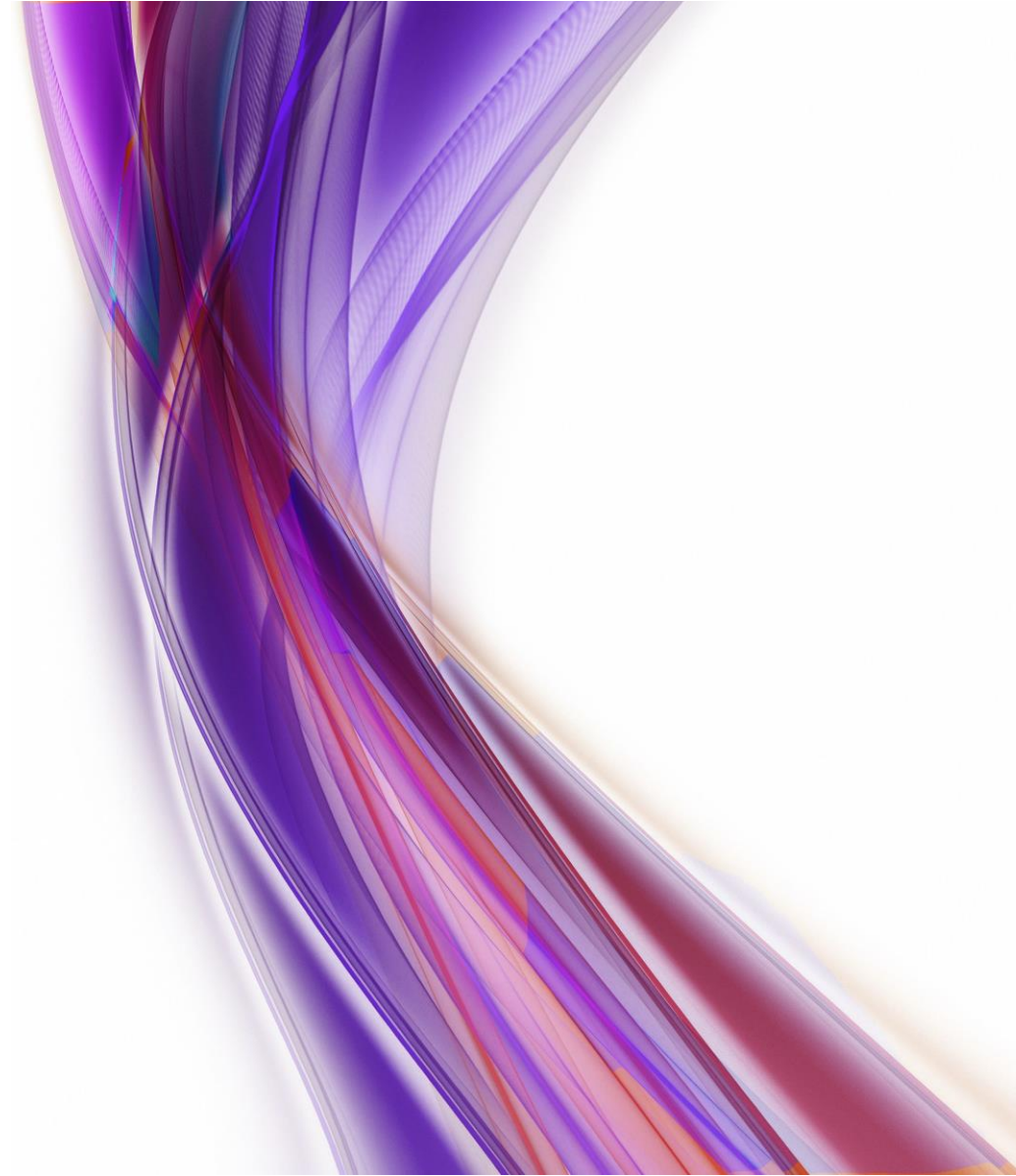


Agility in Action 2.1: A Snapshot of Enhancements to the American Community Survey

**U.S. Census Bureau
American Community Survey Office**

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**U.S. Department of Commerce
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U.S. CENSUS BUREAU
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INTRODUCTION

The American Community Survey (ACS) is an ongoing national survey that samples approximately 3.5 million addresses annually, about 290,000 addresses per month. These data are collected continuously throughout the year to produce detailed population and housing estimates annually. The ACS is designed to produce critical information that was previously collected in the decennial census. Our estimates, covering more than 35 topics, support more than 300 known federal uses and countless nonfederal uses.

