An Effective Strategy To Reduce Census Undercount: Results from California Pilots of Community-Based Address Canvassing

by Ed Kissam
March 24, 2018

KEY POINTS

Living in Unconventional Housing is a Major Cause of Census Undercount—Research indicates that one-third of the total undercount of low-income minority and immigrant families stems from the place a household lives being left out of the Census Bureau's Master Address File and totally missed.

Community Canvassing is an Effective Way to Address the Problem Community address canvassing successfully identified and added on the average 4.1% to the Census Bureau pre-LUCA address list in the targeted neighborhoods —more than twice the official undercount of Hispanics and Blacks. The households added are the most marginal and hardest-to-count.

High Impact at a Low Cost—Mobilizing grassroots community organizations to do address canvassing is affordable, engages people who know the community well and are widely-trusted. They work effectively because they have first-hand knowledge of local housing conditions. Cost of in-field canvassing in the pilots was only about $40,000 for all 3 projects. More than 1,700 housing units/households which would have been left out of Census 2020 were added and, 5,000 low-income minority people now have a much better chance to be counted. Address canvassing is cost-effective because only about 15% of any community needs to be canvassed (no need to go to affluent neighborhoods with single-family homes, they're on the list).

Easy and Rapid to Implement—CommunityConnect Labs' app runs on canvassers mobile phones so that community canvassers can easily submit automatically geo-coded locations and information on housing units they identify in a format conforming to Census Bureau specifications. Training canvassers takes half a day or less. A large San Jose pilot team of volunteers canvassed neighborhood areas with 15,000 housing units in one day. A smaller Fresno team of five canvassers covered areas with 10,000 housing units over a period of 10 days.

A Very Short Window of Opportunity to Implement—This is a one-time-only opportunity. The LUCA (Local Update of Census Addresses) process runs from February through June of 2018. Local government-grassroots organization partnerships can conduct address canvassing very rapidly once there is a decision to go forward and modest funding to support the modest costs of a canvassing team. The ideal model is that local government supports part of the cost of canvassing by community-based organizations while external stakeholders—philanthropy, concerned businesses and local donors—pitch in to help out.

Local Government Can't Effectively Add Unconventional Housing to the Census Bureau's Address List without community partnerships—The usual approach to correcting the Census Bureau's address list in LUCA is to rely on administrative records. But unconventional housing is typically concealed—so even local government databases fail to include these sorts of living quarters. Community address canvassing is a crucial supplement to using administrative records.

Outreach by trusted local grassroots groups doing address canvassing is a great launching point for subsequent efforts to "Get out the Count"-- It is a way for local community activists to deploy their local knowledge and insights in helping decide where to go and, then, to reach out right now in those neighborhoods which distrust the federal government and build awareness that census participation is a way to assert one's own identity and to help one's local community. And that it's safe.

DETAILED FINDINGS FROM THE PILOT INITIATIVE

Overview

A major source of census undercount is that "unconventional", often hidden, housing units where many low-income families, predominantly minorities and immigrants, live are left off the Census Bureau's address list. Families living in these sorts of housing situations – converted garages, basements, back of the house add-ons, informally-built living quarters and trailers in backyards - will not receive an invitation to participate in Census 2020 or receive any follow-up. This problem can be effectively addressed by community-based address canvassing.

Community-based address canvassing is a new strategic approach designed to identify these unconventional housing units and add them to the Census Bureau's address list. The strategy is to mobilize outreach staff and/or volunteers from local grassroots organizations and/or service programs already working in "hard to count" communities to identify the unconventional housing units in these neighborhoods, in partnership with local government via the Census Bureau's LUCA process, so as to add these missing housing units to the final address list that will be used in Census 2020.

The California pilots, conducted in December, 2017 and January-February, 2018, show that unconventional housing is prevalent in both urban and rural California communities and that the community-based address canvassing strategy successfully identifies many of these housing units. The pilots show that community canvassers' identification of these housing units can make a unique contribution to LUCA and augment the Census Bureau's address list by about 3%-6%. The result is that opportunities for the most economically marginal minority and immigrant households to be counted in Census 2020 are dramatically improved.

The San Jose, Fresno, and San Francisco community-based address canvassing pilots also show the strategy is affordable, scalable, and that involvement in the community-based address canvassing contributes greatly to grassroots organizations' preparedness and volunteers' enthusiasm about getting involved in subsequent phases of census promotion and enumeration.

Community-based address canvassing can make a major contribution toward a complete count in communities which move rapidly during March-June, 2018 to take this first step toward a fair and accurate Census 2020 in their local area.

Why It Is Important to Invest In Improving the Census Bureau's Address List

The decennial census is a survey—meant to include 100% of the U.S. population: "to count everyone once, only once, and in the right place". That is why developing a complete address list is so important for census accuracy and fairness. If the place a family lives is not included in the Census Bureau's Master Address File (MAF) – which is built primarily on multiple federal data sources and augmented with administrative data from local government – that household does not get the invitation to participate in the survey

The Census Bureau's address list is, inevitably, incomplete. Several decades of research in inner-city neighborhoods and farmworker communities show that one-third to one-half of total census undercount stems from "total household omission" (Fein and West 1988) because the place a family lives is not included in the MAF and does not receive an invitation to respond to the census. A Census Bureau study of undercount in Los Angeles basin communities reported by David Fein, Kirsten West, showed that 3.3% of housing units in the predominantly Latino study area were not on its address list (Fein 1989). Ethnographic and survey research in immigrant communities suggests that even more of the unconventional housing is missed in California farmworker communities (GAO 2003, Kissam 2006, Kissam 2017).

It is reasonable to ask how prevalent this type of unconventional housing is now in 2018. There are reasons to believe it is as at least as prevalent now as in the past—because housing costs have risen faster than low-wage earners' income. For example, more than one-quarter (28.8%) of California low-income households need to pay more than half of their income for shelter (California Budget and Policy Center, September, 2017). Consequently, the prevalence of low-income households living in "unconventional" housing has very likely increased greatly during the past decade in California and in some other areas of the U.S. and will increase further by 2020. This means that more and more low-income minority and immigrant families are at risk of being left out of the decennial census because of their housing accommodations

Community-based Address Canvassing enhances the effectiveness of the Census Bureau's Current LUCA Partnership with Local Government to Improve Its' Address List

In recognition of the challenges in assuring that every housing unit in the U.S. is on its address list, the Census Bureau invites local governments to participate in a partnership to secure an accurate inventory of all the places people live in the United States.

