Quasi Address-Based Sampling: A New Cost Efficient Rejective Sampling Design for Reducing Undercoverage, Nonresponse Rate, and Nonrespondent Substitution Bias

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Abstract

For implementing two-phase multistage stratified cluster sampling designs, we propose a cost-efficient rejective sampling alternative to area sampling to satisfy the following three goals: (1) reduce nonresponse without field interviewing but by making in-person contact for a leave-behind screener to selected housing units (HUs) in a segment for eligibility and contact information for the telephone main interview; (2) reduce undercoverage without advance counting and listing and without using half open interval but by adjusting in the field selection of HUs from an address list by rejective sampling; and (3) reduce nonrespondent substitution bias without releasing replicates but by selecting at random alternate HUs in neighborhoods or zones within each segment. The basic premise in rejective sampling used for the proposed design termed quasi-ABS (because it is like address-based sampling except for some good features of area sampling) is that it is not feasible to sample directly from the domain subpopulation (such as all valid, eligible and responding HUs in a segment), but it is feasible to sample a dominating population such that for each draw, several alternate random numbers are selected sequentially and each previously selected number is rejected if the corresponding HU is not in the domain subpopulation. Validity of selected HUs is checked by a quasi-lister who also makes an in-person contact effort to deliver the screener. The sampling weights for the sample from the responding subpopulation are adjusted to represent the target population of all valid HUs including responding and nonresponding HUs. Preliminary findings based on a limited field experiment are also presented.

Key Words: Field Interviewer; Nonrespondent Substitution; Quasi-ABS; Quasi-lister; Rejective Sampling.

1. Introduction

Suppose we wish to conduct a two-phase multistage stratified cluster design. For this purpose, the traditional area sampling (AS) design is known to provide satisfactory geographical and housing unit (HU) coverage and high respondent cooperation through in-person contact using experienced interviewers. However, it is time-consuming and costly due to field work required for advance counting and listing of selected segments followed by conducting face-to-face interviews and nonresponse follow-ups. As a time and cost efficient alternative, address-based sampling (ABS) designs are often considered which consists of using the address list of USPS Delivery Sequence file (DSF) as a sampling frame for centralized telephone interviews for HUs with matched telephone numbers and results in quick turn-around time. For HUs without matched numbers, self-administered questionnaires (SAQs) are mailed to obtain telephone contact information.

However, ABS may suffer from low response rates depending on the design, and the DSF list is typically subject to overcoverage of HUs having both PO Box and street address as well as undercoverage of newly constructed HUs. Moreover, rural route (RR) Box, and drop delivery points for multi-unit dwellings are difficult to geocode making it hard to locate the corresponding census block needed for selecting HUs within a selected segment geography; see e.g., O'Muircheartaigh and English (2012). The problem considered in this paper is how to define a hybrid ABS-AS design at possibly a marginal increase in cost over ABS while retaining several good features of both AS and ABS; see Singh and Kwok (2010) for an earlier attempt.

First we review some important features that could be built in AS. In AS, we typically conduct a complex sampling design such as two phase stratified multistage unequal probability cluster sampling design with primary sampling units or PSUs (census tract groups or counties), secondary sampling units or SSUs (segments such as small census tracts or block groups), and ultimate sampling units or USUs (e.g., housing units). The two phase feature is desirable for front-end screening of eligible HUs for a targeted population and for back-end need of auxiliary variables from the larger first phase sample for sampling weight calibration. The stratification feature is desirable for a balanced geographical representation and for variance efficiency by constructing homogeneous strata. The multi-stage cluster feature is desirable for having relatively fewer PSUs and SSUs in order to reduce excessive travel time of field interviewers in contrast to sampling HUs directly which may lead to highly dispersed HUs. Finally, the unequal selection probability feature at different stages is desirable to allow for equal workload per segment, and over- and under- sampling of targeted subpopulations but with approximately equal overall selection probabilities of HUs for variance efficiency. Although it may be costly, AS can have all the above features. Moreover, with adequate training of interviewers, it often has reasonably high response rates from in-person interviewing. A nearly complete address list can be constructed in advance by field counting and listing, and at the time of interview, the half-open-interval procedure can be used to cover any missed HUs.

