

Introduction to the American Community Survey (ACS)

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American Community Survey Office

Slides are available at census.gov/data/academy/webinars/2024/intro-to-the-ac.html

This webinar is being recorded. The recording will be available after the webinar.

About the U.S. Census Bureau

The U.S. Census Bureau is the federal government's largest statistical agency. Our mission is to serve as the nation's leading provider of quality data about its people and economy.



The U.S. Census Bureau conducts more than 130 surveys and programs each year, including

- **The Decennial Census** – the once-a-decade population and housing count of all 50 states and U.S. territories
- **The American Community Survey** – the ongoing, annual survey of the social, economic, housing, and demographic characteristics of the nation's population
- **The Economic Census** – the official five-year measure of American businesses
- **The Census of Governments** – identifies the scope and nature of the nation's state and local government sector

The American Community Survey

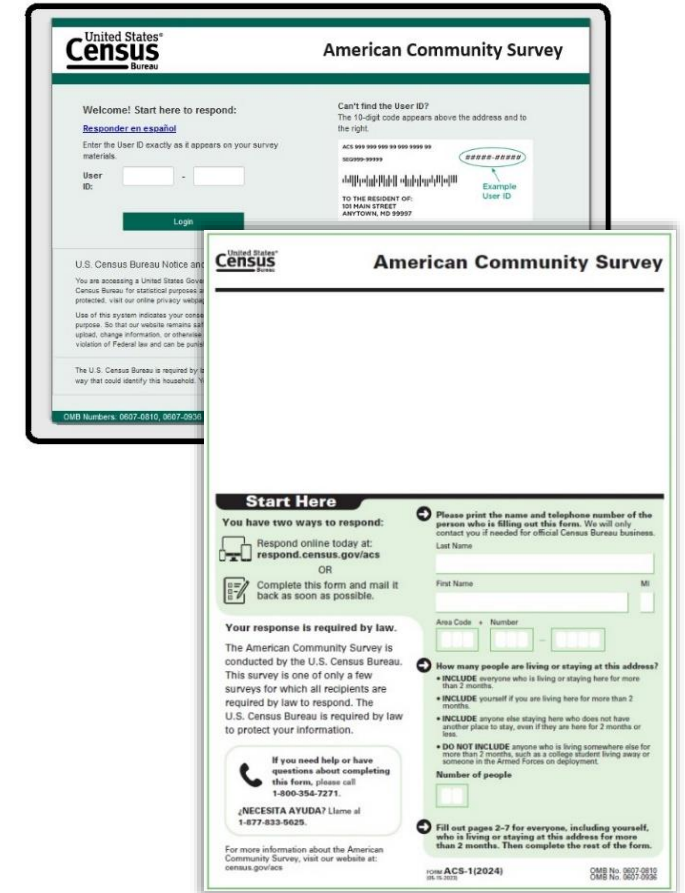
Outline

- **American Community Survey (ACS) basics**
- ACS data products
- ACS data tools and demonstrations
- Resources for learning more

The American Community Survey

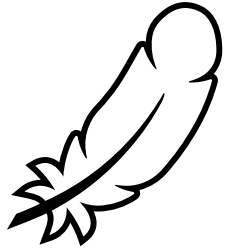
The Foundation

- The American Community Survey (ACS) is the premier source of detailed information about the nation's people and housing.
- Surveys **3.5 million** addresses to produce annual social, economic, housing, and demographic estimates for communities throughout the U.S. and Puerto Rico
- Covers **40+ topics** — Collects detailed information previously collected by the decennial census each decade
- Helps inform how trillions of dollars in federal funds are distributed each year, supports over **300** evidence-based federal government uses
- Data released the year after collection as 1-year and 5-year estimates
- Officially started in 2005 (1-year estimates = 2005; 5-year 2005-2009)



The American Community Survey

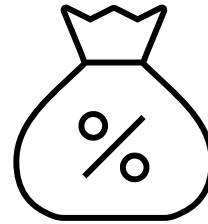
Who Uses the ACS



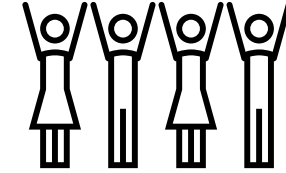
Amer. Indian & Alaska
Native Populations



