

Broadband USA Webinar: Utilizing Federal Data to Measure the Digital Divide

June 17, 2020

Webinar Questions and Responses

Survey Scope and Specificity

1. Q. What is the baseline definition for 'Internet Use'? Example: X hours/day, Y Gb/month, etc.

A. In surveys “Internet Use” usually means the action or fact of choosing to do activities online. Surveys often distinguish between Internet use anywhere, use at home, use at a third place such as a library, use via a cell phone data plan, or use by certain age group, etc.

Typical Question: *“Do you use the Internet, at least occasionally?”*

Typical Question: *“Does anyone in this household, including you, use the Internet at home? This includes accessing the Internet with a cell phone, computer, tablet, or other device.”¹*

For the NTIA Internet Use Survey, we ask about Internet use at a wide range of locations, including home, work, school, public spaces such as libraries, businesses like coffee shops, while traveling, at someone else’s house, or at any location not previously asked about. For the purpose of our baseline Internet use definition, we consider an individual to be an Internet user if the person answers “yes” to any of those questions.

2. Q. Is this data based on 477 reporting or actual by location connectivity?

A. There are three major broadband datasets.

Today's webinar focused on NTIA Internet Use Survey and American Community Survey (ACS) - both of which are household surveys. The questions on these two surveys differ, but both ask people about their Internet use at home.

This is distinct from the Federal Communications Commission (FCC) Form 477 data, which are obtained by compiling filings Internet Service Providers submit to the FCC. These data include both the overall availability of broadband services as well as the number of subscribers. Form 477 subscriber data are aggregated due to confidentiality concerns.

¹ NTIA November 2019 CPS Computer and Internet Use Supplement, INHOME, <https://www.ntia.doc.gov/page/digital-nation-research-center>

3. Q. In your analysis of barriers to adoption (NTIA Internet Use Survey), are “no need” and “too expensive” interrelated and overlapping (e.g., if the price is right, people might have uses)?

A. In recent editions of the survey, we’ve tried to address this question in a couple of ways. First, we now allow offline households to name multiple reasons for non-use (if they do so, we follow up with a question about which is the most important). In 2019, about 15% of offline households named more than one reason for non-use, a little over half of which cited both lack of need/interest and expense. So there is some overlap in stated reasons for non-use, much of which involves those two categories, but the large majority of households only gave one reason for non-use.

Second, we’ve also been asking these offline households whether they would purchase home Internet service if it were offered at a lower price, to which 20% answered “yes” in 2019. Interestingly, the results change a lot when broken down by main reason for non-use. 47% of households naming expense as their main reason for non-use said they would purchase home Internet service if offered at a lower price, compared with just 9% of those in the no need/interest category.

Finally, while the above data point to distinct differences between the lack of interest and too expensive groups, it is important to get a more complete picture of the situation by comparing their demographics. We did this in a blog post last year (using results from the 2017 edition of the survey, though an updated version with 2019 data would be pretty similar), which you can find at <https://www.ntia.gov/blog/2019/unplugged-ntia-survey-finds-some-americans-still-avoid-home-Internet-use>. Figure 2 in particular illustrates that there are similarities as well as differences between these groups of non-users, suggesting that while there are varying challenges to closing the digital divide, there are also some common threads. For example, offline households citing lack of need or interest as their main reason for non-use were, similar to their counterparts citing expense, much more likely to have low family incomes than their counterparts who used the Internet at home. The two offline groups also had substantially lower levels of educational attainment than their online peers. On the other hand, those in the no need/interest group were substantially less likely to have school-age children at home or to use the Internet from other locations, and were substantially older on average and more likely to be White and non-Hispanic than the too expensive group.

4. Q. Does NTIA digital data include transactional data for consumers, retail, wholesale purchases via WiFi or Internet?

A. While we do ask about whether individuals use the Internet to make purchases, we do not collect transactional data as part of this survey. Perhaps another data collection of interest would be the Census Bureau’s e-commerce statistics, which you can find at <https://www.census.gov/programs-surveys/e-stats.html>.

