Measuring the Digital Divide: Review of Recent Surveys and Data

NTIA Webinar Series

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Participants

Presenters
• Rafi Goldberg, Policy Analyst, NTIA Office of Policy Analysis and Development

• Ryan Dolan, Data Visualization Specialist, U.S. Census Bureau

• Gerson Vasquez, Data Visualization Specialist, U.S. Census Bureau

Moderator
• Karen Archer Perry, Senior Policy Analyst, NTIA’s BroadbandUSA
American Broadband Initiative: The Administration’s Initiative for Promoting Broadband Connectivity

March 20, 2019 | 2:00 pm EST

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Measuring the Digital Divide

NTIA’s Internet Use Survey

February 20, 2019

Rafi Goldberg
Policy Analyst
NTIA Office of Policy Analysis and Development
Major Federal Data Sources

- Current Population Survey Computer and Internet Use Supplement (NTIA Internet Use Survey)
- American Community Survey (ACS)
- FCC Form 477 (Broadband deployment and subscription)
Current Population Survey

- In the field every month since 1940
- Approximately 52,000 households each month, state-based sample design, in-person & live phone interviews
- NTIA has periodically sponsored Computer and Internet Use Supplement since 1994
Computer use questions in CPS School Enrollment Supplement

NTIA Internet Use Survey (CPS Computer and Internet Use Supplement)

Next Survey Planned
Figure 2: Internet Use by Race or Ethnicity, Percent of Americans Ages 3+, 1998–2017

Source: National Telecommunications and Information Administration, https://ntia.doc.gov/data
Figure 3: School-Age Children Living in Households with Home Internet Service By Population Density, Percent of Americans Ages 6–17, 1998–2017
Source: National Telecommunications and Information Administration, https://ntia.doc.gov/data
Figure 1: Internet Use by Family Income, Percent of Americans Ages 3+, 2010–2017
Source: National Telecommunications and Information Administration, https://ntia.doc.gov/data
Over 50 Questions About Internet Use

- Devices and Internet access technologies
- Locations of use
- Online activities
- Reasons for non-use
- Privacy and security concerns
2017 American Community Survey - Computer & Internet Use Data

Ryan S. Dolan
Data Visualization Lead
U.S. Census Bureau
ryan.s.dolan@census.gov

Gerson D. Vasquez
Data Visualization Lead
U.S. Census Bureau
gerson.d.vasquez@census.gov
The American Community Survey: The Foundation

*The American Community Survey is on the leading edge of survey design, continuous improvement, and data quality*

- The nation’s most current, reliable, and accessible data source for local statistics on critical planning topics such as age, children, veterans, commuting, education, income, and employment
- Surveys 3.5 million addresses and informs over $675 billion of Federal government spending each year
- Covers 35+ topics, supports over 300 evidence-based Federal government uses, and produces 11 billion estimates each year
- Three key annual data releases:
  - 1-year Estimates (for large populations)
  - 5-year Estimates (for very small populations)
# American Community Survey (ACS) Estimates – **Data Subjects**

<table>
<thead>
<tr>
<th>POPULATION</th>
<th>HOUSING</th>
</tr>
</thead>
<tbody>
<tr>
<td>SOCIAL</td>
<td></td>
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<tr>
<td>Ancestry</td>
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<tr>
<td>Citizenship</td>
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<tr>
<td>Disability</td>
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<td>Educational Attainment</td>
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<tr>
<td>Fertility</td>
<td></td>
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<tr>
<td>Grandparents</td>
<td></td>
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<tr>
<td>Language</td>
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<tr>
<td>Marital Status</td>
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<tr>
<td>Migration</td>
<td></td>
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<tr>
<td>School Enrollment</td>
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<tr>
<td>Veterans</td>
<td></td>
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<td></td>
<td></td>
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<tr>
<td>DEMOGRAPHIC</td>
<td></td>
</tr>
<tr>
<td>Age</td>
<td>Computer &amp; Internet Use</td>
</tr>
<tr>
<td>Hispanic Origin</td>
<td></td>
</tr>
<tr>
<td>Race</td>
<td>Costs (Mortgage, Rent, Taxes, Insurance)</td>
</tr>
<tr>
<td>Relationship</td>
<td>Heating Fuel</td>
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<tr>
<td>Sex</td>
<td>Home Value</td>
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<tr>
<td></td>
<td>Occupancy</td>
</tr>
<tr>
<td>ECONOMIC</td>
<td></td>
</tr>
<tr>
<td>Class of Worker</td>
<td>Plumbing/Kitchen Facilities</td>
</tr>
<tr>
<td>Commuting</td>
<td>Structure</td>
</tr>
<tr>
<td>Employment Status</td>
<td>Tenure (Own/Rent)</td>
</tr>
<tr>
<td>Food Stamps (SNAP)</td>
<td>Utilities</td>
</tr>
<tr>
<td>Health Insurance</td>
<td>Vehicles</td>
</tr>
<tr>
<td>Hours/Week, Weeks/Year</td>
<td>Year Built/Year Moved In</td>
</tr>
<tr>
<td>Income</td>
<td></td>
</tr>
<tr>
<td>Industry &amp; Occupation</td>
<td></td>
</tr>
</tbody>
</table>
American Community Survey (ACS) - Key Product Releases