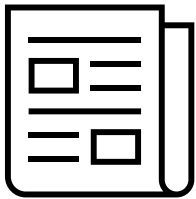
Businesses



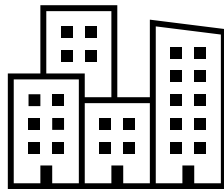
Federal
Government



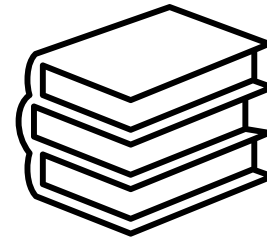
General Users



Media



Nonprofits



Researchers

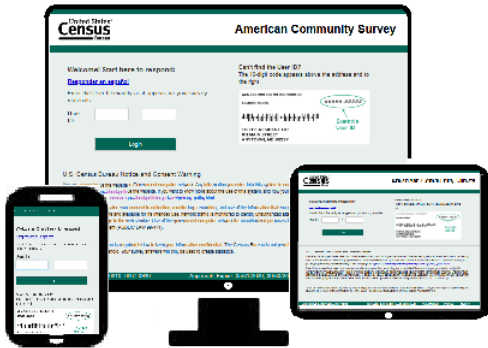


State & Local
Government

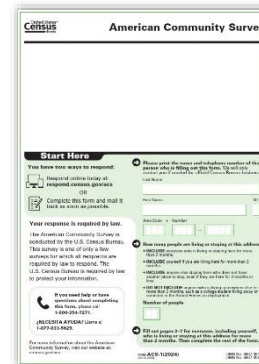
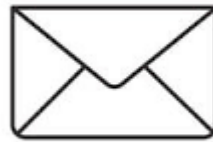
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The ACS Data Collection Process

Online Response



Paper Questionnaire



Computer-Assisted Interviewing In-Person and Telephone



Self-Response
(about 8 weeks)

Nonresponse Follow-up
(about 4 weeks)

