Lupane State University

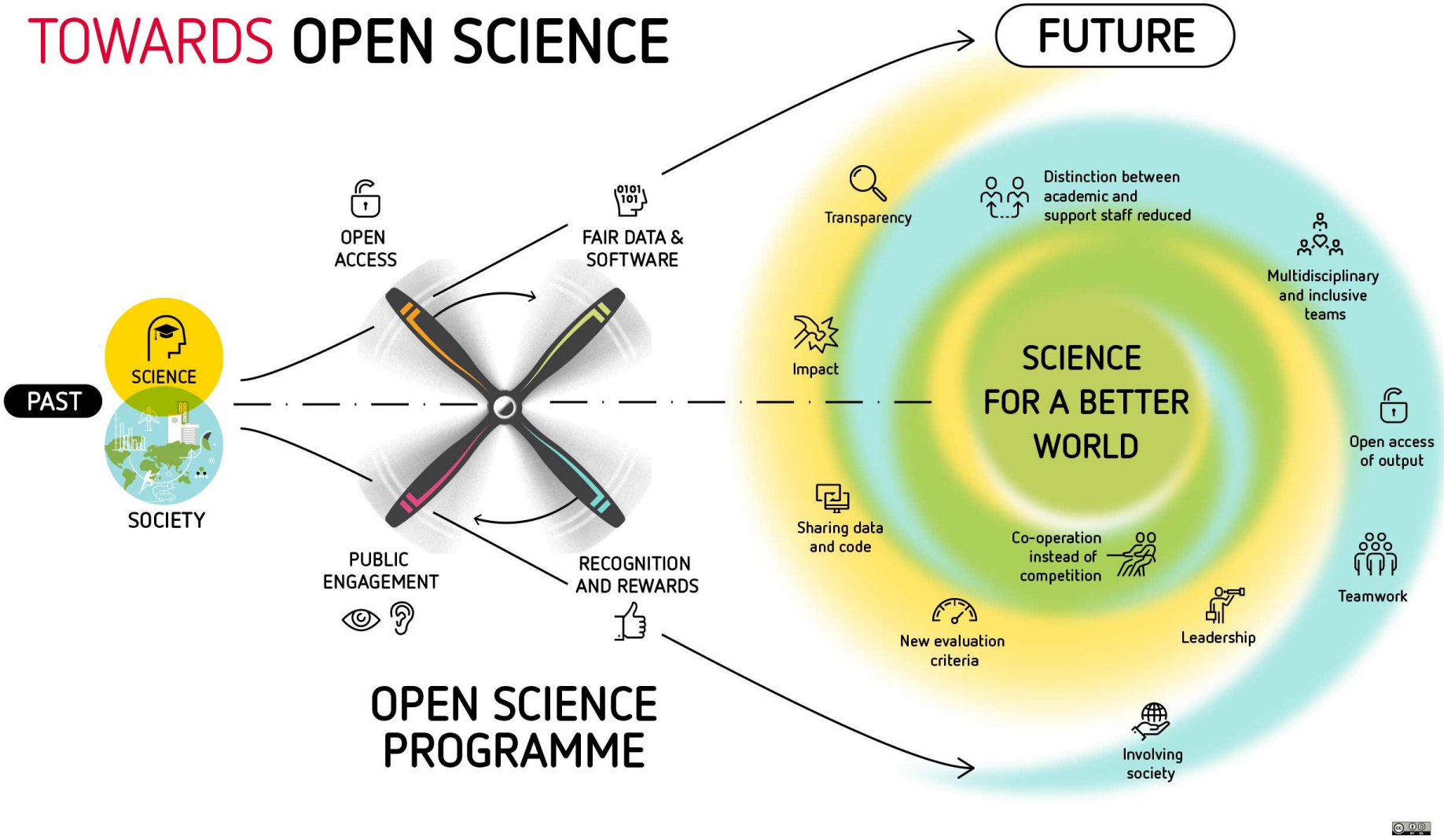
Berlin Declaration: Principles

Supporting the Transition to the Electronic Open Access Paradigm

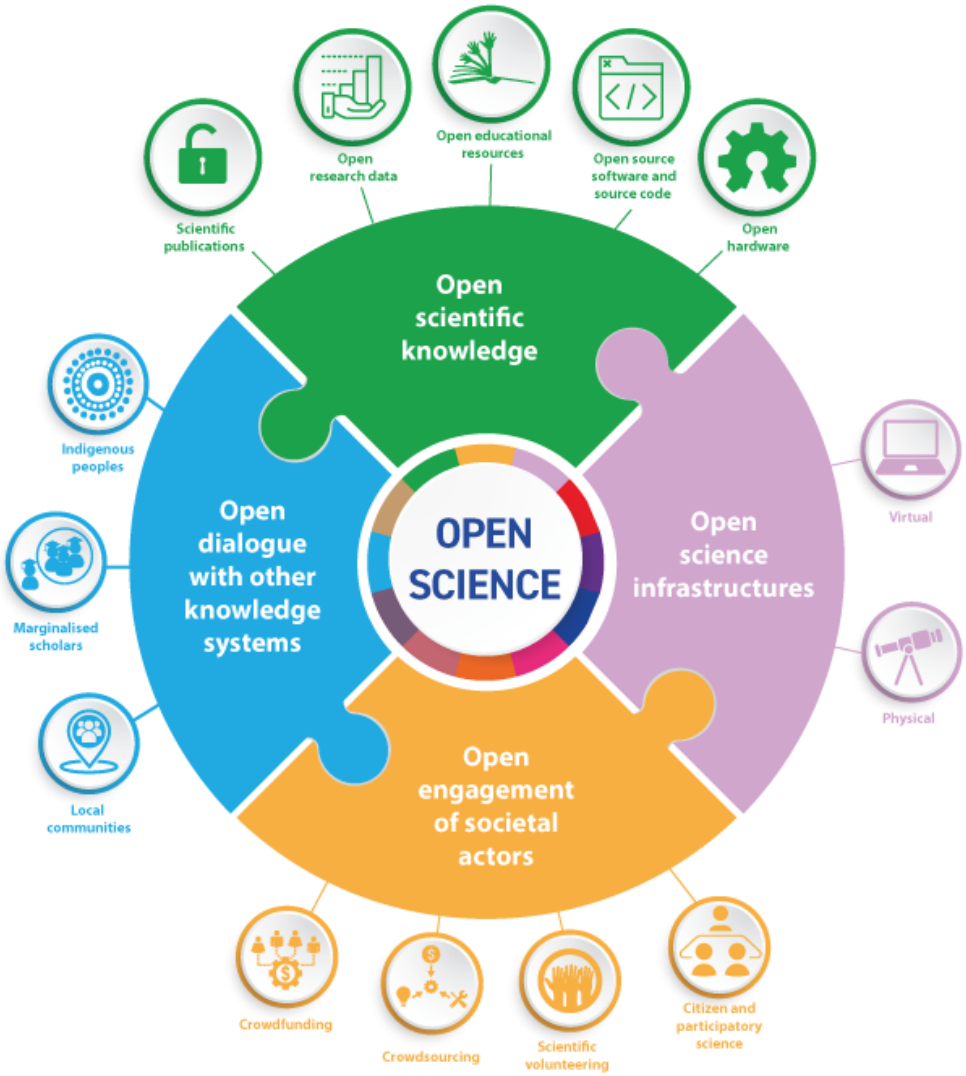
- **encouraging our researchers/grant recipients to publish their work according to the principles of the open access paradigm.**
- encouraging the holders of cultural heritage to support open access by providing their resources on the Internet.
- **developing means and ways to evaluate open-access contributions and online-journals in order to maintain the standards of quality assurance and good scientific practice.**
- **advocating that open access publication be recognised in promotion and tenure evaluation.**
- **advocating the intrinsic merit of contributions to an open access infrastructure by software tool development, content provision, metadata creation, or the publication of individual articles.**

Open Science adoption in HEIs

TOWARDS OPEN SCIENCE



Pillars of OS, UNESCO (2021)

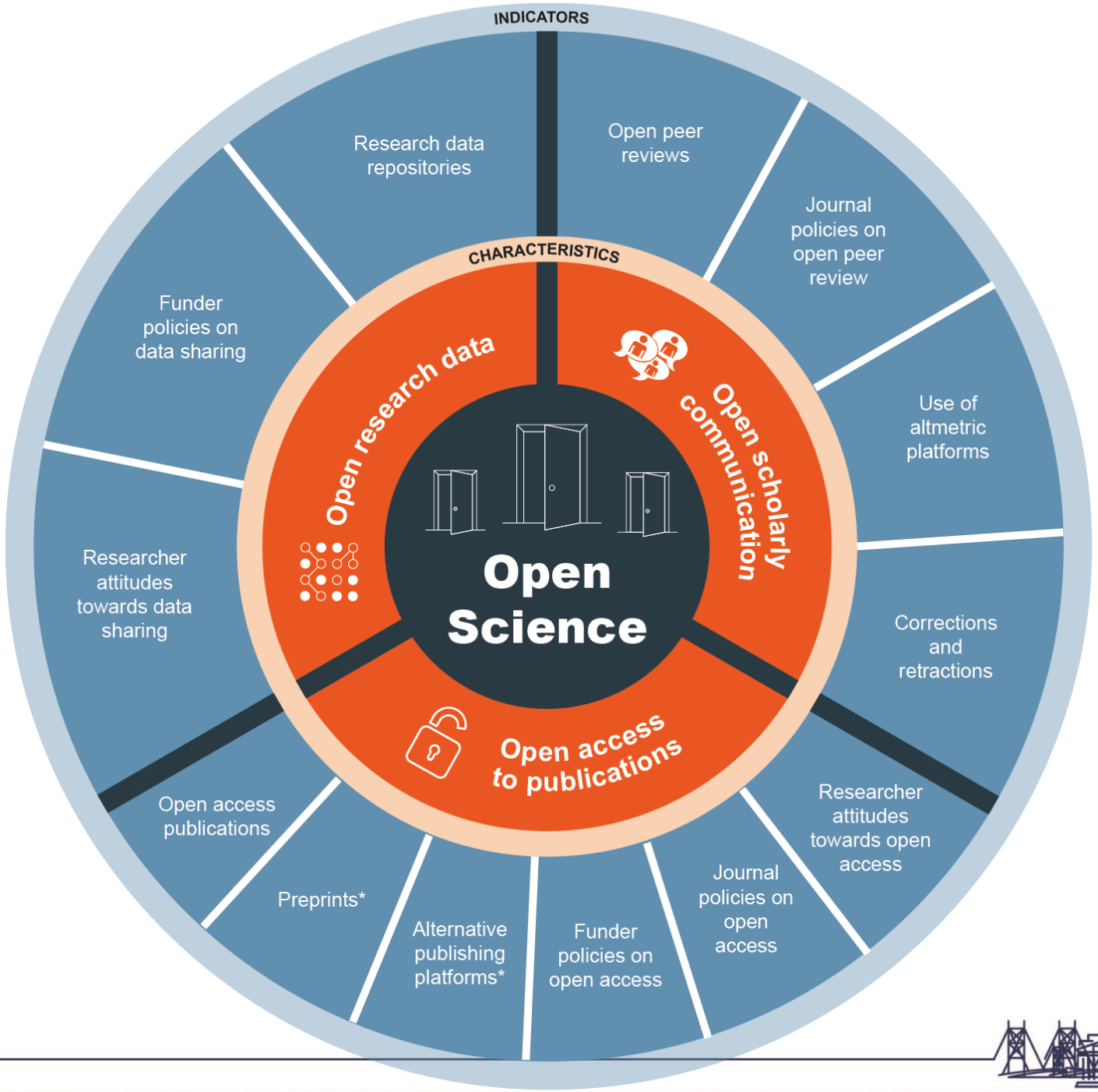


SA, Open Science in Transition

The South African draft open science policy is premised on "...the cardinal guiding principle 'As Open As Possible, As Closed As Necessary'. This principle recognises both the legislative environment, and the critical socio-economic role of intellectual property rights." The policy intends to make open access mandatory for publications arising from publicly funded research and desirable for research from all sources of funding. Open access benefits authors as well as those who can freely access the research.