Local governments are asked to review and correct the Bureau's prior address list (based primarily on U.S. postal service data and commercial address lists) for their local communities. This process, known as LUCA (Local Update of Census Addresses), runs from March through June, 2018.

Unfortunately, most local governments' current efforts to update the Census Bureau's address list typically rely only administrative records – such as property assessor data. But administrative records do not usually include most of the unconventional housing. This is why community-based address canvassing is a crucial supplement which effectively complements the standard approach to LUCA.

Findings from the California Community-Based Address Canvassing Pilot Initiative

Local community-based organizations familiar with housing conditions in their local neighborhoods conducted address canvassing to identify unconventional housing units to submit to the Census Bureau's address list. Implementation details varied from community to community but was very successful in each of the pilots.

The pilots were conducted in Fresno, San Jose, and in several neighborhoods of San Francisco. Overall, neighborhood areas with more than 40,000 housing units were canvassed in the pilots and canvassers identified 1,709 unconventional housing units likely not to have been included in the current Census Bureau MAF or identifiable by reliance on administrative records in the course of LUCA.

The Community-based Address Canvassing pilots yielded 6.3% additional households in Fresno County, 4.7% additional households in San Jose, and 2.3% additional households in San Francisco. These additions represent a major contribution toward overcoming differential undercount of minorities since the Census Bureau's estimated overall undercount rate for Hispanics in Census 2010 was 1.54% and for Blacks, 2.06% (Mule 2012).

The community canvassing took from 1.5 to 2.5 hours per block group in each community. Training of address canvassing used a train-the-trainer model. A mobile survey was created with input from the US Census Bureau that easily allowed canvassers to enter in data on their phone as they canvassed the streets. San Jose organized the canvassing to be completed in a single day with large-scale turnout with more than 50 community canvassers while the Fresno pilot relied on a small team of five canvassers who worked for nine days during the holidays.

The in-field canvassing costs were about $25 for each unconventional housing unit identified, about $40,000 for all 3 pilots. In these neighborhoods where crowded housing predominates there are about 3.4 persons per household.

If the 5,000 or more persons living in these unconventional households were to be left out of Census 2020 because they never received an invitation to participate and enumerators did not know the existence of the place they lived, these local neighborhoods would be likely to lose millions in census-driven federal program funding which would be allocated elsewhere during the decade from 2021-2030. An accurate census count which more reliably includes these economically-disadvantaged households may also affect allocation of state funding. Federal and state funding formulas are, however, complex. The eventual impact of adding very low-income minority and immigrant households to the MAF might be greater than expected (because

improvements in representativeness of the decennial census sampling frame ripple through to the American Community Survey and help generate a more accurate demographic and socioeconomic profile of local communities with higher-than-average proportions low-income minority and immigrant families). Or they might be less than expected due to complexities in funding formula components such as those described by Andrew Reamer in an excellent analyses on fiscal impacts to states (March, 2018) where computation of a component in the Federal Medical Assistance Program (FMAP) has a varying impact of census undercount on MedicAid and CHIP funding in different states.

Key Recommendation

It would be wise for local government entities, and philanthropy to collaborate in sponsoring extensive efforts to integrate community-based address canvassing into local LUCA efforts during March-June, 2018—especially in communities where there are relatively high proportions of low-income neighborhoods, crowded housing, and concentrations of immigrants.

Genesis Of The Community-Based Address Canvassing Pilot Initiative

The rationale for the pilot initiative emerged from a body of research by ethnographers and Census Bureau survey methodologists examining the multiple causes of undercount in minority neighborhoods in California and elsewhere. A review of this research and the design of such an initiative is available on the WKF Family Fund website (WKfamilyfund.org) and an excellent summary is available on the Census Outreach website (www.censusoutreach.org)

Planning for implementation of the community-based pilot initiative began with discussions between the WKF Fund and CommunityConnect Labs and assumed shape in discussions with foundation colleagues—Holly Kreider and Deanna Gomby at the Heising-Simons Foundation, Myra Chow and Tessa Rouverol Callejo at the San Francisco Foundation - the staff at the San Jose Mayor's Office, Myung Lee, Mauricio Garcia and their colleagues at Cities of Service.

Funding for the pilot initiative covered the cost of developing training materials, development of the mobile application for submitting newly-identified housing units, project management, supervision and cost of in-field canvassing, and data analysis.

Implementation of the Community-based Address Canvassing Pilot Initiative

In-field address canvassing was conducted by grassroots community groups already involved in day-to-day interactions with residents of hard-to-count neighborhoods. Each community adapted the underlying strategy taking into account housing conditions in their city and local resources available.

Address canvasser teams were configured to include canvassers with language facility and cultural ties to the residents of neighborhoods they canvassed. In many cases, canvassers worked in pairs. This was useful in assuring accurate identification and description of housing units.

Consultation With U.S. Census

Brian Timko, the Census Bureau's LUCA manager, James Christy and Julie Lam of the Census Bureau's Los Angeles Regional Office, and Gregory J. Robinson, a retired Census Bureau researcher, each provided valuable insights and advice.

The project's operational design also benefited from discussions with Brian Timko as Jacob Model, PhD., CommunityConnect Labs' Vice-president for Research, developed the mobile texting tool which provided an easy way for community address canvassers to submit data on the housing identified to a secure server, in a format which can readily be used by the Census Bureau in its review and validation of the proposed additions to its address list as part of LUCA.

Training Materials

Community canvasser training materials are based on the Census Bureau's own in-field address canvasser training material and were refined and further developed by Jessica Lopez, an anthropology graduate student at NYU, Jacob Model at CommunityConnect Labs, and Ed Kissam at the WKF Fund. Cities of Service, an important partner in the San Jose pilot, has developed a toolkit for additional cities to implement the community-based address canvassing and will be exploring which cities in its national network are interested in adopting the strategy.

User-Friendly Technology for Community Canvassers

CommunityConnect Labs managed the pilots, working in San Jose with the City of San Jose Office of Immigrant Affairs, Cities of Service, and several San Jose community-based neighborhood organizations (including Somos Mayfair, Sacred Heart, the International Children Assistance Network, and Viet Unity), in Fresno County, with the Central Valley Immigrant Integration Collaborative (CVIIC), and in San Francisco with the Chinese Progressive Association and PODER.

