

# Introduction to American Community Survey (ACS)

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# Overview

- What is American Community Survey (ACS)?
- Differences between Census and ACS
- Content of ACS
- Different estimates of ACS
- Examples of using ACS data
- ACS PUMS data
- Weighting ACS PUMS data
- Obtaining ACS PUMS data
  - FTP site
  - IPUMS site

## Overview (Cont.)

- Analyzing ACS data
  - Download data
  - Link household data with person data
  - Stack data over years
  - Use household weights
  - Use personal weights
  - Use replicate weights
- Conclusions

# What Is ACS?

- ACS is a large annual survey of people in the United States and Puerto Rico. ACS was designed to replace the long form of decennial Census survey.
- ACS samples 3.5 million households and group quarters and collects data from respondents between January 1 and December 31 of the survey year. Therefore, each ACS survey provides the average characteristics of the population in a geographic area over one year. ACS surveys can also be pooled together and used to describe the average population characteristics over a longer period of time.
- Four stages of ACS:
  - Demonstration Period: Census Bureau conducted ACS survey in 4, 8, and 9 sites in 1996, 1997, and 1998, respectively, to evaluate costs, procedures, and data usages.
  - Comparison Period: Census Bureau compared differences in data collected by ACS and the long-form of Census 2000 in 36 cites in each year from 1999 to 2002.
  - Supplementary Period: An additional 700,000 residential addresses from 1,204 sites were added each year from 2002 to 2004 and used to compare the estimates from ACS and Census 2000 for states or geographic areas with populations of more than 250,000 persons.
  - Full Implementation: Since 2005, ACS has been conducted in every county of United States.

# Differences between Census and ACS

Table 1. Differences between Decennial Census and ACS

	Decennial Census	American Community Survey
Purpose	provide an official count of the entire U.S. population to Congress.	provide up-to-date sample estimates of the social, economic, housing, and demographic
Inception Year	1790	2005
Frequency	Every 10 years	Every year
Residence definition	Resident living at the sampled address on April 1 of the survey year	Residents living at the sampled address for more than 2 month
Reference time period	March through June time period	Full calendar year
Sample size	all the U.S. citizens (331 millions)	a probability sample of 3.5 millions
Applications	Congressional apportionment and state redistricting	measuring social, economic, housing needs of individuals at the national, regional, state, or county

# Content of ACS

**Table 2. The Content of ACS survey<sup>1</sup>**

Population		Housing
Social	Demographic <sup>2</sup>	
		Computer and Internet Use
Ancestry	Age	Costs (Mortgage, Rent, Taxes, Insurance)
Citizenship	Hispanic or Latino Origin	Heating Fuel
Disability	Race	Home Value
Educational Attainment	Relationship to Householder	Occupancy/Vacancy Status <sup>2</sup>
Fertility	Sex	Plumbing/Kitchen Facilities
Grandparents		Units in Structure
Language Spoken at Home	<b>Economic</b>	Tenure (Owner/Renter)
Marital History and Marital Status	Class of worker	Utilities
Migration/Residence 1 Year Ago	Commuting (Journey to Work) & Place of Work	Vehicles
School Enrollment	Employment Status	Year Built/Years Moved in
Veteran Status	Food Stamps/SNAP	
	Health Insurance Coverage	
	Work Status Last Year (Hours/Week, Weeks/Year) last year	
	Income	
	Industry & Occupation	

<sup>1</sup> Source: Charles Gamble (2019) Introduction to the American Community Survey.

Download link: <https://www.census.gov/data/academy/webinars/2019/acs-introduction.html>

<sup>2</sup> Decennial Census also asks these questions

# Different Estimates of ACS

**Table 3. Different Estimates in ACS**

Characteristics	1-year estimates	1-year supplemental estimates	3-year estimates*	5-year estimates
<b>Time Period</b>	12 months of collected data <i>Example:</i> 2018 ACS 1-year estimates <i>Date collected between:</i> January 1, 2018 and December 31, 2018	12 months of collected data <i>Example:</i> 2018 ACS 1-year supplemental estimates <i>Date collected between:</i> January 1, 2018 and December 31, 2018	36 months of collected data <i>Example:</i> 2011-2013 ACS 3-year estimates <i>Date collected between:</i> January 1, 2011 and December 31, 2013	60 months of collected data <i>Example:</i> 2014-2018 ACS 5-year estimates <i>Date collected between:</i> January 1, 2014 and December 31, 2018
<b>Availability</b>	Data for areas with populations of 65,000+	Data for areas with populations of 20,000+	Data for areas with populations of 20,000+	Data for all areas
<b>Data Release</b>	Annually released: 2005-present	Annually released: 2014-present	Annually released: 2007-2013	Annually released: 2009-present
<b>Reliability</b>	Less reliable than 3-year or 5-year	Less reliable than 5-year	More reliable than 1-year; less reliable than 5-year	Most reliable
<b>Currency</b>	Most current data	Most current data	Less current than 1-year estimates; more current than 5-year	Least current
<b>When to use</b>	Currency is more important than precision Analyzing large populations	Currency is more important than precision Analyzing smaller populations Examining smaller geographies because the standard 1-year estimates are not available	More precise than 1-year, spans fewer years than 5-year Analyzing smaller populations Examining smaller geographies because the standard 1-year estimates are not available	Precision is more important than currency Analyzing very small populations Examining tracts and other smaller geographies because 1-year estimates are not available

\* The 3-year estimates discontinued after 2013

\*\* <https://www.census.gov/programs-surveys/acs/guidance/estimates.html>

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# Examples of Using ACS Data