Our objective in this paper is to propose a design which stays close to ABS but takes advantage of some key features of AS. We propose a cost-efficient rejective alternative sampling to AS to satisfy the following three goals: (1) reduce nonresponse without field interviewing but by making in-person contact for a leave-behind screener to selected housing units (HUs) in an area segment for eligibility and contact information for the telephone main interview; (2) reduce undercoverage without advance counting and listing and without using half open interval but by adjusting in the field selection of HUs from an address list by rejective sampling; and (3) reduce nonrespondent substitution bias without releasing replicates but by selecting at random alternate HUs in neighborhoods or zones within each segment; zones partition the segment such that a single HU is selected from each zone. This type of nonrespondent substitution reduces travel cost in comparison to releasing reserve replicates or PSUs which might require traveling to new segments.

The proposed design is termed quasi-ABS because it is like address-based sampling except for some features of area sampling. The basic premise in rejective sampling used for quasi-ABS is that it is not feasible to sample directly from the domain subpopulation (such as all valid, eligible and responding HUs in a segment) but it is feasible to sample a dominating population. Moreover, for each drawing in the sample, several alternate random numbers are selected sequentially and each previously selected number is rejected if the corresponding HU is not in the domain subpopulation. The validity of selected HUs is checked by a field worker termed quasi-lister who also makes an in-person contact effort to deliver the screener. The sampling weights for the sample from the responding subpopulation are adjusted to represent the target population of all valid HUs including responding and nonresponding HUs.

The organization of this paper is as follows. Section 2 provides a background review of zones for one unit rejective sampling of Singh and Wolter (2010) used for defining the proposed design of quasi-ABS followed by a description of quasi-ABS in Section 3. In Section 4, we provide a conceptual comparison of ABS, quasi-ABS, and AS designs and then show theoretically how they perform cost-wise under general assumptions. Section 5 contains preliminary findings from a limited field experiment to test feasibility of quasi-ABS. Finally, summary and concluding remarks are presented in Section 6.

2. Background and Motivation for the Hybrid ABS-AS Design

We first review the method of zones for one unit rejective (ZOUR) sampling of Singh and Wolter (2010). It is used for the proposed quasi-ABS design. Suppose a selected segment is allocated 20 HUs. We define a sharp upper bound on the available estimate of the total number of HUs in the segment to allow for missed HUs. Rejective sampling allows for a random sample from the subpopulation of valid, responding and eligible HUs by simply rejecting those HUs that are invalid, nonrespondent or ineligible. To this end, we divide the segment into approximately 20 equal parts (termed zones or neighborhoods) starting from the north-west corner of the segment. We need to draw at random one valid, responding and eligible HU from each zone. To achieve this, we draw several substitute HUs by sequentially drawing a set of random numbers with replacement from each zone, and reject invalid, nonresponding or ineligible HUs drawn earlier in favor of the most recent draw. The above simple rejective scheme termed ZOUR enhances AS by allowing for random substitution without substitution bias in estimating totals for the subpopulation of valid, eligible and responding HUs. It also further enhances AS by providing an alternative to the traditional half open interval procedure for coverage of missed HUs which is known to be prone to misunderstanding in any field application.

ZOUR sampling also provides an alternative to the ‘list and go’ design which is sometimes used for saving cost of counting and listing segments with known number of HUs. In ‘list and go’ designs, the steps of counting and listing, selection, and in-person interviewing are merged together for expediency. However, it is subject to bias due to missed HUs in the original segment count and is prone to counting errors which may have a cascading effect. In ZOUR-based AS, unless the blocks in the segment are city-style and easy to count, a two-step process can be used; see Section 5. In the first step, the field interviewer completes the counting and listing of the segment, and in the second step, a sheet consisting of preselected random numbers including substitutes n each zone using an upper bound nearest to the actual observed segment size is used to select HUs in the prescribed order for in-person interviewing. Thus ZOUR overcomes limitations of ‘list and go’ designs.

It may be remarked that if the segment list of HUs were free from coverage bias and available in a random order, then there would have been no need of creating zones for with replacement sampling of a single unit and substitutes. A sample of valid, responding and eligible HUs can be selected by sequentially drawing numbers without replacement from the beginning of the list and rejecting any invalid, nonresponding or ineligible HUs. However, such a list is generally not available in practice. In fact, the population size of number of valid HUs in each segment is also not known. In principle, the method of McLeod and Bellhouse (1983) could be used for without replacement random selection but it would be rather tedious for field implementation besides having the problem of lag time in declaring whether a HU is nonrespondent or ineligible. It is for these reasons, ZOUR sampling is used which entails with replacement selection of several units to serve as substitutes within each zone.

