Reference Guide for Journalists: Using the American Community Survey

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Prepared in conjunction with

The Brookings Institution's Metropolitan Policy Program

"Using Census Numbers to Find Good Stories: A One-Hour Internet Class for Journalists"

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Preface

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In the summer and fall of 2006, the U.S. Census Bureau released, for the first time, a full set of household data from the new American Community Survey (ACS). The ACS provides a remarkable opportunity for those interested in gaining a comprehensive picture of population, housing, and the economy at every level of U.S. society, from the nation down to the neighborhood. Formerly available but once a decade through the decennial census, socioeconomic statistics collected and published through the ACS now provide data users with the opportunity to view annually updated data and track change over time.

Journalists have a significant interest in using ACS statistics to generate meaningful, interesting stories. To aid journalists in this regard, the Metropolitan Policy Program of The Brookings Institution hosted a webcast on November 15, 2006 that guided about 80 reporters through the nature of the ACS, means for accessing the data, and methods for using the data appropriately and effectively. The webcast was led by a D'Vera Cohn, former Washington Post demographics reporter.[1]

This reference guide, prepared by former Census Bureau official Cynthia Taeuber, was created in conjunction with the webcast and provides more detailed information about the nature and use of the ACS. Sections 1.0-3.0 gives an overview of the ACS, web links to a wide range of Census Bureau reference material on the ACS and other data programs, and a description of the process for creating thematic maps using ACS data.

While ACS data collection and products look similar in many ways to that of Census 2000 "long form" data, there are crucial differences in universe, definitions, and presentation. Sections 4.0 and 5.0 are aimed at helping journalists understand and work with these differences so they do not make inadvertent mistakes. Section 4.0 discusses methods for using margins of error, crucial to understanding when cross-area comparisons can be appropriately made and not available in Census 2000. Section 5.0 provides a detailed comparison of similarities and differences between Census 2000 and the 2005 ACS.

The mission of The Brookings Institution's Metropolitan Policy Program is to help the nation's communities grow in more inclusive, competitive, and sustainable ways. The program recognizes that access to current, accurate, detailed statistics are critical for understanding the nature of our communities. Therefore, it is pleased to be able to make use of a grant from Living Cities: The National Community Development Initiative to employ a variety of means, including the webcast and reference guide, to aid data users in general and journalists in particular.

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[1] The webcast recording, slides, transcript, and resource materials are available at http://www.brookings.edu/metro/umi/events/20061115_censusnumbers.htm.

1.0 Overview of the American Community Survey[2]

The American Community Survey was developed by the Census Bureau to replace the decennial census "long form" as the source of detailed census demographic, social, economic, and housing characteristics of the population and housing stock required by hundreds of federal laws and court cases.

- The American Community Survey is the decennial long form spread out over 10 years – that is, the data collection occurs throughout the decade rather than just once in ten years. Traditionally, the states and communities have had to use an aging snapshot for 10-to-12 years until the next census was taken.
- The American Community Survey replaces the old snapshot with a video. Eventually, the American Community Survey will provide estimates, updated *every year*, of the distribution of *characteristics* of the population and housing in geographic areas.
- What communities previously have not had to inform policy issues and evaluate results, but what the American Community Survey will provide, are estimates of population and housing *characteristics*, and measurements of the level and direction of *change* among areas.
- The questions and the data products are essentially the same as those you saw for Census 2000.

Of particular importance, the ACS provides profiles of *small population groups* in states and regions, such as poor children under age 5, or teenage mothers and whether they are in school, working or unemployed. With the ACS, you will be able to track trends and the direction of change for such groups.

How many people? What are they like?

Be sure you got the point that, starting in 2010, the decennial census only will count people and housing units. The American Community Survey does not count – it is a sample survey that gives you estimates about the *characteristics* of the population and the housing stock.

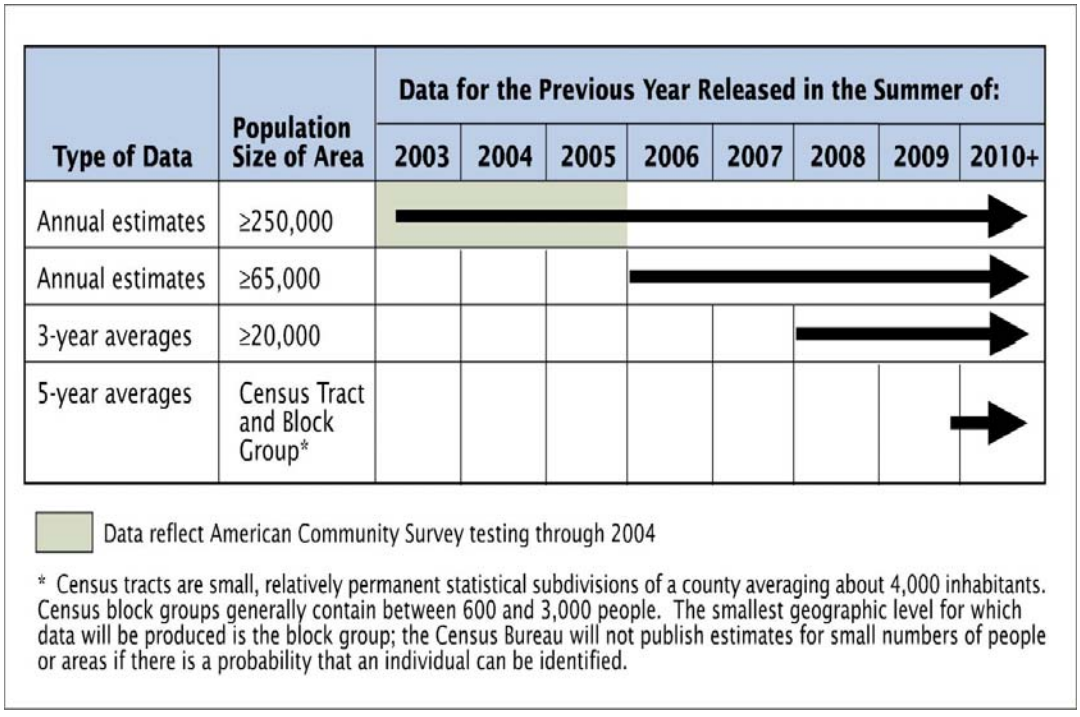
In the years between the censuses, the Census Bureau has a partnership program with the states to estimate how the number of people and housing units change in counties and states (http://www.census.gov/popest/estimates.php). Between censuses, the American Community Survey may improve current estimates of the *number* of people in small areas (such as census tracts and school districts) by furnishing current demographic distributions for use in the population estimate models.