The mobile data submission tool used by canvassers was developed to be most publically accessible. Even canvassers with inexpensive phones, such as so-called "Obama phones" with limited internet access could use it. The user-friendly interface (see **Appendix A**) makes training volunteers easy (even if they are not very data-oriented). The mobile tool was an important element in project implementation because it enabled data to be collected quickly, transmitted, and stored securely. CommunityConnect Labs also generated walking maps using a variety of standard mapping resources, participated in on-the-ground training and observed canvassing in San Jose and San Francisco.

Identifying Target Neighborhoods

A key to making address canvassing process cost-effective is targeting these efforts to the neighborhoods where there is likely to be a significant amount of unconventional housing. Ed Kissam and J. Gregory Robinson worked collaboratively to develop a "bad MAF" algorithm

using Census Bureau Planning Database data to assist in targeting census tracts likely to have higher-than-average concentrations of unconventional housing in each of the pilot counties. (See **Appendix D** for guidance on how to identify priority census tracts to canvass).

The algorithm ranks tracts in order of predicted likelihood of unconventional housing. The pilots were designed to target about 5% of each community, focusing on neighborhoods believed to be most problematic to assure the effort would be cost-effective. Since local community-based organization partners have the best insights about which areas to target given the fact that their members lived in these hard-to-count neighborhoods, the final choice of areas to canvass was left to the community-based organizations.

Selecting and Deploying Canvassers

Community-based organizations that had experience with outreach in hard to count neighborhoods recruited and supervised the in-field canvassers with technical assistance from CommunityConnect Labs.

Canvassing in San Jose took place on the second weekend in December. The approach used in San Jose was the "weekend of service" model where more than 50 volunteers canvassed 31 census block groups in 16 different tracts. Canvassing took about 1.5-2.0 hours for each block group. Overall, about 200 person-hours were needed for the canvassing. Canvassing in San Francisco took place on two weekends.

Canvassing in Fresno County used a smaller team of 5 canvassers and took place over a period of 10 days between Christmas and the first week of January. Overall, the Fresno area canvassing took about 270 in-field person-hours. An advantage for the smaller team conducting canvassing over a period of a week or two was that canvassers were able to share insights from their work daily so as to learn along the way.

Data Analysis

Jacob Model at CommunityConnect Labs analyzed data submitted by canvassers at each of the sites. In order to assure that submissions would be valid additions to the Census Bureau's MAF, the data analysis included deletions of canvassers' reports of unconventional housing arrangements where there were multiple families living in a structure with a single entrance. These unconventional housing arrangements identified by canvassers were not tallied as proposed MAF additions in the pilots, due to constraints on determining that these crowded housing arrangements meet OMB/Census Bureau criteria as "housing units". These observations may, however, provide valuable practical insights for efforts in subsequent phases of Census 2020 operations (both in messaging about census response and in non-response followup).

Data validation also included spot checks of submissions against county/city assessors' records. Consequently, the proposed additions to the MAF are housing units which are extremely likely to be determined to be valid additions.

Observations of Complex Households—Implications for "Next Steps".

It bears note that about 20% of all the unconventional housing arrangements observed by community canvassers in San Jose and in Fresno County not included in the tally of proposed MAF additions reported here consisted of "doubled-up" households (complex households). In consultation with the Census Bureau, it was decided not to tabulate these as additional housing units to be added to the MAF. Under ideal circumstances, each social unit/family in these multi-family unit living quarters would receive its own census notification and be encouraged to submit its own census response but this is not part of the Census 2020 design. Community-based canvassing in the course of LUCA may provide valuable insights for crafting local efforts to address this problem during subsequent phases of Census 2020 operations.

In terms of census undercount, the problematic nature of these households is the following. In the complex households, social units not part of the nuclear family of the householder are omitted. This particular cause of differential census undercount—which disproportionately affects enumeration of poor families doubling up in crowded housing to make ends meet—is an important cause of undercount (Schwede 2003). The pilots suggest the value of innovative messaging and collaboration with grassroots organizations working in "hard to count" neighborhoods and, ideally, enhanced approaches to non-response followup (NRFU).

These partial household omissions are an important source of undercount among young children as well as adults in low-income households that is not very effectively addressed by census form instructions asking respondents to include in a household census response "everyone living here". Community-based organizations may be able to play a valuable role in assisting the Census Bureau to "get out the (full) count" in the neighborhoods where crowded and unconventional housing is most prevalent results in many "complex" doubled-up households).

Outcomes from the Community-based Address Canvassing Pilots and Implications

There are both direct and indirect outcomes from the pilot initiative. The direct impacts include actual additions to the Census Bureau's address list. The indirect impacts include significant increase in organizational capacity and tools for efficiently and effectively rolling out a statewide community-based address canvassing campaign as part of LUCA.

Additions to the Census Bureau Master Address File

Table 1 on the next page presents a summary overview of the direct outcomes of the pilots in each community.

Table 1
Details on Community-based Address Canvassing Pilot Initiative

Community	Fresno	San Jose	San Francisco
Census Tracts canvassed (some partial)	20	20	16
Housing Units canvassed	9,602	15,393	16,428
% of MAF adds per Tract	0.9%-18.3%	0.1%-23.5%	0.2%-7.2%
Aggregate MAF improvement in pilot areas	6.3%	4.7%	2.3%
Newly-identified Housing Units	606	730	373
Av. Persons per unit in canvassed tracts	3.4	3.8	3.1

**The number of HU's in areas canvassed are based on Census Bureau Block Count January, 28, 2018 estimates on their LUCA web page. Estimates of person per unit are based on the Bureau's latest version of its Planning Database (2016 files published in November, 2017). Newly-identified housing units were reviewed to assure they conform to Census Bureau criteria as additions to the MAF. The canvassers only added "unconventional" housing units. Margins of error in the estimated yield of percentage of unconventional units added to the MAF stemming from underlying housing unit estimates, mobile phone signal quality affecting auto-geocoding, and canvasser error appear to be less than 0.2%.*

The CommunityConnect Labs mobile texting survey technology makes community-based address canvassing easy to implement. Similarly, the address canvassing training materials are available for any local community that wants to integrate community-based address canvassing into its LUCA efforts

The WKF Fund, working in collaboration with the Welcoming America network, and CommunityConnect Labs is striving to help other communities with concentrations of low-income immigrants conduct their own local community-based address canvassing. Salt Lake City and County are on a fast-track toward implementing this approach and Cities of Service will be offering to work with its members, as will the Welcoming America network. In California, the Institute of Local Government will be alerting its' member cities to the utility of community-based address canvassing.

