PERSONAL DELIVERY OF MAIL QUESTIONNAIRES FOR HOUSEHOLD SURVEYS: A TEST OF FOUR RETRIEVAL METHODS

ABSTRACT

This paper reports the results of an experiment aimed at overcoming noncoverage error, the biggest limitation of mail surveys of the general public. The effectiveness of four different procedures and three methods of delivery were tested for retrieving 20 page mail questionnaires delivered by face-to-face interviewers to a statewide area probability sample of households in which adult males were selected to respond. The procedures, randomly assigned, incorporated 1) offering an $8.00 post-incentive and providing an immediate interviewer telephone follow-up (E1), 2) only offering the post-incentive (E2), 3) only providing the immediate telephone follow-up (E3), and 4) neither offering the post-incentive or providing the follow-up (E4). Depending upon the contact made, the questionnaires were delivered 1) directly to the respondent (D1), 2) to someone else in the household (D2), or 3) left on the door knob (D3). Results indicate a significant difference in the rate of response obtained from those who were provided the post-incentive or immediate follow-up or both versus those who were provided no special treatment (E1 = 50.0%, E2 = 50.0%, E3 = 46.9% versus E4 =35.1%). The response rates also differed on the basis of delivery method (D1 = 65.6%, D2 =54.0%, and D3 = 17.4%). When controlling for delivery method, one also finds a difference due to the four experimental treatments among those respondents who had questionnaires personally delivered to them (E1 = 77.4%, E2 = 70.9%, E3 = 62.9%, and E4 = 52.6%). The overall response rates attained are too low to justify wide spread use of the exact methods implemented here, but with slight improvements, for which research directions are identified, may be improved to acceptable levels.

PERSONAL DELIVERY OF MAIL QUESTIONNAIRES FOR HOUSEHOLD SURVEYS: A TEST OF FOUR RETRIEVAL METHODS[1]

by

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Although the mail survey is probably the most used sample survey method in the United States (see, U.S. Office of Management and Budget, 1984; Dillman, 1991), it has generally been considered unacceptable for use in surveys of the general public. While response rates to general public mail surveys are now comparable and may sometimes exceed those obtained from certain telephone surveys (see, for example, Dillman and Tarnai, 1991 and Dillman, forthcoming), noncoverage error has remained an insurmountable problem. One primary reason is that there are no adequate lists available from which to draw household samples. Telephone directories, for example, are less than adequate because of the increasing proportion of unlisted numbers (e.g., over 30% nationwide and about 50% in California) and like other lists, quickly become dated (Survey Sampling, 1990).

The development of a method for successfully delivering questionnaires to households selected using area probability sampling methods and successfully retrieving them by mail would be of much benefit to survey researchers (cf., Dillman, 1991: 245-246). At this time, when face-to-face interviews are often prohibitively costly and random digit telephone surveys incur higher refusal rates, a methodology such as this would, because of the avoidance of repeated call-backs and the fact that interviewers could visit all households in a given geographic area during one visit, make available an alternative means of collecting data that would be less costly than the traditional face-to-face interviews. In addition, such a method might be used as a component of mixed mode survey systems, a trend that is now developing as a means of improving data quality (cf., Dillman and Tarnai, 1988).

The purpose of this study is to report the results of a test of four different procedures used to encourage the completion and return of mail questionnaires delivered by face-to-face interviewers. The effects of post-completion financial incentives and personal follow-up contacts as response inducing techniques are examined. In addition to reporting the completion rates obtained from using these procedures, differences in response rates associated with the degree of personal contact between respondents and face-to-face interviewers who delivered the questionnaires are also reported.

FRAMEWORK FOR EXPERIMENTAL DESIGN: THEORETICAL AND PRACTICAL ISSUES

The experimental design used for this study is based upon both theoretical expectations and practical considerations. From a theoretical standpoint, the major issue was one of how to most effectively stimulate return of a questionnaire delivered to a household. From a practical standpoint, the issue was one of how to retrieve self-administered questionnaires at a much lower cost than would be the case for face-to-face interviews.

A review of the mail survey literature suggested at least three important theoretical

considerations for use in designing the study: 1) the implementation of follow-up efforts; 2) the use of financial incentives, and 3) a social exchange framework for guiding use of both the follow-ups and financial incentives. First, past research has consistently shown that extent of follow-up, or number of contacts, has a powerful positive effect on response rates (e.g., Scott, 1961; Linsky, 1975; Dillman, 1978; Heberlein & Baumgartner, 1978).