2010 Census – counts people and housing units as of April 1, 2010
Population estimates – estimates number of people as of each July 1
American Community Survey – estimates demographic, social, economic characteristics of people and housing

[2] Based on: Cynthia M. Taeuber, *American Community Survey Data for Community Planning*, available at www.trafford.com/06-2808.

Areas will receive annually updated estimates based on population size. The chart below shows when ACS data will be released for different size areas.

- Beginning with the release in 2006, and every year thereafter, the American Community Survey will have population and housing profiles for areas and population groups of 65,000 or more people based on data collected in the previous calendar year. For example, data for calendar year 2005 were released in the late summer and fall of 2006.
- For smaller areas and population groups, it will take 3 to 5 years to accumulate enough data to provide accurate estimates. Once an area has a 3-year or a 5-year estimate, it will see an updated multi-year estimate each year thereafter. Information for areas of 20,000-64,999 people will be available starting in 2008 (that is, the 3-year average for the data collected over the period 2005-2007). The information will be updated every year thereafter.
- Information for areas of less than 20,000 people first becomes available in 2010 (the 5-year average for data collected over the years 2005-2009). After 2010, single-, 3-year, and 5-year averages will be updated every year. Then the United States will finally have a community information resource that shows change over time.



In 2010 –

Areas with 65,000 or more people will have three current estimates:

- 1-year averages for 2009
- 3-year averages for 2007 – 2009
- 5-year averages for 2005 – 2009

Areas with 20,000 to 64,999 people will have two current estimates:

- 3-year averages for 2007 – 2009
- 5-year averages for 2005 – 2009

Areas with less than 20,000 people will have one current estimate:

- 5-year averages for 2005 – 2009

The averages will be updated in 2011. For example, the 5-year averages will be for data collected from 2006 – 2010. Note that four of the five years are the same as those in the 2010 release and so the estimates will not change much from year to year.

Areas with more than one average will have analytic flexibility and more information to understand trends than ever before. Prior to the American Community Survey, communities had to rely on decennial census information that was 12 years old before it was replaced, and the intercensal population estimates.

The old information from the decennial census had an obvious problem—it was old. Even when the nation is said to be "doing well" economically, for example, parts of the country are not doing well. The extent and distribution of current trouble spots has not been easy to determine from the statistical system of the past. Some likened the situation to putting one's head in a freezer and feet in a fire and then concluding, "On average, I feel just fine." Without current data, it's difficult to determine where the fire is and where the freezer is—that is, which areas are in what state. Relying on old data, communities only could act reactively rather than proactively. They've needed a modern information system so they can prevent situations rather than try to mop up after the fact. With an information system that was not current, of high quality, and comparable across areas, it has often been difficult to adjust policies in time to meet needs, establish priorities, evaluate results, and plan for the future.

Annually updated information opens new possibilities for using data in ways different from how long form data historically have been used. Researchers are constantly developing ways to use the updated trends provided by the American Community Survey in needs assessments, in econometric and predictive models, and to improve estimates of characteristics such as disability and poverty. Geographic Information Systems (GIS) can use the population and housing information to help community officials visualize differences among areas and to actively manage programs for results.

