

Using Census Bureau Data for Research and Analysis

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The objectives of this workshop are:

1. To provide an overview of the major surveys and data collections available through the Census Bureau,
2. To demonstrate various ways of accessing Census Bureau data, and
3. To provide an overview of several tools tips to use when working with Census Bureau data.

Census Bureau Data: Decennial Census

- The Decennial Census is a count of all U.S. residents taken every ten years: <http://www.census.gov/2010census/>
- Starting in 2010, the Decennial Census was stripped down to 10 questions that focus on only a few topics:
 - a roster of people residing in each household,
 - the ownership type for the household, and
 - the sex, race, and ethnicity of each person in the household.
- All other topics previously found in the Decennial Census have been moved to the American Community Survey.
- The 2010 ACS estimates were forced to be consistent with 2010 Census counts by sex, age, race, and Hispanic origin (population controlled).

Census Bureau Data: American Community Survey (ACS)

- The American Community Survey (ACS) collects housing, demographic, social, and economic information for about 3.5 million household addresses each year: <http://www.census.gov/acs/www/>
- Potential respondents are heads of households or adult household members who have been living at the residence for at least two months.
- The survey is fielded throughout the year, but respondents are interviewed just once.
- The reference period for the survey varies from current time (most demographic questions), in the last week (employment), in the past month (utilities expenses), and in the past year (income).
- The ACS is disseminated in one, three, and five-year data sets.

Census Bureau Data: Current Population Survey (CPS)

- The Current Population Survey collects basic demographic and labor force data on about 54,000 households monthly:
<http://www.census.gov/cps/>
- Potential respondents (CPS Basic) include non-institutionalized civilians 15 years and older.
- Respondents rotate in and out of sample in a 4/8/4 pattern and are then permanently out of sample.
- The (CPS Basic) survey is fielded the week of the 19th of each month and the survey's reference period is the prior week.
- The CPS includes 20 periodic supplemental surveys on a variety of topics, including annual work activity and income (the ASEC, which is fielded in March).

Census Bureau Data: Survey of Income and Program Participation (SIPP)

- The Survey of Income and Program Participation is a longitudinal survey that collects demographic, labor force, income, and program participation information on about 52,000 households (for SIPP 2008): <https://www.census.gov/programs-surveys/sipp.html>
- All household members 15 years and older are potential respondents (includes Armed Forces and institutionalized persons).
- SIPP 2008 interviews household members every 4 months for a period of 4 years.
- The survey reference period is the 4 months prior to the interview.
- SIPP includes periodic supplemental surveys that cover a variety of topics such as child care and school enrollment.

Census Bureau Data: What is it Good For?

- Do you want a variety of demographic and socio-economic characteristics for areas of the U.S.?
 - ACS
- Do you want detailed unemployment, employment, and earnings information about American adults?
 - CPS
 - SIPP
- Do you want information about people's use of government assistance and benefits programs?
 - SIPP
 - CPS*
- Do you want to track people's unemployment, employment, and earnings over time?
 - SIPP
 - CPS*

Accessing Census Bureau Data: What do you need?

A simple statistic or general tabulation

- American Fact Finder (AFF) for ACS and Decennial Census data
 - <http://factfinder2.census.gov/faces/nav/jsf/pages/index.xhtml>
- Tables from the Bureau of Labor Statistics (BLS) for CPS data
 - <http://www.bls.gov/cps/home.htm>
- These tables provide easily accessible data on a variety of topics for many geographies and years.
- The tables are generated from the internal ACS and CPS data.
- There are many different types of tables in AFF, presenting ACS data in numerous ways.

Accessing Census Bureau Data: What do you need?

A simple statistic or general tabulation

- Useful ACS tables:
 - DP02 (Social characteristics)
 - DP03 (Economic characteristics)
 - DP04 (Housing characteristics)
 - DP05 (Demographic and housing estimates).
 - There are also CP versions of each of these tables (multi-year comparisons of estimates).
- These tables are available for numerous geographies, including: nation, state, county, metro- and micropolitan statistical areas, zip codes, Census tracts, Congressional and state legislative districts, and school districts.
- The tables provide estimates using 1, 3, and 5-year ACS data.

Accessing Census Bureau Data: What do you need?

A tabulation that isn't easily found in AFF, but doesn't involve a lot of variables

- DataFerrett: <http://dataferrett.census.gov/>
- DataFerrett allows users to create simple tables, graphs, and maps from the micro data.
- Data sets include: ACS, CPS, and SIPP.
- DataFerrett uses the public use versions of each of the data sets.
- DataFerrett is also a good way of checking estimates created from the PUMS data.

Accessing Census Bureau Data: What do you need?

A complex statistic, custom tabulation, or modeling

- Public Use Micro-data Samples (PUMS)
- ACS PUMS: <http://www2.census.gov/>
- CPS PUMS: http://thedataweb.rm.census.gov/ftp/cps_ftp.html
- Integrated Public Use Micro-data Series (IPUMS):
<https://www.ipums.org/>
- The IPUMS website provides easy access to the ACS and CPS public use micro-data samples, harmonizes many of the variables across years of the surveys, and includes extensive documentation for using the data sets.
- IPUMS is maintained by the Minnesota Population Center.

