Census Data Guide

A "HOW- TO" MANUAL FOR ACCESSING AND UTILIZING DATA FROM THE 2020 CENSUS AND AMERICAN COMUNITY SURVEY

Prepared for Raymond John Wean Foundation by
Greater Ohio Policy Center
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MARCH 2025 NOTE:
The Census has changed the look of its interface since 2022. The screenshots in this PDF will not align with what is currently online. HOWEVER, the steps for retrieving data that are described in this Guide are still accurate.-GOPC

Census Data Guide

Contents

Quick Tips and FAQs for Accessing and Utilizing Census Data

- **Where do I access Census data?**: https://data.census.gov/cedsci/
- **What Census product should I use?:** Use the decennial census data (e.g. 2000, 2010, 2020) when it makes sense. If you want data that is more recent than 2000 or has more details than 2010 and 2020 censuses, use American Census Survey data (ACS). *Generally speaking,* you will use 5-year ACS data. See below for more information.
- **Can I mix-and-match Decennial and ACS data?:** You should not mix-and-match ACS 1-year data and ACS 5-year data (e.g. don't do 2014 ACS 1-year + 2015-2019 ACS 5-year in the same analysis).

  You can mix-and-match Decennial and ACS data, but keep all data from the same year from the same source (e.g. 2010 Decennial data + 2015 ACS 5-year data + 2019 ACS 5-year data).
- **How do I track trends over time?:** Generally speaking, you can look at ACS 5-year data that don't overlap (for example, compare 2006-2010 ACS 5-year data to 2011-2015 ACS 5-year data).

  You can compare ACS 1-year data. However, smaller geographies may need to use 1-year ACS supplemental estimates. The supplemental estimates will have larger margins of error.
- **How do I cite my Census/ACS data?:** Use the title of the data set and the years for which the data was collected. See below for examples.

Details to Utilize Census Data with Confidence

How to Access Census Data

https://data.census.gov/cedsci/ is the web portal to access data and digital content from the U.S. Census Bureau.

Background on different Census products. When to Use Decennial versus American Community Survey (ACS)

Decennial Census

The Decennial Census is the most accurate data set.

The Decennial Census is conducted once every ten years in an effort to count every person living in the 50 U.S. states, the District of Columbus, and the five U.S. territories. It asks a shorter set of questions than the ACS.

Data from the Decennial Census is used to determine congressional representation.

American Community Survey (ACS)

The ACS is the premier source for detailed population and housing information in the United States.

The ACS is sent to a sample of addresses (about 3.5 million) across 50 U.S. states, the District of Columbia, and Puerto Rico.

Information from the survey generates data that help determine how more than $675 billion in federal and state funds are distributed each year.

There are two versions of the ACS:

- ***5-Year Survey*** pools 60 months' worth of data to create more precise multiyear estimates for geographic areas with smaller populations. 5-year estimates are published every year, but will cover five years' worth of data (e.g. 2005-2009 or 2011-2015).

  ACS 5-year data has a smaller margin of error than ACS 1-year and covers smaller geographies. This is why GOPC generally recommends using ACS 5-year data.

  Multiyear estimates should be labeled to indicate clearly the full period of time (e.g., "The child poverty rate in 2011–2015 was X percent."). 5-year estimates do not describe any specific day, month, or year within that time period.

  > Larger "margin of error" does not mean the data is wrong. It just means that the survey used a smaller sample set, which makes researchers less confident that they accurately represented the entire data set.

- ***1-Year Survey*** is information collected over a 12-month period. It has a larger margin of error than 5-year ACS data. Geographic areas with populations of 65,000+ are surveyed for the ACS 1-year survey. Geographies with 20,000-65,000 population have "1-year Supplemental Estimates," which have larger margins of error. Geographies with less than 20,000 population only have 5-year surveys.

One other note: The ACS conducted 3-year surveys until the project was discontinued in 2013. It is unlikely you will need 3-year survey information at this point.