2.0 Links to Useful ACS and Other Census Web Pages[3]

1) American Community Survey

Homepage: http://www.census.gov/acs/www/

Basics: http://www.census.gov/acs/www/Sbasics/index.htm

- Questionnaires: http://www.census.gov/acs/www/Sbasics/Squest/Squest1.htm
- Background on Group Quarters: http://www.census.gov/acs/www/Sbasics/GQ/index.htm
- Operation Plan: http://www.census.gov/acs/www/Sbasics/op_plan.htm

Using the Data: http://www.census.gov/acs/www/UseData/index.htm

- User's Guide for each year – under the "Using the Data" tab on the ACS website. For 2005: http://www.census.gov/acs/www/Products/users_guide/index.htm
- Glossary: http://www.census.gov/acs/www/UseData/Def.htm
- Subject Definitions: http://www.census.gov/acs/www/UseData/Def.htm
    - Group Quarters definition: http://www.census.gov/acs/www/UseData/GQ/def.htm
- Data Accuracy: http://www.census.gov/acs/www/UseData/Accuracy/Accuracy1.htm
- Data Quality: http://www.census.gov/acs/www/UseData/sse/index.htm
- Nonsampling Errors: http://www.census.gov/acs/www/Downloads/ACS/accuracy2003.pdf
- Response Rates: http://www.census.gov/acs/www/UseData/sse/index.htm

American Community Survey Data Tables on American FactFinder: http://factfinder.census.gov/home/saff/main.html?_lang=en

Public Use Microdata (PUMS), American Community Survey: http://www.census.gov/acs/www/Products/PUMS/index.htm

Publications about ACS Methodology: http://www.census.gov/acs/www/AdvMeth/Papers/Papers1.htm

[3] Based on: Cynthia M. Taeuber, *American Community Survey Data in Community Planning*, available at www.trafford.com/06-2809.

2) Census 2000

Census 2000 Gateway: http://www.census.gov/main/www/cen2000.html

Census 2000 Questionnaire: http://www.census.gov/dmd/www/2000quest.html

Census 2000 Glossary: http://factfinder.census.gov/home/en/epss/glossary_a.html

Accuracy of the Data, Census 2000, Chapter 8:
www.census.gov/prod/cen2000/doc/sf3.pdf.[4]

Census 2000 Brief, Overview of Race and Hispanic Origin:
http://www.census.gov/prod/2001pubs/c2kbr01-1.pdf

3) Population Estimates

Population Estimates: http://www.census.gov/popest/estimates.php

4) Census Data Centers

State Data Centers (many develop convenient tables from the decennial census and American Community Survey for their states that can be downloaded into spreadsheets):
http://www.census.gov/sdc/www/

Census Information Centers (show local area data for specific population groups):
http://www.census.gov/contacts/www/c-cics.html

5) Census Geography

Census Geography – the framework on which the data rest:
http://www.census.gov/geo/www/index.html

Geographic Terms and Concepts: http://www.census.gov/geo/www/tiger/glossry2.pdf

Geographic Types in the American FactFinder:
http://factfinder.census.gov/home/en/epss/census_geography.html

Census 2000 Geographic Products and Information:
http://www.census.gov/geo/www/census2k.html

Geographic Reference Resources: http://www.census.gov/geo/www/reference.html

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[4]To compute confidence intervals, you will need to use Table C for the design factors but the documentation on that site neglected to provide the link which is, for Arizona, www.census.gov/prod/cen2000/doc/tablec-az.pdf. For other states, change the two-character state abbreviation "az" in the URL.

Reference Maps (see the "User's Guide for each year under the "Using the Data" tab). For 2005:
http://www.census.gov/acs/www/Products/users_guide/acs_2005_reference_maps.htm

FIPS Codes for Places, Counties, Congressional Districts, and More:
http://www.census.gov/geo/www/fips/fips.html. Use to attach county and place names, for example (places, such as Portland, OR, can cross county boundaries)

U.S. Gazetteer (search for a place or ZIP code):
http://www.census.gov/geo/www/gazetteer/gazette.html

6) Historical Data

Historical statistics: http://www2.census.gov/prod2/statcomp/

Historical population counts from decennial censuses:
http://www.census.gov/population/www/censusdata/hiscendata.html

7) Other Federal Data Resources

Other Census Bureau Demographic Surveys:
http://www.census.gov/main/www/sur_demo.html

Census Bureau Catalog: http://www.census.gov/prod/www/abs/catalogs.html

Other Federal Data Sets: www.fedstats.gov

8) Statistical Reference

Statistics, Third Edition by David A. Freedman, Robert Pisani, and Roger Purves, WW Norton, NY, 1998. The 4th edition will be available in 2007. This is my favorite statistics book for understanding the logic behind statistical techniques and how to do them. Freedman, et al. write in plain English and include many examples. There is extensive discussion of sampling and non-sampling errors and confidence intervals. It is a low-tech approach to learning statistics with words and pictures and no formulas.

