POLICY FORUM

Disappearing people: A global demographic data crisis threatens public policy

Collapsing international support for population data collection is compromising government planning all around the world.

**Jessica M Espey1, Andrew J Tatem1, Dana R Thomson2**

Every day, decisions that affect our lives – such as where to locate hospitals and how to allocate resources for schools – depend on knowing how many people live where and who they are; for example, their ages, occupations, living conditions, and needs.Such core demographic data in most countries comes from a census, a count of the population usually conducted every 10 years. But something alarming is happening to many of these critical data sources. As widely discussed at the United Nations (UN) Statistical Commission meeting in New York in March, fewer countries have managed to complete a census in recent years. And even when they are conducted, censuses have been shown to undercount members of certain groups in important ways. Redressing this predicament requires investment and technological solutions alongside extensive political outreach, citizen engagement, and new partnerships.

A basic device of government that has been used since Ancient Rome, a census is the procedure of systematically acquiring, recording, and calculating information about the members of a given population, with the overarching ambition of generating estimates of total population count in a given country or region. Data are collected through household questionnaires, either completed by members of the household themselves, or through interviews by teams of enumerators. These can be augmented or updated in inter-censal periods with information from other sources, such as administrative records (collected as people engage with government services) and civil registration and vital statistics systems (official records of births, deaths, marriages and other vital events). Often household surveys fill in more detailed information about health, education, and living standards in countries where registries and administrative systems are incomplete or weak.

The data derived from censuses provide the denominator for economic activity, helping governments to understand their tax base and labor force. Census data determine political representation, including the numbers of representatives for each district or region, and the allocation of resources to these areas. They determine funding requirements for critical services like education, healthcare, infrastructure, and social welfare. By understanding population density, age distribution, income levels, and migration patterns, policymakers can strategically direct resources where they are most needed to have the greatest impact in a time of a natural disaster, disease outbreak, or any other crisis.

Moreover, population data help anticipate future challenges and opportunities. Projections of population growth, aging trends, and demographic shifts allow governments to develop proactive strategies. For instance, an aging population might signal the need for enhanced healthcare services and retirement support systems, while a growing youth demographic could necessitate expanded educational and employment infrastructure.

**A QUIET CRISIS UNFOLDS**

According to information available at the end of the 2020 round of censuses, 204 countries or areas conducted at least one population and housing census in the period 2015–2024, representing 85 per cent of the world’s population (*1*). But as of July 2024, 24 of these countries, representing approximately a quarter of the world's population, had not yet published their census results. By contrast, during the 2010 census round, 214 countries or areas conducted and published a census, representing 93 per cent of the world’s population (*1*). In addition to COVID-related delays, some countries have been slow to publish their 2020 census results due to concerns about declining response rates and large margins of error.

Census accuracy, and potential coverage and content errors, can be estimated with a census post-enumeration survey. Based on this type of survey, we know that the 2020 US Census likely undercounted the US Latino population by 4.99% (2.9 million people), which is more than three times the undercount rate of the 2010 census (*2*). A similar survey indicates that the 2022 South African census undercounted its overall population by up to 31% (*3*). According to the UN Economic Commission for Africa, when these undercounts are added to censuses that were not undertaken due to COVID disruptions, conflict, or funding gaps, an estimated one in three Africans were not counted in the 2020 census round (*4*).

In many Arab countries, the 2020 round also faced severe disruptions. While 16 countries in Western Asia managed to complete their censuses, conflicts in Lebanon, Libya, Somalia, Sudan, Syria, and Yemen made population counts impossible or severely limited. The challenge is immense: at a time when accurate population data is most needed for reconstruction and humanitarian assistance, it is precisely when it is hardest to collect.

Insufficient census numbers compromise all public administration and yet because this information captures phenomena that cannot be seen or touched, we fail to perceive these statistics as vital infrastructure akin to bridges or roads. When groups are not counted, they can be left off the policy agenda, and that political underrepresentation and subsequent inadequate resource allocation can have pernicious effects. The 2020 US Census results highlighted a systematic undercount of ethnic minority groups with the potential for impacts upon their representation, funding and services (2). Similar outcomes were reported in Pakistan, where minority groups complained that they were undercounted and will subsequently be under-represented and under-resourced long into the future (5).

Undercounting is also well documented amongst children under 5. In the 2010 US Census, for example, the “undercount of children under age 5 was 4.6 percent, or nearly 1 million children. This represented the highest undercount rate for any age group.” Furthermore, the undercount rate for children had more than tripled since the 1980 census (6), which not only leads to their underrepresentation in policy decisions and investments, but compromises our ability to forecast future population growth. There are many reasons for children under 5 not being counted including young children being more likely to live in poverty than other age groups and their low-income families being themselves undercounted in the census, families not realizing they should be included, and young children being more likely than other age groups to be in complex, often multigenerational households which can lead to their being missed in the count *(6).*

These data gaps have direct impacts on the allocation of resources. In the US, census data is used to direct more than $1.5 trillion in federal funding, annually (7). Declines in data quality thus threaten the very foundation of evidence-based governance at a time when challenges like climate change, aging populations, and migration require more precise knowledge of populations and human settlements than ever before.

