Webinar: Measuring the Digital Divide: Review of Recent Surveys and Data

February 20, 2019

Webinar Questions and Responses

General

1. Q. Could you explain the difference between the CPS (Current Population Survey) and ACS (American Community Survey) Computer and Internet Use Data?

   A. NTIA has sponsored a Computer and Internet Use Supplement to the CPS periodically since 1994. We're able to ask a wide variety of questions in the NTIA surveys, including not just who goes online, but also what types of devices they use, where they use the Internet, what kinds of online activities Internet users engage in, and what reasons some households have for not using the Internet. Compared with the ACS, we ask a much wider range of questions about Internet use in the CPS, and we're able to keep the survey evolving with the times. In conducting the CPS, the Census Bureau interviews about 52,000 households across every state and DC, gathering data on over 120,000 people living in those households—a large enough sample for state-based as well as national estimates, but not for smaller geographic areas. The CPS is administered through live interviewers, either in person or over the phone.

   The ACS is the premier source for detailed population and housing information about our nation. In addition to providing detailed insights on housing, jobs, education, and family status, the ACS includes just a few basic household-level questions about computer and Internet use. The Broadband Data Improvement Act (BDIA) of 2008 called on the Census Bureau to gather data, including for smaller geographic areas, on household subscribership to broadband. To that end, the ACS now includes three relevant questions: whether a household has any of a few different categories of computers, whether the household uses the Internet either with or without a subscription, and what type of Internet access technology is used by those households reporting a subscription. What the ACS lacks in the number of questions, it makes up for with an enormous sample size; over 3 million households complete the ACS every year. That makes it possible to get reliable estimates for much smaller geographic areas and demographic groups than with the CPS. One-year estimates from the ACS cover areas with at least 65,000 people, and 5-year estimates get all the way down to individual Census tracts. ACS data are primarily gathered through the completion of questionnaires via mail or online, with telephone interviewers following up in case of initial nonresponse.

2. Q. This is great data! Can the usage data be broken out by state or county?

   A. Both the Computer and Internet data that Rafi described and the ACS data that Ryan and Gerson described are statistically valid at the State level. The Digital Nation Data Explorer is an easy tool to see data for your state and compare it with other states. The American Community Survey (ACS) 5-year data is available for all 3,142 counties in the country and also valid at the census tract level.

3. Q. A recent Multichannel News article premised the idea of the FCC determining that there is less of a "digital divide" than previously determined. What are your thoughts and comments on the current supply of and demand for quality broadband, especially in rural America?

    A. We need to differentiate between broadband availability (deployment) and broadband subscription or adoption. In this webinar, we focused on broadband adoption data as represented by the CPS and ACS datasets. Both show that there are still a number of "digital divides." Although we have seen improvement in broadband adoption and use across America, broadband adoption in rural and tribal areas lags that in urban areas. Broadband use rises with increasing income and education. Adoption rates and technology choices varies by age and geography. As Karen showed in Pierce County WA, there are areas with low adoption rates in rural communities near Mount Rainer and in the urban core in Tacoma.

    While it was not discussed on this webinar, the American Broadband Initiative Milestones Report that was issued earlier this month does note significant gaps in broadband availability:

    > The FCC's *2018 Broadband Deployment Report* *shows improvements in nearly every area of advanced telecommunications services but significant gaps remain. As of 2016, more than 92% of the U.S. population had access to fixed land-based broadband at speeds of 25 Mbps/3 Mbps. Nonetheless, the remaining 8% represents more than 24 million Americans who lack access to this basic service. Of those households, 80% live in rural communities. This is more people than live in the States of New York or Florida.*

4. Q. Are there common definitions when asking these questions? i.e. do people commonly know what cable, fiber or DSL broadband is? Would they know what they have?

    A. You are correct in noting that this is a challenge. For each of the surveys, questions are tested extensively before they are fielded to make sure that they are as clear as possible. Detailed information on the CPS dataset and questions is available at the Digital Nation Research Center. You can the actual ACS questions on a sample ACS questionnaire:

    > *10. At this house, apartment, or mobile home – do you or any member of this household have access to the Internet?*
    >
    > - *Yes, by paying a cell phone company or Internet service provider*
    > - *Yes, without paying a cell phone company or Internet service provider*
    > - *No access to the Internet at this house, apartment, or mobile home*
    >
    > *12. Do you or any member of this household have access to the Internet using a:*
    >
    > a. *cellular data plan for a smartphone or other mobile device?*

b. *broadband (high speed) Internet service such as cable, fiber optic, or DSL service installed in this household?*
c. *satellite Internet service installed in this household?*
d. *dial-up Internet service installed in this household?*
e. *some other service? Specify service _____*

5. Q. I'm 64 and have never participated in a census (actively provided information) - nor have I provided census information to support Broadband Collection. That is very concerning.... - I'm sure I'm not alone - and I do not pick up unknown caller after being bombarded by unwanted calls - how is NTIA (Census Bureau) going to get accurate information?

