

Economics Experiments in Africa: How Many and by Whom?

My main contribution is a counting exercise. In this short article, I count the number of papers in top¹ economics journals that mention an African country; I count the number of these papers that suggest experimental methods; and I count the number of authors using experimental methods who have an institutional affiliation in an African country—this last number is vanishingly small. Given that an economics paper mentions experiments, it is almost twice as likely to also mention an African country compared to an economics paper that does not mention experiments. In the subset of journals under consideration, papers about Africa are 78 times more likely to be written by authors without an institutional affiliation in Africa than to be written by authors based on the continent. Of those, papers using experiments are very slightly more likely to be written by authors without an African affiliation.

The ratios above suggest that African countries provide important locations for economics experiments, but African researchers do not participate very much in the process. The limited space for African researchers in “international” economics journals deserves to be explored on its own (Chelwa 2017); however, the methodology of experiments may add an important angle to this question. As relates to the question of researchers’ affiliations, experiments are

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distinct from most other empirical methodologies in one important way: experiments seek to manipulate the environment in which people make decisions and experience outcomes. Dawn Teele describes the distinction: “whereas observational research hopes to make causal inferences by measuring and analyzing variation in the world, [field] experiments induce the variation whose outcomes will later be studied” (Teale 2014). Variation is important for identifying effects; in an experiment, the researcher is the source of variation; this suggests scope for greater scrutiny on the role of the researcher who induces the theoretically interesting variation.

In the case of economics experiments in Africa, the disproportionate number of papers with authors from outside the continent raises questions about the choice of manipulations and the effects on populations, particularly compared to other modes of enquiry that leave subjects relatively unchanged by the researcher. Do researchers proposing an intervention have context-specific intuition about downstream outcomes? This may matter for grappling with the balance of risks and benefits.² Might the choice of questions studied be

affected by the fact that researchers could largely make themselves absent in the long-run when unintended consequences of their interventions play out? Are researchers sufficiently informed about norms, beliefs and motivations that may affect how people respond to induced variation, reducing the internal validity of an experiment? This piece provides a preliminary quantitative description of the number of economics experiments in Africa and the researchers who conduct them. It is intended as an input to further discussion about the questions raised above.

Data and methodology

I scraped two large databases to obtain the data analyzed in this paper: EconLit is an abstracting service maintained by the American Economic Association. It provides abstracts, titles and meta-information for articles published in economics journals. Research Papers in Economics (RePEc) is a large volunteer project to provide decentralized bibliographic information about economics publications, including information pages for different authors. All scripts were written in R statistical software.³

I conducted a search in EconLit for all articles published between 2000 and 2019 in 25 journals. The chosen journals either have a focus on development economics or they are considered to be general interest economics journals. Development economics journals were identified

using a list shared by World Bank economist David McKenzie in a popular annual blogpost⁴ about publishing in the field of development economics. General interest journals were identified from RePEc rankings. Starting with eleven development journals, I sequentially added general interest journals to my search starting with the best-ranked, until I had 25 (an arbitrary round number) journals on the total list.

It is worth noting that journals classified as “general interest” by the international economics community may not highlight the most pertinent economic concerns in many geographic locations. However, these journals are very focal within the broad economics discipline (Heckman & Moktan 2020), particularly the subset of them that frequently occupy the top five positions in rankings; therefore, I include them in this analysis.

The search in EconLit returned 25,926 articles. I run each article through a function that returns a list of all country names mentioned in the abstract and title. The search for country names was sensitive to alternate spellings and demonyms. I then create a variable *mentions_africa* which takes a value of 1 if the abstract and title mentioned the name of an African country and 0 otherwise. Table 1 shows the distribution of *mentions_africa* across different journal categories.

Papers mentioning experiments are similarly classified by a search through the title, abstract and keywords for the mention of words associated with experimental methods: “experiment”, “lab”, “field”, “controlled trial”. The variable *any_experiment* is a dummy variable which has a value of 1 if any of these experiment keywords are

Table 1: Summary value across different journal categories

	Development	“Top-5”	Other general interest
Mean value of <i>mentions_africa</i>	0.22	0.01	0.01
Mean value of <i>any_experiment</i>	0.47	0.55	0.73
Authors matched between datasets, %	49.9	72.3	75.7