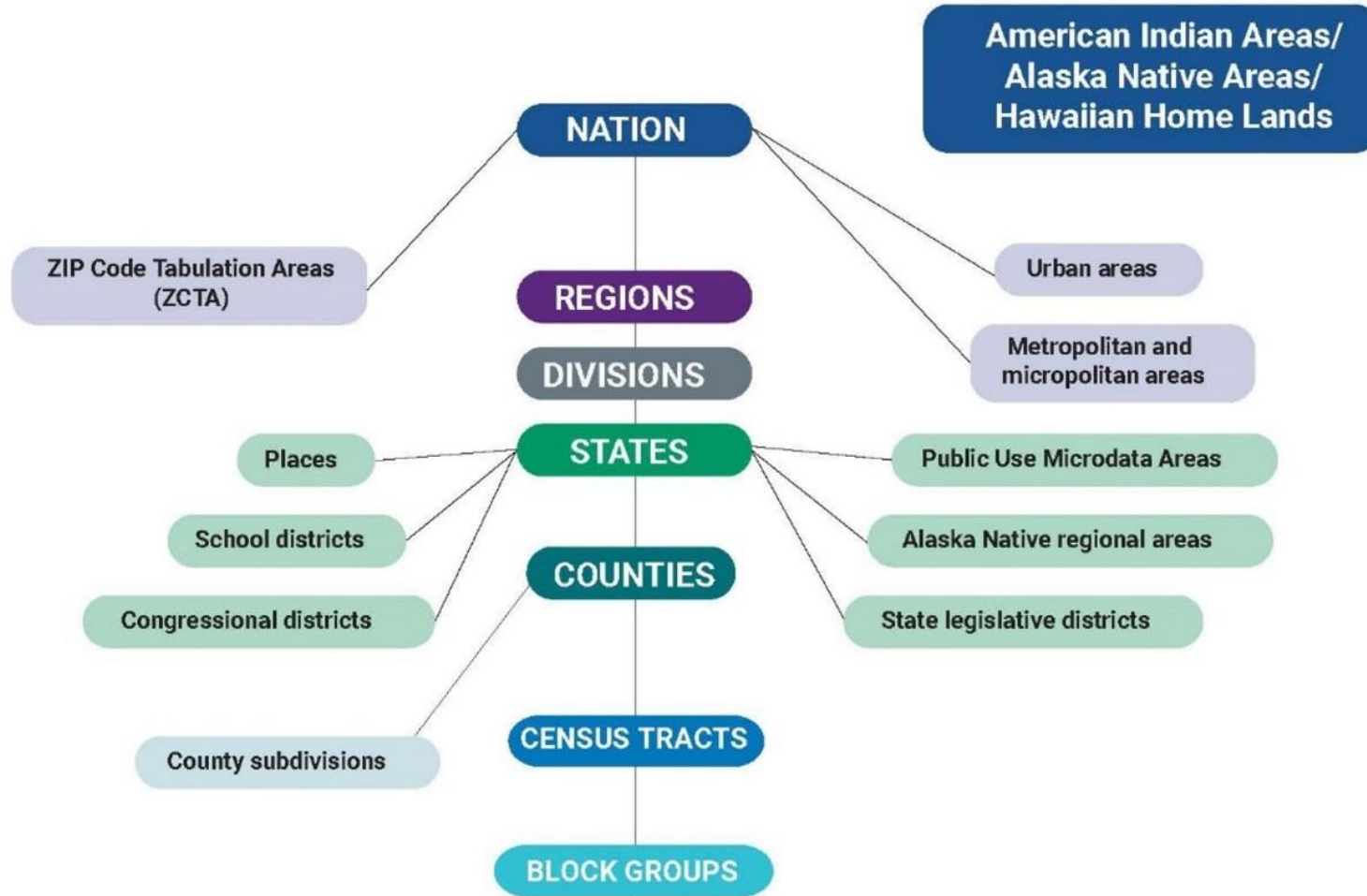
The American Community Survey

Content Overview

POPULATION		HOUSING
SOCIAL Ancestry Citizenship Citizen Voting Age Population Disability Educational Attainment Fertility Grandparents Language Marital Status Migration School Enrollment Veterans	DEMOGRAPHIC Age Hispanic Origin Race Relationship Sex ECONOMIC Class of Worker Commuting Employment Status Food Stamps (SNAP) Health Insurance Income Industry & Occupation Weeks Worked	Computer & Internet Use Costs (Mortgage, Rent, Taxes, Insurance) Heating Fuel Home Value Occupancy Plumbing/Kitchen Facilities Structure Tenure (Own/Rent) Utilities Vehicles Year Built Year Moved In

The American Community Survey

Selected Census Geographic Concepts



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Selected Census Geographic Concepts