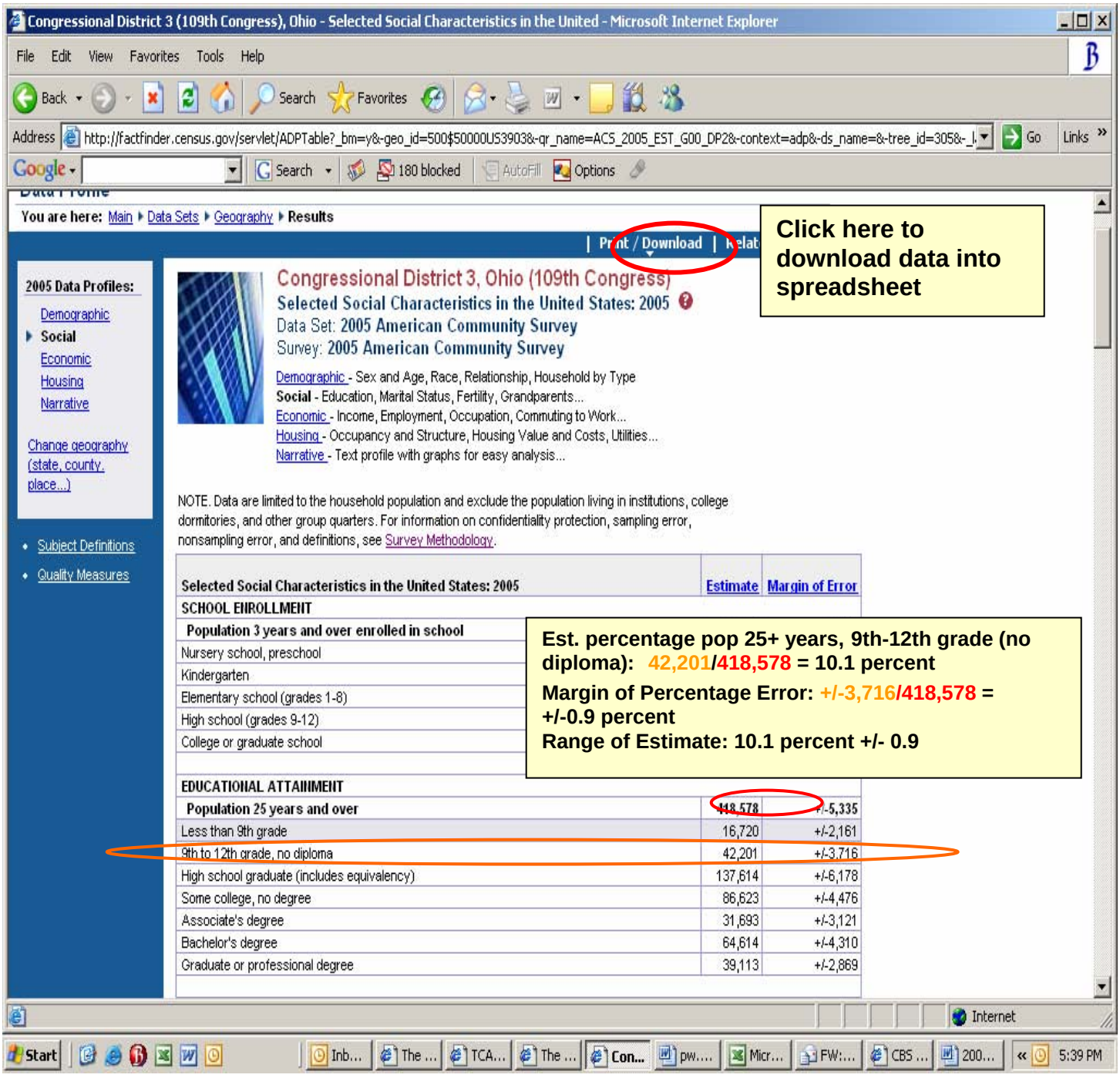
3.0 Building Thematic Maps

- Go to: http://factfinder.census.gov
- Main >
- Data Sets >
- American Community Survey 2005 >
- Thematic Maps >
- Geography type (State) >
- Highlight state name - Next >
- Select Themes – Show Result >
- Display map by – [choose geography]

4.0 Understanding Margins of Error

The American Community Survey profile in Exhibit 1, obtained from the Census Bureau's American FactFinder web tool, shows the distribution of educational attainment for people 25 years and older in the 3rd Congressional District in Ohio.

Exhibit 1: American Community Survey Profile



The first column of numbers provides the population estimate for each level of educational attainment. Note the second column marked "Margin of Error." The Census Bureau provides this column because the figures in the first column are estimates from a sample survey and not a full count from a decennial census. The margin of error is the plus or minus – in the highlighted row in Exhibit 1, the estimate is 42,201 people plus or minus 3,716 people.

The range based on the margin of error reflects what the statisticians call a "90 percent confidence interval"; it means that nine chances out of 10, the true value falls within this range. (The estimate in the first column is simply the midpoint in the range.) You need to know about the margins of error (also called the "sampling error") so you don't make a mistake by saying two areas are different when we can't really be sure they are, or that something has changed when we can't be certain it has.

I also suggest that, to the extent it fits with your story, you show tables and graphs as percentage distributions rather than as numbers. As the numbers are estimates, not exact counts, you're on safer grounds making comparisons with percentages.

From the numbers in Exhibit 1, we see that the estimated percentage of people 25 years and older in this district who dropped out of school between the 9^{th} and 12^{th} grade is 10.1 percent plus or minus 0.9 percentage points. We can be quite confident that the true percentage of high school dropouts is between 9.2 and 11.0 percent of people 25 years and older.

When you do a story, you don't need to show the confidence interval, but you DO need to know it. Knowing the confidence interval helps you evaluate the value of the estimate for your purposes; for small areas or population groups, the confidence intervals can be large—sometimes too large. You also need to know the confidence interval to be able to compare one area with other areas.

Here's how to compute the confidence interval—it's very easy:

- Click the "download" link in the upper right corner of the American FactFinder webpage (see Exhibit 1), which places the data in a spreadsheet.
- To compute the estimated percentage distributions, simply divide the category estimates by the total adult population (see Exhibit 2).
- To compute the margin of error for the each percentage, divide the population margin of error by the total population. To get the lower bound of the confidence interval, you subtract the sampling error from the percentage; to get the upper bound, you add it (see Exhibit 3).