The ACS is the only source of comparable, quality information about the people in all of our communities. There is no more current, reliable, or accessible source for local statistics on topics such as age, children, veterans, income, and employment than the ACS. The ACS is an important national resource, providing needed data about who we are and how our population is changing.

ACS data are used every day to make important decisions that improve the quality of life for those living in communities throughout the United States. ACS data were key to the New Orleans, LA fire department developing a mapping model that determines neighborhoods most likely to suffer fire fatalities and least likely to have smoke alarms. See how the city's Office of Performance and Accountability and the New Orleans Fire Department are using ACS data to save lives every day.

[Stats in Action: New Orleans, LA: Smoke Alarm Outreach Program](#)

ACS is Vital to Businesses, Local Communities, and the Federal Government

The ACS is vital to small and large businesses seeking to better serve the full range of markets, find workers with the needed skillsets, and inform decisions on where to invest and create jobs. Local communities rely on the ACS to target resources to areas in need of assistance, as well as locate schools, first responders, roads, and hospitals. The Federal government uses ACS data to distribute more than \$675 billion per year to our communities, and make our government run smarter and more efficiently.

There is no substitute for the ACS; it produces foundational data, which undergirds our nation's data infrastructure.

Creating a Positive Customer Experience

Providing a positive experience and minimizing burden for survey respondents are clearly and demonstrably a central focus for our work. There is no one-size-fits-all approach for accomplishing this, and the U.S. Census Bureau remains agile in discovering new ways to create a positive customer experience. One important element of the customer experience is the mode people use to respond to the survey. The Census Bureau offers many ways to participate in the survey that are designed to make the process as easy as possible for the respondent. Since 2005, the combination of mail contacts, telephone calls, and personal visits has produced annual overall survey response rates between 94% and 98%. Since 2013, the survey is available online, making participation even easier.

We are committed to demonstrating a high degree of transparency and agility by constantly searching for ways to improve. In recent years we:

- Made changes to survey operations that reduced respondent burden,
- Engaged in several communications efforts to educate the public about the impact of ACS data on communities throughout the United States,
- Conducted numerous research projects and published over 50 papers on their findings,
- Mined the best thinking of subject matter experts in private industry and the National Academy of Sciences,
- Evaluated sources for administrative records and conducted direct replacement tests, and
- Collaborated with the Census Bureau's Respondent Advocate to champion the needs and concerns of respondents everywhere.

We accomplished this while ensuring steady operations in engaging 3.5 million households a year with the ACS. This engagement includes providing customer service, encouraging people to fill out the survey, gathering and analyzing the data, and generating multiple data products along with 11 billion estimates free for public consumption.

Exercising our Commitment to Agility in Action

The Census Bureau understands that we live in an ever-changing, data-driven nation. As times change, so does our need to be nimble, flexible, and agile in our approach to the ACS. Part of this commitment to agility certainly includes actively addressing concerns about respondent burden with the ACS. We make this happen by continually investigating and enacting options for survey enhancements, as well as making research-based changes to how we operate and engage with respondents.

The Census Bureau is enacting several survey enhancements to include:

- Improving survey materials and the way we ask questions,
- Reducing follow-up contacts, and
- Leveraging data from other sources.

Ensuring We Ask Only What Is Necessary

The data collected in the ACS are critical for communities nationwide. At the same time, the collection of information should be as minimally burdensome and unintrusive as possible. The Census Bureau periodically conducts a comprehensive content review to ensure that only the information needed is requested, and that the justifications provided by federal agencies for the ACS questions are current and valid.

