

Your home was specially selected: Using address based sampling as a recruitment technique

Justin T. Bailey¹, Gretchen Grabowski¹, and Michael W. Link¹

¹The Nielsen Company, 501 Brooker Creek Blvd., Oldsmar FL, 34677

Abstract

Recent research has shown the effectiveness of address based sampling (ABS) as a sampling frame that provides wider coverage than random digit dialing (RDD), principally because it includes cell phone-only households that are not part of an RDD frame. However, the ability to recruit cell-phone only homes via phone hinges on households supplying a phone number on returned mail materials. Research has shown that compliance with this question on mailed materials has typically been around 50-55% among responders (Link et al., 2009), so there is still a strong need to improve response rates to ABS pre-recruitment materials.

Nielsen recently attempted to expand on previous ABS techniques by using ABS pre-recruitment materials as the first step in the recruitment process. A one-page informational flyer was included with the pre-recruitment questionnaire that explained how to participate and what the next steps were. Materials were worded in such a way as to generate initial interest in participating. Further, we placed more importance on the acquisition of a phone number than in previous studies, indicating that it would be required to participate.

In another departure from previous ABS methodology, we mailed pre-recruitment materials to both matched and unmatched households to assess pre-recruitment return and subsequent accept rates among the matched group. It was hypothesized that these enhancements would improve response rates at the pre-recruitment phase among both the Matched and Unmatched households, and lead to collection of more phone numbers for unmatched households. Analyses revealed that these changes to the pre-recruitment materials, compared to the Nielsen diary service, significantly improved return rates and phone number inclusion among unmatched households. This, in turn, improved rates among hard-to-reach demographic groups. These findings and possible explanations are discussed.

1. Background

In November 2008, The Nielsen Company introduced address-based sampling (ABS) as a new sampling methodology for its TV Diary service. After two years of initial testing, researchers at Nielsen concluded that the ABS methodology provided an advantage over the previously-used random-digit dialing (RDD) method. Nielsen's research revealed that ABS covered a wider sampling frame than RDD because it sampled addresses instead of phone numbers (Link et al., 2009). Since households with cell phones only cannot be auto dialed in the United States, the quickly growing "cell-phone only" population in the United States was being excluded from Nielsen's TV diary sample frame. Although initial research indicated that there was no sample bias from the exclusion of these households (e.g., Battaglia, 2006), it was also realized that current

RDD methods were becoming outdated. For example, while it was estimated that RDD sampling frames covered only 70% of the total population, ABS, with its sample based solely on addresses provided by the United States Postal Service, covered an estimated 97% of the US population.

Nielsen instituted the ABS method as a result of this significant improvement in sample frame and the relatively low cost of generating an ABS sample compared to hand-dialing known cell phone numbers. Since then, Nielsen has been testing new methods to be more effective in the deployment of ABS techniques. Further, Nielsen is expanding the ABS methodology to other services beyond the TV and Radio Diary initiatives. This paper reviews one of these tests involving the use of ABS to recruit for a one-year TV ratings panel. Specifically, we examined a new approach to sampling using addresses—that of up front recruitment through mail to gauge initial interest, followed by a more in-depth phone recruitment to secure participation in the panel.

1.1 Current ABS Methodology

In order to properly frame the new techniques explored in this test, it is necessary to provide a brief overview of the current ABS methodology employed in Nielsen's TV and Radio Diary services. The goal of ABS for the TV and Radio Diary services is to obtain the phone number and/or email address of *unmatched* households randomly selected from the ABS file. Unmatched households are those in which there is no phone number associated with the address provided in the sample. Such households typically comprise about 40% of the ABS file. The other type of households on the file are *matched*, meaning both an address and phone number are known for a given record. Because a phone number is already provided for matched households, there is no need to obtain this information from the household.

Thus, in order to conduct phone recruitment¹ for TV and Radio Diary households, a 'pre-recruitment' packet is sent to unmatched households. Inclusive in the packet is a cover letter that briefly explains to the household that they have been selected to complete a short survey with three options for returning (via internet, phone, or mail), a small cash incentive, a 14- question survey that asks basic TV viewing and demographic questions of the household, and a postage-paid return envelope. The critical information necessary for the phone recruitment is phone number of the respondent. Without this, there is no way to phone the household to secure their acceptance to participate in the diary-keeping study.