    A. The Census Bureau is very sensitive to this issue, and they don't simply cold-call people when conducting the Current Population Survey (which is the larger data collection that periodically includes NTIA's Internet Use Survey). Any household that gets randomly selected to participate first receives a letter in the mail from the Census Bureau explaining that they have been selected and that an interviewer will be in touch shortly. Households that participate in the CPS are actually surveyed during several consecutive months, and during the first month the interviewer typically visits the household in person. Then during subsequent months, the interviews are usually done over the phone (always with a live interviewer, not an automated system). Because they are able to establish a relationship with each household, Census is consistently able to achieve an over 85% response rate for the CPS—one of the highest response rates of any voluntary survey. So while we're always concerned about the possibility of non-response bias, we think our partnership with Census gives us the most reliable data we can get from a household survey.

6. Q. Just wanted to comment that expense of having internet at home is why we need to support public libraries and their digital services. (Pardon me for stating the obvious). Do the presenters and fellow audience-members think more people are coming to realize this important role which libraries play in closing the digital divide, and if not why not?

    A. I am sorry that we didn't get to discuss this on the call. You would have found resounding support and agreement for the role that public libraries play in providing access, promoting community, and teaching digital skills. As part of NTIA's Internet Use Survey, we ask people where they access the Internet. One choice is at a public place (library, community center, park, etc.). In 2017, 16.9% of respondents accessed the Internet at public place; the figure is 26.5% for 15-24 year-olds.

    As an aside, the U.S. Census Bureau has established a formal partnership with the American Library Association to work with librarians to help reach underrepresented and hard-to-reach populations for the 2020 decennial census. We will be partnering with librarians to help reach people in their communities.

NTIA Computer and Internet Survey

7. Q. How does the presenter [Rafi Goldberg] explain the 2013 downticks in Internet use shown in several graphs?

   A. We don't know with certainty (but have definitely noticed!) why Internet use overall appeared to decline somewhat in 2013 (and in 2011 prior to that). One possibility we have explored is that the month in which the survey was fielded may have played a role. The only two declines we have seen in results of NTIA's Internet Use Surveys have been when a survey went out in July following a survey during the prior October (October 2010-July 2011, then October 2012-July 2013). The theory here is that there may have been some level of seasonality to Internet use, perhaps based in part on the school year and summer vacations. Lending some support to this theory is the fact that the dips in 2011 and 2013 were largest among children ages 3-14, while Internet use among seniors ages 65 or older did not decline at all during the periods in question. Furthermore, Internet use among people of all ages living in households with school-age children declined somewhat more than among their counterparts not living with school-age children.

   Since the NTIA Internet Use Survey has only been conducted in July on a few different occasions, we can't conclude definitively that seasonality is the culprit here. Other possibilities may include changing economic conditions, or other externalities we haven't captured. In part to avoid any seasonality that may exist, NTIA and the Census Bureau plan to keep the survey month consistent going forward; beginning with the 2017 survey, and continuing this year and hopefully into the future, we aim to conduct NTIA Internet Use Surveys in November of odd-numbered years.

8. Q. Does "too expensive" refer to just the Internet plan or does it include hardware?

   A. In order to avoid leading respondents towards giving particular reasons, Census interviewers simply ask, "what are the reasons why you do not use the Internet at home?" Respondents can give whatever reason(s) they want, though a list of common responses is made available for interviewers to select (as well as an "Other" fill-in option) for ease of recording and later analysis. In the (uncommon) event that more than one reason is given, the interviewer asks which reason is most important (but note that all reasons given are made available in the dataset, as well as which one was the most important). In Data Explorer, the "too expensive" metric includes offline households that said their most important reason for not going online at home fell into either the "can't afford it" or "not worth the cost" categories.

   Respondents who say Internet service is too expensive may be referring to either the monthly cost of Internet service or to the cost of hardware (or even to service installation fees, where applicable). Back in 2010, NTIA included a follow-up question in that year's Internet Use Survey in an attempt to shed light on what kinds of costs households were referring to when they said they didn't use the Internet from home due to expense. About

30% of offline households citing expense as their main reason for non-use said they were most concerned about computer or other hardware costs, 27% cited monthly Internet service costs, 22% mentioned hardware, service, and installation costs, and the remainder gave various combinations of the three types of costs.

