Theme Overview: Amplifying the Rural Voice: 2020 Census Challenges and Opportunities

Steven C. Turner

The U.S. 2020 Census, like previous decennial census efforts, will be critical for apportionment of political representation; distribution of funds at the federal, state, and local levels; determination of policy priorities and program eligibility; and a wide range of planning to inform community and economic development initiatives. Although the decennial census is constitutionally mandated and major efforts are made to obtain a complete count of the population, some groups and places have traditionally had lower counts. Geographically, this variation is evident in county-level analysis from the 2000 Census and the 2010 Census, which have apparent patterns of regional concentration; many of the counties with the lowest rates of participation are in rural areas. Factors associated with census participation include respondent age, race/ethnicity, language, education, income, level of trust in the government, and geographic location. The characteristics of place—the context in which people live—may be particularly important to census participation, especially when combined with poverty and rural isolation. That some people and places are harder to count is not a new phenomenon, but there are important changes taking place with the 2020 Census—particularly the option and push for online participation, which challenges rural areas with limited Internet access—that warrant additional attention. These three articles focus attention on these issues and rural places and address (i) the factors associated with lower counts and data analysis to inform what we might anticipate participation in the 2020 Census to look like across the rural–urban continuum and between county types, (ii) promising strategies for improving participation in the Census, and (iii) the importance of the Census to Co-operative Extension programs and services across the United States.

Tian, Goetz, and French examine the factors that affect the response rates in census participation and focus on the difference in the low response rate across county types defined by the rural–urban continuum. They also estimate that Internet access increases census

Articles in this Theme:

- **Problem of Low 2020 Census Participation Will Vary with Sociodemographic Factors and Distance from Metro Areas**
  Zheng Tian, Stephan J. Goetz, and Charlie French
- **Using Community Engagement Approaches to Bolster 2020 Census Participation**
  John J. Green, Heather Hanna, Lynn Woo, Rachel Haggard, and Anne Buffington
- **The Impact of Demographic Changes on Funding for Community Development Programs across the United States**
  Sreedhar Upendram, David W. Hughes, and Victoria Campbell

participation, with the greatest impact occurring in rural areas.

Green, Hanna, Woo, Haggard, and Buffington examine the use of community engagement activity to address historically hard to count (HTC) areas. An initiative in Mississippi provides a model for community engagement efforts to encourage census participation in HTC areas.

Upendram, Hughes, and Campbell provide an overview of the U.S. Census, key datasets, federal funding programs, and the mechanism through which monies are allocated across the United States. They focus on Co-operative Extension Service (CES) programs and the impacts of an accurate demographic count on CES (agricultural and natural resources, community development, family and consumer sciences, and 4-H) programs across the United States.

Every U.S. decennial census is important and the 2020 Census is no different. What is different is the utilization of the Internet to reach a large portion of the population.

These articles highlight the need for active participation by all of us if we are to acquire an accurate picture of our nation for the next decade.

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CHOICES

Problem of Low 2020 Census Participation Will Vary with Sociodemographic Factors and Distance from Metro Areas

Zheng Tian, Stephan J. Goetz, and Charlie French

Introduction

With billions of federal grant dollars potentially at stake, every community has a vested interest in ensuring that its residents are accurately counted in the U.S. Decennial Census of Population and Housing. In the 2010 Census, 20.7% of eligible households failed to return their census forms, implying a response rate of only 79.3%. That amounts to about 22 million households not reached in the last census, the number of which not only affects the quality of the census but also may lead businesses and government officials to make inaccurate decisions when targeting specific populations.

The goal for the 2020 survey is to raise this response rate significantly through outreach and by using on-line survey forms, which rely heavily on broadband Internet access. Researchers have identified key sociodemographic factors associated with low participation in the census. However, differences in how these factors affect responses across metropolitan and non-metropolitan counties have not been adequately addressed. Lack of sufficient broadband Internet in rural areas could make the nonresponse problem even worse. Knowing these factors and the urban–rural differences provides a basis for selecting communities that would benefit from additional outreach to help improve census participation. We find that the effects of race, housing, and other characteristics—such as marital status and even Internet access—on census participation show subtle and sometimes surprising differences depending on whether the non-metro county is adjacent to a metro county.

What Is the Low Response Score (LRS)?

The Census Low Response Score (LRS) identifies places where populations were difficult to enumerate in the 2010 Census as "block groups and tracts whose characteristics predict low census mail return rate and are highly correlated (negatively) with census and survey participation" (U.S. Census Bureau, 2019, p. 4). The LRS uses a statistical model to predict how far the actual return rate falls below 100% using 25 socioeconomic and demographic variables.[1] The first version of the LRS was computed using mail responses to the 2010 Census and data from the 2008–2012 American Community Survey (ACS). The earlier LRS was then updated using more current explanatory variables to predict where low responses would be a problem in the 2020 Census. These data can be downloaded from the Census Bureau's Planning Database (https://www.census.gov/topics/research/guidance/planning-databases.html). The U.S. Census Bureau also provides the Response Outreach Area Mapper (ROAM) (https://www.census.gov/roam), an interactive web mapping tool that allows users to zoom in to the tract level.
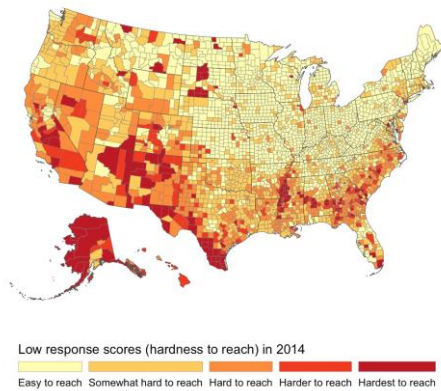
Where Is the LRS Especially Low?

To compare the LRS across different types of counties, we aggregate the original tract-level LRS to the county level. The county-level LRS is the average of the LRS of all tracts in a county, weighted by the number of households in each tract. We also rank the counties by LRS, using these categories to show increasing difficulty of participation: "easy to reach" (the top 50% of easiest-to-reach counties), "somewhat hard to reach" (the next 25%), "hard to reach" (the next 15%), "harder to reach" (next 5%), and "hardest to reach" (top 5% of counties with worst participation rates). Figure 1 shows for the

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[1] See Erdman and Bates (2017) for details of the construction of the LRS.

2014 LRS that most hard-to-reach counties lie in the South, especially in Texas, followed by Mississippi and Georgia. Many of the counties that are the hardest to reach are those where the majority of population are Hispanic, black Americans, or Native Americans, according to a report published by the Pew Research Center (Shaeffer, 2019). As for regional differences in the average LRS, the West has the worst score (21.0), ahead of the South (20.3); the Northeast (18.3) and Midwest (17.4) have the lowest or best LRS (17.4).

Table 1. Count and Proportion of Counties for Each LRS Category, 2014

	Metro Counties	Rural, Metro-Adjacent Counties	Rural, Non-Metro-Adjacent Counties
Easy to reach	545 (46.7%)	515 (50.1%)	512 (54.0%)
Somewhat hard to reach	342 (29.3%)	245 (23.9%)	198 (20.9%)
Hard to reach	179 (15.3%)	163 (15.9%)	129 (13.6%)
Harder to reach	55 (4.71%)	55 (5.36%)	47 (4.95%)
Hardest to reach	46 (3.94%)	49 (4.77%)	63 (6.64%)
Total	1167 (100%)	1027 (100%)	949 (100%)

Notes: We categorize the LRS by the 0th–50th, 50th–75th, 75th–90th, 90th–95th, and 95th–100th percentiles intervals, and label the categories as "easy to reach," "somewhat hard to reach," "hard to reach," "harder to reach," and "hardest to reach," respectively. Parentheses indicate the proportion of counties in each category along the county types.

Figure 1. Low Response Scores, 2014

Low response scores (hardness to reach) in 2014
Easy to reach   Somewhat hard to reach   Hard to reach   Harder to reach   Hardest to reach

Notes: The colors from light to dark represent the percentile categories of low response scores. Source: 2014 Planning Database of the U.S. Census Bureau and authors' compilation.

Do Rural Counties Have A Worse LRS?

To answer this question we use the county typology prepared the USDA's Economic Research Service, known as the 2013 Rural–Urban Continuum Code (RUCC) (https://www.ers.usda.gov/data-products/rural-urban-continuum-codes/documentation/). For ease of analysis, we separate the nine levels of RUCC into metro (RUCC 1–3) and rural counties (RUCC 4–9). Rural counties are further classified as rural counties adjacent to a metro county (RUCC 4, 6, and 8), and rural counties not adjacent to a metro county (RUCC 5, 7, and 9). We label these as rural, metro-adjacent and rural, non-metro-adjacent, respectively.