Above is a simplified review of the rejective sampling idea used in quasi-ABS; see next section for more specific details. Quasi-ABS is analogous to ZOUR-based AS except that SAQs for contact and screener information are handed out in-person or dropped off to all selected HUs (including substitutes) instead of in-person interviewing so that main interviews and follow-ups are performed by telephone as in ABS. To emphasize this distinction, the term quasi-lister is used instead of the usual field lister and interviewer in AS. It is seen that by construction of the quasi-ABS design, it is expected to overcome several limitations of ABS including low response rates under the reasonable assumption that if an in-person contact is made with an HU, it is likely that the respondent can be convinced to fill out the short SAQ on the spot resulting in a higher response rate as in AS; see Section 5. It may be noted that the problem of possible replacement of a HU by a more friendly-looking HU on the spot by a field interviewer in ‘list and go’ or AS designs in general is considerably reduced in quasi-ABS because in-person interviewing is replaced by SAQs.

We now show how the sample selection probability from the *i*th zone can be computed. Let R substitute HUs be selected for the single HU allocated to each zone. Let N_i = total number of valid HUs in zone *i* which is known after the first step of counting and listing of the segment, and N_i^*= total number of responding and eligible HUs in zone *i* which, however, is unknown. It can be shown that under with replacement selections of alternative HUs in each zone, the sample selection probability of a HU from the *i*th zone population of responding and eligible HUs is given by

$$\frac{1}{N_i} \times \frac{1-(1-N_i^*/N_i)^{r_i+1}}{1-(1-N_i^*/N_i)}, \qquad (1)$$

where r_i is the observed substitute HU number. Above probability must be multiplied by a model-based probability of the event that the unit is responding and eligible, the inverse of which is like the usual nonresponse/ineligible adjustment factor. Here, N_i^*’s are unknown, but using the result in rejective sampling on expected number of selections for obtaining a responding and eligible HU in R+1 trials, the ratio N_i^*/N_i can be estimated reasonably well under the assumption that it is common across a large number of zones. We also note that for unbiased variance estimation of population total parameter estimates, it is necessary to have positive probability of inclusion of any pair of HUs in a zone. This can be achieved if random starts are used for forming zones in each segment; see Section 5 for such a provision if a handheld device is used for listing in ZOUR-based AS.

3. Quasi-ABS: Description

The proposed quasi-ABS design is an application of ZOUR to ABS. We first list the key considerations leading up to the proposed design.

- Field visits are necessary to account for undercoverage, and to check validity of HUs without advance contact information.
- Reduce nonresponse by making in-person contact to prompt screener completion or leave behind a short screener SAQ for selected HUs, but without in-person interviewing.
- Reduce undercoverage by rejective sampling from an inflated segment population count to cover missed HUs, and not by prior counting and listing in advance, and not using half-open interval for adjusting selected HUs.
- Reduce nonrespondent substitution bias by selecting substitute HUs in each zone via rejective sampling, and not by releasing replicate PSUs.

Now, the quasi-ABS can be described in the following three steps.

Step I (Quasi-Listing): First perform enhanced listing of each selected segment based on the DSF list, and then identify HUs corresponding to preselected random numbers in a list corresponding to the nearest rounded upper bound on the observed segment size. The quasi-lister is given alternative lists in advance of selected random numbers in a sequential order based on inflated segment sizes with respect to the initial segment size estimate from the DSF or Census. The list of numbers in the list prepared in advance automatically defines zones of approximate equal size and substitute random numbers within them. This way the quasi-lister is not required to keep track of zone formation within segments.

Step II (Quasi-Interviewing): Make in-person contact if possible with all (R+1) HUs (e.g., 10) in each zone, and hand in or drop off screener SAQ for contact information.

Step III (Quasi-Substitution): All selected potential substitute HUs are given screener SAQs. Among the responding HUs to SAQ, conduct main interview by telephone in the order substitutes were selected depending on whether the previously selected HU responded or not.