Prior to implementation of the ABS methodology, Nielsen tested the best design and layout of the pre-recruitment questionnaire so that respondent burden would be reduced. Placement and wording of the phone number question was a central focus of the testing. Based on this, Nielsen created an 11" x 14" tri-fold questionnaire with the phone number question on the back panel (See Appendix A). This was done in order to group the phone number request with change of address and email information, which made sense logically, and because the question fit the best with this information as opposed to grouped with the TV and demo question inside the tri-fold. Further, the wording of the phone number and email questions indicated that providing the phone number was not

¹ Prior testing attempted to use the mailing method as the only form of recruitment prior to sending a diary to households. However, the response rate to the diary decreased significantly with this method, leading to the decision to use the pre-recruitment materials as a tool for collecting phone numbers to call and recruit potential diary-keepers.

definitively registering the household for a study, but rather asked them to provide a phone number and email “in case you are selected for future TV Ratings research.”²

All unmatched households are sent the same materials and given a deadline of approximately three weeks to return the questionnaire. Once the deadline for return of the pre-recruitment survey has passed, the phone numbers for the unmatched households are added to file and phoned in combination with the numbers of the already-known matched households.

1.2 Pre-Recruitment Response Rates

To assess the effectiveness of Nielsen’s TV and Radio diary pre-recruitment phase, it is essential to examine both the return rate of the initial survey and the return rate with the phone number provided. Since ABS methodology was implemented in November 2008, the typical response rates for the return of the pre-recruitment survey have wavered between 23-27% of all unmatched households (Bensky, 2009). Further, of those 23-27% who returned the survey, the initial percentage that included a phone number hovered around 50%³. While this rate is low, it is worth noting that 75-80% of those returning a pre-recruitment survey with a phone number ultimately complete and return a diary.

2. Method

For this test, we attempted to test a new approach to our current ABS methodology. Our ultimate goal was to recruit approximately 300 households to participate in a Nielsen TV Ratings panel that would last for one year and would test a new type of ratings monitoring device. To reach our end result of 300 households, we started with a sample of 2100 records, all located in the Dayton, Ohio market, and mailed pre-recruitment materials beginning in August 2009. For the pre-recruitment, we redesigned the materials so that they were an initial “recruitment” into the panel. In contrast to our TV and Radio diary samples, participants in this sample were recruited to participate for a full year. Because of this, and because of the costs of maintaining panel homes for a year, it was important for us to be certain, up front, that the household wanted to participate. For this reason, we rationalized that using the pre-recruitment materials as the first step in recruitment was the best way to ensure compliance.

To this end, we revamped the cover letter used in the TV and Radio diary services so that it was directed toward explaining, at a high-level, what we were asking the household to do. Additionally, we included information about who Nielsen was, why they should participate, and the potential incentive that would be offered to them if they participated. It was hypothesized that these changes would indicate to recipients that return of the questionnaire was an initial sign of their interest in participating. To solidify this crucial point, we also reworded how we asked the phone number and email request question within the pre-recruitment questionnaire itself. Instead of indirectly asking for phone number and email, we specifically said that “in order to participate in our panel”, we would need to have their phone number and email address (See Appendix B). Thus, the

² This is primarily done because not all households are phoned if they return the questionnaire. Because Nielsen mails out more questionnaires than necessary, and because we often select sample based on the “hard-to-reach” demographics info, it is possible that a household would not get phoned for recruitment in the study.

³ The rates of returned with phone number have since increased, which is discussed in more detail later in this paper.

goal was to make it clear to respondents the importance of returning the questionnaire with their phone number and email if they wanted to participate.

