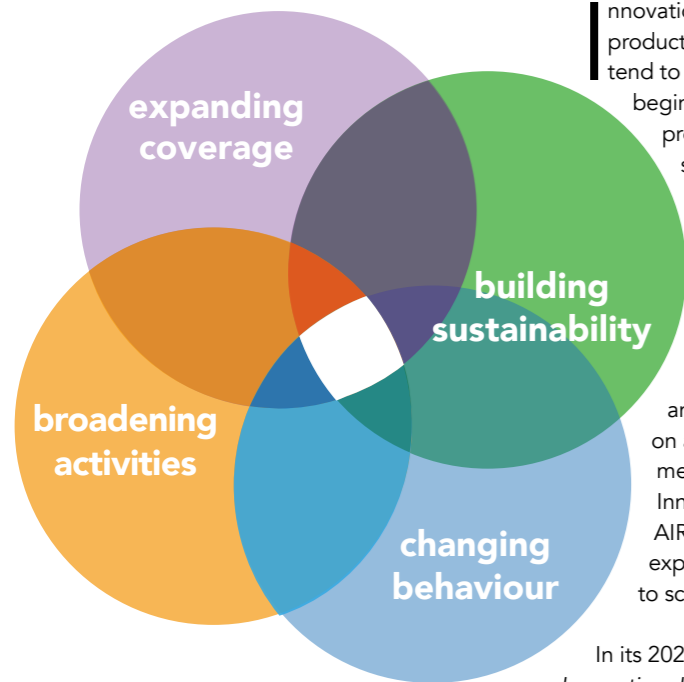


How African knowledge-based enterprises seek scale

Research findings from 10 countries

Innovation is a vital practice in the knowledge economy. Also vital is finding ways to scale innovations so that they can have significant impact. The Open African Innovation Research (Open AIR) network has collected data in numerous African innovation settings over the past decade, and has, in the process, developed a four-pillar taxonomy of scaling practices. As outlined in its 2020 Scaling Innovation report, which draws on findings from 10 African countries, Open AIR has found that scaling by the continent's knowledge-based enterprises can best be understood in terms of four overlapping dimensions: expanding coverage; broadening activities; changing behaviour; and building sustainability.



The four dimensions in Open AIR's scaling taxonomy, as adapted from Uvin et al. (2000).

Innovations—whether they be products, processes, or services—tend to start small. A new product begins as a prototype; a new process is tested; a new service is piloted. Then, when an innovation shows signs of value, a key next question is how to scale it. But discussions of innovation-scaling are often oversimplified, focused narrowly on taking an innovation to market on a commercial basis. The members of the Open African Innovation Research (Open AIR) network take a more expansive, nuanced approach to scaling.

In its 2020 report, *Scaling Innovation: How Open Collaborative Models Help Scale Africa's Knowledge-Based Enterprises*, Open AIR delineates scaling's multiple dimensions in the

continent's innovation settings. Drawing on an extensive literature review and empirical research in 10 countries, the report sets out a four-part taxonomy of scaling, and maps Open AIR findings against the four scaling dimensions.

THE OPEN AIR NETWORK

Open AIR is an international collaboration between academic researchers in more than 20 African countries, Canada, and Europe. It is anchored by six academic hubs, at the University of Cape Town, the University of Johannesburg, Strathmore University in Nairobi, the Nigerian Institute of Advanced Legal Studies, The American University in Cairo, and the University of Ottawa.

The network focuses on two primary research questions. First, how can open, collaborative innovation help African knowledge-based businesses scale up and seize the new opportunities of the global, knowledge-based economy? Second, which knowledge governance policies will best ensure that the social and economic benefits of innovation are shared inclusively? Open AIR tackles these questions through research in five overlapping thematic areas: technology hubs; informal innovation; Indigenous entrepreneurs; innovation metrics; and laws and policies.

OPEN AIR'S FOUR-PART TAXONOMY OF SCALING IN AFRICAN SETTINGS

To arrive at the scaling taxonomy outlined in its *Scaling Innovation* report, Open AIR fuses literature review



Photo Source: Open AIR

The report sets out a four-part taxonomy of scaling, and maps Open AIR findings against the four scaling dimensions.

findings with results from empirical case studies of innovation practices in Egypt, Tunisia, Morocco, Ghana, Nigeria, Ethiopia, Uganda, Kenya, Botswana and South Africa.