Exhibit 2: Example of Computing Percentage Distributions and Confidence Intervals

Ohio, Congressional District 3, Educational Attainment, 2005

EDUCATIONAL ATTAINMENT	Estimate	Margin of Error	Percentage Distribution, with Confidence Intervals			Margin of Error
Population 25 years and over	418,578	+/-5,335	Lower Bound	Estimate	Upper Bound	
Less than 9th grade	16,720	+/-2,161	3.5%	**4.0%**	4.5%	+/-0.5%
9th to 12th grade, no diploma	42,201	+/-3,716	9.2%	**10.1%**	11.0%	+/-0.9%
High school graduate (includes equivalency)	137,614	+/-6,178	31.4%	**32.9%**	34.4%	+/-1.5%
Some college, no degree	86,623	+/-4,476	19.6%	**20.7%**	21.8%	+/-1.1%
Associate's degree	31,693	+/-3,121	6.8%	**7.6%**	8.3%	+/-0.7%
Bachelor's degree	64,614	+/-4,310	14.4%	**15.4%**	16.5%	+/-1.0%
Graduate or professional degree	39,113	+/-2,869	8.7%	**9.3%**	10.0%	+/-0.7%

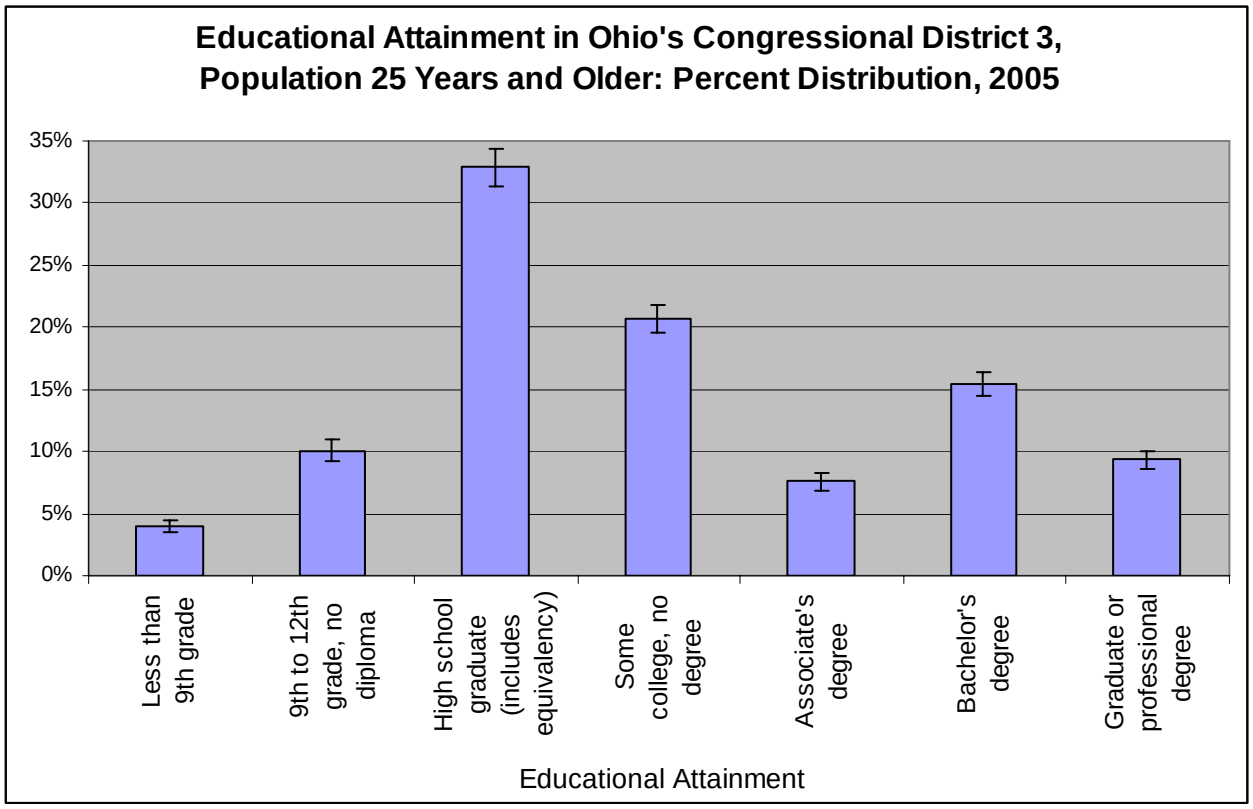
Exhibit 3: Find the Range of the Estimate

LOWER bound of confidence interval =
Estimate - Margin of error
10.1 – 0.9 = 9.2
UPPER bound of confidence interval =
Estimate + Margin of error
10.1 + 0.9 = 11.0

I suggest that you create a graph such as that shown in Exhibit 4. The graph shows you the estimates and the margins of error so you know what the 90 percent confidence interval is for an estimate given the sampling error. While you probably won't publish a graph with that information (it depends on your audience), you do need to look at it. You

might decide the data are not reliable enough for your particular purposes, and if they are sufficiently reliable, you might see patterns you didn't notice looking at just a table.

