

METHODS NOTE · Peer-reviewed · Published · Live dashboard figures

Artificial Intelligence in Clinical Trials: A Cross-Sectional Analysis of Structural Inequities in African and United States Research Investment

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Abstract

We conducted a cross-sectional audit of interventional studies registered on ClinicalTrials.gov through April 2026, comparing Africa with the United States (ClinicalTrials.gov, n.d.). Using registry-derived counts, we estimated trial rates, rate ratios, and bootstrap confidence intervals to quantify disparities in AI/ML trial activity. Africa contributed 10 eligible trials versus 1,436 in the United States, representing an approximately 144-fold difference in absolute counts and a markedly lower population-adjusted trial rate. Although overall trial registrations in Africa have increased over time, trends indicate persistent underrepresentation in advanced methodological studies. Across African research settings, limited digital infrastructure and analytic capacity have been documented as key barriers to adoption of AI-driven approaches (World Health Organization, 2021; World Health Organization Regional Office for Africa, 2023). These findings highlight structural inequities in research investment, though interpretation is limited by reliance on a single registry and incomplete capture of non-English trial databases.

Interactive dashboard figures

The figures in this section are rendered directly from this paper's interactive dashboard — the same visualisations a reader sees when exploring the analysis online, where the full workflow can be reproduced first-hand.

Interactive dashboard:

<https://mahmood726-cyber.github.io/africa-e156-students/methods-systems/dashboards/ai-ml-trials.html>

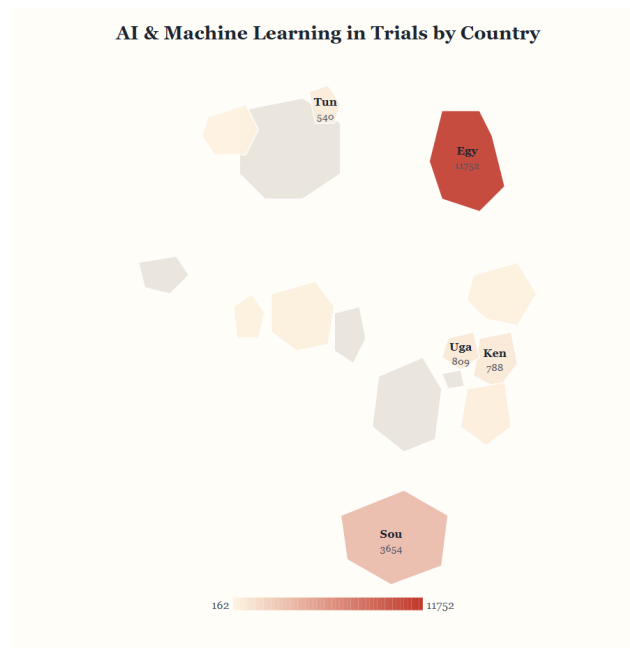


Figure 1. AI & Machine Learning in Trials by Country Rendered directly from the article's live interactive dashboard.

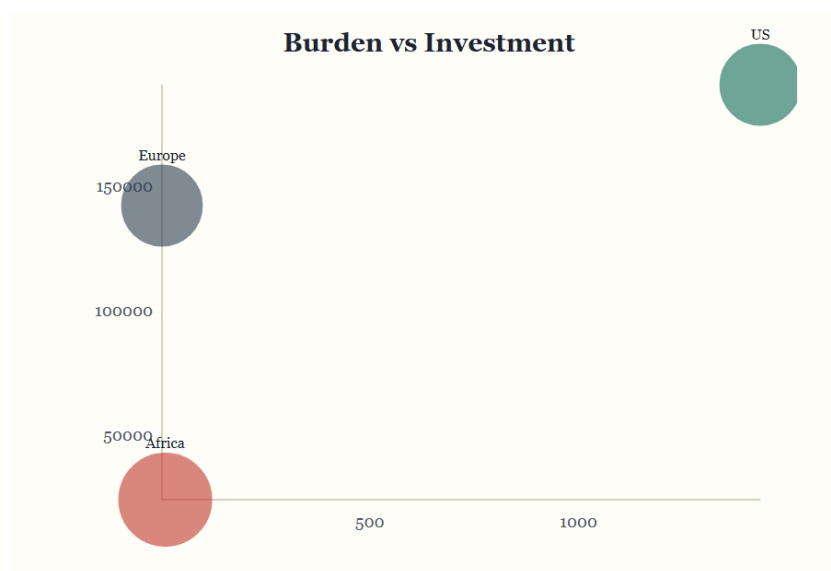


Figure 2. Burden vs Investment Rendered directly from the article's live interactive dashboard.

