



International examples of census survey models & trends

Census models

Census approaches used around the world can generally be categorised into the following categories:

The traditional model

This model collects all census data by surveying every person in a country on a specified day. This survey provides the data for a full population count, full dwelling count, and attributes (i.e. details or descriptions) of the population and dwellings. This was the model New Zealand used before 2018 and the model that most countries have traditionally based their censuses on.

A combined model

This model collects census data by using a combination of survey data and administrative data. Countries that use this model use different levels of survey and administrative data in their census collection depending on their data needs and the quality of their available administrative data. This is the model New Zealand used in the 2018 and 2023 censuses. Most census data was collected via the census survey, with administrative data used to include people missed by the census survey or to fill data gaps.

A register-based (administrative data-only) model

This model uses data held by the government to collect all census data. This model is often used by countries that have a high-functioning population register system in place and is most notably used by Scandinavian countries. A register is a list or database that holds information about the public.

International trends

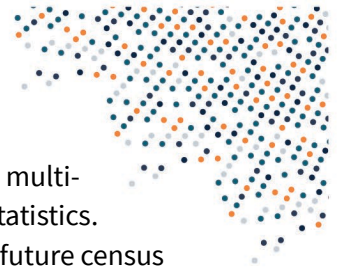
Model type

While the traditional model is still the most common census approach worldwide, there is an international trend of countries (particularly OECD countries) moving away from a traditional census approach and towards approaches that increasingly use administrative data.

For example, across the EU-27, the number of countries undertaking a traditional census model decreased from 17 in 2001 to six in 2021. At the same time, the number of EU-27 countries undertaking a register-based or combined model (like New Zealand's model) has increased from 10 in 2001 to 20 in 2021. Across the world, in 2020, about one-quarter of census models had shifted to non-traditional models.

Frequency

While the United Nations Statistics Division guidelines require a census of population and dwellings at a minimum of every 10 years, many countries are finding this does not meet the needs of their user communities. The European Union is implementing regulations from 2026 for all



member states to produce population and housing statistics quarterly, annually, and multi-annually, with a level of detail comparable or greater than current 10-yearly census statistics. Similarly, the Office for National Statistics in the United Kingdom has proposed in its future census consultation to produce most census statistics annually, with some variables at a 15–18-month interval. This reflects the rapidly changing composition of the population and housing stock, as well as the value of this data in planning and decision-making.

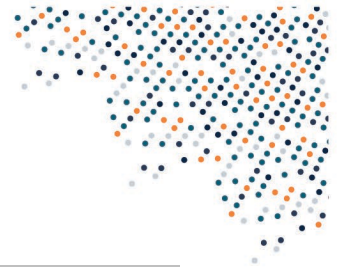
Like Australia and Canada, the Data and Statistics Act 2022 requires that a census is taken every five years in New Zealand. The five-yearly census also triggers the Representation Commission, the body responsible for reviewing electoral boundaries. Legislative changes would be required if the interval between census was more than five years, and Stats NZ would have to be confident that the data needs of customers and partners could still be met.

International examples of census models

Further details on specific countries and models used is set out below.



Model Type	Country	Traditional Census survey	Frequency of census survey	Supplementary sample survey(s) used	Frequency of supplementary survey	Admin-data-based	Planned future admin data use in census	Comments/details
Traditional	Australia	✓	5 years	✗	-	✗	✓	Considering using more administrative data in future censuses; possibly running a combined census model in 2031.
	United Kingdom	✓	10 years	✗	-	✗	✓	Public consultation in 2023 about plans to evolve to a system that would “primarily use administrative data such as tax or benefit data, complemented by survey data and a wider range of data sources replacing the current reliance on the census every ten years”.
	United States	✓	10 years	✓	Annual	✗	✓	A full population survey is done every 10 years, supplemented by a continuous sample survey (every month, sent to 3 percent of households).
	Canada	✓	5 years	✓	5 years	✗	✓	Every five years the population completes a short 17 question census survey, but one-quarter of dwellings are required to complete a ‘long form’ version of 55 questions covering a wider range of topics.
Combined	Italy	✗	-	✓	Annual-	✓	-	Italy runs an administrative-data-first census, and a sample of approximately 1.4 million households across Italy are surveyed annually to supplement the administrative data.
	Switzerland	✗	-	✓	Annual	✓	-	Data is primarily drawn from population registers, which is supplemented by sample surveys to collect data not held in the registers. Roughly 5 percent of the population is surveyed in writing or by telephone.
	Turkey	✗	-	✓	10 years	✓	-	Data is collected every 10 years from population registers in combination with a large-scale household survey (approximately 2.4 million households) and a complete enumeration of institutional places.
	Belgium	✗	-	✓	10 years	✓	-	Data is collected every 10 years and is based on administrative data sources and surveys. About 60 percent of statistics compiled are from administrative databases or other existing sources and the remaining 40 percent of statistics are compiled from surveys.
Register-based	Denmark	✗	-	✗	-	✓	-	Since 1970, censuses have been exclusively based on administrative registers, particularly data from the Civil Registration System.
	Sweden	✗	-	✗	-	✓	-	Population data in Sweden, including census data, is drawn from the ‘population registration’, which is the civil registration of vital population events administered by the Swedish Tax Agency.
	Finland	✗	-	✗	-	✓	-	The population census and the count of dwellings and real estate are carried out every 10 years and the data are drawn entirely from registers and administrative files.