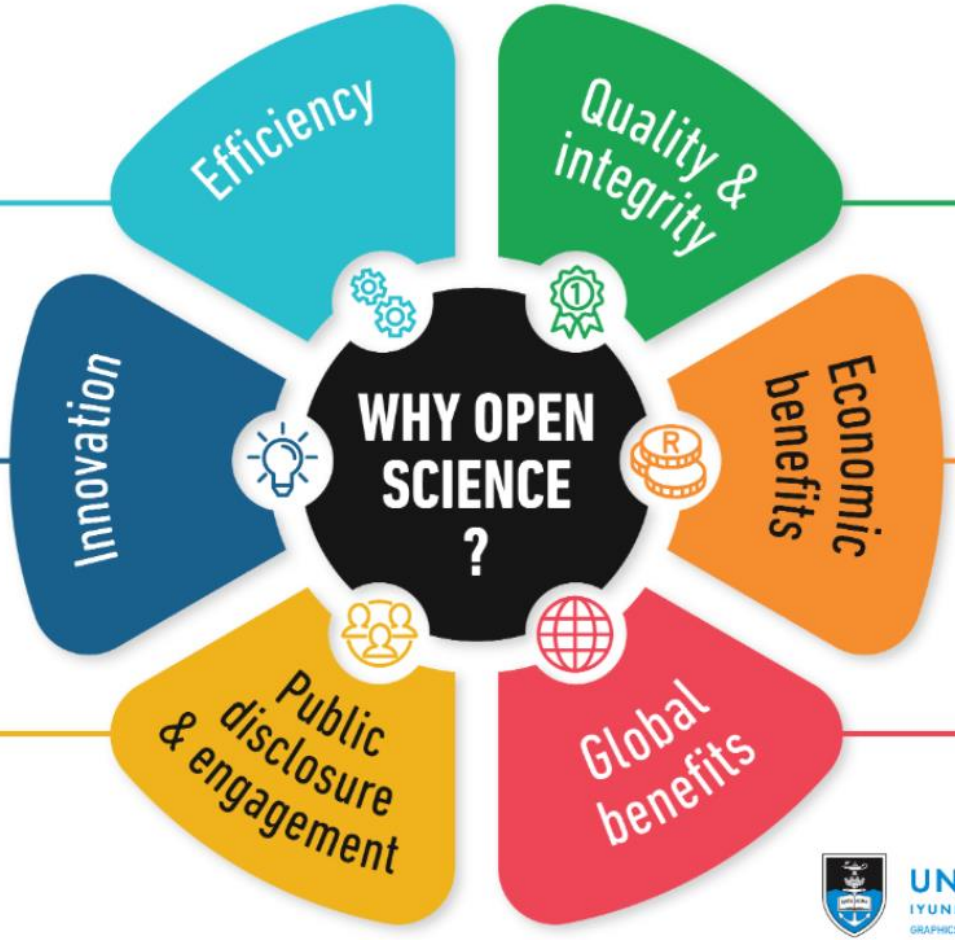
What is Open Science?





- Discipline-specific skills needed to practice open science (does not include generic computer skills, wider librarianship skills and personal competencies)
- Mapped to LIBER OS Roadmap 7 focus areas, Digcomp 2.0 framework and FOSTER learning resources
- Produced by the LIBER Working Group on Digital Skills for Library Staff & Researchers with input from other LIBER Working Groups, 2020

Why Open Science ?



Greater access to scientific inputs and outputs can increase scientific productivity through reducing duplication, allowing **more research from the same data** and multiplying opportunities for domestic and global participation in the research process.

Open access to scientific outputs allow for **greater evaluation and scrutiny** by the scientific community which means more accurate replication and validation of research results. Openness to data contributes to maintain science's self-correction principle.

Open science can **reduce delays in the re-use of scientific research** including articles and data, and promote a swifter path from research to innovation to produce new products and services.

Science plays a key role in today's knowledge economies and increased access to research results, including data, can positive impact not only scientific systems but also innovation.

Science, often publicly funded, should be publicly accessible **to promote a greater awareness** among citizens and to build public trust and support for public policies and investments in research. Open science also promotes citizen science in experiments and data collection.

Open science promotes collaborative efforts and faster knowledge transfer for a better understanding of global challenges and wicked problems.

UNIVERSITY OF CAPE TOWN
IYUNIVESITHI YASEKAPA • UNIVERSITEIT VAN KAAPSTAD
GRAPHICS BY GAELEN PINNOCK

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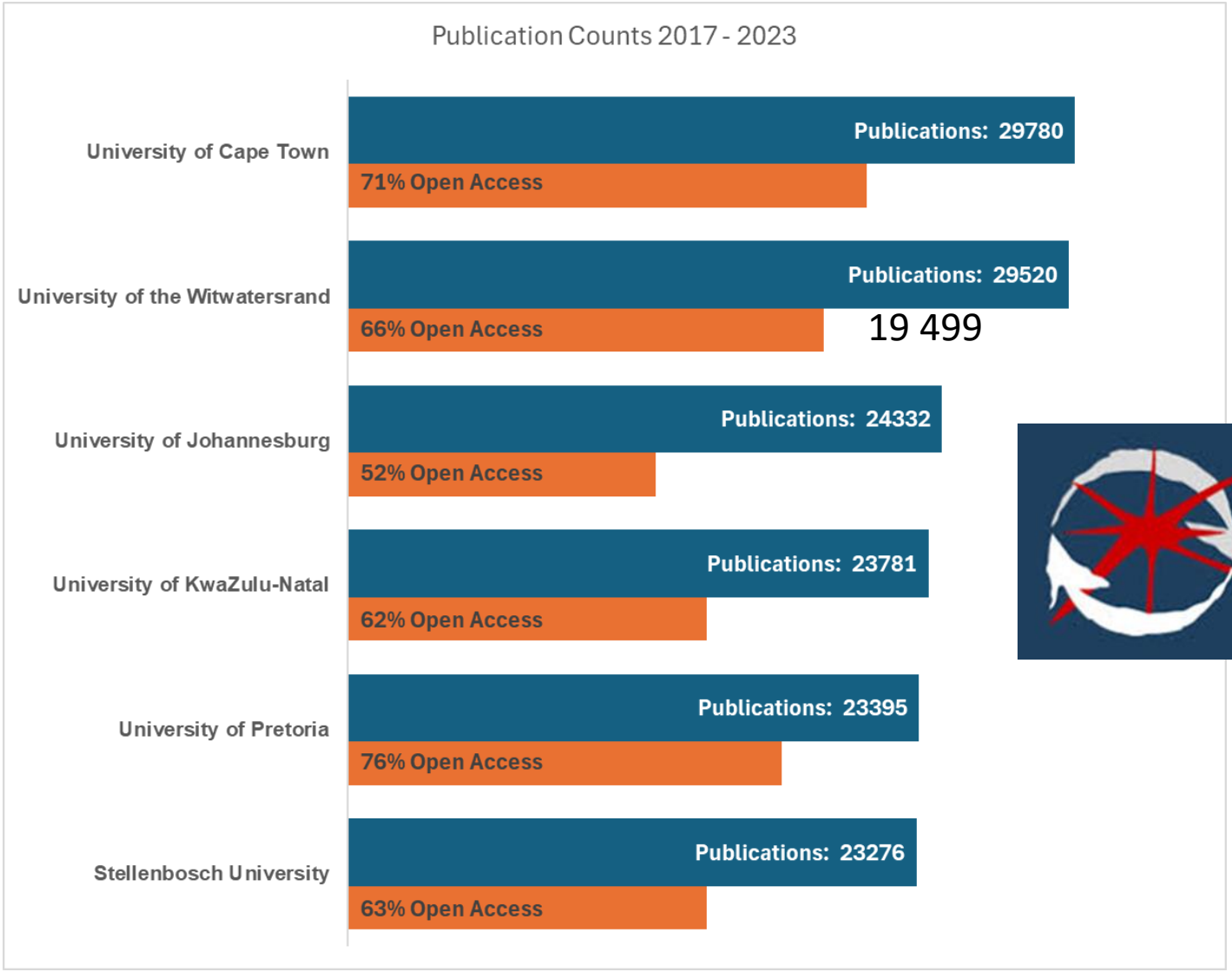
Top 5 - SA Universities

Research Productivity: OA Publishing & Open Data analysis from the **Dimensions/Altmetric Tools**

