The Need
The Need

Horizon 2020 Call for proposals
The Need

How do you identify potential collaborators?
The Need

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
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

- 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 - Uses

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

1. decide where to publish
2. learn more about a subject area
3. identify emerging areas of research.
Bibliometric Analysis
- 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 - Measures

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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 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 Data

Scopus

Scopus covers:
1. Scholarly output
2. Citation counts
3. H-index
4. Number of co-authors
5. SCImago Journal Rank
6. Scopus SNIP
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 Data

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
Finding Bibliometric 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 Data

Journal Citation Reports

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

Make research outputs open access where possible
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.
Raising your research Profile

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.
Raising your research Profile

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.
Raising your research Profile

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.
Raising your research Profile

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.
Raising your research Profile

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.
Raising your research Profile

Collaborate with the corporate sector

Evidence found that academic-corporate collaborations increase the citation impact of papers.
Raising your research Profile

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

Quality
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 Bibliometrics

Discipline Variation

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 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

<table>
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<th></th>
<th>Kenya</th>
<th>SA</th>
<th>Nigeria</th>
<th>Egypt</th>
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<td>58,248</td>
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<td>Citations</td>
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<td>151,304</td>
<td>20,544</td>
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<td>Authors</td>
<td>7,985</td>
<td>41,244</td>
<td>24,844</td>
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<td>Field-Weighted Citation Impact</td>
<td>1.47</td>
<td>1.19</td>
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<td>0.88</td>
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<td>Citations per Publication</td>
<td>3.2</td>
<td>2.6</td>
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<td>Economic Impact (Patents)</td>
<td>0</td>
<td>21</td>
<td>0</td>
<td>29</td>
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</table>
Research output 2013 – 2016 by subject area for Kenya
Country Research

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

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.

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

**Top 10 researchers in Kenya 2013 - 2016**
### Top Researchers

Top 100 authors, by number of publications in Kenya over the period 2013 to 2016

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

<table>
<thead>
<tr>
<th>Name</th>
<th>Publications</th>
<th>Most recent publication</th>
<th>Citations</th>
<th>h-index</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mariga, Alfred Mugambi Ugambi</td>
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<td>Gumula, Ivan</td>
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<td>Manguro, Lawrence A O</td>
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<td>1</td>
<td>1</td>
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<td>Ochieng, Charles O.</td>
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<td>1</td>
<td>3</td>
</tr>
<tr>
<td>Owuor, Philip Okinda</td>
<td>2</td>
<td>2014</td>
<td>1</td>
<td>10</td>
</tr>
<tr>
<td>Yenesew, Abiy</td>
<td>2</td>
<td>2015</td>
<td>3</td>
<td>17</td>
</tr>
<tr>
<td>Abdillahi, Halima S.</td>
<td>1</td>
<td>2013</td>
<td>5</td>
<td>6</td>
</tr>
</tbody>
</table>

**Top 8 researchers in Kenya 2013 – 2016 – Analytical Chemistry**
Benchmarking

Comparison of Kenya, South Africa, Nigeria and Egypt on the basis of scholarly output, views per publication and citation count.
Identify Current
Countries collaborating with Kenya

174 collaborating Countries  5,213 co-authored publications

Countries collaborating with Kenya on the different continents.
No Current
Countries not yet collaborating with Kenya.

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

55 not yet collaborating Countries

Transforming education through ICT

Countries not yet collaborating with Kenya.
JKUAT Collaborations

Institutions collaborating with the Jomo Kenyatta University of Agriculture and Technology worldwide

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

Transforming education through ICT
Institutions not yet collaborating with the Jomo Kenyatta University of Agriculture and Technology worldwide

7,171 not yet collaborating Institutions

North America: 1290
Europe: 2764
Middle East: 501
Asia Pacific: 1985
South America: 357
Africa: 274
Institutions not yet collaborating with Jomo Kenyatta University of Science and Technology in Brazil

Transforming education through ICT
Common research strengths between Jomo Kenyatta University of Agriculture and Technology and Instituto Nacional de Pesquisas Da Amazonia
Thank You

www.kenet.or.ke
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