Population Characteristics of Bowling Green City, Ohio, using American FactFinder, Census Business Builder (CBB), and My Congressional District

- American FactFinder web Address:  
<https://factfinder.census.gov/faces/nav/jsf/pages/index.xhtml>

The screenshot shows the American FactFinder website. At the top, there's a navigation bar with the United States Census Bureau logo and the 'FactFinder' title. Below this is a search bar with a magnifying glass icon. The main content area features a large banner with a map of the United States and a laptop displaying data. To the right of the banner, a yellow box contains the text: 'American FactFinder (AFF) will be taken offline on March 31, 2020. Most data previously released on AFF are now being released on the U.S. Census Bureau's new dissemination platform, [data.census.gov](https://data.census.gov). For more information about the transition from American FactFinder to [data.census.gov](https://data.census.gov), see [Transition From AFF](#). Included on this page are information on historic AFF data, documentation on updating AFF links, and resource materials, including tutorials, webinars, and how-tos on using [data.census.gov](https://data.census.gov). If you have questions or comments, please email: [cedsci.feedback@census.gov](mailto:cedsci.feedback@census.gov).

 Below the banner, there's a 'Community Facts' section with a search box labeled 'Find popular facts (population, income, etc.) and frequently requested data about your community.' The search box has a placeholder text 'e.g., Atlanta, GA' and a 'GO' button. To the right of the search box is a large photo of a smiling family. Below the search box, there are links for 'Guided Search', 'Advanced Search', and 'Download Center'. Further down, there's a 'Popular Tables' section with two columns of links. The first column includes 'Population and Housing' with links to 'Annual Population Estimates (2018 PER, PEANNRES)', 'Demographic and Housing Estimates (2017 ACS, DP05)', 'General Housing Characteristics (2017 ACS, DP04)', and 'General Demographic Characteristics (2010 Census, DP-1)'. The second column includes 'Poverty and Income' with a link to 'General Economic Characteristics (2017 ACS, DP03)', 'Age, Race, Sex and Education' with a link to 'Selected Social Characteristics (2017 ACS, DP02)', and 'Educational Attainment (2017 ACS, S1501)'. At the bottom, there's a 'News and Notes' section with a date 'May 23, 2019' and a 'GET EMAIL UPDATES' button.



# Examples of Using ACS Data (Cont.)

← → ↺ 🏠 <https://factfinder.census.gov/faces/tableservices/jsf/pages/productview.xhtml?src=CF>

Getting Started 拼 Online Pinyin Input M... OneLook Dictionary S... WordHippo 海词词典\_在线词典\_在... Cambridge Dictionary:... google dictionary - Go...

**United States Census Bureau** **AMERICAN FactFinder**

MAIN COMMUNITY FACTS GUIDED SEARCH ADVANCED SEARCH DOWNLOAD CENTER

**American FactFinder (AFF) will be taken offline on March 31, 2020.**  
Most data previously released on AFF are now being released on the U.S. Census Bureau's new dissemination platform, [data.census.gov](https://data.census.gov). For more historic AFF data, documentation on updating AFF links, and resource materials, including tutorials, webinars, and how-tos on using [data.census.gov](https://data.census.gov).

**Community Facts - Find popular facts and frequently requested data about your community**

1 Community Facts 2 Table Viewer

DP05 ACS DEMOGRAPHIC AND HOUSING ESTIMATES ⓘ  
2013-2017 American Community Survey 5-Year Estimates

Table View ⓘ

Actions: Modify Table | Bookmark/Save | Print | Download | Create a Map

Although the American Community Survey (ACS) produces population, demographic and housing unit estimates, it is the Census Bureau's Population Estimates Program that produces and disseminates

Versions of this table are available for the following years:

2017 ▶

2016

2015

2014

2013

2012

2011

2010

Subject	ZCTA5 43402			
	Estimate	Margin of Error	Percent	Percent Margin of Error
SEX AND AGE				
Total population	32,240	+/-788	32,240	(X)
Male	15,823	+/-544	49.1%	+/-1.5
Female	16,417	+/-698	50.9%	+/-1.5
Sex ratio (males per 100 females)	96.4	+/-5.8	(X)	(X)
Under 5 years	1,379	+/-211	4.3%	+/-0.7
5 to 9 years	1,545	+/-293	4.8%	+/-0.9
10 to 14 years	1,523	+/-287	4.7%	+/-0.9
15 to 19 years	1,760	+/-331	5.5%	+/-1.0
20 to 24 years	8,634	+/-516	26.8%	+/-1.4
25 to 34 years	3,922	+/-330	12.2%	+/-1.1
35 to 44 years	3,192	+/-310	9.9%	+/-0.9
45 to 54 years	2,927	+/-292	9.1%	+/-0.9
55 to 59 years	1,901	+/-259	5.9%	+/-0.8
60 to 64 years	1,710	+/-256	5.3%	+/-0.8
65 to 74 years	2,173	+/-211	6.7%	+/-0.7
75 to 84 years	1,072	+/-181	3.3%	+/-0.6
85 years and over	502	+/-141	1.6%	+/-0.4
Median age (years)	27.7	+/-1.0	(X)	(X)

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# Examples of Using ACS Data (Cont.)

- Census Business Builder (CBB) web address:  
<https://www.census.gov/data/data-tools/cbb.html>
- Small Business Edition and Regional Analysis Edition

United States Census Bureau

Search

BROWSE BY TOPIC EXPLORE DATA LIBRARY SURVEYS/ PROGRAMS INFORMATION FOR... FIND A COD

We are hiring thousands of people for the 2020 Census. Click to learn more and apply.

