

AGILITY IN ACTION 3.1



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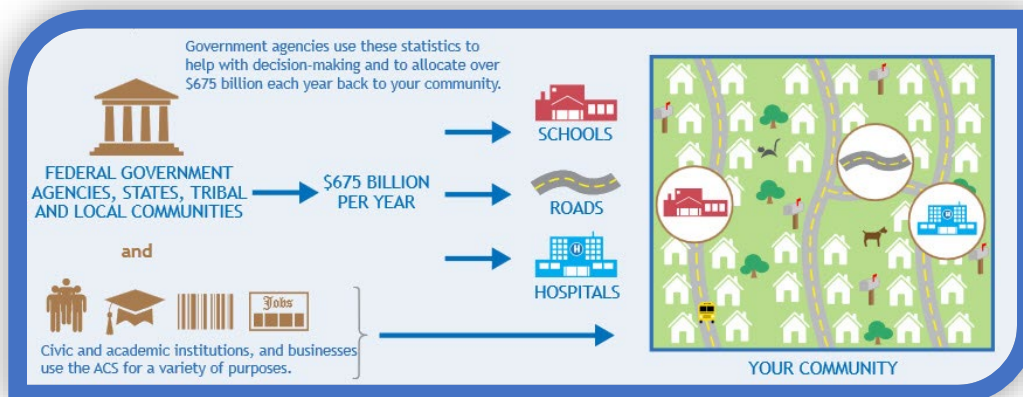
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INTRODUCTION

The United States is a dynamic nation that is constantly evolving. Our demographics and our way of life continually shift because of far-ranging influences, and each year the U.S. Census Bureau surveys a sample of the nation across all communities to stay on top of those trends using the American Community Survey (ACS).¹ Understanding the ever-evolving characteristics of the United States is essential to making informed community and economic decisions, and ACS data empower Congress and executive branch agencies to govern through evidence-based decision-making. These data also empower businesses and communities to create jobs and even save lives. The ACS is the only source of comparable, quality information about the people in all our communities. The Census Bureau’s unwavering commitment to quality in the ACS spawned *Agility in Action*, a report demonstrating the Census Bureau’s pursuit of continual improvement of the survey, the data, and the respondent experience. We work daily to be nimble, flexible, and agile in our approach to the ACS.

IMPACT OF THE ACS

Decision-makers in the federal government, across state and local regions, and within the business community all use the wealth of information provided by the ACS for a wide variety of important and impactful purposes. Federal agencies use ACS data to distribute more than \$675 billion annually, while state and local governments rely on ACS data for comprehensive planning, economic development, emergency management, and to broaden their understanding about local issues and conditions. Meanwhile, businesses also rely on ACS data to make key marketing, location, and financial decisions to serve customers and create jobs. When combining these expenditures, data from the ACS impact more than \$1 trillion worth of investments into our nation’s communities each year.



¹ The ACS is conducted throughout the United States and in Puerto Rico, where the survey is called the Puerto Rico Community Survey (PRCS). For ease of discussion, the term ACS is used here to represent both surveys.

RESEARCH IN FISCAL YEARS 2019–2021

The Census Bureau continues to pursue a rigorous research agenda to fulfill its commitment to quality across all facets of the ACS and to actualize *Agility in Action*. This recent work included investigating new or revised content to better meet data needs, looking at alternative data sources, and researching and implementing methods to increase self-response rates. The following pages address these developments at a high level and outline the positive progress the Census Bureau has made over the past few years toward maintaining the ACS as the only source of comparable, quality information about the people in all our communities.

1. Responding and Adapting...for Better Data

As noted, the Census Bureau is constantly engaging and responding to stakeholders to continually adapt the way we gather data, administer the survey, and conduct the way we do business. In past years, for example, the Census Bureau studied stakeholder feedback related to mandatory messaging and group quarters data collection, looking for creative ways to address the issues raised by stakeholders while remaining committed to quality data, a quality survey, and a quality experience. In the last three years, this commitment to being responsive and adapting our methods continued in the form of new content tests as well as research into the use of administrative data.

a. Executing the 2022 Content Test

In its efforts to ensure better data, the Census Bureau periodically reviews the content of the ACS to ensure the survey stays relevant as society changes and federal agency data needs evolve. Known as a “content test,” this adaptive programmatic practice ensures the ACS is asking the right questions to meet the data needs of our federal partners and stay up to date with the many changes happening across America.



