



## Attrition in mobile phone panel surveys

Instead of using long questionnaires administered in person, researchers are increasingly turning to phone surveys, which require shorter instruments but can be administered over multiple, shorter interviews. A limitation of high-frequency phone surveys is study attrition, where individuals enrolled in a baseline survey may not be reachable or willing to complete follow-up interviews.

This brief shares some evidence on phone survey attrition calculated from existing data collected in the early 2010s in Tanzania and Senegal. In these cases, the researchers distributed devices to respondents, ensuring the best-known conditions for minimizing attrition. In addition to presenting attrition rates calculated over multiple survey waves, the brief explores whether there is *differential* attrition by respondent type, examining changes to the sample composition. Differential attrition can lead to bias in the parameters that researchers are trying to estimate.

The results show that attrition was low after the initial drop-off from in-person baseline to first phone follow-up, but there were small but statistically significant differences between the characteristics of attriters and non-attriters in multiple follow-ups. These data provide a useful benchmark and some cautions for planning future studies.

### Motivation

Attrition has always been a concern in longitudinal research. A high attrition rate reduces the available sample size for analysis. A *differential* attrition rate, where differences are related to variables that the researcher wants to study, produces bias as the sample becomes less representative of the original target population. There is renewed interest in measuring and reducing attrition for phone surveys as the COVID-19 crisis has extended into its second year.

A second important concern, which is specific to phone surveys and especially problematic studying poverty in low- and medium-income countries (LMICs) is coverage bias. Phone surveys exclude those who lack devices, connectivity, calling plans, and reliable electricity for charging. As with differential attrition, this may systematically exclude marginalized populations of interest and therefore introduce troubling bias. Mobile phone penetration is not widely reported, but evidence on device ownership suggests that cell phone owners are not representative of the population, even though ownership rates have been rapidly increasing.<sup>1</sup>

### Existing Evidence

Much of the existing evidence on response rates for mobile phone panel surveys in LMICs comes from the World Bank's tests of high-frequency phone surveys in the early 2010s and work done during the 2013-2016 Ebola crisis, where face-to-face surveying was infeasible.<sup>2</sup> The World Bank used sampling frames built in partnership with national statistical offices and NGOs. They started with face-to-face data collection for the baseline and provided phones and phone credit incentives to all respondents. This was followed by several rounds of computer-assisted telephone interviewing (CATI), where interviewers tried to reach the same respondents on the phone, offering phone credit as an incentive.

<sup>1</sup> [International Telecommunications Union, 2019, \*World, 2019\*, 2019](#)

<sup>2</sup> [Deaton et al., 2013](#)

IPA's evidence briefs are part of a series reviewing existing evidence on implementing surveys using computer-assisted telephone interviewing (CATI) and other remote survey modes. This document was prepared by Jenna Rowner and Michael Rosenbaum with helpful input from Steven Glaserman. It is based on data analysis performed by Jenna Rowner.

# Evidence Brief: Attrition in Mobile Phone Panel Surveys

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