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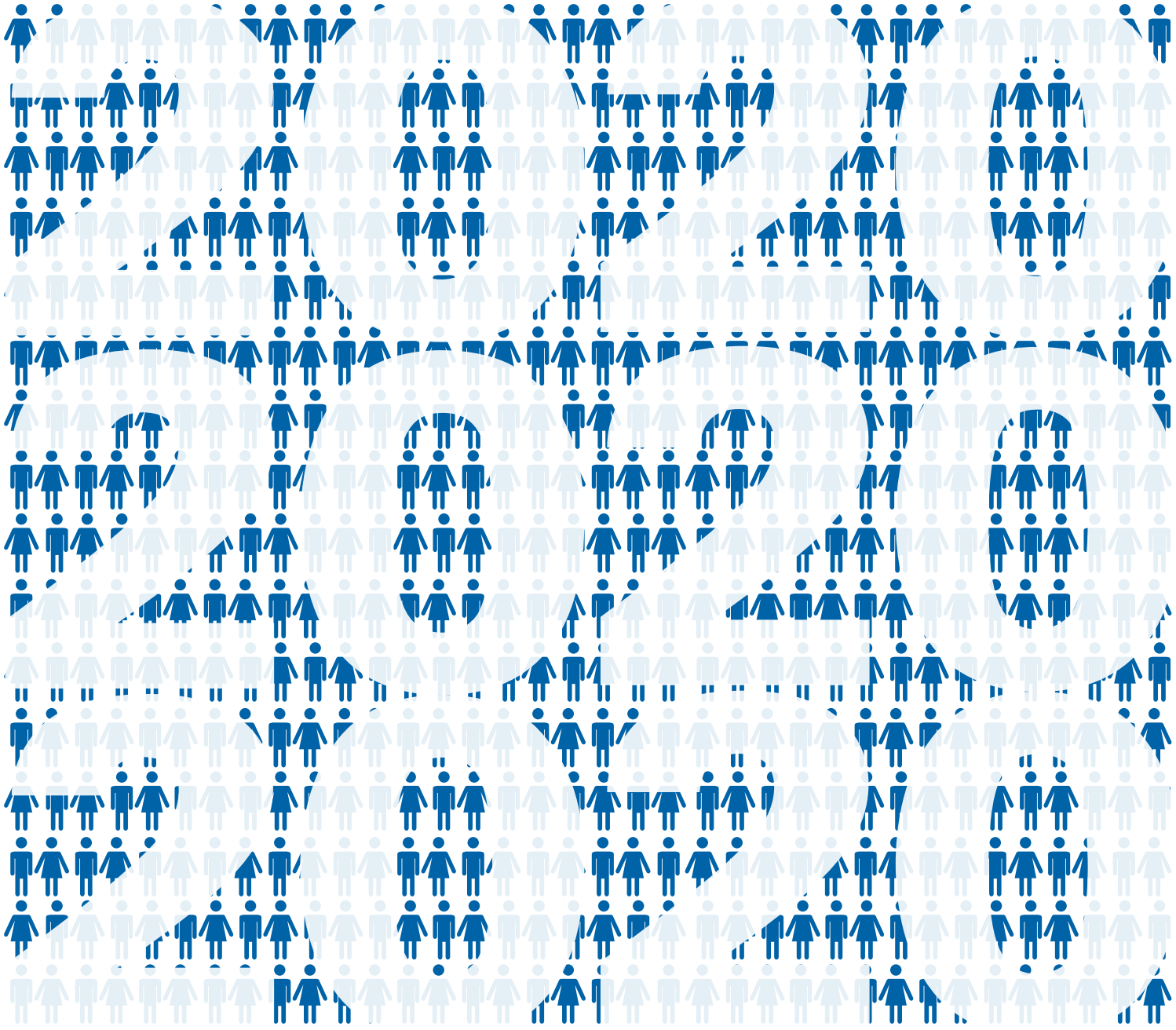
Counting Everyone in the Digital Age



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This report is part of our efforts to raise awareness among the civil rights and other communities about the potential challenges and opportunities associated with information and communications technology in the 2020 Census. We hope stakeholders throughout the country benefit from the report and associated resources.

The authors and publisher are solely responsible for the accuracy of statements and interpretations contained in this publication; any views expressed are attributable to them.

Table of Contents

Introduction and Summary

For more than a century, the U.S. Census Bureau (hereafter, "Census Bureau" or "bureau") has used cutting-edge technology to meet its mandate of producing the most accurate picture of the United States possible. The decennial census' immensity and importance has inspired technological innovation since Herman Hollerith developed punch card and electronic tabulator technology to speed up the 1890 Census. In 1950, the bureau installed UNIVAC I, the first civilian computer to be used by the U.S. government. In the 1970s and 80s, the Census Bureau revolutionized the potential of mapping with new geographic information systems that shaped locational software.[1]

Continuing this legacy with today's technology presents tremendous opportunities but comes with new and untested risks. A fully inclusive, balanced, and well-executed population count is critical to upholding the civil rights of every person in the United States. If new technology is deployed in ways that overcome disparate internet and device access and strictly guard confidentiality, the 2020 Census—the next once-a-decade attempt to count everyone in the United States—could break new ground in efficacy, accuracy, and cost savings.

The census is not always visible in the news or political discourse, but without it, the United States cannot fully understand itself as a nation—the evolution of American social structure, the tectonic shifts in regional demography, or the needs of its diverse denizens. Leaving people out of the census makes them invisible to policymakers, further marginalizing people who are already vulnerable.

This report aims to provide an accessible overview and synthesis of existing research on how proposed internet and automation technologies will impact 2020 Census enumeration for groups at risk of being undercounted. First, it provides an overview of relevant innovations, followed by an examination of the role of internet, smart devices, and automation in the Census Bureau's effort to modernize how people respond in various stages of the enumeration and how the deployment of technology will influence hard-to-count households' participation. Then, the report discusses the relationship between cybersecurity systems and privacy and confidentiality concerns. Finally, this report offers actionable recommendations for the bureau and other policymakers. The report is intended to serve as a resource for civil and human rights organizations, as well as allied researchers, advocates, and other stakeholders for understanding the potential implications of the 2020 Census.

An inclusive census is essential for civil rights

No data collection project is more important for American democracy than the singular effort by the U.S. Census Bureau to count each and every one of us every 10 years. From determining congressional apportionment and proportional representation, to informing the work of researchers seeking to understand and find solutions for a variety of national challenges, to aiding planning for businesses and educational systems, the decennial census is a cornerstone of our social, political, and economic system.[2] Survey results are used to allocate seats and draw district lines for the U.S. House

of Representatives, state legislatures, and local governing boards. Census data are also used to target more than $600 billion a year in vital federal assistance and additional private investment to states and localities[3] and to guide community decisionmaking affecting schools, housing, health care services, and much more. Census data are also crucial for civil rights policy and implementation. For instance, census data guided desegregation efforts after *Brown v. Board of Education*[4] and continues to inform Voting Rights Act enforcement.[5]

Historically, some marginalized groups have been undercounted in the census.[6] Groups that have been classified by the Census Bureau as "hard to count" include young adults of color, very young children, African Americans, Latinos, American Indians on reservations, people in low-income households, and renters, among others.[7] Other groups with lower than average response rates, and therefore a higher risk of being undercounted, include adults with less than a high school diploma, mobile populations, and female-headed households.[8]

Increasing demographic diversity,[9] declining marriage rates,[10] increases in racially and ethnically mixed families[11] and single heads of households,[12] and a charged political environment, all contribute to an increase in the number of people at risk of being undercounted in 2020, as does a poverty rate that remains above pre-recession levels eight years into an economic expansion.[13]

Technology can hinder or foster a fair and accurate census

In 2014, national civil rights and human rights organizations endorsed the first unified Civil Rights Principles for the Era of Big Data, affirming the importance of data and privacy to historically disadvantaged groups.[14] The principles emphasized both the potential for improvements in civil rights enforcement as well as the risks inherent in big data. The same potential and peril are applicable to the use of new technology in the decennial census.