5. Q. Since each state has such diverse broadband access due to rural/ urban differences, does the data and mapping help understand those local differences?

A. The NTIA Internet Use Survey is administered to approximately 50,000 households around the country, and is specifically designed to include representative samples of all 50 states and the District of Columbia. That said, the sample size for each state is not large enough to come up with reliable estimates of individual communities within a state. Data users can compare all urban vs. all rural areas within each state, and in some cases it may be possible to calculate estimates for certain large metropolitan areas, but in general it is not possible to use this dataset to directly calculate estimates for individual locales. Some researchers have used statistical modeling to infer likely estimates based on the national data and the demographic makeup of local communities.

With a sample size in the millions of households each year, the American Community Survey (ACS) is more suited to calculating estimates for local communities. Using 5-year American Community Survey data, data users can obtain estimates of broadband subscription down to the block group level. Data are also available at the census tract, place, county, state, region, and metropolitan/micropolitan area, among others. At the state and national level, these data can also be broken down by urban and rural households. Data are not available at the block level or below to protect the confidentiality of respondents.

6. Q. Is it possible to identify rural and urban populations in the survey in the NTIA Internet Use Survey?

A. Yes, results from the NTIA Internet Use Survey can be broken out nationally and for each state by urban vs. rural location. One caveat is that, when using the publicly-released version of the dataset, it is necessary to use location in a metropolitan statistical area (MSA) as a proxy for urban vs. rural. The Census Bureau redacts the urban/rural variable from the dataset it releases in order to fulfil its legal obligation to prevent re-identification of individual respondents. We find MSA status to be workable proxy that we use in our own rural/urban analyses, but researchers who need to more precisely distinguish rural from urban respondents or otherwise make use of redacted data can pursue an agreement and undergo training to access the non-public data at a Federal Statistical Research Data Center (more info at <https://www.census.gov/fsrdc>).

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7. Q. How is data for access through fixed wireless networks captured through the ACS survey? Is that captured in the broadband definition alongside cable, fiber, DSL?

A. For both surveys, ideally someone using a fixed wireless connection would use the “other” response option. Users can also write in fixed wireless as part of the “other” response.

8. Q. The ACS lumps fiber, cable and DSL in the same response option as having "broadband" - but DSL is not able to meet the federal definition of broadband in most cases. Is this going to be changed in the next survey?

A. Prior to the 2016 ACS, DSL, Cable, and Fiber each had their own response categories. Cognitive testing indicated that these categories resulted in some confusion on the part of respondent. Alternative questions were tested in 2016. Grouping these technologies was found to improve data quality for responses to this question. At the time these changes were made, the FCC's benchmarks for high speed were 4 Mbps down / 1 Mbps up. While modern DSL connections often fall short of meeting the current benchmarks for high speed, some are able to provide speeds in accordance with the FCC's thresholds. At this time, there is no plan to revise this question to break DSL out separately. For more information on the 2016 ACS content changes, refer to the report found at the following link:

https://www.census.gov/library/working-papers/2017/acs/2017_Lewis_01.html

Shortly before this change was implemented in the ACS, we made a similar change to the equivalent question in the NTIA Internet Use Survey based on similar cognitive testing results, which you can find at <https://www.census.gov/content/dam/Census/library/working-papers/2017/adrm/rsm2017-07.pdf>.

9. Q. Is there data for American Indian / Alaska Native? Is there data on Tribal Communities? Can data be broken down by Tribal Nation?

A. Both datasets include some relevant data.

- For the NTIA Internet Use Survey, see [this chart](#). We can break down results by race, including for the combined category of American Indians and Alaska Natives. However, because the sample size for this demographic is relatively small, the margin of error is significantly larger than for other groups. Also note that this dataset cannot be broken out by residence on tribal lands.
- For ACS, data for broadband access on tribal lands can be displayed on data.census.gov. Given the small population of a number of these areas, these data are mostly only available with the 5-year ACS datasets. To obtain these data, select "American Indian Area/Alaska Native Area/Hawaiian Home Land" in the geography selection tool for any table of interest on data.census.gov.
- For ACS, data for broadband access by racial categories are available on data.census.gov. Table B28009C contains data only for American Indians and Alaskan Natives, while table S2802 provides data for this group alongside others.
- Data for broadband access on tribal lands can be displayed on data.census.gov. Given the small population of a number of these areas, these data are mostly only available with the 5-year ACS datasets. To obtain these data, select "American Indian Area/Alaska Native Area/Hawaiian Home Land" in the geography selection tool for any table of interest on data.census.gov.