STATE



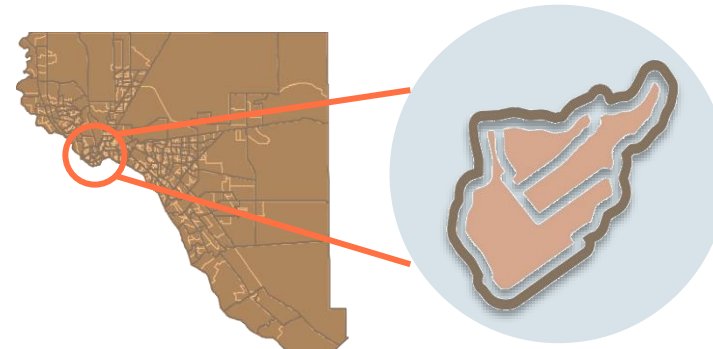
COUNTY



CENSUS TRACT



BLOCK GROUP



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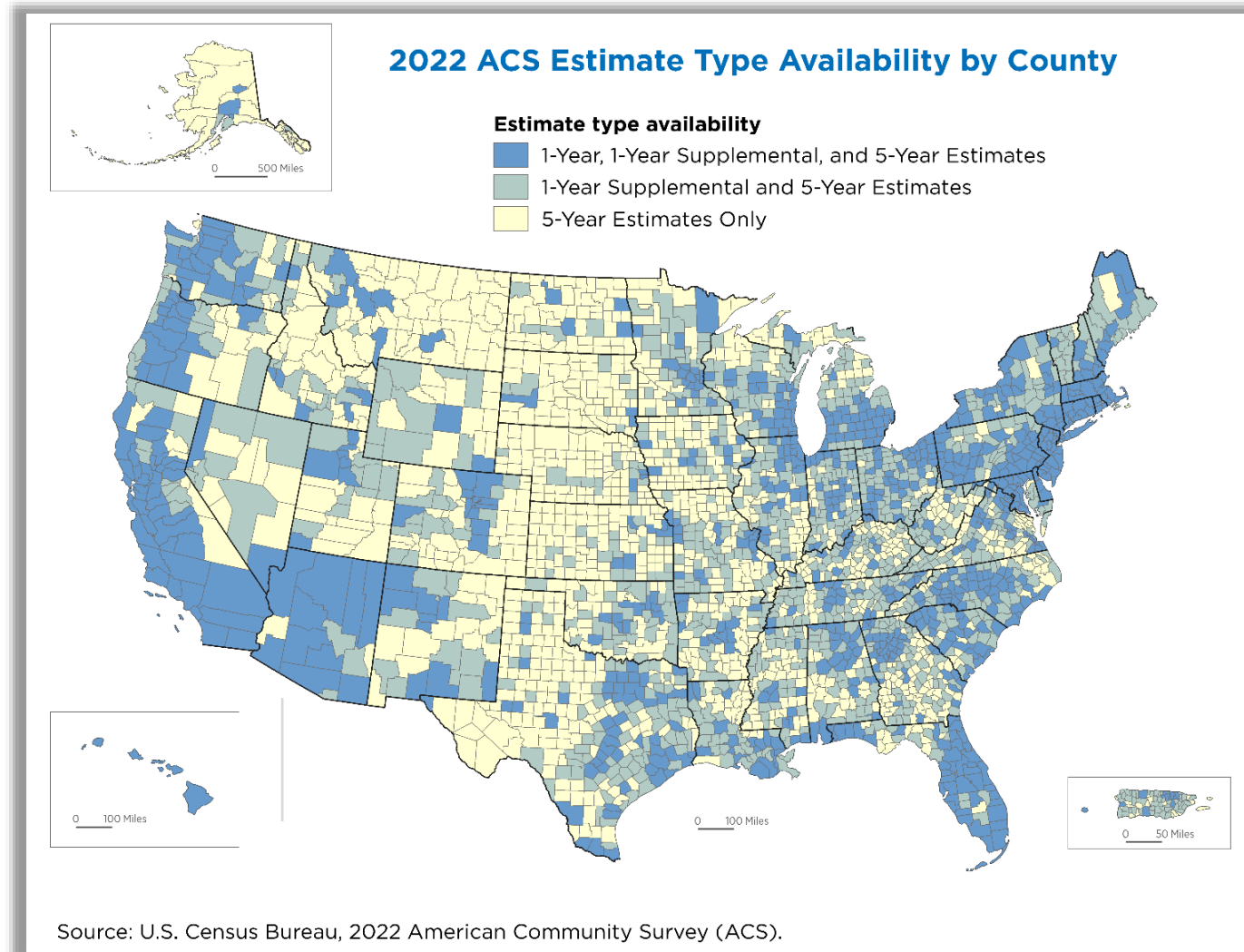
Availability of Data Products

Estimated Population of Geographic Area	1-Year Estimates	1-Year Supplemental Estimates	5-Year Estimates
65,000 or more	X	X	X
20,000 to 64,999		X	X
Less than 20,000			X
Typical Release Month (Occurs in the calendar year after data collection)	September	October	December
2023 ACS Data Releases	Sept. 12, 2024	October 17, 2024	December 12, 2024

census.gov/programs-surveys/acs/news/data-releases.html

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Estimate Type Availability by County



The American Community Survey

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Data Product Types

Pre-Tabulated Profiles and Tables

- Profiles contain the most frequently requested social, economic, housing, and demographic data summarized for a single geographic area
 - Profiles Include: Data Profiles (DP), Comparison Profiles (CP), Selected Population Profiles (S0201), and Narrative Profiles
- Tables offer a precise or detailed view of a subject
 - Tables Include: Detailed Tables (B or C), Supplemental Tables (K), Subject Tables (S), Ranking Tables (R), and Geographic Comparison Tables (GCT)

Public Use Microdata Sample (PUMS) Files

- Allows users to create custom tables that are not available through pre-tabulated data products

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Table/Profile Numbering

B06004APR

- B=Data Product Type (Base Table)
- 06=Subject (Place of Birth)
- 004=Sequential Number (2 or 3 digits)
- A=Race/Hispanic Origin (White Alone)
- PR=For Puerto Rico Geographies Only

The American Community Survey

What is the Margin of Error (MOE)?