A simple comparison of the average 2014 LRS across the three types of counties does not reveal a statistically significant difference: The LRS ranges from 19.15% to 19.32%. However, a more refined analysis reveals that the shares of "hardest to reach" counties are highest in rural, non-metro-adjacent counties (6.64%), followed by rural, metro-adjacent counties (4.77%) and metro counties (3.94%). Below we investigate this in more detail.
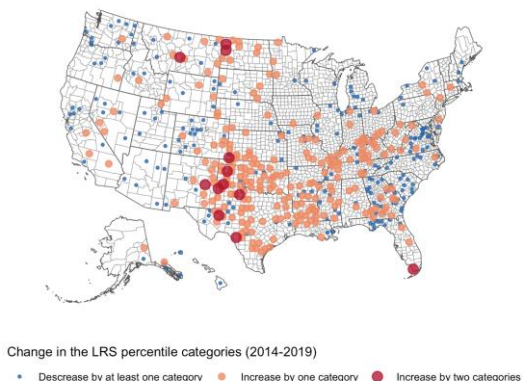
Where Is the LRS Expected to Worsen in 2020 Compared to 2010?

The Census Bureau published the 2019 LRS with the release of the 2013–2017 ACS, which allows us to predict changes in LRS as we approach the 2020 Census. In particular, we can tell where the LRS is likely to have improved and, more importantly, where it has likely worsened as local demographic factors have changed. We compare each county's 2014 and 2019 LRS rankings; specifically, we determine whether it moved up or down in the ranking and, if it moved up (worse LRS), where it jumped by one or two categories. Figure 2 reveals that counties in the South are at increased risk of receiving lower survey responses in the 2020 Census, of which Texas, Oklahoma, and Kentucky are the top three states. Conversely, several counties (blue dots) across the nation are expected to improve their LRS in 2020.

The contrast in the changes between 2010 and 2020 in the LRS in metro and rural counties is notable (Table 2). Although small (less than 1%), the share of counties that are expected to worsen their LRS is greater for rural than for metro counties, and the situation is considerably worse for rural, non-metro-adjacent counties (0.95%) than it is for rural, metro-adjacent counties (0.29%). No metro county experienced an increase in the LRS by two

ranking categories (such as from hard to reach to hardest to reach).

Figure 2. Change in LRS, 2014-2019

Change in the LRS percentile categories (2014-2019)
• Decrease by at least one category   • Increase by one category   ● Increase by two categories
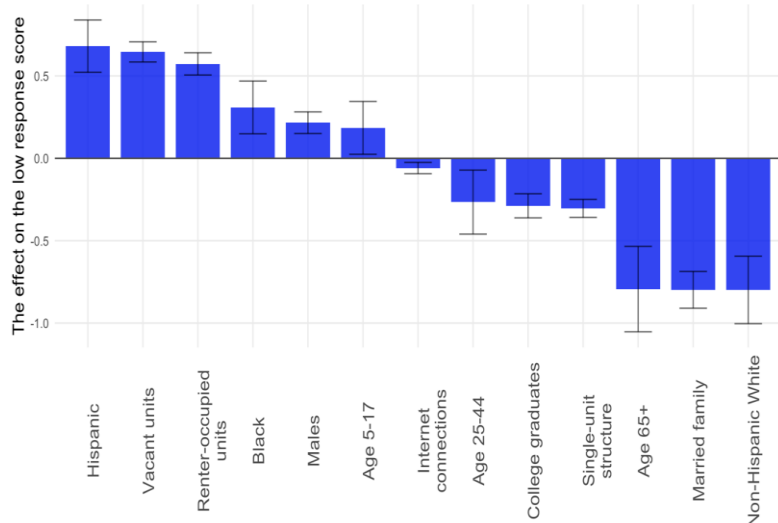
Notes: Orange and red dots indicate an increase of the low response scores by one and two categories, respectively; blue dots indicate a decrease by at least one category. Counties that show no change in categories are omitted. Source: 2014 and 2017 Planning Database of the Census Bureau and authors' compilation.

What Socioeconomic Variables Influence the LRS?

Overall, the strongest predictors of low response scores are race- and housing-related. In particular, higher shares of Hispanic and black populations, as well as vacant and renter-occupied housing units, are strongly

Table 2. Count and Proportion of Counties for Each Change in the LRS, 2014–2019

	Metro Counties	Rural, Metro-Adjacent Counties	Rural, Non-Metro-Adjacent Counties
Decrease in the LRS percentile category	94 (8.06%)	69 (6.73%)	82 (8.65%)
No change in the LRS percentile category	1,017 (87.2%)	881 (85.9%)	735 (77.5%)
Increase by one LRS percentile category	55 (4.72%)	73 (7.12%)	122 (12.9%)
Increase by two LRS percentile categories	0 (0%)	3 (0.292%)	9 (0.949%)
Total	1,166 (100%)	1,026 (100%)	948 (100%)

Notes: Percentile categories are defined in Table 1.

associated with a lower response score on average. In contrast, places with higher shares of elderly (65 years and older), married family households, and non-Hispanic whites have lower low response scores (i.e., populations in these counties are more likely to be counted in the census).

Figure 3 presents the top six variables (out of 25) that have an independent effect in terms of increasing LRS, the top six variables that do the opposite, and the variable of Internet connections. The height of the bars represents the estimated effect of each variable on the LRS, and the error bars are the 95% confidence interval.[2]

Do Effects of the Sociodemographic Variables also Differ by County Type?

To answer this question, we look at whether each variable has a varying effect on the actual 2010 Census mail nonresponse rate across county types, independent of the other variables considered. We find a few subtle differences between metro, rural, metro-adjacent, and rural, non-metro-adjacent counties. To put the following discussion into context, the 2010 Census targeted 110 million valid household addresses nationwide, of which 94 million households are in metro counties, 11 million are in rural, metro-adjacent counties, and 5 million are in rural, non-metro-adjacent counties. So, a 1-percentage-point increase in the mail

Figure 3. Independent Impacts of the Top 13 Factors on the Low Response Scores

Notes: The *y* axis represents the magnitude of how much the score would increase when a variable on the *x* axis increases by one standard deviation from the mean. The error bar represents the 95% confidence interval.

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[2] See the appendix for a description of the regression model used to rank the variables.

nonresponse rate is equivalent to about 1 million households nationwide that are surveyed, of which 940,000 are in metro counties, 110,000 are in rural, metro-adjacent counties, and 50,000 are in rural, non-metro-adjacent counties. Although there are fewer households in rural counties than in metro counties, the cost of reaching out to rural families would be higher.

Race

In metro counties, the mail nonresponse rate rises 0.13 percentage point for each 1-percentage-point increase in Hispanic population. Rural, metro-adjacent and rural, non-metro-adjacent counties experience additional increases of 0.02 (for a total of 0.15) and 0.02 (for a total of 0.17) percentage points. The difference between metro counties and rural, non-metro-adjacent counties is statistically significant. Thus, if the concern is to ensure more complete population counts, resources should be targeted first to rural, non-metro-adjacent counties. One additional percentage point of black populations would increase the nonresponse rate by 0.14 percentage point, which is basically the same for both types of rural counties. In contrast, a higher share of non-Hispanic white population reduces the nonresponse rate by 0.14, 0.18, and 0.20 percentage points, respectively, in metro, rural, metro-adjacent, and rural, non-metro-adjacent counties.

Housing

Metro counties with an increase of 1 percentage point in vacant units have an increase in mail nonresponse rate by 0.11 percentage points. However, there are no statistically significant differences in this effect between metro and rural counties, regardless of adjacency status. A higher share of renter-occupied units would cause the nonresponse rate to increase by 0.18, 0.25, and 0.31 percentage points in metro, rural, metro-adjacent, and rural, non-metro-adjacent counties, respectively; these differences are significant. As opposed to vacant and renter housing, the presence of single-unit housing lowers the nonresponse rate; its effect is bigger in rural counties than in metro counties. As pointed out in the 2020 Census Operational Plan (U.S. Census Bureau, 2017, p. 8), some tactics would be employed to identify vacant households, but, more importantly, more resources should be used to increase visits to renter households, especially in rural areas.

Internet Access

Internet access is measured as the share of households with broadband Internet, which is associated with an improvement in the census responses in all county types. Internet access is important because the census will move away from mail surveys in 2020. In particular, the 2020 Census will be "encouraging the population to respond to the 2020 Census using the Internet, reducing the need for more expensive paper data capture" (U.S. Census Bureau, 2017, p. 15). Internet access reduces

nonresponse rates in all counties. In metro counties, an additional 1-percentage point increase in the share of households with broadband would reduce the nonresponse rate by 0.07 percentage point. In rural counties, it provides an even greater benefit, reducing the nonresponse rate by an additional 0.11 percentage points in rural, metro-adjacent counties and 0.12 percentage points in rural, non-metro-adjacent counties. This underscores the critical importance of broadband access to ensuring an accurate and representative count of the population in 2020.