// Census.gov > Data > Data Tools > Census Business Builder (CBB)

DATA  
Data Tools and Apps  
Datasets  
Errata Notes  
News  
Product Catalog  
Related Sites  
Software  
Tables  
Training & Workshops  
Visualizations  
< Back to Data Tools

**Census Business Builder (CBB)**

The *Census Business Builder (CBB)* is a suite of services that provide selected demographic and economic data from the Census Bureau tailored to specific types of users in a simple to access and use format.

**Version 3.0** Overview Instructional Flyers Webinars Help & FAQs

**Version 3.0**

**Small Business Edition**  
(Select to Launch)

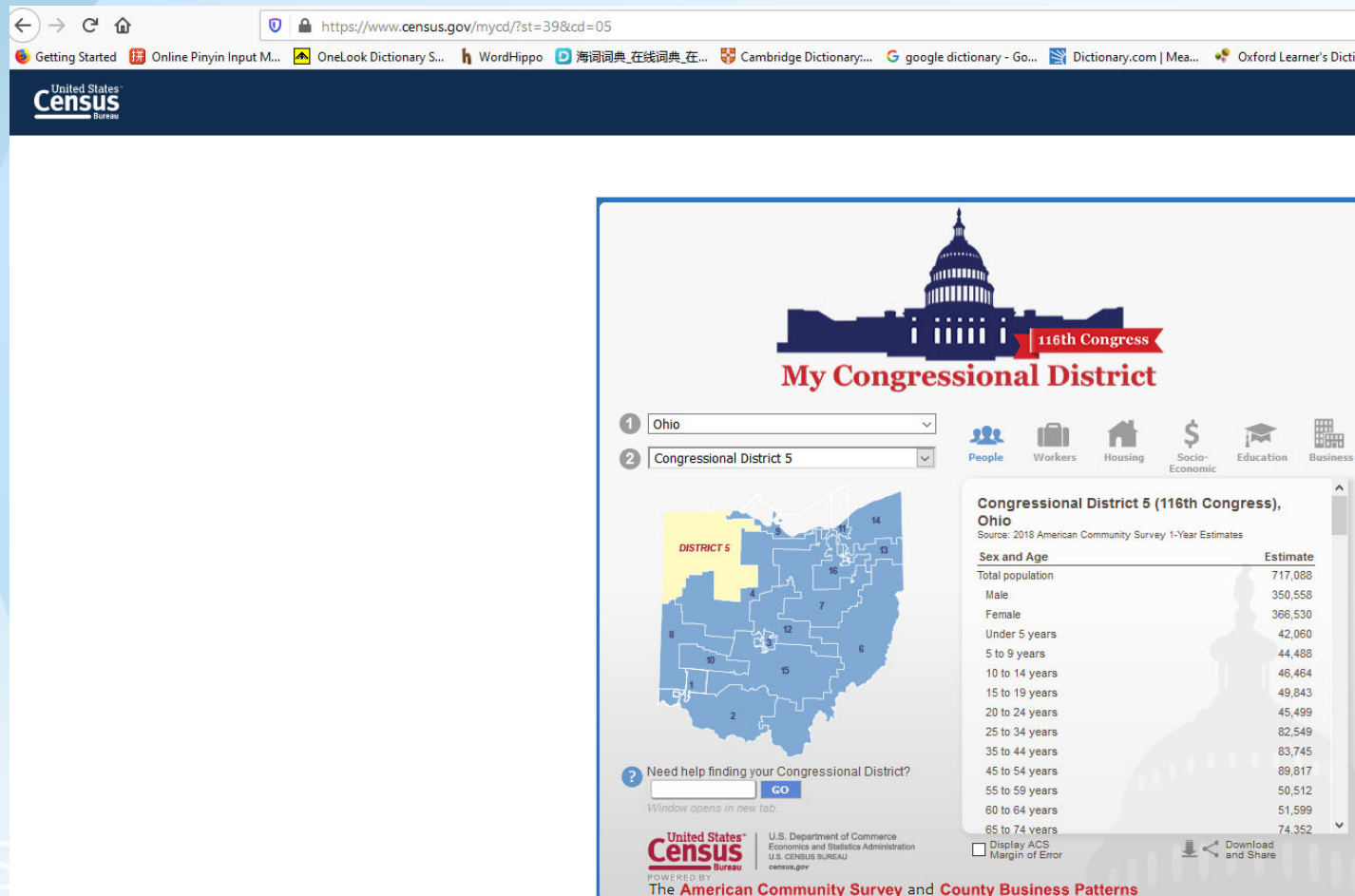
Small Business Edition is primarily for small business owners who need key data for their business plan or to better understand their potential market. It presents data for a single type of business at a time.

**Regional Analyst Edition**  
(Select to Launch)

Regional Analyst Edition is primarily for chambers of commerce and regional planning staff who need a broad portrait of the people and businesses in their service area. It presents data for all sectors of the economy and for a user-defined region made up of one or more areas.

