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THE DROP-OFF/PICK-UP METHOD FOR HOUSEHOLD SURVEY RESEARCH

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ABSTRACT

The hand delivery of self-administered questionnaires has been presented as an alternative for reducing non-coverage error associated with the mail method at lower cost than face-to-face interviews. This research note draws from experiences using the hand delivery technique (combined with hand retrieval) in rural and small community studies to address practical issues associated with improving coverage, and its relationships with sampling, response, and administrative considerations. It is suggested that while this technique provides needed flexibility in relation to household enumeration options, logistical issues limit its applicability where settlement patterns are dispersed and resources to supplement sampling frames are inadequate. Time and cost outlays are required to maximize its potential. When place-related and administrative conditions can be met, the technique offers promise for reducing non-coverage error and possible sample bias without sacrificing response rates. In addition, it provides opportunities to gain experiential insights not possible with other survey methods.

INTRODUCTION

Researchers often employ general public survey methods for community studies and other inquiries that focus on geographically defined populations.

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The ability to utilize questionnaire-derived data on individuals and households for analyzing relationships with community factors is dependent upon acceptably low error in relation to coverage, sampling, measurement, and response (Dillman, 1991, 2000; Groves, 1989). Non-response problems associated with the telephone method have increased the importance of mail, but the latter presents unique challenges in relation to coverage. The hand delivery of self-administered questionnaires has been presented as an alternative for reducing non-coverage error at lower cost than has been the case with face-to-face interviews (Dillman, 1991; Melevin et al., 1999).

This research note draws from experiences using the hand delivery method in rural and small community studies to address practical issues associated with improving coverage, and its relationships with sampling, response, and administrative considerations.[1] Insights are drawn primarily from recent experience with the technique in Pennsylvania, but also from studies conducted in the Great Plains and Intermountain West states (Bourke, 1994; Krannich & Albrecht, 1995; Krannich, Greider, & Little, 1985; Krannich & Little, 1989; Murdock et al., 1999). In all these studies, hand delivery was combined with hand retrieval (drop-off/ pick-up).

This note is organized as follows. First, the challenges associated with telephone and mail methods are discussed in order to frame the role of the drop-off/pick-up technique. Second, household enumeration options and field experiences are reviewed in order to highlight practical considerations involved with improving coverage. Third, potential advantages of the technique in relation to reducing sample bias are discussed in the context of insights gained through field experiences. Next, response rates obtained in the Pennsylvania study are presented using alternative calculations to demonstrate the success of the drop-off/pick-up method for collecting data on the designated sample. Fifth, administrative considerations are discussed and survey error evaluated in relation to costs. The note concludes with a summary of the utility of the drop-off/pick-up method for rural and small community studies.

CHALLENGES ASSOCIATED WITH TELEPHONE AND MAIL METHODS

Telephone interviews can offer advantages in relation to sampling frame availability and quality and efficiency of data collection. The primary challenge associated with this method is declining response rates (Dillman, 2000; Groves & Couper, 1998; Hox & DeLeeuw, 1994). Such declines increase the probability of non-response error (non-random differences between respondents and non-respondents that could be correlated with variables in the survey). Because the response rate reflects the proportion of all eligible households that receive and complete a questionnaire (Groves, 1989), an understanding of declining response

necessitates consideration of both the ability to contact respondents and cooperation on the part of those contacted.

Based on large-scale general public surveys in the U.S. and elsewhere, a trend of decreasing *cooperation* is apparent (Groves & Couper, 1998; Hox & DeLeeuw, 1994).

Explanations offered for this trend include the increasing prevalence of public opinion polls and marketing surveys, decreasing availability of discretionary time, fear of crime, and privacy-related concerns (Goyder, 1987; Groves & Couper, 1998). These considerations interact with the telephone mode to reduce *contactability*. Residents can block calls from unidentified numbers, or screen them using caller identification and answering machines (Dillman, 2000; Groves & Couper, 1998).

The challenges associated with telephone interviews, coupled with a broader societal trend toward the use of self-administration procedures for personal business, have increased the importance of mail questionnaires (both in single and in mixed mode designs; Dillman 1991, 2000). However, obtaining general public sampling frames that provide full coverage and complete mailing addresses can be difficult (Dillman, 1991; Melevin et al., 1999). This increases the potential for non-coverage error (the exclusion of households from the population to be sampled).