Other Sociodemographics

A few other variables also stand out. Higher education plays a positive role in improving survey responses. A higher share of college graduates would lower the nonresponse rate by 0.06 percentage point; the effect is significantly larger in rural, metro-adjacent counties (0.19 percentage points) and rural, non-metro-adjacent counties (0.15 percentage points). In contrast, higher shares of populations who are not high school graduates are associated with higher nonresponse rates. Marriage status is also important. The greater presence of households with single persons or a female head but no husband relative to married couples lowers survey responses. Most aforementioned factors associated with lower response rates seems to be related to poverty. Indeed, we find that a higher share of households below the poverty line would increase the nonresponse rate by 0.42 percentage points in metro counties and 0.51 and 0.43 percentage points in rural, metro-adjacent and rural, non-metro-adjacent counties, respectively.

Conclusion

Our findings suggest that demographic factors, as well as geographic and household characteristics, play a significant role in census participation. These factors include housing vacancy rates, race, Internet access, education level, and marriage status. Certain of these factors have statistically different impacts across county types—metro, rural, metro-adjacent, and rural, non-metro-adjacent—and thus could help to inform Low Response Score projections.

As is the case with many socioeconomic processes and concerns, the devil is often in the details. Given the stated goal of counting more of the population in 2020, scarce public resources will have to be deployed strategically to communities where under-participation problems are especially pronounced. Strong predictors of participation include race, housing arrangements, and other sociodemographic variables such as poverty rates. Further complicating the impacts of these factors is the fact that their importance varies across the metro-rural county spectrum, as a function of distance from or adjacency to metro areas.

Perhaps more importantly, this research raises new questions for further inquiry. What policies or

mechanisms could help boost census participation? And, if targeted policies and incentives are put in place, or shown to be currently effective, what system could help to assess whether they are working?

For More Information

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Appendix

Descriptive Statistics of the 2014 Low Response Scores

Table A1 shows the descriptive statistics of the 2014 LRS of all counties and across three types of counties. The average Low Response Scores are not statistically significant across three types of counties.

Regression Analysis to Generate Figure 3

The regression model uses the county-level 2019 LRS as the dependent variable. The independent variables include the dummy variables representing county types and regions and the 25 variables used to construct the LRS at the census-tract level. The goal of the regression is not to repeat the practice of constructing the LRS but to examine differences in LRS across county types when all other determining variables are controlled for. As a by-product, we reevaluate the importance of the 25 variables to the LRS at the county level. To do so, we standardize these variables by their *z*-scores, which is the original value minus its average, divided by its standard deviation. The coefficient on each of them can be interpreted as how much the LRS would change when X increases by 1 standard deviation from the mean. Table A2 reports the results of the baseline regression model. The top six variables with positive coefficients and the top six with negative coefficients, plus internet connections, are presented in Figure 3.

Table A1. Descriptive Statistics of the Low Response Scores							
Counties	Mean	Std	Min	25th	50th	75th	Max
All	19.27	2.97	8.17	17.11	18.64	21.11	34.19
Metro	19.32	2.72	8.17	17.42	18.87	21.00	32.45
Rural, metro-adjacent	19.32	2.88	13.28	17.20	18.62	21.21	34.19
Rural, non-metro-adjacent	19.15	3.34	12.59	16.70	18.32	21.21	33.06

Table A2. Baseline Regression Results

Dependent Variable: 2019 LRS	
Constant	18.994*** (0.042)
Non-metro: adjacent	0.271*** (0.041)
Non-metro: not adjacent	0.444*** (0.052)
Northeast	−0.159** (0.071)
South	0.659*** (0.048)
West	0.755*** (0.081)
Renter-occupied units	0.573*** (0.035)
Vacant units	0.646*** (0.031)
Age 18–24	0.087 (0.098)
Female head, no husband	−0.123*** (0.047)
Non-Hispanic white	−0.799*** (0.104)
Age 65+	−0.794*** (0.132)
Related child	0.115*** (0.036)
Males	0.216*** (0.033)
Married family	−0.798*** (0.057)
Age 25–44	−0.266*** (0.099)
College graduates	−0.288*** (0.037)
Age 45–64	−0.077 (0.089)
Persons per household	0.165*** (0.050)
Moved-in household	−0.086** (0.038)
Hispanic	0.681*** (0.081)
Single-unit structure	−0.304*** (0.028)
Population density	−0.002 (0.047)
Below poverty	0.003 (0.042)
Different housing unit 1 year ago	−0.163*** (0.028)
Age 5–17	0.185** (0.082)
Black	0.309*** (0.082)
Single-person households	−0.212*** (0.041)
Not high school graduate	−0.232*** (0.038)
Median household income	−0.135** (0.059)
Median house value	0.036 (0.046)
Internet connections	−0.059*** (0.018)
R^2	0.939
Adj. R^2	0.938
Num. obs.	3086

Notes: Single, double, and triple asterisks (*, **, ***) indicate significance at the 10%, 5%, and 1% levels, respectively. The independent variables are standardized by *z*-scores.

Using Community Engagement Approaches to Bolster 2020 Census Participation

John J. Green, Heather Hanna, Lynn Woo, Rachel Haggard, and Anne Buffington

Introduction

Article 1, section 2 of the U.S. Constitution mandates a decennial census. Data are used for political apportionment of elected representatives. The first American census was conducted in 1790, and the next will be conducted in 2020. The administration and form of the census have changed over time, both reflecting changes in society and influencing those changes. The 2020 Census marks the first time that most people will be asked to participate online (although opportunities for paper form, telephone, and in-person enumeration will also be provided).

Over time, census data have become important for much more than political apportionment and districting (Anderson, 2015). Additional uses include policy and program planning, providing the base for sociodemographic and health indicators, and allocation of funding. The census provides a roadmap for distributing funds across the states, including 10 large programs that serve children and families (Annie E. Casey Foundation, 2018a). These programs provide nutrition, public health insurance, foster care services, and education to children and their families through school lunches, the Supplemental Nutrition Program for Women, Infants, and Children (WIC), the Supplemental Nutritional Assistance Program (SNAP), Medicaid, the State Children's Health Insurance Program (SCHIP), Head Start, Title 1 education grants, special education, and child care vouchers. Nationwide, $160 billion is allocated annually through these programs, $2 billion of which is distributed in Mississippi (Annie E. Casey Foundation, 2018b).

For federal allocation to match actual need, states must have an accurate census count of children. However, children under the age of five are the group most likely to be undercounted (U.S. Census Bureau, 2016). Researchers find this undercount results from the fact that young children are more likely to live in difficult-to-count households (Griffin and Konicki, 2017).

Households with young children are more likely to have young parents, rent, move frequently, and reside in multi-tenant buildings such as apartment complexes (Griffin and Konicki, 2017; Walejko et al., 2019). Each of these conditions decreases the probability that the family, and all members within it, will be counted. Additionally, households with young children are more likely to have one parent present, experience poverty, be Hispanic, or be raised by a grandparent, any of which can pose barriers to census participation (Griffin and Konicki, 2017; Jensen et al., 2018). Ironically, the children and families most likely to go uncounted are often the very ones relying on the services for which funding is allocated using census data. Estimates suggest that $2,780 in federal funding can be lost per uncounted child per year (Mississippi KIDS COUNT, 2020).

It is estimated that Mississippi failed to count 4.6% of its young children in 2010 (O'Hare, 2014), and 27% of the state has been designated as "hard to count" based on 2010 Census returns and other predictors, according to the CUNY Mapping Service (https://www.censushardtocountmaps2020.us/). The U.S. Census Bureau's Response Outreach Area Mapper (ROAM) (https://www.census.gov/roam) shows areas of concern based on demographic and socioeconomic indicators from the American Community Survey, including age, race and ethnicity, education, and income, among many others. Mississippi has several areas with expectations of low self-response to the 2020 Census. Among the important indicators, it is notable that Mississippi has the highest child poverty rate of any state in the nation at 28%; this number rises to 43% for black or African American children (KIDS COUNT Data Center, https://datacenter.kidscount.org/).

Given the increased likelihood of undercounting young children in the 2020 Census and the need for federal program support in the state, Mississippi's two leading universities formed a partnership to address the issue. Mississippi KIDS COUNT, located at the Social Science

Research Center at Mississippi State University, and the State Data Center of Mississippi, housed in the Center for Population Studies at the University of Mississippi, received funding from the Annie E. Casey Foundation to form the Mississippi YOU COUNT! Collaborative.