We are committed to making ACS questions clear and easy to understand. We conduct a content test about every 5 years to examine whether changes to question wording, response categories, and underlying construct definitions would make it easier for respondents to answer questions and improve the quality of the ACS data. We conducted a test in 2016, which included ten topics. They were:

- Relationship,
- Race and Hispanic Origin,
- Telephone Service,
- Computer and Internet Use,
- Health Insurance Coverage and Premium and Subsidy,
- Journey to Work: Commute Mode and Time of Departure for Work,
- Number of Weeks Worked,
- Class of Worker,
- Industry and Occupation,
- Retirement, Survivor, and Disability Income.

2017 – 2018 Research Agenda

This document describes the efforts that were pursued in the past year to create a positive respondent experience while maintaining the high quality of the ACS data. It provides background on the most impactful issues facing the ACS, methods to remain agile and address the issue, and progress towards:

- Enhancing respondent mail materials,
- Employing alternative data sources,
- Modifying the modes and design of the ACS,
- Ensuring agile design,
- Understanding the survey experience from the perspective of our respondents, and
- Improving group quarters data collection and products.

The following pages outline these efforts in detail, outlining progress to date, actions taken, accomplishments, and other findings.

1. ENHANCING RESPONDENT MAIL MATERIALS

Objective:

Improve ACS mail materials to increase understanding, reduce concerns about mandatory participation, and increase self-response.

Accomplishments:

- Utilized an interdisciplinary approach to identify best practices for mail message sequencing.
- Validated efficacy of mandatory messaging.
- Optimized content and identified cost savings via use of pressure-seal envelopes.

When the Census Bureau mails the ACS to sampled addresses, it includes information about the importance of the survey in the package. These materials are critical in encouraging self-response. The design and messages the mail materials contain not only convey key information about the recipients' participation, but also set the tone for their interaction with the Census Bureau.

Some ACS recipients have expressed concerns that the tone of ACS materials is too strong. In response, we conducted tests in 2014 and 2015 that evaluated changes to reduce the prevalence of the messages regarding the mandatory nature of participation. We also focused on better communicating the uses and importance of the ACS (Barth et al., 2016; Oliver et al., 2016; Walker, 2015).

The Census Bureau worked with the National Academies of Science Committee on National Statistics (CNSTAT) to conduct a public workshop and four subject matter expert meetings in the spring of 2016. The Census Bureau sought input from experts in survey methodology, marketing, and communications during the CNSTAT meetings. We asked for input specifically, on ways to improve the ACS mail materials while still maintaining high response rates. As a result, we are continuing to improve the ACS mail materials. The goal is to increase self-response, as well as reduce concerns with the mandatory nature of participation.

Learning from the 2017 ACS Mail Design Test

We revised our mail materials for experimental testing based on the recommendations made by survey methodology experts. This began with cognitively testing revised materials in a laboratory setting, followed by formal experiments embedded within the ACS production operations to evaluate their effectiveness. The goal of this research was to improve softened mandatory language by using a friendlier, more conversational tone; emphasize the benefits of participating; and reduce burden to respondents by removing or combining materials.

This research confirmed the primary finding of past research:

- Removing or softening mandatory messaging lowers response rates, decreases data quality, and increases costs.

In addition to the above takeaway, we were able to capture other important insights from our testing, including:

- Omitting "Open Immediately" from the envelopes and changing the size of the envelope may negatively affect the self-response return rate.
- Including a "Why We Ask" brochure in the initial mailing significantly reduces self-response return rates.

- Changing the fifth mailing from a postcard to a letter containing login information has the potential to boost self-response return rates and warrants further testing.
- Revising the paper questionnaire cover page in combination with softened mandatory messaging does not appear to increase self-response rates.