In 2018, the Census Bureau, working through the Office of Management and Budget, solicited proposals from federal agencies to change existing questions or add new questions to the ACS. The proposals included changes to the following topics:

- household roster
- condominium/homeowner’s association fees
- home heating fuel
- educational attainment
- health insurance coverage
- disability
- means of transportation to work
- labor force
- Supplemental Nutrition Assistance Program (SNAP)
- income

Additionally, three new questions were proposed for the following topics:

- solar panels
- electric vehicles
- sewage disposal

In 2019, the Census Bureau began cognitive testing of question wording. Based on the results of cognitive testing, three topics were identified for implementation in the ACS without field testing: condominium/homeowners’ association fees, home heating fuel, and means of transportation to work. The means of transportation to work and home heating fuel questions had small changes in wording that were expected to impact small populations and would not result in large enough statistical differences to detect in a field test. The change to the condominium fee question to include homeowners’ association fees was a bigger change but uses wording from an existing survey with known impacts on the resulting data.

The other topics will be included in a split-sample field test. Starting in September 2022, the Census Bureau will begin the field test to gauge how the proposed questions perform compared to the current question wording. A variety of quality metrics will be used to determine which wording is best understood and produces the most accurate data. Ultimately, the results of the 2022 Content Test will determine the recommended revisions to questions and new questions to be included. Recommended changes will be submitted to OMB for approval and inclusion in the ACS in 2025. These results allow the survey to remain dynamic and responsive, capture America’s trends, and meet federal data needs.

b. Exploration of Administrative Data

The Census Bureau’s continued exploration of the use of administrative data proved useful in helping to mitigate some of the challenges the ACS faced because of the COVID-19 pandemic.

The pandemic posed numerous challenges to collecting ACS data in 2020, which resulted in estimates that did not meet the Census Bureau’s Statistical Quality Standards. Instead of the standard 1-year estimates, the Census Bureau released experimental estimates developed from 2020 ACS 1-year data and administrative data. Our ongoing research into the use of administrative data allowed us to adapt our methods and create the experimental estimates quickly and efficiently.

Our continued research aided in the development of the 2020 ACS 1-Year Experimental Data in several ways, including:

- Using administrative data from the Bureau of Prisons in lieu of survey response for federal inmates.
- Using administrative data from several data sources (e.g., U.S. Postal Service and property tax records purchased from third-party vendors) to more accurately capture the housing unit status of nonresponding addresses as occupied or vacant.
- Incorporating administrative data from several data sources (e.g., Internal Revenue Service and Social Security Administration) into the weighting procedures, using a technique called Entropy Balancing. These Entropy Balanced Weights (EBWs) were used to mitigate the effects of nonresponse bias and produce 2020 ACS 1-year experimental data products for a limited number of topics for the nation and states.
- Expanding the use of administrative data by modifying the 2016-2020 ACS 5-year housing unit weighting methodology to incorporate EBWs.

WHAT ARE ADMINISTRATIVE DATA?

Administrative data refer to microdata records contained in files collected and maintained by administrative or program agencies and commercial entities. Government and commercial entities maintain these files for the purpose of administering programs and providing services. Administrative data are distinct from systems of information collected exclusively for statistical purposes, such as data from census and surveys that are produced under the authority of Title 13 of the United States Code (U.S.C.).

Even after the effects of the COVID-19 pandemic diminish, natural disasters and decreasing respondent participation will continue to challenge survey operations and make it increasingly more important to explore how we can use administrative data for the ACS. In addition to further research into the methods used for the 2020 experimental estimates, we continued working on the following:

1. Evaluating the use of administrative data to fill in missing demographic data.
2. Comparing the differences between administrative and survey response data for multiple items, such as acreage, citizenship, veteran status, property value, and income.

Integrating administrative data into the ACS is a challenging and time-consuming endeavor. Incorporating these data in our 2020 methods was a great achievement for the ACS program and demonstrates the Census Bureau's commitment to innovation.