Our collaborative had three primary goals: (i) to use data to identify areas in Mississippi where children could be hardest to count, (ii) to convene community engagement meetings in these locations, and (iii) to produce and disseminate census materials tailored to local audiences via the collaborative. Here we discuss the methods used for this project and the findings, followed by the insights we believe other organizations and states could use. We maintain that the YOU COUNT! process could be used to help facilitate community engagement, empowering Census Bureau partnership specialists, Extension leaders, and others for 2020 Census outreach, education, and promotion.

Strategies to Identify Areas Where Children Are Hard to Count

For this project, we combined a focus on public data utilization with community-based engagement (Green, 2012, 2018). With the goal of identifying areas at greatest risk for children being undercounted in the 2020 Census, our YOU COUNT! team used public data to analyze and later combine three indicators. The first two indicators had been precalculated by the U.S. Census Bureau. First, we looked at the Low Response Score (LRS) based on the 2016 five-year estimates in the Bureau's ROAM program (the Census Bureau updates the LRS as new data are available before the decennial census). This provided predictions of census self-nonresponse at the census-tract level using a variety of demographic and socioeconomic characteristics (for the list of variables, see Erdman and Bates, 2017; U.S. Census Bureau, 2019); the final index ranged from 0 to 100. For the second indicator, we subtracted the 2010 Census Mail Response Rate from 100 to determine the percentage of households that did not self-respond via mail in the 2010 Census to reflect a Low Mail Response Rate (LMRR). The third indicator for the YOU COUNT! Initiative was calculated by aggregating nine variables identified through the literature as being associated with the undercounting of children, which we called the High Risk Index (HRI). We found the correlations among the three indicators to be strong (ranging from Pearson's correlation coefficients of 0.390 to 0.881) but not perfect. Therefore, we maintained that a new composite score of these nine variables would provide a tool to help delineate areas of concern.

We combined data from the three sources (LRS, MRR, and HRI) to create an overall index (Table 1). Five of the variables that applied to families with children and living in poverty overlapped between the LRS and HRI, which effectively emphasized and weighted them in the final composite Hard to Count Index (H2C). We calculated the H2C by first recoding each of the indicators into quintile groups (each coded such that being in a higher group indicated greater likelihood of low response to the 2020 Census) and then adding the quintiles together across census tracts. Thus, a census tract with an overall score of 3 would be in the group least likely to have low responses across these data sources and a census tract with a score of 15 would be in the group

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Table 1. Indicators Used for the Hard to Count (H2C) Index

Items	Sources
Low Response Score (LRS)	U.S. Census Bureau, Planning Database using American Community Survey (ACS) 2016 five-year estimates. A regression model derived estimate of predicted survey self-response rate using 25 independent variables (list of variables available from Erdman and Bates 2017; U.S. Census Bureau 2019)
2010 Census Low Mail Response Rate (LMRR)	U.S. Census Bureau, Mail Response Rate (reverse coded the value by subtracting from 100)
High Risk Index (HRI)	State Data Center of Mississippi, using data from ACS 2016 five-year estimates. Percentage of population w/age <5*, Percentage of population w/ age 18-24*, percentage of households that rent, percentage of multi-unit structures, percentage of individuals with different address one year ago*, percentage of individuals living in complex household, percentage of families below poverty level*, percentage of grandparents responsible for child, percentage of single-person households*
Hard to Count (H2C) Index	LRS, LMRR, HRI each recoded into quintiles, then quintile scores summated to form H2C (15 = census tracts likely to be the most difficult to count)

Note: A single asterisk (*) denotes indicators also represented in the LRS.

most likely to have low responses. Figure 1 shows the distribution of H2C index scores across the state.

2020 Census Dialogue Sessions

Directing our attention to areas in the state we deemed likely to have undercounts of children in the 2020 Census, the YOU COUNT! team focused attention on three towns and their respective counties (two rural—north Delta and southwest—and one urban) located in areas with multiple census tracts with particularly high H2C index scores. The team compiled a lengthy file of phone numbers and emails of community stakeholders from diverse organizations. We invited potential participants via the above methods, often multiple times. This list of diverse organizations and personal contacts included, but was not limited to, Extension offices, Head Start centers, libraries, community health centers, and a wide range of nonprofit organizations providing education, outreach, and direct services. In addition to our university-based team, Census Bureau partnership specialists also attended these meetings.

The team developed a participatory approach for engaging community stakeholders in active dialogue and workshop sessions modeled on the Problem Solving for Better Health™ (Smith, Fitzpatrick, and Hoyt-Hudson, 2011) pedagogy. The idea was to move from identifying challenges to planning for action. In addition to the four YOU COUNT! facilitators and three Census Bureau representatives, 73 individuals participated across the three meetings.

Following a presentation on the 2020 Census and concerns over the potential undercount of children, we guided participants through a series of four interactive conversations, with participants rotating between facilitators at each stage. Participants were randomly placed in groups based on a color code attached to their name tags. The topics addressed in 20-minute increments included
- Participation: What factors are likely to influence participation of families with young children in the 2020 Census in the communities you serve?
- messaging:
  - (a) What messages would resonate with families with young children to help them understand and participate in the

Figure 1. Hard to Count (H2C) Index in Mississippi Census Tracts
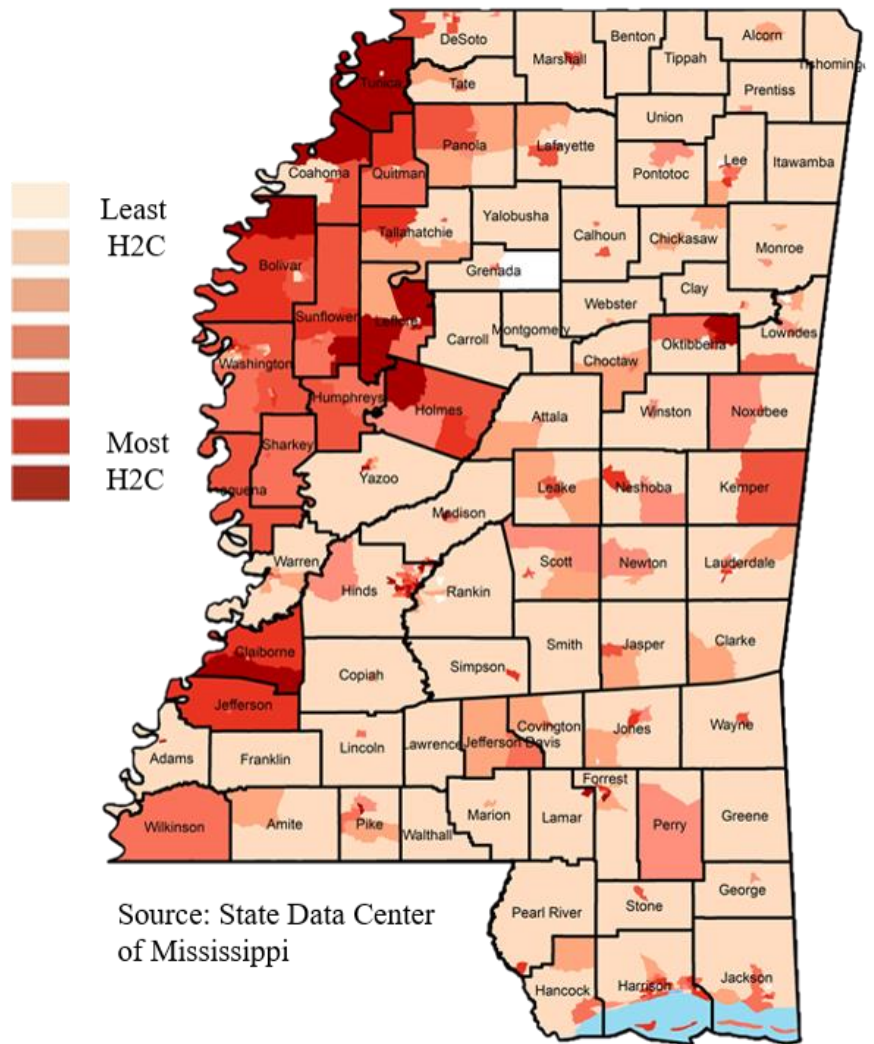
Source: State Data Center of Mississippi

2020 Census in the communities you serve?
  - (b) Review and discuss the Mississippi YOU COUNT! factsheets, asking participants to provide feedback.
- Engagement: How should stakeholders engage families with young children for participation in the 2020 Census in the communities they serve?

Each of the discussions involved a hands-on activity to stimulate dialogue and help document participants' ideas (drawings, writing on index cards, making notes on factsheets, etc.). After the discussions ended, census partnership specialists made a final presentation concerning Complete Count Committees.