It is remarked that the process of quasi-listing can be simplified by using a handheld device with a built-in algorithm for selecting HUs within each zone after segment listing is completed and all addresses entered. In this case, an upper bound on the segment size is not needed, but rejective sampling under ZOUR is still needed to allow for substitute HUs at random. With a handheld device, it is possible to have a random starting point of the first zone in the listed segment, and continue thereafter to create other zones of approximately equal size covering the list in a circular fashion. The provision of a random starting point is useful to ensure that the joint selection probability for any pair of HUs in a segment is positive for unbiased variance estimation. However, to minimize cognitive burden, the quasi-lister is not required to know how the selected HUs are obtained from different zones. Incidentally, in the absence of a handheld device, it may be somewhat confusing for the quasi-lister to have a random starting point for zone creation and numbering of the selected HUs as per the prespecified list starting from the customary north-west corner of the segment. In this case, the commonly made assumption of with replacement PSUs can be used to obtain approximate variance estimates. It is important to keep the two operations of listing and in-person contact effort for screener SAQs separate to avoid confusion in counting. This is facilitated by the fact that the quasi-lister would not know which pre-specified list of randomly selected HUs to use until an upper bound nearest to the actual segment size observed is determined.

4. Comparison of Quasi-ABS with AS and ABS

We first compare quasi-ABS with AS in terms of cost and coverage issues as listed below.

1. AS has initial field visit for counting and listing (or enhanced listing of selected segments based on DSF) followed by field visits to selected segments for face-to-face interview. In quasi-ABS, it is replaced by quasi-listing which consists of enhanced listing of selected segments followed by in-person contact effort to hand in or drop off short screener SAQs.
2. AS may use half-open interval for missed HUs while in quasi-ABS, it is replaced by rejective sampling from zones within a segment after inflating values of initial segment sizes.
3. AS uses release of reserve samples to help meet the desired number of sample completes in case of low response or eligibility rate while in quasi-ABS, it is replaced by rejective sampling based on releasing substitute random numbers in a sequential manner for random substitution of nonrespondents within each zone or neighborhood.
4. AS has in-person interview for screener and main questionnaire while in quasi-ABS it is replaced by in-person contact effort for screener SAQ but telephone for main interview in quasi-ABS.
5. AS has in-person nonresponse follow-up; it is replaced by postcard reminders for screener SAQ and telephone follow-ups for main interview in quasi-ABS.

We next compare quasi-ABS with ABS as listed below

1. ABS has undercoverage of segments due to problems in geocoding noncity style addresses (such as P.O Box, RR Box, and drop points) for assignment to blocks; this problem is overcome by rejective sampling in quasi-ABS.

2. ABS uses enhanced listing for only those segments with deficient DSF list while quasi-listing may be used for all segments in quasi-ABS.

3. ABS may have low response rates for mail/telephone screeners and telephone main interview, but in-person contact effort for screener SAQ in quasi-ABS is expected to increase the screener response rate and enhance respondent cooperation for the main telephone interview.

At the design stage of quasi-ABS, it is important to compare its cost with AS and ABS under certain simplifying assumptions. Let AS, ABS, and quasi-ABS designs be denoted by A, P (for postal address list) and Q respectively. Let p_e denote the probability of eligibility or being screened-in over all segments, and let p_{1A}, p_{2A} denote respectively the probabilities of responding in phase I and phase II for design AS, and similarly define response probabilities for designs ABS and quasi-ABS. Because of in-person contact effort for quasi-ABS, it is expected that

$$p_{1P} \leq p_{1Q} \leq p_{1A};\, p_{2P} \leq p_{2Q} \leq p_{2A}. \qquad (2)$$

The probability $p_{*A}$of an eligible and responding HU in both phases for AS is given by

$$p_{*A} = p_{1A} p_e p_{2A} \, , \qquad (3)$$

and p_{*P}, p_{*Q} are similarly defined. Clearly, in view of (2), we expect to have,

$$p_{*P} \leq p_{*Q} \leq p_{*A} \qquad (4)$$

Let $n_0$be the desired number of completes. Then the expected numbers of lines or HUs released to obtain the number of completes under AS and ABS are respectively n_0/p_{*A} and n_0/p_{*P}. For quasi-ABS, however, the number of lines released is different from the number of lines actually used because of release of substitute HUs which may or may not be used. Let $m_Q$be the number of zones in quasi-ABS and *R+1* be the total number of lines released per zone including substitutes. Then the expected number of completes under quasi-ABS is given by