Deciding which ACS Estimate to Use

For data users interested in obtaining detailed ACS data for small geographies (areas with fewer than 65,000 residents), ACS 5-year estimates are the only option. For areas with populations of 65,000 or more, choosing between ACS products will depend on the intended use of the data. The table below shows the different features of ACS 1-year, 1-year Supplemental, 3-year, and 5-year estimates that data users can consider in choosing which estimates to use.

Table 3.1: Distinguishing Features of ACS 1-Year, 1-Year Supplemental, 3-Year, and 5-Year Estimates		
1-Year Estimates	**1-Year Supplemental Estimates**	**5-Year Estimates**
12 months of collected data	12 months of collected data	60 months of collected data
Data for areas with populations of 65,000 and more	Data for areas with populations of 20,000 and more	Data for all areas
Smallest sample size	Smallest sample size	Largest sample size
Less reliable than 5-year	Less reliable than 5-year	Most reliable
Most current	Most current	Least current
Released annually since 2005	Released annually since 2014	Released annually since: 2005-2009 ACS 5-year data
Best used when	**Best used when**	**Best used when**
Comparing data year-over-year, but less precise than 5-year estimates You're analyzing large populations	Comparing data year-over year, but less precise than 5-year estimates You're analyzing smaller populations Examining smaller geographic areas (because the standard 1-year estimates are not available)	You want the most precise data You can compare over a longer timeframe (5-year estimates should not overlap) You're analyzing very small populations Examining tracts and other small geographic areas (because 1-year estimates are not available)

The complete version of the table above can be found in *Understanding and Using American Community Survey Data*, issued July 2018. The table itself is lifted from "Chapter 3: Understanding and Using ACS Single-Year and Multiyear Estimates." The full handbook can be seen here: https://www.census.gov/content/dam/Census/library/publications/2018/acs/acs_general_handbook_2018.pdf

Making Comparisons over Time

ACS 1-year estimates should only be compared with other 1-year estimates, and ACS 5-year estimates should only be compared with other non-overlapping 5-year estimates and Decennial data. Don't mix-and-match 1-year and 5-year data pulls.

To look at trends over time, you can compare ACS 1-year estimates on a year-to-year basis. For example, comparing county poverty rates using 2014 ACS 1-year estimates to 2015 and 2016 ACS 1-year estimates.

If you are comparing ACS 5-year estimates (perhaps because the geography you are looking at is too small to have an ACS 1-year estimate), the Census Bureau recommends comparing 5-year estimates that do not overlap. For example, you can compare 2006-2010 ACS 5-year data to 2011-2015 ACS 5-year data.

You can compare ACS estimates and Decennial data. Make sure the ACS estimates are the same year span (e.g. 1-year vs 5-year).

> For more information, view "Chapter 4: Making Comparisons with ACS Data" from *Understanding and Using American Community Survey Data,* issued July 2018. The full handbook can be seen here: https://www.census.gov/content/dam/Census/library/publications/2018/acs/acs_general_handbook_2018.pdf
>
> See also: The Importance of the American Community Survey and the Decennial Census https://www.census.gov/programs-surveys/acs/about/acs-and-census.html

Citing Census Data

When pulling data from the U.S. Census Bureau, it is important to cite the data set. Generally, you should include the title of the data set and the years for which the data was collected. Citations can look like:

- U.S. Census Bureau. (2015). *2010-2014 American Community Survey 5-year Estimates* [SAS Data file]. Retrieved from [URL].
- Demographics of Bond Hill, Roselawn, and Comparison Neighborhoods. U.S. Census American Community Survey 2015-2019. Subsidized Rental Data from U.S. Department of Housing and Urban Development, 2019.
- U.S. Census Bureau; *American Community Survey, 2015-2019 5-Year Estimates*; Table ID: S2501

Pulling Data!