Traditional model

Australia

The Australian Bureau of Statistics (ABS) conducts a census every five years using a traditional survey model.

Their most recent 2021 Census was primarily collected online, with paper census forms being available on request for any household. This survey has a response rate of 96.1 percent (a number that can be attributed to this census being held during national/regional COVID lockdown).

Although responses to Australia's traditional census model are high, the ABS is considering using more administrative data in future censuses, with the possibility of running a combined census model in 2031.

The independent review of Australia's 2021 census recommended consideration should be given to establishing sources of reliable administrative data to help address a population undercount for indigenous populations.

United Kingdom

In the United Kingdom, the census is run once every 10 years using a traditional survey approach.

The Office for National Statistics in England and Wales (ONS), and the Northern Ireland Statistics and Research Agency, last ran their census in 2021. The National Records of Scotland ran their last census in 2022. Across the United Kingdom, between 15-19 percent of census forms were submitted online. The return rate in England and Wales was 97 percent and in Scotland it was 89 percent.

In mid-2023, the ONS consulted publicly about their plans to evolve towards an administrative data-only census model.

Canada

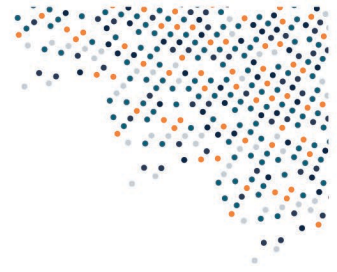
In Canada, a population census is run every five years. The survey has 17 questions about core demographics and provides an official count of the population.

In addition, one-quarter of all dwellings are selected to complete a 'long form census', which has a total of 55 questions and seeks information about topics, such as education, employment, disabilities, mobility, and transport. The sample for the long form census includes all dwellings of First Nations communities, Métis settlements, Inuit regions, and other remote areas.

United States

In the United States, a population census is run every 10 years. The survey has nine questions about core demographics (e.g. age, sex, race, Hispanic origin, and owner/renter status) and provides an official count of the population.

In addition, the American Community Survey is a continuous survey conducted every month of every year. It is sent to a sample of addresses (3 percent of households across the 50 states, District of Columbia, and Puerto Rico) and asks about topics not included in the Census, such as education, employment, internet access, and transportation.



Combined model

Italy

Italy runs an administrative-data-first census, supplemented by an annual census survey for a sample of the population (approximately 1.4 million households) across the country. The survey collects the main characteristics of the resident population and its social and economic conditions at a national, regional, and local level. It includes questions in areas such as education, employment, and mobility.

Switzerland

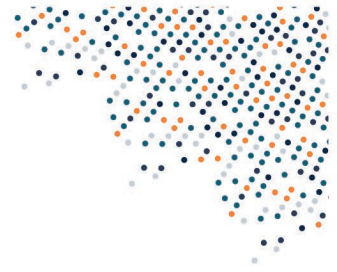
Switzerland uses a system of population and dwelling registers to provide population counts and some census attributes. Information not contained in a register is collected using additional sample surveys. This includes an annual census day attributes survey of around 200,000 people (local authorities can enlarge the sample for their area at their own cost); smaller thematic surveys (between 10 and 40,000 people) covering five rotating themes, changing annually; and an omnibus survey of 3,000 people on topical issues.

Belgium

The Belgium census is run by Statistics Belgium (Statbel). Census data is collected every 10 years. Collection is based on administrative data sources and surveys. Research is also being carried out into new data sources, such as big data. Statbel produces approximately one-hundred statistics, 75 percent of which are required by European law and others in the framework of the National Accounts Institute. About 60 percent of the statistics are compiled from administrative databases or other existing sources, and surveys (in whole or in part) are used to produce the remaining 40 percent of statistics.

Turkey

The Turkish census takes place every 10 years and uses a combined method. Population registers are used in combination with a large-scale household survey (approximately 2.4 million households) and a complete enumeration of institutional places.



Register-based model

Sweden

All population data in Sweden, including census data, is drawn from the “population registration”, which is the civil registration of vital population events (e.g. births, deaths, marriages, immigration, and emigration). Population data is available by county, municipality, sex, age, civil status, country of birth, and country of citizenship. The data is kept in the population registry, which is administered by the Swedish Tax Agency, who supplies the data to Statistics Sweden. The registry spans several centuries and is often used by genealogists.

Denmark

From 1981 and each year onwards, information that corresponds to a population and housing census is retrieved from registers, with Denmark being the first country in the world to conduct these censuses from administrative registers. The most important registers are the Population Register (Det Centrale Person register), the Building and Dwelling Register (Byggnings – og Boligregistret) and the Enterprise Register (Det Centrale Virksomheds register). The central statistical office, Statistics Denmark, is responsible for compiling these data. This information is available online in the Statbank Denmark.

Finland

In Finland, the population census and related count of dwellings and real estate are carried out every 10 years and drawn entirely from registers and administrative data. Census data includes population structure, families, dwellings and housing conditions, buildings and free-time residences, and employment.