

CASE STUDY 001

From Data Producer to Data User

The Kaduna Data Lab Project



The Amina J. Mohammed SDGs Data Lab, Kaduna State.

THE NUMBERS

1

State-of-the-art data laboratory built to house the Kaduna State Bureau of Statistics. Equipped with advanced analytics tools, GIS equipment, and other cutting-edge technologies

15

Health data sources connected through HEFA, used for COVID-19 vaccination and private facility licensing

110

Young people trained across three data science fellowship cohorts, 70 percent into jobs or scholarships

Millions

of Kaduna State citizens in rural and urban communities impacted as data is used for policy design across key sectors by the government

The Natview Foundation for Technology Innovation (NFTI) is a non-profit organization inspired by the potential of using technology to advance policy tracking, monitoring, and evaluation across the social sectors of health, education, and agriculture in Africa. NFTI works at the intersection of technology, data, and public sector innovation, partnering with governments, development agencies, and communities to build platforms that turn raw data into evidence for decision-making. The Kaduna Data Lab project represents one of the Foundation's earliest and most consequential partnerships, establishing the institutional template the organization has since carried into other states and sectors.

The Problem

The Kaduna State Government launched the Kaduna State Data Revolution Plan in 2018 to support better policy design in social sectors, particularly health and education, through accurate, well-informed data. The plan addressed a specific, recurring problem: horizontal and vertical data discrepancies across similar indicators in the state, most visible in maternal health, where different sources reported conflicting figures for the same measure.

Three challenges sat at the root of this:

- Varying indicators across different sources, often giving conflicting values for the same social indicator
- Different government agencies produce separate surveys without statistical completeness, which makes it difficult to know where to invest for the best results
- Low data disaggregation, making it difficult to break down national or state-level estimates into local government or ward-level figures, or by basic categories like age, population, or gender

Kaduna State was also determined to build its capacity to collect and define the use of its data rather than depend on external estimates, and to address a low base of workplace productivity that was holding the state's data custodian by law, the Kaduna State Bureau of Statistics (KDBS), back from transitioning away from purely survey-based operations.

The Intervention (2018 to 2023)

The Kaduna State Government and the Gates Foundation jointly committed to strengthening and building up the KDBS so it could provide the evidence-based data that policymakers need across several health continuums. The explicit goal was to professionalize the Bureau, moving it from a survey-based agency to a data service provider, organized around four outcomes:

- Enhance workplace productivity by building a state-of-the-art facility, the Amina J. Mohammed Data Lab, to support KDBS's new mandate on data management and analytics
- Strengthen coordination between KDBS and other data producers, consumers, and users so routine administrative data meets standards for representativeness, concept definition, and collection methods
- Build the capacity of young people in the state, with a deliberate focus on gender mainstreaming, through the Click-On Kaduna Data Science Fellowship, broadening the Bureau's ability to draw on youth talent for data management and evidence-based decision-making

- Enhance data management and analytic capability, shifting the Bureau from basic collection and visualization of surveys toward integrated, multi-source analysis that supports decision-making.

The approach centered on building strategic question banks across the health continuum, questions policymakers and operational heads actually need answered, and codifying them into a results framework. This created sustainable data pipelines connecting roughly 15 health data sources, anchored by the 2018 Health Facility Census, and feeding four platforms built for practical, decision-relevant use cases.

The Data (2018 to 2023)

Over this window, the partnership's outputs, documented directly by KDBS and NFTI, include:

- **Early groundwork (late 2018):** within ten weeks of the grant's approval, construction had begun on the Data Lab building, following approval of one of three architectural designs presented to the state. This laid the physical and operational foundation for everything that followed.
- **The Amina J. Mohammed Data Lab:** constructed and equipped as KDBS's state-of-the-art home for all its data management, modeling, and analytics functions.
- **The Kaduna State Health Facility Analytics Platform (HEFA):** combining a health directory, dashboard, and analytics platform connected to 15 different data sources. The State Ministry of Health used HEFA for its first COVID-19 vaccination distribution planning for frontline health workers, and the Private Health Establishment sector used it as the base data source for licensing private health facilities.
- **Digitization of the 2020 General Household Survey:** made the Bureau's findings available in an open data format with local government-level disaggregation and cross-variable analytics.
- **A call center and tele-polling service:** to run citizen perception surveys on service delivery, particularly in health. The center has been used for initiatives like the telepolling survey on understanding citizens' perception on awareness and enrollment with the Kaduna State Contributory Health Management Authority (KADCHMA).
- **The Click-On Kaduna Data Science Fellowship Program:** by the end of the grant, ran three cohorts, training 110 young people aged 18 to 35 in modern data management tools to work on socio-economic issues in health, agriculture, and education. The pioneer cohort selected 30 fellows from 6,030 applicants, who completed three months of intensive in-class training followed by three months of practical fieldwork; a second cohort of 40 fellows followed, and a third cohort brought the total to 110. 70 percent have since moved into full- or part-time data science jobs or international scholarships. In 2022, the program also produced the Kaduna Datathon, a hackathon that brings young people from across Nigeria together to turn unstructured data into structured insights.
- **A digitized Integrated Supportive Supervision tool:** used to rank and grade primary and secondary health facilities against a standard scorecard, identifying improvement areas, especially around child health and demand for primary health care.
- **And many more...** Visit www.kdbs.ng for more information.