10. Q. Can the census data be broken down by race/ethnicity via data.census.gov?

A. Data for broadband access by racial categories are available on data.census.gov. Tables B28009A-I contains data only for individual racial groups. Table S2802 provides data for a number of racial groups at once, including additional demographic characteristics.

11. Q. How are smart phones and data usage differentiated from computers and Internet subscription via cable/ landline?

A. Table S2801 on data.census.gov lists both computer and Internet service types alone or in combination with other types. Further information on those who only have a smartphone and mobile broadband Internet can be found in the report located in the following link: <https://www.census.gov/library/publications/2018/acs/acs-39.html>.

12. Q. How can I get information on access to Internet, by ward, especially low income wards, for Washington DC, including access device, by age? Computer, smart phone, cell phone, and age distribution, etc. My work focus is older adult transportation and challenges for access to information by those 65 years+.

A. Using 5-year American Community Survey data, data users can obtain estimates of broadband subscription down to the block group level. Data are also available at the census tract, place, county, state, region, and metropolitan/micropolitan area, among others (including by DC Ward). At the state and national level, these data can also be broken down by urban and rural households. Data are not available at the block level or below to protect the confidentiality of respondents. Data are not aggregated to the Ward level on data.census.gov.

The ACS does not distinguish between smartphones and other cellular devices. Both are included in the Smartphone category on data tables produced on data.census.gov. Estimates of smartphone use derived from these data will likely be higher than those for which smartphones are singled out.

13. Q. What is best way to identify how many students may not have access to Internet within a county?

A. The ACS currently does not produce tables of Internet access by enrollment status. Table S2802 lists Internet access by basic age categories, including those under 18 years of age. Users are also able to create their own cross-tabulations using the Public Use Microdata Sample (PUMS). These data can be accessed at <https://data.census.gov/mdat/#/>.

14. Q. Is there a way to see what type of Internet access college students have at home?

A. The ACS collects computer and Internet data for all households in the United States, but does not collect data for group quarters populations. As such, students enrolled in college that live outside of college dormitories are included in the household population. Currently, no tables are published on data.census.gov that break down broadband subscription by enrollment status and grade.

Similarly, group quarters coverage for the NTIA Internet Use Survey is limited, but the public use dataset does include information on who living in a household is enrolled in college.

15. Q. Is data broken down to county information? If so, is Whatcom County in WA state included in the data? If not, how can we get our County added?

A. Using 5-year American Community Survey data, data users can obtain estimates of broadband subscription down to the block group level. Data are also available at the census tract, place, county, state, region, and metropolitan/micropolitan area, among others. At the state and national level, these data can also be broken down by urban and rural households. Data are not available at the block level or below to protect the confidentiality of respondents.

16. Q. Can you refine your data search for a particular location, region, and congressional district?

A. Using the data.census.gov advance search geography search, you can search for a town or city which is called a “place” in census, a region, county, state, school district, congressional district, or a number of other census-defined geographies. Not all data elements are available for the most granular geographies, such as the census block or block group.

17. Q. Is the data available at census block level? Most sites I've visited provide data by the census tract which does not tell me about the entire block of residents. Is there block level data?

A. Using 5-year American Community Survey data, data users can obtain estimates of broadband subscription down to the block group level. Data are also available at the census tract, place, county, state, region, and metropolitan/micropolitan area, among others. At the state and national level, these data can also be broken down by urban and rural households. Data are not available at the block level or below to protect the confidentiality of respondents.

18. Q. Is there any data more current than 2018?

A. The most recent NTIA Internet Use Survey was fielded in November 2019, with results released last month at <https://www.ntia.gov/data>.