Targeting to Guide Community-Based Address Canvassing Efforts

Census geography does not necessarily conform to actual neighborhoods, the real-world patterns of housing in communities where low-income families try to manage the extraordinary cost of housing as part of limited family budgets. Consequently, the density of unconventional housing arrangements varies from one block group to another and one census tract to another.

This means that it will be useful for community-based address canvassing efforts conducted as part of LUCA to broaden the scope of areas canvassed more broadly than the narrow targeting used in the pilots (which focused on <5% of the block-groups each community) to canvass perhaps 20% of the housing units in each community, typically those in hard-to-count neighborhoods. Improving the address list by 5% in the most problematic 20% of census tracts in a community decreases overall community-wide differential undercount by 1%.

In rolling out community-based address canvassing initiatives as part of LUCA, and in subsequent address in-field address canvassing by the Census Bureau in 2019, it is important to keep in mind that there are deep pockets of unconventional housing omitted from the MAF—not only in rural areas but, also, in more populated areas—both inner-city neighborhoods and some ex-urban blue-collar neighborhoods where there are unconventional concealed "back houses" or housing add-ons. While Census Bureau use of satellite imaging and use of local government administrative records to improve the MAF via "in office" address canvassing are valuable they cannot be expected to adequately substitute for on-the-street observations by locally-knowledgeable and well-trained canvassers in the most diverse communities.

The pilot address canvassing teams' experience provides valuable confirmation that in-field address canvassing should include urban areas (formerly designated as mailout-mailback areas) where low-income minority families and immigrants reside, not just remote rural areas. The Census Bureau should include urban and rural neighborhoods similar to those canvassed in the pilots as part of their in-field address canvassing in 2019 and to augment its' use of update-enumerate procedures in its 2020 non-response followup (NRFU) phase, as well.

Lessons learned in the community-based address canvassing pilots and subsequent rollout as part of municipalities' LUCA efforts have promise for enhancing the general address canvassing efforts although it is unclear if the Census Bureau will have adequate funding to do this as part of its 2019 address canvassing.

To enhance the effectiveness of its address canvassing in 2019, the Census Bureau should also adapt its recruitment and screening procedures to assure hiring an adequate number of locally-knowledgeable canvassers with established relationships in hard-to-count neighborhoods. In each community, canvassers relied on their knowledge of local areas to approach canvassing in ways that were probably more effective than standard address canvassing as implemented by the Census Bureau (e.g. in Fresno focusing on back alleys where the entrances to unconventional housing units were located rather than simply walking the streets, in San Jose up-close observations of garages to determine if they were used as living quarters).

Community-based Address Canvassing as Outreach and Census Promotion in Hard-to-Count Neighborhoods

Although the address canvassing in the pilots did not typically involve a great deal of interaction with neighborhood residents, the community-based canvassing teams made up of local volunteers and activists in the pilots did, from time to time have occasions to talk with curious neighborhood residents about what they were doing. Despite concerns about potential hostility in some neighborhoods given the intensity of anti-immigrant messaging and actions by the federal government, conversations went very well as canvassers had been prepared to explain to those who asked ways in which the census benefits local community residents.

In San Jose, city staff prepared a pamphlet with the city logo for canvassers to share with residents who wanted to know what the canvassers were doing. In the Fresno area, the

community partner organization, CVIIC, conducted several informational neighborhood meetings and prepared an informational sheet for canvassers—but most interactions with neighbors in the hard-to-count neighborhoods were verbal. Ideally, community-based address canvassing implementation would include a few days of initial community outreach in hard-to-count neighborhoods to explain why the process is so important for community well-being.

Implications for Improving Census Accuracy and Recommendations

1. Community-based address canvassing as a supplement to "in office" use of administrative records during LUCA is affordable, easily replicable, and can be implemented rapidly.

Community-based address canvassing is affordable. There is ample evidence that volunteers and community workers currently involved in community outreach activities can be rapidly trained (in half a day) to work effectively as canvassers to identify low-visibility housing likely to have been omitted from the MAF. In-field canvassing can be conducted in 1-2 weeks at most, even in community such as Fresno where unconventional housing is widely dispersed.

Although the LUCA process begins on the date a community receives the address list for its jurisdiction and corrections and additions must be submitted back to the Census Bureau within 120 days (i.e. March-June, 2018) there is still adequate time to integrate community-based address canvassing into any community's overall LUCA efforts. But it is necessary to decide quickly to go forward and streamline implementation.

Every local jurisdiction has pre-existing relationships with a range of community-based service providers and community activists who interact daily with diverse "hard to count" populations. These community-based organizations understand they are key stakeholders in communities' receipt of census-driven federal program funding supporting their activities (e.g. WIOA, CSBG, CDBG) or the populations they serve (e.g. SNAP, WIC).

Recruitment of volunteers or deployment of outreach staff with the requisite local knowledge and communication skills to efficiently and safely conduct canvassing is not difficult. The data collection/submission app and training materials developed in the pilot initiative are available at no cost to any local government or non-profits which seeks to implement a community-based address canvassing initiative as part of LUCA. Technical assistance, consultation, and project management support are available from CommunityConnect Labs at a modest cost.

2. Return on investment in community-based address canvassing is very high.

Local community address canvassing campaigns costing as little as $15,000 can, by improving eventual census inclusion and accuracy, be expected to have positive fiscal impacts in the millions of dollars over the post-decennial decade. Not only will the decennial census have less of a minority undercount; adding these low-income minority and immigrant households will subsequently have a significant positive impact on the accuracy of the American Community

Survey (ACS) population and socioeconomic data which plays a major role in allocation of federal program funding.