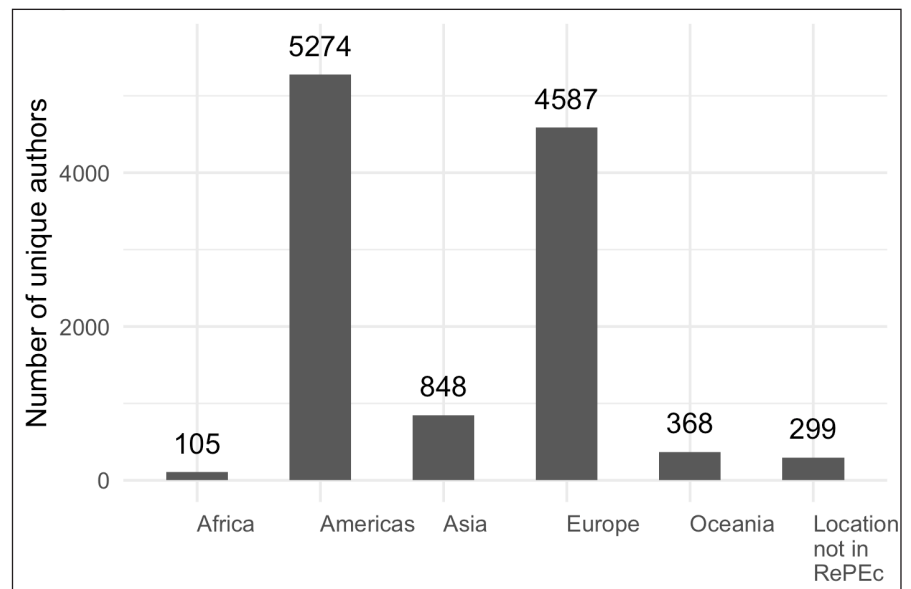
Note: Journal classifications from RePEc rankings and the World Bank Development Impact blog.

mentioned and 0 otherwise. Table 1 shows the distribution of *any_experiment* in different journal categories.

Author locations are scraped from RePEc individual author pages. For every listed RePEc author, I run a script that extracts their institutional affiliation and its location from their webpage. There are 59,027 authors listed on RePEc. There is information about

locations retrieved from RePEc. Sixty-three percent of authors appearing in the articles dataset are successfully matched to the RePEc dataset. This corresponds to 80 per cent of papers in the articles dataset for which I am able to match at least one author. I use this matched dataset (20,747 papers) for all analysis. Figure 1 shows the distribution of author locations in the matched dataset.

Figure 1: 0.9% of matched authors are located in Africa



Source: Author’s own elaborations with data from RePEc

the location of the institutional affiliation for 92 per cent of those. I use a simple string of the authors’ names to match authors in the articles dataset to institutional

Data caveats

There are plenty of caveats to this approach. First, it is tempting to interpret *mentions_africa* as a variable that describes whether a

paper is about an African country. This could be misleading for an article that choose to focus on a general mechanism explored in the paper, for example, rather than the country or countries where the data was collected.

Second, the search terms to classify *any_experiment* may miss terms such as “games” that might also suggest that a paper contains experiments. Potential search terms in this direction were not included because, compared to the words in the more straightforward list, they run a greater risk of incorrectly classifying papers that do not use experiments.

Third, as noted earlier, the selection of journals comprises journals that are highly ranked “internationally”. In practice, this means that they are highly ranked mainly by the people who publish in them—existing social networks and norms determine whose work gets cited. It is not clear that these are the journals that are or should be relevant for authors at African institutions seeking to publish their work. This selection of journals will likely underestimate African researchers’ contributions. Nevertheless, the fact that they are focal amongst a broad range of economists suggests that they are a useful starting point for this analysis.

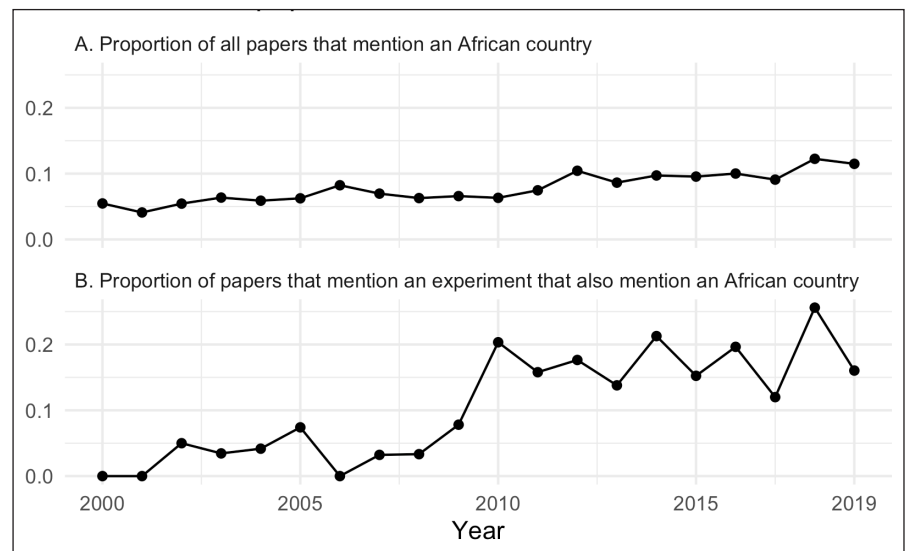
Finally, there is likely to be significant selection in terms of which economists have a RePEc profile. Table 1 shows that authors of papers published in development journals were less likely to be matched to a name in the RePEc database. The suggests another source of underestimation of contributions from researchers with an African affiliation. Affiliations scraped from RePEc are also only correct at the time of

scraping (25 July 2020), although I apply them to papers published at earlier dates.