A third key change to the design of the pre-recruitment materials was to change the placement of the phone number and email question. While it logically made sense to have the phone number request on the back panel of the tri-fold, along with address verification, initial results from the TV and Radio Diary studies revealed that interested households might be overlooking this important piece of information and returning the questionnaire with a blank phone number field. As a result, we tested potentially making the phone number and email request more salient by moving it to the inside of the tri-fold, where it appeared directly following the demographic questions (See). This change in placement ensured that any respondent who looked at the questions on the inside of the survey would see the phone number and email request.

Finally, all unmatched households were given a non-contingent \$5 incentive with the pre-recruitment mailing, and promised another \$5 if they completed and returned it. TV and Radio Diary services provide only a contingent incentive upon return. Testing of this incentive distribution at Nielsen has revealed that respondents feel it shows a commitment on our part as well as motivating the participants to respond.

2.1 Mailing to Matched Households

As mentioned previously, it is not common practice to mail pre-recruitment materials to matched households. Since phone numbers for these households are already listed on the sample file, there is little reason to contact them prior to the phone recruitment in our TV and Radio Diary measurements. However, for this test, since we were recruiting for a yearlong panel and needed to gain an initial acceptance from the respondents, we felt it would be an ideal time to test the effectiveness of sending the pre-recruitment materials to matched households as well. This would serve to 1) enable us to measure response and initial interest in the study, 2) provide an assessment of the costs and benefits associated with mailing to matched households, and 3) enable the household to update any erroneous information we might have for them.

In contrast to the unmatched households, our matched sample was not sent a non-contingent incentive, but was promised \$5 for completing and returning the questionnaire. All other materials were exactly the same for both the matched and unmatched samples. While it is widely assumed that the cost of mailing to matched households would outweigh the perceived benefits of gaining an early acceptance, we wanted to test the idea to rule this out for future panels.

2.2 Phone Recruitment

As with our TV and Radio services, we compiled all phone numbers that were either known or provided and conducted a phone recruitment among these households. All matched households, regardless of whether or not they mailed back the questionnaire, were recruited by phone. The phone recruitment provided households with details about what participation in the yearlong panel would require, reviewed the incentive they would receive in return, and required a firm commitment to participate. Regardless of any initial interest shown by return of the pre-recruitment questionnaire, households were only included in the panel if, during the phone recruitment, they asserted that they wanted to participate.

3. Results

3.1 Pre-Recruitment Response

We first wanted to examine how well our sample responded to the revised pre-recruitment packet. Specifically, we analyzed overall response of the initial 2100 households in which we mailed the pre-recruitment packet, as well as investigated the difference in response between the matched and unmatched sample. As can be seen in Table 1, our total return rate was 26.4%, slightly higher than the 23-25% observed for our TV and Radio Diary mailouts. Given that these households were being asked to participate in a one-year panel, it was difficult to make a direct comparison to the rates for our diary services, but interesting to note we were on par with this test. Looking more closely at the data, however, one unexpected finding is the difference in return rates between the unmatched (33.0%) and the matched (22.3%) households. This difference of nearly 11 percentage points is likely explained, in part, by the \$5 non-contingent incentive mailed with the pre-recruitment packet, but is still greater than we originally expected.

Table 1: Pre-Recruitment Questionnaire Return Rates

| | Mailed | Returned | Percent |
|-----------|--------|----------|---------|
| Matched | 1296 | 289 | 22.3% |
| Unmatched | 804 | 265 | 33.0% |
| Total | 2100 | 554 | 26.4% |

3.2 Phone Number and Email Response

Next, we sought to examine how often those unmatched households who returned a pre-recruitment questionnaire also completed the phone number and email responses. If the phone number field is left blank, we cannot call to recruit the unmatched households⁴. Because of the changes we made from the diary services pre-recruitment packet—the rewording and new placement of the phone number and email question, the use of the pre-recruitment pack as the first step in recruiting for the panel, and the specific mention of the possible incentive that could be earned—our response to this item, especially the phone number questions, were substantially higher than previously observed (See Table 2).

Table 2: Phone Number and Email Return Rates

| | Total Returned | % with Phone Number | % with Email Address |
|-------------------|----------------|---------------------|----------------------|
| Unmatched Returns | 265 | 94.7% | 73.5% |

These results indicate that all but 14 of the unmatched households who returned a pre-recruitment survey included a phone number. Overall, this meant that 31.2% of the unmatched households originally mailed a pre-recruitment packet showed initial interest in participation by returning the questionnaire.