# Examples of Using ACS Data (Cont.)

- My Congressional District web address:  
<https://www.census.gov/mycd/>



# ACS Public Use Microdata Sample (PUMS) Data

- Researchers may be interested in certain research questions that data tools on the Census Bureau webpage cannot answer. Thus, researchers need to analyze ACS data themselves.
- Census Bureau releases data from about two-thirds of the ACS respondents (i.e., PUMS) for public use. Therefore, the results of using ACS PUMS files may be different from those found from American FactFinder.
- Values of some variables in PUMS files are masked or edited to prevent respondents from being identified, for example, income, mortgage, rent, utilities, property taxes, home values, property insurance costs, number of rooms and bedrooms, age, travel time to work, and hours worked.
- The latest ACS data (i.e., 2018 ACS) data release schedule:  
<https://census.gov/programs-surveys/acs/news/data-releases/2018/release-schedule.html>

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## Weighting ACS PUMS Data

- ACS collects data from a sample of people living in the United States and Puerto Rico. Therefore, ACS PUMS data need to be weighted to get the accurate housing units and population estimates and their standard errors.
- PUMS household weights (WGTP) are used for producing housing unit estimates, while household replicate weights (WGTP1-WGTP80) are used for calculating standard errors at the household level.
- PUMS person weights (PWGTP) are used for producing population estimates, while population replicate weights (PWGTP1-PWGTP80) are used for standard errors at the population level.

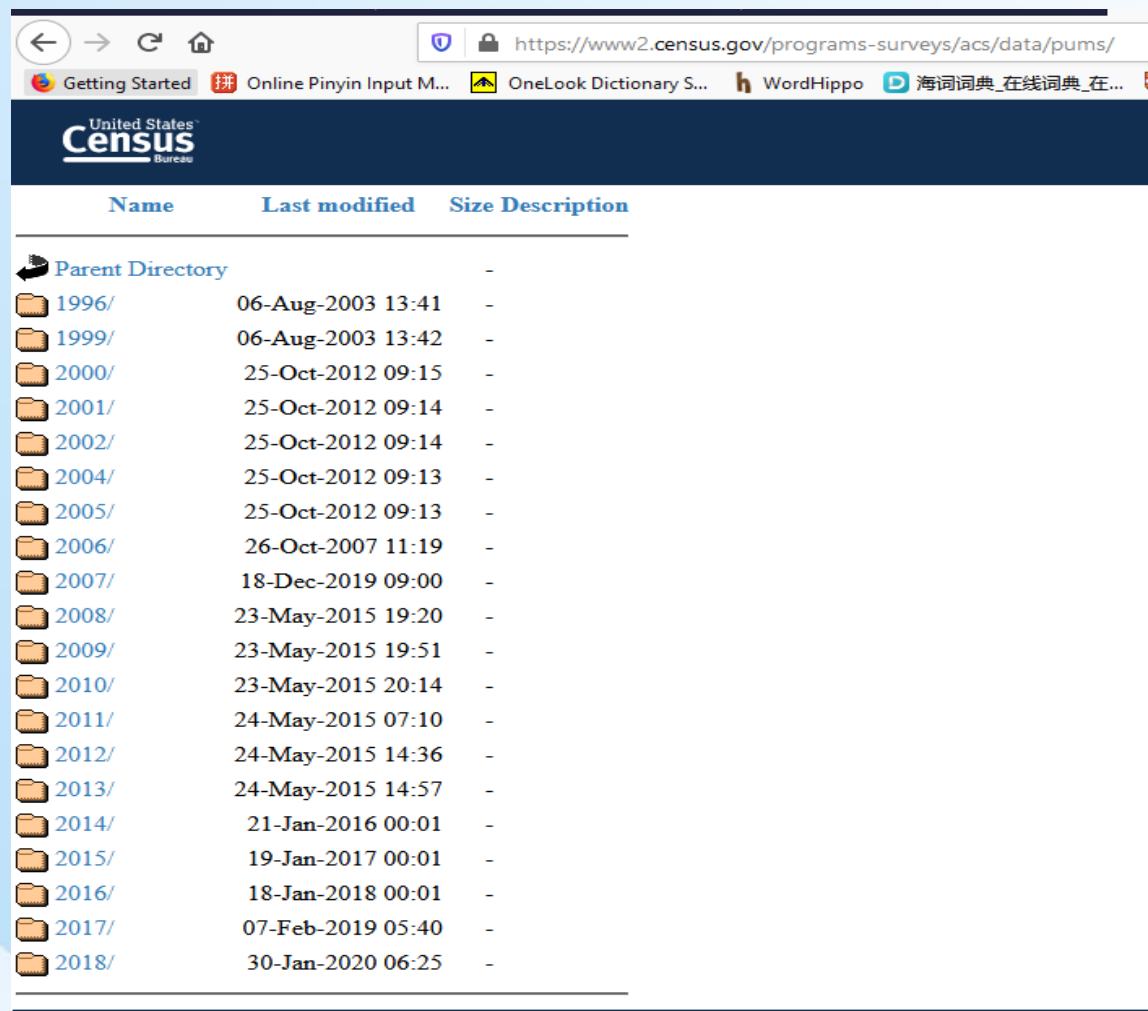
## Obtaining ACS PUMS Data

- PUMS data can be downloaded from at least three places:
  - Census Bureau FTP server  
(<https://www2.census.gov/programs-surveys/acs/data/pums/>)
  - Integrated Public Use Microdata Series (IPUMS) at Minnesota Population Center  
(<https://usa.ipums.org/usa/index.shtml>)
