The decennial census is far and away the most demanding of the many responsibilities of the Census Bureau, which range from the ongoing American Community Survey (ACS) and issue-specific and economy-focused surveys to the Survey of Income and Program Participation. Despite the herculean nature of a decennial census and the complexity of the U.S. population, Congress expects the 2020 Census to cost less than the 2010 operation.[15] That requirement is driving efforts to implement a more efficient internet response option, automate key components of training and field operations, and develop cloud infrastructure to streamline data collection.[16]

The operational changes planned and underway could reduce costs by up to $5.2 billion, and create a more efficient decennial census. Of course, to uphold its constitutional duty and ensure an accurate and fully inclusive count, the Census Bureau must prepare for potential pitfalls. Technological failures could compromise data quality and cybersecurity. Populations at risk of being undercounted are also among the most likely to face tenuous and insecure access to the internet and other new technologies, making responding more burdensome and more open to danger from hackers and malware. Data quality is also at risk because vulnerable communities, especially those who are caught in the crosshairs of current political and social tensions, may distrust the new methodologies.

To reduce the risks associated with new technology, Census Bureau staff have been conducting extensive research and testing for years. Now they are racing against the clock to be fully prepared to conduct a successful and affordable count. The last major test will be a large-scale "dress rehearsal" in 2018. Only operations included in the 2018 test are likely to be part of the 2020 Census,[17] leaving a short window for stakeholders to ensure that the bureau's procedures and technologies can be relied upon not to result in undercounting of socially and economically disadvantaged populations.

Achieving a 21st Century Census: Plans for 2020

Each decennial census is a massive and elaborate undertaking. What was once a door-to-door survey of just under 4 million U.S. residents has evolved into a multi-stage, mixed media operation, using mailings, phone calls, and in-person enumeration to count more than 300 million people.[18] The core enumeration process in 2020 will consist of:

- An operation called Update/Enumerate in which the bureau begins field canvassing in early 2020, bypassing self-response for households that are least likely to respond on their own;
- Official Census Bureau mailings sent to households to solicit responses to the 10-question 2020 Census survey either online, by phone, or by mail, as of Census Day (April 1, 2020);[19]
- In-field staff canvassing of households that did not self-respond by internet, telephone, or mail, in an operation called nonresponse follow-up.

The demographic complexity of the United States in the 21st century, including increasingly complicated household arrangements and growing racial and ethnic diversity, have made the upcoming decennial census especially challenging.[20] These realities, alongside budget constraints, compelled the Census Bureau to turn to automation and the internet to an unprecedented extent.

A fair and accurate population count requires maximizing the number of people who utilize the internet option successfully, freeing up resources for non-response follow-up to count remaining individuals and families. The information technology (IT) systems must be designed thoughtfully and have the capacity to securely handle the workload from millions of respondents per day during peak operations, each submitting unique data from a different device.[21] This section describes how the Census Bureau will introduce new IT and automation to the way households receive and respond to the 2020 Census questionnaire, the bureau's methods for counting nonresponding households, and the systems and protocols that should guarantee secure and functional data collection.

Optimizing household internet self-response

In 2020, the Census Bureau will for the first time offer an internet response option to households as the main method of self-response.[22]

In addition to potentially improving data collection costs and quality, the internet self-response option will make participation easier and more broadly accessible than before. It will provide options made possible by combining data-driven technology with a digital platform, including:

- **Real-time non-ID response processing:** To make the form as easy to fill out as possible, the Census Bureau allows respondents to submit an online form either by entering a bureau-issued ID code included in their household's mailings or by selecting a "non-ID" option, in which respondents can use their household address as identifying information. They will also have the option of assistance from a telephone agent.[23] A program will use administrative records and third-party data to match each non-ID response with the bureau's Master Address File in real time.[24] This functionality removes an extra step (finding or securing a bureau-issued ID) for many households and has performed well in tests.[25] Online non-ID response could reduce data collection costs while potentially helping to bridge the digital divide.[26]

- **New communications and advertising strategies:** Census Bureau research shows that different methods are effective at reaching specific demographic groups. A digital advertising campaign will use social media and targeted search ads to link people directly to online census materials, potentially increasing participation among hard-to-count households by millions of responses.[27]

Of course, not everyone has the same connectivity, security, and comfort with the web. Many people of color and adults with low educational attainment, low incomes, rural addresses, disabilities, and advanced age lag behind younger, more affluent, highly educated, urban, or White adults in both internet and computer access.[28] Behavioral scientists and statisticians are well aware of these disparities and have spent years developing optimal contact strategies:

- **Internet first:** The 75-80 percent of households characterized by traits indicating consistent internet access will be treated as "push-to-internet" or "internet first." The bureau will send mailings to addresses listed in its Master Address File[29] with information about responding to the 2020 Census online and will only send a paper questionnaire if a household has not responded online after multiple mailed reminders.

- **Internet choice:** The remaining 20-25 percent of households with indicators of low internet use will simultaneously receive both the full paper questionnaire and information about responding online, followed by a series of reminder mailings.[30] The bureau will determine which households are "internet choice" with the Low Response Score (LRS), the bureau's new metric for hard-to-survey populations, using a model based on demographic characteristics and internet connectivity of a geographic area.[31]

African Americans, Latinos, younger adults, low-income adults, and those without a high school diploma are most likely to depend on a mobile device as a primary or sole source of internet access.[32] Among households using the internet response option, 2020 Census respondents belonging to at least one of these groups will more likely submit census data through an internet browser on a mobile device. The Census Bureau is working actively to optimize its internet survey options for mobile device use, though test results show that survey response is still easier on a laptop or desktop computer.[33]

Strengthening follow-up to nonresponding households

One of the most extensive—and expensive—decennial operations is non-response follow-up, which requires in-person follow-up with any household that doesn't respond on its own.[34] The 2020 non-response follow-up operation will use a radically new approach to reaching hard-to-count people.[35] Up until the current decennial census cycle, non-response follow-up has been an almost entirely paper-and-pencil operation.[36] In 2020, the bureau estimates it will save an estimated $2.5 billion[37] by changing non-response follow-up procedures to include internet and cloud connectivity,[38] automation, the utilization of administrative records and databases from other public agencies,[39] and new mobile enumeration devices.

Administrative records will be used to identify and remove vacant addresses from the non-response pool before follow-up field enumeration begins.[40] Addresses that are deemed vacant will be mailed a final letter encouraging self-response.[41] The bureau will also remove addresses from non-response follow-up on a rolling basis, as self-responses are recorded.[42]

The Bureau has developed a "Best Time to Contact" model to try to reach households when people are most likely to be home.[43] Based on traits identified with administrative records, non-response follow-up households will receive a variable number of contact attempts, ranging from one to six household visits.[44]

The Census Bureau plans to significantly re-engineer management systems to improve field communication, staff efficiency, and response time for problems. Human resources recruitment, training, and administrative tasks related to census field workers will in large part be automated. Enumerators—or personnel responsible for counting and listing of people and helping respondents answer questions and complete a survey[45]—and managers will use software applications on bureau-issued mobile devices, which enable the entire enumeration process to be almost entirely paperless and interactive. Enumerators will enter data directly into devices, using a version of the internet self-response option optimized for the data collection application. The application will transmit entries to a data storage location through a secure, encrypted connection. As envisioned, all management can be performed remotely from an operational control center, using performance-based alerts and real-time changes to caseload information, route assignments, model-based adaptive strategies, and survey materials.[46]

The need for efficient and secure communications technology runs up against federal budget constraints