Adding low-visibility housing is a crucial investment in facilitating census enumeration of hard-to-count households. Even if a household living in a concealed, unconventional housing unit—e.g. a "back house", converted garage, or backyard trailer—newly-added to the MAF fails to receive a mailed invitation to respond to the census online or on paper, or if the household receives the invitation and fails to respond, the housing unit's inclusion in the MAF means that an enumerator will seek to contact them and enumerate them in person as part of non-response followup.

Return on investments in community-based address canvassing will be dramatic even if some of those who are provided the opportunity to respond fail to take advantage of it. Improving the inventory of low-visibility housing units in any community inevitably improves the efficacy of subsequent census promotion and non-response followup among the most economically marginal "hard to count" groups. Although the precise fiscal benefits of community-based canvassing as a strategy to reduce differential undercount will vary from state to state, the return on investment in community-based address canvassing is always very substantial, almost certainly >20:1.

Community-based canvassing efforts also provide the basis for additional real-world guidance to the Census Bureau about the nature of "hard to count" neighborhoods in diverse communities. These insights complement and augment the ACS-derived information in the Bureau's ACS-based Census Planning Database and will provide practical guidance for crucial but problematic components of Census 2020 operations—e.g. enhancing low-income households' access to online census participation and non-ID processing (NID). Insights can also contribute to the efficacy of non-response followup (NRFU) and quality of imputation in neighborhoods with low self-response.

3. Integrating community-based address canvassing into the Census Bureau's current partnerships with local government (states, counties, municipalities) to conduct LUCA, provides an innovative, effective model of collaboration.

Community-based address canvassing represents a strategy to achieve an important commonly agreed-upon societal objective by deploying local cultural capital (local knowledge, language and communication skills) and social capital (community-based networks working to conduct canvassing campaigns) to complement shortage of financial capital, i.e. the Census Bureau's budget shortfalls.

Ongoing, vigorous advocacy to assure the Census Bureau receives the public funding needed to do its job successfully in an increasingly challenging environment for survey research is crucial. But, given current political/fiscal circumstances, particularly the urgent need for adequate funding in FY 2019, funding constraints will most probably continue to be a problem. Community-based address canvassing provides an important launching pad for developing more innovative and robust partnerships to assure a fair and accurate count in Census 2020.

4. Immediate and decisive action by philanthropy, local, and state government is required to make good on the promise of community-based address canvassing.

The LUCA process, established by statute provides the only opportunity to directly deploy local community resources to improve the undercount of low-income minority and immigrants' households in local communities. ***This opportunity is only available from March through June of 2018***.

Experience in the pilot initiative shows that investments in community-based canvassing are almost certain to yield significant improvements in the local address list and that implementation is feasible, even in neighborhoods which are generally considered to be "difficult". The resources and experience developed in the pilot initiative—most notably the data collection/submission app, training materials, and experience in deploying and coordinating teams of community canvassers—are available at low cost to local governments and pro-census consortia due to the developmental investments in the pilot project.

5. Canvassing Builds Local Community Organizations' Capacity to Partner with the Census Bureau in recruiting and training culturally and linguistically skilled address canvassers and enumerators.

Local community-based organizations and local outreach workers involved in the pilots had not always known the full range of partnership opportunities for collaborating with the local and state government and the Census Bureau to work toward an accurate and fair census.

Address canvassing provides a compelling example of an active way to collaborate where community organizations' unique local knowledge of their community and current human resources can be used to make Census 2020 as accurate as possible.

Acknowledging the value and power of social networks as a resource for civic initiatives and inviting local grassroots organizations to proactive involvement provides a way to re-frame perspectives on census partnership, broadens opportunities for messaging about census participation as part of a locally-led, locally-relevant collaboration. It provides an opportunity for local communities to assert their distinctive identity, underscore the importance of "hard to count" families and individuals, and a way to make the decennial census a better mirror of America.

6. Community-Based Canvassing Should Be Incorporated Into the Census Bureau's Final Strategy for post-LUCA "In Field" Address Canvassing in 2019

The Census Bureau's October, 2017 Operational Plan and its' severely-constrained FY19 budget means that only 30% of the housing stock in the United States is scheduled to receive "in field" address canvassing (i.e. actual street-level observations of housing) to improve the inclusiveness of the Master Address File. Current plans understandably appear to give priority to in-field canvassing in areas affected by natural disasters (e.g. Puerto Rico, southwest Florida, California

fire areas, Houston flood areas). However, the Community-Based Address Canvassing Pilot highlights the importance of identifying unusual housing accommodations in order to reduce the longstanding chronic undercount of low-income minority and immigrant families in a broad range of "hard to count" neighborhoods.

Census stakeholders' policy advocacy focused on improving the differential undercount of minorities should include specific recommendations for supplemental operational Census Bureau funding for in-field address canvassing in hard-to-count neighborhoods—in inner-city urban areas, low-income ex-urban areas, and rural communities where poverty and lack of affordable housing lead households to live in unusual housing.

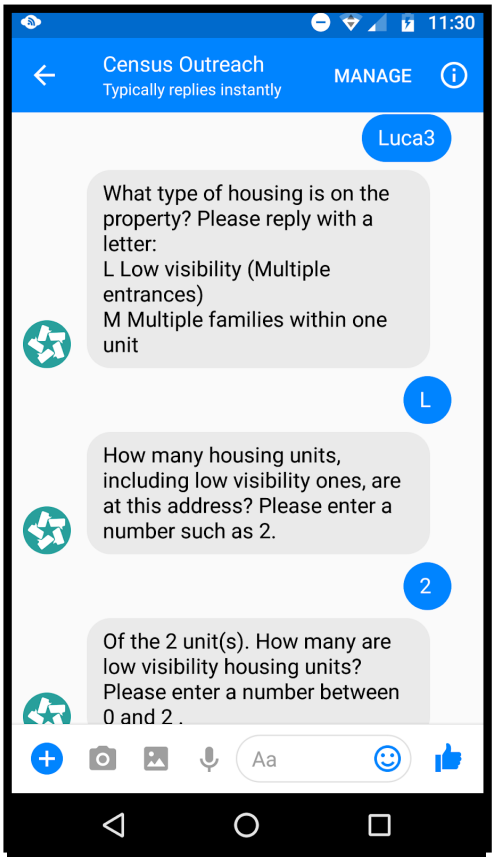
If the Census Bureau adjusts its operational planning to include the most problematic of these neighborhoods, there are several different ways to configure partnerships in local communities to provide valuable insights and support to Census Bureau canvassing efforts.