# Obtaining ACS PUMS Data (Cont.)

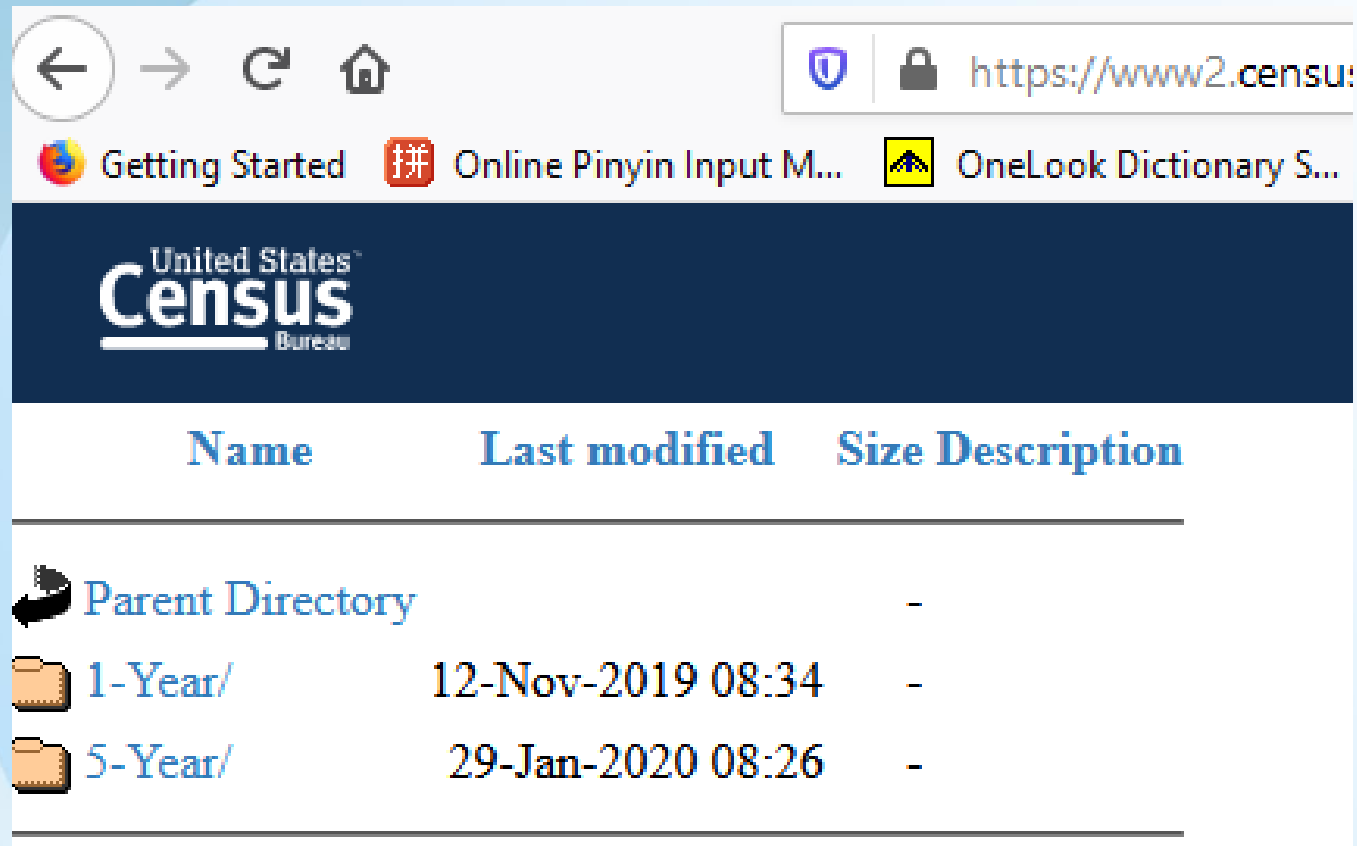
## Using the Census Bureau FTP server






The screenshot shows a web browser displaying the directory listing of the Census Bureau FTP server. The URL in the address bar is <https://www2.census.gov/programs-surveys/acs/data/pums/>. The page features the United States Census Bureau logo and a table of directory contents. The table has three columns: Name, Last modified, and Size Description. It lists a 'Parent Directory' and a series of year-based folders from 1996 to 2018, each with its last modification date and a size of '-'. The browser's taskbar at the top shows several open applications, including 'Getting Started', 'Online Pinyin Input M...', 'OneLook Dictionary S...', 'WordHippo', and '海词词典\_在线词典\_在...'.

