

## Discussion

*Linda A. Jacobsen*<sup>1</sup>

In her Morris Hansen Lecture, Nancy Bates describes the Census Bureau's innovative approaches and success in identifying, reaching, and motivating hard-to-survey population groups with the 2010 Census social marketing campaign. She also previews the current plans for the 2020 Census campaign. In this discussion, I elaborate on several of the key challenges the Census Bureau – and the social marketing campaign – must address to successfully identify and reach hard-to-survey populations for the 2020 Census. These include: 1) The impact of changes in family formation processes and living arrangements; 2) Changes in the composition of the hard-to-survey population due to new census operations – principally the shift to Internet as the primary response option; and 3) The presence of both Internet and mail response options which will complicate messaging for the social marketing campaign. I also offer several options for the Census Bureau to consider in meeting these challenges.

### 1. The Impact of Changes in Family Formation Processes and Living Arrangements

For many years, adults in the United States followed a fairly uniform path in forming families. They first married, then began living with their spouse, and then had children shortly after marriage. They also tended to remain married throughout most of their adulthood – often remarrying after divorce or widowhood. But, significant increases in cohabitation and nonmarital childbearing over the past several decades have changed this process. Many adults first cohabit, then marry, and then have children, while others cohabit, have children, and then marry, and still others have children without cohabiting or marrying. Another important aspect of these changes has been the increase in relationship churn or repartnering – many adults today are serial cohabiters who have children with multiple partners without ever marrying. How dramatic have these changes been?

Today, a full 65 percent of women between the ages of 19 and 44 have ever cohabited. And, while cohabitation is higher among those with less education, almost three-fifths (58 percent) of women with a college degree have also cohabited ([VanOrman and Scommegna 2016](#)). Cohabiting unions are still fairly transitory, lasting about two to three years on average, and then transitioning to marriage or breaking up. In the early 1970s, only eleven percent of marriages were preceded by cohabitation, but by 2010 this share jumped to 69 percent ([Manning and Stykes 2015](#)). The trends in nonmarital childbearing are equally striking.

<sup>1</sup> Population Reference Bureau, U.S. Programs, 1875 Connecticut Avenue, NW, Suite 520, Washington DC 20009, U.S.A. Email: [ljacobsen@prb.org](mailto:ljacobsen@prb.org)

In the early 1980s, 21 percent of all births were nonmarital, and only six percent of births were to mothers who were cohabiting. By 2009–2013, more than 40 percent of all births were nonmarital, and one quarter were to cohabiting mothers. Nonmarital births are higher among racial and ethnic minority groups with Blacks having the highest share of nonmarital births at 75 percent, and Hispanics having the highest share to cohabiting mothers at 40 percent. And, while the exact estimates vary, researchers agree that the share of adults who have cohabited with more than one partner and who have children with multiple partners has been increasing, especially among women who have not completed college (VanOrman and Scommegna 2016; Monte 2017). These changes in family formation patterns have, in turn, caused important shifts in living arrangements.

The primary effect has been an increase in more complex household structures that include stepparents, stepsiblings, and half-siblings, as well as unrelated individuals. And, families often span multiple households. The increase in cohabitation and childbearing with multiple partners has affected the living arrangements of children in particular. Recent estimates indicate that more than 40 percent of children in the United States live in complex family households (VanOrman and Scommegna 2016). Yet, the current relationship question in both the Census and the American Community Survey (ACS) makes it difficult to identify and understand the relationships among the members of such complex households.

For the Census and ACS, respondents are instructed to list the name of a person living in the household who owns or rents the housing unit. This individual is called “Person 1”, and the relationship question for all other household members identifies their relationship only to Person 1. The relationships between Person 1 and other household members in turn determine whether a household is considered to be a family or a nonfamily household. Although household structure has become more complex, this current relationship question prevents the Census Bureau (and researchers who use the data) from being able to determine if an adult other than Person 1 is the parent of a resident child, or how other household members are related to each other. This is particularly true in cohabiting couple households, where a child’s classification as an “own” child or an “unrelated” child is arbitrary based on which unmarried partner is listed as Person 1. This problem is illustrated in Figure 1.