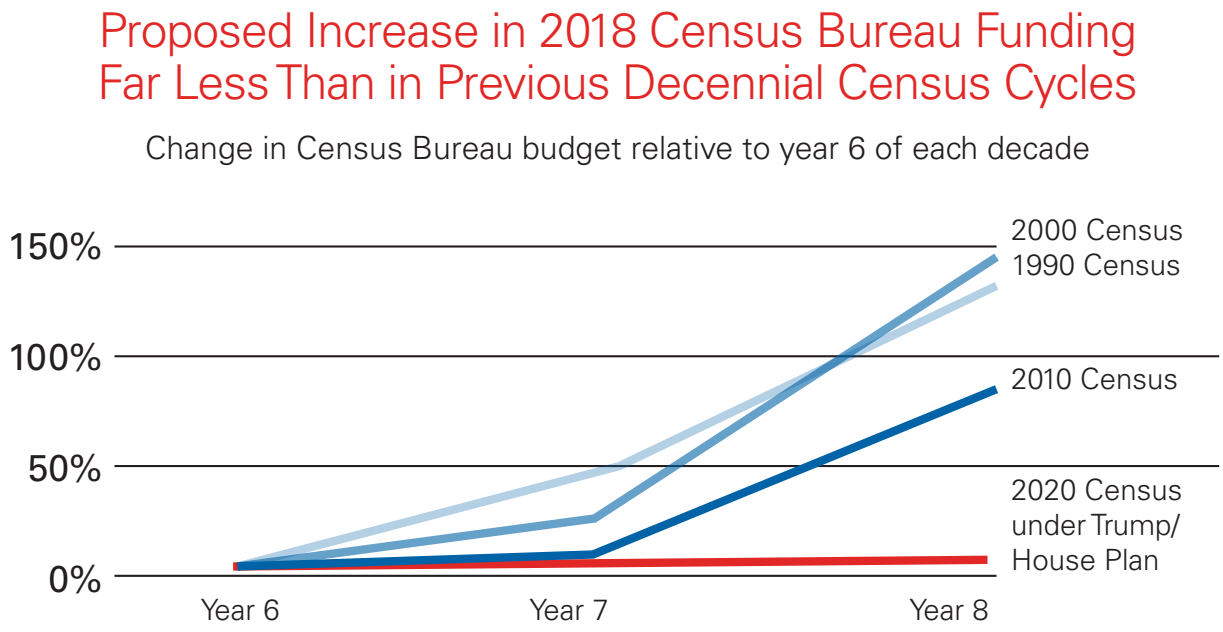
Crucial 2020 Census functions, including self-response and non-response follow-up, will rely on network data transmission and cloud information storage. For both the re-engineered field operations and internet self-response, the Census Bureau plans to provide a cloud computing environment that is secure and protected against power grid interruptions or malicious attacks on its IT system.[47] Research indicates that public confidence in the confidentiality of their personal

information is an important factor in census participation,[48] so bureau staff must ensure that security measures give census respondents confidence in the confidentiality of their personal information.

To develop robust IT systems for 2020, the Census Bureau must balance rigorous evaluation with the rapid pace of technological innovation. Cloud storage, servers, and the new Census Enterprise Data Collection and Processing program (CEDCaP) must remain secure, even with millions of points of contact from self-responding households using the online form, online data submissions from Census Questionnaire Assistance (CQA) interviewers who will assist respondents via phone or online chat, and real-time data submission as non-response follow-up enumerators enter data from interviews.

Because information and communications technology can become obsolete in a few years or even months,[49] the bureau's task is incredibly difficult. Many systems needed for the 2020 Census are not yet fully developed and require substantial work and testing in the 2017 Census Test and the 2018 End-to-End Census Test—also referred to as the "dress rehearsal" for the 2020 Census.[50] Census Questionnaire Assistance (CQA)—the main resource for telephone or online chat assistance—Real Time Non-ID Processing (RTNP)—the ability to complete the census survey online without a bureau-issued unique identifier—and user experience software all need scalability updates.[51] Backup operations to support these systems are also far from finished. In 2016, the Census Bureau awarded a contract to develop the Disaster Recovery and Continuity of Operation Plan (COOP).[52] Though no

Figure 1. Bureau funding in advance of decennial count (figures are in thousands)



Note: All years are fiscal years. Figures show discretionary budget authority in each year of the decade relative to that in the sixth year, not adjusted for inflation.

Source: CBPP based on Office of Management and Budget, enacted appropriations, and draft legislation from the House Appropriations Committee.

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details are yet available, the plan is supposed to "help the U.S. Census Bureau and the 2020 Census operations quickly recover from system failures, and keep the systems and operations running with a minimal loss of data, and productivity."[53]

Delaying product development as long as possible makes sense when considering the pace of technological change, but postponing crucial investments can become a political gamble given the congressional appropriations process. Like most federal agencies, the Census Bureau had to operate for the first seven months of FY 2017 at FY 2016 funding levels, at a time when the decennial census budget should be ramping up sharply for final testing and preparations. For example, during the last decennial census cycle under President George W. Bush's administration, funding for the Census Bureau rose by a 79 percent increase, from FY 2006 to FY 2008.[54] However, neither Congress nor President Trump's administration show any signs of allowing this necessary increase for FY 2018 (see Figure 1). On the contrary, FY 2017 funding will have been $164 million below the Census Bureau's request of $1.634 billion.[55] The Trump administration's FY 2018 budget request includes $1.497 billion for the Census Bureau, a mere 2 percent above the FY 2017 discretionary appropriation.[56]

Insufficient funding in FY 2017 and the prospect of strained resources in FY 2018 have forced the Census Bureau to cancel final testing of some key activities. For example, the bureau was forced to cancel 2017 census site tests, which included the only field evaluation of special methods for counting rural and remote communities. The bureau also reduced the scope of address list updating using cheaper "in-office" methods, meaning more of this critical preparation work will have to be done through costlier block-by-block canvassing in 2019. The bureau has also slowed development of vital communications and language assistance programs and announced the cancellation of two out of three planned sites for the 2018 End-to-End Census Test, severely limiting the scope of the only integrated evaluation of all operations and IT systems before the 2020 Census takes place.[57] This underfunding and uncertainty jeopardize efforts to reach hard-to-count households and endanger prospects for an accurate count.[58]

The integrity and quality of census data will also rely on the bureau's cybersecurity strategy to an unprecedented extent. Since most self-response data and virtually all non-response follow-up data will be entered online, the bureau is taking extra precautions against malware, fraud, and hacking attempts. The Census Bureau has developed or is developing systems to manage risk involved with all components of the 2020 Census architecture, including people, physical security, infrastructure, procurement, and management of IT systems; how bureau IT systems interface with other systems; applications that collect and process survey information; and, most importantly, the data.[59] These systems, which are evolving with each test and potential new technology,[60] aim to address threats ranging from phishing to communications failure to improper data access.[61]

Responding Across the Digital Divide

The United States' well-documented "digital divide" must be considered carefully in the design of self-response strategies and in identifying outreach priorities for hard-to-count communities. Many marginalized U.S. residents have tenuous internet access via data-limited smartphones, public computers, or slow or unsecure home connections—if they have internet access at all. Disparate access and opportunities depending on socioeconomic, geographic, and other characteristics contribute to households being hard-to-count in the 2020 Census.[62] This section discusses obstacles that marginalized communities face regarding access to the internet and digital devices, and methods the bureau can use to encourage participation across the digital divide.

Marginalized communities lack internet access

Race, ethnicity, English proficiency, and age are among the major predictors of internet access (see Figures 2 and 3). By 2015, almost nine out of 10 Americans had at least occasional internet access and 70 percent have broadband in their homes.[63] But only 58 percent of adults 65 and older use the internet. Though the gap has been shrinking, significant racial and ethnic differences remain. Whites and English-speaking Asian Americans are more likely to be internet users than African Americans, Hispanics, and Native Hawaiians and Pacific Islanders, who all lag behind the national average in internet use. Only 51 percent of those who have Limited English Proficiency have internet access.[64] People with disabilities have particularly limited internet use. As of late 2016, only 50 percent of people with disabilities reported using the internet on a daily basis, compared to 79 percent of people without disabilities.[65]

Location is also a major predictor of internet access. The 2013 American Community Survey found the Northeast and West to be the most connected regions, and the South the least. Almost two-thirds of the states with above-average rates of high-speed internet access were in either the West or Northeast. Meanwhile, most states with especially low rates of high-speed Internet were in the South.[66] Seventy-five percent of rural residents reported using the internet at all in 2015, compared to 85 percent of urban residents.[67]

Figure 2. American Internet Use

Among all American adults, % who use the internet by demographic characteristic (2015)

All American Adults	84%
18-29	96%
30-49	93%
59-64	81%
65+	58%
Men	85%
Women	84%
Asian Americans*	97%
Native Hawaiian and Pacific Islander**	80%
White, Non-Hispanic	85%
Hispanic	81%
Black, Non-Hispanic	78%
Limited English Proficiency***	51%
$75K+	97%
$50K-$74,999	95%
$30K-$49,999	85%
Less than $30K	74%
College+	95%
Some College	90%
HS Grad	76%
Less than HS	66%
Urban	85%
Suburban	85%
Rural	78%

*Data is for English-speaking Asian Americans in 2014

** 2015 American Community Survey

*** 2015 data from Center for Media Justice

Source for all other data: Pew Research Center surveys, 2000-2015

A pronounced internet access imbalance exists across levels of income and educational attainment, as well. By 2015, almost all college-educated Americans were connected to the internet, compared to only 66 percent of those who did not complete high school. Members of households with over $75,000 in income are about 20 percentage points more likely to have internet access than members of households with total earnings under $30,000 a year.[68] Social scientists have found that "socioeconomic inequality is the main predictor of lack of access, over race, age, or gender; income is the primary predictor of whether someone has home internet access."[69]

Multiple characteristics can have a cumulative effect on individual access. For instance, the average rural American household is likely to have lower educational attainment, lower income, older age, and higher unemployment than urban households. Additionally, poverty and educational attainment rates are worse for people of color in rural America.[70] People who belong to several of these groups, such as an African American person with low income and no high school diploma living in a rural area, are least likely to have internet access.