Wider Reach and Access of Wits' OA Publications

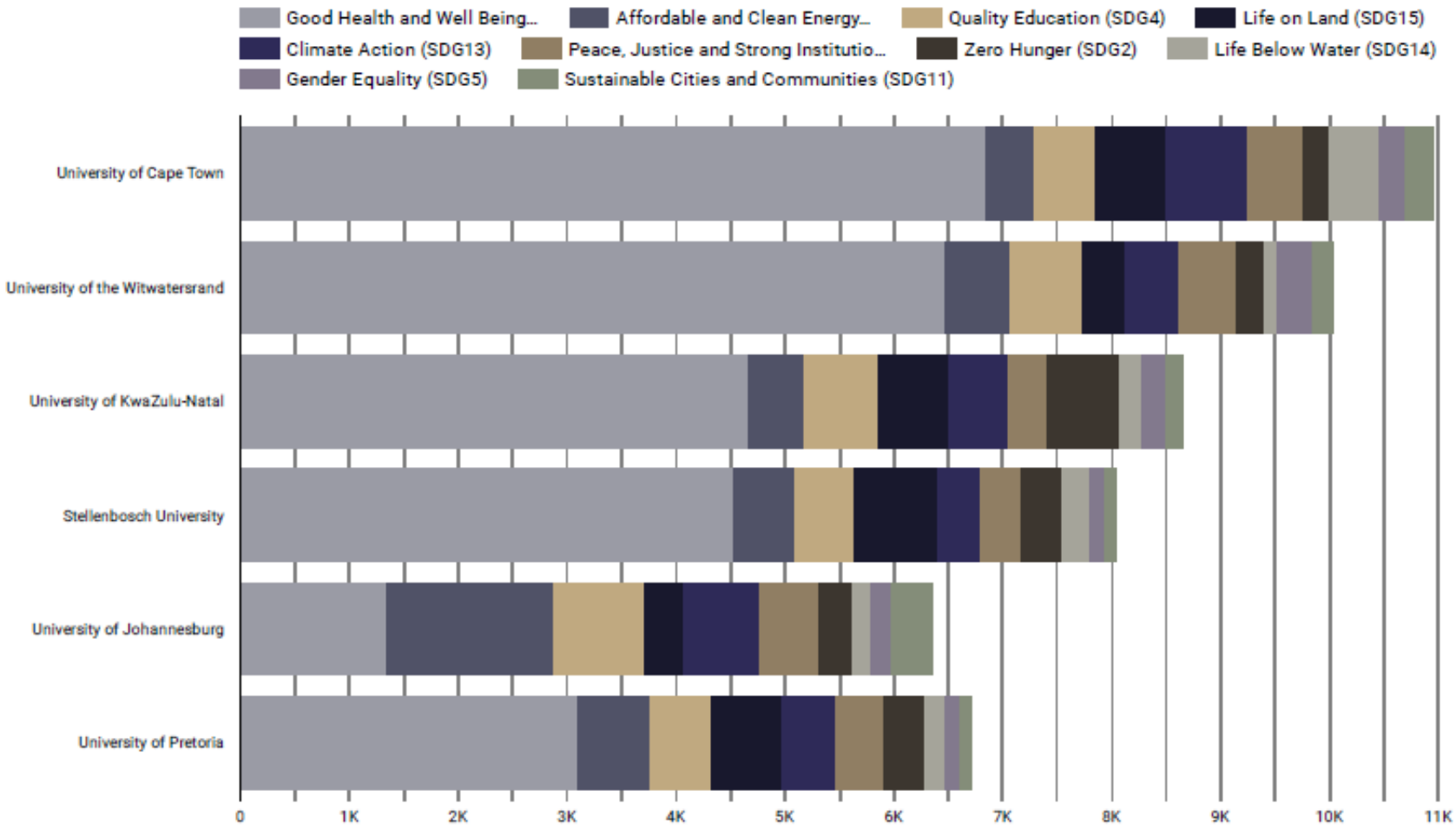


WIReDSpace
Wits Institutional Repository environment on DSpace

Source: Dimensions, 3/09/2024

University of Witwatersrand - Benchmarking

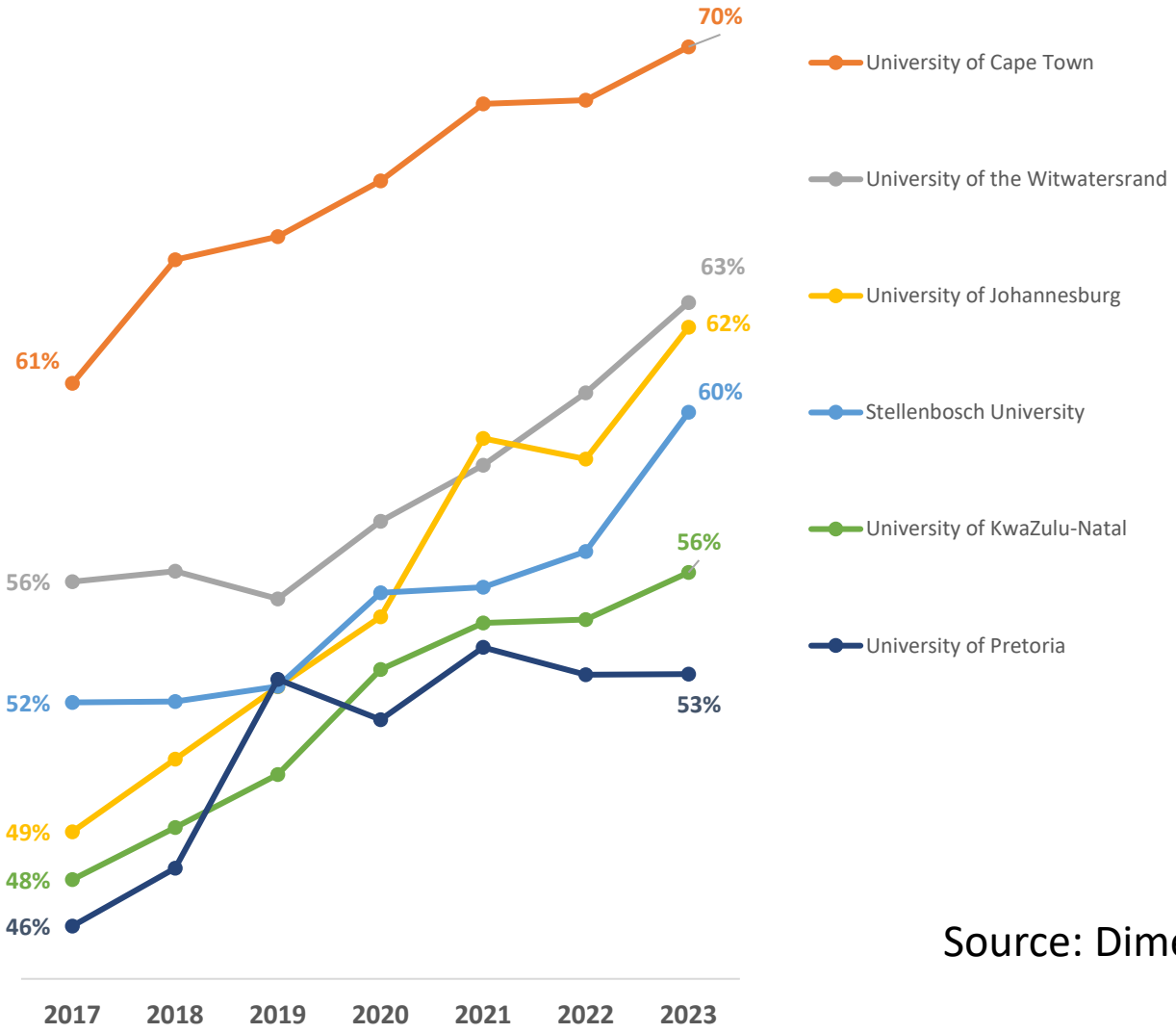
SDG Related Research 2019 - 2023



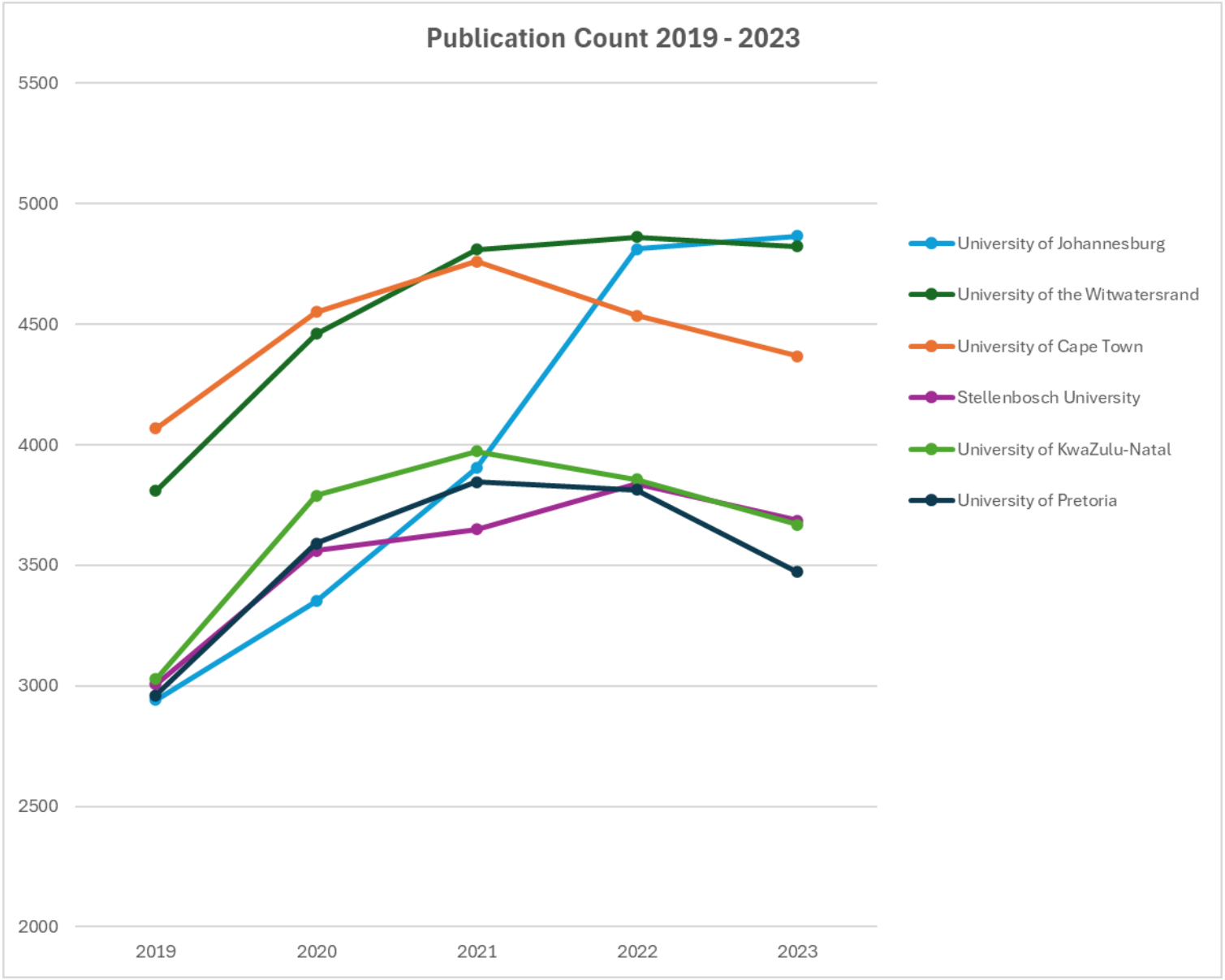
Source: Dimensions, 3/09/2024

Library metadata support for SDGs impact & rankings

Research Librarians – tracking co-authorship

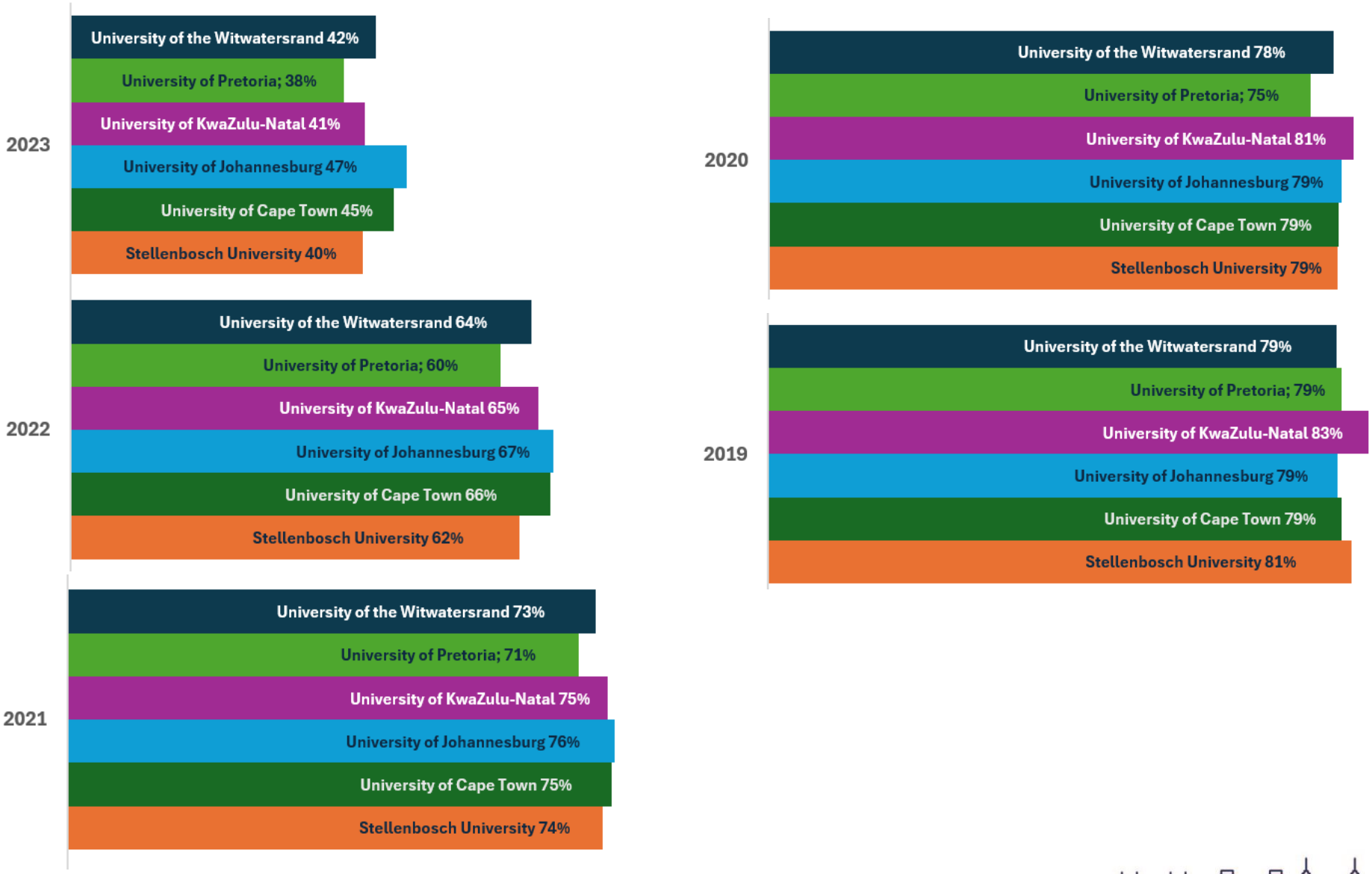


Source: Dimensions, 3/09/2024

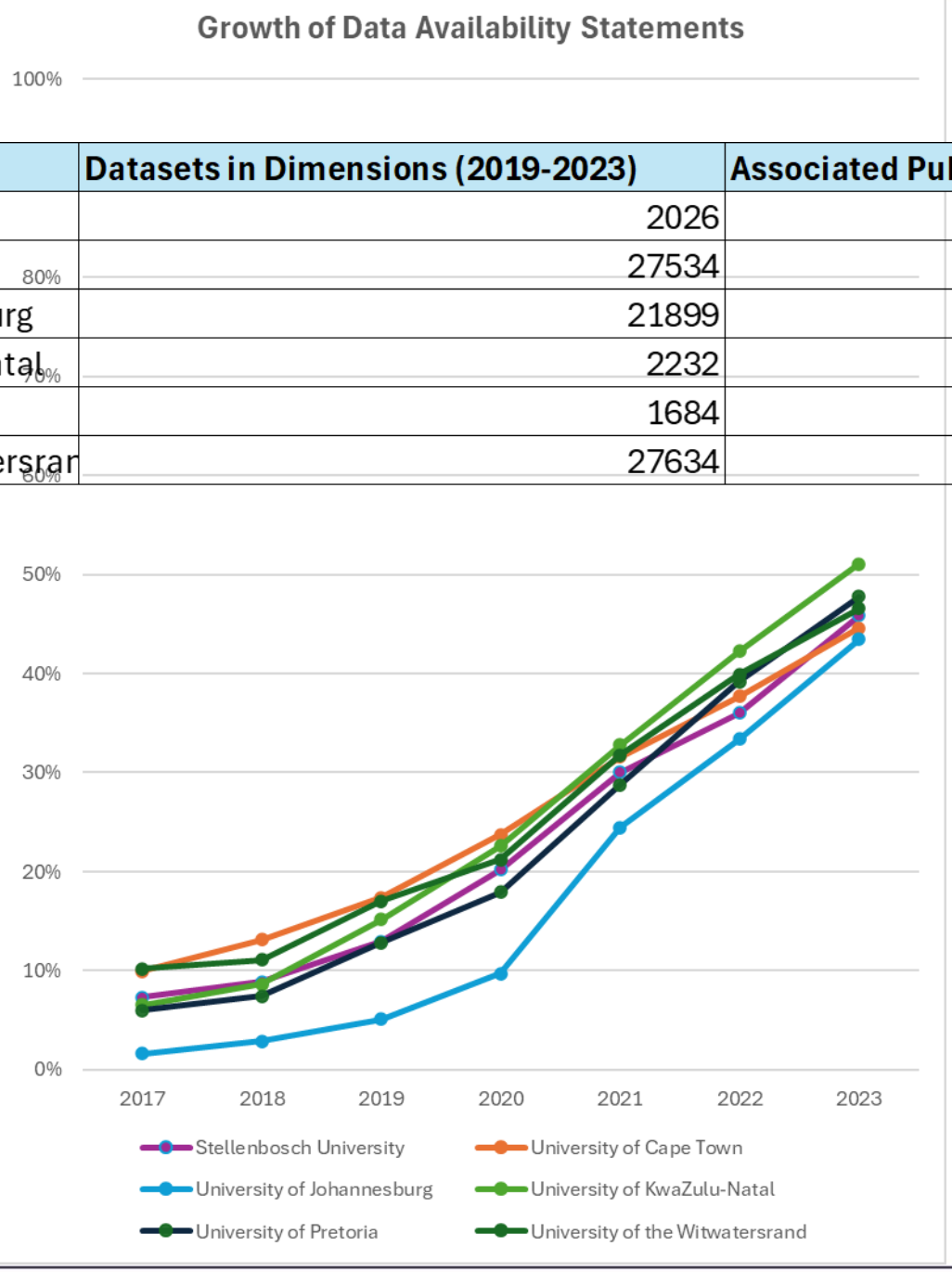


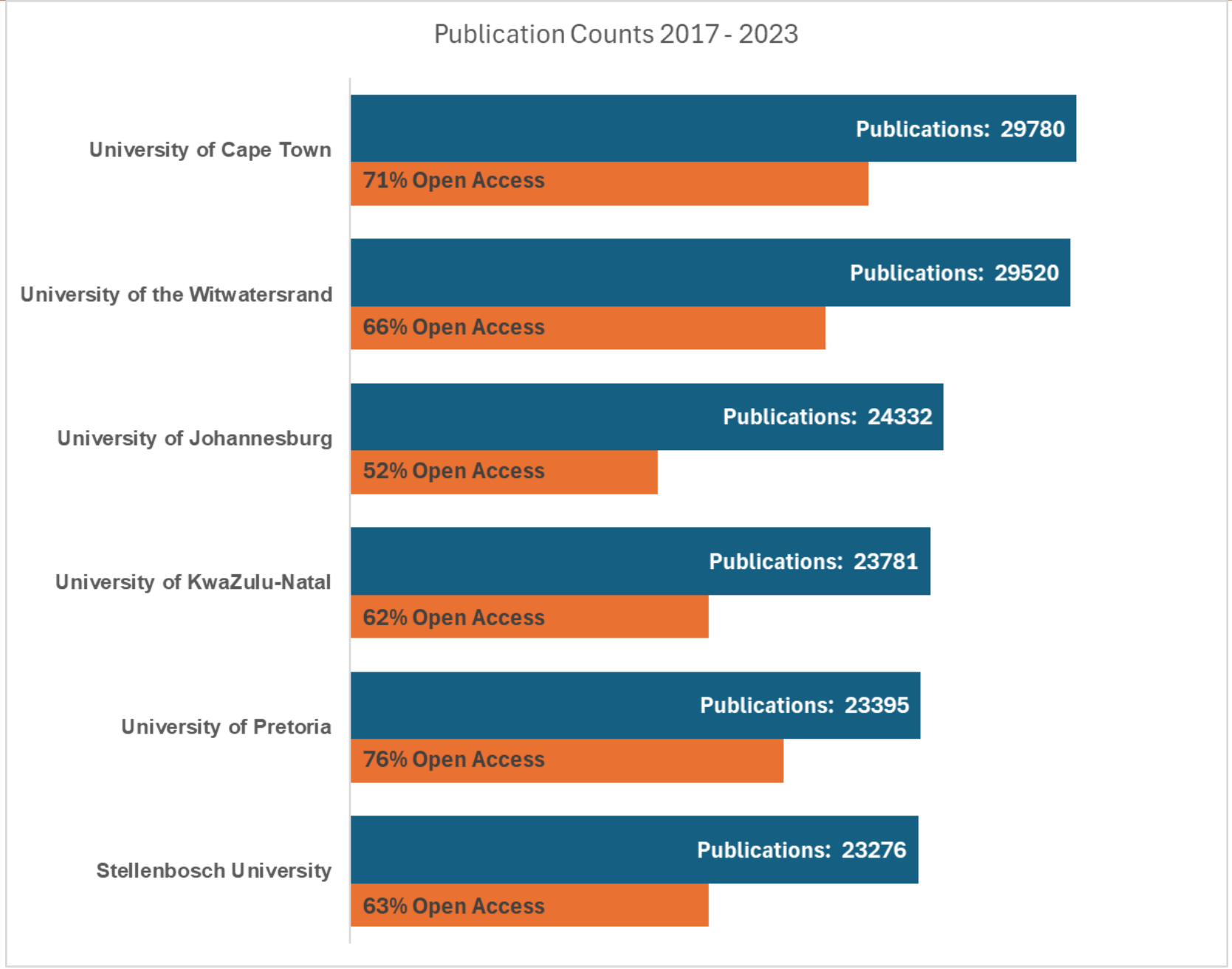
Source: Dimensions, 3/09/2024

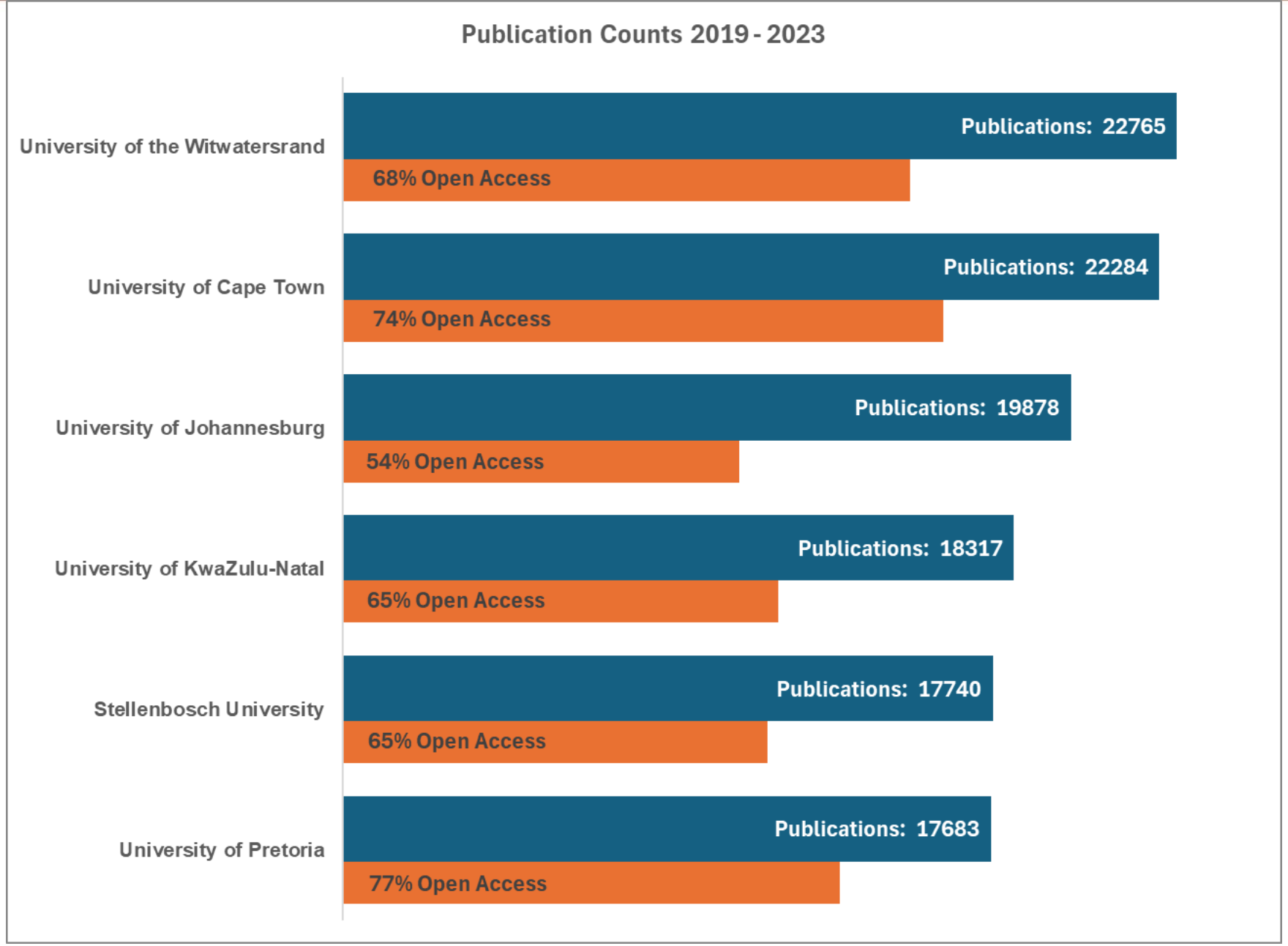
Percentage of Publications with 2 or more Citations



University	Datasets in Dimensions (2019-2023)	Associated Publications
Stellenbosch University	2026	727
University of Cape Town	27534	1584
University of Johannesburg	21899	667