Separately, the historically third most-common main reason for non-use has been that the household lacks a computing device, or that the device is inadequate or broken. This answer used to be relatively common—it peaked at 23% of offline households in 2003 (which tied it with expense as the second most-common reason that year), but has since declined to a new low of just 4% in 2017. A lack of sufficient computing equipment could certainly imply a cost issue in many cases, though there may be different explanations as well (e.g., digital literacy issues).

9. Q. We used Pew raw data to show that low income and low education are major computer non-use factors WITHIN the age 65+ population -- i.e., older age is not the main determinant. Are these same x-tab data available in American Fact Finder?

    A. Based on NTIA's multivariate regression analysis, age continued to be a significant factor even after controlling for income, education, and other demographics. Though income and education are consistently some of the largest predictors of Internet use. So while age main not be the "main determinant," age matters.

    There are cross-tabs available in both the CPS and ACS datasets. A typical Pew Internet Survey covers a two-four thousand households. The CPS study covers 52,000 households and 120,000 people. The ACS reaches 3.5+ million households a year and 17 million households over the 5-year cycle. You can learn more about the dataset from the brief published by Census: Computer and Internet Use in the United States: 2016. Since the CPS survey also asks about barriers, there is plenty of data to explore. We've be interested in your analysis. Please share!

American Community Survey

10. Q. How do you find out specific data for a census track--how do you drill down into the census tract?

    A. There are multiple ways to search for census data on American FactFinder (AFF). For example, starting at the Advanced Search page, the following steps would get you to the census tract level:

    1. Click on the "Geographies" navigation button on the left of the screen, which will open the geography overlay filter
    2. It should default to the "List" tab, where you would select the geographic type from that dropdown menu, and select "Census Tract - 140"

3. On the following dropdown, select a state
4. Then, there is the option to select a county, or you can skip that to go to the following box and select "All Census Tracts within [YOUR SELECTED STATE]"
5. Once the selection(s) is made, remember to click on "ADD TO YOUR SELECTIONS"
6. Verify that your selection has been added in the "Your Selections" box near the top left of the AFF page
7. If you have finished selecting geographies, then close out using the "X" button in the top right of the geography filter overlay window, to view the search results
8. In the "Refine your search results: topic or table name" field, enter "internet" then press the "GO" button (no need to select from the auto-fill options that may appear)
9. You can now select tables on ACS Computer and Internet Use to view and download

Another example can be seen by navigating to this link, within our AFF tool. It should result in "internet" themed tables for all tracts in Minnesota (a reset of the browser may be necessary if it defaults to one of your last AFF searches). You can further refine or change your chosen geography through the "Geographies" filter button on the left, between "Topics" and "Race and Ethnic Groups" or you can modify when viewing a selected table, via the "Add/Remove Geographies" action, above the table. If you are interested in getting step-by-step instructions, directly, please reach out at https://www.census.gov/data/training-workshops/contact.html.

11. Q. Can we get data for all census tracts across the US, without having to click individually through each state?

A. Yes, you can download data for all census tracts in the U.S. via the Download Center on American Fact Finder. To see more on the Download Center, click here.

12. Q. I would like to know more about when we should use the 1-year estimates and when to use 5-year estimates.....I understand that 1-years are more current data - but 5-year is more accurate....so for tracking the change in internet subscriptions adoption over time, what number should we use? There is a HUGE difference in the numbers for the "no internet of any kind" from the 1 year and 5 year

A. In general, if there is a 5-year estimate available, it will be more accurate and have a lower margin of error. This is because the 5-year estimates use a larger sample size representing 60 months of data collection. A large part of whether to use a 1-year or 5-year is determined by which geographic level you're looking at. For example, Census Tracts and Block Groups are only available from 5-year estimates. You can find additional guidance here.

13. Q. Is there a way to locate "Broadband Desert" areas within a census tract area?

A. While the ACS does provide data at the Block Group level for selected metrics (See Detailed Tables), going "up" to the Census Tract level offers full Subject Tables with less volatility. Going up the geographic hierarchy provides a larger sample size which, in turn, reduces the margin of error.

I am not sure of how you define a "broadband desert." I sometimes look at both availability and adoption data. The American Communities Survey Subject Tables, S2801 and S2802 provide tract level data on the type of subscription that people report: dial-up, broadband (cable, fiber, DSL), cell phone only, satellite, or none. The FCC 477 broadband deployment data is available at the block level. It collects data by technology type: cable, DSL, fiber, fixed wireless, satellite, or other. Note that the FCC 477 data is service provider data on broadband deployment while the ACS data is household data on subscription and use. By looking at both data sets, you can get a sense of where the gaps are. Contact us at BroadbandUSA@ntia.doc.gov if we can be of assistance.