 **A PERFECT STORM**

Why is this happening? Many factors are driving increasing census inaccuracies, including challenges recruiting people to work on data collection, the logistical complexity of collecting data during COVID, and declining government statistical budgets. Changing political climates and heightened fears about data mismanagement also affect public confidence in national institutions and their eagerness to be counted.

**Pandemic disruptions**

The COVID-19 pandemic posed substantial challenges for census operations, with 77% of countries surveyed by the UN Statistics Division (UNSD) reporting disruptions (8). Many countries were forced to shift from traditional house-to-house interviews to alternative data sources and mixed methods, including online and phone responses, and extended timelines for data collection. These changes required rapid adjustments to census collection teams and overall strategies.

The pandemic also resulted in acute budget cuts across governments, including statistical offices, with knock-on effects on capacity and exacerbating existing budget pressures. A 2024 survey of 155 countries, conducted by UNSD, found that 63% reported "significant" or "moderate" financial challenge, while 75% struggled with implementing new technologies and improving coverage and data quality. Many countries also reported difficulties with the practical aspects of census operations - recruiting and training field staff (69%), identifying residential addresses (49%), and addressing privacy and confidentiality concerns (52%) (*9*).

**Declining confidence in institutions and data management**

According to the 2023 Drivers of Trust in Public Institutions survey by the Organisation for Economic Co-operation and Development (OECD), public trust in national government has been declining since 2021. More people (44%) across OECD countries report low or no trust in their national government compared to those with high or moderately high trust (39%) (10). How does this decline in trust effect demographic data collection? The social and political climate is critical when it comes to census data collection. For example, in some settings, such as in communities in which there are fears of immigration-related law-enforcement, having people claiming to be government workers knocking on the door ostensibly to take census data could be perceived as a threat. These types of concerns were echoed in the 2024 UNSD survey of 155 countries found that "managing public trust and perceptions about the census" was a major concern for 70% of responding countries (*1*).

The OECD survey suggests that declining confidence in government institutions is becoming chronic. Rising anti-immigration rhetoric and more isolationst policies post-COVID undoubtedly contribute, as does the rapidly evolving data landscape and the associated challenges facing governments to effectively manage data. Cyber-attacks are increasing in frequency and sophistication, and each successful attack on a public or prominent institution undermines the perception of government’ ability to protect and safeguard data. Stories of government data leaks, errors, and abuses arise around the world. For example in 2023, the Bangladesh government’s Computer Incident Response Team unintentionally leaked the personal data of 50 million people (*11*). Government use of AI-supported decision-making and consolidation of data across agencies further erodes public trust of governments as reliable data stewards. With the exponential growth in data, ensuring robust government standards for data privacy, security, and storage remains an essential and constant challenge.

**Collapsing international support**

Making matters worse, international funding support for population data collection is collapsing. Major survey programs like the US-supported Demographic and Health Surveys (DHS) program, which provided vital health data across 90 countries for four decades, was terminated in February 2025 by the Trump administration. Initially launched by the US Agency for International Development (USAID) and primarily funded by the US, the program also received support from the UN, World Bank, Gates Foundation and others. Often described as "the gold standard” of internationally comparable household surveys, the DHS has been essential for tracking a wide range of indicators, from population age, sex, and educational levels, to infant mortality and maternal healthcare access in low- and middle-income countries . The UN Childrens’ Fund’s Multiple Indicator Cluster Surveys program, covering 112 countries, also faces an uncertain future amid shrinking global aid budgets. Whilst the US Government has cut international support via USAID, other countries including the UK, France, and Netherlands are reallocating development assistance to defense spending, reducing both direct bilateral assistance and UN multilateral contributions (*12*). These cuts threaten census and survey programs worldwide, which often rely on both financial support and UN technical assistance where national capacity is limited.

These issues create a paradox: we live in an era of seemingly unlimited data, where our digital activities seemingly generate constant information streams, yet some of our most essential infrastructure – demographic information – is deteriorating, introducing known and unknown bias into decision making.

**FINDING SOLUTIONS TO THE COUNTING CRISIS**

The UNSD reports a substantial shift in how countries are approaching the upcoming 2030 census round. In the 2010 round of censuses, 5% of countries exclusively used register-based approaches, meaning they relied exclusively on administrative data from service-points and data recorded in civil registration and vital statistics systems, which capture individuals’ unique identification numbers, births, deaths, marriages and so on (*13*). By 2030, 10% of countries are expected to fully enumerate their populations with registry data, and another 18% of countries plan to combine administrative data with traditional census enumeration (*13*).

