DISCUSSION: PLANS FOR IMPROVING COVERAGE IN THE CENSUS

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KEY WORDS: Rostering, Unduplication, Administrative Records

Before beginning, I would like to state that these comments are my own, and not necessarily in agreement with those of any of the panels that I work with, nor of the Committee on National Statistics.

Comments on Rostering, Residence Rules, and Coverage by Schwede and Mills.

The Census Bureau undertook a comprehensive examination of rostering in 1996, and as a result made the decision that for the 2000 census, the short form would not include a household roster but that the long form would include a household roster. The Bureau staff's examination of this issue included census tests, studies using the Current Population Survey, census ethnographic studies, cognitive studies, and related international work. The key trade-off is coverage versus response. I believe it would have been useful to directly test this trade-off in a small field test during the time leading up to the 2000 census, but evidently there were either insufficient resources or insufficient time.

Unfortunately, the census tests carried out were confounded, since they involved simultaneous changes to many important factors including those involving rostering. The differences that are seen relative to this issue are relatively modest, with resulting changes of around 3% in malback rates. However, in the decennial census, a 3% change in response can represent a large amount of money. Improving the census form while retaining a roster in one study did seem to recoup some of the 3%. I believe that that was fairly promising and deserved further investigation. This could be tested as part of the 2006 census test, or in a small field test in 2005. If I were in charge of the census, I don't think I would give this test a very high priority. However, the ACS is a natural test bed for census experimentation, and a small test in ACS, once fielded, would be a natural idea.

Having raised ACS, I am interested in how these considerations are represented in the plans for ACS. Another question I have concerns the item nonresponse rates that are compared in the work by Schwede and Mills. One nonresponse rate relates to a single response whereas the other relates to a set of responses. This is not a major criticism since the bias would presumably be in the other direction from the inference taken, so the inference is still probably clear.

I agree that reinterviewing would be a big help in understanding the trade-offs involved with this decision. What plans are there for conducting reinterview studies vis-à-vis the 2000 census? Will the reinterviewing, if carried out, be for variance estimation or variance estimation as well as measurement error?

Technology could be of help here. The Internet questionnaire planned for 2010 could automatically place names supplied earlier in the interview in other spots on the questionnaire, as could the mobile computing devices used for field work.

Comments on Improving Within Household Coverage by Krejsa, and Sheppard

This paper was concerned with residence rules and within household omissions. This is a crucial issue for 2010. A lot of analysis will be needed to arrive at an optimal solution. The U.S. is becoming increasingly complicated to enumerate due to an increasingly large number of people with attachments to multiple residences. The Census Bureau plans to examine this in its 2004 census test in which they are comparing a new question format against that used in 2000. Unfortunately, again there is a lot of confounding here. Three major changes are being looked at simultaneously. Instead, why not use a small focused test to examine the separate dimensions of interest, namely coverage questions and the display of information on residence rules? The ACS might be a good test bed for this question (though the residence rules for ACS are different). This is consistent with the often heard criticism of the Census Bureau that it does a bit too much in large scale tests and not enough focused examination.

One question that I have is why not ask for alternative addresses in the coverage questions? Why is this just requested by field enumerators? Another question is isn't there some tension between unbiasedness versus reducing gross error, and what position does the Census Bureau on how to address this? Is unbiasedness the goal no matter what?

Another question that I have is what is the power for the 2004 test? Are we likely to be able to identify the likely small changes that will result? I believe that focus groups could be very helpful in understanding this trade-off, along with information from the ethnographic studies that were carried out.

Finally, technology again might be a partial answer. The Internet will allow help screens to assist responders under residence rules. Also, mobile computing devices will likely store information from other residences in the areas that may reduce the frequency of these misunderstandings.

Comments on Census Unduplication Research Plan for 2010 by Smith and Whitford

Unduplication is an extremely important topic. Duplicates, due to MAF problems and due to residence rule confusion, are on the increase (at least our knowledge of them is). Real-time person unduplication, based on the work of Bob Fay and Tom Mule, provides a real opportunity for addressing this important problem. It is not clear that a local test can adequately provide an adequate test of feasibility in 2010 here, since one cannot estimate the field costs. The big problem is the identification of false matches and also determining which enumeration of a matched pair is the proper one. Sometimes this will be trivial to determine (e.g., college students) but other times it will require expensive and time-consuming field work.

The Bureau's current plans for housing unduplication are based on reconciling results from an alphanumeric matching algorithm, e.g., transposition errors, misspellings, and inconsistent apartment identifies (3-A versus 3A). The Census Bureau has at times suggested that GPS locations will be incorporated into the MAF/TIGER system by 2008. If the matching also utilized GPS coordinates, I think the applicability of this would be greatly enhanced in rural areas. One other question I have is whether the master address file database could include contextual information that would help to identify duplicate housing units.

The use of administrative records information to help with unduplication sounds exciting. Could the mobile computing devices include some of this information to help resolve duplications during nonresponse follow-up? Finally, many of the questions of interest to the Bureau and some of those raised here could be addressed with smaller tests, rather than just in the large tests in 2006 and 2008.

Comments on An Empirical Evaluation of the Use of Administrative Records to Predict Census Day Residency by Judson and Stuart

This paper referred to empirical work that was carried out to implement models developed by Stuart and Zaslavsky, which adds migration to the usual model of multi-system estimation. The technique is extremely clever. Even though the model is already somewhat computationally intense, unfortunately many of my comments are directed to make it even more complicated. There could be some value in having inclusion probabilities that were not constant, based on various covariates, the Census Bureau's hard-to-enumerate scores, etc. The model could also include move probabilities dependent on a variety of covariates. Though less important, one could even include appearance probabilities. At this point, there is no representation of those multiply missed (fourth cell people in the dual-systems problem), but there is the hope to do that in the future, which would be a great benefit. It would also be useful to represent births, deaths, and immigration and emigration.

Matching error is a nonignorable complication that could hurt this model. Along the same lines, this model needs more empirical validation. However, it is not clear how to do that. The notion of generalizing the model to be able to distinguish whole household versus partial household moves is a good idea.

There are a lot of possible applications and side benefits to use of this model. It is clearly useful for intercensal population estimation (which needs more of a statistical perspective) and it is clearly useful for imputation for nonresponse. It is also clearly useful for diagnosing areas with coverage problems (either overcounts or undercounts) by providing target counts for subnational areas.

One general comment, not relevant to this paper, is that administrative records is a very fertile ground for research in many areas. However, in the past the experience has been letting a thousand flowers bloom until it is too late to implement even one application in the decennial census. The Census Bureau needs to focus now on one or two applications and make them a reality for 2010 by including them in the upcoming census tests.

In summary, this is a great list of important topics for the Bureau to be examining. Administrative records research is promising, questionnaire form and other cognitive issues are extremely important, person and household duplication on the MAF is a very high priority,

and residency rules are *crucial* to address. These are precisely the kind of issues that the Bureau's research program should be examining.

In making progress on these topics, the Census Bureau needs more collaboration with experts in these areas. The Bureau should consider setting up some acceptable analog of the old joint statistical agreements to flesh out these matters. Further, progress can be made on many of these areas with small-scale testing, not requiring the massive census tests. Lastly, a few of these areas could be informed through the use of artificial census population simulation studies, as was done in the mid 1980s.