Figure 1 depicts three cohabiting couple households with a child. In Household 1, the child (C1) is the biological child of both unmarried partners (M1 and F1). Therefore, no matter which partner is listed as Person 1, the relationship question identifies this child as a “biological son or daughter” or as an “own child,” and this household is classified as a family household. But, note that the relationship question doesn’t allow us to determine whether F1 is the child’s biological father. In Household 2, the child (C4) is the biological child of the female partner (M3), but not the male partner (F2). If the female partner is listed as Person 1 (as shown in Figure 1) then the child is again classified as an “own child” and this household is classified as a family household. For Household 2, we also can’t determine whether F2 is the child’s father. Household 3 in Figure 1 is identical to Household 2, except the male partner (F2) is listed as Person 1. Because the child (C4) is not the son or daughter of F2, the relationship question identifies C4 as an “unrelated child” and this household is classified as a nonfamily household. In this case, we can’t determine whether M3 is the child’s mother because the current relationship question does

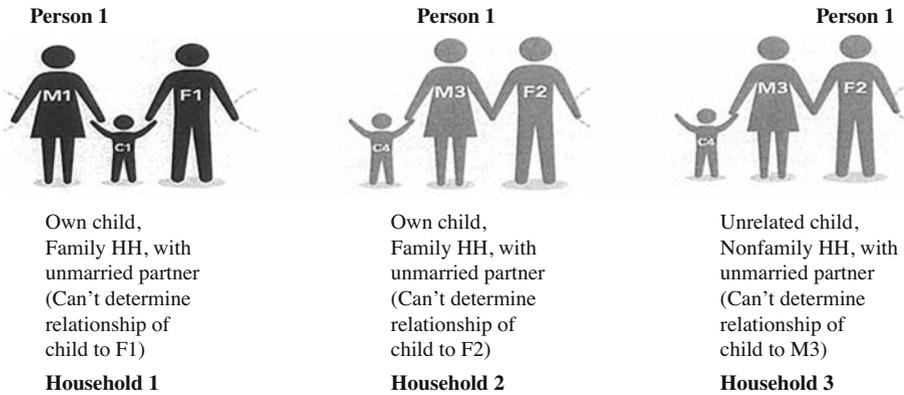


Fig. 1. Classification of Three Cohabiting Couple Households with a Child.

not identify the relationship(s) between a resident child and any other resident adult(s) other than Person 1. Although the second and third households depicted in Figure 1 have the same structure, they are classified completely differently depending on which unmarried partner is arbitrarily designated as Person 1.

Why do these changes in family formation and living arrangements matter for the 2020 Census? As living arrangements have become more fluid and transitory, individuals – particularly children – are more likely to split time between multiple households. As a result, it has become more confusing and challenging for respondents to understand decennial census and ACS residence rules and instructions defining who should be counted as a household member. In addition, these changes in living arrangements are more concentrated among groups who have historically been harder to survey – racial and ethnic minorities and those with less education who are economically disadvantaged. The confusion about who should be counted may not only impact response rates to the 2020 Census among complex households, but also differential undercount and the accuracy of the data.

Changing living arrangements are also important for 2020 because they are contributing to an increase in the net undercount of young children (ages 0 to 4) in the Census. This undercount for young children rose from less than two percent in 1980 to 4.6 percent in 2010 (O’Hare 2015), and Census Bureau research finds that unrelated children, children who are classified as “other relatives”, and children living in complex households were more likely to be missed in the 2010 Census (U.S. Census Bureau 2014, 2017a, 2017b, and 2017c).

What options could the Census Bureau consider in response to this challenge? In the short-term, question(s) or pointers could be added to identify the relationship of children to resident adults other than Person 1. This is done in other surveys such as the Current Population Survey (CPS), and results in a more complete and accurate delineation of household composition and relationships. Although the primary response options for the Census and ACS (Internet and mail) are different from the CPS (in-person, telephone), it is important for the Census Bureau to develop and test changes to the relationship question for the decennial Census and the ACS to better address this rise in complex households and fluid living arrangements, especially among children.