What Community Members Had to Say about the Census

Using the previously described participatory community engagement methods, we present our findings obtained

from the dialogue sessions and workshops below. Notes from the activities were read and analytically coded to identify themes and patterns within and across locations (Table 2).

parties, rallies, and churches. Participants mentioned that having local pastors include information about the census in their sermons would enhance understanding and motivation to participate.

Table 2. 2020 Census Dialogue Session Topics and Findings	
Discussion Topics	**Themes Identified in Coding**
Challenges to census participation	Overall feelings of distrust, especially distrust of government and outsiders Low levels of literacy and education Limited knowledge about the census and use of census data
Opportunities to enhance census participation	Partner with local people and organizations Disseminate materials through local places and at community events Spread information through trusted leaders and organizations, especially churches and schools Provide assistance to people and places with limited computer and Internet access

As previously described, the three locations were strategically chosen based on their history and estimated future likelihood of undercounting children in the upcoming 2020 Census. Two locations were in rural areas and one was in a city, and all three had high levels of poverty. Additionally, the populations in all three locations were majority black or African American. What emerged through the four exercises were many similar responses, beliefs, and feelings about the census and undercounting children. We aggregated the responses from all three places and major themes emerged in reference to barriers of census participation as well as the ways to enhance census engagement.

The first topic encompassed the challenges participants saw to census participation in their community. Across the three places, the major barrier identified by participants was an overall feeling of distrust, particularly distrust of the government and fear over how the data would be used. Distrust of outsiders coming into their communities also factored into the overall sense of fear toward the census. Another challenge participants identified in all three places was literacy and education issues. Reading, writing, and technological competency were all labeled as challenges to participating in the census. Coinciding with literacy competency, limited knowledge about the importance of the census and why and how enumeration affects their particular communities was pinpointed as major challenges to participation.

The second topic related to opportunities workshop participants saw to enhance census participation and demystify some misconceptions about the census. Across the three locations, the most common opportunities identified were partnering with local people and organizations to overcome the distrust of outsiders and government. Participants advocated for using new census promotion materials to display in local places and disseminate using social media, radio, and television. Part of local events included spreading these promotional materials at community events like fairs,

Participants said that census education needs to start with children, who can then spread this information in their homes. Head Start, teachers, and librarians were labeled as major pillars in the community who could help overcome misconceptions about the census through education about what it is, why it is important, and how it affects local communities. Part of this education was spreading knowledge about places with Internet access and how to navigate using a computer in order to complete the census online.

Three YOU COUNT! 2020 Census information sheets were drafted and disseminated at the dialogue sessions, and participants reviewed and critiqued them. Writing marginal notes and discussing at their tables, feedback included the need for more straightforward wording, graphics that are informative but not overwhelming, and more strategic placement of information.

The primary difference we observed between the dialogue sessions in different locations was the initial way in which participants discussed responsibility for enhancing census participation. While there was considerable attention given to how the U.S. Census Bureau could improve its approach across all sessions, participants in one location also seemed to assume a higher level of local responsibility for what could be done. Participants at the other locations appeared to feel that census participation was largely out of their hands; although they did identify local actions that could be taken, they tended to be conveyed as examples of what the Bureau should be doing to help them rather than feeling a sense of ownership for ensuring their communities are counted. That said, it is notable that participants at all three locations took on more sense of agency as each of the workshop sessions progressed through the day.

Following the analysis of findings and subsequent revision of materials, the YOU COUNT! team held a briefing with nine congressional and state office staff leaders. We also adapted the dialogue session process

for use in shorter meetings and piloted them with faculty at a conference and with university students. Additionally, we revised the three flyers, made additional documents, and shared thousands of copies through a range of venues, including mail-outs to workshop participants; tabling events in other communities, webinars, and conferences; and online. (Revised versions of the factsheets are available from Mississippi KIDS COUNT, https://kidscount.ssrc.msstate.edu/data-research/mississippi-kids-count/mississippi-kids-count-reports/.) Ultimately, we provided these materials to the Mississippi 2020 Census Complete Count Committee.

Discussion

The decennial census is a data source of critical importance to decision making. With concern for children being undercounted, it is important that efforts be undertaken to address challenges in those places with historically lower participation and contemporary predictions of undercounts. Through the Mississippi YOU COUNT! initiative, we developed and piloted an approach to identify these areas using publicly available statistical tools and facilitation strategies to engage community members in dialogue and planning. Overall, the people who came to the workshops identified challenges to census participation and then suggested creative potential solutions. Despite their differences, the commonalities that emerged among the three locations demonstrated that process matters: Local people and organizations can be engaged to improve the counting young children. The benefits of using a participatory approach may include obtaining local knowledge regarding potential barriers and facilitators of a complete census count, increasing the likelihood of local buy-in to grassroots census "get out the count" efforts and input

on adaptations for national-level census messaging to enable targeted modifications for local and statewide use.

The U.S. Census Bureau provides several data sources and tools that can be used to better understand the factors associated with census (and other survey) participation, and many non-governmental organizations have put major effort into further research, outreach, and education. However, these resources must be actively employed to meet their potential, which requires a roadmap for engagement. We used public data sources to inform our community engagement initiatives. Such an approach can be improved and adapted for other contexts. For instance, not addressed here, further attention could be directed toward the intersections of hard-to-count areas and populations with higher proportions of immigrants and limited English proficiency.

We conclude that facilitating active engagement at the local level will help to improve the accuracy of data to inform decision making. Interestingly, an average of 60% of workshop participants reported they would be likely to join a Complete Count Committee (CCC), and all the communities that participated in the YOU COUNT! initiative had active CCCs at the time of this writing. Of course, actual self-response rates to the 2020 Census will serve as the ultimate outcome for analysts to evaluate; those findings could be used to inform future analysis and interventions. In all, we maintain that Census Bureau partnership specialists, Extension leaders, and others could use these types of strategies as potential pathways of engaging other population subgroups that may be undercounted, such as racial minorities, the elderly, and rural residents in general.

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The Impact of Demographic Changes on Funding for Community Development Programs across the United States

Sreedhar Upendram, David W. Hughes, and Victoria Campbell

Background

The decennial census is an important national enumeration process that impacts livelihoods of households as well as community and regional welfare. Conducted every 10 years since 1790, it determines the number of people living in the United States, as mandated by Article 1, section 2 of the U.S. Constitution and Title 13 of the U.S. code (U.S. Census Bureau, 2019a). Along with other census-based data collection programs, it is used by numerous government programs that support education, employment, health, housing, energy, transportation, telecommunication, financial, and environmental activities. Decennial census data are used for accurate

1. political representation in the U.S. Congress: The decennial census determines the apportionment of 435 Congressional seats in the U.S. House of Representatives across 50 states based on each state's population share of the national population.
2. redistricting: To ensure fair and equitable representation, decennial census data are used to redraw 435 Congressional districts (O'Hare, 2019), districts represented by 7,383 state legislators (National Conference of State Legislators, 2019), and 13,598 public school districts (Snyder, de Brey and Dillow, 2019).
3. community development planning: Current and reliable demographic data trends from the census are crucial to developing relevant community development and outreach efforts (Curtis et al., 2012), especially with respect to Cooperative Extension Service (CES) programs that use census data to assess and assist communities (Zimmerman and Kahl, 2018).
4. federal fund distribution: Decennial census data form the basis for distributing more than $1.5 trillion in federal funding (FY 2017) to state and local government, including programs

administered by land-grant universities, especially through CES.

This study reviews the key datasets and distribution of community development federal funds that rely on census data. We also discuss the impact of demographic changes and accuracy on funding for community development programs across the United States, including a case study presentation of how census-based poverty estimates influence the distribution of funding for the Expanded Food and Nutrition Education Program (EFNEP) program.

Problems and Potential Economic Losses Due to Census Miscounts and Undercounts

Decennial census miscounts and undercounts will result in flawed data estimates and cause a social equity problem (O'Hare, 2019) that has a profound impact on local, state, and national economies. A recent study by Elliott et al. (2019) indicates that the 2020 Census could potentially undercount the U.S. population by 0.27%–1.22%, which translates to between 900,000 and 4 million people. Miscounts may disproportionately affect some groups more than others. While white, non-Hispanic people have only a 0.03% risk of being undercounted, African American and Hispanic populations could be undercounted by 3.68% and 3.57%, respectively. Other hard-to-count populations are rural populations, renters, ethnic and racial minorities, and immigrants (Kane-Willis et al., 2019). Children under the age of 5 have a high risk of being undercounted by up to 6.31% (Elliott et al., 2019; Potyondy, 2017). While these percentages seem relatively small, such miscounts and undercounts can substantially impact a community's future for a decade or longer.