Definition: An MOE is a measure of the possible variation of the estimate around the population value.

- At a given confidence level, the estimate and actual population value will differ by no more than the MOE.
- 90% confidence level is the Census standard and ACS MOEs are provided in the same unit as the estimate.

Example: How many males under age 5 live in WY?

$$\text{Lower bound} = 16,772 - 440 = 16,332$$

$$\text{Upper bound} = 16,772 + 440 = 17,212$$

We are 90% confident the true number of males under age 5 in Wyoming falls **between 16,332 and 17,212**.

	Wyoming	
Label	Estimate	Margin of Error
▼ Total:	577,929	*****
▼ Male:	295,835	±617
Under 5 years	16,772	±440
5 to 9 years	19,419	±840
10 to 14 years	19,708	±809
15 to 17 years	12,008	±292
18 and 19 years	8,375	±352
20 years	3,961	±582

The American Community Survey

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Selected Ways to Access Data



data.census.gov



My Congressional District



QuickFacts



OnTheMap
for Emergency Management



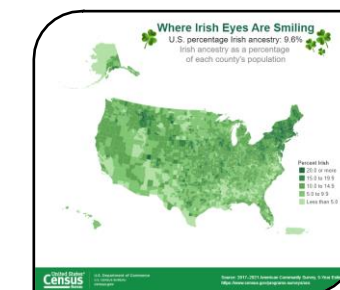
My Tribal Area



My Community Explorer



Census Business Builder



Application
Programming Interface

The American Community Survey

Quick Demo

United States[®]
Census
Bureau

Explore Census Data

Learn about America's People, Places, and Economy

Find Tables, Maps, and more ...

Help Feedback Advanced Search

data.census.gov

QuickFacts
United States

QuickFacts provides statistics for all states and counties, and for cities and towns with a population of 5,000 or more.

Enter state, county, city, town, or ZIP code

Select a fact

Table

All Topics	United States
Population Estimates, July 1, 2022, (V2022)	333,287,597
PEOPLE	
Population	
Population Estimates, July 1, 2022, (V2022)	333,287,597
Population Estimates, July 1, 2021, (V2021)	332,031,554
Population estimates base, April 1, 2020, (V2022)	331,448,520
Population estimates base, April 1, 2020, (V2021)	331,448,520
Population, percent change - April 1, 2020 (estimates base) to July 1, 2022, (V2022)	0.6%
Population, percent change - April 1, 2020 (estimates base) to July 1, 2021, (V2021)	0.2%
Population, Census, April 1, 2020	331,448,281
Population, Census, April 1, 2010	308,745,538
Age and Sex	
Persons under 5 years, percent	5.7%
Persons under 18 years, percent	22.2%
Persons 65 years and over, percent	16.8%
Female persons, percent	50.5%
Race and Hispanic Origin	
White alone, percent	75.8%
Black or African American alone, percent (a)	13.6%
American Indian and Alaska Native alone, percent (a)	1.3%
Asian alone, percent (a)	6.1%

census.gov/quickfacts

118th Congress

My Congressional District

1 Georgia

2 Congressional District 1

People Workers Housing Socio-Economic Education

Need help finding your Congressional District?
Enter ZIP code GO

Window opens in new tab.