Melevin et al. (1999) described a technique in which area probability sampling was utilized to define a geographic population within which all households were visually enumerated and mail questionnaires were hand-delivered. Not only did this approach reduce non-coverage problems, but it also demonstrated utility for maintaining high cooperation rates. While a direct comparison to the mail method was not made in their study, speaking directly to the designated respondent had a significantly greater effect on response rates than did speaking to someone else in the household or leaving the questionnaire on the doorknob. Using a social exchange framework, the authors suggested that personal contact influenced response by conveying to the respondent the importance and legitimacy of the research. The use of incentives and follow-up telephone calls also increased cooperation rates in their study.

COVERAGE

As indicated by Melevin et al. (1999), the ability to visually enumerate all households within a defined geographical area eliminates the need to obtain a complete sampling frame. Visual enumeration and mapping of all household units within entire communities has been successfully undertaken in previous studies for places as large as 2,000 to 3,000 residents (Krannich & Little, 1989). In the Pennsylvania study, enumeration was not undertaken for two reasons. First, residents of four communities located in two different counties were

surveyed. Second, each community included a central place and an aggregate of several contiguous surrounding minor civil divisions (MCDs).[2] Because of the geographic size of these communities, dispersed settlement patterns, and the presence of numerous seasonal homes, it would have been difficult to identify all households in these areas.

Where complete visual enumeration is not practical, sampling frames can be used in combination with limited on-site mapping and/or high quality parcel maps. The procedures utilized in several of the Great Plains and Intermountain West studies illustrate this point. Researchers secured access to water and electric utility records to serve as their base sampling frames and, when necessary, corrected them for proper inclusion of multiple-dwelling and mobile home units using on-site mapping techniques (Bourke, 1994; Krannich et al., 1985; Krannich & Little, 1989).

Rural addressing systems present unique challenges to the use of sampling frames for drop-off/pick-up. In Pennsylvania, local occupational tax lists were utilized in each of the four sites. While the occupational tax may be unique to Pennsylvania,[3] experiences with these lists illustrate some of the challenges associated with using any sampling frame. In this study, some addresses did not reveal the physical location of households. Examples included post office box numbers and rural route numbers without associated box numbers (the carriers' routes themselves were identified by local postmasters).[4] Incomplete cases were further investigated using property tax records located at the county assessors' offices. If a complete address could not be obtained for a household, and the property could not be located on a parcel map, then a replacement household was issued.

Additional challenges associated with coverage were encountered in the field. The county parcel maps used to compensate for some incomplete addresses contained many inaccuracies because they had not been recently updated. Within the boroughs, security entrances associated with some multiple-unit dwellings precluded access unless the respondent could be reached by intercom. This coverage problem has been previously identified in the context of face-to-face interviews (Groves & Couper, 1998).

Thus, while the drop-off/pick-up method offers flexibility in household enumeration options needed to reduce non-coverage error, logistical challenges remain. The technique is best suited for situations in which all households can be visually enumerated or in which resources are available to supplement sampling frames. The use of parcel maps can help, but the quality of such maps varies considerably across states and counties with different systems of legal organization. In addition, due to the importance of assistance from local residents (officials who provide sampling frames, postmasters, and neighbors), the technique is best suited to places where residents are receptive to visitors in general and researchers in particular.

WITHIN-HOUSEHOLD SAMPLING

While the primary challenge associated with mail questionnaires is non-coverage error, the potential for within-household sample bias should not be overlooked. With the mail method, the only way to convey to households the significance of who should complete the questionnaire is through the cover letter. Drop-off/pick-up provides the opportunity to convey this message personally. This can be further emphasized through callbacks aimed at directly speaking with the designated respondent. Because Melevin et al. (1999) did not draw a general public sample, they did not address the issue of sample bias. However, the fact that direct contact with the designated respondent increased response rates underscores the potential significance of hand delivery in this regard. Related to this issue is the ability to tailor introductions based on perceptions of respondents' situations and time constraints – an advantage not offered by either telephone or mail methods.

The potential to reduce sample bias using the drop-off/pick-up method is directly related to the quality of the sampling frame (unless visual enumeration is used) and of address identification in the field. If more time is required to contact the designated *households*, less time is available for the multiple callbacks needed to reach designated *respondents*. Differences in the decision rules applied in the Pennsylvania and the Great Plains and Intermountain West studies illustrate these points.