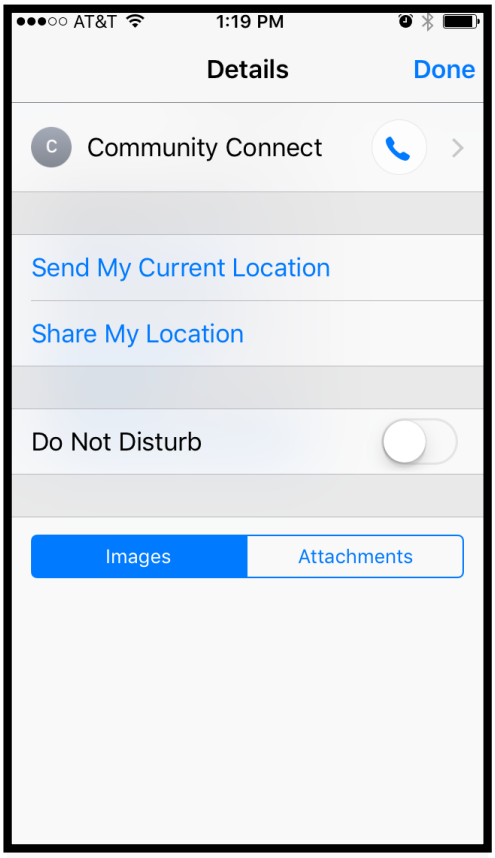
For more information, contact:

Ed Kissam (edkissam@me.com), Perla Ni (perlani@communityconnectlabs.com),
or Jacob Model (Jacob@communityconnectlabs.com)

Appendix A-Photo examples of unconventional housing

Appendix B-Interface for data collection/submission by community address canvassers





Appendix C—Community Address Canvasser Training Materials

(available on request)

Appendix D: How to Identify The Neighborhoods to Canvass

Overview

An important reason community-based address canvassing works so well as a component of LUCA and is cost-effective is that it is only necessary to target 10% to 20% of the census tracts in a community—focusing on the neighborhoods where unconventional, sometimes-concealed, housing arrangements are most prevalent.

The exact number of neighborhoods/census tracts to target depends on the type of housing stock in a local community, housing cost as proportion of poor families' income, and local population characteristics. It makes sense to start in the most problematic neighborhoods and then go on to canvass in less problematic neighborhoods if resources permit.

The pilots of community-based address canvassing in San Jose, San Francisco, and Fresno showed that canvassing even 5% of a city can make a huge contribution to a fair and accurate count in Census 2020.

Here are some tips for identifying high-priority neighborhoods for local "in-field" on-the-street address canvassing.

Rely on Grassroots Insights about Unconventional Housing in Hard-to-Count Neighborhoods

Local grassroots community organizations and programs providing services to families in hard-to-count know best what kinds of unconventional housing there are in a community and where to find it. They are crucial resources in deciding where to go and in doing the actual canvassing—especially if they are regularly involved in actual on-the-street outreach.

For example, community health clinics which send *promotora/es* out to talk to families, Head Start programs, churches, community organizing groups in touch with low-income families about affordable housing, renters' rights organizations, groups providing legal support services to immigrants, all know a lot about the kinds of housing most likely to be left off the Census Bureau address list and omitted from local administrative databases such as assessors' tax rolls.

These local insights are crucial because the kind of unconventional housing most prevalent in a community varies from place to place. In some neighborhoods, garages converted to living quarters are prevalent. In others, backyard add-ons to an existing house are common. In others, unconventional housing may include trailers, mobile homes, and RV's. In others, basements or storage space above small commercial establishments are converted into living quarters. Local community workers also know the clues to identifying concealed and hard-to-observe housing quarters—e.g. extra swamp coolers on the roofs of seemingly suburban houses, extra flashing around garage doors, gates from backyard "casitas" opening onto alleys.

Use the Online Map of Hard-to-Count (HTC) Areas in Targeting Tracts

The online HTC Map 2020 is at http://www.censushardtocountmaps2020.us It is a valuable resource to cross-check local grassroots insights about where to go against Census Bureau data on neighborhoods that were hard to count in 2010. The thematic map shows the hardest-to-count tracts in every community. They are colored magenta or orange, representing tracts where there were low census mail return rates (<71%) in 2010. Although the interactive map does not provide a perfect guide for identifying the highest priority neighborhoods to focus on in address canvassing—because many factors enter into low mail-return rate—it provides solid guidance about areas which don't need to be canvassed. The HTC Map 2020 is a valuable resource, also, because clicking on any census tract provides easily-accessible information (drawn from the Census Bureau's Planning Database) about neighborhood characteristics correlated with prevalence of unconventional housing.

Particularly important census tract characteristics in the HTC Map 2020 database include:

# of households and population—It is important to know how many households there are in each tract to plan and manage address canvassing. Some geographically compact census tracts in urban inner-cities may have more households than larger less-densely settled ones.

% crowded households—Neighborhoods with high proportions of crowded households do not necessarily include unconventional housing, but those with low prevalence of crowded housing can probably be left out of canvassing efforts.

% of households living in poverty—This is a major factor related to unconventional housing. Living in unconventional housing is almost always due to economic pressure.

% non-citizens—Neighborhoods with higher-than-average concentrations of foreign-born heads of household have more unconventional housing; more recently-arrived immigrants are particularly likely to live in unconventional housing.

% renters—This is relevant but requires careful consideration. Tracts with few households living in poverty and high proportions of homeowners can be excluded from canvassing. But in some neighborhoods very low-income homeowners may be supplementing their income by setting up concealed unconventional housing quarters which are missed.

Consider A Deeper Analysis of Factors Linked to Prevalence of Unconventional Housing

The Census Bureau has created a Planning Database (PDB) for Census 2020 planning. It is based on American Community Survey (ACS) data—as is the HTC 2020 Map—but it includes a much broader range of variables, some which are particularly relevant to identifying areas where unconventional housing is prevalent than available in the HTC map. The PDB is available at:

https://www.census.gov/research/data/planning_database/

Using the Census Bureau's Planning Database (PDB), Ed Kissam and Gregg Robinson (one of the original developers of the Census Bureau's planning database) have identified several variables which provide useful guidance in identifying areas where unconventional housing is likely to be more prevalent. They have developed a "Bad MAF" algorithm incorporating several of additional PDB variables in addition to those captured in the HTC 2020 Map.