The report outlines approaches to scaling in literature from the fields of agriculture, healthcare, education, information and communications technology (ICT), non-governmental organisations, business, and microfinance. The literature contains numerous efforts to delineate notions of scaling "up" (also called "vertical scaling") and scaling "out" (also referred to as "horizontal scaling"). One such effort is by Wigboldus et al. (2016: 2), who cast scaling-up as "increasing [...] in terms of numbers, speed, size" and scaling-out as "expanding, such as geographically". Also found in the literature, Duggan et al. (2013, drawing on CGIAR, 1999) make a delineation between scaling "down" (e.g. by "increasing participation" through "decentralisation") and scaling "in" (e.g. through focus on "values and culture").

The report settles on four core "archetypes" of scaling, adapting the taxonomy proposed by Uvin et al. (2000) to produce a taxonomy comprising:

- scaling by expanding coverage;
- scaling by broadening activities;
- scaling by changing behaviour; and
- scaling by building sustainability.

MAPPING OPEN AIR RESEARCH FINDINGS AGAINST THE SCALING TAXONOMY

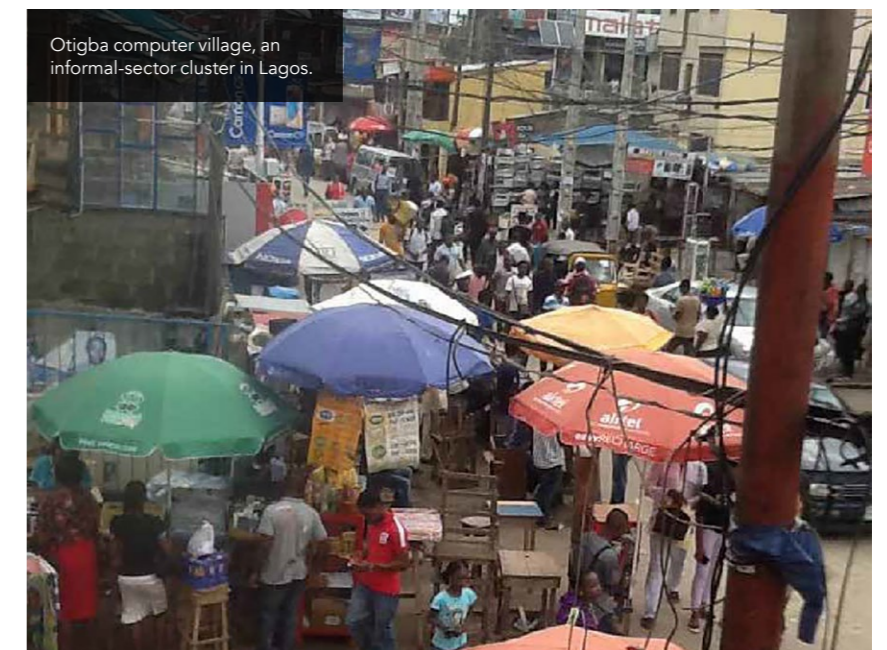
The *Scaling Innovation* report then sets out findings from Open AIR's on-the-ground African case studies against the four dimensions of the scaling taxonomy.

Under *scaling by expanding coverage*, Open AIR found enterprises taking innovations (commercial and social) to market; prototyping innovations (commercial and social); participating in networks enabled by ICTs; participating in informal-sector clusters; and participating in formal-sector tech hubs. The informal-

sector hubs where scaling (of access to customers, markets and suppliers) was identified by Open AIR research are the Otigba computer village in Lagos (Nigeria), the Shiro Meda market cluster in Addis Ababa (Ethiopia) that is home to numerous handloom-weaving microenterprises, and the Suame Magazine metalworking and vehicle repair cluster in Kumasi (Ghana).