The first decision rule related to the replacement of households. In the Pennsylvania study, households were replaced in the field (using addresses that had been randomly selected in advance) if residents were not found at home after three different attempts (morning, afternoon, and evening). In some of the Great Plains and Intermountain West studies, researchers applied the rule that households must be approached at least four times across two days before replacement. The Pennsylvania team found that in addition to the challenges associated with outdated parcel maps, mailboxes were often poorly marked or difficult to associate with a particular residence. Although neighbors were generally helpful in identifying the designated dwelling, this process required more time, and hence more cost.

The second rule related to speaking with the designated respondent. In each of the studies using the drop-off/pick-up technique, the fieldworker requested that the adult (18 or over) who most recently had a birthday be designated to complete the questionnaire and asked to speak with that person.[5] This point was also emphasized in the cover letter. If the designated respondent was not home, fieldworkers in some of the Great Plains and Intermountain West studies made callbacks in an attempt to speak directly with that person. In the Pennsylvania study, they left the questionnaire with another adult member of the household for delivery to the designated respondent. This decision was based both on the logistical challenges described above and on the fact that

attempts to make callbacks to the designated respondents were not well received during the pre-test. Residents were irritated by this suggestion and indicated that they preferred to deliver the questionnaire personally.

The results of one-sample chi-square tests on gender and age in the Pennsylvania study suggest that if the drop-off/pick-up method is to reduce sample bias, multiple callbacks will be necessary. Based on 1990 census data and 1998 survey data, the sampled populations over-represented females and residents over age 64 in three out of the four sites.[6] These results could partially reflect the higher probability of contacting these residents, since there is evidence that members of households with young children and elderly residents are the most likely to be home at any given time (Groves & Couper, 1998).

When evaluated in relation to the sociodemographic correlates of cooperation, contactability appears to be more important for explaining the over-representation of older residents than of women. Though the evidence is somewhat ambiguous, seniors tend to be less cooperative than non-seniors when personally contacted (Groves & Couper, 1998; Thornberry & Massey 1988), and women tend to be more cooperative than men (Goyder, 1987; Groves & Couper, 1998). Social isolation theory has been used to explain the lower participation of seniors, and social desirability to explain the higher participation of women.

While the drop-off/pick-up method is not a panacea for reducing sample bias, its potential warrants further exploration. Due to the time investment required, the technique clearly cannot be chosen over the mail method on the basis of this consideration alone.

RESPONSE

While there is no clear evidence that response rates to mail questionnaires are falling, increasing the options available to researchers to maintain high response rates over time is imperative for survey research. The findings of Melevin et al. (1999) suggest that personal contact and the use of follow-ups influence *cooperation*. While the research efforts described in this note were not designed to test these effects,[7] practical experiences with various retrieval options and examination of the components of response provide a broader perspective from which to address such issues.

Respondents in the Pennsylvania study were encouraged to complete the questionnaire within two days and to hang it on their doorknob inside a specially designed plastic bag. They were also provided a mail-back option (a business reply envelope was included in the questionnaire packet). If a questionnaire was not displayed on the doorknob by the last visit, the fieldworker knocked on the door to request it. If the respondent had not completed it, he or she was urged to mail it back as soon as possible. If no one was home, a reminder note

was left at the door. Approximately ten days after returning from each community, reminder letters were sent to those addresses for which questionnaires had not been returned. It should be noted that the use of visual enumeration techniques precludes a follow-up mailing unless steps are taken to record addresses in the field.

In the Great Plains and Intermountain West studies, researchers used slightly different procedures. First, they requested, and successfully obtained, most completed questionnaires within one day of drop-off. There it was felt that the shorter the deadline, the more likely completion was to occur. Second, as a cost-saving measure and to encourage immediate completion, they utilized plain envelopes, giving out business reply envelopes only upon request or at the end of the week if residents still had not completed their questionnaires. Third, they did not mail reminder notices (though reminder notes were left on doors when in-person callbacks were unsuccessful).

Response to the Pennsylvania effort was favorable, though some variation was found across sites in relation to contact rates and refusals (Table 1). The relatively high number of refusals in the Bradford area was partially attributable to the fact that it was the first community of the four to be surveyed. As fieldworkers became more experienced with the method, their ability to secure the cooperation of residents increased. The higher number of eligible non-contacted households in this community is explained by the presence of multiple-unit dwellings with security entrances. Rural addressing problems were most evident in the Port Allegany area, as reflected in the high number of non-contacts associated with sampling frame inaccuracies.