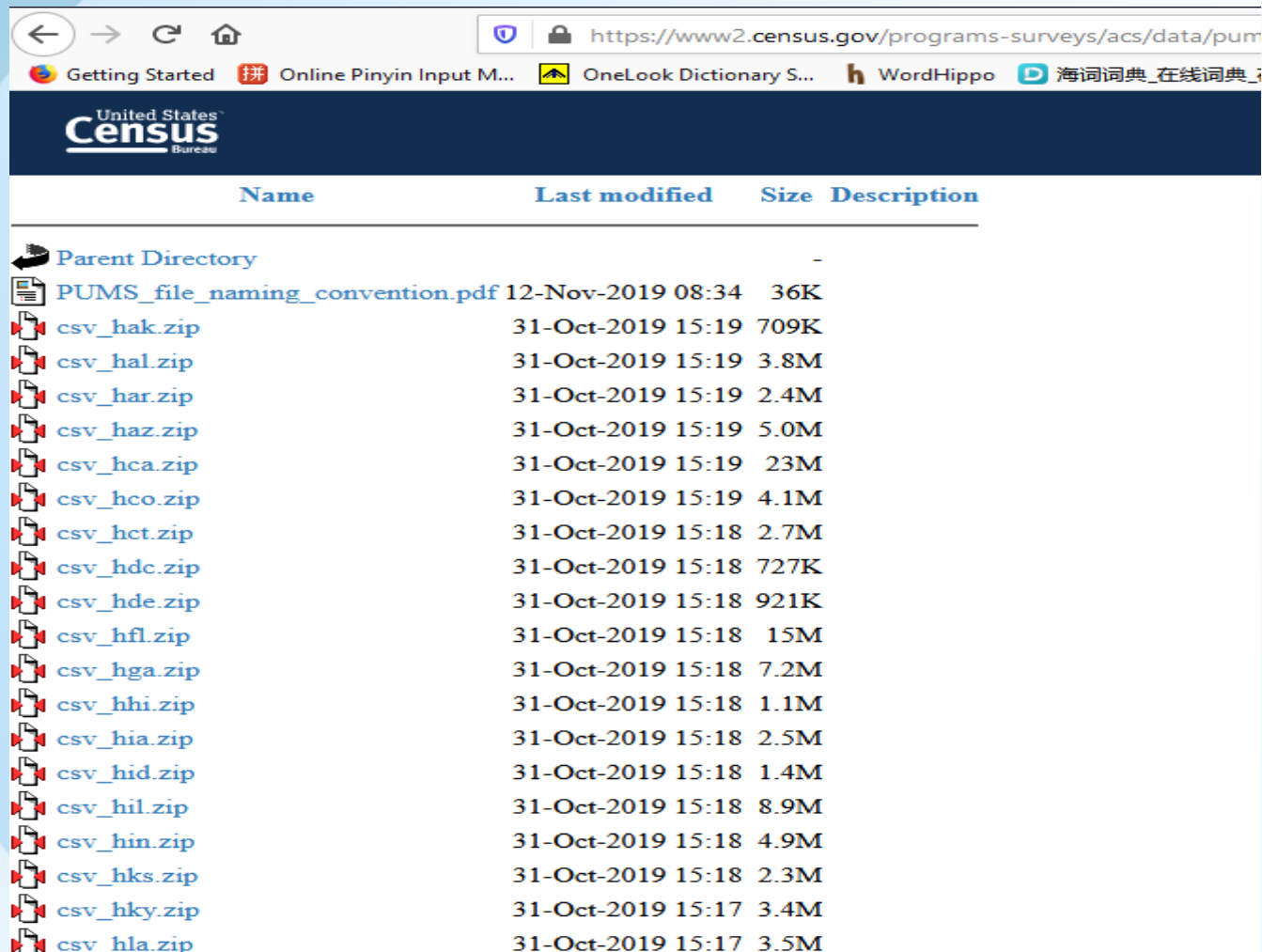
Name	Last modified	Size Description
 <a href="#">Parent Directory</a>		-
 <a href="#">1996/</a>	06-Aug-2003 13:41	-
 <a href="#">1999/</a>	06-Aug-2003 13:42	-
 <a href="#">2000/</a>	25-Oct-2012 09:15	-
 <a href="#">2001/</a>	25-Oct-2012 09:14	-
 <a href="#">2002/</a>	25-Oct-2012 09:14	-
 <a href="#">2004/</a>	25-Oct-2012 09:13	-
 <a href="#">2005/</a>	25-Oct-2012 09:13	-
 <a href="#">2006/</a>	26-Oct-2007 11:19	-
 <a href="#">2007/</a>	18-Dec-2019 09:00	-
 <a href="#">2008/</a>	23-May-2015 19:20	-
 <a href="#">2009/</a>	23-May-2015 19:51	-
 <a href="#">2010/</a>	23-May-2015 20:14	-
 <a href="#">2011/</a>	24-May-2015 07:10	-
 <a href="#">2012/</a>	24-May-2015 14:36	-
 <a href="#">2013/</a>	24-May-2015 14:57	-
 <a href="#">2014/</a>	21-Jan-2016 00:01	-
 <a href="#">2015/</a>	19-Jan-2017 00:01	-
 <a href="#">2016/</a>	18-Jan-2018 00:01	-
 <a href="#">2017/</a>	07-Feb-2019 05:40	-
 <a href="#">2018/</a>	30-Jan-2020 06:25	-

## Obtaining ACS PUMS Data (Cont.)
























Name	Last modified	Size	Description
 <a href="#">Parent Directory</a>		-	
 <a href="#">1-Year/</a>	12-Nov-2019 08:34	-	
 <a href="#">5-Year/</a>	29-Jan-2020 08:26	-	

# Obtaining ACS PUMS Data (Cont.)



The screenshot shows a web browser window with the URL <https://www2.census.gov/programs-surveys/acs/data/pum>. The page header features the United States Census Bureau logo. Below the header is a table listing files in the PUMS directory. The table has four columns: Name, Last modified, Size, and Description. The files listed are various ACS PUMS data files in CSV format, each with a unique identifier (e.g., csv\_hak.zip, csv\_hal.zip, etc.). The last modified date for all files is 31-Oct-2019. The sizes range from 36K to 9.9M.