ACS data is collected on a yearly basis, and released annually in the fall. One-year data releases usually occur in September, while 5-year data releases are made available in December. The most current ACS data that includes computer and Internet subscription tables are the 2014-2018 ACS 5-year estimates that were released on December 19, 2019. The 2015-2019 ACS 5-year estimates will be released on December 10, 2020.

Data Accuracy, Openness and Accessibility

19. Q. How do you choose people to be on the surveys?

A. Both the American Community Survey (ACS) and Current Population Survey (CPS, to which the NTIA Internet Use Survey is a periodic supplement) are random sample surveys.

- The CPS sample is based on a random selection of about 52,000 addresses, including independently drawn samples from each state and the District of Columbia. See <https://www2.census.gov/programs-surveys/cps/methodology/CPS-Tech-Paper-77.pdf> for details.
- The ACS sample is based on a random selection of approximately 3.5 million addresses. Learn more in Chapter 4 of the [Design and Methodology Report](http://www2.census.gov/programs-surveys/acs/methodology/design_and_methodology/acs_design_methodology_report_2014.pdf) at http://www2.census.gov/programs-surveys/acs/methodology/design_and_methodology/acs_design_methodology_report_2014.pdf

20. Q. Is the data open and interoperable? Is it locked into proprietary platforms?

A. These datasets fit into a larger framework within the [Federal Data Strategy](#). The mission of the Federal Data Strategy is to fully leverage the value of federal data for mission, service, and the public good by guiding the Federal Government in practicing ethical governance, conscious design, and a learning culture. To that end, all of these datasets are open, publically available, and usable without restriction.

- NTIA's Data Central Research Center is your one-stop shop for downloading datasets, sample code, and technical documentation, and for learning best practices in analyzing data from the NTIA Internet Use Survey. Datasets are made available in multiple formats, including CSV, Find more information at the Digital Nation Research Center <https://www.ntia.gov/page/digital-nation-research-center>.
- Data from the American Community Survey data tables are all publically available. You are free to use the data, we just ask that you cite the U.S. Census Bureau's American Community Survey as the data source. In addition, the Census Bureau also releases

our data through the Application Programming Interface (API) to help users access the information in a standardized way. You can access our public API at <https://www.census.gov/data/developers.html>

21. Q. How do you account for people who don't respond to the survey?

A. Each household selected to take part in the American Community Survey is provided the opportunity to respond by a number of methods, including telephone and in-person follow up if primary methods fail to obtain a completed survey. Should a household still neglect to answer the survey, or in the case that the survey is incomplete, the Census Bureau uses a process known as allocation to generate estimated responses. These values are based on a number of factors, including other reported household and individual characteristics and values reported in close geographic proximity. For more information on this process, consult the ACS Design Methodology which can be found at the following link: <https://www.census.gov/programs-surveys/acs/methodology/design-and-methodology.html>.

22. Q. What is the U.S. Census response rate in Native Communities?

A. The American Community Survey response rate data for housing units are available for the nation, state, and counties through table B98021. To learn more about the Census Bureau's efforts to ensure an accurate count for tribal communities, please contact our tribal affairs office at 301-763-6100 or ocia.tao@census.gov.

23. Q. Do these challenges to Internet access intersect with community responses (or lack thereof) to the 2020 Census?

A. The Census Bureau is committed to counting each person once, only once, and in the right place. To learn more about our outreach efforts and strategies to engage the hard-to-count population, please contact pio@census.gov.

There is much more information on the 2020 Census Outreach and Partner strategy at <https://2020census.gov/en/partners.html> [The U.S. Census Bureau works with partners to reach engage hard-to-reach populations. Census partners are vital to ensuring a complete and accurate count.](#)

24. Q. What is the sampling bias in the Survey by homeless, Internet or phone access, undocumented, other reasons the survey might not be fully representative for purposes of understanding the digital divide?