Subject Definitions

The ACS and Decennial surveys offer data on dozens of subjects. Both sources can "slice" subject data in a number of ways; for example, poverty data is broken down by race, education, and age; housing tenure data is provided by race, age, or educational attainment.

The results from ACS and Decennial surveys usually include subject definitions within the table, which is helpful for the less intuitive subject labels.

> All subject definitions for ACS can be found here: https://www2.census.gov/programs-surveys/acs/tech_docs/subject_definitions/

Starting a Data Retrieval

1. Your search will begin at https://data.census.gov/cedsci/

2. Click on the link to begin an Advanced Search. Data.census.gov offers many filters to help you find the data you are looking for.

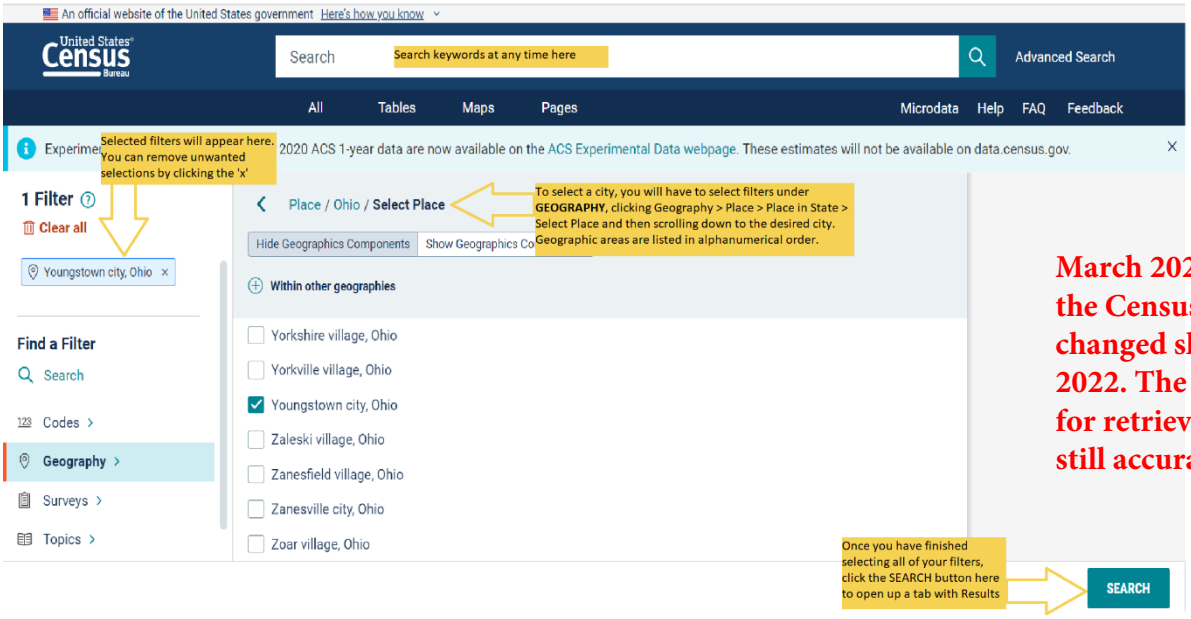
   The filters you will probably use most often are
   - Geography
     - Generally, you want to use "Place," which is where you will find city-specific data. You can also pull data at the State, County, Metropolitan Statistical Area (MSA), Zip Code, and Census Tract levels.
     - Neighborhood-level data can be approximated using Census tracts or block groups. Only the ACS 5-year survey provides data at this level of geography.
     - To assess conditions for a region, look at MSA data. MSAs must include a city with a minimum population of 50,000; in contrast, micropolitan statistical areas center on towns and smaller communities with populations between 10,000–50,000.
       - Both the cities of Youngstown and Warren are included in the **Youngstown–Warren–Boardman, OH–PA Metropolitan Statistical Area** https://en.wikipedia.org/wiki/Mahoning_Valley
       - To learn more, visit: https://www.census.gov/programs-surveys/metro-micro/about.html OR https://www.investopedia.com/terms/m/msa.asp
   - Surveys
     - This allows you to filter between different survey options, for example, ACS 1-year vs ACS 5-year vs Decennial.
   - Topics
     - Filtering by topic will help narrow down the data you may be looking for. For example, data on school enrollment is found under the Education > School Enrollment, and data on housing values can be found under Housing > Financial Characteristics.