<table>
<thead>
<tr>
<th>Estimated Population of Geographic Area</th>
<th>1-Year Estimates</th>
<th>5-Year Estimates</th>
</tr>
</thead>
<tbody>
<tr>
<td>65,000 or more</td>
<td>X</td>
<td>X</td>
</tr>
<tr>
<td>20,000 or more</td>
<td></td>
<td>X</td>
</tr>
<tr>
<td>Less than 20,000</td>
<td></td>
<td>X</td>
</tr>
</tbody>
</table>

| Release Date                           | September 13, 2018 | December 6, 2018 |

United States Census Bureau

U.S. Department of Commerce
Economics and Statistics Administration
U.S. CENSUS BUREAU
census.gov
American Community Survey (ACS) 5-Year Estimates

5-Year Geography

• All geographic areas down to the tract and block group level
• Over 578,000 geographic areas
• 87 different geography summary levels available

census.gov/programs-surveys/acs/geography-acs.html
American Community Survey (ACS) 5-Year Estimates

- Describe the characteristics over a specific period of time, not a single point in time

- Data are pooled across 60 months, weighted to produce estimates, and controlled for age, sex, race, and Hispanic origin
  - 5-year estimates are NOT an average of 1-year estimates

- Estimates are based on geographic boundaries as of January 1 of the last year in the 5-year period

- Dollar-value estimates are inflation adjusted to the most recent year for the period
2017 ACS 5-Year Estimates - Computer and Internet Use

Computer and Internet Use
(click here to jump to the corresponding Subject Tables in American FactFinder)

Tables for computer ownership and internet subscription are available for the first time in the 2013-2017 ACS 5-year data products.

- S2801 “Types of Computers and Internet Subscriptions” (Income)
- S2802 “Types of Internet Subscriptions by Selected Characteristics” (Age, Race and Hispanic or Latino Origin, Educational Attainment & Employment Status)
- There are 22 new Detailed Tables available: B28001, B28002, B28003, B28004, B28005, B28006, B28007, B28008, B28009A-I, B28010, B28011, B99281, B99282, and B99283.
- One new Geographic Comparison table (GCT2801) has also been added. Table GCT2801 shows comparisons of various geographies by the percentage of households with a broadband internet subscription.
- Computer ownership and internet subscription have also been added to the Data Profiles (DP02, DP02PR) and Comparison Profiles (CP02, CP02PR).

To see more on changes within the 2013-2017 ACS 5-year Estimates, click here.
2017 ACS 5-Year Estimates - Computer and Internet Use Data

**Downloading the Data:**
Data at the census tract level is available for all tracts within each state or county using [American FactFinder](http://www.americanfactfinder.gov) (AFF) or the [Census API](https://www.census.gov). For a national picture, it is best to download the table for an entire geographic level via the AFF’s [Download Center](http://www.americanfactfinder.gov).
2017 ACS 5-Year - Computer and Internet Use Data Mapping