Exhibit 4



Another pointer: Because the American Community Survey provides estimates, not exact counts, when you write up the estimates, I suggest you use the word "about" and round off the numbers or percentages. Using this approach, here's what we learned about Ohio District 3 for 2005 through our analysis:

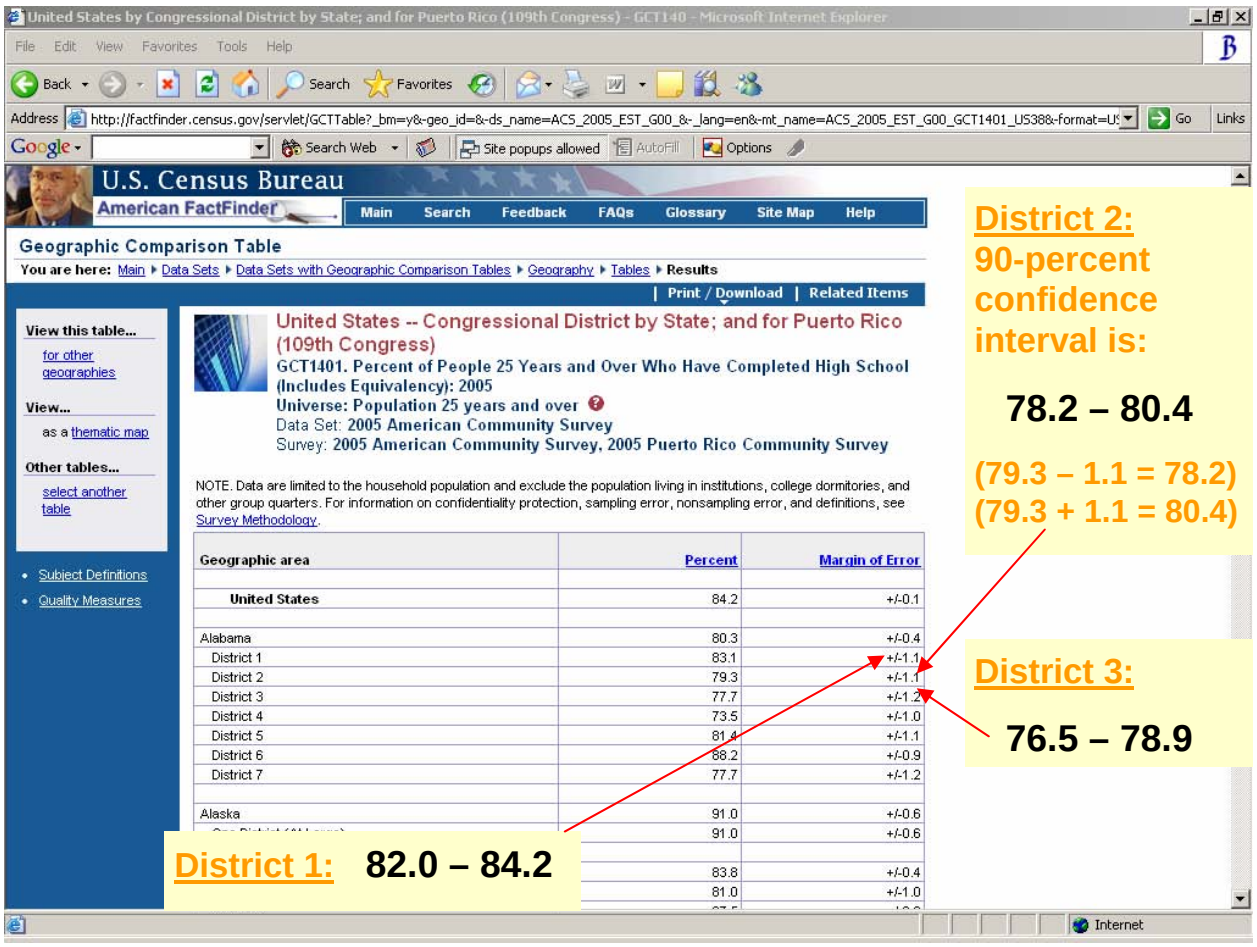
- About four percent of adults have less than a 9th grade education.
- Another 10 percent dropped out of high school sometime after 8th grade and never received a high school diploma or its equivalent.
- About one in three people have only a high school degree.
- About one in four people in this district have a college or graduate degree, 15 percent with a bachelor's degree and another nine percent with a graduate or professional degree.

To understand what is going on in an area, we can compare its estimates for a given year to estimates from earlier years and to estimates for other areas for the same year. The heart of safely making geographic and temporal comparisons—of saying, for example,

that two areas are or are not significantly different from one another—is to compute the confidence intervals.[5] Why not just use the estimate and move on? Answer: to avoid getting egg on your face. I want to convince you to keep your eye on those confidence intervals before you say one area is different from another or that one area changed from one period to another.

Here is how to use those intervals, the ranges of the estimates, before you say one area is different from another. We begin with the Geographic Comparison tables from the American FactFinder. Exhibit 5 below shows, by Alabama Congressional District, the percentage of people 25 years and older who completed high school. We see that the estimate for Alabama District 2 is 79.3 percent and the estimate for District 3 is 77.7 percent. Can you say that District 2 has a higher percentage of adults with a high school degree than District 3?