Response rates were calculated several ways in order to demonstrate different measures of the success of the drop-off/pick-up method for collecting data on the designated sample. These are summarized in Table 1. The *contact rate* assesses how fully the sampled households were alerted to the survey effort (Gripp, Luloff, & Yonkers, 1994; Groves, 1989). It is measured as the ratio of total contacted to total eligible households. Total contacted households include those that accepted the questionnaire and those that refused at the door. Total eligible households include those that were contacted and those that were known eligible but not contacted. The contact rate ranged from 87.2 percent in Bradford to 90.7 percent in Port Allegany. For the entire sample, the contact rate was 89.0 percent.

The *cooperation rate* assesses how well the research team persuaded those who were contacted to complete the questionnaire (Gripp et al., 1994; Groves, 1989). Defined as the proportion of total completed questionnaires to total contacted households, the cooperation rate ranged from 66.5 percent in Bradford to 76.2 percent in Blossburg. The overall cooperation rate was 72.0 percent.

The most widely accepted response rate takes into account not only how many households were contacted, but also eligible non-contacts (Groves, 1989). As the proportion of all eligible households that provided a completed

Table 1. Drop-Off/Pick-Up Response Summary

	McKean County		*Tioga County*		
	Bradford	**Port Allegany**	**Wellsboro**	**Blossburg**	**TOTAL**
Total questionnaires delivered	**400**	**400**	**400**	**400**	**1600**
Non-contacted households[1]	**90**	**87**	**75**	**65**	**317**
Eligible[2]	67	44	58	47	216
Ineligible[3]	23	43	17	18	101
Refusals	**65**	**35**	**53**	**38**	**191**
Refused at door[1]	57	28	44	28	157
Returned blank survey	8	7	9	10	34
Total eligible households[4]	**524**	**472**	**502**	**475**	**1973**
Total households contacted[5]	**457**	**428**	**444**	**428**	**1757**
Total questionnaires completed	**304**	**309**	**326**	**326**	**1265**
Picked-up	275	248	257	287	1067
Mailed-in	29	61	69	39	198
Contact rate					
Total contacted/Total eligible	**87.2%**	**90.7%**	**88.4%**	**90.1%**	**89.0%**
Cooperation rate					
Total completed/Total contacted	**66.5%**	**72.2%**	**73.4%**	**76.2%**	**72.0%**
Response rate					
Total completed/Total eligible	**58.0%**	**65.5%**	**64.9%**	**68.6%**	**64.1%**
Completion rate					
Total completed/Total delivered	**76.0%**	**77.3%**	**81.5%**	**81.5%**	**79.1%**

[1] Non-contacted households and refusals at the door were replaced in the field until 400 questionnaires were delivered in each community (see text).

[2] Eligible non-contacts include households at which occupants were not found at home after three attempts and those which were inaccessible due to security entrances.

[3] Ineligible non-contacts represent inaccuracies of the sampling frames, including vacant dwellings, addresses for which no household could be located in the field, and non-residential units.

[4] Total eligible households is the sum of total questionnaires delivered, refusals at the door, and eligible non-contacts.

[5] Total households contacted is the sum of total questionnaires delivered and refusals at the door.

questionnaire, it is the most conservative measure of those presented. *Response rates* ranged from 58.0 percent in Bradford to 68.6 percent in Blossburg, with an overall rate of 64.1 percent.

A final measure of interest is the *completion rate*, defined simply as the proportion of respondents who actually completed the questionnaire after agreeing to do so (Gripp et al., 1994). Completion rates ranged from 76.0 percent in Bradford to 81.5 percent in Wellsboro and Blossburg. For the entire sample, the completion rate was 79.1 percent.

These responses were similar to those obtained in some previous studies that have utilized the drop-off/pick-up method, and lower than those obtained in others. Krannich and Albrecht (1995) reported similar *completion rates* of 82 percent for communities in Southern Nevada and 87 percent for those in Nebraska. In another study of four communities in Utah and Wyoming, completion rates ranged from 73 to 85 percent (Krannich et al., 1995). Murdock et al. (1999) reported a mean completion rate of 76 percent across 15 communities in located in Colorado, Utah, Nebraska, Oklahoma, and Texas.

Bourke (1994) obtained very high *cooperation rates* of 94, 89, and 89 percent for each of three communities in rural Utah. In that study, the combination of high-quality sampling frames, short time period offered for completion, the saliency of the hazardous waste topic, and fact that the study communities were isolated and not often the subject of research attention likely contributed to high cooperation. In addition, that study utilized an all-female fieldworker team. Although not empirically tested, some fieldworkers have perceived residents to be more receptive to females than to males.

