Methods note: sampling

How do you draw a sample in Nigeria when the last census was in 2006?

A usable frame exists, but national surveys are split between old and new frames, and every population total is a projection. What that means for any estimate, and how we handle it.

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In short

- Nigeria has not held a census since March 2006. The National Population Commission has since mapped the country into new enumeration areas from satellite imagery, and several national surveys since 2022, including the Labour Force Survey, the 2024 Nigeria DHS and the 2025–26 Mini-DHS, sample from that frame.
- Other series still use older frames: the 2021 MICS used the 2006 census frame and the GHS-Panel refreshed its sample from its 2010 frame. Trends that join these surveys cross a change of frame.
- Every population total for Nigeria after 2006 is a projection or a model. The UN's estimate for 2022 is about 6.4 million, or 2.9%, higher than the latest Commission projection we found in a primary source, and every rate per person moves with the choice.

Where things stand

Nigeria's last census was enumerated from 21 to 27 March 2006 and counted 140,431,790 people [1,2]. The census planned for 3–7 May 2023 was postponed on 28 April 2023, to a date 'to be determined by the incoming Administration' [3]. In November 2024 the National Population Commission said no date had been announced and that it 'does not have the authority to set the date' [4]. A presidential committee inaugurated in April 2025 was asked to recommend a date and propose funding [5]. In February 2026 the UN Statistics Division still listed Nigeria's next census only as expected in 2026 [6].

Twenty years is a long time for a sampling frame. A census frame lists enumeration areas with a measure of their size; as it ages, new settlements are missing and the measures of size are wrong where growth has been fastest. A UN draft handbook on sampling frames calls an old census 'the quintessential example of a frame that is out of date', and warns that failing to update measures of size in high-growth areas before selection makes results 'biased and of course misleading' [7].

Which frame each survey used

The Commission's Enumeration Area Demarcation, carried out digitally from 2014 to 2022 with high-resolution satellite imagery, divided the country's local government areas into new enumeration areas [8]. The Commission's website says demarcation was completed in 772 of the 774 local government areas [9]. The 2024 Nigeria DHS drew its 1,400 clusters from this 'updated cartographical frame' [10], and the 2025–26 Mini-DHS, the Labour Force Survey from the last quarter of 2022 and the National Agricultural Sample Survey fielded in 2022 used the same frame [11,12,13]. Other national series did not move.

The frames behind Nigeria's main household surveys

Survey	Fieldwork	Sampling frame	Reports for
Nigeria DHS 2024	Dec 2023 – May 2024	The Commission's new frame [10]	36 states and the FCT, six zones, urban and rural [14]
Nigeria Mini-DHS 2025–26	Dec 2025 – Feb 2026	The Commission's new frame [11]	36 states and the FCT, six zones, urban and rural [11]
Labour Force Survey	Quarterly since Q4 2022	The Commission's new frame [12]	The nation each quarter; states once a year [12]
MICS 2021	2021	2006 census frame, updated [15]	36 states and the FCT, six zones; Borno from 7 of its 27 local government areas [15]
Living Standards Survey 2018/19	Sep 2018 – Sep 2019	NBS master sample built on 2006 census areas [16]	36 states and the FCT, except Borno [16]
GHS-Panel, Wave 5	Jul 2023 – Mar 2024	2010 panel areas plus a 2018/19 refresh drawn from the same 2010 frame [17]	The nation and six zones [17]

The survey's final report is titled 'Nigeria Demographic and Health Survey 2024' [14]. Its Key Indicators Report, cited here, is titled 'Nigeria Demographic and Health Survey 2023–24', after its fieldwork period [10].

- The new frame classifies far more of the country as urban. EFInA, which runs Nigeria's financial-access survey, reported that the new frame is 46% rural, against the 66% assumed under the old national master frame [18].
- A consultant's report published by EFInA found that reweighting earlier financial-access results to the new frame raised the share of adults with bank access from 40% to 45% [19]. The report is unsigned and inconsistent in places, so we treat the five points as a sign of how large a frame effect can be, not as a correction to apply.

