# What We've Learnt From *Diversifying* Study Participants, and Problems With Seeking a *"Representative Sample"*

## Advait Sarkar

Microsoft Research, University of Cambridge, University College London

advait@microsoft.com

Research in end-user programming (EUP) faces a diversity problem.

Most researchers and participants hail from Western, Educated, Industrialised, Rich, and Democratic (WEIRD) nations. This lack of diversity negatively impacts the field. Our research group has been working to improve the geographic diversity of our study participants. In collaboration with partner organisations, *we have conducted four studies* where participants from non-WEIRD countries (Ghana, Kenya, Nigeria, Israel, Japan, and Armenia) comprised 20.8% to 53.3% of the sample.

We used participants' primary country of residence as a proxy for geographic diversity, acknowledging its limitations. The studies were conducted remotely via Microsoft Teams, following standard HCI research methods, including think-aloud protocols, questionnaires, and post-experiment interviews. Data collection involved demographic information, usability assessments, telemetric logs, and recorded sessions.

We experienced challenges and benefits through our efforts to diversify our participant samples.

For example, we assumed participants would use laptops or desktops (necessary to use our prototype software), but many African participants joined study sessions from smartphones or tablets. Our assumption overlooked the reality that some participants *lacked access to larger devices*. We responded by adapting study protocols to work across different devices or developing alternative study versions for mobile users.

Participants from African countries often faced *low-bandwidth connections* and *unreliable electricity*, leading to frequent disruptions. We adapted by turning off video feeds, saving progress continuously, and overprovisioning participants to account for incomplete sessions. We also faced issues with *poor performance of automatic transcription* tools on speech that was not British/American accented. Moreover, systemic biases in research practices, such as discarding data from participants with incomplete sessions, perpetuate exclusion.

Having geographic diversity in our sample increased our exposure to *varied user contexts* and tasks, such as analysing job preparedness in Nigeria or workplace discrimination in Kenya. We found that affluent participants from non-WEIRD countries had much in common with affluent WEIRD participants, and the converse.

Recruitment diversity should seek to identify *not just differences, but also similarities* between WEIRD and non-WEIRD perspectives in EUP research. Observing common user problems across diverse groups provides a broader empirical basis for generalising insights.

The pursuit of diversity in small sample studies in HCI research faces a *paradox*.

The challenge lies in reconciling the ideal of diversity, which recognises that individuals and groups have complex intersectional identities that are radically unique and different, with the scientific ideal of representativeness, which generalises from the experiences of one group (the sample) to another (the population).

This paradox questions the epistemic value of geographic diversity in small samples. If more diverse samples aren't more representative, what purpose does diversity serve? Merely increasing geographic diversity doesn't automatically yield better knowledge or more ethical research.

We explore alternative criteria to evaluate the epistemic strength of such studies and assess how diversity contributes to knowledge production. One approach is *shifting from representation to presentation*, focusing on specific individuals rather than abstract populations. This can reveal unique insights, but risks tokenism. Another approach, *research for the very particular*, emphasises deep understanding of individuals in specific contexts but struggles with applying such knowledge broadly. *Transferability*, proposed as an alternative to generalisability, focuses on applying knowledge from one context to another, but requires intensive, long-term research.

We outline the need for a metamodern synthesis, balancing the modernist value of representativeness and postmodern critiques that expose its limitations. We seek to produce high-quality knowledge while avoiding exclusion and oppression, creating new understandings of the value of diversity in small sample studies.

## Read the full paper:

Sarkar, Advait. (2024). *Diversity in Study Participants and a Critique of the "Representative Sample" in Human-Computer Interaction Research.* In *Proceedings of the 2024 IEEE Symposium on Visual Languages and Human-Centric Computing (VL/HCC) Workshop on Addressing Challenges in Recruiting Participants for Human-Centric Computing Research Studies.*