Exhibit 5. Comparing Estimates for Geographic Areas



[5] In the ACS products up to 2004, the Census Bureau provides the upper and lower bounds of the confidence intervals—you don't have to compute anything. However, in the 2005 products, it only gives the margin of error.

Before you jump to any conclusions, look at the margins of error. I added and subtracted the margin of error from the estimate so I can see the range in which the estimate is likely to fall.

We can see that the 90-percent confidence interval (estimate +/- margin of error) for District 2 is 78.2 to 80.4 percent and that for District 3 is 76.5 to 78.9 percent. Statisticians do a statistical test to decide whether these estimates are statistically different—and the Census Bureau shows you how to do that on their website.[6]

Here are the basics for doing a simple test of statistical significance, using the example above for Alabama's Districts 2 and 3:

- Compute the difference between the estimates: **79.3 – 77.7** = **1.6**
- Look at the margin of error for each of the two areas, and note the larger one: **District 3 MOE** = **1.2**
- Compare the "difference in the estimates" (1.6) to the margin of error of the estimate (1.2).

✓ If the absolute difference in the estimates is *LESS THAN* the margin of error, the difference in the two estimates is *NOT* statistically significant at the 90-percent confidence interval. (If they are equal, you should consider the difference in the two estimates not statistically significant.)

✓ If the absolute difference in the estimates is *MORE THAN* the margin of error, the difference in the two estimates *IS* statistically significant at the 90-percent confidence interval.

In this example, 1.6 is more than 1.2 and so the difference in the estimates *is* statistically significant. Thus, when you compare the estimates, you *can* say more people 25 years and older in Alabama's Congressional District 2 completed high school than in Congressional District 3. And note that we have statistical significance even though the lower bound for District 2 is less than the upper bound for District 3.

If the difference in the estimates had not been statistically significant, it means that the difference could be due to chance rather than a "real" difference. Moreover, even though in this case the difference in the estimates is statistically significant, it depends on the uses of the data whether that difference, less than two percentage points, is of much practical difference—that's a judgment you have to make.[7]

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[6] See "Accuracy of the Data" at http://www.census.gov/acs/www/UseData/Accuracy/Accuracy1.htm.

[7] **Caution**: The published estimates are rounded estimates and margins of error. Ideally, testing is done with unrounded estimate but those are not available to data users. The above test is simple but a rougher approximation of statistical significance than a Z-test of statistical significance which the Census Bureau recommends. The Z-test uses the two estimates (Est_1 and Est_2) and their respective standard errors. In the formula below "SQRT" means to take the square root and the "^2" means that the standard error is squared.

Now look at District 1. We see that the estimate is 83.1 percent and the confidence interval is 82 percent to 84.2 percent. We can say that the difference between District 1 and either District 2 or District 3 is statistically significant, that is, that District 1 has a somewhat higher percentage of high school graduates than either District 2 or District 3.

You can state the comparisons by rounding off the numbers. For example, you might say: "Better than 4 in 5 adult residents of Alabama's Congressional District 1 are at least high school graduates compared with just under 4 in 5 of the residents of Districts 2 and 3." And by the way, notice I said "residents," – I did not use the word "citizens" – just like the decennial census, the ACS surveys all residents – it does ask about citizenship – but the universe of the survey is all residents.

$$Z = (Est_1 - Est_2)/ SQRT (SE_1\text{^}2 + SE_2\text{^}2)$$

If Z is > 1.65 or Z<-1.65, then the difference is statistically significant at the 90-percent confidence interval. See page 12 of the "Accuracy of the Data" document for ACS 2005 (http://www.census.gov/acs/www/UseData/Accuracy/Accuracy1.htm).

5.0 Comparing Census 2000 and the 2005 ACS

Prepared by the State Data Center, New York State Department of Economic Development[8]

GENERAL COMPARABILITY ISSUES

Issue	Census 2000	ACS 2005
Universe	• Most tables include ALL residents (there may be age, race, etc. restrictions) • Some tables are limited to the household population • If geography is correct, PUMS or Advanced Query System can be used to generate tables limited to the household population but there are other issues.	• Tables are limited to the HOUSEHOLD POPULATION ONLY (there may be additional restrictions such as age or race) • *This will have a greater impact on areas with large group quarters facilities.*
Residence Rules	• Usual place of residence – Self-identification as to where you live most of the year. College students are supposed to be counted at their college address. • Does not capture seasonality or second home location.	• Current Residence – Counted at the sampled address if lived there most of the time in the last TWO MONTHS. College students might be counted at parent's house during summer months. • *This will have a greater impact on areas with large seasonal populations such as college and resort communities.* • Seasonal destination areas may have population counted that would have lived elsewhere on April 1, the date of the decennial census count.
Collection Procedures Non-Response Follow-up	• Primarily personal visit by short-term, moderately trained employees, being paid a relatively low wage for the area. • Emphasis on counting number of people at address.	• Conducted by long-term, highly-trained employees, being paid reasonably well for the area. • Telephone follow-up in second month if possible. Personal visit in third month usually to 1/3 of addresses not responding. • Emphasis is on collecting characteristics of individuals in the household.