$$m_Q p_{*Q} + m_Q(1 - p_{*Q})p_{*Q} + \cdots + m_Q(1 - p_{*Q})^R p_{*Q} = m_Q(1 - q_{*Q}^{R+1}) \, , \quad (5)$$

where $q_{*Q} = (1 - p_{*Q})$. It implies that for n_0 completes, the number of zones should be larger than n_0 and is given by

$$m_Q = \frac{n_0}{1 - q_{*Q}^{R+1}} \; . \qquad (6)$$

In view of (6), it follows that the expected number of lines actually used by quasi-ABS is given by

$$m_Q + m_Q(1 - p_{*Q}) + \cdots + m_Q(1 - p_{*Q})^R = \frac{m_Q(1 - q_{*Q}^{R+1})}{(1 - q_{*Q})} = \frac{n_0}{p_{*Q}} \, , \qquad (7)$$

which is analogous to the expected number of lines under AS and ABS. We still need to specify *R*. Suppose it is assumed that the total number of lines released should match the number for ABS. We then have the estimating equation for *R* as

$$m_Q(R + 1) = n_0/p_{*P} \;\; , \qquad (8)$$

From which it follows using (6) that *R* must satisfy the nonlinear equation

$$R = \frac{(1 - q_{*Q}^{R+1})}{p_{*P}} - 1. \qquad (9)$$

The value of *R* can be solved iteratively by using $p_{*P}^{-1} - 1$ as an initial solution corresponding to $R = \infty$. The final solution can be rounded up to make it meaningful in practice.

We can now obtain expressions for approximate total cost for each design under assumptions of average cost per line or HU for phase I listing and screening and phase II interview. Here the cost is averaged over varying number of callbacks or substitute HUs. Suppose for simplicity, under AS, all segments are enhanced listed; under ABS, no segment is enhanced listed, and under quasi-ABS, all segments are quasi-listed. For AS, both first phase screener and second phase main interviews if eligible are conducted during the same visit for consenting HUs. Let $c_{1A}^{(1)}$ be the average cost per HU for nonrespondent HUs to the first phase screener interview and $c_{1A}^{(2)}$ for respondent but ineligible HU. Similarly let $c_{2A}^{(1)}$ be the average cost for eligible but nonrespondent HU to the second phase main interview and $c_{2A}^{(2)}$ for eligible and respondent HU to the main interview. Note that $c_{1A}^{(2)}$ and $c_{2A}^{(1)}$ will be same for AS. The total cost C_A for AS is approximately given by the product of expected number of lines released and the expected cost depending on whether the HU responds or not. That is,

$$C_A = \frac{n_0}{p_{*A}}\left[(1-p_{1A})c_{1A}^{(1)} + p_{1A}(1-p_e)c_{1A}^{(2)} + p_{1A}p_e\left\{(1-p_{2A})c_{2A}^{(1)} + p_{2A}c_{2A}^{(2)}\right\}\right]. \quad (10)$$

Similarly, for ABS with no enhanced listing, the screener interview is conducted by mail in or telephone if matched number available, and the main interview by telephone, we have

$$C_P = \frac{n_0}{p_{*P}}\left[(1-p_{1P})c_{1P}^{(1)} + p_{1P}(1-p_e)c_{1P}^{(2)} + p_{1P}p_e\left\{(1-p_{2P})c_{2P}^{(1)} + p_{2P}c_{2P}^{(2)}\right\}\right], \quad (11)$$

where all the terms are defined in a manner analogous to AS. Note that in ABS. the cost $c_{1P}^{(2)}$ for ineligible responding HU to mail-in screener is less than the cost $c_{2P}^{(1)}$ for eligible but nonresponding HU to the main telephone interview. However, for HUs with telephone screeners, the two would be same.