These "Bad MAF" scores have now been computed for all census tracts in California. The distribution of "Bad MAF" scores suggest that about 15% of California census tracts should get in-field address canvassing—but that the distribution of problematic tracts varies greatly from county to county---for example, around 20% of the tracts in Los Angeles, Madera, Fresno, Tulare, Imperial, Monterey, and Kern Counties, but only 7%-10% of the tracts in Santa Barbara, San Joaquin, Orange, San Diego, San Bernardino, and Riverside counties.

Robinson's analysis shows that census tracts' Bad MAF score is well-correlated with the more generic HTC score (as we would expect) but that it is likely to provide slightly better guidance in identifying priority tracts for address canvassing. His analysis also confirms that census tracts with concentrations of non-US citizens are among the hardest to count.

Local government planners can use the Bad MAF algorithm by accessing the PDB data for any county or city (extracted simply by filtering for the appropriate state-county-city GEOID in the database) and rank census tracts in their local area by predicted likelihood of having higher-than-average proportions of unconventional housing that's left out of the MAF.

The "Bad MAF" algorithm (Version 6-March 12, 2018)

The "bad MAF" algorithm incorporates the variables previously discussed in connection with the HTC 2020 Map:

- Percent of households in poverty— (pct_Prs_Blw_Pov_Lev_ACS_10_14*1.5)
- Renter/homeowner ratio (pct_Renter_Occp_HU_ACS_10_14)
- Percent crowded households (pct_Crowd_Occp_U_ACS_10_14)
- Percent non-US citizens— (pct_NON_US_Cit_ACS_10_14)

The "Bad MAF" algorithm includes, in addition to the variables available in the HTC 2020 Map several additional variables derived from the Census Bureau's Planning database. Ideally, local government planning for targeted address canvassing should triangulate decisions about where to focus by including: consultation with grassroots organizations, ranking of census tracts using the Bad MAF algorithm, and review of the component variables in the Bad MAF score. This review can provide a basis for a local decision about the most cost-effective scope for in-field canvassing—e.g. 5% or 15% or 20%. The key point is that an analytic approach to targeting community-based address canvassing can guarantee that the effort will be cost-effective.
The additional variables included in the Bad MAF targeting algorithm are discussed below.

Educational attainment—weighted up (pct_Not_HS_Grad_ACS_10_14*1.5) Educational attainment is likely to be a better predictor of both U.S.-born and immigrant households living in unconventional low-visibility housing than race.

Lack of Health Insurance—weighted up (pct_No_Health_Ins_ACS_10_14*1.5) In the ACS 2013 data lack of health insurance is likely to be a very useful indicator of household marginality, including living in marginal housing accommodations

Percent not speaking English well (pct_ENG_VW_ACS_10_14) Linguistic isolation is correlated with census undercount in general. The extent to which it correlates directly with living in unconventional housing is not straightforward but, together with low educational attainment and proportion of recent immigrants, it is likely to be useful as a component.

Percent Mobile Homes— (pct_Mobile_Homes_ACS_10_14*2) Census Bureau research on omission of housing units shows that renter-occupied mobile homes are particularly likely to be missed. However, the utility of this variable varies from community to community, depending on local planning/zoning regulations and specific local post office practices for mail delivery.

The formula for Version 6 of the "Bad MAF" algorithm is summarized below:

Percent of households in poverty (pct_Prs_Blw_Pov_Lev_ACS_10_14*1.5)
+
Percent of renter-occupied Housing Units (pct_Renter_Occp_HU_ACS_10_14)
+
Percent crowded households (pct_Crowd_Occp_U_ACS_10_14)
+
Percent non-US citizens (pct_NON_US_Cit_ACS_10_14)
+
Educational attainment (pct_Not_HS_Grad_ACS_10_14*1.5)
+
Lack of Health Insurance (pct_No_Health_Ins_ACS_10_14*1.5)
+
Percent not speaking English well (pct_ENG_VW_ACS_10_14)
+
Percent Mobile Homes (pct_Mobile_Homes_ACS_10_14*2)

= **"Bad MAF" score**

* *Variables are from the November 28, 2017 re-release of Planning Database files for the U.S—Census Tract database at https://www.census.gov/research/data/planning_database/2016/*

** *The source file is for the entire U.S. It can be downloaded as a zipped Excel CSV file. The relevant data for any jurisdiction—state, county, municipality—can then be extracted by filtering on the relevant state or county identifier and, for a municipality, the appropriate GEOID codes for census tracts within the city boundaries.*

**** The "Bad MAF" score ranks census tracts by projected likelihood of having significant numbers of unconventional housing units. It should not be interpreted as predicting the % of unconventional housing units added to the MAF by community-based in-field canvassing in any specific tract.*

*****The San Jose and Fresno pilots, as well as exploratory research in eastern Riverside County, CA suggest that it is important to consider local insights about the distribution and distinctive nature of the prevailing unconventional housing arrangements in each individual community together with the targeting algorithm in making final decisions about where to start canvassing and the extent of canvassing-e.g. 5%, 10%, 15%, 20%, 30% of tracts in a community.*

******Although the tracts predicted as being the most likely to have significant amounts of unconventional housing are also tracts with very high proportions of low-income minority households, our assessment was that the "structural" factors included in the Bad MAF algorithm such as prevalence of poverty and prevalence of household heads with low educational attainment would be better in predicting presence of unusual housing than race/ethnicity.*

Conclusion

Time is short to put local government-community partnerships in place to mobilize community canvassers to add unconventional housing units to the Census Bureau's address list for local communities where there are neighborhoods where poverty is prevalent and where there are concentrations of minority and immigrant families living in unconventional housing, Improving a community's address list by incorporating "in field" address canvassing to local government's LUCA efforts inevitably makes a major contribution to decreasing differential undercount of minorities and working toward a fair and accurate Census 2020.

Targeting is necessary so as to assure that community-based address canvassing can be completed during the short window of opportunity available as LUCA is underway from March-June, 2018 as well as to assure that it is affordable.

Targeting the census tracts where there is most likely to be some unconventional housing and where canvassing efforts will make the greatest contribution to improving the Census Bureau's basic address list is not difficult—but it does require proactive efforts to consult with local grassroots organizations and review available data sources (the HTC 2020 Map and/or the Census Bureau Planning Database) for planning a local street-level address canvassing initiative.

