

## Illustrating Impact: Applying Altmetrics to Southern African Research

*A case study, findings and suggestions by  
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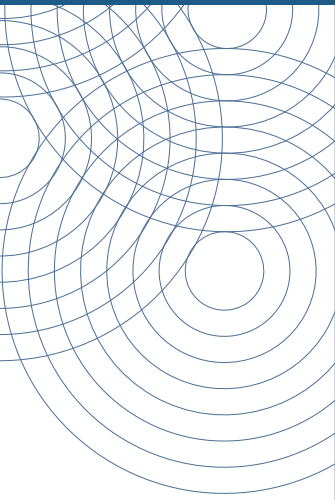
Universities are under growing pressure to illustrate the “impact” of research they produce, perhaps especially institutions in the developing world, which are expected to balance social responsiveness with the rigours of a competitive global higher education environment.

Institutions worldwide are engaging with more sophisticated business intelligence for the purposes of better governance and funder engagement. In higher education, Altmetrics – “alternative metrics” – are being used to measure and track scholarship in new ways.

A key question is whether institutions in sub-Saharan Africa are in a position to meet demands for the improved measurement and dissemination of research outputs.

The Scholarly Communication in Africa Programme (SCAP) explored the state of scholarly communication at four Southern African universities, and probed the alignment between their mission statements, the values of their academic communities, and the reward and incentive frameworks that govern academic careers.

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## The case study

One component of SCAP was a case study that had the following objective: “To speculate on alternative methodologies for a more Afrocentric approach to research evaluation that could align quality concerns, recruitment, recognition and reward systems in order to promote greater access to knowledge.”

To experiment with Altmetrics in the African context, a one-year content-tracking exercise was undertaken involving four universities and an international Altmetrics content-tracking expert. One institution was unable to supply data and so the exercise focused on three sites: (i) Southern African Labour and Development Research Unit, SALDRU, University of Cape Town; (ii) Faculty of Humanities and Social Sciences, University of Namibia; and (iii) Faculty of Sciences, University of Mauritius.

Bibliographic data on outputs generated by academics at SCAP pilot sites was required to conduct the content tracking exercise. Data collected was examined in context to identify potential “impact narratives” and any interesting or unusual characteristics of data usage.

Data collection took place over six months from May to October 2012, via institutional Research Coordinators tasked with sourcing lists of research outputs for the five-year period from 2007 to 2012. There were a number of challenges in sourcing the data, and one of the three sites could supply data for a three-year period.

Once bibliographic information was received, data entry, cleaning and normalisation processes were conducted. As the study sites focused on different disciplinary fields, the research data varied, but traditional media – journal articles, book chapters and conference proceedings – provided the majority of research objects identified. The study and analysis of the data collected led to the findings below.

## Findings

### 1 Institutions do not maintain good records of research outputs

The quality of the data provided was generally poor and there were technical issues. It was impossible in some cases to identify and/or access outputs online. It was clear that institutions had resorted to requesting bibliographic information from academics, suggesting the lack of a central bibliographic store of outputs. This is not unusual globally, but clear understanding of outputs is a prerequisite to measuring the performance and impact of those outputs.

### 2 Researchers do not retain quality information on their outputs

Researchers retain very weak data collections on their research outputs. Most did not have detailed bibliographic information or author “identifiers”. Where URLs or information was provided, it was often incorrect or insufficient to identify an article easily. Researchers should maintain a list of their publications with enough information to find outputs. Online services like Mendeley, ORCID and ResearcherID enable online profiles that link to outputs.



There was very limited evidence of social media activity by researchers or institutions around research outputs and this may present opportunities.

### **3 Collecting identifiers and online locations would enable use of output data**

Bibliographic metadata available from institutions and researchers was poor. The cleaning and curation of data to obtain unique author identifiers such as digital object identifiers (DOIs), PubMed IDs and URLs was an arduous, manual task. Collecting identifiers and online locations for research outputs would reduce the work involved in obtaining usage and impact data, and enable institutions to use available data sources much more easily.

