Methods note: survey modes

# When can a phone survey stand in for a household visit?

Phone surveys are fast and cheap, and in Nigeria they can reach most households. They miss particular people, and weighting narrows the gap without closing it.

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## In short

- Nine in ten Nigerian households own a mobile phone, but only 62% of the women interviewed by the 2024 DHS own one. Phones reach most households; they reach individuals much less evenly.
- In Nigeria's pandemic phone survey, drawn from a face-to-face panel, 82% of respondents were household heads and 73% were men. Weighting reduced the bias in household estimates without removing it, and adds uncertainty.
- A phone sample drawn from a recent household survey can be checked and reweighted against it. A random-digit-dialled sample offers far less to adjust with, and its response is much lower.

## Who has a phone

The 2024 Nigeria DHS found that 90% of households own a mobile phone, but that only 62% of women own one, 30% own a smartphone, and 26% used the internet in the past year[1]. A phone survey of households can reach most of them; a phone survey of individuals reaches some groups far less than others.

Subscription counts do not answer the question. The Nigerian Communications Commission reported 195,108,814 active telephone subscriptions in July 2026, 194,862,642 of them on the GSM mobile networks, and a teledensity of 90%, which it defines as active telephone connections per 100 inhabitants[2]. Connections are not people: a teledensity of 90% is compatible with large numbers of people who own no phone, as the DHS figures for women show. We found no authoritative count of unique mobile users in Nigeria.

## What Nigeria's pandemic phone survey showed

The National Longitudinal Phone Survey, run by the National Bureau of Statistics with the World Bank from 2020, drew its sample from the GHS-Panel, a face-to-face survey. Of 4,976 panel households, 4,934 (99.2%) had given at least one phone number, but about 10% of these had given only the number of a reference person in close contact with the household, not of a household member[3]. Of the 3,000 households selected, 69% were reached and 1,950 completed the first interview, 65% of those attempted[3,4].

Ambel and colleagues compared who was reached with the full panel in Nigeria, Ethiopia, Malawi and Uganda. The households reached were 'biased toward wealthier households with higher living standards'. Coverage bias was 'not a major concern for Nigeria', but non-response bias was found in all four countries, and reweighting with information from the face-to-face survey produced 'a substantial reduction in bias, although the bias was not fully eradicated'[5].

Answers from individuals are harder to correct. In the Nigerian survey, 82% of respondents were household heads and 73% were men, partly because the head was called first[4]. Brubaker and colleagues found that reweighting moved such estimates closer to the adult population, but that it 'increases the variance of the estimates and, in most cases, fails to overcome selection biases'. Reliable data on men and women, they concluded, need 'random selection of adult interviewees within sampled households'[4].

## A survey-based sample or random dialling

Across the World Bank-supported high-frequency phone surveys worldwide, first rounds drawn from an earlier face-to-face survey averaged a 73% response rate, against 36% for samples drawn by random-digit dialling [6]. A sample drawn from a household survey also brings that survey's information on every household, so non-response can be modelled and weighted; Ambel and colleagues note that adjustment is more limited for random-digit dialling or telecom lists [5].

The same World Bank review found that non-responding households 'appeared to have characteristics similar to households without access to a phone', and that 'the survey mode effect is still not well understood' [6].

## Short, and only for what a phone can measure

Guidance from fragile settings is that phone interviews 'typically should not last longer than 20–30 minutes' [7]. A survey experiment in urban Ethiopia, cited in the World Bank review, found that fatigue set in early when consumption was asked by phone but not face to face, which 'can result in overestimating poverty rates' [6].

## Our practice

These are the rules every Probatio Africa study follows. Read them as commitments you can hold us to.

- [x] We draw phone samples from a recent face-to-face probability survey wherever one exists, and adjust for selection into the frame, non-contact and non-response, step by step, as the national phone survey did [3].
- [x] When a study needs answers from individuals, we choose the adult at random within the household, not whoever answers the phone.
- [x] We keep phone interviews short, and we do not use them to measure household consumption or poverty.
- [x] We describe frame coverage in plain terms ('gave a phone number', not 'owns a phone') and report the design effect that weighting adds.
- [x] We do not publish estimates about Nigeria's population from random-digit dialling without its response rate and a statement of what the weights could and could not correct.

## What the evidence cannot settle

- How large mode effects are in Nigeria. We found no Nigerian experiment comparing the same questions by phone and face to face.
- How many people in Nigeria have at least one phone line. Subscriptions count connections, and we found no authoritative count of unique users.
- Response rates for random-digit-dialled surveys in sub-Saharan Africa specifically. The averages we cite are global.

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