2. Innovating & Evolving...for Less Cost

The Census Bureau is continuously innovating to evolve its products, mature its operations, and reduce costs. We designed our research agenda to reinforce our culture of continuous improvement across our organization. From 2019 through 2021, the Census Bureau continued this push via new research, which included examining the effects of adding a due date to ACS response materials. These efforts show how we are vigilant stewards of taxpayer funding, while remaining an innovative, evolving, improving organization that puts customers first.

a. Informing the ACS through the National Academy of Science Committee on National Statistics Expert Meetings

In 2019, three expert group meetings were convened as a follow-up to a [public workshop](#) on improving the ACS. These expert meetings were designed to solicit input from external experts to inform the ACS research agenda in the coming years. The meetings were organized around the following topics:

1. *Administrative Data*: Discussed the Census Bureau's framework for researching the use of administrative data in the ACS and obtained input from experts on the current research and potential future research. This helped the Census Bureau refine research on the use of administrative data in the ACS.
2. *Technology*: Identified existing and emerging technologies that can be leveraged to enhance the respondent experience, improve data collection, and make the ACS program more able to employ new technologies. This spawned a multiyear research project to evaluate the data quality and operational impacts of responses received on a mobile phone (see Section 2c).
3. *Communications with Respondents*: Discussed the Census Bureau's recent communications research and current plans. Obtained input from experts on the communications materials. This helped the Census Bureau refine mail materials being tested as part of the Strategic Framework project (see Section 3a) and develop and test a new internet login screen (see Section 2c).

b. Implementing Due Dates to Increase Self-Response

Recognizing the potential for significant cost savings, the Census Bureau invested in research that seeks to increase self-response rates. In 2019, for example, the Census Bureau worked with faculty from Harvard University and the University of Pennsylvania to develop new techniques for motivating respondent actions using behavioral science. One such technique, which was tested in the [2019 Due](#)

[Dates Test](#), is the introduction of a concrete deadline, or due date, for response. This concept is designed to help respondents prioritize their response, respond according to the listed timeframe, and ultimately prevent the Census Bureau from needing to deploy field staff for in-person follow-up, which is a more costly operation. The test evaluated the placement of the due date on the mail materials and also evaluated the wording. Because of the increase in self-response rates seen in the Due Dates Test the revised methodology was implemented in the ACS in the fall of 2020.

c. [Maximizing the User Experience](#)

In 2013, when the Census Bureau first launched the ACS online survey instrument, it was state of the art. In 2015, the Census Bureau conducted [usability testing](#) to evaluate and improve functionality of the survey, particularly for those who respond on a mobile device. Beginning in July 2022, the Census Bureau will implement an email reminder to respondents who started to complete the survey online but did not finish. [During previous testing](#) for the ACS, the Census Bureau found that sending a reminder email to respondents who provide their email address could prompt respondents to finish the survey and reduce the numbers of paper mailings sent.

Despite these improvements to the survey over time and based on feedback from the expert group meetings convened by the National Academy of Sciences, it became apparent that the instrument could be improved, and the Census Bureau needed better insight into the data quality of online responses.

To investigate potential improvements to the online survey instrument, in 2019, the Census Bureau outsourced a study to evaluate the user experience. Human factors engineers from the MITRE Corporation executed a cognitive walkthrough and heuristic evaluation (an inspection method to identify usability problems in the user interface design) and made recommendations to improve the user experience.

Additionally, the Census Bureau began a multipart study to understand the quality of data received by respondents on mobile devices. [The first study](#) analyzed ACS response by device type (e.g., personal computers, mobile phones, and tablets) to understand device usage over time as well as respondent behaviors (e.g., multiple logins or device switching) and the characteristics of those who respond by device type. Additional analyses of usability measures and quality indicators by device type, such as breakoffs, help screen access, and item nonresponse, is ongoing.

One specific recommendation made during the National Academy of Sciences expert group meetings was to redesign the ACS landing page, the website page that respondents see when they first begin to respond online. As a result, the Census Bureau developed a new landing page design that reduced text

BEHAVIORAL INSIGHTS

Emerging from the fields of behavioral economics and behavioral sciences the field of behavioral insights explores how humans make decisions. The Census Bureau is working with leading behavioral insights faculty from the Harvard Business School and the Wharton School of the University of Pennsylvania to explore the impact of changes to mailings on response rates.

on the page and prioritized actionable items in a logical reading order, among other changes. The design was refined based on results of usability testing and will be implemented in the ACS in July 2022.

Recently, the Census Bureau initiated an expert review of the ACS internet instrument and previous recommendations to establish a prioritization of next steps for implementation or additional research.