Collectively, this work has repositioned KDBS as the state’s “Single Source” and “Official Source of Verifiable Statistics,” increased the availability of SDG and State Development Plan KPI data, and improved data demand across government agencies through a centralized databank housed at the Data Lab.

The Human Story

The Kaduna Data Lab Project has several beneficiaries who can anchor a human-angle account, including KDBS Statistician-General Dr. Bukar Baba Alhaji and Amina Lami, Head of the Project and Technical Coordination Unit at KDBS, both of whom worked directly in the Data Lab and its platforms. On the fellowship side, Click-On Kaduna Data Science Fellows such as Daniel Danjuma Laah, Usman Danjuma, Faiza Sani, and Khadija Othman represent the pipeline of young Kaduna-based data talent the grant was designed to build, with several of them having gone on to data science careers or scholarships abroad and within Nigeria.

“The Bureau, in partnership with NFTI, has really done tremendous work (on the DSFP). About 100 youth have graduated from this program. These youths are scattered across the state, national, and global levels. The youths we trained across 3 cohorts are part of our Community of Practice, where they give back to society.”

— Bukar Alhaji, PhD. Statistician General, KDBS.

WATCH

The Kaduna State Data Revolution: A Journey Towards Evidence-Based Progress

Documentary, 58 minutes

<https://www.youtube.com/watch?v=dxllyM3IUzc>

“I’ve been equipped with skills that are required in data management value chain. The fellowship also supported me with networking and mentorship as I can access Instructors at anytime.”

— Usman Danjuma, Data Analyst, KDBS.

“The State has the State Development Plan (SDP) and the KDBS works with the Planning and Budget Commission to develop the result framework where all indicators related to the SDP are tracked data collection and analysis to check performance across all sectors. ”

— Amina Lami, Head, Project and Technical Coordination Unit, KDBS.

“The fellowship taught me practical machine learning and data engineering skills that I now use in my PhD research in computer vision. Thanks to DSFP, I have been able to publish research in top journals, and I have also worked with international companies.”

— Daniel Ayuba, PhD. Research Engineer, University of Surrey, England.

The Broader Implication

The KDBS Data Lab grant demonstrates what it takes to move a government statistics bureau from producing numbers to using them: purpose-built infrastructure, a codified results framework that ties policymakers’ questions to specific data pipelines, and a talent pipeline that continually renews the Bureau’s technical capacity through successive fellowship cohorts. The approach has already proven exportable within Kaduna’s own data ecosystem, feeding health and citizen-perception platforms far beyond the original mandate.

Regional peers have taken note. As detailed below, delegations from neighboring states, national and international agencies have since made their way to KDBS specifically to study this model, a signal that this is a replicable template other sub-national statistical agencies are actively studying, not a one-off Kaduna solution.

Outcome by 2023

Across the program window from September 2018 to 2023, KDBS transitioned from a data producer to an active data service provider. By the end of this window, the Bureau was running live platforms feeding real government decisions, from COVID-19 vaccine distribution planning to private facility licensing to citizen perception tracking, and had trained three fellowship cohorts totaling 110 fellows. What began in late 2018 as an approved grant and a set of stakeholder meetings had, by 2023, become a functioning Data Lab, a “Single Source” statistics bureau, and a talent pipeline with a proven track record.

The natural next chapter, beyond this 2018 to 2023 narrative, would be to deepen interest in regional replication into formal partnerships, expand the supportive supervision tool to sectors beyond health, and continue running fellowship cohorts to sustain the talent pipeline the Bureau and other MDAs now depend on.