Funds not received by a county due to an undercount are given to other states and regions. For example, in FY 2017, Title I programs, which provide financial assistance to local education agencies with relatively high percentages of children from low-income families,

lost an estimated $1,700 per missed person (Reamer, 2019b). In FY 2015, the median loss per missed person on funds received from the U.S. Department of Health and Human Service was estimated to be $1,091. Many of the 37 states forfeited substantial funds, with losses ranging from $533 to $2,309 per missed person (Reamer, 2018b).

Accuracy of Census Data

The allocation of federal funds is highly sensitive to the accuracy of the decennial census. Inaccuracies in enumeration can occur due to a number of reasons, the foremost among which include (Chapin, 2018)

1. low participation due to language barriers, low literacy, or educational attainment.
2. Many households are difficult to locate, not in the census sampling frame, or otherwise inaccessible. Many people move due to unexpected events or natural disasters.
3. people that are inaccessible because they are highly mobile, are experiencing homelessness, or live in communities with physical barriers, such as gated communities, that don't provide ready access to enumerators.
4. people who are unwilling to participate in the census due to lack of trust in government programs or low levels of civic engagement.

Solutions

Increased citizen participation to an online census survey, available in the upcoming census, may result in better estimates. Factoring in risk scenarios on miscounts, undercounts, and inaccuracies based on historical data (Elliott et al., 2019) at planning, developing, and implementation phases of community development programs will reduce potential losses to vulnerable communities.

Which Census Datasets Are Relevant for Federal Funds?

Since the decennial census is only conducted once every decade, the U.S. Congress approved development of up-to-date and detailed datasets derived from the decennial census called census-derived datasets. There are 52 census-derived datasets that assist with geographic allocation of federal funds. Figure 1 reports the 8 foundational and 11 general datasets that comprise the decennial census. (An additional 33 program-specific datasets are further extensions of these 19 datasets, as explained by Reamer, 2018a.)

Based on decennial population density, the Census Bureau provides an urban–rural classification of all census tracts (Figure 1). Using the *Urban-Rural Classification, American Community Survey and Population Estimates*, the nation's *Core-Based Statistical Areas* are delineated as metropolitan and micropolitan areas (Reamer, 2018a).

Five of the six geographical classification datasets (*Rural–Urban Commuting Areas*, *Rural–Urban Continuum Codes*, *Urban-Influence Codes*, *Frontier and Remote Areas*, *Urban–Rural Classification*) are associated with differentiating rural areas on the level of rurality or the adjacency to a city (Figure 1). Small Labor Market Areas make up the balance of the United States that is grouped in to one or more counties that are not major labor market areas (metropolitan and micropolitan areas) (Reamer, 2018a).

Population Estimates and Housing Estimates are updated annually with population and housing numbers based on vital statistics and tax records (Figure 1). The demographic information that is not collected in the decennial census is collected through the four survey datasets related to households: *American Community Survey, Consumer Expenditure Survey, Current Population Survey*, and *American Housing Survey* (Reamer, 2018a).

The *Consumer Price Index, Personal Income, Local Area Unemployment Statistics, Per Capita Income*, and *Poverty Thresholds* serve as the five standard economic indicators related to prices, income, employment, and poverty (Figure 1).

Census Datasets Relevant for Federal Fund Distribution

Several census datasets are relevant for determining eligibility for and equitable distribution of federal funds (Reamer, 2018a):

1. Decennial population statistics (population count, age, sex, race, and ethnicity) aid in determining the distribution of funds based on population share and funding per capita and provide control totals for household surveys.
2. Economic variables—such as income, poverty and labor force status—collected through household surveys (*American Consumer Survey*, *Consumer Expenditure Survey*, *Current Population Survey*, and *American Housing Survey*) are used by a number of federal programs to adjust for inflation on distributions and eligibility levels.
3. The *Urban–Rural Classification* and the nation's *Core-Based Statistical Areas* that are delineated as metropolitan and micropolitan areas serve as the basis for regional economic analysis and planning. These geographical classifications are highly sensitive to census accuracy.

The primary uses of the decennial census are to allocate political power through seat apportionment (Burnett, 2011); distribute federal funds; assist in civil rights enforcement, business, and community planning efforts; provide population estimates and projections; provide

Figure 1. Key U.S. Census Bureau Datasets Associated with Federal Funding

Decennial Census

---**Foundation**---

Geographic Classification (2)	*Multivariate Datasets (6)*	
Urban-Rural Classification (Census) Core-based Statistical Areas (OMB)	**Multivariate Datasets** Population Estimates (Census) Housing Estimates (Census)	**Household Surveys** American Community Survey (Census) Current Population Survey (Census & BLS) Consumer Expenditure Survey (Census & BLS) American Housing Survey (Census for HUD)

---**General Extensions**---

Geographic Classifications (6)	*Standard Economic Indicators (5)*
Rural-Urban Commuting Areas (ERS) Frontier and Remote Areas (ERS) Rural-Urban Continuum Codes (ERS) Urban Influence Codes (ERS) NCHS Urban-Rural Classification (NCHS) Small Labor Market Areas (BLS)	Consumer Price Index (BLS) Personal Income (BEA) Per Capita Income (BEA) Local Area Unemployment Statistics (BLS) Poverty Thresholds (Census)

Agencies responsible for Census-Derived Datasets:

OMB - Office of Management and Budget, White House

BLS - Bureau of Labor Statistics, Department of Labor

HUD - Department of Housing and Urban Development

ERS - Economic Research Service, Department of Agriculture

NCHS - National Center for Health Statistics, Department of Health and Human Services

BEA - Bureau of Economic Analysis, Department of Commerce
Census - Census Bureau, Department of Commerce

Source: (Reamer, 2018)

weights for sample surveys; and, in general, support economic and social research activities (O'Hare, 2019).

What Types of Federal Financial Assistance Are Available for Communities?

Federal financial assistance based on census-derived datasets supports domestic programs listed in the Catalog of Federal Domestic Assistance (CFDA):

1. Direct loans are loans that are to be repaid in a specified amount of time, extended by the federal government to an individual recipient or a business (Reamer, 2018a). For example, the U.S. Department of Agriculture (USDA) provides direct loans through the Very Low to Moderate Income Housing Loans Program (CFDA 10.410).

2. Direct payments are federal dollars provided directly to individuals or private institutions with the aim of encouraging or subsidizing certain programs and activities (Reamer, 2018a). For example, the USDA's Rural Rental Assistance Payments (CFDA 10.427) are made to owners on behalf of low-income tenants who are unable to pay full rent.

3. Grants are federal funds committed to use for specific public interest purposes (Reamer, 2018a). The federal government provides grants as

    a. formula grants: Funds allocated to states or local governments based on specific formulas that are defined by laws or specifically by the granting agency, for any ongoing programs and activities. For example, USDA

Cooperative Extension Service funds (CFDA 10.500) are allocated to states based on the proportion of the rural and farm population.

b. project grants: Funds distributed (by a competitive process or formula) for a specific project or an intended purpose. For example, the USDA's Water and Waste Disposal System for Rural Communities (CFDA 10.760) provides funds to drinking water and wastewater facilities serving rural and economically distressed communities.

c. cooperative agreements: Legal agreements between federal government and a non-federal entity to carry out a program or activity with a public purpose. Cooperative agreements are similar to project grants except that the federal government directly performs, provides guidance, and implements the program. For example, the USDA's Rural Business Opportunity Grant Program (CFDA 10.773) provides technical assistance, training, and activities supporting business development and expansion in rural areas.

4. Loan guarantee is an agreement based on a contract between the federal government and a borrower that serves as a security to a debt obligation in case of a loan default (Reamer, 2018a). For example, the USDA's Rural Electrification Loans and Loan Guarantees (CFDA 10.850) for distribution, generation, and transmission facilities to non-profit, cooperatives, public bodies, and utilities in rural areas.

Federal financial assistance programs are dependent on the U.S. Census Bureau data for (Hotchkiss and Phelan, 2017)

1. eligibility determination: Data from the census are used to select program recipients based on population served and characteristics that fit with the federal program, recipient community, or organization.

2. fund allocation: Data from the census are used to determine the amount of funds that can be awarded to eligible program recipients.

3. program monitoring and assessment: Data from the census are used to assess program planning, development, and implementation. This evaluation will help in improving future programs and leveraging funds that benefit communities.

Table 1 presents the USDA's community development programs, types of federal assistance, and the role of census-derived datasets.