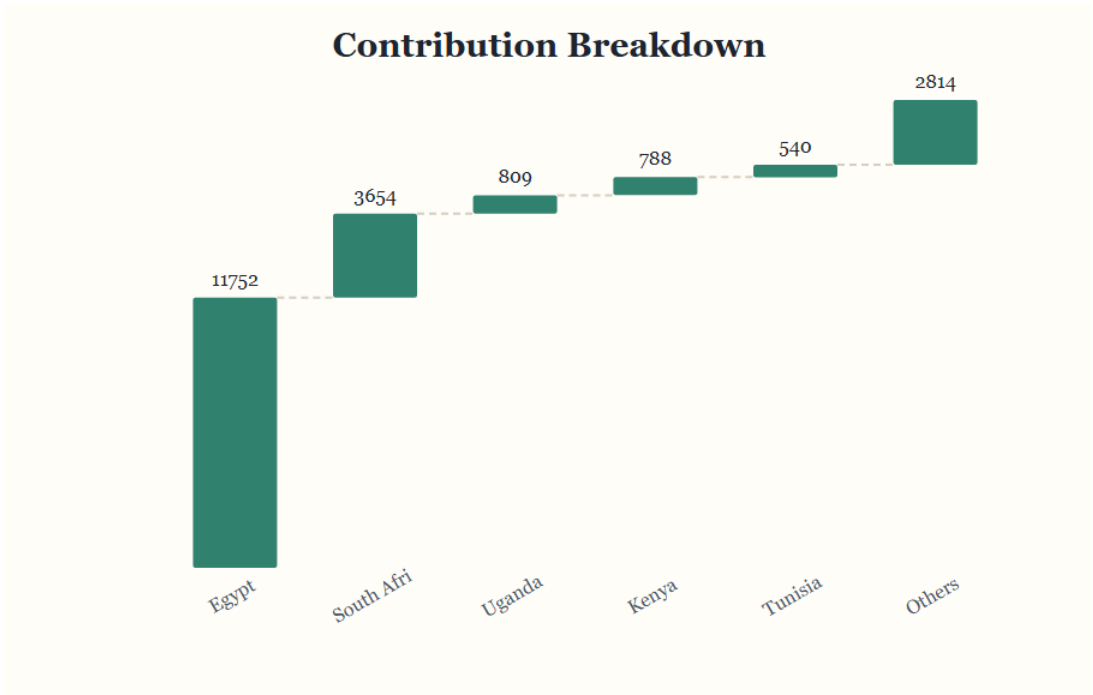


Figure 3. Contribution Breakdown Rendered directly from the article's live interactive dashboard.