United States[®]
Census
Bureau

U.S. Department of Commerce
U.S. Census Bureau
census.gov

POWERED BY
The American Community Survey

Display ACS Margin of Error

Download and Share

Congressional District 1 (118th Congress), Georgia

Source: 2021 American Community Survey 1-Year Estimates

Sex and Age	Estimate
Total population	776,100
Male	380,050
Female	396,050
Under 5 years	47,882
5 to 9 years	51,064
10 to 14 years	51,620
15 to 19 years	54,649
20 to 24 years	50,371
25 to 34 years	114,841
35 to 44 years	100,467
45 to 54 years	87,593
55 to 59 years	45,675
60 to 64 years	46,672
65 to 74 years	77,427

census.gov/mycd

The American Community Survey

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- **Resources for learning more**

The American Community Survey

ACS Main Page

The screenshot shows the United States Census Bureau website for the American Community Survey (ACS). The header includes the logo and navigation links for Partners, Researchers, Educators, Survey Respondents, News, NAICS Codes, Jobs, About Us, Contact Us, and Help. A search bar is located on the right. The main navigation menu highlights 'Surveys & Programs'. The breadcrumb trail reads: // Census.gov / Our Surveys & Programs / American Community Survey (ACS). The left sidebar lists various resources: 'Within Our Surveys & Programs', 'About the ACS', 'Respond to the ACS', 'News & Updates', 'Data', 'Microdata', 'Guidance for Data Users', 'Geography & ACS', 'Technical Documentation'. The main content area features the title 'American Community Survey (ACS)', a descriptive paragraph, a video player, and a 'Featured' section titled 'Respond to the ACS' with a brief description of response methods.

United States[®]
Census
Bureau

Partners Researchers Educators Survey Respondents News NAICS Codes Jobs About Us Contact Us Help

Topics Data & Maps **Surveys & Programs** Resource Library

Search data, events, resources, and more 🔍


// Census.gov / Our Surveys & Programs / American Community Survey (ACS)

Within Our Surveys & Programs

- About the ACS
- Respond to the ACS
- News & Updates
- Data
- Microdata
- Guidance for Data Users
- Geography & ACS
- Technical Documentation

American Community Survey (ACS)

The [American Community Survey \(ACS\)](#) helps local officials, community leaders, and businesses understand the changes taking place in their communities. It is the premier source for detailed population and housing information about our nation.



Featured

Respond to the ACS

Learn the different ways to respond to the American Community Survey -- online, by phone, by email. Read our FAQs or call us for more help with the survey.

The American Community Survey

Why We Ask


[← BACK TO TOPICS PAGE](#)

Why We Ask Questions About...

Commuting / Journey to Work

We ask questions about where people work, how they get there, when they leave home, and how long it takes, to create statistics about commuting, or a person's journey to work.

Commuting patterns and characteristics are crucial to planning for improvements to road and highway infrastructure, developing transportation plans and services, and understanding where people are traveling in the course of a normal day.



Your privacy concerns

"I Don't Want Everyone to Know What Time I Leave"

We use your confidential survey answers to create statistics like those in the results below and in the full tables that contain all the data—no one is able to figure out your survey answers from the statistics we produce. The Census Bureau is legally bound to strict confidentiality requirements. Individual records are not shared with anyone, including federal agencies and law enforcement entities. By law, the Census Bureau cannot share respondents' answers with anyone—not the IRS, not the FBI, not the CIA, and not with any other government agency.

Questions as they appear on the form

We ask five questions about a person's journey to work to create a profile of a community's commuting patterns.

[VIEW QUESTIONS](#)

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Data Tables and Tools

The screenshot shows the United States Census Bureau website. The top navigation bar includes links for Partners, Researchers, Educators, Survey Respondents, News, NAICS Codes, Jobs, About Us, Contact Us, and Help. Below this is a secondary navigation bar with Topics, Data & Maps, Surveys & Programs (highlighted), and Resource Library. A search bar is located on the right side of the navigation bar.

The main content area features a breadcrumb trail: // Census.gov / Our Surveys & Programs / American Community Survey (ACS) / ACS Data. The main heading is "American Community Survey Data". Below the heading are social media share icons for Facebook, Twitter, and LinkedIn.

The left sidebar contains a list of links under the heading "Within American Community Survey (ACS)":

- Custom Tables
- Data Tables** (highlighted with a red box)
- Data Tools
- Data via API
- Data via FTP
- Equal Employment Opportunity (EEO)
- Experimental Data
- Race/Ethnicity and American Indian & Alaska Native
- Summary File
- Variance Replicate Estimate Tables

The main content area contains the following text:

The American Community Survey (ACS) releases new data every year through a variety of data tables that you can access with different data tools. Learn more about the different types of tables and profiles powered by ACS data. We also have information about other special datasets, such as the ACS Experimental Data, ACS Summary File, and ACS Public Use Microdata Sample (PUMS) files.