Table 1. Community Devlopment Program by Type of Assistance and Role of Census-Derived Datasets in Funding			
CFDA	USDA Program	Type of Federal Assistance	Role of Census-Derived Datasets
10.551	Supplemental Nutrition Assistance Program	Direct payment	Eligibility
10.410	Very low to moderate income housing loans	Direct loans and loan guarantees	Eligibility and allocation formulas
10.555	National School Lunch Program	Grants	Eligibility
10.557	Women, Infants. and Children Program	Grants	Eligibility and allocation formulas
10.553	School Breakfast Program	Grants	Eligibility and selection preference
10.850	Rural Electrification Loans and Loan Guarantees	Direct loans and loan guarantees	Eligibility and selection preference
10.558	Child and Adult Care Food Program	Grants	Eligibility
10.766	Community Facilities Loans/Grants	Direct loans and loan guarantees	Eligibility and selection preference
10.760	Water and Waste Disposal Systems for Rural Communities	Grants, direct loans, and loan guarantees	Eligibility, allocation formula and interest rates
10.427	Rural Rental Assistance Payments	Direct payments	Eligibility and selection preference
10.768	Business and Industry Loans	Loan guarantees	Eligibility and selection preference
10.500	Cooperative Extension Service	Grants	Allocation formula

Trends in Federal Funding for Community Development Programs

In 1999, the General Accounting Office reported that 22 federal programs used decennial census data to allocate $167 billion (U.S. GAO, 1999). Blumerman and Vidal (2009) indicated that 140 federal programs used census data to distribute approximately $446.4 billion in FY 2007. By 2008, 215 federal programs reportedly used census data to allocate $446.7 billion in federal funds (Carpenter and Reamer, 2010). In 2016, 325 federal programs distributed $883 billion based on Census Bureau data (Reamer, 2019a). In 2017, census-derived data was used to distribute $1.5 trillion in federal funds, which represents 7.8% of the national gross domestic product (Reamer, 2019c). With the upcoming 2020 Census, newer and updated census data are essential for federal fund distribution.

Over the years, as the U.S. population grew to 309 million (2010), the federal funds allocated to states, communities, and households have steadily grown in nominal terms from $200 billion (FY 2003) to $1.5 trillion (FY 2017).

How Do Population Changes Affect Funding for Community Development?

The ability to anticipate and recognize change within a community is vital for the future of community development programs. Population estimates indicate areas of growth or decline, while demographic data provide information in the areas of basic demographic (age, gender, race); social (education, marital status, household numbers); economic (income, poverty, employment); and housing (tenure, type, value) issues. For example, the *Current Population Survey,* a collaborative effort between the U.S. Bureau of Labor Statistics and the U.S. Census Bureau, provides information on labor force statistics. Such detailed data are vital to understanding and, hence, tailoring education programs for a community, for CES, and for other community-based programs. Without demographic information, creating culturally inclusive programming based on community participation and feedback would be impossible.

For specific information relating to families, the Census Bureau's *American Community Survey* (ACS) can be valuable. This information provides specifics on family types and characteristics, which are especially beneficial when working with family and consumer sciences or community youth. The ACS also provides information on educational attainment (levels of education). When working with agriculture clientele, which is a major portion of CES efforts, the USDA *Census of Agriculture* is conducted every five years and provides data pertaining to farming families (race, age, gender) as well as hired migrant labor.

Figure 2. FY 2016 Fund Allocation to USDA Community

- Very low to moderate income housing loans, $16.9 billion, 14%
- National School Lunch Program, $12 billion, 10%
- Women, Infants and Children, $6.4 billion, 5%
- School Breakfast Program, $4.1 billion,…
- Rural Electrification Loans and loan guarantees, $3.8 billion, 3%
- Child and adult care Food program, $3.3 billion, 3%
- Community Facilities Loans/Grants, $2.4 billion, 2%
- Water and Waste Disposal Systems for Rural Communities, $1.6 billion, 1%
- Rural Rental Assistance Payments, $1.3 billion, 1%
- Business and Industry loans, $1.27 billion, 0.9%
- Supplemental Nutrition Assistance Program, $66.3 billion, 55%
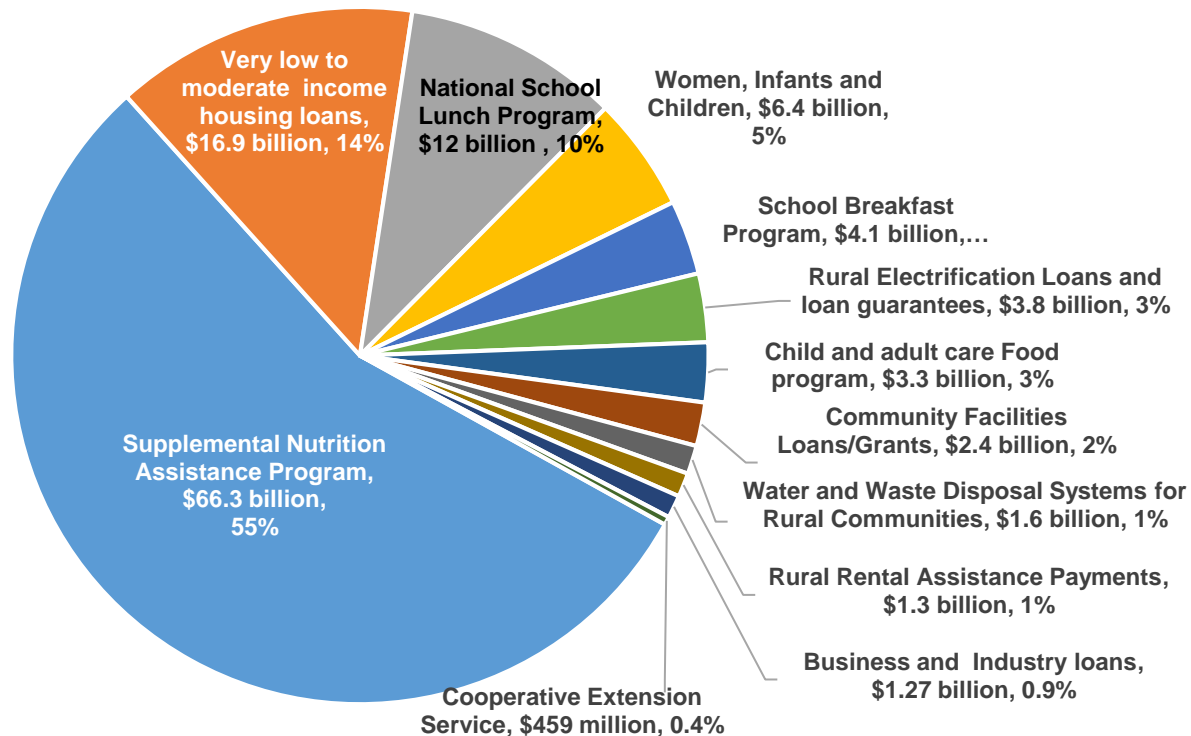- Cooperative Extension Service, $459 million, 0.4%

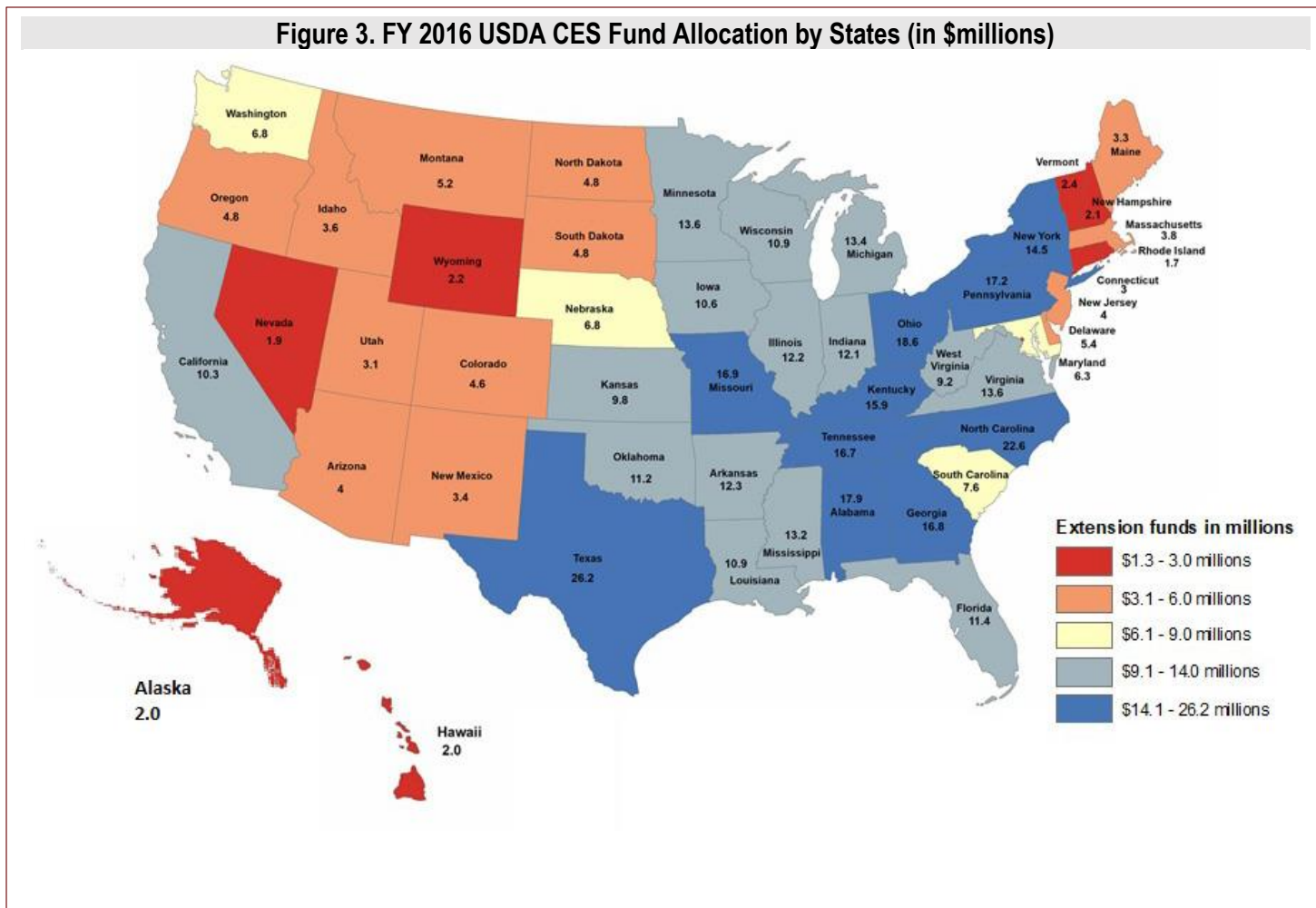**Figure 3. FY 2016 USDA CES Fund Allocation by States (in $millions)**

