2. CONSIDERATIONS WHEN WORKING WITH ACS DATA

Considerations When Working With ACS Data

The greatest strength of the American Community Survey (ACS) is that it provides access to estimates on an annual basis, but this also results in an array of options that affect how data can be used effectively by state and local governments.

Most local governments represent relatively small geographic areas that must rely on ACS 5-year estimates. Of the approximately 69,000 states, counties, cities, towns, townships, villages, other minor civil divisions, and census designated places, more than 90 percent rely on 5-year estimates exclusively. This is because most local governments are small, serving geographic areas with fewer than 20,000 people.

Among counties and county equivalents, 41 percent rely on 5-year estimates exclusively, while 26 percent meet the 65,000-population threshold needed to receive 1-year estimates.[10] Data users interested in ACS estimates for areas with populations of 65,000 or more have a choice between the 1-year and 5-year data series. Which data should be used?

The 1-year estimates for an area reflect the most current data but they have larger margins of error (MOEs)—indicating less reliability or precision—than the 5-year estimates because they are based on a smaller sample. The 5-year estimates for an area have larger samples and smaller MOEs than the 1-year estimates. However, they are less current because the larger samples include data that were collected in earlier years. The main advantage of using multiyear estimates is the increased statistical reliability for smaller geographic areas and small population groups.

TIP: In the end, what makes the most sense is a matter of judgment regarding the balance between the period covered by an estimate and its level of reliability or precision. The key is to strive to use only reliable estimates, where the period covered best suits the question at hand.

Many state and local government data users focus on small geographic areas such as census tracts and block groups. Even with 5 years of pooled data, ACS estimates for these small areas often have large MOEs.

TIP: State and local data users need to use good judgment by paying attention to measures of reliability—such as MOEs—that indicate whether ACS data are useful "straight out of the box," or whether some type of data aggregation (e.g., combining geographic areas or data categories) is required to increase reliability.

For example, New York City's Department of City Planning aggregates census tracts into "Neighborhood Tabulation Areas" to increase data reliability. ACS data are then provided for these neighborhoods—rather than individual census tracts—to support local government decision-making.[11]

Finally, there is the issue of how to use multiyear characterizations of an area to measure change over time. As the ACS program has moved forward, a whole series of multiyear estimates for various time intervals has become available.

TIP: Data users now have access to nonoverlapping ACS 5-year estimates that have increased the value and utility of the data for monitoring trends in local communities.

However, it is more challenging to capture rapid change in areas where only ACS 5-year estimates are available. For example, it was very difficult for local officials and planners to accurately assess changes in socioeconomic characteristics accompanying expanded drilling in the Bakken oil fields in North Dakota—where there was a large influx of male workers starting in the early 2000s—because the affected counties only received 5-year, rather than 1-year, ACS estimates.

For more information about ACS multiyear estimates and sampling error, see the sections on "Understanding and Using ACS Single-Year and Multiyear Estimates" and "Understanding Error and Determining Statistical Significance" in the U.S. Census Bureau's handbook on *Understanding and Using American Community Survey Data: What All Data Users Need to Know*.[12]

[10] Percentages include population totals for municipios in Puerto Rico. For more information, see the Census Bureau's ACS Web page on Areas Published, available at <www.census.gov/programs-surveys/acs/geography-acs/areas-published.html>.

[11] To explore differences in ACS data reliability between census tracts and Neighborhood Tabulation Areas, see NYC Department of City Planning's ACS data aggregation tool, NYC Population FactFinder, <https://popfactfinder.planning.nyc.gov/>.

[12] U.S. Census Bureau, *Understanding and Using American Community Survey Data: What All Data Users Need to Know,* <www.census.gov/programs-surveys/acs/guidance/handbooks/general.html>.

Using ACS Data for Population and Housing Counts

Many state and local governments need reliable data on the number of people and housing units in their jurisdiction and how those numbers have changed over time.

TIP: Such users need to understand that the ACS was designed to provide estimates of the characteristics of the population, not to provide counts of the population in different geographic areas or population subgroups.

Therefore, data users are encouraged to rely more upon noncount statistics, such as percent distributions or averages, when using ACS estimates.

The Census Bureau's Population Estimates Program produces and disseminates the official estimates of the population for the nation, states, counties, cities and towns, and estimates of housing units for states and counties.[13] For 2010 and other decennial census years, the decennial census provides the official counts of population and housing units.[14]

The ACS uses a weighting method to ensure that estimates are consistent with official Census Bureau population estimates at the county level by age, sex, race, and Hispanic origin—as well as estimates of total housing units. ACS 1-year estimates are controlled to population and total housing unit estimates as of July 1 of the survey year, while ACS 5-year estimates are controlled to the average of the July 1 population and housing unit estimates over the 5-year period.

Starting with the 2009 survey, ACS estimates of the total population of incorporated places (self-governing cities, towns, or villages) and minor civil divisions (county subdivisions, in 20 states where they serve as functioning governmental units) are also adjusted so that they are consistent with official population estimates. However, ACS data for other statistical areas, such as Public Use Microdata Areas (PUMAs) or census tracts, have no control totals, which may lead to larger MOEs of population and housing unit estimates than in areas of similar size with control totals. In such cases, data users are again encouraged to rely more on noncount statistics, such as percent distributions or averages.

For more information about ACS methods, visit the Census Bureau's Design and Methodology Report Web page.[15]

[13] U.S. Census Bureau, Population and Housing Unit Estimates, <www.census.gov/popest/>.

[14] See, for example, the U.S. Census Bureau, Census of Population and Housing, CPH-2. Population and Housing Unit Counts report series, <www.census.gov/prod/www/decennial.html>.

[15] U.S. Census Bureau, American Community Survey (ACS), Design and Methodology Report, <www.census.gov/programs-surveys/acs/methodology/design-and-methodology.html>.