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Independent Africa, dependent science: Scientific research in Africa



AUTHOR:
R. Sooryamoorthy

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REVIEWER:
Robin Drennan¹

AFFILIATION:
¹Director: Research Development, University of the Witwatersrand, Johannesburg, South Africa

EMAIL:
Robin.Drennan@wits.ac.za

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Confirmation that science can contribute to African independence

I enjoyed reading Prof. Sooryamoorthy’s book, *Independent Africa, Dependent Science*. It is a thorough piece of work that has been carefully written and skilfully edited. I recommend it as a good read for all those interested in science at the system level and particularly in the science systems of Africa. I would like to take the liberty to recommend it as vital, even compulsory, reading for those in leadership positions in government departments focused on science, engineering and technology, or higher education; research funding agencies; and similar organisations across Africa.

The book is a combination of original research and an extensive review of the pertinent literature. These two threads are skilfully entwined to map how scientific research can help accelerate development in Africa.

The book describes an ambitious bibliometric study of scientific publications recorded in the Web of Science index and published by African authors over an 18-year period from 2001 to 2019. The work examines these publications at various levels. Starting at the country level, the book provides data for all 54 countries in Africa. This analysis is then extended to the scientific disciplines that are covered in these publications: the top five being chemistry, engineering, physics, environmental studies and ecology, and material science. The study then moves to the institutional level and considers the major producers of research publications across the same period. Thereafter, the study extracts information about the funding bodies that are acknowledged in the publications reviewed. Finally, the study examines partnerships based on co-authorship of publications. This extensive chapter looks at Global South and Global North interactions, South–South interactions and intra-African interactions. An unexpected and fascinating part of the study is the examination of the partners of African scholars.

A few of the many conclusions presented in the book are shared here to provide a taste of the richness of the book’s contribution to the scientometric study of African research. They have been selected in such a way that they reflect my set of interests but will point to the abundance of the book’s conclusions. They include:

- The production of science across the African continent is uneven – the top two countries produce 47% of the publications, the next eight produce 37% and the rest produced about 17%. (p. 68)
- The most common disciplines “point to problems that affect Africa”. (p. 80)
- “African funding agencies based in Africa provided funding for [only] about 10% of all the funded publications...” (p. 98)
- The international partners that co-publish with African scholars remain shaped by the colonial history of the continent. The top five being the USA, France, England, Germany and Canada. However, there are signs of this pattern shifting with more Global South collaborations realising publications, with Saudi Arabia and China playing a more prominent role. It would appear from the analysis that geo-political rivalry does not overly affect scientific collaboration. (p. 116)
- Collaboration is not always equal and can be characterised by the northern partner “keen to gain access to data and fieldwork”, and the southern partners looking for “funding and publication opportunities”. (p. 240)
- African science relies on international funding agencies for funding. (p. 248)
- Over reliance on international funding shifts the agenda away from the African agenda and prevents “national science”. (p. 287)
- Improving the quality of African research will lead to more equitable partnerships. (p. 289)
- The need for all African countries to develop science policies is important, but “should make use of some of ... the structures already in place”, like ARUA. (p. 290)

There are many more conclusions drawn from the study and the literature review. All of which gave a reassuring sense of confirming my assumptions about African science. This should not be viewed as a negative comment; indeed, the value of the work is to provide evidence to confirm these commonly held assumptions, turning them into facts. Facts that can be used for strategic planning purposes that will enhance the African science systems, and thus relieve the reliance on the Global North, and further African independence.

In summary, this book provides telling insights and confirms anecdotal assumptions.