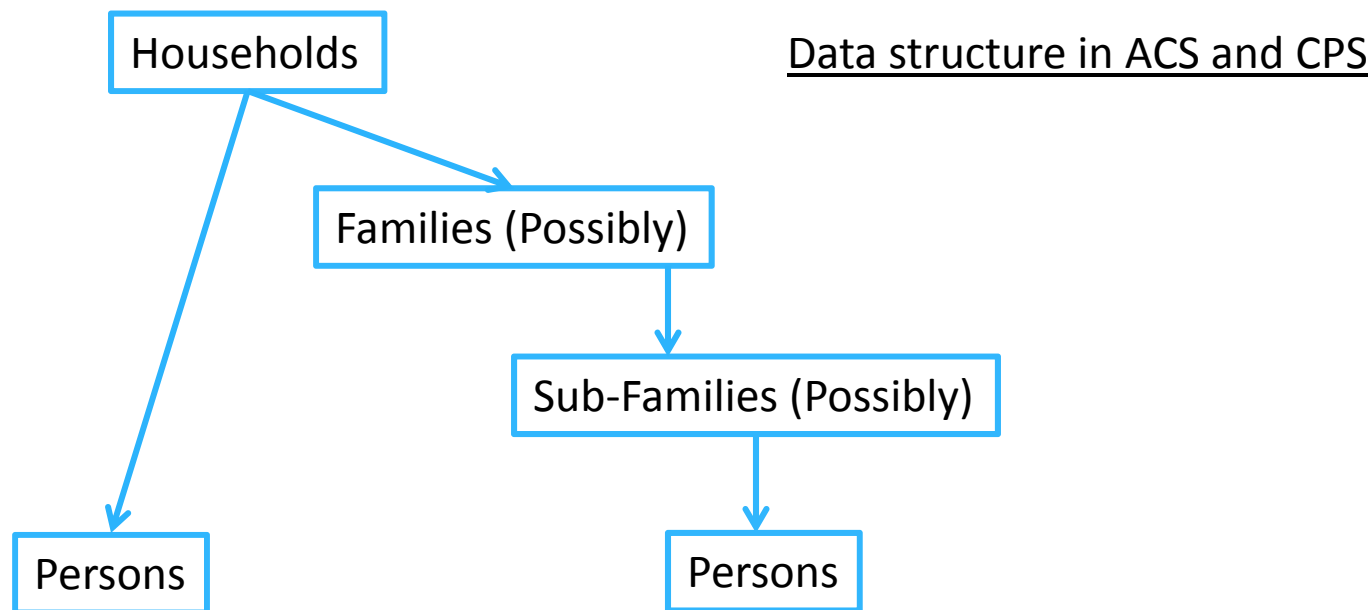
Working with Census Bureau Data: Tools and Tips

Distinction Between Internal and Public Use Data

- Public use data files go through a variety of transformations to limit disclosure of personally identifiable and sensitive information, including:
 - Limiting identifiable geographies,
 - Aggregating and top- and bottom-coding variables,
 - Excluding cases, and
 - More extreme measures such as data swapping and data perturbation.
- For these reasons, estimates produced from the public use data (DataFerrett and PUMS) should not be expected to match estimates from the internal data (AFF and BLS tables).

Working with Census Bureau Data: Tools and Tips

Data Structure and Unique Identifiers



- ACS files are provided at the person and household level.
- CPS files are provided at the person, family, and household level.
- Unique identifiers for households, families, and persons are provided in the Data Dictionary for ACS and CPS (see slide 14).

Working with Census Bureau Data: Tools and Tips

Weighting

- ACS and CPS provide weights to calculate point estimates and replicate weights to calculate measures of error.
- ACS includes household and person weights:
http://www.census.gov/acs/www/data_documentation/pums_documentation/ (Data Dictionary)
- CPS includes household, family, and person (for March ASEC), person and person for earnings and union variables (for CPS Basic) weights:
<http://www.census.gov/cps/methodology/techdocs.html>
- IPUMS provides Stata code for using the ACS and CPS replicate weights:
 - <https://usa.ipums.org/usa/repwt.shtml>
 - <https://cps.ipums.org/cps/repwt.shtml>
- IPUMS also provides (approximate) strata and cluster variables to analytically derive measures of error in ACS data.

Working with Census Bureau Data: Tools and Tips

Race and Ethnicity

- Census Bureau surveys adhere to self-identification for race and ethnicity. Respondents can assert any race(s) and ethnicity, in any combinations.
- Census Bureau publications generally use the following race and ethnicity categories:
 - Single race, not Hispanic
 - White
 - Black
 - Asian
 - American Indian or Native Alaskan
 - Native Hawaiian or Pacific Islander
 - Some other race
 - Two or more races, not Hispanic
 - Hispanic or Latino

Working with Census Bureau Data: Tools and Tips

Employment

- For ACS and CPS,
 - Employment questions are asked only of people 15 years and older.
 - Questions about employment status refer to the last week before the interview.
 - The employed population includes active duty armed forces members (CPS ASEC).
- For ACS, questions about occupation, industry, and class of worker are asked of anyone who worked in the last 5 years.
- CPS (ASEC) collects industry, occupation, and class of worker information on the current, main job and the longest job held in the year and hours and earnings information for all jobs held in the year.

Working with Census Bureau Data: Tools and Tips

Income

- In ACS and CPS (ASEC), income questions are asked of the 12 months prior to the interview.
- ACS and CPS collect income information on wage and salary earnings, business earnings, a variety of other income sources (such as interest and government assistance), and total personal income.
- The surveys use the total personal income data to generate total family income. This total family income data is used to assign poverty status to families (see slide 18).
- Income data is reported in the reference period's dollar amounts.
- For the ACS multi-year files, income data is reported in the respective reference period's dollar amounts and an adjustment factor is provided to convert income data to the last year's dollar amounts.

Working with Census Bureau Data: Tools and Tips

Poverty

- Poverty status is determined by comparing annual income to a set of dollar values called poverty thresholds that vary by:
 - family size
 - number of children
 - age of the householder (for 1 and 2 person households)
- If a family's before- tax money income is less than the dollar value of the threshold, then each person in family is considered to be poor.
- The ACS uses thresholds updated annually to allow for changes in the cost of living from the Consumer Price Index (CPI-U). They do not vary geographically.