Access to devices that can connect to the internet varies significantly

Approximately 30 percent of households lack home broadband, meaning one-third of households will respond either via dial-up internet, a public internet-connected computer (at a library or computing center), or a mobile device.[71] While groups with the lowest levels of internet access will clearly face hurdles responding via the internet, even groups with high internet access rates may experience poor reliability and quality in their internet connections. For example, while Latinos[72] appear to have similar internet access to non-Hispanic Whites, Latinos—especially those that primarily speak Spanish—are one of the groups least likely to have broadband at home.[73]

Ways of connecting to the internet can vary across geographies, as well as across demographics. Almost a fifth of the states with the highest rates of computer ownership were located in either the West or Northeast, while more than half the states with the lowest rates of computer ownership were located in the South (see Appendix).[74] Only 47 percent of people living in rural America have high-

Figure 3. Demographics of U.S. adults who do not use the internet.

Who's not online?

% of U.S. adults who do not use the internet (2016)

U.S. adults	13%
Men	12%
Women	15%
White	13%
Black	13%
Hispanic	16%
18-29	1%
30-49	4%
50-64	16%
65+	41%
<$30K	23%
$30K-$49,999	12%
$50K-$74,999	6%
$75K+	3%
Less than HS	34%
High school	23%
Some college	6%
College+	3%
Urban	12%
Suburban	11%
Rural	22%

Note: Whites and blacks include only non-Hispanics. Hispanics are of any race

Source: Surveys conducted March 7-April 4 and March 30-May 3, 2016

Pew Research Center

speed internet access.[75] Connectivity is even more tenuous in Indian country; high-speed internet access was only available to 37 percent of American Indian households on tribal lands in 2013.[76] People of color, younger adults, low-income adults, and those without a high school diploma are most likely to use a mobile device as a primary or sole source of internet access (see Figure 4).[77] Young adults may have near universal internet access at 96 percent, but 86 percent of those young adults rely primarily on smartphones for internet access, which is likely to be of poorer quality than home broadband. Hispanics are among the most likely to own a smartphone, to live in a household with only a cellphone and no landline, and to access the internet from a mobile device.[78] Smartphones' markedly different user interfaces and experience can lead to multitasking, distraction[79], or interruption.[80] Potential explanations range for a variety of reasons, ranging from the multi-use nature of a cell phone to poor reception.

Even if the mobile version of the 2020 Census questionnaire runs well on smartphones, hard-to-count, smartphone-dependent groups are at heightened risk for lack of access and poor quality access.[81] Researchers have found that the most cell phone-dependent adults are also the most likely to have to cancel phone service due to financial constraints or data limits.[82] The financial burden of a time-consuming survey that requires costly data could disproportionately reduce the response rates of groups that tend to be low-income. Additionally, problems that plague mobile phone users, such as slow download speeds and dropped calls, occur most frequently for people of color.[83]

Finally, people responding to the census via smartphone might encounter greater difficulty in assessing new, expanded choices for designating their race and/or ethnicity. Advocates for vulnerable population groups applaud the Census Bureau's careful, well-researched decision to allow all

Figure 4. Demographics of cell phone-dependent internet users in the U.S.

Who's a cell-mostly internet user?

Among cell internet users, the % who mostly use the phone to go online.

All cell Internet users (n=1,185)	**34%**
a Men (n=598)	34
b Women (n=587)	34
Race/Ethnicity	
a White, Non-Hispanic (n=762)	27
b Black, Non-Hispanic (n=158)	43a
c Hispanic (n=157)	60ab
Age	
a 18-29 (n=336)	50bcd
b 30-49 (n=405)	35cd
c 50-64 (n=304)	14
d 65+ (n=109)	10
Education attainment	
a Less than HS/HS grad (n=333)	45bc
b Some College (n=306)	34c
c College+ (n=541)	21
Household income	
a <$30K a year (n=238)	45cd
b $30K-$49,999 (n=175)	39d
c $50K-$74,999 (n=171)	30
d $75K+ (n=429)	27
Urbanity	
a Urban (n=436)	33
b Suburban (n=571)	35
c Rural (n=176)	30

Source: Pew Internet and Amican Life Project Spring Tracking Survey, April 17-May 19, 2013. N=1,185 cell internet users ages 18+. Interviews were conducted in English and Spanish and on landline and cell phones. The margin of error for results based on cell internet users is +/-3.3 percentage points.

Note: Percentages marked with a superscript letter (e.g., a) indicate a statistically significant difference between that row and the row designated by that superscript letter, among categories of each demographic characteristic (e.g., age).

respondents to report detailed ethnicities or national origins in a new combined race and ethnicity question. However, while the Census Bureau plans to optimize their survey for mobile devices,[84] respondents who rely on smartphones for internet access could find their ability to provide more granular information hampered by small screen size,[85] in turn affecting the collection of accurate subgroup data for specific communities that already face higher risk of disproportionate undercounting.

Testing whether internet response can overcome the digital divide

Census Bureau testing through the monthly American Community Survey (ACS) and the 2015 National Content Test (NCT) points toward strategies that are most likely to yield the highest internet self-response rates among households with differing demographic characteristics and technological access.[86] In general, Census Bureau research shows that small changes to modes of contact, such as order of mailings, number of notifications, and amount of information provided, can greatly affect response rates.[87]

Contact strategies and mode of self-response depend on respondent characteristics

The American Community Survey (ACS) presented respondents with the internet self-response option for the first time in 2013, and researchers discovered that reactions to an internet response option are mixed across traditionally hard-to-count populations.[88] Households where all residents are under 30 years of age and households with children under five years old had the highest internet penetration rates and were more likely to self-respond when an internet option was offered than when mail or telephone were the only options.[89]

Figure 5. 2015 National Content Test Mode of Response by Race and Ethnicity.

Race/Ethnicity	Mode of Response				
Self-Response Group Alone or in Combination	Internet			Telephone Questionnaire Assistance (TQA)	Mail
	Mobile	Tablet	Other		
White	6.5%	7.7%	57.8%	9.0%	19.0%
Hispanic	10.7%	7.0%	45.8%	7.5%	29.0%
Black	8.9%	6.4%	40.1%	11.7%	32.9%
Asian	5.8%	7.7%	67.4%	3.2%	15.8%
American Indian and Alaskan Native	8.6%	7.4%	58.0%	12.4%	13.6%
Native Hawaiian and Pacific Islander	11.6%	7.3%	51.5%	5.8%	23.9%
Native Hawaiian and Pacific Islander	11.6%	7.3%	51.5%	5.8%	23.9%
Some Other Race	10.6%	7.8%	56.1%	9.8%	15.7%

Source: U.S. Census Bureau

Groups with the lowest internet penetration, like adults with less than a high school education, demonstrated a strong preference for paper; the response rate was significantly reduced in reaction to the push-to-internet strategy.[90] African Americans and households with a respondent over 65 years old were also significantly less likely to respond at all to a push-to-internet contact strategy.[91] This research suggests that the internet response option may alter the decennial census landscape enough to change who is hard-to-count, improving the undercount of younger adults and their families, but putting populations who are typically counted correctly or even overcounted, like seniors, at risk of lower response rates.[92]

For every race and ethnicity analyzed in the nationwide 2015 National Content Test (NCT), the majority of self-responding households responded by internet; however, the devices used to respond and proportion of those households using non-internet options varied by race and ethnicity (see Figure 5).[93]

The 2015 test results highlighted disparities surrounding the internet self-response option.[94] Asians were most likely to respond over the internet with a non-handheld device, as were Middle Eastern and North African (MENA) households.[95] Native Hawaiian and Pacific Islander (NHPI) and Hispanic households relied more heavily on mobile phones.[96] American Indian and Alaskan Native (AIAN) households used Telephone Questionnaire Assistance (TQA) to respond over the phone at the highest rate of all groups studied.[97] African Americans were most likely to respond by mail, followed by Hispanics.[98] The 2015 NCT also found that households with more seniors (65+) were more likely to respond via TQA.[99]

Mobile device users face greater obstacles when self-responding

Census Bureau experts found that responding to the 2015 NCT and the ACS online via mobile devices was more burdensome and likely produced less accurate data than using a desktop or laptop computer.[100] Mobile device users faced the challenges of longer load time for the ACS web application, small font sizes, using a finger to select the proper option, and more scrolling.[101] Mobile device respondents experienced breakoff rates—starting but not completing a survey—over

Figure 6. Phones are increasingly used to fill out Census surveys online

	National Content Test		American Comunity Survey	
	2012	2015	2015	2016
Phone	2.6%	7.7%	4.6%	7.6%
Computer	91.2%	83.0%	80.3%	82.2%
Tablet	6.3%	9.3%	15.1%	10.25%

Source: Horwitz, Rachel, "The Differential Effect of a Mobile-Friendly Instrument on Data Quality." Adapted from United States Census Bureau.