- Year(s)
  - Certain surveys are only available for select years; for example, Decennial Census data will only be available for years 2000 and 2010.

You can select several filters at once, though some options may disappear depending on the limitations of certain filters. For example, you cannot select Survey > Decennial Census and also select Year > 2011 because the Decennial Survey was only conducted in 2000 and 2010.

By selecting a survey, you also limit the number of topics available to explore; for example, the 2010 and 2020 Decennial Survey asked only 5 questions and therefore provides data on limited topics.

You may want to select filters in this order: Geography → Year → Topics → Survey. If you are struggling to find good results for the data you need, try selecting a different Topic filter similar to the metric you're looking for. For example, select 'Income and Poverty' instead of 'Poverty' or consider removing all filters for Topics and typing in a keyword into the top search bar.



March 2025 note: the Census interface has changed slightly since 2022. The instructions for retrieving data are still accurate. -GOPC

Knowing what data to search for is not always obvious. The following is not an exhaustive list of all data subjects, but does provide an overview of common data subjects and suggested language/tables on how to search for the information.

- **Population data** by age, sex, and race is found in "ACS Demographic and Housing Estimates" (Table ID: DP05)
- **Household Income** is found in tables like "Income in the Past 12 Months" (Table ID: S1901); or "Financial Characteristics" (Table ID: S2503); or "Selected Economic Characteristics" (Table ID: DP03)
- **Per Capita Income** is found in tables like "Per Capita Income in the Past 12 Months" (Table ID: B19301); or "Mean Income in the Past 12 Months" (Table ID: S1902); or "Selected Economic Characteristics" (Table ID: DP03)

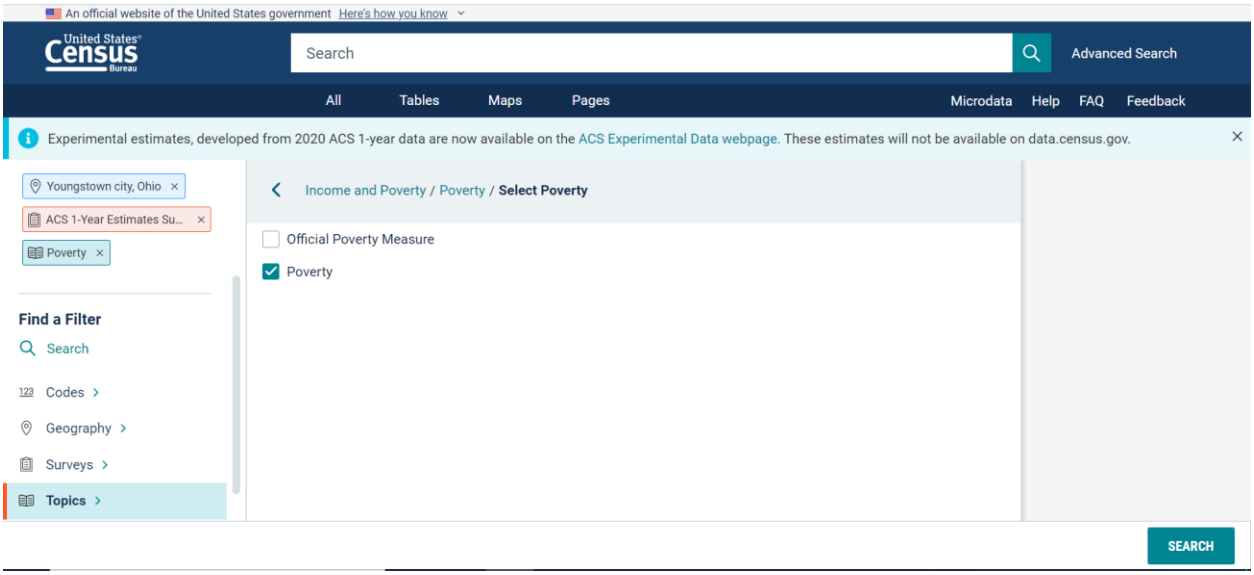
- **Employment Status** and **Labor Force Participation** can be found in tables like "Employment Status" (Table ID: S2301)
- **Homeownership rates** are found in tables like "Occupancy Status" (Table ID: 25002)
- **Home Values** are found in tables like "Value of Owner-Occupied Housing" (Table ID: B25077)
- **Education** data can be found in tables like "Educational Attainment" (Table ID: S1501) or "School Enrollment" (Table ID: S1401)