Who is writing about Africa and how often do they use experiments?

I plot some proportions of interest in Figure 2. Panel A shows the proportion of all papers that mention any African country. The number grows from about 5 per cent in 2000 to 11 per cent in 2019.

Figure 2: Papers using experiments are more likely to mention Africa than other papers



Source: Author’s own elaborations with data EconLit

These numbers should be read with the context that economics papers are likely not to mention any country at all in the abstract or title—only 32 per cent of papers pooled across the years mentions any country. Countries that are mentioned are more likely to be in Africa or Asia. (Some of this effect is mechanical as there are simply more distinct countries in Africa and Asia compared to other regions in the world).

The denominator used to calculate proportions in Panel B is all papers that mention an experiment. The graph shows the proportion

of these that also mention an African country. A comparison of Panel B to Panel A suggests that papers that mention experiments more frequently mention African countries compared to all papers in the article dataset. In Table 2, I present results using the data pooled across years and testing the null hypothesis that the frequencies at which African countries are mentioned is the same when the denominator is only experimental papers as when the denominator

is all other papers that do not mention experiments. The null can be rejected at the 1 per cent level.

I move on to consider authors’ locations. For this analysis, I focus only on papers that mention an African country. I cross-tabulate authors’ locations and whether a paper mentions experiments. Of all papers that mention an African country, only 2.82 per cent have an author with an African institutional affiliation. The vast majority of papers (87%) written about Africa are not experimental and are written by authors without an African

Table 2: Papers that mention experiments also mention African countries

		Paper mentions experiments	
		Yes	No
	Yes	493 (0.9%)	4368 (8.0%)
Papers mention an African country	No	2645 (4.8%)	47050 (86.2%)
χ -squared = 188.83, df = 1, p-value = < 2.2e-16			

institutional affiliation. About 10 per cent of papers that mention an African country also mention experimental methods. These are 1.01 more times likely to be written by an author without an African affiliation compared to papers that do not use experimental methods. This is a small ratio although it is statistically significant (Chi-squared 4.07, 1 degree of freedom, p-value 0.04). The larger concern is the number of papers that mention an African country without having an author affiliated to an African institution.

important for the experimental method.

An important feature of a method that requires a researcher to induce variation is that resources are often required to induce people to change behaviour and to carry out specialized measurements of the induced behavioural changes (Cole et al. 2020). These resources may not be readily available to researchers based in countries that spend less than 1 per cent of their GDP on research and development.⁵ Furthermore, large

researchers control the variation that is analyzed to explain effects. Experimenters’ involvement at this stage of a research design invites scrutiny. The correlational analyses presented in this paper highlight that researchers based at institutions outside Africa write papers related to Africa and conduct experiments in Africa at an increasing rate. This suggests one area for increased scrutiny. A body of knowledge about African economies is being built using experiments. How is this affected by the fact that the people who introduce manipulations and analyze their effects do not have an institutional base in the places where their data is generated? Of course geographical distance does not necessarily imply a lack of contextual knowledge or ethical negligence. But the results show that authors from outside Africa are up to 77 per cent more likely to publish papers that mention African countries using methods that intentionally manipulate the environment of their African research subjects. This certainly suggests an area for further discussion.

Table 3: The vast majority of papers that mention Africa are published by authors without and African affiliation

		Paper mentions experiments	
		Yes	No
	Yes	6 (0.12%)	127 (10.0%)
Author works in Africa	No	467 (2.7%)	4,092 (87.2%)
χ -squared = 4.0733, df = 1, p-value = 0.04356			

Note: Analysis conducted only for papers that mention an African country

Does the location of an author matter?

Keeping in mind the caveats discussed above, the results tentatively suggest that within economics, papers that use experiments are more likely to be written about Africa by authors who don’t have an affiliation on the continent. Does this matter? I first discuss features of experiments that act as barriers, and conclude with further reflections on why the disparity in publication outcomes is particularly

scale experiments often rely on partnerships with governments or NGO partners (Dufflo 2020). This back and forth between researchers and society can be good, but could also replicate power dynamics that disadvantage researchers embedded in the local environment (Pomeranz et al. 2015).

Experiments introduce changes to their subjects’ decision environment in a way that is avoided by most other research methods. In an experiment,

Notes

1. According to criteria which can, and often are, contested (Heckman & Moktan 2020)
2. See Hoffman (2020) for an extended discussion of the ethics of experiments in developing countries.
3. Code used for scraping and analysis will shortly be posted on <https://github.com/ammapanin>
4. <https://blogs.worldbank.org/impactevaluations/state-development-journals-2020-quality-acceptance-rates-review-times-and>
5. <http://uis.unesco.org/apps/visualisations/research-and-development-spending/>

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