3.3 Panel Participation

Our final measure was to investigate how many of the initially interested unmatched households eventually agreed to participate in the panel. Despite initially recruiting

⁴ While we ask for email address, we currently do not use this as a method of recruiting. Therefore, the phone number is the critical field in this survey.

households with the ABS pre-recruitment materials, the phone recruitment was the true barometer of success. The tasks involved in the panel were fully explained during the phone call and verbal acceptance from the household was required. Any signs that the household did not understand what was expected when the pre-recruitment materials were sent would be revealed at the time of the call. In line with rates achieved by our TV and Radio diary services, 74.5% of the unmatched HHs and 80.2% of the matched households who returned pre-recruitment surveys ultimately agreed to participate in the one-year panel (See Table 3). Overall, it appears that most of those households who showed initial interest in panel participation by returning their pre-recruitment materials went on to agree to be a member of the panel. Further, 23.5% of the unmatched households in which we initially mailed pre-recruitment materials went on to agree to participate during the phone call.

Table 3: Panel Accept Rates Among Pre-Recruitment Returns⁵

| | Accept % | Refuse % | Other % |
|-----------|----------|----------|---------|
| Matched | 80.2 | 6.4 | 13.4 |
| Unmatched | 74.5 | 4.5 | 20.0 |
| Total | 77.6 | 5.5 | 16.9 |

3.4 Supplemental Data

Since the initial test of the new ABS pre-recruitment technique, Nielsen has had an opportunity to make singular changes to both its TV and Radio Diary services based on these results. While it is not feasible to implement the new methodology as a whole for these services, introducing two of the changes can still be observed for increases in pre-recruitment returns with a phone number.

Beginning in January 2010, the TV Diary service created a cover letter similar to the one created for the panel test (See Appendix C). The revised cover letter used more pictures and contained a red “bubble” with the same text as that found in the pre-recruitment materials for the panel test. The message in the bubble encouraged respondents to “make sure you fill in a phone number and email address...” with the goal of increasing the visibility of the phone number question and thus increasing the number of responses to that crucial item. For January, this was the only change made to the pre-recruitment materials. As can be seen in Table 4, this small change resulted in a significant 15 percentage point increase in responses to the phone number question among returners compared to January 2009.

Table 4: TV Diary Respondents Providing Phone & Email

| | % providing Phone Number | % providing Email Address |
|----------|--------------------------|---------------------------|
| Jan 2009 | 51.2 | 40.9 |
| Jan 2010 | 64.5 | 57.2 |

Additionally, beginning with the Spring 2010 Radio Diary measurement, the phone number and email question was moved from the back panel to the inside of the pre-recruitment questionnaire, like had been done in the panel test. However, based on the results of the panel test, it was hypothesized that moving the phone number question to the inside, along with the demographic questions, would make it more salient and thereby lead to more completed phone numbers. As with the TV Diary, making this single change led to a 15.5 percentage point increase in response rate to the phone number

⁵ Other Phone statuses include No Answer, Not in Service, and Place of Business.

question when compared to Spring 2009. Thus, both changes to the TV and Radio diaries, based on the results of the panel test, significantly increased response to the phone number request.

4. Discussion

Since 2008, Nielsen has used Address Based Sampling to recruit households for its TV and Radio Diary services. The standard methodology employed with this type of sampling is to mail out pre-recruitment packets to unmatched households in an attempt to get the phone number from these respondents. With the phone number, the households can then be called and recruited for the diary service.

In the Fall of 2009, Nielsen tested this methodology for a yearlong panel test instead of a one-week diary. Since a new technology was being introduced to potential respondents and they would be asked to commit for a year, we tested the idea of using the pre-recruitment packet to gauge initial interest in the panel. By focusing the pre-recruitment materials on the one-year panel, changes could be made to the ABS methodology. First, the cover letter that accompanies the pre-recruitment questionnaire was revised such that it provided respondents with 1) a cursory overview of what was to be expected if they participated, 2) the incentive the households could potentially receive if they participated for a full year, and 3) additional stress on the phone number and email item. These three changes provided recipients with an overview of what they would be committing to and how to commit, as well as potentially drawing interest to the value of participating.