Sample Query: Child Poverty in the City of Youngstown in the Past 5 Years

We want to record the poverty status for individuals under 18 years of age from 2015 up to 2019. Because we want to look at year-over-year change within a short time frame, we will need to use a 1-year survey product from the ACS.[1] In 2019, ACS 1-year survey estimates were provided for the City of Youngstown because the city's population was over 65,000. Had there been fewer than 65,000 residents, we would have had to use 1-year supplemental estimates.

Step 1: To begin, start selecting your filters. We know the GEOGRAPHY, the SURVEY, and the TOPIC that we want to filter for, so we will select:

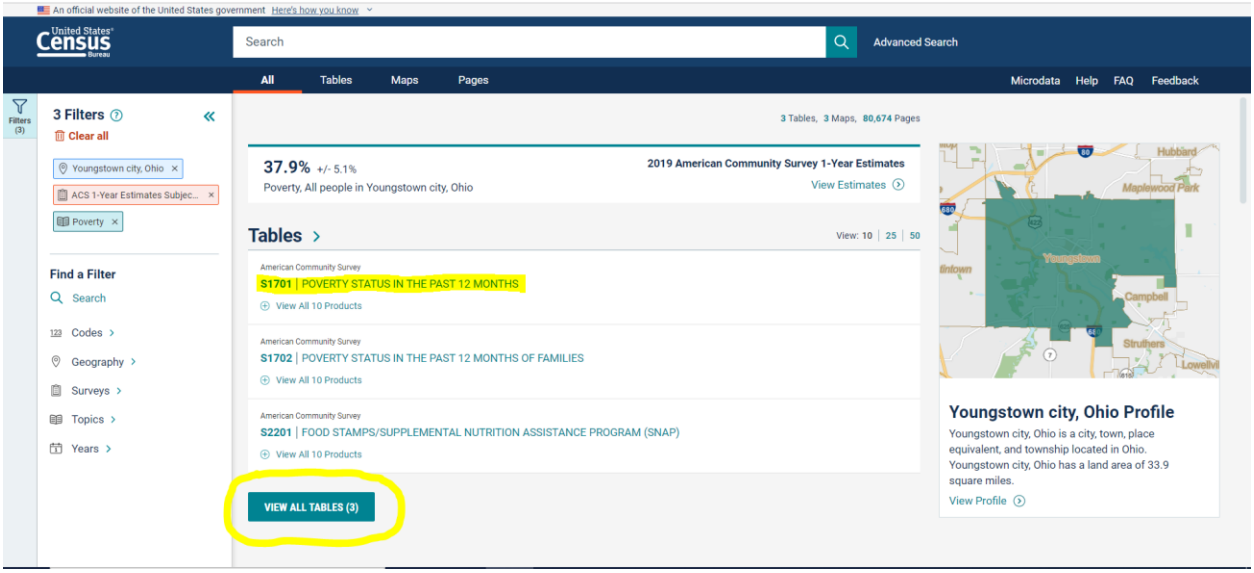
- Geography > Place > Ohio > Youngstown city, Ohio
- Survey > American Community Survey > 1-Year Estimates > Subject Tables
- Topic > Income and Poverty > Poverty > Poverty



Hit the search button to bring up results.