Figure 2 presents the distribution of $120 billion in federal funds to community development programs based on U.S. Census data in FY 2016. While a majority of these funds (77%) were allocated to food and nutrition programs, 15.2% of the funds supported housing programs, 7.4% helped build infrastructure and support businesses, and 0.4% were provided to CES programs.

Between food and nutrition programs, $66.3 billion (55% of funds) was allocated to the Supplemental Nutrition Assistance Program, followed by $12 billion (10%) to the National School Lunch Program. About $6.4 billion (5%) of the funds were allocated to the Women, Infants, and Children Program, followed by $4.1 billion (4.4%) to the School Breakfast Program and $3.3 billion (3%) to the Child and Adult Care Food Program (Reamer, 2019a).

Among programs related to housing, $16.9 billion (14% of funds) were allocated to very low to moderate income housing loans and $1.3 billion (1%) to rural rental assistance programs (Reamer, 2019a).

Amid programs supporting infrastructure and businesses, $3.8 billion (3% of funds) were allocated to rural electrification programs, $2.4 billion (2%) to community facilities programs, $1.6 billion (1%) to water and wastewater disposal systems for rural communities,

and $1.27 billion (0.9%) to provide loans to business and industry (Reamer, 2019a).

CES programs were provided $459 million (0.4% of funds) to support educational programs in communities across the United States. (Reamer, 2019a). Inaccurate census data leads to poor community-level planning decisions and poor recommendations for community development strategies.

Cooperative Extension Funding (CES)

The CES, with the help of the National Institute of Food and Agriculture (NIFA), is tasked with conveying the knowledge gained at the research level to the public and putting it into practice. Operated through the land-grant university system, the CES works as a federal partner to state and local governments to address national priorities through the allocation of grants and program oversight. Research is conducted at the university level by expert faculty members; county-based educators relay that information to the public to solve a variety of local problems, concerns, and hardships. In return, the agents collect input about current issues and transfer that information to the university, enabling research faculty to create priorities for future studies. As agricultural and environmental challenges are increasing

and public needs are growing (Hoag, 2005), CES is a key part of the solution.

capita), New Jersey ($0.46 per capita) and Florida ($0.55 per capita) received the least.

Table 2. Regression Results of Poverty Estimates on EFNEP Funding Levels				
Multiple R	0.918			
R Square	0.842			
Adjusted R Square	0.836			
Standard Error	391,748.50			
Variable	*Beta*	*Standard Error*	*T-Value*	*Probability*
Intercept	294,593.50	77,500.40	3.80	0.00040
Poverty Rate	0.5578	0.03959	14.09	0.00000
1890 Dummy	559,896.80	116,780.30	4.79	0.00002

CES funding was established by the Smith-Lever Act (1914) to provide educational programs that use scientific knowledge to address the challenges of agriculture and rural communities (Coppess et al., 2018). About two-thirds of the federal funding is formula-based for CES activities. The first 20% of the Smith-Lever funds are divided equally among all the states. An additional 40% is allocated to states based on the proportion of rural population, as determined by the decennial census, and the remaining 40% is allocated to states based on the proportion of the farm population, as determined by the decennial census. Historically, federal funds constituted one-third of the funding for CES, with another third supported by state funding and the final third from local funding (Franz and Townson, 2008). Federal statute requires every federal dollar to be matched by nonfederal sources. In the recent years, the cost-share has ranged from 10%–70% from federal, state, and local sources depending on funding availability (Franz and Townson, 2008).

The CES was allocated $458.8 million in FY 2016 (Reamer, 2019a). Figure 3 illustrates the geographical distribution of these funds. Texas ($26.2 million), North Carolina ($22.6 million), and Ohio ($18.6 million) received the most funding. Many states in the northeast and southern United States received funds greater than $14 million.

The District of Columbia ($1.3 million), Rhode Island ($1.7 million), and Hawaii ($1.8 million) received less than $2 million in support of CES programs (Reamer, 2019a). Many states in the western United States received more than $3 million for such programs, with the exception of Nevada, Wyoming, Alaska, and Hawaii.

In the FY 2016, each state received an average of $1.44 in CES funds per capita. North Dakota ($6.40 per capita), Delaware ($5.69 per capita), and South Dakota ($5.54) received the most, while California ($0.26 per

Case Study: EFNEP Program

First initiated in 1968, the Expanded Food and Nutrition Education Program (EFNEP) is a formula-funded program administered by NIFA. Land-grant universities administer the program in all 50 U.S. states, the District of Columbia, and six U.S. territories. EFNEP personnel focus on diet quality and physical activity, food resource management, food safety, and food security, encouraging lower-income individuals to make better choices.

EFNEP serves as an example of how census data can influence the fund distribution in land-grant-based CES programs and, by extension, other types of federal funding that go to states and counties. EFNEP state allocations are driven by a complicated formula based on poverty-level-adjusted FY 1981 allocation for 1862 land-grant universities, poverty-level-adjusted FY 2007 allocations for 1890 land-grant universities, $100,000 for each 1862 and 1890 land grant, and an allocation of remaining funds based on the relative size of the population living at or below the 125% poverty level based on the most recent decennial census (in part on adjustment to funding levels received in 2007) (U.S. Department of Agriculture, 2018).

We used FY 2019 EFNEP funding by state and 2017 estimates of the number of individuals below the 125% poverty level at the state level (U.S. Census, 2019b) in a regression analysis to examine the influence of census-based poverty estimates on EFNEP funding levels. The analysis shows the impact of undercounting the poor (as defined here) in funding levels for this program and, hence, serves as an example of how census counts can influence fund distribution. Because of the increased funding for states with an 1890 land grant, we also included an 1890 school dummy variable in the analysis. Total EFNEP funding for FY 2019 is $67.4 million, with averaging funding per state (including the District of Columbia and Puerto Rico) at $1.3 million; our analysis accounted for 61.9 million poor individuals, with a per state average of 1,189,616 individuals. Based on our

analysis, one additional poor person leads to an increase in EFNEP funding of $0.56 (Table 2). On average, a 10% increase in the estimated number of poor at the state level would result in an increase of $66,349 in EFNEP funding. Hence, census estimates regarding the number of poor people definitely matter in determining the distribution of funding for this program.

Summary and Conclusions

This study presented the federal census datasets that are key to funding community development programs across United States and the mechanism through which funds are allocated. Spatial and temporal trends of federal funding were presented as a result of demographic changes.

The decennial census is a single opportunity to impact federal programs every 10 years. The U.S. Census Bureau has the responsibility to accurately estimate the U.S. population, an estimate that will in turn impact households, communities, states, and the nation. Undercounts or miscounts can significantly impact vulnerable population across communities, as demonstrated in the case study. Factoring in undercounts or miscounts in community planning may alleviate economic losses.

CES programs across the nation can play a crucial role through education and outreach programs about the importance of participation in the decennial census and aid in the accurate count of people and households. An accurate census and increased citizen participation will ensure fair and equitable distribution of funds to support food and nutrition programs, rural housing, rural infrastructure, and CES programs across the United States.

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