<table>
<thead>
<tr>
<th>Subject</th>
<th>Total</th>
<th>Estimate</th>
<th>Margin of Error</th>
<th>Percent</th>
<th>Estimate</th>
<th>Margin of Error</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total households</td>
<td>2,144</td>
<td>1.17</td>
<td>0.06</td>
<td>99.3%</td>
<td>1.17</td>
<td>0.06</td>
</tr>
<tr>
<td>Types of Computer</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1 desktop or laptop with no other type of computing device</td>
<td>1,530</td>
<td>1.17</td>
<td>0.06</td>
<td>99.3%</td>
<td>1.17</td>
<td>0.06</td>
</tr>
<tr>
<td>1 smartphone</td>
<td>258</td>
<td>1.17</td>
<td>0.06</td>
<td>99.3%</td>
<td>1.17</td>
<td>0.06</td>
</tr>
<tr>
<td>1 tablet or other portable wireless computer with no other type of computing device</td>
<td>1.171</td>
<td>1.17</td>
<td>0.06</td>
<td>99.3%</td>
<td>1.17</td>
<td>0.06</td>
</tr>
<tr>
<td>Other computer</td>
<td>86</td>
<td>1.17</td>
<td>0.06</td>
<td>99.3%</td>
<td>1.17</td>
<td>0.06</td>
</tr>
<tr>
<td>No computer</td>
<td>209</td>
<td>1.17</td>
<td>0.06</td>
<td>99.3%</td>
<td>1.17</td>
<td>0.06</td>
</tr>
<tr>
<td>Types of Internet Subscribers</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>With internet subscription</td>
<td>1,033</td>
<td>1.17</td>
<td>0.06</td>
<td>99.3%</td>
<td>1.17</td>
<td>0.06</td>
</tr>
<tr>
<td>With broadband of any type</td>
<td>1,833</td>
<td>1.17</td>
<td>0.06</td>
<td>99.3%</td>
<td>1.17</td>
<td>0.06</td>
</tr>
<tr>
<td>cellular data plan</td>
<td>1.202</td>
<td>1.17</td>
<td>0.06</td>
<td>99.3%</td>
<td>1.17</td>
<td>0.06</td>
</tr>
<tr>
<td>With internet service</td>
<td>1.171</td>
<td>1.17</td>
<td>0.06</td>
<td>99.3%</td>
<td>1.17</td>
<td>0.06</td>
</tr>
<tr>
<td>Without an internet service</td>
<td>209</td>
<td>1.17</td>
<td>0.06</td>
<td>99.3%</td>
<td>1.17</td>
<td>0.06</td>
</tr>
<tr>
<td>Household Income in the Past 12 Months (in 2017 Inflation-Adjusted Dollars)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Less than $20,000</td>
<td>212</td>
<td>1.17</td>
<td>0.06</td>
<td>99.3%</td>
<td>1.17</td>
<td>0.06</td>
</tr>
<tr>
<td>$20,000 to $24,999</td>
<td>619</td>
<td>1.17</td>
<td>0.06</td>
<td>99.3%</td>
<td>1.17</td>
<td>0.06</td>
</tr>
<tr>
<td>$25,000 to $49,999</td>
<td>1,857</td>
<td>1.17</td>
<td>0.06</td>
<td>99.3%</td>
<td>1.17</td>
<td>0.06</td>
</tr>
<tr>
<td>$50,000 to $74,999</td>
<td>128</td>
<td>1.17</td>
<td>0.06</td>
<td>99.3%</td>
<td>1.17</td>
<td>0.06</td>
</tr>
<tr>
<td>$75,000 or more</td>
<td>216</td>
<td>1.17</td>
<td>0.06</td>
<td>99.3%</td>
<td>1.17</td>
<td>0.06</td>
</tr>
</tbody>
</table>

Source: U.S. Census Bureau, 2013-2017 American Community Survey 5-Year Estimates
2017 ACS 5-Year - Computer and Internet Use Data Visualization
Open Data In Action

• Karen Archer Perry, Senior Policy Analyst, BroadbandUSA

Two examples:

• National Digital Inclusion Alliance – Bill Callahan and Angela Siefer
• Internet is Infrastructure – Bob Ballance

If you have an example or application to share, please add to chat!
ACS Open Data In Action - NDIA

- NDIA Home Internet Maps
  - Cable, fiber, or DSL
  - No Internet
  - By census tract
  - By region

https://www.digitalinclusion.org/home-internet-maps/
ACS Open Data In Action – I3 Connectivity Explorer

- Internet-is-infrastructure
  - ACS population data
  - ACS demographic data
  - FCC Form 477 wireline deployment data
  - FCC Form 477 wireless deployment data
  - FCC Form 477 wireline subscription data
  - M-Lab speed test data
  - ACS computer and Internet data

Request a free login from Bob Ballance
ballance@internet-is-infrastructure.org
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Questions and Comments

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Contact Us

Ryan Dolan, Data Visualization Lead
ryan.s.dolan@census.gov
(612) 718-6041

Gerson Vasquez, Data Visualization Lead
gerson.d.vasquez@census.gov
(770) 543-9900

Customer Liaison and Marketing Office
Data Dissemination Branch
census.askdata@census.gov
1-844-ASK-DATA

Rafi Goldberg, Policy Analyst
rgoldberg@ntia.doc.gov

NTIA Data Central
https://ntia.doc.gov/data

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Karen Archer Perry, Policy Analyst
Kperry@ntia.doc.gov
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March 20, 2019
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https://broadbandusa.ntia.doc.gov/ntia-common-content/how-we-can-help

BBUSA Resources
- Implementing a Broadband Network Vision: A Toolkit for Local and Tribal Governments
- Community Broadband Roadmap Toolkit
- Guide to Federal Funding of Broadband Projects
- Using Partnerships to Power Smart Cities