Compared to the best *response rates* obtained from general public mail questionnaires when follow-up procedures are utilized (70%; Dillman, 2000), those obtained in the Pennsylvania study appear lower. Three points of caution are offered for interpreting this finding. First, variability across studies in relation to how response rates are calculated and reported calls into question the comparability of the mail and drop-off/pick-up response rates as defined in this note. Second, wide variation in response to mail questionnaires exists. Based on the predictive equation derived by Heberlein and Baumgartner (1978), the estimated response rate that would have been obtained in this study had mail questionnaires been used was 4 percent lower than the overall response obtained using drop-off/pick-up.[8] Third, response rates would likely have been higher in this study if more callbacks had been made and replacement questionnaires had been included with the reminder notices. The most important point is that response rates will not be sacrificed (and may even be improved) by using the drop-off/pick-up method to reduce coverage problems or for other objectives.

ADMINISTRATIVE CONSIDERATIONS

The advantages of the drop-off/pick-up method must be evaluated in relation to its costs. Considerations related to labor requirements and speed of data collection are presented, followed by calculations of the cost per questionnaire in this study. These costs are intended only to frame the discussion of tradeoffs involved in reducing error, and not to suggest that similar costs might be incurred in other research settings. Per-unit costs can vary considerably according to the type of sample and its geographical distribution, the total sample size, and differences among research teams in relation to access to needed services and supplies (Dillman, 1978).

Labor needs related to fieldwork preparation vary depending upon whether visual enumeration procedures or sampling frames are utilized. In addition, time must be allotted to prepare questionnaire packets, develop a file card system to track the status of each questionnaire, plan routes for field teams (two workers per team), and other logistics. The latter include notifying local police of the survey effort, sending press releases,[9] and making travel arrangements. In this study, sampling and fieldwork preparation required the equivalent of approximately four weeks of full-time work by three graduate students.

Questionnaire delivery and pick-up required another four weeks (one week–Monday through Friday–in each community) and an additional three fieldworkers. This was equivalent to 30 person-days per 400 questionnaires delivered. This ratio (.075) was within the range required for the Great Plains and Intermountain West studies, which averaged 10 to 15 person-days per 150 to 175 delivered (.068 to .107 person-days per questionnaire).

The ability to shorten the total data collection period is an important advantage of drop-off/pick-up over the mail method. It not only provides administrative benefits, but also decreases the potential for history threats to validity, should an influential event occur between the time of initial questionnaire delivery and completion of data collection efforts (Campbell & Stanley, 1963). Of all completed questionnaires, 84 percent were collected in the community during the week of the survey effort. The remaining 16 percent arrived in the mail—nearly all within two to three weeks of returning from the community.

The cost per questionnaire was calculated based upon wages, travel costs, printing, postage, and supplies. Calculations did not include time spent developing and pre-testing the survey instrument on the front-end, nor for data coding, entry, and analysis on the other. Costs were estimated both including and excluding graduate student stipends. Travel costs for the four weeks of questionnaire delivery and pick-up comprised the largest expense (40% of the total budget if graduate student stipends were included in the total and 51 percent if they were not). This included food, lodging, and use of university fleet vehicles. The cost per completed survey including stipends was $21, and excluding stipends was $16.

Costs that would have been incurred using mail questionnaires were estimated for comparative purposes. Calculations were based on the 60 percent estimated response rate derived from the predictive equation of Heberlein and Baumgartner (1978) and the use of follow-up procedures recommended by Dillman (1978), as described earlier. Travel costs and wages for extra fieldworkers were eliminated. The estimated per-unit cost was $8 if graduate stipends were included, and $6 if they were not.

These figures, while only estimates, suggest that the use of drop-off/pick-up to reduce survey error will require concerted efforts to keep down costs. While more efficient field efforts could reduce costs by increasing the number of completed questionnaires picked up while in the community, attempts to

reduce travel costs will have even greater impacts. In some cases it might be possible to hire local labor, such as students from area colleges. However, this would still require careful supervision and could introduce bias if workers were drawn from the study community. Although travel costs might also be reduced by utilizing hand delivery in combination with incentives and telephone or mail follow-ups to encourage mail-back, as reported in Melevin et al. (1999), the effect of this action on response rates remains an important unanswered question.