Conducting Pressure-Seal Letter Test

The 2017 ACS Pressure-Seal Letter Test measured the impact of using pressure-seal mailers to replace the reminder mailings that consisted of a letter and two postcards. A pressure-seal mailer is a one-page document with a pre-applied adhesive that is folded and sealed with pressure. This type of mailer costs less than a letter with an envelope and costs more than a postcard. Pressure-seal mailers can conceal personal information while postcards cannot. This year’s research included three experimental treatments:

- Replace the reminder letter with a pressure-seal mailer and keep the two reminder postcards as is.
- Replace the reminder letter and one of the reminder postcards with pressure-seal mailers.
- Replace all three reminder mailings (letter and both postcards) with pressure-seal mailers.

This research resulted in the following findings:

- Using pressure-seal mailers did not impact total self-response return rates.
- Replacing the reminder letter (second mailing) with a pressure-seal mailer generated cost savings.
- Using pressure-seal mailers provided the means to increase the use of the internet user ID in the ACS mailings.

Being Strategic about Mailings

In 2017, we developed a strategic framework, a comprehensive plan for communicating strategically with the ACS recipients through our mail contact materials. The strategic framework, which recommends a specific objective for each mailing, reflects theory from the fields of communications, psychology, behavioral economics, marketing, and survey methodology.

The framework recommends the following objectives in the first four mailings:

1. Establish trust in the first mailing.
2. Communicate tangible community-level benefits in the second mailing.
3. Reduce the sense of burden and explain responding to the ACS is a civic duty in the third mailing.
4. Re-state the appeals to trust, benefit, burden, and duty from previous mailings in the fourth mailing.

Going forward, the Census Bureau is creating new mail materials designed to incorporate this new message sequencing.

2. DEEPENING OUR EXPLORATION OF ALTERNATIVE DATA SOURCES

Objective:

Test the feasibility of using administrative records to provide data on housing.

Accomplishments:

- Defined guiding principles and ground rules for the use of administrative records in the ACS.
- Determined the eventual viability of using administrative records for housing questions.

The Census Bureau continues to make significant progress exploring the use of administrative records in surveys and censuses. We have evaluated the availability and suitability of several different data sources for use in the ACS since Agility in Action 1.0.

We are charting a course for incorporating administrative records into our data gathering and analysis efforts. This effort will enhance data quality, while also improving the respondent experience by reducing the amount of information we request. To that end, the Census Bureau has built on its prior research, exploring the feasibility of using administrative records to supply needed data on housing and income.

Simulated ACS Housing Estimates Using Administrative Records

We tested using administrative records on various housing items (e.g., year built, acreage, property tax, and property value) to model and simulate ACS estimates. This was an essential step toward determining whether administrative records would ultimately be of sufficient quality to replace or supplement ACS data.

As a result of our research efforts, the American Community Survey Office has now:

- Determined its IT systems are capable of handling administrative records for these variables.
- Uncovered a handful of items in need of additional study, such as geographic disparities in coverage and impacts on other ACS estimates.
- Outlined a path forward for employing administrative records on a greater scale.

Going forward we will be exploring how to use administrative records to replace ACS questions, fill in blanks during editing and imputation, provide additional information to enrich census and survey resources, identify vacant housing units to reduce non-response follow-up costs, and support survey operations in remote areas.

3. MODIFYING THE MODES AND DESIGN OF THE ACS

Objective:

Make the survey experience better for in-person and telephone respondents.

Accomplishments:

- We eliminated the ACS Computer Assisted Telephone Interview (CATI) Non-Response Follow-Up (NRFU) operation.
- We will be making 10 million fewer phone calls and saving more than \$10 million each year.
- We decreased the number of contact attempts an interviewer makes.

The ACS allows people to respond in multiple modes, a design that takes relative cost and response rates into account and maximizes cost efficiencies. Specifically, we start with the least expensive and least intrusive contact modes (internet and mail) and then follow-up with more expensive and more direct contact modes (telephone and personal visit). Typically, negative comments come from respondents who experience the latter contact modes.

