

Bibliometric Analysis

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The Need





Horizon 2020 Call for proposals





How do you identify potential collaborators?





What do you need to know about a potential collaborator?

Who they are, Research strengths, publications

How do you currently do this?



The Means



BIBLIOMETRIC ANALYSIS



Bibliometrics is the quantitative analysis of research literature, based upon citations, and can be used to evaluate the impact of a research paper, an individual researcher, a research group or institution, or a journal.

Bibliometric Analysis C Kenet - Uses To demonstrate the impact of individual or group research activity:

 1.When applying for jobs, promotion or grants
 2.To demonstrate the value of your research
 3.To show the return on investment to funding bodies, industry and the general public.
 4.To identify areas of research strength and weakness to inform future research priorities for an institution.

Bibliometric Analysis Ckenya Education Network - Uses

To identify top performing journals in a subject area, in order to:

1.decide where to publish2.learn more about a subject area3.identify emerging areas of research.

Bibliometric Analysis Ckenya Education Network - Uses

To identify top researchers in a subject area, in order to:

1.locate potential collaborators or competitors
 2.learn more about a subject area
 3.inform a recruitment process.



BIBLIOMETRIC ANALYSIS -MEASURES

Bibliometric Analysis -Measures



Scholarly output

The total number of outputs published. It measures productivity rather than impact.

Bibliometric Analysis -Measures



Scholarly output

The total number of outputs published. It measures productivity rather than impact.

Citation counts

The number of citations received. It measures citations for individual outputs or a set of outputs.

Bibliometric Analysis -



Measures H-index

The productivity and impact of a researcher's outputs. It is based on the number of publications as well as the number of citations they have received.

An author has an H-index of n if they have published n papers, each of which has been cited at least n times.

Example: to have an H-index of 15, 15 of your papers must have been cited at least 15 times each.

Bibliometric Analysis -



Measures Field-weighted citation impact (*only available in SciVal*)

The ratio of citations received, relative to the expected world average for the subject field, publication type and publication year.

Outputs in top percentiles (only available in SciVal)

The number or percentage of outputs in the top most-cited publications in the world/UK/specific country.

Bibliometric Analysis -Measures



Journal impact factor (only available in Journal Citation Reports)

The importance of a particular journal. It is based on the average number of citations received per paper published in that journal in the preceding 2 years.

Bibliometric Analysis -Measures



Scopus SNIP (only available in Scopus)

The importance of a particular journal. The Scopus Snip normalises for citation rate subject differences. It is a ratio of a journal's citation count per paper and the citation potential in its subject field.

Bibliometric Analysis -



Measures SCImago journal rank

The importance of a particular journal. It is an alternative to the Journal Impact Factor. The SCImago Journal Rank places higher value/weight to citations from more prestigious journals.

The SCImago Journal and Country rank is a portal that includes the journals and country scientific indicators developed from the information contained in the Scopus database. This indicator shows the visibility of the journals contained in the Scopus database from 1996.

Bibliometric Analysis -



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Bibliometric Analysis -Measures



Altmetrics

Altmetrics are based on the number of times an article is shared, downloaded or mentioned on social media, blogs or newspapers.



FINDING BIBLIOMETRIC DATA

Finding Bibliometric Chenya Education Network Data Scopus

Scopus is a citation database of more than 21,000 journals, 40,000 books, 6.5 million conference papers and 24 million patents.

The coverage of engineering and social sciences material is broader than Web of Science, but citation data is only available for papers published from 1996 onwards.

Finding Bibliometric Ckenet Data Scopus



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Finding Bibliometric Ckenya Education Network

SciVal is a research performance assessment tool which uses data from Scopus. It allows you to benchmark individual researchers, groups of researchers and institutions based on a variety of bibliometric measures.

It holds information for 4,600 research institutions and 220 countries. A subscription is required to access this resource.

Finding Bibliometric Ckenya Education Network



Web of Science

Web of Science is a citation database of more than 12,000 journals and over 160,000 conference proceedings. Coverage includes science, social science and arts and humanities dating back to 1900.

Web of Science covers: 1.Scholarly output 2. Citation counts 3.H-index

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Finding Bibliometric Ckenet Data

Journal Citation Reports

Journal Citation Reports allows you to evaluate and compare journals using citation data from over 11,000 journals. Coverage includes science, medicine and social sciences dating back to 1998.