Although the Census Bureau's extensive research on the undercount of young children has identified the types of households that may erroneously exclude young children as well as the characteristics of children who are more likely to be missed, it does not explain *why*. In the future, Census Bureau researchers might consider conducting studies that ask respondents **why** certain children were not included – especially those who are unrelated to or who are “other relatives” of Person 1. In the longer-term, the Census Bureau, and survey researchers in general, need to re-evaluate and evolve their concepts of residency as well as their instructions to respondents to better reflect the reality of current and future living arrangements.

## 2. Changes in the Hard-to-Survey Population for the 2020 Census

Another important challenge for the 2020 Census and social marketing campaign is accurately capturing potential shifts in the composition of the hard-to-survey population due to changes in census operations, particularly the switch to the Internet as the primary response option. Currently, the Census Bureau plans to use an Internet push option in the initial mailing for 80 percent of households, with only 20 percent initially receiving a paper Census form in the mail. This change in collection procedures may impact self-response rates for some groups. For example, those with historically high mail self-response rates – such as older adults – may be less likely to respond online. Similarly, those with historically low mail self-response rates – such as mobile young adults who are renters – may have higher Internet self-response rates. The Census Bureau implemented an Internet response option for the ACS in 2013, and some ACS research has shown that the switch to the Internet as the initial response option had a negative effect on self-response rates in some states, and for some population groups with lower Internet penetration, even when a paper form was mailed later ([Baumgardner et al. 2014](#); [Nichols et al. 2015](#)).

While Bates cites data from a 2016 PEW study showing small differences in smart phone ownership between whites and racial and ethnic minorities, ACS data indicate that some historically hard-to-survey households are less likely to own computers or to have broadband Internet subscriptions at home. For example, in 2015 only 65 percent of non-Hispanic black households and 71 percent of Hispanic households had broadband (DSL, cable, fiber optic, mobile broadband, satellite, fixed wireless) subscriptions at home, compared with 79 percent of non-Hispanic white households ([Ryan and Lewis 2017](#)). Among households headed by someone age 65 or older, only 62 percent had a broadband subscription at home, and this drops to only 48 percent among householders who have not completed high school ([Ryan and Lewis 2017](#)). For 2020, it will be important for the Census Bureau to accurately identify, and for the social marketing campaign to reach, both new and historically hard-to-survey populations who are unable or unwilling to respond by Internet.

To facilitate the identification and geographic location of hard-to-survey populations, the Census Bureau developed a Low Response Score (LRS) based on Census 2010 mail response rates and data from the 2010 Census and the ACS ([Erdman and Bates 2014](#)). While Bates describes how the LRS for census tracts and a new mapping application will be used to help locate hard-to-survey populations for the 2020 Census, it is important to

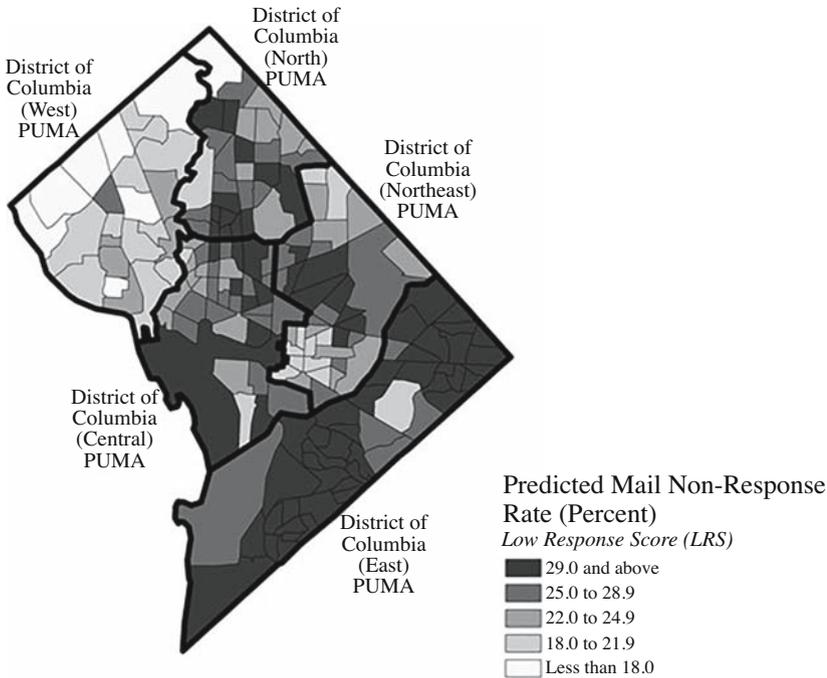


Fig. 2. Low Response Score by Census Tract for PUMAs in Washington, DC: 2010 Census and 2010–2014 American Community Survey.

recognize that the current LRS indicator may be less accurate for 2020 planning because it is based only on mail self-response rates. This potential problem can be illustrated by comparing tract-level LRS scores with recent data from the ACS on response mode, computer ownership, and Internet subscription.