Between 2012 and 2014, there was a dramatic decline in the efficiency of the CATI operation. Many factors have contributed to a drop in CATI efficiency across all surveys. People are less willing to give information over the phone to someone they have never seen or met. Similarly, people are less likely to answer the phone when the call is coming from a number they do not recognize. In an effort to improve the efficiency of the CATI operation and demonstrate responsiveness to respondent burden, the ACS cut call parameters and workload. Despite these exhaustive efforts, the efficiency of the CATI operation continued to decline and costs continued to escalate. To improve efficiency of the ACS, the Census Bureau ultimately decided to eliminate CATI from the ACS non-response follow-up operation effective October 1, 2017. We are now focusing on the most efficient, cost-effective response modes: internet, mail, and in-person contacts. The Census Bureau continues to monitor its Computer Assisted Personal Interviewing (CAPI) operations and has imposed limits on the number of allowable in-person contacts.

4. ENSURING AGILE DESIGN

Objective:

Provide respondents with their choice of response mode.

Accomplishments:

- Determined that offering a choice of response modes did not increase response rates but did significantly increase costs.

The ACS employed an *internet first* strategy when it introduced an internet response option in 2013. This strategy encouraged response by internet followed by a choice to respond by paper questionnaire or internet. Although this method was effective at increasing overall self-response rates nationwide, this was not the case for some areas in the country (Baumgardner et al., 2014) or among some population groups (Nichols et al., 2015). It can be frustrating for people without internet access or who prefer responding by paper, to be told their response to the survey is required by law. Especially when the only response option the Census Bureau initially provides is internet. Waiting two weeks for a paper form to arrive by mail after this initial invitation to respond online may make the respondents less likely to participate.

Internet versus Paper Questionnaire in the First Mailing

The purpose of the 2017 Adaptive Strategy Test was to reduce respondent burden by using an adaptive method that:

- Sent households an initial response option that most closely matches their preferences,
- Maintained or improved overall self-response, and
- Reduced the number of households that were sent a replacement mail package due to non-response.

The Census Bureau targeted geographic areas believed to be associated with a preference for the mail response mode and sent a sample of the housing units within those tracts a paper questionnaire in the initial mailing package. This mailing strategy was called the Choice method. With the Choice method, households were able to choose between responding online or by paper from the start. The remaining housing units in the targeted geographic areas received the current ACS mailing strategy, named the Push method. In the Push method, the paper questionnaire is included in the third mailing.

The key findings of this test were:

- Overall, the Push method had higher self-response return rates.
- The Choice method had higher self-response return rates in the mail mode, which increases costs for the ACS program.
- There was no significant difference in the final response rates between the two methods.
- The Choice method resulted in a higher household-level item non-response rate (i.e., not answering a question) for the Mail Preference geographic areas.

We will continue to provide respondents with choices of response mode, but for now we will continue to encourage internet response first.

5. UNDERSTANDING THE RESPONDENT'S EXPERIENCE

Objective:

Listen and learn from our respondents to identify opportunities to improve the respondent's experience.

Accomplishments:

- Analyzed correspondence from respondents to understand the key issues they experience.
- Learned from feedback questions used on other surveys.
- Take a deeper dive with current respondents to learn how to ask them about their survey experience.

The Census Bureau has engaged in numerous activities to provide a positive experience for our respondents, and minimize the burden associated with participating in the ACS. Understanding the respondent experience and their perceptions of burden involves exploring many different factors. Some of these factors are very concrete, such as survey length and number of contacts with the respondent. Other factors are less quantifiable, such as the respondent's perception of the survey experience, or notions of the survey's importance to the nation.

Making the Questions Easier to Answer

Making the ACS questions clear, easy to understand, and relevant are key to improving the response rate and the quality of the data. The Census Bureau conducts a content test for the ACS about every five years to determine if wording and layout of questions should be updated.