15 percentage points higher than breakoff rates for computers.[102] Responding by mobile phone browser also took on average about eight minutes longer than responding via computer. These challenges are important for hard-to-count communities, since mobile device web respondents are significantly more likely to be people of color, renters, and younger, less educated, and lower income respondents than users of other devices.[103] This issue is becoming more pressing, as an upward trend in the share of respondents utilizing mobile devices for self-response (see Figure 6) will likely increase further as 2020 approaches.[104]

New contact and outreach strategies can help address the digital divide

In addition to highlighting inequalities related to the digital divide, Census Bureau research has identified strategies for addressing them. The "internet choice" contact strategy, where the paper questionnaire is sent in the first mailing, inspires significantly higher mail response rates than "push to internet" from households that are least likely to respond to the census and have the lowest internet connectivity.[105] Sending reminder postcards early and often also improves response rates from otherwise nonresponding households.[106] The Census Bureau also found that offering an internet option results in increased call volumes to the telephone assistance component of Census Questionnaire Assistance.[107]

Figure 7. Census Bureau goals for optimizing self-response in 2020.

*Validate respondent addresses for those without a Census ID and prevent fraudulent submissions.
Adapted from U.S. Census Bureau.

Streamlined and flexible self-response processes may increase access

The internet option will streamline self-response for limited English proficiency respondents, who are historically hard-to-count. Though the Census Bureau will send bilingual mailings to Spanish-speaking households, for the most part, respondents must make a special request to receive a copy of the census questionnaire in a different language than what they receive in the mail, which may have contributed to the overall low self-response rates among non-English speakers in the 2010 Census.[108] In 2020, the web option will allow for the survey to be instantly available in several languages besides English, including Spanish, Chinese, Vietnamese, Korean, Russian, Arabic, and Tagalog.[109] Lowering the language barrier to self-response could have positive impacts across age groups and communities of color. For instance, one-quarter of young Latino children lived in a household where adults had difficulty speaking English in 2010.[110] As one of the hardest-to-count populations,[111] these children could benefit immensely if their parents could use the online multilingual platform.

Digital platforms expand outreach opportunities

Internet response provides a single clear portal, which makes outreach and advertising vastly simpler.[112] For example, public computers will be invaluable tools to facilitate response in service centers, such as food banks, making it easier to capture households that are especially mobile or low-income.[113] The online census form will make it easier for advocates to help their communities self-respond. Moreover, advocates and trusted community figures now have the option to directly increase access to the 2020 Census using email and text message.[114] The 2015 Census Test rigorously tested the potential of digital ads targeting typically hard-to-count demographic groups to bring new participants straight to the online census form.[115] Targeted digital ads in social media and paid search ads tested well and are likely to increase self-response rates from various hard-to-count populations—some by more than 10 percent.[116]

A functional, rapidly-loading interface compatible with a range of devices will be critical to promoting self-response from hard-to-count groups and most U.S. residents. The Census Bureau must secure the resources and complete the testing research and outreach necessary to optimize self-response for everyone.

Reaching the Hardest to Count While Updating Field Operations

Recent censuses have shown that roughly a quarter of households do not respond to the decennial census on their own.[117] In 2010, nonresponding households were most likely to be larger, younger, renters, and include people of color.[118] The few households with a head of household under 18 had the lowest self-response rate (30.4 percent); Native Hawaiian and Pacific Islander (NHPI) households had the lowest self-response rate (59.7 percent) of all racial and ethnic groups.[119] No matter how well the self-response internet option performs, non-response follow-up is critical to ensuring that households of all ages, sizes, housing tenures, races, and ethnicities are fully included in the 2020 Census and count in congressional reapportionment and redistricting as well as allocation of critical government resources.

As the most expensive part of the decennial census, field operations targeting hard-to-count households, including Update/Enumerate and non-response follow-up, could be seen as a logical target for cost-saving strategies (see Figure 8). The bureau will be using administrative records (AR) from other government agencies and data collected through the ACS to improve efficiency. AR and ACS data will help reduce the number of in-person enumeration attempts needed per household and automate field staff assignments, training, and management. Allowing census takers to collect and transfer data in real time on smartphone devices will also result in cost savings.[120] Innovations to in-field decennial census enumeration have the potential to save over $2.5 billion compared to conducting similar field operations using older methods, according to the Census Bureau, but if they are not effectively designed and sufficiently tested, those very innovations risk excluding millions of hard-to-count households whose best chance at being counted is through Update/Enumerate and non-response follow-up.[121]

Figure 8. Re-engineering, automation, and connectivity in field operations.

Streamlined Office and Staffing Structure	Increased Use of Technology	Increased Management and Staff Productivity
 Area Census Office Manager	• Automated and optimized work assignments	• Increased visibility into case status for improved workforce management
 Census Field Manager	• Automated recruiting training, payroll, and expense reporting	• Redesigned quality assurance operations
 Census Field	• Ability to conduct address updates and enumeration on same device	• Improved communications
 Listers and Enumerators	• Reduced paper and manual processing	

Adapted from United States Census Bureau.

The Census Bureau tried to implement ambitious changes to in-field operations in the years leading up to the 2010 Census, developing specialized handheld computers to automate costly and time-consuming canvassing activities.[122] The 2010 handheld computers were developed from scratch, rather than using an off-the-shelf device like smartphones, as is planned for 2020.[123] Unfortunately, testing revealed serious technical challenges that the bureau could not resolve in time for the 2010 Census. The bureau ultimately opted to use traditional pencil-and-paper methodologies for non-response follow-up only two years before the census. The technology failure required the Census Bureau to hire and train more staff, inflating costs for the 2010 Census by more than $2 billion beyond original estimates.[124]

It is urgently important for policymakers to recognize that insufficient annual appropriations and agency leadership vacuums threaten the Census Bureau's efforts to avoid repeating past mistakes and to develop well-tested automation and IT systems for field enumeration.[125] Many new systems and models have tested well among relatively small populations, but the experience of previous decennial censuses suggests those successes do not eliminate uncertainties involving new models, procedures, and technologies as they are rolled out at scale.[126]

Much of the technological infrastructure for 2020 has performed well in census tests, according to the Census Bureau, but functionality is still inconsistent. Partially automating enumerator and manager training through videos and online tools was successful in recent tests; introducing new teaching tools, including online tutorials, brought "classroom" hours down from 32 hours in 2010 to 18 hours in 2020.[127] Electronic payroll and workload management have functioned well.[128] Enumerators were able to use smartphones well, even if they had little technological background.[129]

However, while automated training proved useful as a component, when used alone it left enumerators unprepared, without strategies to handle the most difficult non-response follow-up cases.[130] The 2015 Census Test responses initially overwhelmed management review, and system-generated notifications did not always properly inform managers if field staff were deviating from instructions.[131] Even with large parts of the system automated, there are still managerial challenges.[132] For instance, enumerators in the 2015 Census Test only followed the route optimized by automation 67 percent of the time, and exceeded the allowed non-response follow-up contact attempt limit in 15 percent of cases.[133] Since a third of enumerators deviated from their routes, efficiency and cost savings may not be as great as originally anticipated.[134]

Internet connectivity and IT systems play major roles in non-response follow-up, which will incorporate handheld device-based management, field optimization, and enumeration software applications.[135] Unfortunately, due to prior "structural instability," the 2017 Census Test was the first time the Census Bureau tried real-time cloud computing as it will be deployed in 2020.[136] Both the Government Accountability Office (GAO) and the 2020 Operational Plan identify scalability, or the ability for massive numbers of people and enumerators to use the online form simultaneously, as a key risk faced by the decennial census.[137] Given the scale of total census responses, the lack of load testing to date is a major concern of independent overseers, such as the GAO and the Commerce