### **4 For outputs with identifiers, obtaining data on use and performance is simple**

Once a data set was acquired and cleaned, using it to obtain information from a range of services was straightforward. Reports can be set up and monitored with ease, providing insight into the use of research, social media activity around outputs, and some information on the demographics of users. But good data is highly skewed towards outputs for which identifiers – particularly DOIs and PubMed IDs – are available, favouring STEM (science, technology, engineering and mathematics) outputs.

### **5 There is limited social media activity around outputs**

There was very limited evidence of social media activity by researchers or institutions around research outputs and this may present opportunities. A small proportion of outputs had either Facebook or Twitter activity or both. Twitter activity was largely in North America or Europe and was generated by journals. Where potential users of research are engaged with social media, there is the potential to reach them more directly.

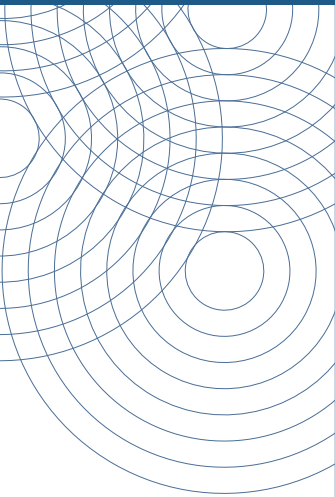
### **6 Use of research is heavily biased towards North America and Europe**

Mendeley bookmarks provided some demographic information on users of research. For SALDRU and the University of Namibia, the information showed strong bias towards North American and European users. There was greater diversity among readers of University of Mauritius outputs. The availability of data on Mendeley bookmarks is also biased towards particular research domains and outputs for which DOIs or PubMed IDs are available.

## **Suggestions for change**

The professionalisation of higher education is demanding reporting and accountability standards that require more precise, more quantitative, and more evidence-based proof of the value that universities provide to students, academia, countries and societies.

Changes in higher education discourse have broken down barriers between society and the academy, allowing academics to communicate more directly with civil society but also requiring that they adopt business practices that are endemic to that space.



The study revealed very limited evidence of use or discussion of research outputs by researchers or institutions. There were some standout outputs with high citations and academic bookmarking activity, or some social media activity, but rarely both. Lack of traces of activity around research outputs suggests opportunities to promote scholarly work to potential users of research.

Higher education will need to engage strategically with new technologies and tools, with a mind to their utility and the negative reflection that lack of social media engagement will have on their operation. Throughout the study, data quality was a significant problem. For institutions to exploit the wider range of usage and engagement data now available, they will need to:

- Actively collect, collate and curate data on research outputs
- Build simple but reliable infrastructure to collect research output data
- Institutionalise the collection of data and preservation of a record of outputs
- Commit resources to a reliable system for recording and preserving data
- Gather as many unique author identifiers and online locations as possible for outputs:
  - » Obtain local identifiers for working papers and preprints
  - » Collect DOIs and PubMed IDs for published journal articles where available
  - » Require URLs for published articles as a minimum
  - » Collect ISBNs for books
- Encourage publishers that do not provide DOIs to do so as a priority
- Grasp opportunities to reach key potential research users through social media
- Develop a strategic approach to increasing engagement and embrace new channels.

## Conclusions

The SCAP case study raised crucial questions about the readiness of African higher education to participate in the emerging area of output measurement. There was very limited evidence of use or discussion of research outputs. Scholarly communication needs to be improved if universities are to align their values, missions and impact.

Altmetrics tools and methods, including social media, provide a compelling means for African academics and institutions to derive new forms of usage data on a range of research outputs and to disseminate research to a broad spectrum of audience groups.

Further work is required to refine methodologies, ramp up curation and research management efforts, engage with research uptake and dissemination strategies, and grow research efforts in order to better understand the dynamics of implementing Altmetrics in Africa.

