

Science matters for the census

In 1787, James Madison conceived of a scientific method to distribute political power in the United States. He proposed a decennial census of population to ensure that the membership of the House of Representatives would reflect the pattern of growth of the fledging nation. From that first census emerged a whole system of social and economic measurement serving the country. As the 2020 U.S. census approaches, the science in the census—and the value of the census for science—can easily be threatened by politics.

How does the census matter for science? For most of the policy implications of the biomedical sciences, the census provides the benchmark information. Cancer registries produce their epidemiological importance when they are matched to population distributions. When the higher mortality of middle-aged whites was discovered, its value was discerned only by comparing death counts to the population totals in different age groups. Assessing the harmful impacts of toxic waste in water systems and patterns of water scarcity rests on population distributions. Because the social sciences explicitly focus on human behavior, their studies cannot proceed very far without a decennial census. It is unrivaled in revealing the variation in racial, cultural, ethnic, and age groups at the most granular level possible. Social scientists can track the emergence of new groups at very fine geographical detail, including congressional jurisdictions, place boundaries, and numerous other jurisdictional boundaries.

However, just as the census matters for science, so too does science matter for the census. The scientific method requires objectivity in gathering data, devotion to explicit standards for findings, commitment to wide dissemination of results, and norms of self-criticism regarding conclusions. Many of these principles are foundational to the decennial census. Objective measurements, tested through years of randomized

experiments, are key. Whenever possible, data-collection methods attempt to remove bias in responses due to nonobjective influences. Unusual effort is made to attain full participation so as to reduce self-selection biases. Documentation of data processing permits external critique. Formal estimation of the errors remaining in the collected data is presented, subjecting the census to open critique. Scores of evaluation studies are conducted post-census to provide insight into the weaknesses of the census. All of this self-criticism is freely distributed to the public.

Mistaking the decennial census as only an act of politics, solely useful for updating the distribution of political power, threatens the scientific basis of its credibility. The scientific components of the census should not be undermined by the last-minute addition of untested questions (as is currently proposed by the U.S. Department of Justice), a lack of public-communication campaigns that aid the participation of newly arrived residents (which arises from insufficient funding), or attempts to politicize the act of census taking.

Census data are used by scientists to draw representative samples for social and medical research and analyses and by the business sector to identify areas with different levels of demand for goods and services. It permits forecasts of residential displacement, rural to urban migration, social and political cleavages, and other features of the society and the economy. In the United States, the census is the only event in which everyone is asked to participate. In that sense, it is a national ceremony, renewing the population picture and providing objective evidence for the growth of subgroups. Although the constitutional origin of the U.S. census was explicitly political, the process has been protected from political interference and propelled forward by allegiance to scientific norms. Let's keep it that way.

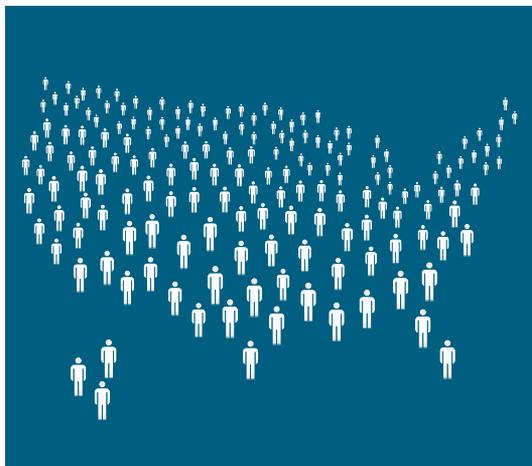
—Robert M. Groves and Steven H. Murdock



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Science

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