14. Q. Does the income metric account for geography/cost of living?

A. The ACS 5-Year estimates use the last year in the collection period for both geographic boundary and dollar-value estimates. For example, the latest 5-Year ACS release period available is for 2013-2017, so the geographic boundaries would be based on 2017, and the dollar-value estimates are inflation adjusted for 2017.

15. Q. I know this webinar may not need to answer highly technical questions but why does the totals for mobile/wireless devices from B28001 does not add up to the category available on B28010, especially when looking at not owning any other type of device?

A. The reason the two sums don't match is because they are measuring two different combinations of computers. In table B28010, the row you selected reflects households who report having a smartphone, tablet, other wireless device, or other general computing device alone or in some combination, as long as they don't have a desktop or laptop computer. For example, a household may just have a smartphone, but households with a smartphone and tablet are included in this count. In both table B28001 and S2801, the rows you select reflect households that report having the computing device in question and no other technologies. So from my previous example, the household with just a smartphone would count, but not the household with the smartphone and tablet. The difference between these two figures would be the number of households that have more than one of these devices in some combination and no desktop or laptop.

16. Q. Does anyone ever step back and contemplate whether the ACS survey results align with actual publicly reported data?

A. The American Community Survey is the largest, most comprehensive source of publically available data available. (Read more about the survey, history, scope and methods here.) That said, at BroadbandUSA, when we work with local broadband

planning teams, we always encourage people to supplement lessons from the national datasets with their local insights.

17. Q. How can my community participate in the next [ACS] survey?

A. Part of the statistical method requires that surveys participants be randomly selected so you cannot volunteer to participate. See the response to Q5 for more information on how Census ensures that responses are representative. Learn more about the Sample Size and Data Quality or methodology here.

FCC Form 477 Data

18. Q. Is 4G LTE separated or included in the 25/3 data?

A. We did not delve into the FCC Form 477 data in this webinar. The mobile broadband data is sourced from service providers and includes details on wireless technology: 2G, 3G, 4G (not LTE), and 4G LTE. The upload and download speeds for 4G LTE vary; while coverage is sometimes at 25/3 or greater. It is often less. The FCC's 2018 Broadband Deployment Report states:

Rural and Tribal areas continue to lag behind urban areas in mobile broadband deployment. Although evaluated urban areas saw an increase of 10 Mbps/3 Mbps mobile LTE from 81.9% in 2014 to 90.5 % in 2016, such deployment in evaluated rural and Tribal areas remained flat at about 70% and 64%, respectively. Approximately 14 million rural Americans and 1.2 million Americans living on Tribal lands still lack mobile LTE broadband at speeds of 10 Mbps/3 Mbps.

19. Q. It seems all this data is from surveying consumers. Is it fruitless to work directly with Broadband Service Providers for even more accurate data?

A. The two surveys that we showcased today are based on consumer surveys. Both are unique among consumer surveys because that each have huge sample sizes that allow us to provide very granular data. The major federal data collection from broadband service providers is the FCC Form 477 data which shows broadband deployment. The FCC does produce one series of reports on broadband subscriptions based on ISP data. It is called the Internet Access Service Reports. The FCC just published a map of connections as of June 30, 2017: Residential Fixed Connections by Census Tract. Note that the map looks at connections "exceeding 200 kbps in at least one direction, and connections at least 10 Mbps downstream/1 Mbps upstream." Some people and organizations work directly with providers to better understand their FCC submissions, current availability, and deployment plans. Reviewing the public data can provide a good foundation for those conversations, making them more constructive.

20. Q. Incorrect data from the Form 477 makes Stevens County, WA appear 100% served with 100 Mbps down and up -- service that does not exist. It makes it look (to funders and ISPs) as though our issue is adoption, not access.

A. First, it's great that you looked at the data for your region. By reviewing the FCC 477 data, you see the data what the FCC has on file representing coverage in your area. We recommend reaching out directly to the provider in question to better understand their coverage and representation. If they cannot demonstrate the coverage and service level described, ask that they modify their submission to the FCC and document the meeting. While there is no official challenge process through the FCC, you can send a question or comment to the FCC at 477info@fcc.gov.

Other Tools: NDIA Subscription Maps and Internet-is-Infrastructure Connectivity Explorer

21. Q. Can we zoom into city level of data visualizations?

A. This would have been a great question to handle on the webinar. We believe that all of the maps that we showed on the webinar are zoom-able. Please contact BroadbandUSA@ntia.doc.gov if you have further questions.

22. Q from NTIA. Are there data access tools that you like?

A from participants. Community Commons

A from participants. We use PolicyMap and their mapping layers for Community Reinvestment Act funding areas, superimposed with bank bench locations, and school district boundaries, and have just begun looking at how to integrate this ACS data into our mapping for digital equity investment and needs assessment decision making. www.digitalequity.us