[8] http://www.empire.state.ny.us/nysdc/Census_ACS2005_Comparison.pdf

Issue	Census 2000	ACS 2005
Proxy Respondents	• Allowed - People living outside the address (landlords, neighbors, etc.) are allowed to provide information.	• NOT Allowed - ONLY people living at the address can answer the questions.
Reliability	• Statistical reliability is generally not reported, but can be calculated • Generally, fairly small compared to the estimate. (Confidence intervals on data from PUMS will be larger.)	• Reported as Margin of Error (MOE). Must be calculated for user derived data • Can be VERY large compared to the estimate. • MUST be used for comparing areas or change over time.

ITEM-SPECIFIC COMPARABILITY

Total Population – Not comparable as yet. Unless otherwise noted, the 2000 Census reports the total resident population. The 2005 ACS reports only the household population, though it is expected it will publish total resident population figures for 2006 and 2007.

Age – Comparable. However, the Census reports age as of April 1, 2000 while the ACS reports age as of the survey month.

Gender – Comparable

Race – Comparable

Hispanic or Latino Origin – Comparable

Household Relationship – Comparable though some categories are different. The Census distinguishes between Natural-born, Adopted, and Step-sons and -daughters while the ACS has only one category "Son or Daughter." The Census also distinguishes between Parent-in-law and Son- or Daughter-in-law while the ACS has only "In-law."

Average Household/Family Size – Comparable although the different residency rules will likely impact household and family size.

School Enrollment – Concept is comparable but the reference period for the census is April 1, 2000, while the ACS reference period is the survey month. May also be affected by the ACS not including group quarters population.

Educational Attainment – Concept is comparable but the reference period for the census is April 1, 2000 while the ACS reference period is the survey month.

Marital Status – Concept is comparable but the reference period for the census is April 1, 2000 while the ACS reference period is the survey month. May also be affected by the ACS not including group quarters population.

Fertility – Not included in the 2000 Census

Grandparents – Comparable

Veterans Status – Comparable

Disability – Not comparable. The question was redesigned for 2005; in addition, the 2005 ACS lacks non-institutional group quarters populations.

Residence 1 Year Ago – Not comparable. Census 2000 asks residence as of 5 years ago.

Place of Birth/Nativity – Comparable

Citizenship – Comparable

Year of Entry – Comparable

Region of Birth - Comparable

Income – Not comparable. While the concepts are similar, several issues make the data not comparable: differences in the time periods for which data are collected in the ACS versus the Census; adjustments for inflation in the ACS data; accuracy of the respondents' answer; and the rates of imputation when the Census Bureau cannot get answers to these questions.

> *Reference Period* – The 2005 ACS asks respondents for their income over the 12 months prior to completing the questionnaire. The 2000 Census asks respondents about their income in calendar year 1999.
>
> *Inflation Adjustment* – The ACS income data is collected over an entire year, and refers to incomes received over a 23-month period (12 months prior to January 2005 through 12 months prior to December 2005). The Census Bureau adjusts incomes to represent the same time period using the Bureau of Labor Statistics' Consumer Price Index for all urban consumers – research series (CPI-U-RS).
>
> *Accuracy of the Respondent's Answer* – Respondent accuracy can depend on the relative stability of the respondent's income and their ability to recall changes, especially if there are major fluctuations in their income. The 2000 Census asks about income in 1999 at a time when most respondents have the information needed to complete their income taxes. It may be more difficult for an ACS respondent to recall income over the previous 12 months.

> *Imputation of Non-Response* – Historically, rates of imputation for non-response in the ACS have been much lower than in Census 2000 because of the use of highly training interviewers in the ACS. In Census 2000, about 33 percent of New York residents 15 and older had income imputed vs. about 25 percent in the ACS.

Household and family incomes – Not comparable. Concepts are comparable but in addition to the issues above, they are also affected by differences in household composition due to the different residence rules used in the 2000 Census and the ACS

Per Capita and Aggregate Incomes – Not comparable. Concepts are comparable but the 2005 ACS excludes the incomes of people living in non-institutional group quarters (college dormitories, military barracks, etc.) and uses the household population as the base while the 2000 Census includes these incomes and uses the total population as the base.

Source of Income – Not comparable. While the Census and ACS definitions are consistent, the data are impacted by all of the general income qualifications.

Poverty Status – Not comparable. Since poverty status is based on income, it is subject to all of the problems described under income. Additionally, poverty status in the 2000 Census refers to poverty status during 1999. In the ACS poverty status refers to the 12 months prior to completing the questionnaire. The difference in residency rules can also affect the number of people in a family, changing the poverty threshold for that family, but might not have much of an effect on the family's income.

Employment Status – Not Comparable. While the 2000 Census and the ACS both ask for employment status last week, the 2000 Census reference week is the last week in March whereas the ACS reflects an annual average collected throughout the year.

Means of Travel to Work – Generally comparable. In areas with large seasonal workforces or commuting methods affected by weather, such as walking, the data may not be comparable due to different reference periods. Also, "public transportation" included taxicabs in the 2000 Census but the 2005 ACS excluded this category.

Industry, Occupation, and Class of Worker – Generally comparable. In areas with large seasonal workforces the data may not be comparable due to different reference periods.

Weeks Worked – Comparable

Hours Worked – Comparable

Place of Work – Comparable

Time Leaving Home – Comparable

Travel Time to Work – Comparable

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