In the case of quasi-ABS with quasi-listing for all segments, the expression for total cost C_Q is somewhat different because the expected number of lines released n_0/p_{*P} is larger than the expected number of lines actually used n_0/p_{*Q} due to substitute HUs. We have

$$C_Q = \frac{n_0}{p_{*P}}\left[\left(1-p_{1Q}\right)c_{1Q}^{(1)} + p_{1Q}(1-p_e)c_{1Q}^{(2)}\right] + \frac{n_0}{p_{*Q}}\left[p_{1Q}p_e\left\{\left(1-p_{2Q}\right)c_{2Q}^{(1)} + p_{2Q}c_{2Q}^{(2)}\right\}\right], \quad (12)$$

In any particular application of quasi-ABS, it is likely that not all segments would be quasi-listed depending on the coverage of the DSF list as compared to the most recent count from the Census. In such situations, the above cost expression can be easily modified in order to treat the proportion of non-quasi-listed segments as in ABS. The cost formulas presented here are useful in analyzing situations when the proposed quasi-ABS can be considerably less costly than AS but more than ABS. Note that although under (4), the expected number of lines used under ABS, n_0/p_{*P} is largest and under AS, n_0/p_{*A} is smallest, the approximate cost C_P can be much smaller than C_A due to increase in average cost per line or HU at various stages.

5. Field Experiment for Quasi-ABS

5.1 Design

The main purpose of the field experiment was to test the feasibility of quasi-listing in terms of understanding of the field process and evaluation of potential counting errors by checking agreement between quasi-listers as well as with adjudicator's assignment of HUs (deemed to be correct) to selected random numbers. Two quasi-listers were used to cover the same segments in an independent fashion. For the field experiment, we stratified census tracts of Chicago's Cook County by urbanicity, and select using pps 2 rural and 8 urban tracts. Within each selected tract, contiguous blocks were merged to create segments of size at least 50 (based on census counts) from which 10 HUs (one primary and 9 secondary as replacements for rejective sampling) were selected. For simplicity we treated segments as zones so that they do not cut across blocks but in reality they might. The segment size was inflated to account for potential undercoverage in census counts. From each tract, a systematic random sample of 6 segments was selected and within each selected segment, several random numbers selected in order to obtain 10 HUs (one primary and 9 secondary as substitutes) resulting in a total of 60 primary HU selections and 540 substitutes.

It should be noted that success of Q-ABS depends on reducing the cognitive burden on quasi-listers required for correctly assigning selected random numbers to HUs in each zone in a prescribed order. In this regard, it might be better if the tasks of listing HUs in each segment and making in-person contact for SAQs are performed separately. Moreover, use of a handheld computing device is recommended for future testing with built-in programs to automatically select random numbers corresponding to each zone. With such a device, as mentioned earlier in Section 2, there would be no need for the quasi-lister to differentiate between numbers selected from different zones. Moreover, it would be possible to have a random starting point for zone creation in a circular manner within each segment so that any neighboring pair of HUs would have a positive chance of being selected in the sample.

5.2 Preliminary Findings

The field experiment was not completed yet but based on preliminary results, it was apparent that results would not be conclusive due to small number of expected completes. Nevertheless, it was possible to make some important useful observations from the preliminary results. In the initial design, the quasi-listers were asked to perform the two tasks of listing and contacting or dropping off the SAQs to selected HUs simultaneously. However, based on the observed discrepancy among selections of HUs between the two interviewers (one experienced and the other a new recruit) especially in segments with nonstandard addresses of HUs, it became clear that it would be best to keep the two tasks separate. In other words, in a first round, each segment is listed as in enhanced listing and then in the second round HUs are selected for in-person contact for or dropping off SAQs. Another interesting finding was that among the returned SAQs (reminder postcards were not sent yet), most of them were filled in during the presence of the quasi-lister which suggests possible increased cooperation rate if the quasi-lister is able to visit HUs during hours when a potential respondent is likely to be home.

6. Concluding Remarks

Quasi-ABS was proposed as a cost efficient rejection sampling alternative to AS. It is expected to reduce nonresponse without in-person interviewing, reduce undercoverage without advance counting and listing and without HOI, and reduce nonrespondent substitution bias without releasing replicate samples or PSUs. Preliminary findings of the field experiment suggest that the method is feasible and the counting error could be reduced if the two tasks of segment listing and dropping SAQs to selected HUs were performed separately. Moreover, as expected, there seems to be benefit in respondent cooperation if in-person contact is made for filling in SAQs. Finally, we note that other than AS, potential applications of rejective sampling to non-AS surveys might include web applications for sampling subpopulation of eligible (with internet access) and responding HUs where rejective sampling would be useful for meeting target number of completes with internet access and segments could possibly be defined as zip codes.

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