Non-Random Locations of Random Trials?

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Research Problem

Over the past two decades, randomized control trials (RCTs) have transformed development economics, earning a Nobel Prize for their role in poverty alleviation. While interventions within RCTs are randomly assigned, the choice of their locations —both across and within countries—is not.

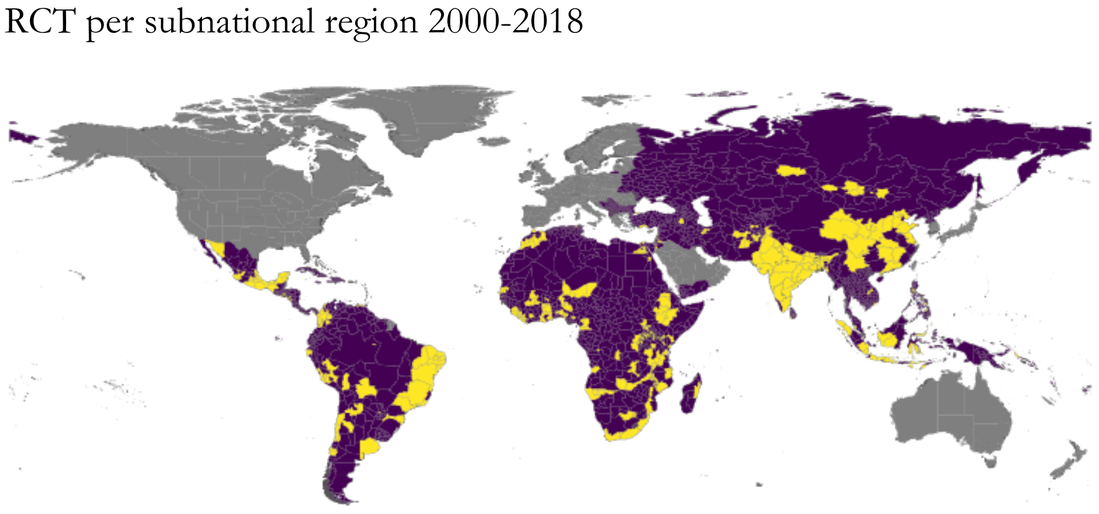
This study explores the global spatial allocation patterns of RCTs, addressing a critical gap in understanding their selectivity and potential biases. Evidence suggests RCTs are often conducted in "favorable" environments, raising concerns about site selection bias besides the typical issues of external validity and the generalizability of findings (Allcott, 2015; List, 2007).

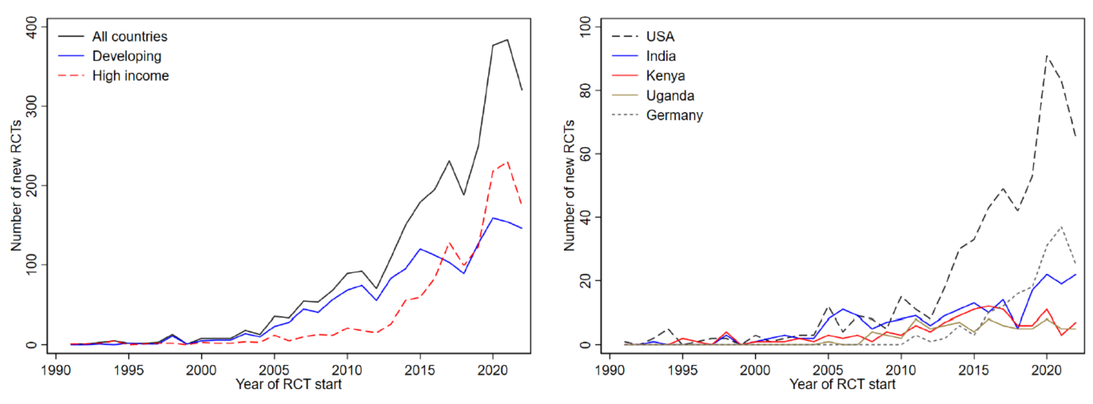
This research sheds light on these critical issues, offering insights into the geographic and selection biases of RCT placement, highlighting the the implications of such biases for scaling interventions and providing **a new dataset on subnational location of RCTs.**