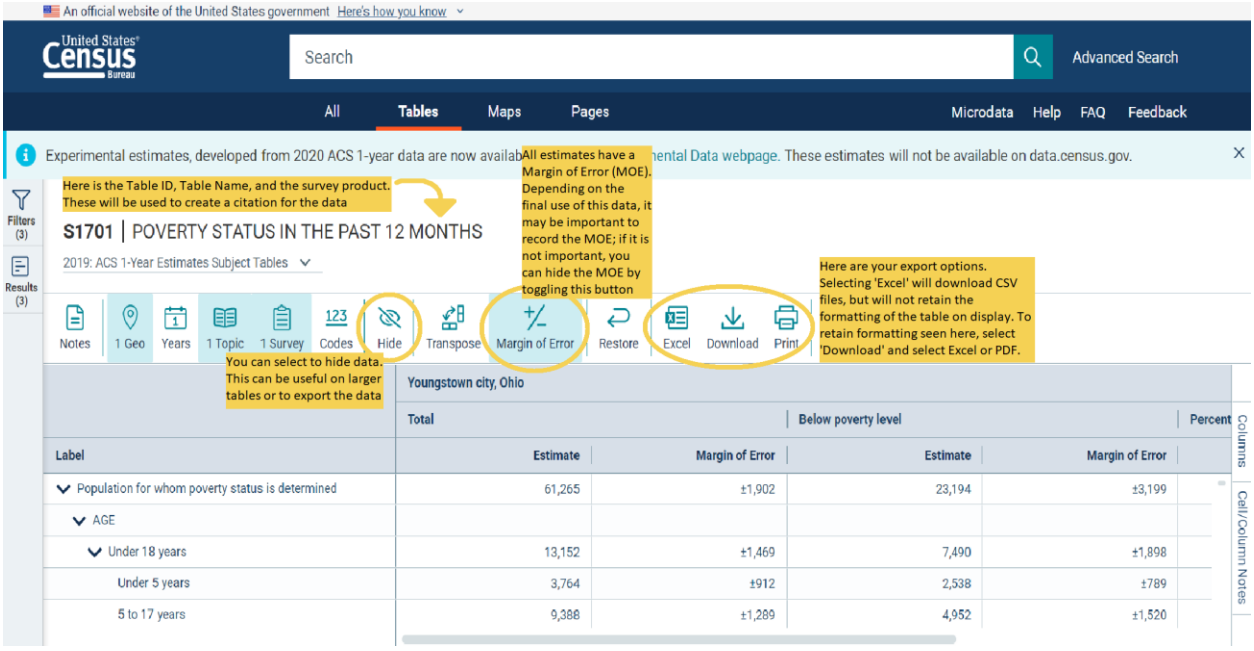
[1] If, for example, you wanted to look at poverty rates between different census tracts; or you wanted to compare child poverty rates between Youngstown and Warren; or if you wanted to opt for estimates with a lower margin of error, then you should use ACS 5-year estimates instead of the ACS 1-year estimates. For more information, see the ***Deciding Which ACS Estimate To Use*** section of this guide.

Step 2: We want to be able to view tables, so click the button that says “View All Tables.” There should be three results; select Table S1701 | Poverty Status in the Past 12 Months.