Finding Bibliometric Ckenet Data



Journal citation reports covers: 1.Journal impact factor 2.Most frequently cited journals in a field 3.Highest impact journals in a field 4.Largest journals in a field



RAISING YOUR RESEARCH PROFILE



Raising your research profile Make research outputs open access where possible Evidence shows that open access articles are of

Evidence shows that open access articles are cited significantly more than non-open access articles.

Where funding permits publish using the gold open access route where possible

Publishing via the gold open access route can result in research being made open access immediately for other researchers to read and cite.



Share your research data where possible

Evidence suggests that clinical trials sharing their data were more frequently cited than those that did not. Sharing research data can make research more accessible and visible.



Use a consistent author name

Evidence shows that using a consistent author name throughout a research career helps to improve retrieval of a researcher's whole output. Changing names throughout a career can make it difficult to associate different research outputs to the same author.



Use an author identification system

Evidence suggests that using a unique author identifier system such as ORCID means that research outputs are accurately linked to a researcher's profile which improves the visibility of the research..



Include your institutional affiliation field of all research outputs

Using the standardized institutional affiliation in all research outputs ensures they are clearly affiliated with your University and as a result, improves the visibility of the research.



Use online media to promote and link to your research

Evidence suggests there are statistically significant associations between higher citations for articles and the use of various social networking sites such as Twitter, Facebook, blogs and forums.



Raising your research Profile Collaborate with international authors across multiple institutions

- Evidence suggests that international collaborations lead to higher citation rates.
- These increase the further apart collaborators are geographically. It is suggested that the combination of different promotion and disseminating opportunities of the collaborating institutions and less overlap between personal networks of authors can help to increase citation impact.



Collaborate with the corporate sector

Evidence found that academic-corporate collaborations increase the citation impact of papers.



Self-cite previous work when appropriate and relevant

Evidence shows that the more an author cites their own work, the more the author is cited by other researchers. Self-citations should not always be considered improper, if the work being cited is relevant and appropriate.



LIMITATIONS OF BIBLIOMETRICS

Limitations of Bibliometrics



A large number of citations does not automatically mean that a work is of high quality. A work may be heavily cited because other authors are refuting its research.

Bibliometrics does not measure quality. It is important to put the data in context using a combination of metrics and other qualitative information where appropriate, such as funding received, number of patents, awards granted and qualitative measures such as peer review when evaluating quality of work.

Limitations of Biscipline Variation S



Citations patterns differ greatly between disciplines so direct comparisons cannot be made Bibliometrics predominantly focuses on journal article citations, but some disciplines such as the arts, humanities and social sciences publish research in different types of publication Different fields of research publish at different rates.

For example, in biomedicine, there is generally a much stronger culture of publishing in journals and citing the work of peers than in engineering which makes more use of conference papers

Limitations of Bibliometrics



Database Variation

The bibliometric databases do not cover all research areas and do not index all publications. For example, conference proceedings or reports are often poorly covered. Results will vary depending on the database you use, so don't rely on just one

Limitations of Bibliometrics



Bias and Discrepancies

Citation bias. People may inappropriately cite their own work, their colleagues, or work from the journals in which they publish. A number of bibliometric tools allow you to exclude self-citations
Experienced researchers have an advantage over early career researchers as they will have produced more outputs over a period of time and so will have

more outputs over a period of time and so will have more citations.

Limitations of Bibliometrics Bias and Discrepancies



There is a bias towards English language material
Time is needed before a meaningful citation analysis can be made, so new journals tend to fare badly

•Bibliographic tools cannot always reliably differentiate between researchers who share the same surname and initials, meaning that citation counts may be inflated. Researchers can use unique researcher IDs to reduce the risk of this.



Using Scival to Obtain Bibliometric Information

Comparing Performance



	Kenya	SA	Nigeria	Egypt
Publications	7,299	58,248	17,946	49,339
Citations	23,636	151,304	20,544	96,902
Authors	7,985	41,244	24,844	49,398
Field-Weighted Citation	1.47	1.19	0.55	0.88
Impact				
Citations per Publication	3.2	2.6	1.1	2.0
Economic Impact (Patents)	0	21	0	29





Research output 2013 – 2016 by subject area for Kenya





Research output 2013 – 2016 by subject area for South Africa





Research output 2013 – 2016 by subject area for Egypt





Research output 2013 – 2016 by subject area for Nigeria

Top Researchers

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Authors

2013 to 2016

no subject area filter selected

Export 🔻

Top 100 authors, by number of publications in Kenya over the period .