Beyond 2023: KDBS as a Sub-National Model

KDBS has become a sub-national model for evidence-based statistical governance in Nigeria, as the National Bureau of Statistics and other sub-national bureaus have increasingly looked to Kaduna to benchmark their own data systems. The World Bank’s Poverty and Equity in West Africa delegation, visiting the state in mid-2025, praised Kaduna’s investment in data integrity and evidence-based planning, positioning it as a reference point for global best practices. The Northwest Statisticians-General Forum, led by Jigawa State’s Statistician-General, Dr. Jamilu Garba, paid a courtesy visit to KDBS alongside a UNICEF delegation to explore collaboration on capacity building, data management, and research. Jigawa’s delegates went further by joining a DSFP guest

lecture during their study tour. Kano State Bureau of Statistics and the Lagos State Bureau of Statistics have each sent their own technical delegations, with the Lagos visit in particular covering KDBS's end-to-end data value chain, from CAPI field collection through CKAN repository storage to GIS-based geofencing.

This peer recognition has been matched by an expanding portfolio of work. KDBS partnered with Enhancing Financial Innovation & Access (EFInA) on an Access to Financial Services (A2F) Kaduna deep-dive survey, reporting that adult financial inclusion in the state rose from 36 percent in 2018 to 57 percent in 2023. The Bureau also welcomed NOIPolls and SCIDaR for Community Polls data collection aimed at strengthening malaria prevention and health service delivery through community-driven insights. In October 2025, the KDBS Statistician-General was featured in *BusinessDay*, making the case that statistics are vital for economic growth, a sign that the Bureau is now shaping public discourse on data, not just producing it.

The Bureau has also begun turning its analytic capacity on questions the state could not previously answer for itself. Its Learning Poverty report measures the share of 10-year-olds who cannot read and understand a simple text, placing Kaduna's overall Learning Poverty Indicator at 74.7 percent, compared with a World Bank finding that 70 percent of Nigerian 10-year-olds experience learning poverty. The assessment goes well beyond a single headline figure. It disaggregates by grade, showing that 74.3 percent of Primary 4 pupils scored below the minimum proficiency level in English EGRA, easing to 63.3 percent by Primary 6 and 45.1 percent by JSS 1, and by gender, where a higher share of girls fell below the minimum at both primary levels, 74.8 percent against 73.9 percent of boys in Primary 4 and 67.5 percent against 59.2 percent in Primary 6, before the gap narrows and reverses slightly at JSS 1. It also separates schooling deprivation, at 31.1 percent of primary school-age children, from learning deprivation at 63.3 percent, distinguishing children who are not in school from those who are in school but not learning. That distinction is what a bureau that has moved from producing data to using it can offer a ministry, not a count, but a diagnosis specific enough to act on.

The clearest evidence that Kaduna's data ecosystem now sets a national standard came in 2026, when the Federal Government adopted the state's household mapping model as the national framework for identifying out-of-school children. Rather than relying on projections, as government planning in this area had historically done, Kaduna collected household-level data that identified vulnerable children by name and location, enabling enrolment and retention efforts to be precisely targeted. The State Governor reported that the approach helped reduce the number of out-of-school children in Kaduna State from approximately 550,000 to fewer than 180,000. Announcing the decision after meeting the Governor in Abuja, the Minister of Education, Dr. Tunji Alausa, confirmed that the Federal Ministry of Education would work with the National Bureau of Statistics to carry out a nationwide household mapping exercise across all 36 states and the Federal Capital Territory. The institutional capacity that made that mapping possible—the ability to collect, manage, and use accurate, disaggregated data—is the same capacity built at KDBS through the Data Lab grant.

Acknowledgments

This case study spans multiple leadership tenures at KDBS, and its results would not have been possible without the partnership and support of the Gates Foundation, whose Data Lab grant made this work possible.

The Bureau's progress across this period also reflects the work of each Statistician-General who has led it:

- **Basheer Bature**, Statistician-General during the grant's early implementation years, who passed away in office
- **Dr. Saheed Salawu**, who succeeded him as Statistician-General from December 2021
- **Dr. Bukar Baba Alhaji**, Statistician-General from May 2022 to the present.

The Natview Foundation for Technology Innovations (NFTI) gratefully acknowledges the leadership and institutional continuity each of them provided in carrying this partnership forward.

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