University of KwaZulu-Natal	2232	799
University of Pretoria	1684	623
University of the Witwatersrand	27634	1405




Publication Counts 2017 - 2023
University of Cape Town
Publications: 29780
71% Open Access
University of the Witwatersrand
Publications: 29520
66% Open Access
University of Johannesburg
Publications: 24332
52% Open Access
University of KwaZulu-Natal
Publications: 23781
62% Open Access
University of Pretoria
Publications: 23395
76% Open Access
Stellenbosch University
Publications: 23276
63% Open Access

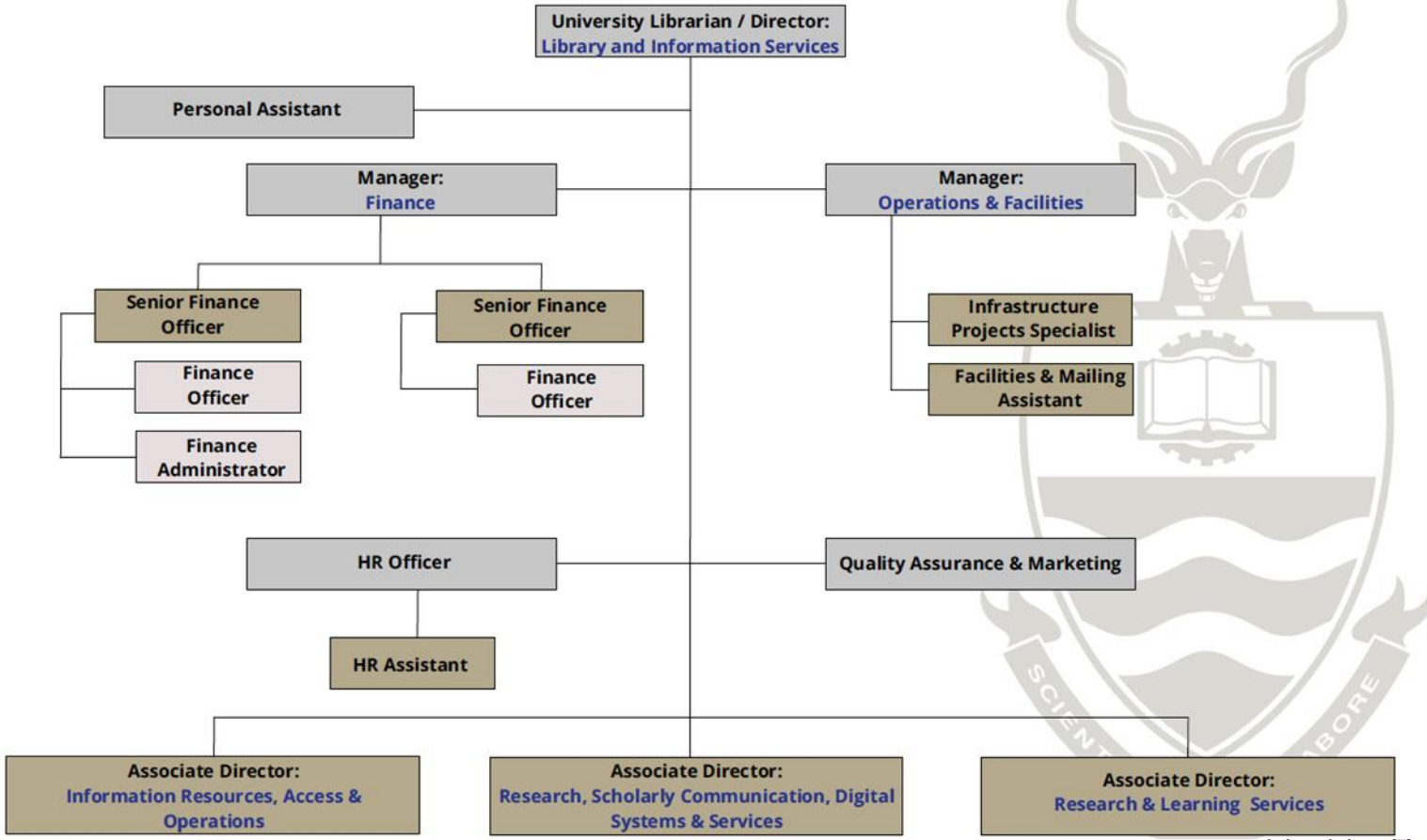

Publication Counts 2019 - 2023
University of the Witwatersrand
Publications: 22765
68% Open Access
University of Cape Town
Publications: 22284
74% Open Access
University of Johannesburg
Publications: 19878
54% Open Access
University of KwaZulu-Natal
Publications: 18317
65% Open Access
Stellenbosch University
Publications: 17740
65% Open Access
University of Pretoria
Publications: 17683
77% Open Access