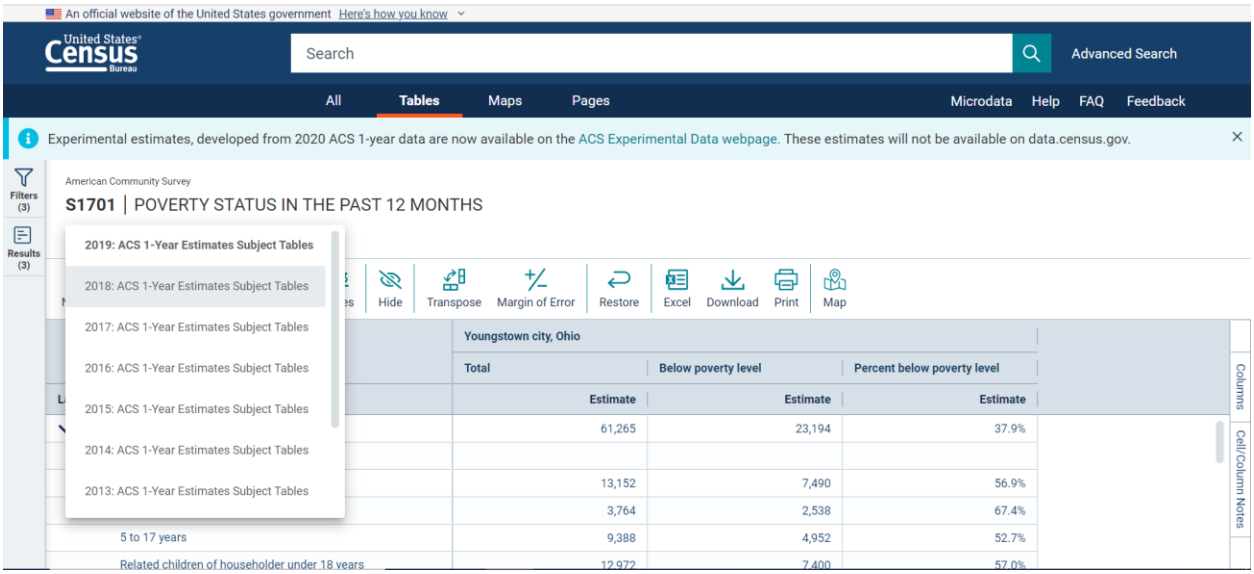
The Table Name and ID is the unique identifier for this dataset. Table ID should remain the same should you want to look at poverty status (or another metric) across multiple years or geographies.

Step 3: There are several options to customize your table, including the option to hide certain columns, show the Margin of Error, transpose the table (switch the Columns and Rows), as well as an option to restore the original table view. Changes made through the top buttons will be retained in a table export. You can also hide or expand the labels on the first column by toggling the arrows to the left of each label. This change will modify the table view, but will not be retained if you export the table.



We want to focus on individuals under 18 years of age and the percent below poverty level. You can only look at one year of data at a time, so you will have to either manually copy the data for each year or export a table for all of the focus years. However, if you would like to view multiple geographies in one table, you can do that by choosing any number of locations when applying your filters in Step 1.

You can change the year by selecting a different survey in the dropdown menu.