Based on experience in the California Community-based Address Canvassing Initiative in San Jose, San Francisco, and Fresno, CommunityConnect Labs, the WKF Fund along with their city and community organization partners who implemented the local community canvassing are happy to share insights and practical advice.

For more information on targeting contact Ed Kissam (edkissam@me.com)

Selected References

Bruce A, Robinson G, Devine J.E. "A Planning Database to Identify Areas That Are Hard-to- Enumerate and Hard-To- Survey in the United States". Proceedings of the Conference on Hard-to-Reach Populations, 2012 http://www.eventscribe. com/2012/ASAH2R/assets/pdf/50020.pdf.

Census Bureau, 2020 Census Operational Plan: A New Design for the 21st Century (v. 3), September, 2017

Census Bureau, "2020 Census: Local Update of Census Addresses (LUCA) Operation", April, 2017

De La Puente M. "Using Ethnography to Explain Why People Are Missed or Erroneously Included by the Census: Evidence from Small Area Ethnographic Studies", Center for Survey Methods Research, U.S. Census Bureau, 1993

De La Puente M. "Using Ethnography to Explain Why People are Missed or Erroneously Included by the Census: The Evidence from Small Area Ethnographic Studies", Center for Survey Methods Research, U.S. Census Bureau https://www.census.gov/srd/papers/pdf/mdp9501.pdf.

De la Puente M. "An Analysis of the Underenumeration of Hispanics: Evidence from Small-area Ethnographic Studies", Proceedings of the 1992 Bureau of the Census Annual Research Conference, 1992.

Dominguez, Boanergues and Sarah J. Mahler "Alternative Enumeration of Undocumented Mexicans in South Bronx". Bureau of the Census, Washington, D.C. 1993

Fein DJ. "The social sources of census omission: Racial and ethnic differences in omission rates in recent censuses", Ph.D. dissertation, Princeton University, 1989.

Fein DJ, West K. "The Sources of Census Undercount: Findings from the 1986 Los Angeles Test Census", Survey Methodology, 1988 Dec.

Government Accountability Office, Lessons Learned for Locating and Counting Migrant and Seasonal Farmworkers. 2003

Hamid A, Brownrigg L. "Accurate Address Listings to Improve Housing and Population Counts: A Comparison of Address Listings and Enumerations of Four Sample Areas by the 1990 Decennial Census, the Post- Enumeration Survey (PES) and the Alternative Enumeration (AE)". 1992. https://www.census.gov/srd/papers/pdf/lab9301.pdf.

Heim, Krista and Raim, A, "Predicting Coverage Error on the Master Address File using Spatial Modeling Methods at the Block Level", Proceedings of the American Statistical Assn., Survey Methods Section, 2016.

Kimberlin, Sara, "Poverty and Housing Costs in California" California Budget and Policy Center, September 22, 2017.

Kissam E, Herrera E, Nakamoto J. "Hispanics' Response to Census Forms and Procedures". Aguirre International, Final Report to Population Division, U.S. Census Bureau, 1993.

Kissam E, Jacobs I. "Practical Research Strategies for Mexican Indigenous Communities Seeking to Assert Their Own Identity", in Fox J, Rivera-Salgado G, **Indigenous Mexican Migrants in the United States**, Center for U.S.-Mexican Studies, 2006.

Kissam E. “Census Enumeration of Immigrant Communities in California: Dramatic Improvements but Challenges Remain”, Report to California Rural Legal Assistance and The California Endowment, JBS International, 2010 Sep.

Kissam E. “Estimating the Potential Impact of Community-based Census Address List Improvement on California Differential Undercount”, 2017. Retrievable at: http://wkfamilyfund.org.

Kissam E. “Differential undercount of Mexican immigrant families in the U.S.”, Statistical Journal of the International Association of Official Statistics. 2017

Mahler, Sarah. “Alternative Enumeration of Undocumented Salvadorans on Long Island”. Prepared under Joint Statistical Agreement 89-46 with Columbia University. Bureau of the Census, Washington, D.C. 1993.

Mule T. 2010 “Census Coverage Measurement Estimation Report: Summary of Estimates of Coverage for Persons in the United States”, Decennial Statistics Studies Division, U.S. Census Bureau, 2012 May 22.

Mule T, Konicki S. 2010 “Census Coverage Measurement Estimation Report”, Census Bureau, May, 2012.

O’Hare WP, et. al. “The Invisible Ones: How Latino Children are Left Out of our Nation’s Census”. Child Trends: Hispanic Institute, 2016. ftp://ftp.census.gov/cac/nac/meetings/2016-

O’Hare W.P. **The undercount of young children in the US Decennial Census**. Springer International Publishing. New York, NY, 2015.

Olson D, Viehdorfer C. “Net Coverage for Housing Units in the United States”, Decennial Statistical Studies Division, U.S. Census Bureau, 2012 May.

Public Policy Institute of California, “Poverty in California”, October, 2017

Reamer A. “Counting For Dollars: The Role of the Decennial Census in the Geographic Distribution of Federal Funds” https: //gwipp.gwu.edu/counting-dollars-role-decennial-census- geographic-distribution-federal-funds

Schwede L “Complex Households and Relationships in the Decennial Census and in Ethnographic Studies of Six Race/Ethnic Groups: Final Report”, Statistical Research Division, U.S. Census Bureau 2003 Aug. https://www.census. gov/pred/www/rpts/Complex%20Households%20Final%20 Report.pdf.

Sherman J, Villarejo D, Garcia A, McCurdy S, Mobed K, Runsten D, et al. “Finding Invisible Farmworkers: The Parlier Survey”. California Institute of Rural Studies, 1997.

Turner K, Guzman L, Wildsmith E, Scott M. “The Complex and Varied Households of Low-Income Hispanic Children” National Center for Research on Hispanic Families and Children, 2015 Jan.

West K, Fein DJ. “Census Undercount: An Historical and Contemporary Sociological Issue”, Sociological Inquiry, Vol. 60 #2, 1990.

Swartz R, Virgile P, Timko B. “2010 Census Local Update of Census Addresses Assessment: Final Report”, Geography Division, U.S. Census Bureau. 2012