Name	Last modified	Size	Description
 <a href="#">Parent Directory</a>		-	
 <a href="#">PUMS_file_naming_convention.pdf</a>	12-Nov-2019 08:34	36K	
 <a href="#">csv_hak.zip</a>	31-Oct-2019 15:19	709K	
 <a href="#">csv_hal.zip</a>	31-Oct-2019 15:19	3.8M	
 <a href="#">csv_har.zip</a>	31-Oct-2019 15:19	2.4M	
 <a href="#">csv_haz.zip</a>	31-Oct-2019 15:19	5.0M	
 <a href="#">csv_hca.zip</a>	31-Oct-2019 15:19	23M	
 <a href="#">csv_hco.zip</a>	31-Oct-2019 15:19	4.1M	
 <a href="#">csv_hct.zip</a>	31-Oct-2019 15:18	2.7M	
 <a href="#">csv_hdc.zip</a>	31-Oct-2019 15:18	727K	
 <a href="#">csv_hde.zip</a>	31-Oct-2019 15:18	921K	
 <a href="#">csv_hfl.zip</a>	31-Oct-2019 15:18	15M	
 <a href="#">csv_hga.zip</a>	31-Oct-2019 15:18	7.2M	
 <a href="#">csv_hhi.zip</a>	31-Oct-2019 15:18	1.1M	
 <a href="#">csv_hia.zip</a>	31-Oct-2019 15:18	2.5M	
 <a href="#">csv_hid.zip</a>	31-Oct-2019 15:18	1.4M	
 <a href="#">csv_hil.zip</a>	31-Oct-2019 15:18	8.9M	
 <a href="#">csv_hin.zip</a>	31-Oct-2019 15:18	4.9M	
 <a href="#">csv_hks.zip</a>	31-Oct-2019 15:18	2.3M	
 <a href="#">csv_hky.zip</a>	31-Oct-2019 15:17	3.4M	
 <a href="#">csv_hla.zip</a>	31-Oct-2019 15:17	3.5M	

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# Obtaining ACS PUMS Data (Cont.)

## Using the IPUMS website:

The screenshot shows the IPUMS USA website in a web browser. The browser's address bar displays <https://usa.ipums.org/usa/>. The website has a dark blue header with the IPUMS USA logo and navigation links: HOME | SELECT DATA | MY DATA | FAQ | HELP. Below the header is a banner image showing diverse people. The main content area is divided into a left sidebar and a main body. The sidebar contains links for DATA, DOCUMENTATION, RESOURCES, RESEARCH, and CONTACT US. The main body features a large heading 'U.S. CENSUS DATA FOR SOCIAL, ECONOMIC, AND HEALTH RESEARCH' followed by a paragraph about IPUMS USA's mission. Below this is a section titled 'USE IT FOR GOOD -- NEVER FOR EVIL' with two buttons: 'Get Data' and 'Analyze Data Online'. Further down, there is a 'WHAT IS IPUMS?' section and a '2016 5-YEAR DATA' update section.

**IPUMS USA**

HOME | SELECT DATA | MY DATA | FAQ | HELP

**DATA**

- BROWSE AND SELECT DATA
- DOWNLOAD OR REVISE EXTRACTS
- ANALYZE DATA ONLINE
- IPUMS REGISTRATION

**DOCUMENTATION**

- VARIABLES
- SAMPLES
- USER'S GUIDE
- GEOGRAPHIC TOOLS
- FAQ

**RESOURCES**

- ENUMERATION FORMS
- PUBLISHED CENSUS VOLUMES
- ERRATA AND REVISIONS

**RESEARCH**

- CITATION AND USE
- BIBLIOGRAPHY
- RELATED SITES

**CONTACT US**

- HELP
- USER FORUM
- IPUMS STAFF

**U.S. CENSUS DATA FOR SOCIAL, ECONOMIC, AND HEALTH RESEARCH**

IPUMS USA collects, preserves and harmonizes U.S. census microdata and provides easy access to this data with enhanced documentation. Data includes decennial censuses from 1790 to 2010 and American Community Surveys (ACS) from 2000 to the present.

**USE IT FOR GOOD -- NEVER FOR EVIL**

**CREATE YOUR CUSTOM DATA SET**

Get Data

**USE OUR ONLINE TOOL FOR ANALYSIS**

Analyze Data Online

**WHAT IS IPUMS?**

IPUMS provides census and survey data from around the world integrated across time and space. IPUMS integration and documentation makes it easy to study change, conduct comparative research, merge information across data types, and analyze individuals within family and community context. Data and services available free of charge.

**IPUMS-USA DATA UPDATES**

2016 5-YEAR DATA | 1900 100% DATA | 2016 ACS/PRCS DATA | NEW IPUMS FAMILY INTERRELATIONSHIP VARIABLES

# Obtaining ACS PUMS Data (Cont.)

← → ↺ 🏠 <https://usa.ipums.org/usa-action/samples>

Getting Started 拼 Online Pinyin Input M... OneLook Dictionary S... WordHippo 海词词典\_在线词典\_在... Cambridge Dictionary:... google dictio...

LOG IN | IPUMS.ORG

## IPUMS USA

HOME | SELECT DATA | MY DATA | FAQ | HELP

### SELECT SAMPLES

Variable documentation on the web site can be filtered to display only material corresponding to chosen datasets ([more information](#) on this feature).