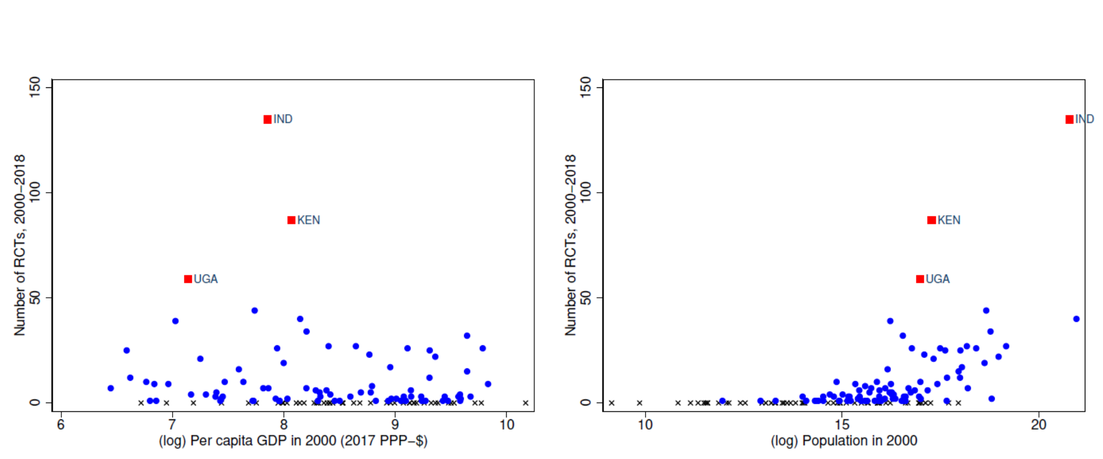
Data Collection

We compiled a novel dataset of RCT locations at the country and subnational levels for studies conducted between 2000 and 2018. Using data from the AEA Registry and J-PAL, we addressed missing subnational details by extracting information from study papers, datasets, or contacting authors. Additionally, we collected data on the countries of principal investigators through author information and manual online searches, creating a uniquely detailed resource on the spatial distribution of experimental research in development economics.

RCT per subnational region 2000-2018







(a) GDP per capita

(b) Population

Analysis

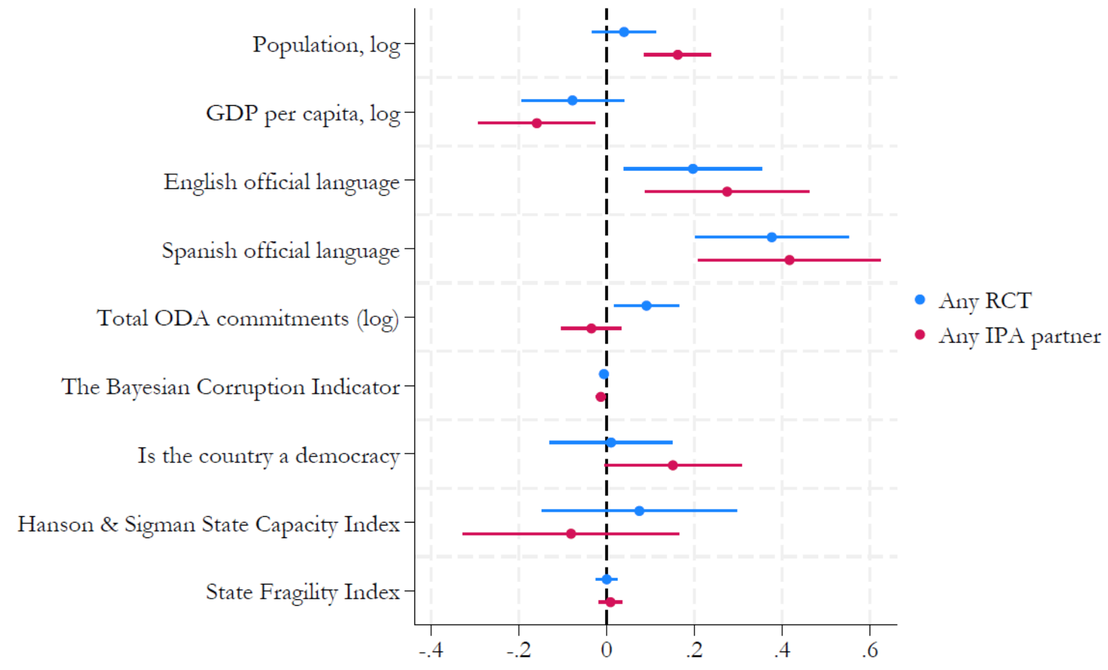
The dataset includes 1230 RCTs in 96 countries and over 350 subnational locations. We use simple OLS with country FEs for subnational analysis.

