

census

 Compton's by Britannica


Census workers make personal visits to follow up on questionnaires that were mailed in or to ...
*United States
 Census Bureau*

The process by which a government counts its people is called a census. Censuses—sometimes called enumerations—are also used to find out what kinds of people a country has, how they live, what they possess, how their economy functions, and much more.

There are many different kinds of censuses. Economic censuses may count imports and exports, sales and profits, hours of labor, and types of equipment and workers employed. A census of agriculture enumerates farms and farm products. Censuses of state and local

governments may gather data on taxes and other revenue, money spent, debts, and staffing. Censuses of housing, mining, and construction are also taken in many countries. All of these have much in common with the census of population, which is the focus of this article.

Censuses of Population

Population censuses are used mainly to survey and count the people living in different regions of a country. Some censuses randomly select a few households to ask numerous additional questions in a “long form” of the census; however, most people have to answer only a brief questionnaire.

The additional questions can be used to gather a wide range of information about people and their families, including data on age, sex, marital status, and relationship to the head of the household (for example, husband, wife, son, etc.). Some also ask questions about one's place of birth, citizenship, or native language, places of residence in recent years, educational level, military service, occupation, income, or disabilities. Questions about housing may seek information on the type and size of the dwelling (house or apartment), the amount of monthly rent or mortgage payment, and the number of bedrooms and bathrooms.

In many countries, questions regarding “race” and ethnicity are asked. However, different countries define and count races and ethnic groups in different ways. In many Latin American countries, for example, censuses recognize mestizo (mixed European and Native American) and mulatto (mixed European and African) groups.

The United States has no such mixed-race categories, and until the 2000 census each person was only allowed to list one race. European censuses are often very specific about European ethnic groups, using such terms as German-descended Hungarians or French-descended Italians. In the U.S. census all European-descended Americans are now counted together as “white” and all African-descended Americans are counted as “black” whereas immigrants from Latin America, Asia, and the Pacific Islands are also described in terms of their nationalities, such as Guamanian, Cuban, Vietnamese, or Samoan. A notable distinction in the U.S. census is the category of “Hispanic or Latino.” People who claim this status are also counted as “white,” “black,” or some other racial category.

How a Census Is Taken

An effective census uses a combination of techniques, including face-to-face interviews, mailed questionnaires, and telephone interviews. Detailed maps and computer technology are also important aids, given the widespread populations to be surveyed. Some census bureaus rely on estimates and statistical samples as well as direct enumeration. These techniques are discussed in a separate section below.

Even where mailed questionnaires are used, census takers still play vital roles in follow-up interviews and in contacting people who do not return questionnaires. Although some countries rely on police, postal workers, or other government agents to be census takers, many hire workers specifically for the job. People are more willing to share personal information if they do not have to worry about whether it will result in taxes, fines, arrest, or deportation. Census takers tend to do a better job when they can identify with the cultures of the people they are questioning—for instance, by speaking the same language or having similar ethnic characteristics. In an African American neighborhood, for example, African American census takers might be more effective than white enumerators.

A key element in census taking is timing. Censuses are often designed to be snapshots of a specific point in time, called a “census moment.” The day chosen for this moment should not be in a harsh-weather season or at the time of year when large numbers of people are away from their homes. In countries with large pastoral or nomadic populations, for example, it would not be wise to carry out a census when herders are in remote pastures. In countries relying mainly on face-to-face interviews, census takers may need many days to cover the whole area. Census bureaus that rely mostly on mailings, such as those of the United States and Canada, must send out their questionnaires before the census date so that recipients can send them back in time.

To aid in tracking trends, censuses should be taken on a regular schedule. Some are taken decennially (every 10 years) and others are taken every five

years; however, some are necessarily irregular.

Once the information has been gathered through questionnaires and interviews, workers in central processing centers receive, sort, and file the data. They then begin to analyze and edit the data. Weeks or months later, the completed census reports are submitted to the central government. Finally, they are published in books and digital (computerized) files for the general public.