Role of HEIs libraries in supporting OS = New skills & job titles

Response to the Berlin OA declaration: HEIs, University Libraries

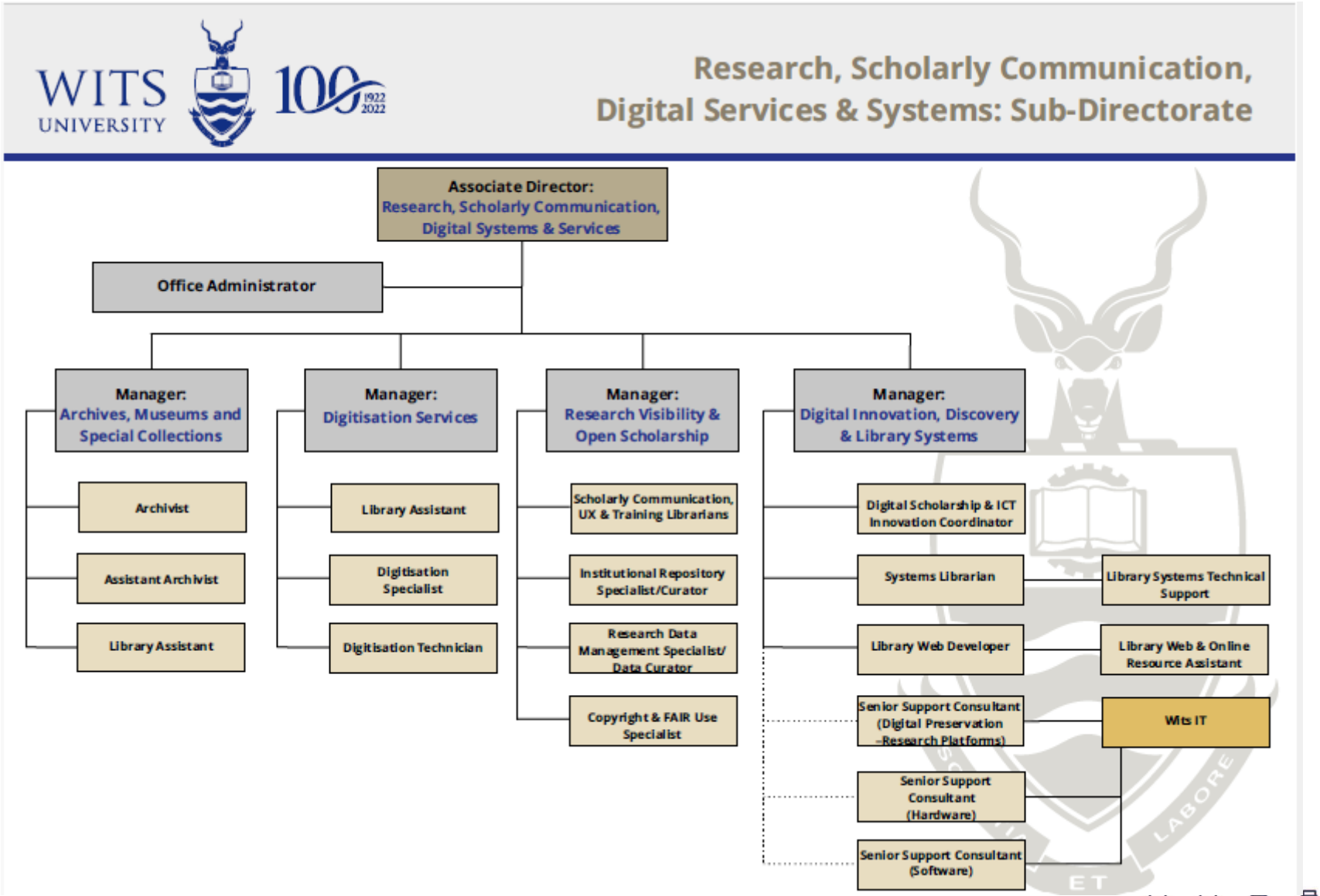
WITS UNIVERSITY 1922 2022

Wits Library and Information Services Organogram



1922 2022

Research, Open Scholarship & Digital Systems



Libraries: AI Research Support Tools

Academic AI Writing Tools

Scopus® AI

Trusted content. Powered by responsible AI.

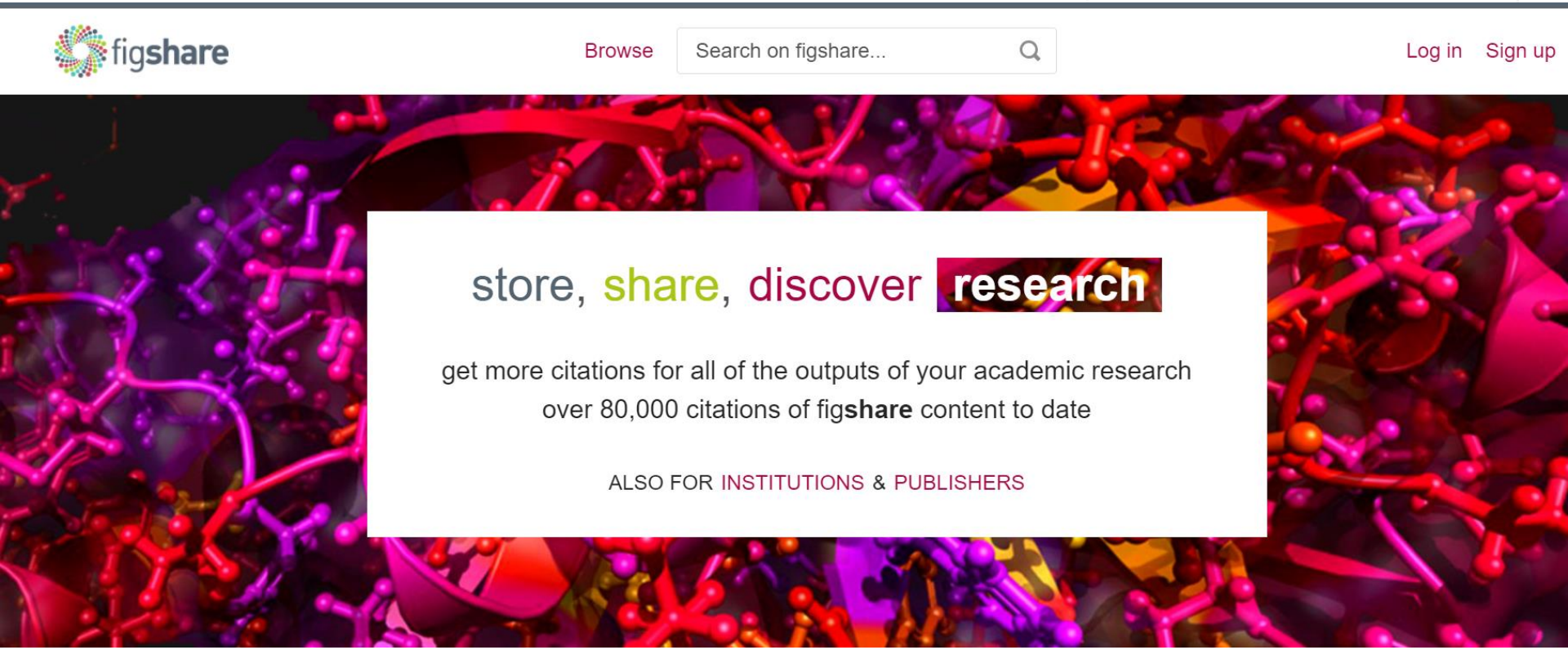
zotero

TRINKA

by enago

Research Data Management

OSF



Journal finder: APCs and Transformative Agreements



https://www.youtube.com/watch?v=32BgcNL_hjs

Research Impact Measuring Tools

Dimensions help us to identify publications, conduct co-author and co-citation analysis, and uncover translational impact with an enormous set of linked global research data, including Intellectual property, and more

Altmetric is utilised to demonstrate public engagement with research and enhance institutional, departmental, and individual reporting.

Researcher: Citations & Bibliometric Impact Measuring Tools

Clarivate
Web of Science™

ELSEVIER
SciVal

Libraries: Open Access Publishing Platforms

Open Access Publishing Platforms

OJS
OPEN JOURNAL SYSTEMS

OMP
OPEN MONOGRAPH PRESS

SciELO South Africa

Research Visibility & Impact

The project hopes to generate a framework that will anchor the various research analytical tools used to assess and encourage researchers to be digital natives and self-promote their online presence

WITS' ranking & metrics

Raise WITS' ranking & metrics by:

Developing our scholarly publishing systems to better serve our researchers and the public



Increase the impact of WITS' scholarly activities

By promoting the results of our research across a range of platforms

WITS' research

This will assist researchers and the librarians **to collaborate to support the impact and visibility** of a university's research outputs and researchers' activities

©Researcher Visibility Check Tool



The use of the **Research(er) Visibility Check** will help evaluate the Department of Library Services (DLS) and improve University of Witwaterstrand research(er) visibility. It does this by gathering researchers' data from those who have online presence and it also flags

Open Researcher Tools

Be Visible: Engage, Influence and Ensure Your Research Has Impact

Researchers promote their research and data online using Academic and social networking tools. In the research evaluation process, the DLS support researchers in profiling their research using academic and social networking tools to produce annual metrics report. These reports detail data on journal impact factors, citation scores, article-level metrics, author-level metrics including Altmetrics that quantify social media attention received by a scientific work as extracted from Scopus, Web of Science, Altmetric Explorer and other platforms.

These research(er) academic and social profiling platforms link researchers with their scientific production and performance and help profile institutional visibility and research performance. These platforms are used to quantify research excellence and to credit researchers for recognition in their specific disciplines.



Dr. Charne Lavery
Exceptional Young Researchers' Awards

Prof. Priscilla Gutura
Exceptional Young Researchers' Awards

Dr. Heather Thuynsma
Teaching Excellence and Innovation Laureate Awards

Dr. Renata Eccles
Community Engagement Award

Prof. Nigel Bennett
A rated and featured in the top 10 of the research.com international rankings

Prof. Vukosi Marivate
Recipient of JP Morgan AI Research Award and, Google Research Scholar Award

Award winning researchers have online presence and have promoted their research publications including research data using academic and social profiling tools.

- Google Scholar
- LinkedIn
- ResearchGate
- Semantic Scholar
- Dimensions
- UPSpace
- Academia
- The Conversation
- Scopus Author ID

- Google scholar
- research gate
- LinkedIn
- Academia.edu
- Semantic Scholar
- Twitter
- Dimensions
- UP Space
- Supervised Research
- ResearcherID
- Scopus Author ID

- ResearchGate
- LinkedIn
- Academia.edu
- Google Scholar
- Research Data
- Dimensions
- UPSpace
- University of Pretoria
- Semantics scholar
- Academia edu
- Scopus Author ID

- Google Scholar
- Supervised research
- ResearchGate
- Semantic Scholar
- Dimensions
- UPSpace
- Publons
- ScienceOpen
- Scopus Author ID

- Research Data
- Google Scholar
- Supervised research
- ResearchGate
- Loop
- Microsoft academic
- Supervised work
- UP Space
- ResearcherID
- Scopus Author ID
- Loop profile

- Personal Site
- Data Science for Social Impact Research Group
- Research Data (Figshare)
- Research Data (Mendeley)
- Research Data (Zenodo)
- Google Scholar
- Supervised work/research
- ResearchGate
- ScienceOpen
- Semantic Scholar
- Dimensions
- UPSpace
- LinkedIn

Lazarus Gallant Matizirofa, Veliswa Tshetsha, Heather Thuynsma, *A conceptual framework for researcher visibility and impact check tool at two South African universities*, Open Science Fair, 25-27 September 2023, Madrid, Spain

Enabling Policies – OS, OA, OD, OERs

UNIVERSITY OF PRETORIA
Department of Library Services

Policy on Open Access to Research Papers and Creative Outputs Authored by University of Pretoria Researchers

Document type: Policy
Policy Category: Research
Document number: S 5120/21

UNIVERSITY OF PRETORIA
Department of Library Services

Policy on Open Access Publishing Processing Charges

Document type: Policy
Policy Category: Academic
Document number: S4420/14

(G-SC-ERC-2021-018)
Document 13

UNIVERSITY OF THE WITWATERSRAND, JOHANNESBURG

POLICY DOCUMENT

LIBRARIES

UCT Libraries / LibGuides / University Of Cape Town Current Read & Publish Agreements / UCT Read & Publish Agreements

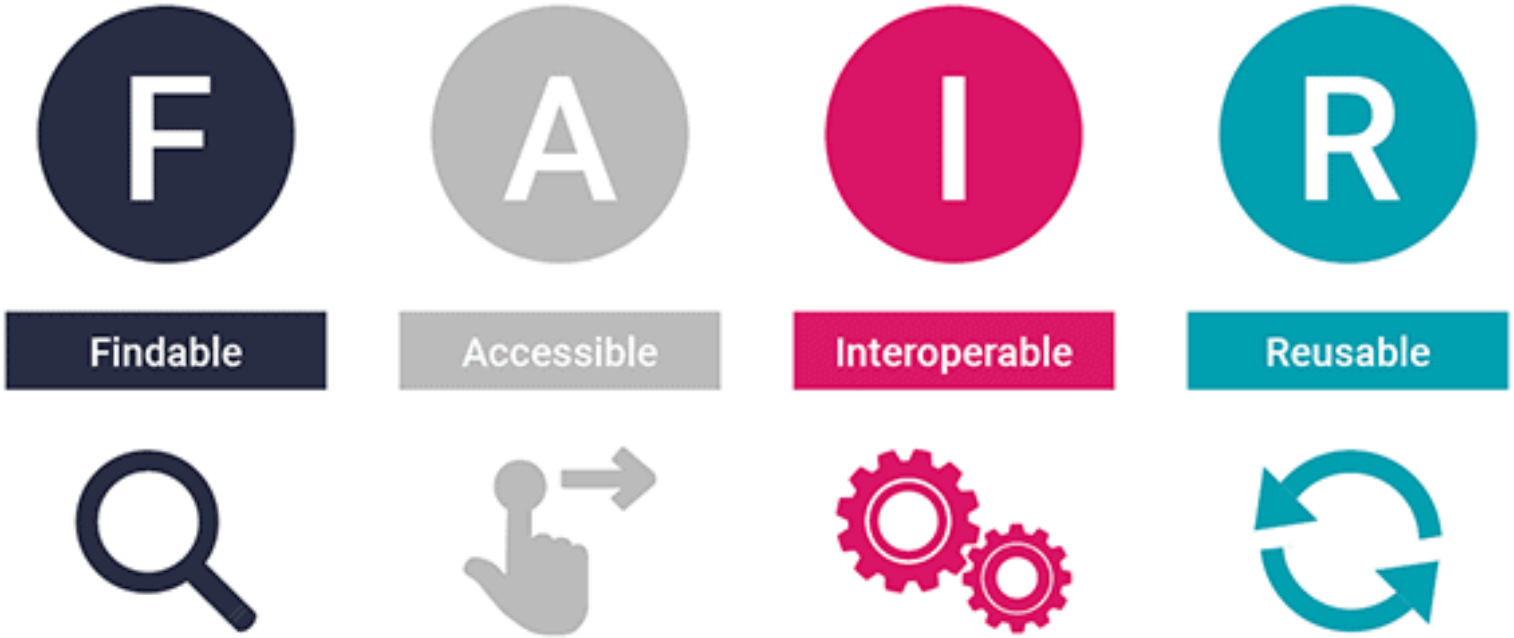
University Of Cape Town Current Read & Publish Agreements

The Read & Publish agreements give the University of Cape Town access to journal content and allow authors to publish articles Open Access.