Although the ACS is the largest annual sample survey in the United States, five years of ACS data must be combined to provide reliable estimates for census tracts and block groups. Since the Internet response option was not added to the ACS until 2013, ACS five-year estimates for 2013–2017 of Internet response, computer ownership, and Internet subscriptions will not be available until the fall of 2018. However, the ACS does provide one-year estimates for Public Use Microdata Areas (PUMAs) – the geographic areas included in the Census Bureau’s Public Use Microdata Sample (PUMS) files. PUMAs are geographic areas within each state that contain at least 100,000 residents. Figure 2 shows the Census Bureau’s 2016 LRS (predicted mail nonresponse rate) for all census tracts in Washington, DC, with the boundaries and labels for each of the five PUMAs overlaid. Tracts shaded with the darkest gray have the highest predicted mail nonresponse rate (29 percent or higher), while those shaded in lightest gray have the lowest predicted rate (less than 18 percent). Comparison of these tract-level LRS with data from the 2015 ACS one-year estimates highlights potential circumstances where the current LRS may be less accurate in predicting Internet response rates due to its reliance on Census 2010 mail response rates.

Table 1 provides response rates by mode for the District of Columbia and for each of its five PUMAs. Overall, about 42 percent of households in DC responded to the 2015 ACS

Table 1. Response mode, computer ownership, and Internet subscription for PUMAs in Washington, DC: 2015 American Community Survey.

	Percent of households responding by Internet	Percent of households responding by CATI or CAPI	Percent of households without a computer*	Percent of all households with a computer* but without an internet subscription
<b>District of Columbia</b>	<b>41.8</b>	<b>40.9</b>	<b>10.7</b>	<b>12.7</b>
West PUMA	57.4	24.5	2.7	3.6
North PUMA	35.7	45.1	13.7	11.2
Northeast PUMA	43.2	36.1	11.3	9.7
East PUMA	17.2	64.1	20.7	27.4
Central PUMA	54.4	33.1	5.6	9.3

Note: \*Includes desktop, laptop, handheld (including smart phones), or other computers (including tablets). Excludes GPS devices and digital music players.

by Internet, but this varies from a low of only 17 percent of households in the East PUMA to a high of 57 percent in the West PUMA. The Internet response rates in the West and East PUMAs are consistent with their underlying tract-level predicted mail nonresponse rates. That is, most tracts in the West PUMA have low predicted mail nonresponse rates, while many tracts in the East PUMA have high rates. However, the Central PUMA has a large share of tracts with predicted high mail nonresponse rates, yet its 2015 ACS Internet response rate of 54 percent is almost as high as that in the West PUMA.

The percentage of households who responded to the 2015 ACS by Computer Assisted Telephone Interview (CATI) or Computer Assisted Personal Interview (CAPI) – more expensive modes of data collection than self-response by mail or internet – is generally consistent with the tract-level LRS, particularly in the East and West PUMAs. Almost two-thirds (64 percent) of households in the East PUMA responded by CATI or CAPI, compared with only one-fourth (24.5 percent) of households in the West PUMA (see Table 1).

Analysis of 2015 ACS data on household computer ownership and presence of an Internet subscription help to explain the response mode patterns by PUMA. Overall, about eleven percent of households in DC do not have a desktop, laptop, handheld computer (includes smart phones), tablet, or other computer, compared with about 13 percent of households nationwide. This share is very low among households in the West PUMA (3 percent), but jumps to more than one-fifth of households (21 percent) in the East PUMA (see Table 1). The percentage of households without a computer is also very low in the Central PUMA (six percent), even though many of its underlying tracts have high predicted mail nonresponse rates.