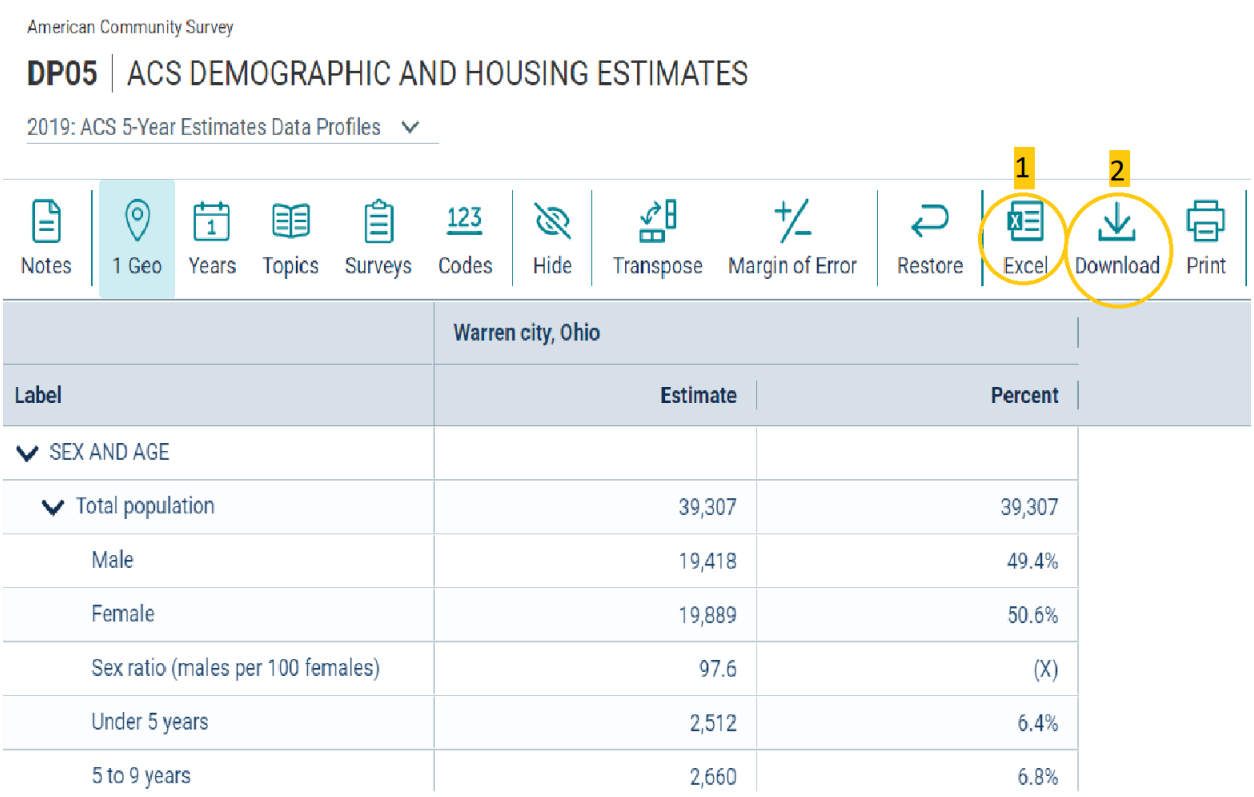
We will go through 2015-2019 ACS 1-Year Estimates data to build out the table below.

Child Poverty in the City of Youngstown, 2015-2019		
Year	Total Individuals under 18 years	Percent below poverty level
2015	14,153	61.4%
2016	12,325	53.5%
2017	14,071	55.3%
2018	13,679	47.4%
2019	13,152	56.9%

U.S. Census Bureau. *American Community Survey 1-year Estimates*; Table ID: S1701. Retrieved December 2021.

Downloading Data

For quick or one-time inquiries, looking up data and copying directly from data.census.gov might be sufficient (making sure to cite the survey, year, and Table ID). If this is data that you plan to reference multiple times or that you intend to manipulate (i.e. use the data in calculations or to create graphs/charts), then you will want to download the data. There are several options to do this. Once you have gotten the table result that you're looking for, you can do the following:



(1) **Selecting 'Excel'** will allow you to download the full table as either an Excel workbook or as a .csv file. The downloaded file will include any customizations that you have made (e.g. hide margin of error or certain columns). Selecting either Excel or .csv will automatically begin the file download.

(2) **Select 'Download'** will allow you to download multiple years of data for one table as .csv files. Select the years for which you want to download the data and hit 'Download' again to automatically begin downloading a .zip folder. The .zip folder will include
   a. A .csv file of metadata, which will include the names for columns in the data file;
   b. A .csv file of data, which will include the estimate and margin of error data;
   c. A .txt file with the table title

Generally speaking, you will want to download to Excel (the first option) to do simple calculations and to create independent tables/graphs.

This guide was written by Maria Walliser-Wejebe, Research Manager, Greater Ohio Policy Center.