Research Data Management Policy

WITS POLICY

FAIR DATA PRINCIPLES - CODATA







CUT Research Productivity vs Other HEIs in Zimbabwe

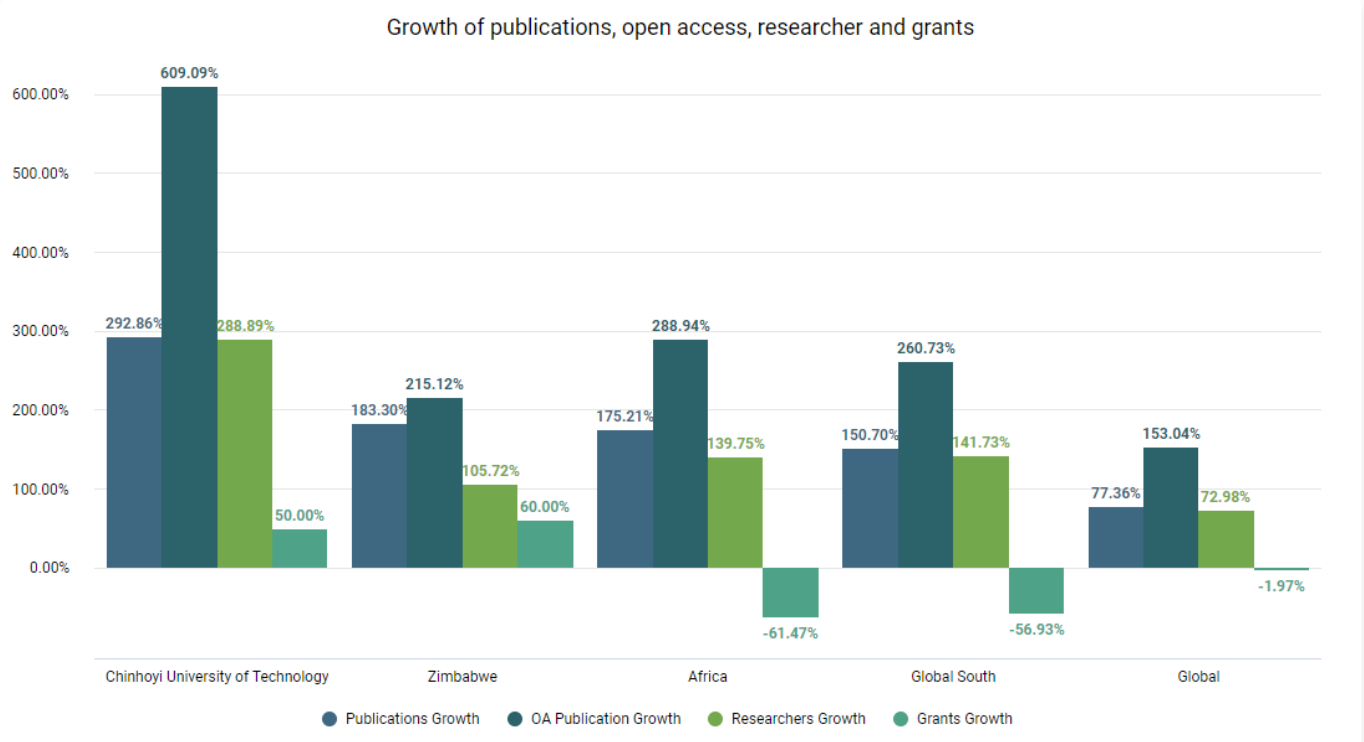
Source: Dimensions, 3/09/2024

CUT Research productivity

Chinhoyi University of Technology - Research Snapshot

Chinhoyi University of Technology	2014 From	2023 To

This report provides a high level overview on key indicators for the selected organization. This collection of key indicators is presented against key performance calculated on a national, continent, regional and global level.

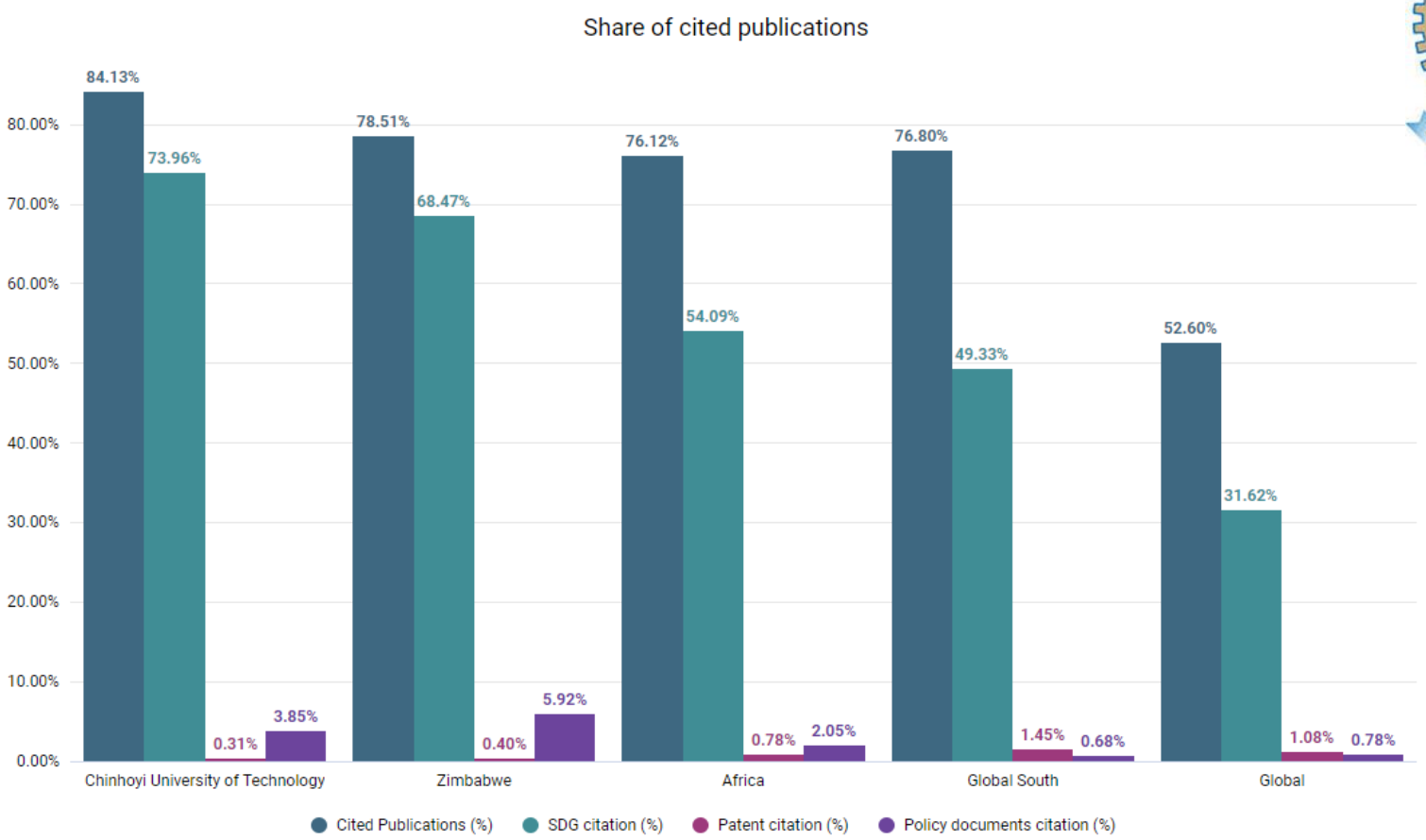


Source: Dimensions, 3/09/2024

CUT: Citation impact

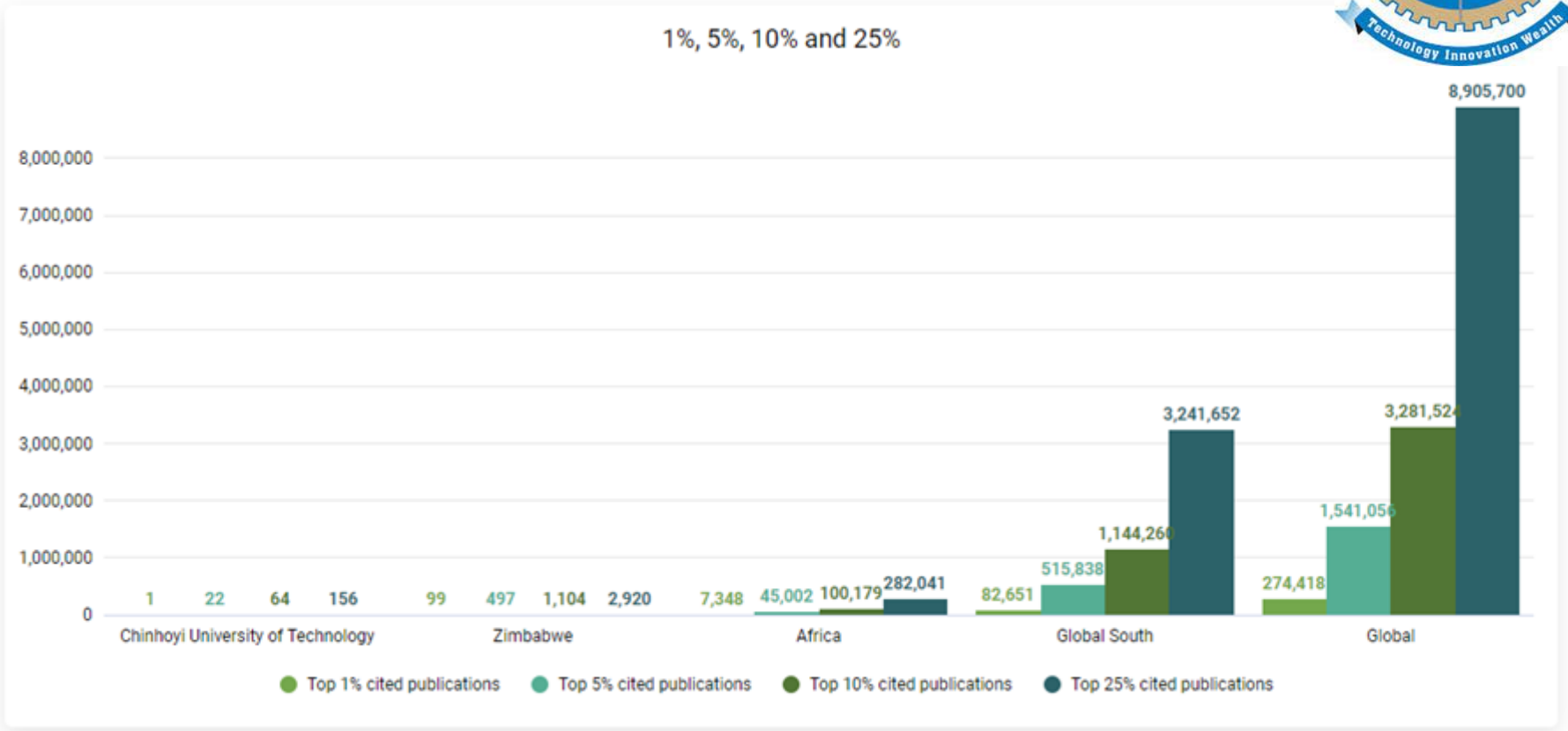
Chinhoyi University of Technology	2014 From	2023 To

This report provides insights on a group of citation indicators for the institutional performance on a national, continent, regional and global level.