Problems with Censuses

Censuses are expensive and difficult to organize, especially where there are harsh physical environments, people in isolated places, or regions torn by civil war, violent crime, or high levels of poverty. Such conditions often lead to undercounting (counting too few people). Many people are unwilling to talk to census takers because they fear or distrust the government.

Often, governments themselves handicap censuses by allocating insufficient money or time for census taking or by censoring census data. Moreover, political controversies often revolve around censuses, especially when ethnic or social groups believe they have been undercounted. Corruption among government agents is another major problem, especially when threats of taxes or military service are involved with censuses.

The Uses of Census Data

When census data is collected and analyzed, much can be learned about where groups of people live, how their lives may have changed in recent years, and what trends might be expected in the future. Census reports thus provide data for some of the most important decisions made by government planners, social scientists, and business firms. Many countries use censuses to ensure fair representation in government, so that states or provinces with larger populations receive a larger share of representatives in legislatures. Some national governments also use population figures to determine the amount of money they will send to different regions to assist with projects such as housing loans, medical assistance, and the building of new schools or government offices. Census data can be included in maps fairly quickly, especially with the use of a Geographic Information System (GIS) or other computer applications. Additional information can be derived by analyzing the answers on the census form, such as the percentage of people living in cities versus rural areas or the average incomes of different states.

Historians also mine census data. For example, historians of World War II have compared the number of Russians enumerated in 1939 (197 million) to the number in 1946 (168.5 million) and concluded that at least 25 million Russians were killed during that conflict. Censuses can also help show how societies have changed over the centuries. The first U.S. census in 1790, for

example, shows that the largest cities of the time (New York with nearly 33,000 people, and Philadelphia with 29,000 people) had populations comparable to those of mere towns today.

Estimates and Reports Between Censuses

In an effort to reduce costs, or to supplement the information gathered from regular censuses, many governments make population estimates based on “sampling” techniques—that is, counting people within limited areas of the country and then applying the results to larger areas.

Many countries update their statistics each year, or even more often, with estimates of populations and of economic and social data. There are many ways to calculate population estimates, such as through sampling techniques or by use of vital statistics—reports of births and deaths—and immigration and emigration data. Of course, vital statistics can be difficult to gather accurately in some regions, and many countries can only guess at their numbers of illegal immigrants.

History of the Census

It is not known when or where the first census took place, because censuses have developed slowly through time. The earliest censuses, which inventoried people and possessions, were generally faulty and of limited scope.

Ancient Censuses

In ancient times, censuses were commonly used to identify who could be taxed, forced to work for the government, or drafted into military service. Because most people wanted to avoid these obligations, early censuses tended to be inaccurate. In addition, few censuses enumerated women, children, and the elderly.

As early as 3800 BC, ancient Babylonians used thousands of clay tablets to register farm animals, products (like butter, milk, honey, and wool), and households. Over subsequent centuries, inventories were also made in Persia, ancient Egypt, and ancient Israel.

In China, the census of AD 2 tallied the population at nearly 60,000,000—far greater than any European population of the time. China had at least nine more censuses by AD 155. Statistical surveys and censuses have also been taken in India since ancient times.

In ancient Rome, citizens and their property were counted for tax purposes. This practice was extended to include the entire Roman Empire in 5 BC. After the collapse of the empire, however, some 1,500 years passed before regular census taking resumed in the Western world.

In the Americas, ancient Mesoamerican civilizations such as the Toltec and Maya may have taken some of the first censuses in what is now Mexico and Central America. It is not known whether any censuses were taken by the ancient Pacific Ocean islanders or the African peoples south of the Sahara, because no records exist.

Medieval and Pre-Modern Censuses

Few censuses seem to have been taken in Europe during the Middle Ages and Renaissance, though there were some notable exceptions. In France in AD 808, the emperor Charlemagne ordered the compilation of a type of census called the *Brevis Capitulorum*, or *Breviary*. However, the survey was untrustworthy due to the corruption of many nobles, clergymen, and government agents.

