

## **Demographic Data for Effective Programming: An Update on Sources and Successful Practice**

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**Abstract:** *This article details recent changes in demographic data released by the US Census Bureau and the implications for use among Extension educators. We discuss updates to demographic data products and the keys for their successful use. Focus is on the American Community Survey (ACS). Users must adopt new practices to effectively use the ACS, which now provides the most current and reliable demographic data for communities in the United States.*

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This article responds to recent changes in federal data on community demographics essential for the development of effective Extension programs (see Curtis, Veroff, Rizzo, & Beaudoin, 2012). The US Census Bureau has redesigned the collection and delivery of demographic data that are necessary to understand the population dimension of community processes, whether economic, environmental, or civic. The American Community Survey (ACS) has replaced the decennial census long-form data (known as Summary File 3) that provides economic and social data vital to well-targeted programs. Important changes accompany the shift to the ACS, and old practices will not apply to the new data that became available for all places in late 2010.

### **What Is the ACS?**

The ACS has its roots in the idea that data from the decennial census became old and stale by the midpoint of the decade. The Census Bureau was challenged to develop a way to collect data that could be refreshed every year. Moreover, the Census Bureau was challenged to deliver fresh data for even the smallest communities with the same detail as the decennial census. With these challenges in mind, the ACS was developed.

The ACS is not a head count. The Census Bureau still uses the decennial census short-form to count the population and will continue to work between censuses with states to get annual

estimates of the population of states and counties. Because it does not count the population, the ACS is not a means of apportioning Congressional seats or creating legislative districts. It is designed to report social, economic, and housing information every year to show trends and changes at the community level.

The ACS provides new demographic profiles every year for states, cities, counties, metropolitan areas, and population groups of 65,000 or more. For smaller areas like rural jurisdictions and neighborhoods, it takes 3 to 5 years to accumulate enough data to provide estimates similar to those that previously came from the census long-form. Multi-year estimates are updated every year. As of December 2010, all communities will have updated profiles that capture trends and changes every year.

## Keys for Successful Use

There are three important features of the ACS that set it apart from the decennial census and must be kept in mind for successful use in Extension programming.

### Period Estimates

The ACS collects data in all 12 months of the year, and then, in simplest terms, the data is averaged over the period. Multi-year estimates of 3 or 5 years use a moving average concept to estimate characteristics for pooled months. For example, the 2009 ACS data describe the population and housing characteristics of an area for the period January 1, 2009 through December 31, 2009, not for any specific day or month within the year.

While 1-year estimates include information from independent monthly samples collected over a 12-month period, 3-year estimates represent data from independent samples collected over a 36-month period, and 5-year estimates include data collected over a 60-month period. For example, the 2007-2009 ACS 3-year estimates describe the characteristics of an area for the period January 1, 2007 through December 31, 2009.

The estimates are not calculated as a simple average of monthly or annual estimates. Because multi-year estimates are period estimates, they must be labeled to indicate the full data collection period. An example of correct labeling for a multi-year estimate based on data collected from 2007 through 2009 is: "The child poverty rate in Waushara County, Wisconsin for the 2007-2009 period was 13.8%." Reporting it as a "2008 average" would be inaccurate.

A geographic area will rely on multi-year estimates unless it has a population greater than or equal to 65,000. Additionally, multi-year estimates are preferred when the margins of error (discussed below) for 1-year estimates or for small population groups are larger than desired. An example of a small population group is "Families with Female Householder with own Children under 18." Ultimately, data users must consider the tradeoffs between using 1-year estimates, which are more current, versus multi-year estimates, which are more reliable.

### Estimate Quality

The margin of error (MOE) is defined as a measure of the precision of an estimate at a given level of confidence. The confidence level of an MOE indicates the likelihood that the difference between the true population value and the sample estimate is less than or equal to the MOE. ACS estimates are published with their MOEs at the 90% confidence level, indicating there is a 90% probability that the estimate and the true value differ by no more than the value of the MOE. This means we can be 90% certain that the range established by the MOE contains the true value. MOEs are used to assess the reliability of estimates and whether differences between estimates are significant when comparing different communities or the same community in different periods.

It is possible to construct MOEs with higher levels of confidence (i.e., 95% or 99%). Instructions on adjustments can be found in the technical appendices in *The ACS Compass Products Handbooks* (US Census Bureau 2008) available on the ACS web site <[http://www.census.gov/acs/www/guidance\\_for\\_data\\_users/handbooks/](http://www.census.gov/acs/www/guidance_for_data_users/handbooks/)>.

### Residence Rule

The decennial census counts people where they are on April 1 and uses a "usual residence" rule. In contrast, the ACS uses a "current residence" rule; people are counted based on where they are when surveyed, as long their stay is not temporary or less than 2 months. Combined with the monthly nature of the survey, large differences can emerge between decennial data and ACS data for places with seasonal populations (e.g., college and snowbird destinations). However, the ACS will yield better estimates of characteristics of seasonal populations because population characteristics are captured throughout the year, not on a single day.

### Accessing the ACS

The ACS is publicly available at no cost through the on-line resource American FactFinder <<http://factfinder.census.gov>>. From this data portal, users can access additional surveys and data programs sponsored by the Census Bureau, generate basic community profiles, and download data for detailed analysis and reporting.

### References

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