Additionally, two key changes were made to the questionnaire itself. Since it was vital that unmatched households, i.e., those in which no phone number was listed with the address on the ABS sample file, provide a phone number in order to continue their participation, the phone number question was reworded from how it had been presented in Nielsen's diary services such that it said, "In order to participate in our panel...". Further, the phone number and email questions were moved to the inside of the questionnaire, following the demographic questions, instead of on the back panel with the address verification.

These changes, in tandem with the revised cover letter, resulted in significantly higher responses to the phone number request on the pre-recruitment materials, when compared to the TV and Radio diaries. While it could be argued that the reference to the substantial incentive that could be received for participation was the main reason respondents complied, it is still telling that nearly all (94.7%) provided a phone number. These findings suggest to us that address-based samples can, in correct situations, be initially recruited via mail with address only. We further admit that this methodology would not work for all studies, such as recruitment for our one-week diary services. Thus, the next step will be to continue identifying how and when to use the pre-recruitment process as a precursor for phone recruitment. Moreover, as already evidenced by improvements to the TV and Radio diary response rates, we will continue to test ways to improve response to the pre-recruitment mailings, with an emphasis on procuring the phone number and email address from potential respondents.

A further departure from Nielsen's traditional ABS methodology was to mail pre-recruitment materials to matched addresses, i.e., those in which a phone number is listed with the address on the initial sample file. While it is not typically seen as cost-effective to mail pre-recruitment questionnaires to matched households, the goal of this particular test was different. While it is normally the case that we have the phone number for

matched households and can simply recruit them by phone, in this test we wanted to send informational materials to the matched households to provide an overview of what was to be expected and what respondents could earn in return.

The results indicate that mailing the pre-recruitment materials to matched households was ineffective in gaining initial acceptance of the panel study. While matched records received the same materials as unmatched (except for a \$5 non-contingent incentive), they mailed back the materials at a significantly lower percentage than the unmatched records. While this difference in incentives likely led to some of the difference in response between matched and unmatched households, it is possible that the matched households, by not returning the questionnaire, were indicating they were *not* interested in the panel and therefore less likely to accept during the phone recruitment than if we had not mailed the materials. While the evidence for this idea is speculative and based on qualitative feedback from our call center recruiters, it is an intriguing possibility that would clearly suggest matched and unmatched households should be treated differently during pre-recruitment, regardless of the purpose of the pre-recruitment.

5. Conclusion

In Nielsen's first attempt to apply the ABS methodology to the recruitment of households for a one-year TV ratings study, there was clear and convincing evidence that it is possible, even advantageous, to apply a dual objective in the pre-recruitment phase of a study using ABS methodology. When recruiting respondents by phone, the main goal remains to use the pre-recruitment mailing as a means to obtain the otherwise-unknown phone number of unmatched households. However, we saw a marked increase in both response to the pre-recruitment questionnaire (indicating initial interest) and eventual agreement to participate in the panel from unmatched households.

Finally, there were notable advances made in the percentage of unmatched respondents who agreed to provide a phone number. By giving thoughtful consideration to the most effective way to ask for the phone number (and increase its visibility), the number of unmatched households were recruited was higher than expected, especially when considering unmatched households are more likely to fall into the hard-to-reach category that so often eludes survey researchers. We will continue to test new techniques for targeting unmatched households and increasing participation rates among them.

References

- Battaglia, Mike. 2006. "Response Rates: How Have They Changed And Where Are They Headed?". COPAFS 2006 FCSM Statistical Policy Seminar, Washington DC, November 28-29.
- Bensky, E. Nicole. 2009. "November 2008 ABS Implementation Final Report". Internal document. The Nielsen Company, Oldsmar, FL.
- Link, Michael, Gail Daily, Charles Shuttles, Christine Bourquin, and Tracie Yancey. 2009. "Addressing the Cell Phone-Only Problem: Cell Phone Sampling Versus Address Based Sampling." Survey Practice (Feb 2009). E-journal article available at: <http://surveypractice.org/2009/02/25/abs-samplin/#more-731>.