During 2016 ACS Content Test, the Census Bureau tested several changes to the ACS questions:

- To reflect changes in how people use the telephone, the question on **telephone service** was separated from a list of questions about physical characteristics of the housing unit and the instruction to "include calls using cell phones, land lines, or other phone devices" was added.
- To keep up with changes in technology, we tested modifications to our questions about **computer and internet use**, which were already implemented in the 2016 ACS. The test allowed us to evaluate the changes to the questions.
- The **health insurance** question was modified to reduce the underestimate of those with Medicaid coverage, allow respondents to better distinguish direct-purchase insurance from other types, and to improve the accuracy of the estimates. We also tested a new question about **health insurance premiums and subsidies** to measure subsidized Marketplace coverage (a type of health insurance coverage introduced through the Affordable Care Act).
- The question on **commuting** mode was changed to update the terms used to describe how people get to work. For example, we changed "Streetcar or trolley car" to "Light rail, street car, or trolley." We also revised the time of departure question to address concerns raised among some respondents about privacy because the question specifically references the time a person leaves *home* to go to work.
- We changed the question about the number of **weeks worked** to make it easier to respond to and to better meet the needs of data users.
- Several changes to the questions about **class of worker** were tested to clarify definitions, improve the layout by grouping categories under general headings (e.g., private sector), and Active Duty status in the military was added as a response category.
- Changes to the questions on **industry and occupation** were tested to make the question easier to understand and obtain the level of detail needed to classify these data. For example, we increased

the space for write-in responses and provided new, consistent examples for the main occupation and description of job activities or duties.

- New instructions about the types of **retirement, survivor or disability pensions** to include were added.
- To reduce errors in reports of same-sex and opposite-sex coupled households, we provided more detailed response categories for the question on **household relationships** and introduced an automated consistency check in electronic modes to ask respondents to verify their responses when there are inconsistencies between sex and relationship.
- We tested a combined version of the question on **race and Hispanic origin** that included write-in responses areas for every major group and a distinct response option for Middle Eastern or North African (MENA).

Based on the results of the 2016 test, we are moving forward with several changes to the ACS questions:

- Given the rapid changes in technology, we chose to implement changes to the computer and internet questions in 2016 before field testing. The test results further validated our decision to revise the computer and internet questions.
- The test results support implementing the changes to the questions on telephone service, commuting mode, time of departure, number of weeks worked, class of worker, industry and occupation, retirement income, and household relationships. We are implementing these changes on the 2019 ACS.
- The test results showed that the changes to the health insurance coverage question did not appreciably improve the health insurance coverage estimates and do not support implementing these changes. We will draw upon the lessons learned here for future testing of the coverage question. The test results do support implementing the new question on health insurance premiums and subsidies, which will be added to the ACS in 2019.
- We will implement the version of the race and Hispanic origin questions used on the 2020 Census on the ACS in 2020.

Learning from Our Respondents

The Census Bureau pays careful attention to comments from respondents, documenting them as they come in, and following up on concerns. We continually analyze the comments we receive, looking for themes that might suggest opportunities to improve the respondent's experience and response rates.

Analysis of correspondence received directly from respondents or from their congressional representatives yielded the following insights:

- Most of the correspondence was about issues respondents encountered when trying to respond online, requests for a questionnaire, and requests to opt out of the survey due to age, illness, or death.
- Characteristics of those who sent correspondence and ultimately completed the survey were:¹
 - Most were White,
 - Most were 65 and older,
 - Most were high school graduates, and
 - More complaints were received from the Midwest and Northeast regions of the country than we might have expected based on the number of households estimated to be in those areas.

¹ Statistical testing was not conducted.

Taking a Deeper Dive with Current Respondents

We conducted a literature review to explore how other surveys have conceptualized, operationalized, and tested respondent burden measures. We took what we learned from the literature review to inform questions we asked during voluntary focus groups with survey respondents.