Of course, it is not only computer ownership that is important for Internet response, but also access to the Internet. Table 1 shows that about 13 percent of all households in DC have a desktop, laptop, handheld computer (includes smart phones), tablet, or other computer, but do not have a subscription to the Internet (payment for a type of service that provides Internet access such as a data plan for a mobile phone, a cable modem, DSL, or other). These shares are again lowest among households in the West and Central PUMAs,

but more than one-fourth (27 percent) of households in the East PUMA have some type of computer but no Internet subscription at home.

The demographic characteristics of households in the Central PUMA help to explain the discrepancy in the tract-level LRS and high Internet response rates in the 2015 ACS. Central PUMA residents match the profile of young, single, mobile renters who are more likely to respond online than by mail. Although this is just one example, it indicates that the current LRS may provide less accurate predictions of Census 2020 self-response rates for geographic areas with population groups who are either more likely or less likely to respond by Internet than by mail. The Census Bureau's plan to adjust the current LRS to include multiple response modes (e.g., Internet and mail) is an important enhancement that will increase the accuracy and utility of the LRS in locating hard-to-survey populations for Census 2020.

### **3. Multiple Response Modes Will Complicate Messaging for 2020**

For the 2020 Census, 80 percent of households will initially receive only an Internet push mailing, while 20 percent will initially receive a paper form in the mail. Having two different response options from the outset will make it difficult for the Census Bureau to use mass ads and slogans in its social marketing campaign like those used in 2010 ("We can't move forward until you mail it back"). As was true in 2010, the ACS will also be in the field at the same time as the 2020 Census. However, unlike 2010, the ACS will have different data collection operations than the 2020 Census. For example, the initial ACS mailing is Internet push only (forms are only mailed later to nonresponding addresses), and use of a pre-assigned, unique, address-based Census ID is required for online response to the ACS, but not to the 2020 Census. The social marketing campaign for the 2020 Census will need to take both factors into account.

### **4. Prospects for Reaching Hard-to-Survey Populations in the 2020 Census**

The Census Bureau continues to make impressive innovations in the design and implementation of its social marketing campaigns for the decennial census. In her article, Nancy Bates previews several key features of the new campaign for Census 2020, including development of a new self-response propensity for each household, a new survey to understand how the barriers, attitudes, and motivators for households to participate in 2020 have changed since the 2010 Census, and development of a new household-level segmentation system to guide messaging and social marketing plans for hard-to-survey populations.

In planning for 2020, the Census Bureau will also benefit from the ACS – which will continue to provide critical data on computer/device ownership, Internet access, and self-response propensity by mode in the absence of a social marketing campaign. The ACS 2013–2017 five-year estimates for census tracts slated for release in the fall of 2018, will provide a timely update of computer/device ownership, Internet connectivity, and self-response rates by Internet, telephone, and mail for households and small geographic areas across the United States. Of course, technology and Internet access will continue to change before 2020, and the 2013–2017 ACS tract-level estimates will smooth out change across this five-year period. As a result, ACS five-year data may not provide estimates of device

ownership, Internet access, and Internet response in 2018 and 2019 as accurate as those that would be ideal for Census 2020 planning. Nonetheless, ACS data will be a key input for the final operations and social marketing plans for the 2020 Census, including selection of the geographic areas that will initially receive paper forms by mail.

Despite the Census Bureau's innovations and promising social marketing campaign plans, this discussion has highlighted several challenges that may undermine the overall success and accuracy of the 2020 Census. The first is the risk that the undercount of young children will increase in the 2020 Census. While the Census Bureau has conducted an important body of research to better understand the factors associated with this rising undercount, it is not yet clear how these research findings can or will be translated into processes or operations to reduce the undercount in 2020. A related challenge is the fact that changes in family formation processes and living arrangements will continue – and may even accelerate – in the remaining years prior to the 2020 Census. Without clarification of residence rules, improvements in instructions for respondents, and targeted outreach, response rates and data accuracy may be lower in 2020 for the growing share of complex households. The Census Bureau, demographers, and survey researchers all need to evolve our concepts of residency and improve how we measure relationships to more accurately reflect the ways people live together now.

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