Get Started Accessing ACS Data

Check out data.census.gov, the Census Bureau's main data dissemination tool. Here, you can access tables and maps with ACS data. You can also view data.census.gov Resources for step-by-step guidance, video tutorials, FAQs, and more.

Related Information

- DATA
- Data
- data.census.gov Resources

At the bottom of the main content area is a red button that says "GO TO DATA.CENSUS.GOV".

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Comparison Guidance

Do	Do Not
Use ACS for population characteristics (i.e., percentages, means, medians, rates)	Use ACS for population totals (instead use decennial census or the Population Estimates Program)
Compare non-overlapping datasets (i.e., 2013-2017 to 2018-2022)	Compare overlapping datasets (i.e., 2017-2021 to 2018-2022)
Compare similar period lengths (i.e., 1-year to 1-year and 5-year to 5-year)	Compare estimates from different period lengths (i.e., 1-year to 5-year)
Conduct statistical testing when making comparisons between estimates	Look at estimates alone to decide if they are higher or lower than one another

The American Community Survey

What is Statistical Testing?

- **Definition:** A test to determine if a difference is unlikely to occur by chance.
- To be “significantly different” there must be statistical evidence that there is a difference between two estimates.
- Testing should be conducted for all comparisons.

The American Community Survey

Statistical Testing Tool

Algebraically, the significance test can be expressed as follows:

$$\text{If } \left| \frac{\hat{X}_1 - \hat{X}_2}{\sqrt{SE_1^2 + SE_2^2}} \right| > Z_{CL}, \text{ then the difference}$$

between estimates \hat{X}_1 and \hat{X}_2 is statistically significant at the specified confidence level, CL

where \hat{X}_i is estimate i ($i=1,2$)

SE_i is the SE for the estimate i ($i=1,2$)

Z_{CL} is the critical value for the desired confidence level (=1.645 for 90 percent, 1.960 for 95 percent, 2.576 for 99 percent).


// [Census.gov](#) / [Our Surveys & Programs](#) / [American Community Survey \(ACS\)](#) / [Guidance for Data Users](#) / [Statistical Testing Tool](#)

Statistical Testing Tool

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Facebook Twitter LinkedIn

Comparing American Community Survey (ACS) estimates involves more than determining which statistic is higher or lower. Users should also conduct statistical testing to make sure differences are statistically significant and are unlikely to have occurred by chance. This testing takes into account the margin of error (MOE) associated with survey estimates, which are based on responses from a sample of the full population.

Looking for an easy way to conduct statistical testing? Try the Census Bureau's [Statistical Testing Tool](#). Simply copy or download ACS estimates and their MOEs into the spreadsheet to get instant results of statistical tests.




[Download Statistical Testing Tool \[2.4 MB\]](#)

Tool Features:

- Compares up to 3,230 pairs of estimates at once
- Compares multiple estimates simultaneously (up to 150 estimates)
- Displays statistical testing results ("Yes", "No") automatically
- Handles special formatting and characters, such as the '+' in front of the MOE, without additional editing by the data user
- Uses the Census Bureau's standard 90% confidence level, but can also process statistical testing at 95% or 99% confidence levels
- May be used to conduct statistical testing for other Census Bureau surveys

Within Guidance for Data Users

- [Comparing ACS Data](#)
- [Handbooks](#)
- [Recorded Webinars](#)
- [Subjects Included in the Survey](#)
- [Statistical Testing Tool](#)**
- [Using ACS Data with Open-Source Software](#)
- [When to Use 1-year or 5-year Estimates](#)
- [Which Data Table or Tool Should I Use?](#)


Join the ACS Data Users Group

Related Information

VIDEO
[Population Reference Bureau: Assessing ACS Reliability](#)

RANDOM SAMPLINGS BLOG
[Using Census Bureau Data Made Easier: New Statistical Testing Tool](#)

The American Community Survey

Technical Documentation

The screenshot displays the United States Census Bureau website. The top navigation bar includes links for Partners, Researchers, Educators, Survey Respondents, News, NAICS Codes, Jobs, About Us, Contact Us, and Help. Below this is a secondary navigation bar with Topics, Data & Maps, Surveys & Programs (highlighted), and Resource Library. A search bar is located on the right side of the navigation bar.