Why every selected area is listed again

Because frames age, cross-sectional surveys list households afresh. The DHS sampling manual requires a complete listing of dwellings in each selected enumeration area before any household is chosen, and calls listing 'an important procedure for reducing non-sampling errors in the survey, especially when the sampling frame is outdated' [20]. The 2024 DHS, the 2025–26 Mini-DHS, the 2021 MICS and the 2018/19 Living Standards Survey listed every household in each selected area [10,11,15,16]. The GHS-Panel's Wave 5 instead revisited households first selected in 2010 and in a 2018/19 refresh [17].

Listing brings the households in a selected area up to date. It does not change the chance each area had of being selected, which still rests on the frame's measure of size; the UN draft handbook notes that sampling variance rises over time unless the whole frame is updated [7].

Where no usable frame exists, some surveys draw areas from gridded population estimates. The World Bank's household survey guidelines suggest 'grid-based sampling or other geospatial data approaches' when a frame is unavailable or out of date [21]. The method's developers describe gridded population sampling as 'in its infancy' [22], and a 2020 review found that 'cell-level accuracy is not known for any top-down gridded population datasets' [23]. Choosing households by random walk within a grid cell, as some Nigerian surveys in that review did, is not probability sampling [22,23].

Which population figure to divide by

Every rate per person needs a population total, and for Nigeria every total after 2006 is a projection or a model. The latest projection by the National Population Commission that we found in a primary source is 216,783,381 for 2022, published by the National Bureau of Statistics in 2024 [24]. The UN's World Population Prospects, as published by the World Bank (updated July 2026), puts 2022 at 223,150,896 and 2025 at 237,527,782 [25].

The UN figure for 2022 is about 6.4 million, or 2.9%, higher than the Commission's. A rate per person calculated on the Commission's figure is therefore about 3% higher than the same rate calculated on the UN's. Neither total rests on a count made after 2006.

Gridded estimates do not settle the question. WorldPop's 2025 model for GRID3, trained on 2022–23 malaria bed-net campaign data from nine states, estimated Nigeria's population at 237,345,980, with a 95% credible interval of about 233.6 million to 243.7 million. Its released grid is then scaled to match the UN's 2025 projection, and its producers state that the figures 'are not official government statistics' [26].

Who counts as a household

Surveys define the household differently, and in polygynous and compound households the difference matters. The 2018/19 Living Standards Survey counts people who usually sleep in the same dwelling and take their meals together, and either have been part of the household for at least six of the past twelve months or are current members. Its manual reminds interviewers that family and household are not necessarily the same: in its worked example, a married son who cooks and eats separately with his wife, within his father's compound, is not counted in his father's household [27].

Earlier General Household Surveys counted people 'who eat from the same pot' [28]. DHS defines the household by shared housekeeping arrangements and one acknowledged head [29]. A comparison between surveys has to check that they counted the same people.

Across Africa

Nigeria is not alone. On the UN Statistics Division's list, updated in February 2026, at least 16 other African countries or territories had a last recorded census more than ten years old, or none since at least 1985, including the Democratic Republic of the Congo, Ethiopia, Sudan, South Sudan, Cameroon and Niger. Several of them, Nigeria included, were listed as expecting a census in 2026 [6].

We found no cross-country study that measures how much bias an ageing frame introduces into African survey estimates. The Nigerian reweighting above is the only quantified case we found.

Our practice

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

- [x] Every sampling note we write states the frame, its date and who compiled it, and says whether a trend comparison crosses a change of frame.
- [x] We list every household in each selected area before choosing any, and update measures of size in areas we have reason to think have grown fast.
- [x] We fix the population total and its source before weighting and report which we used. Where the choice could change a conclusion, we show the result under both.
- [x] We use a gridded population frame only where no usable census frame exists, label the result as experimental, and never choose households by random walk.
- [x] We state the household definition on the questionnaire and in the report, and use the definition of the survey we compare against.

What the evidence cannot settle

- When the next census will be held. No date had been announced in the sources we checked.
- How complete the new frame is. The Commission's statements differ on how many local government areas it covers, and we found no count of its enumeration areas published by the Commission.
- How large the bias from an old frame is in general. The only quantified Nigerian case comes from one unsigned consultant report.

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