The Domesday Book, compiled in England by 1086, is regarded as the most outstanding statistical record of the Middle Ages. It was put together to provide William the Conqueror with information about the people and the wealth of his new domain. Using data from the Domesday Book, historians have estimated the English population to have been roughly 1,250,000 at that time.

In Italy, censuses on the island of Sicily may have begun as early as the 1200s, and some historians regard Sicily's 1501 census as the first genuine detailed survey of an entire population. Farther north, censuses were begun in the city of Venice in 1540, and occasionally the surrounding region was also enumerated. At about the same time, local clergy in England and France began to keep baptismal records of their parishioners, and later censuses would be influenced by their efforts.

China continued its long tradition of census taking under several rulers, including the Mongol emperor Genghis Khan in the early 1200s. A census in 1393, under the Ming Dynasty, listed nearly 10,653,000 households and 60,545,812 people—remarkably similar to the census count taken in AD 2. Occasional enumerations also took place in Russia, such as in 1257-58 in the Republic of Novgorod, when the Russian prince Alexander Nevsky supported a census by Mongol troops collecting tribute.

Across the Atlantic, Maya and Aztec city-states probably continued to make population counts until the Spanish conquest in the early 1500s. The Inca empire of South America undertook wide-ranging assessments in the 1400s and early 1500s. From their capital city of Cuzco, the Inca regularly sent royal agents to inventory people and supplies of grain, potatoes, and other goods throughout the Andes Mountains and coastal territories. They recorded data on hundreds of quipus, sets of colored cords with knots tied into them to signify different numbers. The Spanish and Portuguese colonial censuses of the next several centuries were seldom as systematic or accurate.

Modern Censuses

In the 17th and 18th centuries, censuses gradually became more accurate. Some censuslike surveys began in capital cities and later spread to wider areas. In London, England, so-called Bills of Mortality were first published on a weekly basis in 1629, recording the number of dead, their estimated ages, and presumed causes of death. In 1670 officials in Paris, France, began to register baptisms, births, and burials on a regular basis—information that is now called vital statistics. France's colonies of New France (Quebec) and Acadia (Nova Scotia) in North America completed 16 censuses between 1666 and 1754. New France's first census showed a total of 3,215 European colonists that were listed by name, age, sex, marital status, and occupation. Native Americans were not counted.

Many modern European censuses can trace their roots to the 1700s. Prussia held a census in 1719, and censuses occurred in several German states from 1742 onward. Great Britain's first census, in 1801, counted some 8,900,000 people; 50 years later 17,900,000 were enumerated. Although France tried to take a census in 1800 and 1806, the results were untrustworthy. The first relatively reliable French census was taken in 1836. Italy held its first complete census in 1861, after it was unified under King Victor Emmanuel. Before that, several of the individual states had conducted their own enumerations, including those of Sardinia in 1773 and 1795, Parma in 1770, and Tuscany in 1766.

The British colonies of North America had also conducted their own censuses before they were united. Article I, Section 2 of the United States Constitution adopted in 1789 requires an "enumeration" to be taken every 10 years to determine how many representatives each state is entitled to send to Congress (see United States Constitution). The first such census took place in 1790. The census of 1790 counted some 3,900,000 people, including nearly 700,000 African slaves. The U.S. census was remarkable because of the large size of the country and the great effort that was made to obtain data on characteristics of the population. Since 1985, the U.S. has taken mid-decade censuses on years ending with "5," though only the censuses in years ending with "0" are used for Congressional apportionment.

In India the practice of census taking in modern times dates back to the period during which the British controlled the region. British statisticians periodically made surveys of several cities and states beginning in about the early 18th century. In the state of Madras the government began taking censuses every five years beginning in 1851. In 1867 work began on India's first dominion-wide census, which was finally completed in 1872. Since 1881, complete, systematic population censuses have been taken every 10 years.