SUMMARY AND CONCLUSIONS

The drop-off/pick-up method has been presented as an alternative to mail questionnaires when high quality sampling frames cannot be obtained. While field experiences support the contention that this method provides needed flexibility in household enumeration options, it is not suited for all places. The technique appears most appropriate for small and densely-settled places, those where addressing systems (reflected both on sampling frames and in the field) are clear, where resources are available to supplement sampling frames, and where residents are conducive to visitors. In addition, the drop-off/pick-up method requires a significant team effort to cover the area thoroughly and to make multiple callbacks. When these conditions can be satisfied, the technique offers promise for reducing non-coverage error and possible sample bias while maintaining high response rates.

This note has focused on survey error and costs, but there is another important aspect of drop-off/pick-up to consider. From a research design perspective, this technique offers advantages associated with working directly in the local areas where study subjects reside. Exposure to local conditions, residents, and landscapes provides researchers with additional insights from which to interpret results. Neither telephone interviews nor mail questionnaires provide this opportunity, unless they are conducted as part of a multi-method study design requiring on-site research (see Tashakkori & Teddlie, 1998). The ability to build opportunities to gain insights about community life into the survey effort itself might therefore weigh as significantly as considerations of survey error and costs.

NOTES

1. Measurement error is not addressed in this note because the hand delivery technique utilizes the same survey instrument as the mail method.

2. Previous work with similar aggregations revealed that the center-hinterland units were meaningful from the perspective of respondents (Claude, Bridger, & Luloff, 2000; Theodori & Luloff, 2000).

3. Occupational tax lists were used because officials in both counties offered them. In other states, other tax lists or various utility lists might be used. The occupational tax lists were not

ideal because they consisted of individual units (all working-age individuals, regardless of employment status). Thus, to get to a household sampling frame, these individuals had to be grouped. Although household-based list frames should be pursued whenever possible, the importance of cooperating with local officials cannot be over-emphasized.

4. Most postmasters were willing to provide information on carriers' routes, as long as they were not asked to identify the location of individual residences. However, one was very uncooperative. This decreased the efficiency of the fieldwork, because the team was forced to rely on the help of local residents.

5. This selection procedure was used to provide an approximately randomized selection of an adult household member, without requiring the use of more formal but also more time consuming and intrusive randomization procedures that necessitate enumeration of all household members prior to selection. In the absence of evidence that there are systematic relationships among household members' birth dates within calendar years, this is a reasonable and efficient mechanism for selecting non-biased samples of household members. Of course, more formal randomization procedures could also readily be applied within the context of the drop-off/pick-up approach.

6. The expected and observed proportions of women were 53 percent and 60 percent in Bradford ($\chi^2 = 5.5$, $p < .05$), 51 percent and 56 percent in Port Allegany (not significant at $p < .05$), 53 percent and 63 percent in Wellsboro ($\chi^2 = 13.5$, $p < .001$), and 51 percent and 64 percent in Blossburg ($\chi^2 = 21.0$, $p < .001$). In relation to residents over age 64, the expected and observed proportions were 24 percent and 30 percent in Bradford ($\chi^2 = 7.3$, $p < .01$), 19 percent and 25 percent in Port Allegany ($\chi^2 = 6.8$, $p < .01$), 26 percent and 24 percent in Wellsboro (not significant at $p < .05$), and 23 percent and 30 percent in Blossburg ($\chi^2 = 8.9$, $p < .01$).

7. In future studies, researchers might consider developing a tracking system from which to evaluate the effects of various forms of contact on cooperation rates.

8. Based upon a meta-analysis of published studies, Heberlein and Baumgartner (1978) derived a ten-variable model for predicting final response rates. Variables entered into this equation for comparative purposes included the general public subject population (negative effect), moderate saliency of the local quality-of-life topic (positive effect), length of questionnaire (12 pages; negative effect), and use of follow-up contacts (positive effect). It was assumed that the follow-up procedures recommended by Dillman (1978) would have been used. These include one postcard thank-you/reminder to all sampled households and two follow-up letters to non-respondents with replacement questionnaires enclosed. Based on these considerations, the final estimated response rate was 60 percent.

9. In some cases, direct notification of local leaders is also advisable. For example, in previous studies conducted in areas of heavy Morman influence, fieldworkers believed that advance notification of the Bishops enhanced the perceived legitimacy of the survey effort among residents.

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