1. We map RCT locations at both the country and subnational levels, revealing patterns of spatial concentration as descritive analysis.

2. We examine the underlying determinants of RCT allocation, including need-based factors, political economy influences, and variables like World Bank projects, conflict zones, official language biases, and income levels.

Results

Cross-country analysis.



Subnational analysis.

Table 4: Admin1 cross-section: by country of affiliation of first primary investigator.

	Any RCT (yes/no), 2000–18				
	All	US	Other Global North	Global South	Not classified
	(1)	(2)	(3)	(4)	(5)
Night light (log)	0.011*	0.017***	0.010**	-0.005***	-0.005
	(0.006)	(0.005)	(0.005)	(0.002)	(0.005)
Population (log)	0.058***	0.020**	0.022***	0.006	0.053***
	(0.010)	(0.008)	(0.006)	(0.004)	(0.008)
Infant mortality rate (log)	0.071**	0.050*	0.026	-0.034*	0.027
	(0.031)	(0.029)	(0.017)	(0.018)	(0.023)
Road density: Highways & primary	0.132***	0.008	0.035	0.082**	0.014
	(0.051)	(0.061)	(0.039)	(0.041)	(0.043)
Number excluded ethnic groups	-0.035**	-0.009	-0.002	-0.012**	-0.038***
	(0.017)	(0.014)	(0.011)	(0.006)	(0.013)
25+ conflict deaths (2000–18)	-0.010	0.001	0.001	-0.005	0.004
	(0.025)	(0.019)	(0.016)	(0.010)	(0.021)
Ever leader birthregion (2000–18)	0.050**	0.028	0.024	0.020*	0.057***
	(0.024)	(0.020)	(0.018)	(0.011)	(0.020)
Official Development Aid (2000–17):					
World Bank: number of projects	0.003***	0.003***	0.001***	0.001***	0.001***
	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
China: number of projects	-0.002	-0.001	-0.000	-0.001**	0.000
	(0.003)	(0.003)	(0.003)	(0.001)	(0.002)
Country FEs	✓	✓	✓	✓	✓
Geo-climate controls	✓	✓	✓	✓	✓
N	1874	1874	1874	1874	1874
adj. R^2	0.398	0.319	0.188	0.140	0.373

Findings

RCTs in developing countries are concentrated in a few countries and regions, particularly in poorer areas with more aid projects. The presence of an IPA partner office strongly influences RCT locations, suggesting infrastructure plays a key role in site selection. Biases are mainly driven by initial site choices driven by unobserved/ unmeasured factors. RCTs led by PIs from the Global North tend to occur in wealthier areas, while those led by PIs from the Global South are more likely to take place in poorer regions.

Further research, including surveys of experimental research in development economics, could uncover the hidden biases in site selection by providing qualitative insights into the factors influencing initial site choices.

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