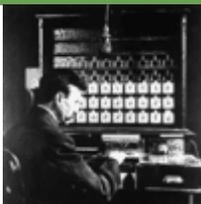
Russia's Czar Peter the Great was responsible for a censuslike tax list, the

“First Revision” of which was completed in 1724. However, the military officers who took the census also forced people to shelter soldiers—giving people ample reason to avoid being counted. Several other revisions were made through the 1700s and 1800s, but despite these efforts, Russia did not carry out its first truly modern census until 1897. Although Japan had its first census in 1721, its first systematic and reliable census was in 1920. Since then, Japan has taken detailed censuses every 10 years, and simpler versions every five years.

In Canada, a Census Act was passed in 1870 in order to apportion seats in the House of Commons, and the first census after Confederation was taken in 1871. Decennial censuses were first taken in Canada in 1901. In the early 20th century additional five-year censuses became necessary in the rapidly growing Prairie Provinces (Manitoba, Saskatchewan, and Alberta). In 1956 these were extended to the whole country. However, censuses in years ending in “6” are less detailed than decennial censuses, taken in years ending in “1.”

Although China carried out many censuses beginning in ancient times, it often suffered from unreliable information. This changed in 1741, when the emperor Qianlong of the Qing (Manchu) Dynasty began a new census system that counted more than 143,000,000 people. However, the Chinese census soon became ineffective once again because of corruption and violence. Torn by civil unrest and warfare during the 1800s and early 1900s, China was not able to organize a comprehensive, modern national census until 1953, a few years after the Communist government unified the country. The 1953 census was a landmark, because it succeeded in counting more than 580,000,000 people—about one fifth of the world's population at the time. In 1982 China's population exceeded 1 billion for the first time. In 2000 an army of 6 million census takers (more than the total populations of many countries) canvassed the country and tallied more than 1,260,000,000 people—still about one fifth of the world's population.

Gradually census takers throughout the world learned to improve their methods. As countries conducted more and more censuses they refined their questions to gather more effective data. For example, the first U.S. census did not contain questions about occupation, birthplace, marital status, or exact age. And it was not until 1850 that the U.S. census began to focus on individuals rather than simply on households. As better ideas and systems developed, these advances were shared with other countries.



A census worker

The amount of data generated by censuses has been growing with each census. From the challenge of processing that data have come advances in technology. Mechanical tabulation machines, the forerunners of modern calculators, were used starting with the U.S. census of 1870. About a decade later, Census Bureau

operates one of
the first
automated
machines used to
tabulate
information for
the ...
*IBM Corporate
Archives*

employee Herman Hollerith created electric tabulating machines that greatly reduced processing time. Hollerith's work led to the founding of the IBM Corporation. UNIVAC, a giant mainframe computer, tabulated results from the 1950 census, and from the 1960s more advanced types of mainframes, scanners, and magnetic tapes were developed. By the 1990s most census bureaus in the world were doing work on desktop computers. The Internet is now used to publish the censuses of dozens of countries, and GIS and GPS (global positioning systems) boost the accuracy and availability of maps used in censuses.

Since the 1940s many countries have planned and conducted censuses with the aid of the United Nations. But even in the 21st century, as the world's population far exceeds 6 billion people, many poorer countries are unable to make regular enumerations.

MLA style:

"census ." *Compton's by Britannica. Encyclopædia Britannica Online School Edition.* Encyclopædia Britannica, 2010. Web. 3 Feb. 2010
<<http://www.school.eb.com.proxygsu-k12d.galileo.usg.edu/comptons/article-9273577>>.

APA style:

census . (2010). In *Compton's by Britannica*. Retrieved February 3, 2010, from Encyclopædia Britannica Online School Edition:
<http://www.school.eb.com.proxygsu-k12d.galileo.usg.edu/comptons/article-9273577>