Appendix A

Television Diary Pre-Recruitment Mailing: Phone Number Question on Back Panel

Instructions
Please answer the following questions to the best of your ability. Some questions refer to you only, while others refer to the entire household. Please read each question carefully and write your answers to each question in the space provided.
Thank You.

BEGIN:
Please open and fill in your response to each question.

There are 3 easy ways to return this questionnaire:

www.NielsenTVFamily.com
Using your USER ID & PASSWORD located on the back

1-888-637-4708 **Mail**
Calling us toll-free by telephone Using the postage paid return envelope

Thank You for participating in this Nielsen Household Survey!

NOTE:
Please turn to back to verify that your mailing address is correct.

PLEASE BE SURE TO RETURN THIS QUESTIONNAIRE BY AUGUST 25, 2009.

We would like to verify the contact information we have listed for you below. If needed, please make any corrections.

a. Is the information shown above correct?
 Yes
 No (Please write the correct and complete information below)

Name: _____
Street Address: _____
City and State: _____
Zip Code: _____

b. Nielsen performs other TV ratings studies, including by telephone and Internet. In case you are selected for future TV ratings research, please provide the following additional contact information below. Please be assured that this information will be kept strictly confidential and that we will not reveal or sell your information to anyone.

Phone #: () - -
Email Address: _____ @ _____


We've produced the TV ratings for over 50 years!

Television Household Survey

nielsen


Appendix B

Revised Panel Pre-Recruitment Letter with Emphasis on Future Participation



Why should you become a Nielsen Family?

We'd like to give your household the opportunity to participate in an upcoming Nielsen Ratings panel study and tell us what you're watching on TV for up to one year!



Your home was specially selected!

We can't measure everyone, so we use statistical sampling to make sure that everyone has an equal chance of being selected to participate in the survey.

It doesn't matter whether you watch just a little or a lot.

Nielsen works with households like yours every day to gather information about the people watching television across the U.S. We want YOU to be the one to tell us what you're watching on TV.

The Nielsen Company was established in 1950 and is best known as the leader in television and media research.

Nielsen uses viewing information to prepare reports for broadcast and cable TV networks and your local TV stations. Any information you provide to Nielsen will be kept strictly confidential. We will not reveal or sell your information to anyone.

Flip over to begin the process of becoming a Nielsen Family!

Becoming a Nielsen Family is easy!

Just follow the simple steps below and you can be selected to participate in an upcoming panel study to tell us what households like yours are watching for a full year!


1. **Fill out the enclosed questionnaire to give us a little more information about your household.**
2. **Return your completed questionnaire in one of three easy ways:**
 - Log in to www.NielsenTVPanel.nielsen.com. Use the User ID and password located on the back of the questionnaire to answer the questions online.
 - Call us at 1-866-394-2474. Complete the questionnaire over the phone with a Nielsen representative.
 - Use the mail. Return the questionnaire to us in the enclosed postage-paid envelope.
3. **Wait for your Thank You gift!**

Make sure you fill in a phone number and email address on your questionnaire so we can reach you!

We will send you \$5 just for completing this first questionnaire, and contact you soon about how your household can participate in a year-long panel study. By telling us what your household watches on TV, you will receive at least \$325 throughout the year!

Any Questions?
1-866-394-2474 (toll-free)

Copyright © 2010, The Nielsen Company. All rights reserved. Printed in the USA. Nielsen and the Nielsen logo are trademarks or registered trademarks of Nielsen Media Systems, LLC.



Revised Pre-Recruitment Phone Number Question with Emphasis on Need for Contact

14. In order to participate in our panel, Nielsen representatives will need to be able to contact you at various times throughout the year. Please provide a telephone number and e-mail address below. This information will be kept strictly confidential. We will not reveal or sell your information to anyone.

Phone #: () -

Email Address: _____ @ _____