**SUBMIT SAMPLE SELECTIONS**

USA SAMPLES

USA FULL COUNT

PUERTO RICO

☒ Default sample from each year

2018	<input checked="" type="checkbox"/> <a href="#">ACS</a>	<input type="checkbox"/> <a href="#">ACS 5yr</a>	
2017	<input checked="" type="checkbox"/> <a href="#">ACS</a>	<input type="checkbox"/> <a href="#">ACS 5yr</a>	
2016	<input checked="" type="checkbox"/> <a href="#">ACS</a>	<input type="checkbox"/> <a href="#">ACS 5yr</a>	
2015	<input checked="" type="checkbox"/> <a href="#">ACS</a>	<input type="checkbox"/> <a href="#">ACS 5yr</a>	
2014	<input checked="" type="checkbox"/> <a href="#">ACS</a>	<input type="checkbox"/> <a href="#">ACS 5yr</a>	
2013	<input checked="" type="checkbox"/> <a href="#">ACS</a>	<input type="checkbox"/> <a href="#">ACS 3yr</a>	<input type="checkbox"/> <a href="#">ACS 5yr</a>
2012	<input checked="" type="checkbox"/> <a href="#">ACS</a>	<input type="checkbox"/> <a href="#">ACS 3yr</a>	<input type="checkbox"/> <a href="#">ACS 5yr</a>
2011	<input checked="" type="checkbox"/> <a href="#">ACS</a>	<input type="checkbox"/> <a href="#">ACS 3yr</a>	<input type="checkbox"/> <a href="#">ACS 5yr</a>
2010	<input checked="" type="checkbox"/> <a href="#">ACS</a>	<input type="checkbox"/> <a href="#">ACS 3yr</a>	<input type="checkbox"/> <a href="#">ACS 5yr</a>
2009	<input checked="" type="checkbox"/> <a href="#">ACS</a>	<input type="checkbox"/> <a href="#">ACS 3yr</a>	<input type="checkbox"/> <a href="#">ACS 5yr</a>
2008	<input checked="" type="checkbox"/> <a href="#">ACS</a>	<input type="checkbox"/> <a href="#">ACS 3yr</a>	
2007	<input checked="" type="checkbox"/> <a href="#">ACS</a>	<input type="checkbox"/> <a href="#">ACS 3yr</a>	
2006	<input checked="" type="checkbox"/> <a href="#">ACS</a>		
2005	<input checked="" type="checkbox"/> <a href="#">ACS</a> ⓘ		
2004	<input checked="" type="checkbox"/> <a href="#">ACS</a> ⓘ		
2003	<input checked="" type="checkbox"/> <a href="#">ACS</a> ⓘ		
2002	<input checked="" type="checkbox"/> <a href="#">ACS</a> ⓘ		
2001	<input checked="" type="checkbox"/> <a href="#">ACS</a> ⓘ		

# Obtaining ACS PUMS Data (Cont.)

The screenshot shows the IPUMS USA website interface. The URL is <https://usa.ipums.org/usa-action/variables/group?id=h-constr>. The page features a navigation bar with links: HOME | SELECT DATA | MY DATA | FAQ | HELP. A 'DATA CART' summary shows 0 variables and 19 samples. Below the navigation bar, there are buttons for 'CHANGE SAMPLES', 'SELECT HARMONIZED VARIABLES', 'HARMONIZED VARIABLES' (selected), 'SOURCE VARIABLES', 'DISPLAY OPTIONS', and 'HELP'. The main content area displays a table of household composition variables for the years 2000 to 2018. A note states: 'AN "X" INDICATES THE VARIABLE IS AVAILABLE IN THAT DATASET.'

HOUSEHOLD COMPOSITION VARIABLES -- HOUSEHOLD				2018 2017 2016 2015 2014 2013 2012 2011 2010 2009 2008 2007 2006 2005 2004 2003 2002 2001 2000																		
Add to cart	Variable	Variable Label	Type Codes	acs	acs	acs	acs	acs	acs	acs	acs	acs	acs	acs	acs	acs	acs	acs	acs			
<a href="#">+</a>	<a href="#">SSMC</a>	Same-sex married couple	H <a href="#">codes</a>	X	X	X	X	X	X	-	-	-	-	-	-	-	-	-	-			
<a href="#">+</a>	<a href="#">NFAMS</a>	Number of families in household	H <a href="#">codes</a>	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X			
<a href="#">+</a>	<a href="#">NSUBFAM</a>	Number of subfamilies in household	H <a href="#">codes</a>	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X			
<a href="#">+</a>	<a href="#">NCOUPLES</a>	Number of couples in household	H <a href="#">codes</a>	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X			
<a href="#">+</a>	<a href="#">NMOTHERS</a>	Number of mothers in household	H <a href="#">codes</a>	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X			
<a href="#">+</a>	<a href="#">NFATHERS</a>	Number of fathers in household	H <a href="#">codes</a>	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X			
<a href="#">+</a>	<a href="#">MULTGEN</a>	Multigenerational household	H <a href="#">codes</a>	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X			
<a href="#">+</a>	<a href="#">CBNSUBFAM</a>	Number of subfamilies in household (original Census Bureau classification)	H <a href="#">codes</a>	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X			



## Analyzing ACS PUMS Data

- Before analyzing the PUMs data, check out at least three related documents on the website <https://www.census.gov/programs-surveys/acs/technical-documentation/pums/documentation.html>
  - The ReadMe file
  - The Data Dictionary file
  - Top coded and bottom coded values

## Analyzing ACS PUMS Data (Cont.)

- Download and create the personal data
- Merge household data with personal data
- Combine data files across multiple years
- Obtain the marital statuses of different age groups using personal weights
- The distribution of Internet Access by Type of Unit using household weights
- Multinomial logistic regression of marital status on age, using replicate weights

# Conclusions

- ACS data allow researchers to gain an current understanding of the demographic, social, and economic characteristics of the populations in the United States and Puerto Rico.
- ACS also allows for examining how these characteristics change over time. However, before conducting such studies, researchers should ascertain that the definitions of the characteristics and geographic areas are the same at different time points.
- The sizes of ACS data files are large. When using ACS data, you may want to only select the variables you want to use.
- When analyzing ACS data, you need weight the data.
- For additional helps about ACS, you can contact Census Bureau at 1-844-275-3282 and [census.askdata@census.gov](mailto:census.askdata@census.gov); ask question at the data user group (<https://acsdatacommunity.prb.org/>); or come see me at room 5D, Williams Hall.