Source: Dimensions, 3/09/2024

CUT: Citation impact %

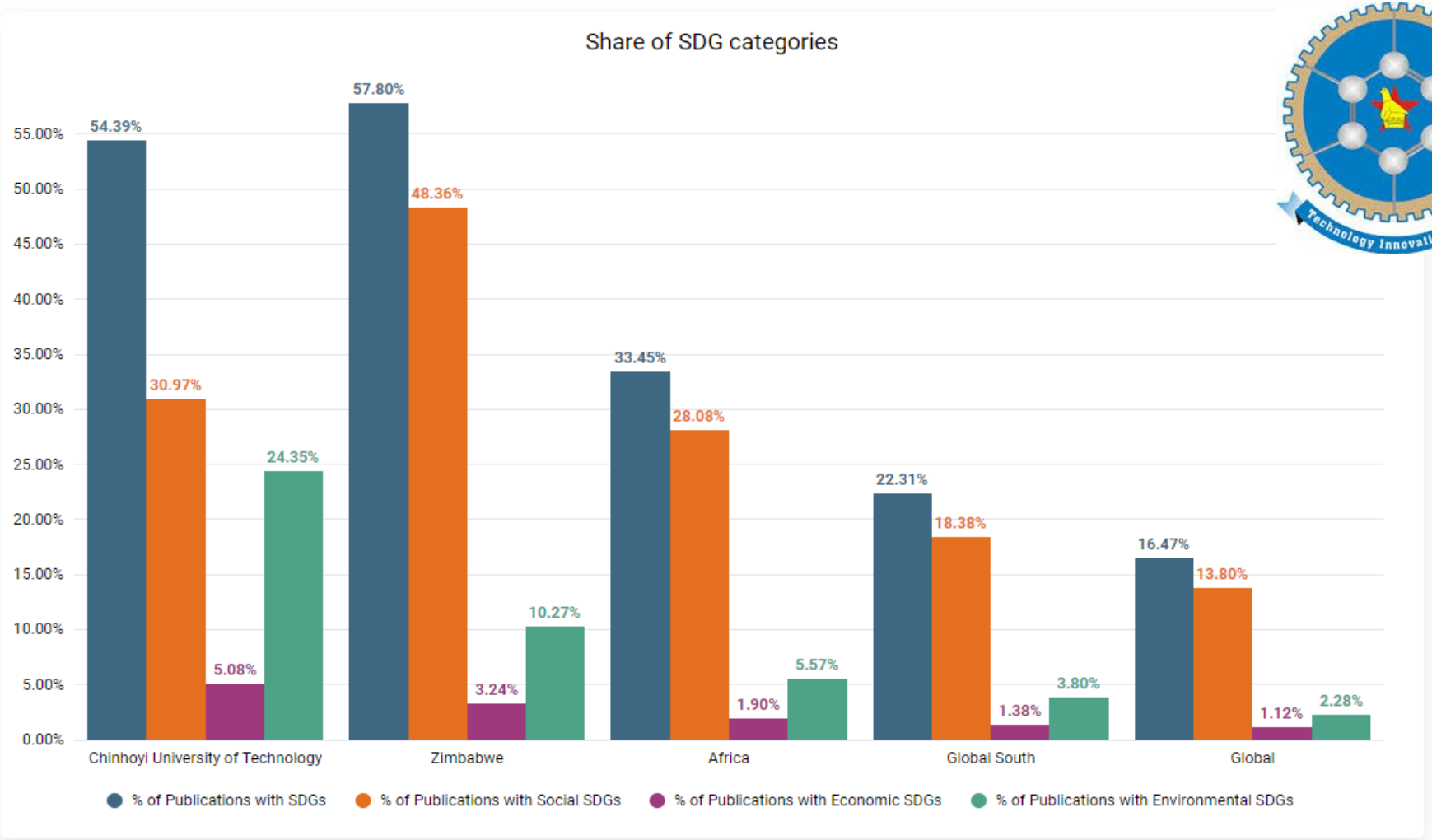


This bar chart illustrates the citation performance of the research organization. The bars indicate the volume of publications based on these being in the top 1%, top 5%, top 10% or top 25% cited publications, respectively, based on a chosen time frame and FoR 1st level.

Source: Dimensions, 3/09/2024

CUT: Sustainable Development Goals

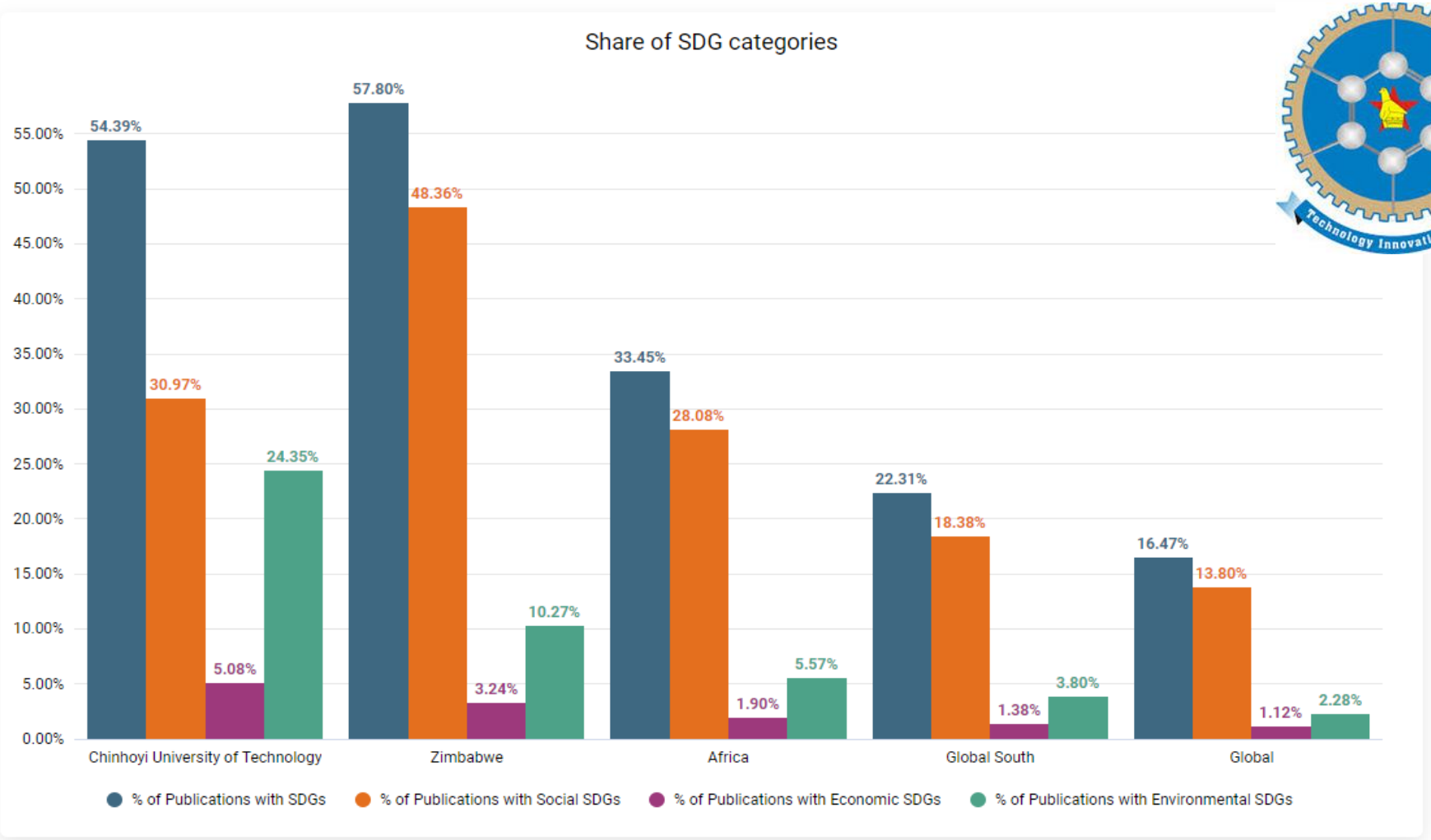
This report provides insights on the institutional performance indicator based on SDG in a national and international comparison. The display represents the organization and national, continental, regional and global shares of SDG. The shares are refined to present the total number of publications classified in the context of SDG and further refined by broad categorisation of the SDGs into social, environmental, and economic groups.



Source: Dimensions, 3/09/2024

CUT: Sustainable Development Goals

This report provides insights on the institutional performance indicator based on SDG in a national and international comparison. The display represents the organization and national, continental, regional and global shares of SDG. The shares are refined to present the total number of publications classified in the context of SDG and further refined by broad categorisation of the SDGs into social, environmental, and economic groups.



Source: Altmetric, 3/09/2024

CUT: Fields of Research & Concepts

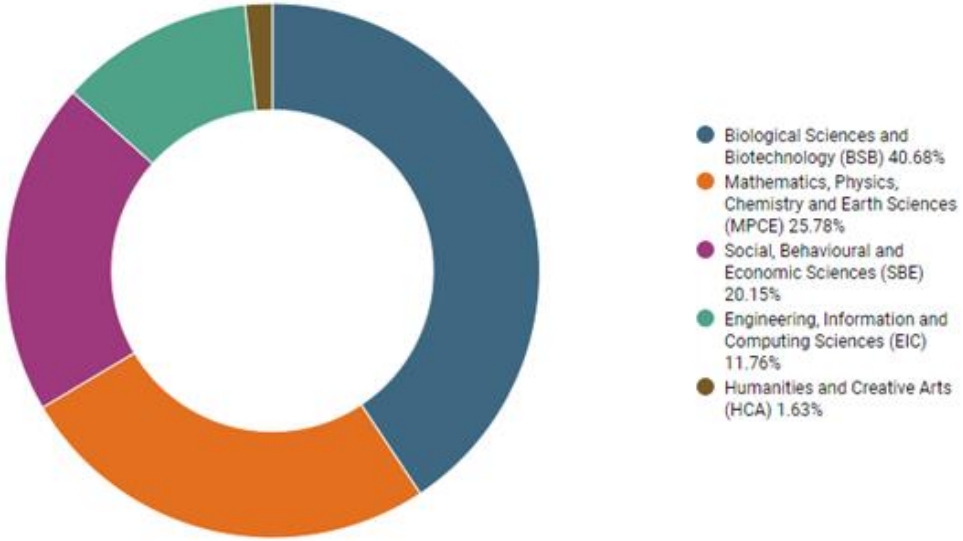
Chinhoyi University of Technology

2014 From

2023 To

Subject areas at a glance

Publications per Fields of Research(broad categories)



66.4%

% Single FoR publications (1st level)

32.5%

% Multi FoR publications (1st level)

1.1%

% n/a

The 22 FoR first level (ANZSRC 2020) are grouped into five broad FoR categories on the left. Click on the individual broad FoR segment to retrieve the underlying publications with title, further information and indicators. The section on the right shows percentages contextualizing the number of publications and their characterization by the FoR classification system.

Source: Dimensions, 3/09/2024

CUT: Fields of Research & Concepts

Chinhoyi University of Technology

2014 From

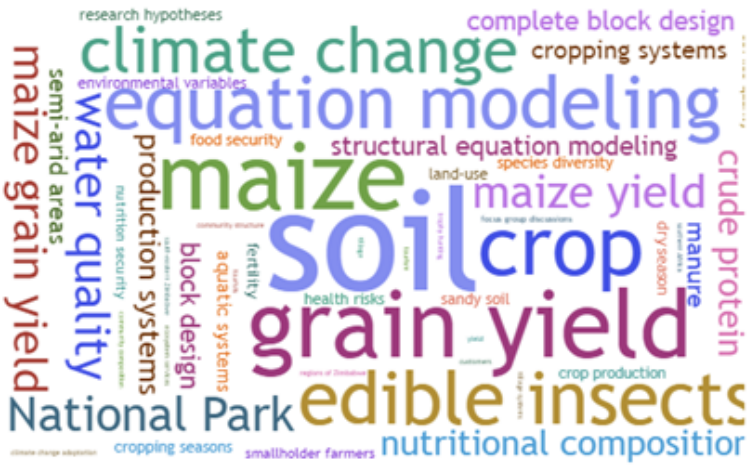
2023 To

566
Publications with concepts

6,577
Unique concepts

Concept prevalence

Wordcloud of concepts



Word cloud returns most frequent concepts. The size of the concept represents the number of publications published by the selected organization.

Most frequent concepts

	Concept: Name	Publications	Average citations
1	soil	22	10.14
2	grain yield	17	14.76
3	maize	17	15.94
4	crop	16	12.38
5	structural equation mod...	16	25.81
6	edible insects	15	37.53
7	equation modeling	15	26.80
8	climate change	14	18.71
9	water quality	14	16.93
10	National Park	14	12.07
11	production systems	13	24.38
12	maize yield	12	13.75
13	crude protein	12	18.92
14	maize grain yield	12	12.92
15	crop production	11	9.45
16	block design	11	5.64

The table lists the concepts that appear most frequently in publications within the selected category.

Source: Dimensions, 3/09/2024

CUT: Fields of Research & Concepts

This report provides analysis on all aspects of open research, focussing in this overview on general statistics and the trend and comparison of open access at the research organization. This is based on the last full ten years by default - different year settings and a drill down by publisher can be applied via the filter (top right).