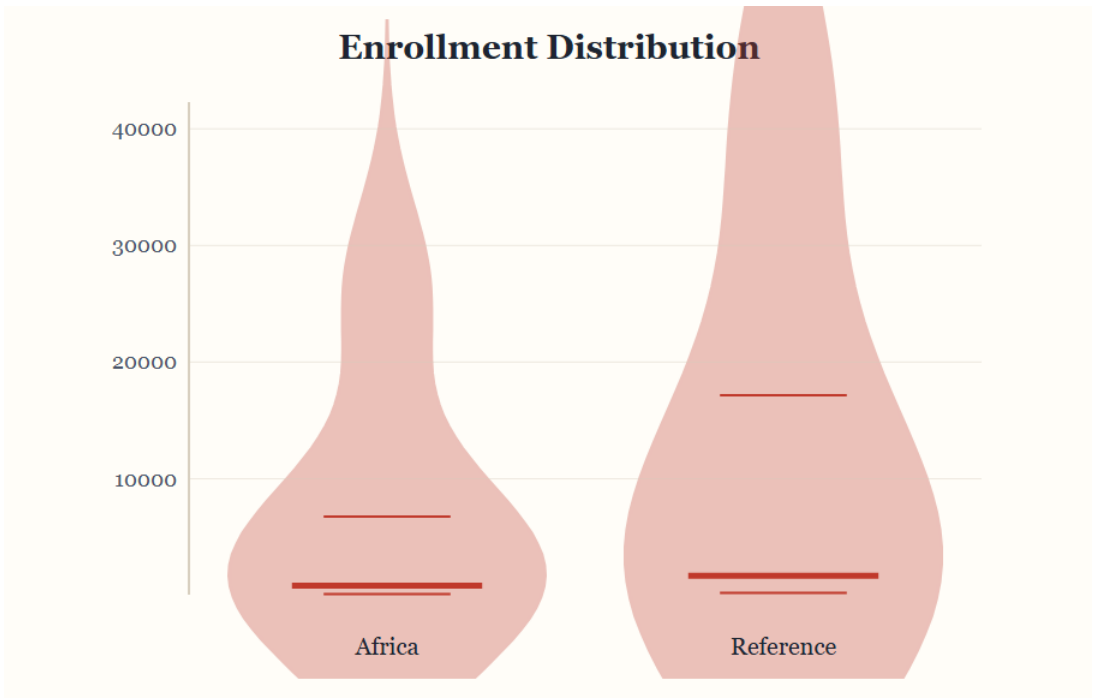


Figure 4. Enrollment Distribution Rendered directly from the article's live interactive dashboard.

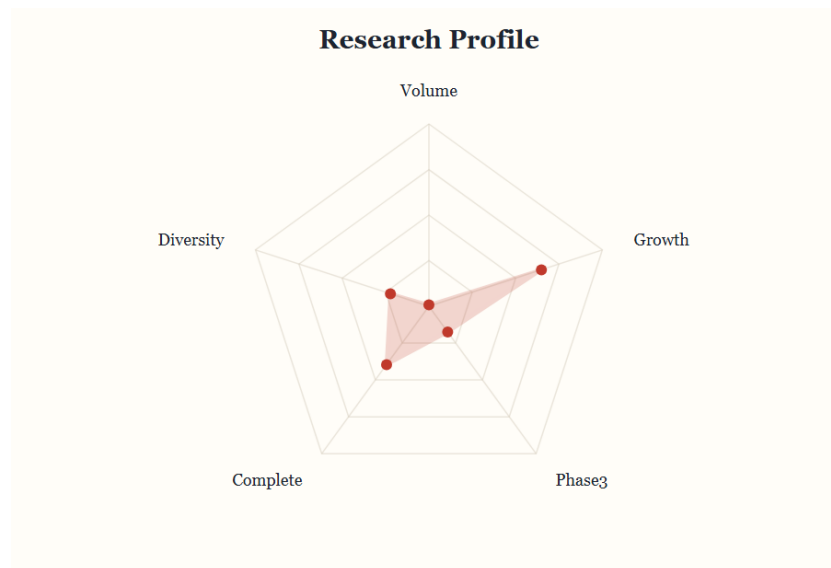


Figure 5. Research Profile Rendered directly from the article's live interactive dashboard.

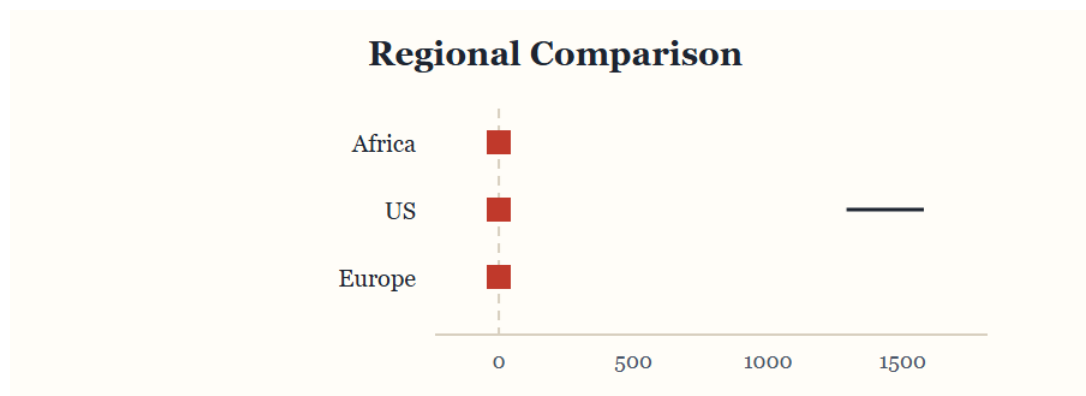


Figure 6. Regional Comparison Rendered directly from the article's live interactive dashboard.

HOW TO CITE

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