The main content area features a breadcrumb trail: // Census.gov / Our Surveys & Programs / American Community Survey (ACS) / Technical Documentation. The title 'Technical Documentation' is prominently displayed. Below the title are social media sharing options for Facebook, Twitter, and LinkedIn.

The page is divided into three main sections:

- Code Lists, Definitions, and Accuracy:** This section provides a brief overview and a link to view detailed codes and definitions for variables, statistical testing, and sample design.
- User Notes:** This section offers information on issues impacting the survey, such as design, collection, production, and data release.
- Related Information:** This section includes links to American Community Survey Data, Share Your ACS Data Story, and Contact Us.

A sidebar on the left lists additional resources: Within American Community Survey (ACS), Code Lists, Definitions, and Accuracy, Data Suppression, Errata Notes, Table & Geography Changes, Table Shells and Table List, and User Notes. At the bottom of the sidebar is a call to action to 'Join the ACS Data Users Group' with a corresponding logo.

The American Community Survey Information for...

- American Indian and Alaska Native Populations
- Businesses
- Congress
- Equity
- General Users
- Hispanohablantes
- Law Enforcement Organizations
- Media
- Nonprofits
- Puerto Rico
- Researchers
- State and Local Governments

// [Census.gov](#) / [Our Surveys & Programs](#) / [American Community Survey \(ACS\)](#) / [Information by ACS User Type](#)

Information by ACS User Type

Within American Community Survey (ACS)

- American Indian and Alaska Native Populations
- Businesses
- Congress
- Equity
- General Users
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- Media
- Nonprofits
- Puerto Rico
- Researchers
- State and Local Governments

Share [f](#) [t](#) [in](#)
Facebook Twitter LinkedIn

The U.S. Census Bureau's American Community Survey (ACS) provides a detailed portrait of the social, economic, housing, and demographic characteristics of America's communities. Explore the links below to quickly find resources and information by ACS user type.

American Community Survey Resources for AIAN

Explore resources for Tribal officials, government agencies, and organizations using ACS data about American Indian and Alaska Native populations & geographies.

[>](#)

American Community Survey Resources for Businesses

Explore resources for business users of ACS data.

[>](#)


American Community Survey Resources for Congress

Explore resources for congressional offices helping constituents participate in the ACS and make an important contribution to their community.

[>](#)

Related Information

- [American Community Survey Data](#)
- [Respond to the ACS](#)
- [ACS Data Stories—Stats in Action!](#)



Join the ACS
Data Users Group

The American Community Survey

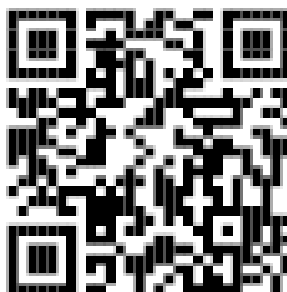
Stay Connected



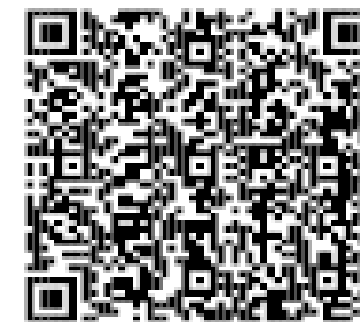
Share Your ACS
Data Story



JOIN THE
**ACS DATA
USERS GROUP**



Sign Up for
Email Updates



The American Community Survey

Find Answers, Get Support

Website

census.gov/acs

ACS Data User Support

acso.users.support@census.gov

Census Customer Service Center

800-923-8282

Census Academy

census.gov/academy

Social Media

@uscensusbureau

#ACSdata

Source Us

U.S. Census Bureau, [YYYY – YYYY]

American Community Survey

[1/5]-year [estimates/statistics/data release]