3. Listening & Learning...for an Improved Respondent Experience

The Census Bureau is researching ways to improve the respondent experience from various angles. This focus allows the Census Bureau to better meet its mission of delivering a quality respondent experience.

a. Establishing a Strategic Framework

The current ACS mail materials have proven effective at encouraging ACS recipients to self-respond through the internet or by filling out and mailing back a paper questionnaire. Motivating people to self-respond, particularly online, provides huge cost savings to the ACS program.

To maximize self-response, we developed and tested a new series of mail materials. To develop new mail materials, the Census Bureau first developed a [strategic framework](#) that recommended distinct messaging themes for each mailing sent to ACS respondents. This framework was developed by a cross-disciplinary literature review from the fields of communications, psychology, behavioral economics, and survey methodology. The framework is used to clarify the communications tactics and methodological approaches that should be applied in each of the mail pieces.

In 2020, the Census Bureau published an [assessment of the 2018 ACS mail contact materials](#). This study leveraged the best practices identified in the strategic framework report to evaluate the messaging in the materials. The study also quantified the use of messages on trust, benefits, burden reduction, and other messages and identified how the mail materials aligned with best practices. The report also provided recommendations for improvement of the mail contact materials.

Building on the strategic framework and assessment of the 2018 materials, the Census Bureau developed new mail materials for testing. The Census Bureau also partnered with faculty at the Harvard Business School and the Wharton School of the University of Pennsylvania to design their own version of the ACS mailings, applying techniques they have honed while conducting their own research. Development and testing of the new mail materials began in 2019 and a controlled experiment was fielded in the fall of 2021 as follows:

- In 2019, the Census Bureau finalized development of new mail materials using strategic insight from various fields to improve messaging, packaging, and mailer sequencing.
- In 2019 and 2020, three rounds of cognitive testing of the new mail materials were conducted to refine wording for field testing.
- In the fall of 2021, a large-scale field test was conducted with new mail materials to determine their efficacy at motivating ACS recipients to self-respond. Researchers are currently evaluating the data from the test.

b. Evaluating a Paperless ACS

The Census Bureau is committed to reducing survey costs while maintaining data quality. Increasing self-response, especially online, has great potential for reducing the costs of collecting ACS data.

Since the introduction of the online response option in 2013, we have seen steady increases in the percentage of people responding to the ACS online. Building on data and lessons learned from the 2020 Census, the ACS will evaluate changes to the ACS contact strategy, including optimizing timing of the paper questionnaire and prioritizing sending it to those who most likely need it.

RESEARCH GOING FORWARD: Continuing to Explore New Frontiers

The ACS will remain on the forefront of survey best practices, the latest in demography, and cutting-edge research so that Congress, federal agencies, and our nation's businesses and communities can use the ACS for evidence-based decision-making.

To this aim, the Census Bureau plans to look at ways to modernize the online experience for ACS respondents, utilize behavioral insights to encourage respondent action, and investigate modeling procedures that help determine respondents' response mode of choice. These efforts will build off our current research and allow the Census Bureau to focus on its commitments—quality data, a strong survey that is easy to understand, and a seamless respondent experience. The Census Bureau will also continue to explore the use of administrative data for the ACS to produce the highest quality data products. As always, this critical work will be conducted with scientific rigor using established processes that consider efficiency, effectiveness, and suitability to enable actionable outcomes.

CONCLUSION

As evidenced by this report, the Census Bureau continues to strengthen its deep and abiding commitment to the ACS—ensuring that the ACS provides a detailed demographic portrait of our nation and remains a vital source of data for our communities, businesses, and the federal government.

In line with this commitment, the Census Bureau continues to stay aware of emerging trends while building on its comprehensive research agenda. This work not only improves the ACS, but also allows the Census Bureau to innovate responsively across key aspects of our work. We have enhanced our mail messaging and packaging, eliminated costly and ineffective operations, incorporated administrative data, and streamlined data collection activities. We are researching ways to improve the respondent experience and are building tools to help us become more responsive and customer focused. We undertake these efforts knowing that ACS data are used to build businesses and create jobs, prepare for emergencies, improve the reach of health care, and support many other serious and important efforts.

For these reasons, the Census Bureau continues to be a proactive, forward-leaning enterprise, putting agility into action across its organization. We are committed to creating a more positive respondent

experience, more accurate and useful data, and a survey that is best-in-class. Going forward, we will continue to focus on listening and learning, responding and adapting, and innovating and evolving. We will continue to demand quality in everything we do and serve as a vital source of data for our communities, businesses, and federal agencies. In so doing, the ACS will remain reputable, researched, and responsive.