Department Office of the Inspector General (OIG), who worry about the short timeframe remaining to make enormously consequential decisions.[138] Additionally, the Census Bureau now projects that the main IT architecture behind the decennial census' ambitious data collection goals, the Census Enterprise Data Collection and Processing program (CEDCaP), will exceed its original cost estimate of $656 million by at least $309 million.[139]

Former Census Bureau Director John Thompson attributes the dramatic increase in price on the Census Bureau's lack of in-house technical and accounting expertise.[140] The Commerce OIG and the GAO seem to agree with Thompson's assessment; they say the design of the census tests makes it difficult to isolate how much each factor contributed to efficiency and cost-savings.[141] Delays resulted in most testing decisions being made before the previous year's results were formally recorded and published, raising questions about transparency and the reliability of cost savings estimates.[142] Trustworthy budget projections for re-engineering field operations are critical because the new methods account for almost 50 percent of the projected savings from technological innovation for the 2020 Census.[143]

When budget shortfalls and system failures arise, hard-to-count communities often suffer. Canceling the use of handheld computers in 2010 meant that hard-to-count households were enumerated with expensive, last minute pencil and paper operations.[144] In the current cycle, FY 2017 budget shortfalls led the bureau to cancel critical tests of multilingual products in Puerto Rico and special enumeration methods for rural, remote, and tribal areas.[145] To save funds for core operations of the 2018 "dress rehearsal," the bureau canceled the Census Coverage Measurement (CCM) survey for this final testing opportunity. The CCM analyzes undercounts by traits such as race and age.[146] If funding continues to fall short, the quality of Update/Enumerate and non-response follow-up, and thus the fairness and accuracy of the 2020 Census, could very well be compromised.

Balancing Confidentiality and Security

Technological innovations may put hard-to-count communities at heightened risk of cybersecurity-related threats in the 2020 Census. This section explores the special threats that hard-to-count households face in a digital age census and also how cybersecurity measures that are seen as weakening data confidentiality could generate damaging resistance to census participation, especially among hard-to-count population groups.[147]

Hard-to-count communities need cybersecurity

With the new 2020 Census systems, all census responses will go through an IT data collection architecture (CEDCaP), whether submitted by internet self-response, telephone, or paper questionnaire, or gathered by non-response follow-up field staff using smartphone applications.[148] The risks of personally identifiable information being exposed and compromised are heightened by increasingly sophisticated hackers, technological advancements that make it easier to track and analyze data, and the growing extent to which individual data are collected in today's society (see Box 1).[149]

Box 1. Hackers Target the Australian Census

In August 2016, the Australian government offered an internet census response option for the first time and encountered a technological meltdown. The website hosting the online portal was ultimately shut down after a "denial of service" attack, where an attack originating overseas deliberately overloaded the website, making it temporarily inaccessible to Australians trying to complete their census online.[1] The cyberattack occurred in the midst of a heated public debate voicing privacy concerns about new methods for collecting and storing census data, with some factions calling for a boycott.[2]

The Australian Bureau of Statistics managed to recover by successfully reopening the online census portal a few days later, and ultimately reached projected response rates; however, the debacle cost the equivalent of more than 22 million U.S. dollars,[3] and provided a stronger platform for skeptics and privacy activists to advocate boycotting the census.[4] This attack demonstrates that a national census could be a target for hackers. It also shows how important perceptions of cybersecurity can be in fueling anti-census rhetoric.

[1] Selyukh, Alina. "Cyberattack halts Australia's First Online Census." NPR, August 10, 2016. Available at http://www.npr.org/sections/thetwoway/2016/08/10/489467907/cyberattack-halts-australias-first-online-census.

[2] Farrell, Paul."Census 2016: Australians who don't complete form over privacy concerns face fines." *The Guardian*, July 24, 2016. Available at https://www.theguardian.com/technology/2016/jul/25/census-2016-australians-who-dont-complete-form-over-privacy-concerns-face-fines.

[3] The total cost was reported to be 30 million Australian dollars. The Australian Associated Press. "Australia's 2016 census website shutdown to cost $30m." *The Guardian*, October 19, 2016. Available at https://www.theguardian.com/australia-news/2016/oct/20/australias-2016-census-website-shutdown-to-cost-30m.

[4] Kanaracus, Chris. "Australian census debacle generates both troubling and encouraging signs for privacy." ZDNet, August 19, 2016. Available at http://www.zdnet.com/article/australian-census-debacle-generates-both-troubling-and-encouraging-signs-for-privacy/.

Hard-to-count households' data may be at greater risk of being intercepted or attacked as they legitimately fill out their census forms. In particular, many of these respondents are at risk of utilizing the internet option via smartphones with less protection from malware and hacking. Despite the growing use of smartphones to transmit sensitive information, as well as their growth as a target for malware attacks,[150] protective software taken for granted on personal computers, such as firewall, antivirus, and encryption, are extremely uncommon on mobile phones.[151] Even the most secure phones are at risk if the operating system is not kept up to date.[152] In 2016, 87 percent of Android users had an outdated version of their operating system,[153] and 40 percent of all smartphone owners in 2015 only updated their smartphone operating systems when they found it convenient.[154] Hackers may also see the 2020 Census internet response option as an opportunity for phishing, in which a false link is presented to trick unsuspecting people into divulging sensitive information or downloading malicious software; an estimated 91 percent of all hacking attempts begin with phishing.[155] Research shows that mobile phone users are significantly more likely to succumb to phishing attempts than people using personal computers.[156] In another example of cyber-vulnerability, low-income people are much more likely to use free Wi-Fi at public locations, such as coffee shops.[157] According to Pew Research, people dependent on public Wi-Fi sources, which often are less secure than private Wi-Fi, are especially prone to hacking.[158]

Marginalized communities who are often hard-to-count will also be disproportionately affected if Census Bureau enumeration systems are compromised. If non-response follow-up devices and networks or CQA systems have security issues, hard-to-count communities are most likely to be affected since they are the most likely households to be counted either by self-responding through CQA or by non-response follow-up interviews.[159] For example, the GAO highlighted disconcertingly lax security for mobile devices in the 2015 Census Test.[160] During the test, which collected real information from selected respondents, external communications (i.e. calls, messaging applications, and internet browsers) were not disabled on the government-issued devices during the enumeration process.[161] Statutorily protected sensitive information could have been illegally shared or posted online.[162] Since this threat only applied to the non-response follow-up portion of the test, it disproportionately placed people of color, immigrants, low income, young, mobile, and other hard-to-count populations at disproportionate risk for fraud and crime victimization.[163] The Census Bureau has a responsibility to secure these systems in a manner that best serves hard-to-count households.

Negative perceptions of security practices can endanger data quality

While security measures are undoubtedly important to protecting the personal data of hard-to-count communities and, indeed, all Americans, they must be designed thoughtfully to maintain the strict data confidentiality guaranteed by the Census Act (see Box 2) and to encourage rather than undermine decennial census response.

To comply with provisions of the Federal Cybersecurity Enhancement Act of 2015, the Census Bureau is mandated to utilize Department of Homeland Security (DHS) cybersecurity systems.[164]

Box 2. Census Bureau Confidentiality Obligations under 13 U.S. Code §9 and §214

Federal statutory language mandates that all personally identifiable information collected by the Census Bureau remain confidential:

Sec. 9. Information as confidential; exception

(a) Neither the Secretary, nor any other officer or employee of the Department of Commerce or bureau or agency thereof, or local government census liaison may, except as provided in section 8 or 16 or chapter 10 of this title or section 210 of the Departments of Commerce, Justice, and State, the Judiciary, and Related Agencies Appropriations Act, 1998.[1]

1. Use the information furnished under the provisions of this title for any purpose other than the statistical purposes for which it is supplied; or
2. Make any publication whereby the data furnished by any particular establishment or individual under this title can be identified; or
3. Permit anyone other than the sworn officers and employees of the Department or bureau or agency thereof to examine the individual reports. No department, bureau, agency, officer, or employee of the Government, except the Secretary in carrying out the purposes of this title, shall require, for any reason, copies of census reports which have been retained by any such establishment or individual. Copies of census reports, which have been so retained, shall be immune from legal process, and shall not, without the consent of the individual or establishment concerned, be admitted as evidence or used for any purpose in any action, suit, or other judicial or administrative proceeding.