A. As a supplement to the Current Population Survey (CPS), the NTIA Internet Use Survey takes advantage of the sophisticated interview methodology employed by the CPS, which addresses some though not all of these issues. The sample is constructed by randomly selecting housing unit addresses from the Master Address File, a national inventory of continuously updated addresses. There is no requirement that the individuals living at an address meet any particular criteria, through particular survey questions might be addressed to

one subset or another of the population as appropriate. Unfortunately, because the sample is constructed from housing units, it cannot fully represent the portion of the population experiencing homelessness.

Households at those addresses selected for the CPS sample first receive an explanatory letter in the mail. Households remain in the CPS sample for several consecutive months, with the first monthly interview usually being conducted in person and at home. At the end of the first survey, the interviewer asks if it's OK to conduct subsequent interviews by phone rather than in person, and if so, records a preferred phone number for use during subsequent months. As a result, there is no need for respondents to use the Internet to participate, and having a phone is optional as well.

25. Q. How reliable is the ACS data? Can I get granular data from ACS?

A. As we indicated in the webinar, the ACS is the largest random sample survey in the nation with a sample of 17 million household and response rate of over 90%. That said, it is a survey and each data element has a margin of error. The smaller the geography or population segment, the larger the margin of error.

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In addition to these data, a selection of individual microdata are available in the Public Use Microdata Sample, or PUMS. These data are released yearly. In order to protect the confidentiality of respondents, geographic identifiers are limited to state and PUMA (Public Use Microdata Areas) designations.

Moderator Comment: These two datasets provide information from household surveys. Since they are very large surveys with sophisticated methodologies, they are very reliable for this type of data collection. This type of dataset will always have a margin of error and other caveats, so it's important to review multiple data sets and to look at the margin of error for your locality.

26. Q. Is it possible to do a crosstab of variables, such as cell/mobile data and fixed broadband? Is there any sort by poverty level?

A. Cross-tabulations for computer use, Internet access, and a number of demographic variables are available as part of the published data tables on data.census.gov. Tables S2801 and S2802 provide a decent overview of the computer and Internet use for a number of demographic groups.

If these tables do not contain the information of interest, users are able to create their own cross tabulations using the Public Use Microdata Sample (PUMS). These data can be accessed at <https://data.census.gov/mdat/#/>.

27. Q. The U.S. Census speaker mentioned there is 3.5M addresses on their surveys. Is the detailed street address is available for use? We are attempting to cross reference students with no Internet access to the physical location so we can identify the most effective solution for the students in a given area (hotspot, expanded public WiFi, WAP placement, ISP offers, etc.)

A. Using 5-year American Community Survey data, data users can obtain estimates of broadband subscription down to the block group level. Data are also available at the census tract, place, county, state, region, and metropolitan/micropolitan area, among others. At the state and national level, these data can also be broken down by urban and rural households. Data are not available at the block level or below to protect the confidentiality of respondents.

Using the S2802 Subject Table “Types of Internet Subscriptions by Selected Characteristics,” you can get data by age (under 18, 18-64, 65 and older) and whether or not that group has a computer and/or an Internet subscription by census block group. While this is not address level detail, it is neighborhood-level detail.

28. Q. At the Virgin Islands Next Generation Network, we are in a U.S. Territory not covered by the Census American Community Survey. Is it permissible to utilize the same questions on a local level should we embark on our own local Broadband Plan? Is there Cross-Border Regional sharing programs along the Canadian Border, the Mexican Border and also US Territories?

A. American Community Survey questions have undergone cognitive testing and review by subject matter experts to ensure a high level of data quality. These questions can be used in other surveys to assess broadband subscription rates.

While the ACS does not administer yearly surveys on American Island Territories, questions about computer and Internet use will be included in the decennial census data collection. These data should be released at some point in the future. [Note that the computer and Internet questions are not on the standard decennial census. Since the American Island Territories do participate in the ACS, they instead use the long form of the decennial Census, which does include the computer and Internet use questions.

Similarly, the NTIA Internet Use Survey questions are also publicly available and free for anyone else to use. The most recent version of our questionnaire can be found at https://www.ntia.gov/files/ntia/blogimages/november_2019_cps_supplement_-_final.pdf.