To illustrate the second dimension in the taxonomy, *scaling by broadening activities*, the report describes African innovators engaging in product innovation; process innovation; business model innovation; and organisational strategy innovation. One of the examples of business model innovation is Nigeria's film industry, Nollywood, which began as a business innovation by VHS videocassette vendors needing to source content to drive sales.

The third dimension, *scaling by changing behaviour*, is demonstrated by African innovators collaborating with outside stakeholders, engaging in systematic outreach, and interacting with policymakers and law-makers. Among the examples cited is the work of South Africa's maker communities, many of whom are "adept at furthering their objectives, and building recognition of the maker movement, through partnerships with other stakeholders". For example, the Geekulcha maker community based



Otigba computer village, an informal-sector cluster in Lagos.

Photo Source: Open AIR

in Pretoria partners with government departments, private-sector entities, foreign embassies, and foreign donors, in order to help schoolchildren, university students and youth in general develop their skills in the use of digital hardware and software. Also mentioned under *scaling by changing behaviour* is the work by Open AIR itself, as an innovating entity in its own right, in encouraging organisations responsible for global innovation metrics to revise certain metrics in order to better capture the realities of African innovation.

For the fourth dimension in the taxonomy, *scaling by building sustainability*, the report cites research findings revealing African innovators participating in communities of practice; developing human capital; engaging in open, collaborative innovation; grounding their innovations in social challenges and environmental management; and making use of communal forms of knowledge governance. One example cited to illustrate communal knowledge governance is the case of the Kukula Healers association in South Africa's Bushbuckridge region. These traditional medicine practitioners developed "a bio-cultural community protocol (BCP) to govern the medicinal plant-related traditional knowledge (TK) held by the organisation's members".

CONCLUSION

The report stresses that the four elements of the Open AIR scaling taxonomy



Suame Magazine informal-sector metalworking and vehicle repair cluster, Kumasi, Ghana.

Photo Source: OpenAIR

The research finds that "scaling by building sustainability" is central because "the more sustainable an enterprise is, the greater its potential will be to engage in the other three kinds of scaling[...]: scaling by expanding coverage, broadening activities, and changing behaviour".

must be understood as overlapping and occurring simultaneously, "with all four components interacting in cross-cutting modalities that generate

mutually reinforcing beneficial effects". The scaling dimensions' overlapping character is particularly important to understanding the fourth part of the taxonomy: *scaling by building sustainability*. As the report states, "Open AIR's conception of *scaling by building sustainability* rests to a great extent on the assumption that the more sustainable an enterprise is, the greater its potential will be to engage in the other three kinds of scaling [...]: *scaling by expanding coverage, broadening activities, and changing behaviour*".

Scaling Innovation is both a treatise on the concept of scaling and a tour of African innovators' practices in seeking scale. The report adopts a highly relevant taxonomy of scaling, and then illustrates its value through empirical findings from on-the-ground case studies.



Members of the Kukula Healers association tend to their medicinal plants, Bushbuckridge, South Africa.

Photo Source: OpenAIR



Behind the Research

Open AIR

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Research Objectives

This Open African Innovation Research (Open AIR) report delineates empirical research findings on how African knowledge-based enterprises approach matters of scaling.

Detail

Addresses

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Research Network

Open AIR is a network of academic researchers conducting empirical studies that explore the ways in which African innovators engage in open, collaborative innovation; the steps that the innovators take in an effort to scale their innovations; and the modes of knowledge governance that the innovators adopt in order to optimally manage their innovative knowledge.

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- Queen Elizabeth Scholars

Collaborators

This study is by researchers in the Open AIR network, <https://openair.africa>, a partnership between the University of Cape Town, the University of Johannesburg, Strathmore University in Nairobi, the Nigerian Institute of Advanced Legal Studies, The American University in Cairo, and the University of Ottawa.

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Personal Response

What is Open AIR looking to research next?

// Open AIR's future research is expanding into analysing data sovereignty; inclusion and artificial intelligence (AI); and digital innovation in the water-energy-food security nexus. Our researchers are tackling, for example, problems of AI, gender equality and social inclusion in North Africa; AI and human rights; and clean energy innovation. Our researchers are also working on cutting-edge policy developments involving innovation, trade, and economic integration, such as the new African Continental Free Trade Area (AfCFTA). //