The COVID-19 pandemic has accelerated this transition. As with many crisis-induced innovations, these adaptations are likely to become permanent features of the census landscape. In parts of Asia the benefits of these transitions have been immense. Indonesia, for example, leveraged their Population Registration System (which compiles national identification numbers alongside vital statistics like births, marriages, and deaths) to modernize their 2020 census, reducing the need for large-scale, countrywide enumeration. Turkey has systematically transitioned from a traditional to a combined approach, reducing census costs from $48.3 million in 2000 to $13.9 million in 2011, while simultaneously improving data quality and timeliness (*14*).

More countries are experimenting with new technologies and methodologies to improve census timeliness, quality, and coverage while reducing costs. Important advances have been made in stochastic forecasts which narrow uncertainty bands in population estimates and help to foster greater trust in the science of population statistics and demography. Other promising areas of innovation leverage sample population counts together with satellite imagery and statistical modelling to construct small area population estimates. New technologies like AI-derived building footprints from satellite images are being used to plan censuses and surveys, and support the census-taking process itself. These data are also being used in small area modelling efforts to verify census data, and provide estimates for un- or under-surveyed areas. Modelling approaches using AI-derived data have proven valuable in countries like Democratic Republic of the Congo (*15*), where recent census implementation has not been possible.

Whilst these technological advances hold promise, it is essential they are integrated into a process for collecting high quality population data. This process should continue to prioritize data collected through local enumeration as a primary input, support data integration and imputation through models to reduce costs, and leverage both field data and non-traditional data such as earth observation and geographic information system (GIS) data. Triangulation and validation against external data that are not part of modelling processes – such as incomplete registry data, citizen generated data, or third party sources – are essential to ensure the accuracy and reliability of modelled population estimates.

**REBUILDING TRUST AND COLLABORATION**

This is not just about technical fixes. The crisis in population data reflects deeper issues of trust, inclusion, and governance. To overcome the epidemic of undercounting, governments must demonstrate how population data directly affect everyday lives – from hospital funding to school placements to transportation planning – and be transparent about how this data informs decisions. This transparency will help build public confidence that the data will not be manipulated or used to disadvantage any community. Governments need to show the public and the international community (who are reliant on national data to assess trade potential, fiscal stability, or other forms of collaboration) the data safeguards and management practices in place to ensure data are used and stored appropriately. Additionally, Governments need to demonstrate innovation in their sourcing, sharing, and management of data across departments, breaking down traditional silos to ethically combine efforts and data in a resource-constrained world. Priority actions for governments and the wider stakeholder community should include public communications and building collaborative systems. The Philippines National Statistical Authority provides a startling example of this kind of cross-government, collaborative leadership with a clear mandate from the Government to coordinate all statistical activities across departments, to be responsible for local data collection and dissemination, and to spearhead external data-based collaborations.

**Public communications**

At this year’s UN Statistical Commission meeting, the UN Population Fund identified strategic communication and public engagement as a critical ongoing need for the 2030 census round (1). Winning public support requires investing in communications and outreach, including working with local governments and trusted community intermediaries to encourage public participation and explain how census information guides budgetary decisions. Additionally, the UN emphasizes that capacity building in data dissemination is crucial for countries to both maximize the value of census and other demographic data in policy and planning, and to engage the public. Positively, 90% of countries that responded to a recent UNSD survey said they are offering interactive online databases for census data, recognizing the need to make information more accessible and useful (*9*).

**Collaborative systems**

The future of demographic data does not just lie with government. To overcome engagement, funding, and technical challenges, collaboration across the entire data ecosystem is essential. Stakeholders must move beyond business-as-usual and work collectively to build integrated, adaptive, and inclusive systems capable of producing the population data that democratic governance and equitable development demand. For academics and data scientists, now is the time for humility and collaboration—not salesmanship. No single model or dataset will solve the crisis. It is necessary to co-create solutions with National Statistical Offices, especially in low- and middle-income countries, and prioritize usability over novelty. The “POPGRID Data Collaborative”, a global network of demographers trialing new approaches to population mapping, exemplifies this approach by prioritizing collective impact over competition.

For those in the international community, including UN agencies, it is crucial to foster coordination across disciplines, geographies, and institutional silos. Private sector data and technology organizations, like Microsoft, Google and ESRI, must ensure that innovations complement rather than replace core government statistical products, recognizing the fundamental importance of the census and other administrative data for validating their modelled estimates. They should also invest resources in lower-capacity partners and infrastructure to ensure that technological innovations will be maintained, sustained, and developed into the future, and in doing so expanding long-term collaborative opportunities .

In an era of growing challenges, from climate change to economic inequality, accurate population data is not a luxury – it is essential infrastructure for healthy, resilient, functioning societies. While there are no quick fixes, and trust depends on external factors. The current undercounting of populations creates a negative feedback loop, leaving governments with less accurate information on the communities most in need. This threatens both statistical accuracy and the very foundations of equitable governance. By combining technological innovation with renewed public trust and international cooperation, we can ensure that everyone is counted – and everyone counts.

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1WorldPop, School of Geography and Environmental Science, University of Southampton, Southampton, UK. 2Center for Integrated Earth System Information (CIESIN), Climate School, Columbia University, New York, USA. Email: J.M.Espey@soton.ac.uk