Note that some authors may no longer be affiliated with an Institution in Kenya.

	Name	Publications 🔻	Most recent publication	Citations v	<i>h</i> -index
1.	Bukusi, Elizabeth Ann	95	2016	393	25
2.	Newton, Charles R J C	60	2016	601	54
3.	Breiman, Robert F.	59	2016	856	57
4.	Kiarie, James Njogu	48	2016	161	26
5.	Mugo, Nelly Rwamba	48	2016	280	22
6.	Ekesi, Sunday	47	2016	99	20
7.	Marsh, Kevin	42	2015	498	78
8.	Williams, Thomas Neil	42	2016	378	47
9.	Ogutu, Bernhards R Agama	40	2016	178	24
10.	Vanlauwe, Bernard	39	2016	125	34

Top 10 researchers in Kenya 2013 - 2016

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Top Researchers



Authors	2013 to 2016 V Analytical Chemistry V			Export 🕶		
Top 100 authors, by number of publications in Kenya over the period . Note that some authors may no longer be affiliated with an Institution in Kenya.						
Name		Publications	₹ Most recent publication	Citations v	<i>h</i> -index	
1. Mariga, Alfre	ed Mugambi Ugambi	3	2016	39	5	
2. Wanyoko, Jo	hn K.	3	2014	23	6	
3. Gumula, Iva	n	2	2015	3	1	
4. Manguro, La	wrence A O	2	2014	1	1	
5. Ochieng, Cha	arles O.	2	2014	1	3	
6. Owuor, Phili	p Okinda	2	2014	1	10	
7. Yenesew, Ab	iy	2	2015	3	17	
8. Abdillahi, Ha	lima S.	1	2013	5	6	

Top 8 researchers in Kenya 2013 – 2016 – Analytical Chemistry

Benchmarking







Identify Current



Countries collaborating with Kenya

Worldwide

← Filter for more (regional) detail or filter by field at the top of the page

174 collaborating Countries
5,213 co-authored publications



Countries collaborating with Kenya on the different continents.

No Current



Countries not yet collaborating with Kenya

Worldwide

← Filter for more (regional) detail or filter by field at the top of the page

55 not yet collaborating Countries



Countries not yet collaborating with Kenya.

JKUAT Collaborations



Institutions collaborating with the Jomo Kenyatta University of Agriculture and

Technology

Worldwide

All sectors v Filter for more (regional) detail or filter by field at the top of the page

🏛 251 collaborating Institutions 🛛 🗋 249 co-authored publications



Institutions collaborating with Jomo Kenyatta University of Science and Technology worldwide

JKUAT - No



Institutions not yet collaborating with the Jomo Kenyatta University of

Agriculture and Technology

Worldwide 🗸

All sectors v

- ← Filter for more (regional) detail or filter by field at the top of the page
- 17,171 not yet collaborating Institutions



Institutions not yet collaborating with Jomo Kenyatta University of Science and Technology worldwide

JKUAT – No



Institutions not yet collaborating with the Jomo Kenyatta University of Agriculture and

Technology

|--|

ft 172 not yet collaborating Institutions



Institutions not yet collaborating with Jomo Kenyatta University of Science and Technology in Brazil

Common Research



Collaborati Year range: 2013	on with Instituto N 1 to 2015	acional de Pesquisa	s Da Amazonia Export •	× Shortcuts ▼
Overview	Current co-authors	Potential co-authors		
Publications by S	ubject Area			
🕓 Pie chart	II Bar chart			
🗯 lomo Kenvatti	a University of Agricultu	ire and Technology	📼 Instituto Nacional de Pesquisas Da Amazonia	
Medicine (24.	0%) and Biological Sciences		(47.6%)	
(21.2%)	and biological belefices		Environmental Science (14.0%)	
Biochemistry	, Genetics and Molecular		Medicine (11.7%)	
Other (45.2%)		Other (26.7%)	

Common research strengths between Jomo Kenyatta University of Agriculture and Technology and Instituto Nacional de Pesquisas Da Amazonia



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Thank You

www.kenet.or.ke

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