(b) The provisions of subsection (a) of this section relating to the confidential treatment of data for particular individuals and establishments, shall not apply to the censuses of governments provided for by subchapter III of chapter 5 of this title, nor to interim current data provided for by subchapter IV of chapter 5 of this title as to the subjects covered by censuses of governments, with respect to any information obtained therefore that is compiled from, or customarily provided in, public records.

Sec. 214. Wrongful disclosure of information

Whoever, being or having been an employee or staff member referred to in subchapter II of chapter 1 of this title, having taken and subscribed the oath of office, or having sworn to observe the limitations imposed by section 9 of this title, or whoever, being or having been a census liaison within the meaning of section 16[2] of this title, publishes or communicates any information, the disclosure of which is prohibited under the provisions of section 9 of this title, and which comes into his possession by reason of his being employed (or otherwise providing services) under the provisions of this title, shall be fined not more than $5,000 or imprisoned not more than 5 years, or both.

[1] The Census Address List Improvement Act of 1994, P.L. 103-430 amends section 9(a) by inserting "or local government census liaison" and adding references to section 16. P.L. 105-119, the Departments of Commerce, Justice, and State, the Judiciary, and Related Agencies Appropriations Act, 1998, adds the reference to section 210.
[2] The Census Address List Improvement Act of 1994 (P.L. 103-430) amends section 214 making references to section 16 and "census liaisons."

Source: https://www.census.gov/about/policies/privacy/data_protection/title_13_protection_of_confidential_information.html

This move is particularly sensitive because it could allow federal personnel who are not sworn under the confidentiality provisions of the Census Act to see personally identifiable information if the DHS system detects possible, or actual, cyberattack. DHS is requiring that all agencies use their in-house cybersecurity analysis system, Einstein 3 Accelerated (Einstein 3 or E^{3}A).[165] Accordingly, the Census Bureau decided to revise its longstanding confidentiality pledge, which had previously promised that only sworn Census Bureau employees would have access to raw census and survey data (see Box 3). It is important for the administration to consider how the perception of such measures may affect participation in the census and, therefore, the quality of census data.[166] In a potentially foreshadowing example, demands by the Trump administration's "Election Integrity Commission" that states turn over personal data on all voters led some voters to ask to be removed from voting rolls.[167] Fear of government surveillance and interagency data sharing may inspire a similar chill in civic engagement and reduce household willingness to respond to the 2020 Census, thus jeopardizing accuracy and cost-effectiveness.

Research shows that cybersecurity concerns do not yet have a major impact on people's behavior. At least 70 percent of Americans think there will be major cyberattacks on the U.S. government and infrastructure in the next five years, but a majority has faith in the government's ability to block the attacks.[168] Despite awareness of cybersecurity issues, few Americans actually change their behavior to safer practices.[169] When polled on reasons to not respond to the decennial census online, only 5 percent of respondents identified concerns about internet security as the primary reason.[170] In contrast, Americans value the confidentiality of their data very highly. Testing for the 2010 Census showed that anonymity was important to participants, and participants responded well to assurances that their data would only be used for statistical purposes and negatively to the idea of two-way agency data sharing.[171] When asked about 2020 Census functions in a Gallup nightly poll, many respondents cited concerns about unauthorized parties outside the Census Bureau gaining access to their data.[172]

People who fear that their civil rights are threatened may be especially sensitive to government data collection and less likely to participate in a census that relies on DHS for protection against hacking.[173] In other words, what may be a well-intended effort to protect census respondent confidentiality could be highly problematic in practice. Though personally identifiable information will be removed from data before submission, DHS reserves the right to access it if "the cyberthreat pertains to a specific threat of the loss of life, economic damage, serious injury or the effort to prosecute or prevent the exploitation of a minor." The bill resulting in Einstein 3A was described by the American Civil Liberties Union (ACLU) as "a surveillance bill by another name." Senator Ron Wyden stated, "Americans deserve policies that protect both their security and their liberty. This bill fails on both counts."[174]

Box 3. Census Bureau weakens its confidentiality pledge

Under an agreement pursuant to the Federal Cybersecurity Enhancement Act of 2015, DHS provides U.S. statistical agencies "protection against cyber malware" through a system known as Einstein 3A, which electronically searches internet traffic in and out of federal civilian agencies in real time for malware signatures and has the capacity to block traffic, also in real time. Einstein 3A ("A" for "accelerated") operates as a managed security service involving private internet service providers (ISPs) scanning all traffic that flows to and from the federal government. When it detects potentially malicious traffic, which could include personally identifiable information, it intercepts and segregates the affected data for review by personnel at DHS.

While experts assure that breaches of personally identifiable information are extremely unlikely with Einstein 3A,[1] the Census Bureau revised its confidentially pledge on an emergency basis. It then published a second *Federal Register* notice, explaining the significant and unprecedented revision to the confidentiality pledge according to the agreement between the Census Bureau and DHS under the Act. The revised pledge states, "Per the Federal Cybersecurity Enhancement Act of 2015, your data are protected from cybersecurity risks through screening of the systems that transmit your data" and provides no promise that people involved in those systems must be sworn to confidentiality. Revising the confidentiality pledge reflects a decision that goes against the most recent decennial census operational plan, which includes the following goal: "Ensure that all people handling or reviewing Title 13 and Title 26 materials are Special Sworn Status certified."[2]

The civil rights community is aware that neither the revised pledge nor the *Federal Register* notice offer the public any guarantee that personally identifiable information could not be accessed by other federal government agencies. Once such information is in the possession of individuals who are not bound by Title 13's strict confidentiality requirements and penalties, the potential for misuse arises and could be difficult to detect, monitor, and prevent.

It is unclear what data could be seen by public officials who are not bound by the Census Bureau's strict confidentiality protections. In fact, the notice states that when Einstein 3A detects a malware signature—however defined—

> "the Internet packets that contain the malware signature are shunted aside for further inspection by DHS personnel. Since it is possible that such packets entering or leaving a statistical agency's information technology system may contain a small portion of confidential statistical data, **statistical agencies can no longer promise their respondents that their responses will be seen only by statistical agency personnel or their sworn agents**" [emphasis ours].

At a time when the Census Bureau itself has identified negative public perceptions and distrust as major threats to a successful decennial census in 2020,[3] this admission could be a move in the wrong direction.

[1] Based on conversations with a former Department of Homeland Security officer.
[2] U.S. Census Bureau, 2020 Operational Plan—Version 2.0 (September 2016), available at http://www2.census.gov/programssurveys/decennial/2020/program-management/planning-docs/2020-oper-plan2.pdf
[3] Ibid.

Source: http://www.civilrightsdocs.info/pdf/policy/letters/2017/CommentsonRevisedConfidentialityPledge-20170221.pdf.

Research shows that undocumented immigrants and their families may believe that sharing information with the government will put them at increased risk of deportation.[175] Monolingual Spanish speakers counted through 2010 non-response follow-up visits expressed concerns that census data would be shared with other government entities; these concerns are often compounded when there is anti-immigration policy and rhetoric in the news.[176] This anxiety could have significant consequences. A resident of a town mostly populated by undocumented workers explained that when half of her town chose to ignore the census, "that means half of us don't really exist when it comes to funding. Regardless of our status, children are still going to schools and we're still driving on roads."[177]

Negative perceptions of government data collection have also disrupted the trust of the American Muslim community in the census. After the government response to the September 11th attacks, which broadly subjected people to invasions of privacy based on ethnic and religious profiling, a survey of Muslims in the United States revealed that surveillance had a chilling effect on Muslim internet use.[178] Interviews with members of Muslim communities revealed suspicion and fear involving census operations during the 2010 Census.[179] More recent government activities could have the same result in 2020. In December 2014, the Department of Justice (DOJ) openly allowed massive data-gathering programs to track Muslim American communities, and DOJ and other government agencies have been opaque about justifying these civil rights transgressions.[180] In 2017, President Trump signed multiple executive orders targeting people from primarily Muslim countries; during his campaign and early presidency he also called for a Muslim registry.[181]

Unfortunately, there is historical precedent for the misuse of census data to achieve unjust government objectives. The Census Bureau provided address-level data to other parts of the U.S. government to help facilitate the incarceration of Japanese Americans in internment camps during World War II.[182] While the Census Bureau did not violate the confidentiality provisions of its authorizing statute in place at the time, Congress recognized the importance of preserving the integrity of the nation's largest statistical agency, and strengthened those provisions over the following decades to prevent any sharing of personally identifiable information, except when necessary for sworn Census Bureau employees to carry out their work.[183] In 2000, then-Census Bureau Director Kenneth Prewitt officially acknowledged the bureau's role in this stain on our nation's history, for which he and President Clinton formally apologized. This precedent demonstrates that vulnerable communities at risk of an undercount in the 2020 Census need a system that combines necessary cybersecurity measures with a commitment to the absolute confidentiality and overall security of their personal information.

