Planning Information Center
Census Data Bulletin

RHODE ISLAND
STATEWIDE
PLANNING
PROGRAM

Rhode Island Statewide Planning Program
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Where to Find the Numbers You Need: Census and ACS

From the number of seniors in a neighborhood to the number of commuters on our roads, datasets help planners assess current needs and track change over time. However, it can be a challenge to harness available data, understand the merits and disadvantages of a particular dataset, and use imperfect data in an appropriate way.

As the Rhode Island lead of the Census Bureau's State Data Center Program, Statewide Planning disseminates Census data through a network of agencies, universities, and libraries and fields questions from a diversity of data users. This Data Bulletin discusses the answers to questions we hear most frequently, including differences between the Census and the ACS, how to interpret and report ACS margin of error, and where population estimates come from.

Decennial Census versus ACS

People seeking demographic data often confuse the offerings of the Decennial Census, often referred to simply as "the Census," and the American Community Survey, or ACS. Both datasets are produced by the U.S. Census Bureau. A simple tip from the Census Bureau explains the major difference between the two: The Decennial Census shows the *number* of people who live in the U.S. and the ACS shows *how* people live.

Decennial Census

The Decennial Census, conducted every 10 years, is a 100% count of all residents. The Decennial Census provides basic characteristics of the population, such as age, sex, race and Hispanic/Latino ethnicity. Some questions that the Census will help you answer include:

- How many people live in a particular Census tract, block, or block group?
- What share of residents in my town are over 65?
- How has the racial makeup of my town changed in the past ten years?

KEY TERMS

Census a survey that attempts to reach every individual of a population, such as the 2010 Census.

Sample survey a survey that reaches a random subset of the population in order to draw conclusions about the entire population, such as the American Community Survey. The findings of a sample survey lead to an **estimate**

Margin of error a likely range of possible true values, usually defined by a specific likelihood, such as 90%. The larger the margin of error, the less confidence one should have that an estimate is close to the true value

American Community Survey

The American Community Survey, which replaced the former Census "Long Form" or SF3 dataset, produces 1-, 3- and 5-year "period estimates" from ongoing surveys that ask random samples of residents about topics ranging from occupation to education to language spoken at home. Examples of questions that the ACS will help you answer include:

- How many people in my town have less than a high school education?
- In Rhode Island, what share of the foreign-born population works in a particular industry group like construction or public administration?
- How many people moved to Rhode Island from another region of the country in the past year?

By surveying people on a continual basis, the ACS provides timely data, updated each year for every geography. The tradeoff is that smaller geographies must use aggregate estimates from three or five years.

Estimates are notated with the range of years during which the sample surveys occurred. For example, an estimate generated from sampling a population during the three years 2009, 2010, and 2011 would be notated as a "2009-2011 3-year estimate." For statewide data or

When to use 1-year, 3-year, or 5-year estimates

You must think about the balance between currency (or timeliness) and sample size/reliability/precision

1-year estimates	3-year estimates	5-year estimates
12 months of collected data	36 months of collected data	60 months of collected data
Data for areas with populations of 65,000+	Data for areas with populations of 20,000+	Data for all areas
Smallest sample size	Larger sample size than 1-year	Largest sample size
Less reliable than 3-year or 5-year	More reliable than 1-yr; less reliable than 5-yr	Most reliable
Most current data	Less current than 1-yr; more current than 5-yr	Least current
Best used when	**Best used when**	**Best used when**
Currency is more important than precision	More precise than 1-yr, more current than 5-yr	Precision is more important than currency
Analyzing large populations	Analyzing smaller populations Examining smaller geographies because 1-year estimates are not available	Analyzing very small populations Examining tracts and other smaller geographies because 3-year estimates are not available

larger local geographies, 1-year data will provide the most timely data, while 5-year data will provide the most accurate data (smallest margin of error).

Margins of Error

The greatest challenge to using ACS data is working with margins of error. Because the ACS uses a sample survey to derive conclusions about a larger population, the estimates have an associated margin of error. The ACS margins of error use a 90% confidence interval; in other words, there is a 90% chance that the true value is within the range created by adding or subtracting the margin of error to or from the estimate. When using ACS data, always consider the possibility of a value at the upper end of that range and at the lower end.

A rule of thumb suggested by the Census Bureau is not to use estimates for which there is a margin of error greater than one quarter of the estimate. In some cases, this may not be possible, so you should let any end users or audiences know that the margin of error for a particular estimate is very high.

Margins of error can also help you determine whether two estimates are significantly different from one another. For example, you may want to know if the estimated share of households with at least one senior citizen is significantly different in Rhode Island versus Massachusetts. An Excel spreadsheet that calculates statistical significance using margin of error is available on the Planning Information Center website (link available in the "To Learn More…" box). It is strongly encouraged to compare 5-year estimates to 5-year estimates, 3-year estimates to 3-year estimates, and 1-year estimates to 1-year estimates. If you are looking at change over time, select period estimates with years that do not overlap one another.

Population Estimates

The Census also produces population estimates each year for states, counties, and municipalities. The population estimates use demographic and housing data provided by state and local government to estimate change in populations. The population estimates are provided in aggregate for cities and towns, and are available by age, sex, race, and Hispanic origin for counties, states, and the nation.

TO LEARN MORE…

To explore Census and ACS data, visit the U.S. Census website, *American FactFinder*. The Census also hosts informational resources about the ACS at http://www.census.gov/acs/www/

U.S. Census Bureau's State, County, and Subcounty Estimates are available online at http://www.census.gov/popest/data/index.html.

The Rhode Island State Data Center, located in the Statewide Planning Program, hosts online resources on demographic data at http://www.planning.ri.gov-/geodeminfo/data/index.php, including a calculator to determine if two estimates are significantly different (under Census and ACS data).

For further information about R.I. State Data Center resources, contact Vincent Flood at vincent.flood@doa.ri.gov or Amanda Martin at amanda.martin@doa.ri.gov.