Chinhoyi University of Technology	2014 From	2023 To

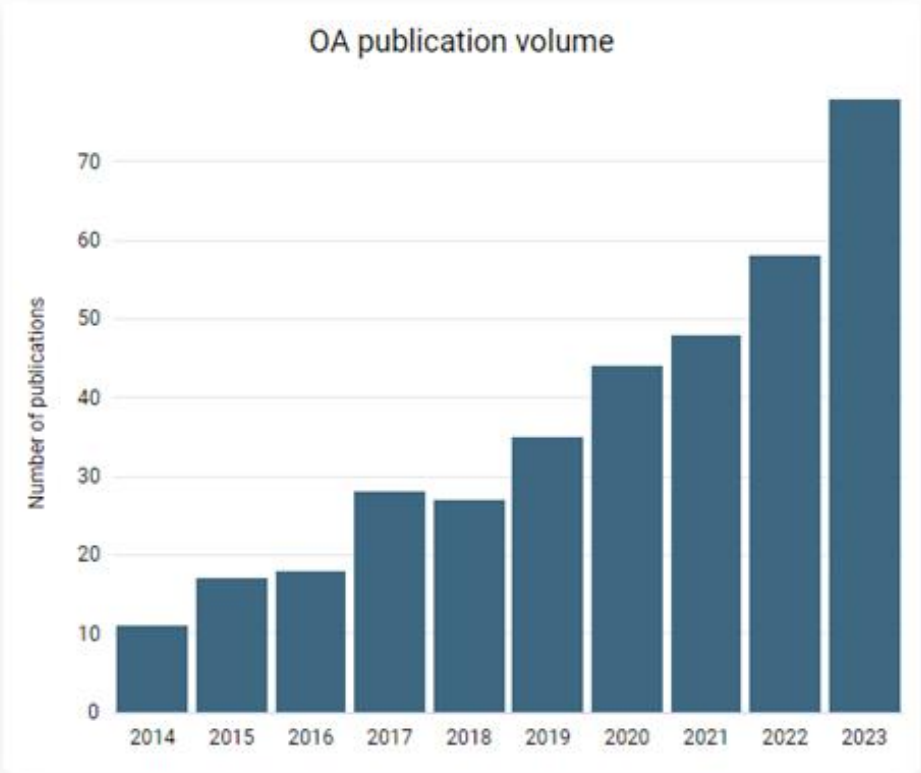
649 Publications	293% Publication growth
364 Open Access publications	609% Open Access publication growth
57 Datasets	-69% Datasets growth
30 Preprints	400% Preprints growth
3 Preprints to article conversion	

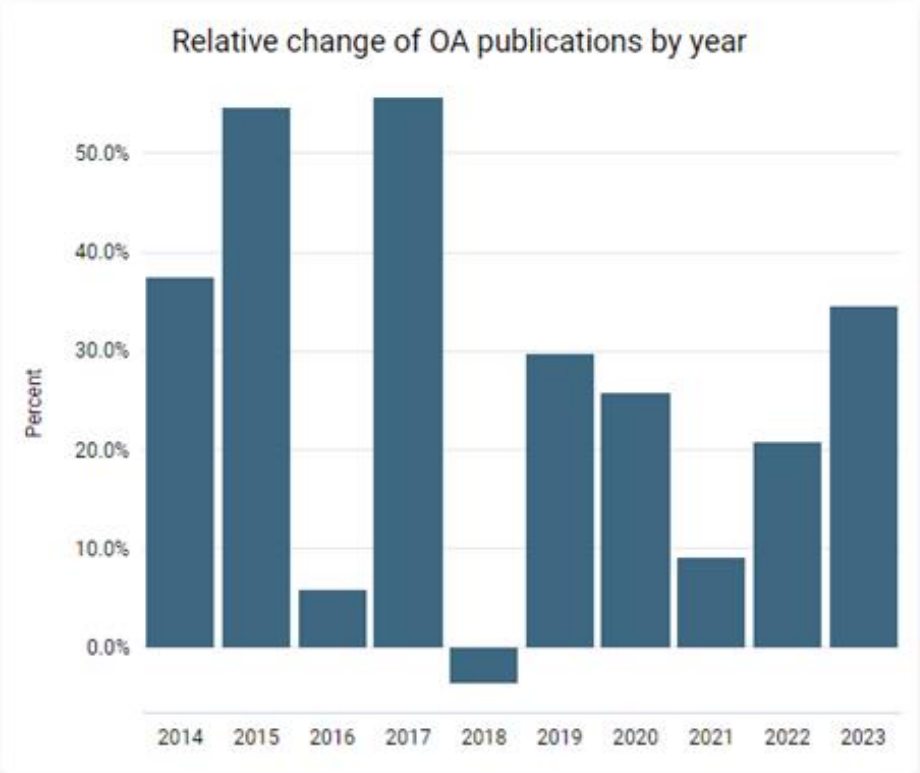
A general overview on publications in the context of Open Access. For the selected research organization the number of publications, those publications that are openly available, and datasets publicly available are presented based on the publication date in the selected time frame. The overall number of preprints and those that are published in journal format are presented and linked in a downloadable table with associate metadata. Growth rates, indicating the change (%) over the entire selected time frame are presented for all types of research outputs.

Source: Dimensions, 3/09/2024

CUT: Fields of Research & Concepts

Source: Dimensions, 3/09/2024





Number of Open Access publications (deduplicated) per year published by the selected organization. Click on the individual bar for a year of the selected timeframe to retrieve the underlying publications title, further information and indicators (e.g. all and recent citations, FCR).

Relative change of Open Access publications by year. The chart illustrates the growth rate using a 1-year-window. For example, a value of 10% in 2015 indicates that there were 10% more OA publications in 2015 than there were in the previous year of 2014.

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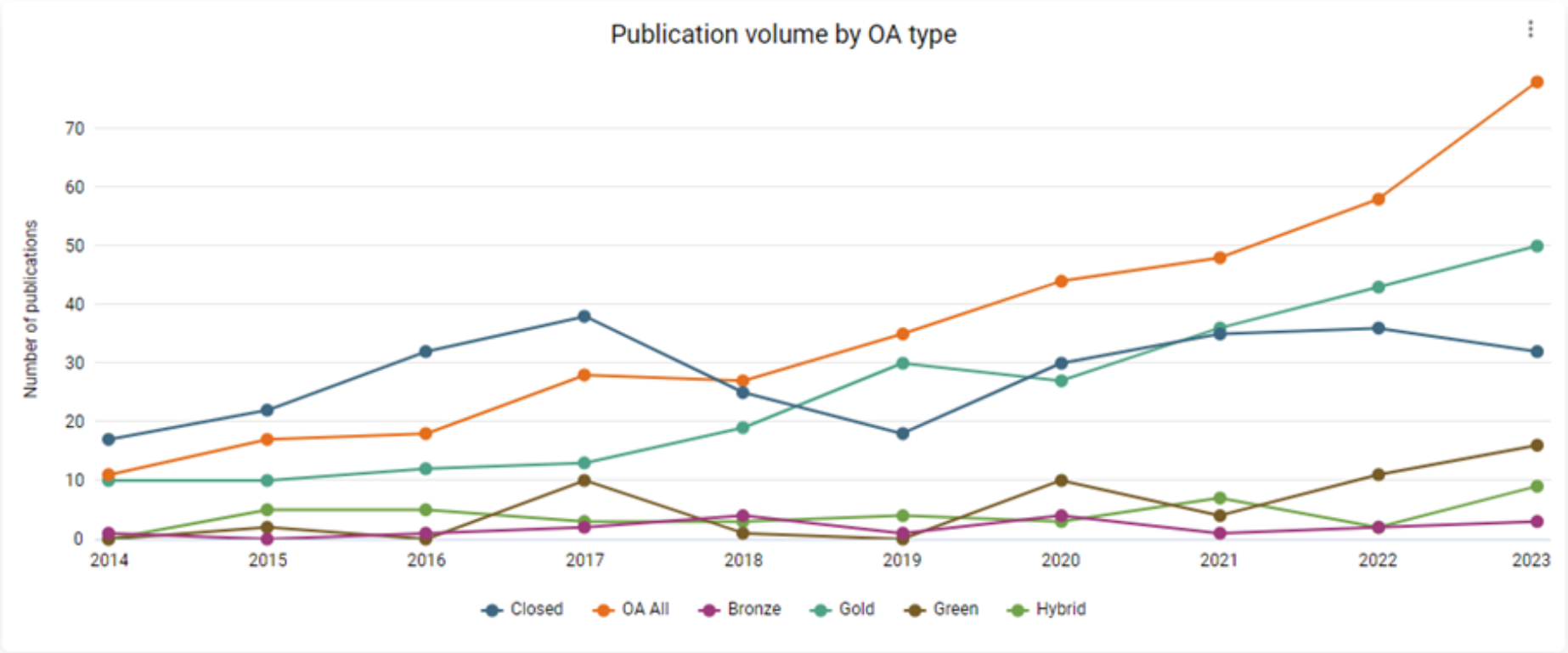


This graph presents the number of publications by Open Access type (see legend) and furthermore groups these in terms of a total OA count ("oa_all"). For comparison, all non OA publications ("closed") for the same years in the chosen timeframe are presented too. Clicking a dot (indicating a year of the relevant OA type or collection) leads to a downloadable list with individual items and the underlying publications titles, further information and indicators (e.g. all and recent citations, FCR).

Source: Dimensions, 3/09/2024

CUT: Collaborative Research

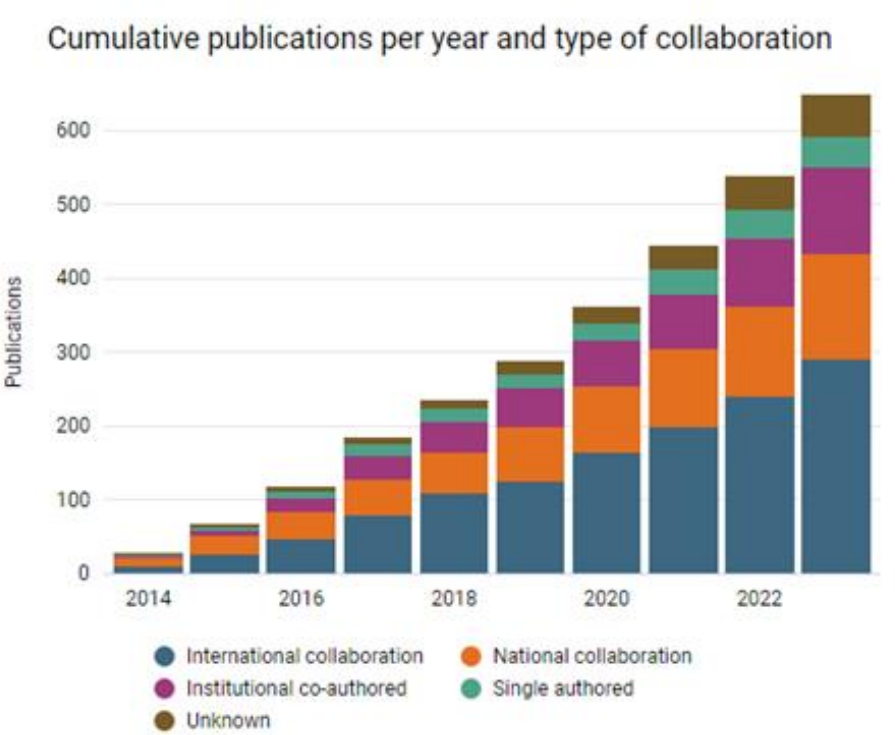
Chinhoyi University of Technology	2014 From	2023 To

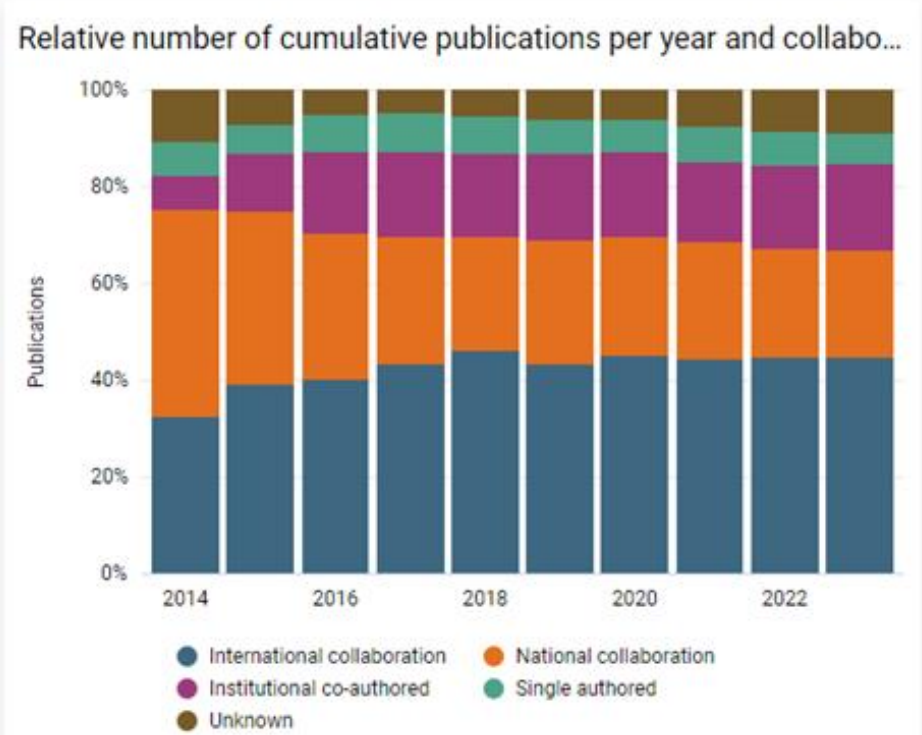
649 Publications	6% Single authored	18% Institutional co-authored
22% National collaboration	43% International collaboration	0% Corporate collaboration

These general statistics provide a summary view on the different shares by type of collaboration based on the resulting number of publications set by the filter settings. The default last ten year setting can be changed under the filters (top right) which allow a broad variety of settings based on publication types, broad FoR and SDG categories and drill-downs by FoR first level, FoR second level, or individual SDG.

Source: Dimensions, 3/09/2024

CUT: Collaborative Research





Cumulative number of publications by collaboration type over the time period. E.g. the international collaboration is the number of the organization's publications that have been co-authored by two or more countries (other than the country of the organization itself).

Relative number of publications per collaboration type. E.g. the percentage of international collaboration is the share of the organization's publications that have been co-authored by two or more countries (other than the country of the organization itself).

Source: Dimensions, 3/09/2024



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