From the focus groups, we learned:

- **Respondents did not find the ACS to be very burdensome.** Most respondents said it was a little or not at all burdensome. Respondents commented that the ACS was “not a big deal,” “not very taxing,” and “not a huge imposition” on their lives.
- **They did not have many suggestions on how the ACS could be made less burdensome.** A few of the suggestions we received included advertising how ACS data are used, as well as generic suggestions to ask fewer questions and less sensitive questions.
- **Not everyone viewed the ACS being mandatory as a bad thing.** These respondents said that it must be really important if it is mandatory.
- **Most respondents thought the length of the ACS was about right.** While some said they wished that the ACS would be shorter, many said that the length of time to complete the survey was about right given their expectations based on the number of questions. They also said they understood why it needed to take some time since the ACS is important. A couple of respondents said that the amount of time is okay given that the ACS is not a regular event in their lives.
- **Some respondents commented they thought the questionnaire was repetitive.** For some, this was due to having to answer the same questions about multiple people, and for others because the same questions were asked in slightly different ways.
- **Almost all of our respondents thought it was very or somewhat easy to answer the ACS questions.** Some respondents indicated they had to look up information or ask other household members for the answers to some questions for example costs for utilities.
- **Most respondents thought the ACS questions were somewhat or a little sensitive.** Reasons included not understanding why we asked specific questions, having to answer on the behalf of someone else, and viewing the information as private.
- **Almost all of the focus group respondents thought that they received a reasonable number of contacts for the ACS.**

We used these insights to develop a series of questions to cognitively test a subset of survey respondents. Results from this testing will inform the development of a voluntary feedback survey.

6. IMPROVING GROUP QUARTERS DATA COLLECTION

Objective:

Make group quarters (GQ) data collection more relevant and less burdensome.

Accomplishments:

- Modifying the definition of college/university student housing.

The ACS uses special procedures for people who live in GQs, which are living arrangements such as college dormitories, prisons, and nursing homes. Special procedures reflect that living arrangements are different for persons who reside in GQs compared to people who are living in traditional households (e.g., houses, apartments, mobile homes, etc.).

In the interest of reducing respondent burden, the Census Bureau sought input from the experts on how best to make the data collection in GQs more relevant and less burdensome.

Modifying the Definition of College/University Student Housing

In the ACS, people are counted using either the housing unit or the group quarters method. In the past, most college/university student housing had been counted using the group quarters method. However, the types of places where students lived were changing. There are increasingly more unique arrangements, including apartments and apartment-style housing, especially near or off campus. Recognizing this evolving social reality, the Census Bureau exercised agility to modify the definition.

It is important to identify whether buildings that house students attending a college/university are housing units or group quarters to get an accurate college/university student housing population count. To that end, we improved the definition by providing more specificity to distinguish between university/college-owned and privately-owned student housing. In addition, we created an additional college/university student housing category, which specified the criteria needed for a privately-owned student housing facility to be included in the GQ universe. These changes have made it easier for GQ facility representatives and Census Bureau interviewers to correctly classify the residence.

CONCLUSION

The Census Bureau's deep and abiding commitment to quality drives us to create a positive survey experience, deliver high quality data, and conduct research to make data-driven decisions that enhance the American Community Survey. We are continually evolving our survey operations to balance the needs of individual respondents with the need for impactful data in our communities.

Committing to Agility Through Innovation

Each year we remain agile in launching new research and experimentation with survey protocols while still meeting the multi-tiered demands of survey operations. We are building on exhaustive research that covers survey protocols ranging from mail packaging to contact modes to public education campaigns and beyond. In the year to come, we will keep improving by using a multi-pronged approach, focusing on:

- Improving survey materials and the way we ask questions,
- Reducing follow-up contacts,
- Obtaining data from other sources, and
- Removing questions or asking questions less frequently.

Committing to Engage Respondents and Providing Essential Data

It has been well-established that the ACS data are used to improve the quality of life for U.S. communities in myriad ways. The data help build businesses and create jobs, prepare for emergencies, improve the reach of health care and education, and much more. Knowing the significance and impact of the data, the Census Bureau is serious about continuing its work on reducing burden to respondents while providing these essential ACS data across the private and public sectors.

The Census Bureau provides resources to facilitate this such as: a [detailed explanation of why we ask each question on the survey](#), lots of easy-to-understand infographics, and a robust social media presence. We will continue to do our part to stay agile and pursue every way we can to improve the respondent experience and enhance the survey over time, and we invite every American to do their part as well by filling out the survey.

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