Recommendations

Everyone has a stake in a fair, safe, and accurate decennial census. Advocates and experts with policy recommendations regarding decennial census operations and technology should make their voices heard as quickly as possible, since the Census Bureau is significantly more likely to include changes to 2020 Census methodology that are first tested in the "dress rehearsal"—the 2018 End-to-End Census Test.

Funding and agency leadership are paramount

Congress and the administration will determine whether Census Bureau has the funding and leadership required to make the 2020 Census fair and functional:

1. **Policymakers should prioritize full and adequate funding to ensure proper testing, outreach, and operations for the remainder of the current decennial cycle, FY 2018 through FY 2022.** To avoid a similar funding crisis for a future census, policymakers should consider legislation exempting the Census Bureau from discretionary spending caps in the five years leading up to a decennial census, when spending must ramp up and preparations can be irreversibly hindered by political delays.

2. **The administration should promptly nominate and confirm a highly qualified, experienced, and widely respected professional to serve as the next Director of the U.S. Census Bureau.** Census Bureau Director John Thompson retired on June 30, 2017.[184] The administration and the Senate should act quickly to minimize leadership vacuums in this critical ramp-up to 2020 and confirm a director who understands and prioritizes the need to address challenges in counting people of color, rural residents, Limited English Proficiency households, and individuals with a high school degree or less, and others who will face obstacles to being counted in an internet- and automation-based decennial census.

The Census Bureau must prioritize the importance of reaching hard-to-count households:

3. **The Census Bureau should take all possible measures to bridge the digital divide with the new internet response option.** For instance, the bureau should test software to ensure it operates smoothly and safely on older operating systems and smartphones. This is especially important since people of color, younger adults, low-income adults, and those without a high school diploma are most likely to use older computers or a mobile device as a primary source of internet access.

4. **The Census Bureau should share insights from 2020 Census testing about differing responses across demographic and geographic characteristics.** Releasing these findings swiftly can help civil rights stakeholders design effective outreach campaigns and harmonize them with Census Bureau needs and priorities.

5. **The Census Bureau should consider how new IT and automation systems affect vulnerable communities at risk of being undercounted.** As an example, when automating non-response follow-up field staff management, bureau staff and contractors should design algorithms assigning predetermined optimized routes that capitalize on enumerators' local knowledge, which is especially important for enumerating hard-to-count groups such as immigrants with limited English proficiency.[185]

Both the Census Bureau and the Department of Homeland Security (DHS) should guarantee the sanctity of personal data submitted in a census survey:

6. **DHS and the Census Bureau should develop a cybersecurity procedure that upholds the letter of the statutory confidentiality provisions.** Weakening the Census Bureau's confidentiality pledge alarms some communities, such as Muslims and immigrants, and threatens to weaken their willingness to respond with quality data or at all. There are viable alternative approaches. One solution would be to train sworn Census Bureau employees to perform Einstein 3A functions for Census Bureau internet traffic. Another option is to require DHS employees who monitor Census Bureau internet traffic to take the current Title 13 confidentiality pledge that binds Census Bureau staff to the strict requirements and penalties of the law. These straightforward, sensible solutions would maintain the strict confidentiality protections the law intends, promote enhanced data security, and require no revision to the established confidentiality pledge that the Census Bureau makes to respondents.

7. **DHS should officially pledge to strip all personally identifiable information from any cybersecurity threat indicator it shares outside the department.** With respect to Einstein 3A intercepted traffic, there is a significant threat that, absent a complete scrub of personally identifiable information from any cyber threat indicator, personal information could be used, and access abused, for purposes that will chill participation in the census.

8. **DHS should publicly pledge that the strict confidentiality requirements that encourage participation in the census, especially among vulnerable minority communities, supersede the provisions of the Cybersecurity Information Sharing Act of 2015 ("CISA") that encourage government-wide sharing.**[186] Such an outcome is not inconsistent with the application of prior laws enacted to protect the nation's security, vis-à-vis Title 13-protected data. The Department of Homeland Security and Department of Justice confirmed during the 2010 Census that the Patriot Act did not supersede the strict Title 13 requirements to maintain a firewall between personally identifiable census information and all other government agencies.

Community efforts are essential

Local leaders, volunteers, and institutions are especially important in helping the Census Bureau encourage decennial census participation and mitigating risks to hard-to-count communities:

9. **Organizations can become an official partner for the 2020 Census.** Contacting your regional office[187] to become a census partner is a good way to receive timely updates for promoting census awareness and participation and an opportunity to work collaboratively with the bureau's regional offices before and during the enumeration.

10. **Local leaders should join Complete Count Committees and make sure they address particular risks to hard-to-count households, including undercounting and threats to data security that are introduced with new technology.** As the 2020 Census approaches, Complete Count Committees will act as a bridge between states and localities and the Census Bureau to help everyone work in coordination toward a complete census.[188]

Incorporating the internet in the 2020 Census provides new avenues for trusted community figures to spread the word and facilitate participation in the 2020 Census:

11. **Trusted figures can share 2020 Census information through email, text messages, and social media.**[189] These communications should emphasize the importance of being counted in the census and provide information about how to safely and securely submit information to the Census Bureau.

12. **The Census Bureau and local civil rights advocates should emphasize the confidentiality of responses and help census participants sift through perceived cybersecurity and privacy threats to determine legitimate strategies and outstanding concerns.** Advocates should explain how to identify official decennial census materials, forms, and representatives, and how to avoid phishing attempts, especially since the Census Bureau is using targeted digital advertising.

Local government and community leaders can further increase access to a digital age census:

13. **Schools, libraries, community centers, and other public computing centers should set aside computers for the census.** Doing so during the self-response period would give more people the opportunity to be counted on systems that are updated, secure, and using software that optimizes response time.

14. **Localities should think outside the box to increase online census form access and response rates.** The Administrative Records, Internet, and Hard to Count Population Working Group of the Census National Advisory Committee on Racial, Ethnic, and Other Populations has suggested creative approaches to providing wide internet access, including using mobile vans with internet access, making the 2020 Census page the home page at libraries and community centers, developing incentive programs where time on a library or community center computer is extended if users complete the census form, and providing Wi-Fi hotspots with power stations for people completing the census form on their phone.[190]

15. **Partners should follow the Census Bureau's guidance in using the online self-response form to enumerate in service centers, such as food banks.** Doing so will help the 2020 Census better capture households that are especially mobile or low-income.[191]

Conclusion

Census data are essential to the enforcement of civil rights and the implementation of policies designed to safeguard and improve the well-being of people and communities,[192] especially those who face physical, economic, social, political, and cultural barriers to participation in the census.[193] Without reliable census data, the nation could face a serious rise in political and economic inequality.

The functionality, accuracy, and cost of the decennial census[194] have come under increasing scrutiny as enumeration becomes more difficult.[195] Facing severe budget constraints, the Census Bureau is trying to deliver a less costly 2020 Census.[196] The bureau is promoting an internet option as the primary response mode, paired with increased automation of administration, data collection, and field supervision.[197] According to the Census Bureau, these new efforts could potentially increase initial response rates while saving resources that could be used to find and enumerate the hardest to count households, all with a $5.2 billion reduction from the cost of repeating the 2010 Census design. Yet, the Census Bureau must bridge the digital divide within self-response systems, build a field infrastructure that best serves hard-to-count populations, and strike a balance between cybersecurity and confidentiality to protect respondents' civil and human rights.

The decennial census is a backbone of our democratic system, determining political representation and providing a road map for government and private sector funding. A number of groups, including communities of color, people in rural areas, low-income households, and our nation's youngest children, run a disproportionate risk of being undercounted in 2020. Being undercounted deprives individuals and families of political representation and vital public and private resources. The decennial census may be more challenging than ever, but with national and state advocates, community leaders, and federal, state, and local governments working toward a 2020 Census that optimizes all means of self-response, strengthens non-response follow-up, and ensures a seamless and secure experience, everyone in the United States stands a much better chance of being counted.

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