Second, financial incentives are also a strong inducement to response (e.g., Kanuk & Berenson, 1975; Linsky, 1975; Heberlein & Baumgartner, 1978; Dillman, 1991; James and Bolstein, 1990 and 1992). Further, Armstrong (1975) has reported for low levels of financial incentives that prepayments are more effective than postpayments. A recent study by Johnson and McLaughlin (1990) using a long questionnaire (32 pages) and higher levels of incentives, showed that a prepayment $5.00 check increased response rate by 10 percentage points (82.6% versus 71.3% for no incentive), and that a postpayment $10.00 check resulted in response only marginally higher than that obtained without the use of any incentive (72.3% versus 71.3%). However, they also showed that significantly lower item nonresponse (5.3% versus 9%) was obtained with the use of the postpayment incentive. Thus, there appears to be some trade-off between pre and postpayment influence on overall response rate versus completeness of the data that are obtained.

Third, social exchange has been found to be a useful framework for organizing specific actions aimed at improving response rates (Dillman, 1978). This theory assumes that the act of responding to a questionnaire incurs certain costs for respondents (i.e., the time and effort required to read survey materials and answer some questions) and that response can be encouraged by rewards which offset those costs (e.g., thanking the respondents and complimenting them for contributing to the well being of society). Additionally, this theory assumes that the respondent must be able to trust that the rewards offered will be provided (cf., Dillman, 1978: 12-18).

However, one of the limitations of utilizing this framework to obtain mail survey response is that there is usually no personal contact between the sender of questionnaires and the recipient, thus, making it difficult to invoke an effective exchange relationship. Dillman, et al (1995) reported an effort to improve response rate in a personal delivery situation by combining social exchange and foot-in-the-door principles. This study involved asking visitors to a national park to accept a survey and complete and return it after visiting the park. The interspersing of requests and thank-yous, combined with the promise to send a special thank-you for return of the questionnaire, resulted in a doubling of response rates compared to simply handing people the questionnaire when the park fee was paid and asking them to complete it. Response rates averaged 37.9% in 11 national parks for the latter procedure, versus 75.4% for the procedure which combined social exchange and foot-in-the-door principles. On the basis of this experiment, we reasoned that a personal contact based on exchange principles would be more effective than no personal contact or simply handing the questionnaire to a prospective respondent with little or no explanation.

Among the practical considerations guiding the experimental design of this study, the most

important one was cost. Indeed, the main reason for attempting to retrieve a self-administered questionnaire rather than to utilize a face-to-face interview was to lower costs. One way of lowering costs is to reduce significantly the number of attempts that an interviewer has to make in order to contact someone at their household. Ways of accomplishing this could include leaving the questionnaire on the door when no one is at home or giving the question-naire to another member of the household and asking them to pass it on to the respondent.

The second practical consideration guiding development of the experimental design was the extreme difficulty of utilizing a pre versus postpayment incentive. Because respondent names were unknown, checks could not be written to them ahead of time. Cash payments were deemed unacceptable because of the difficulty of accounting for public funds that would have to be incorporated into the survey process. Further, some funds would have likely had to have been left in the care of nonrespondents in some households and in other households, in the care of no one.

However, it was reasoned that a postpayment incentive might be as effective as a prepayment if offered in a different context. Past research using "laboratory simulations" of negotiations has shown bargaining to be a dynamic process that develops through three distinct stages, the initiation stage or the point at which the parties decide to negotiate, the exploration stage or period in which bargainers establish trust through their mutual exploration and identification of the items that can be negotiated, and the resolution stage wherein the parties actually negotiate the items to be exchanged (see Druckman and Bonoma, 1976; Bartos, et al, 1983).

If response to surveys occurs as a result of an exchange between researcher and respondent, one can assume that the decision to conduct this exchange may result from an act of negotiation guided by the aforementioned process with the monetary incentive being one of the items offered for exchange. The amount of the incentive is not negotiable in either the pre-payment or postpayment situation because it is predetermined by the researcher before contact. However, in the prepayment situation, trust is immediately established as are the terms of the exchange because the respondent has the payment in hand and is allowed to choose whether he/she wants to participate as well as choose the degree to which he/she will participate in completing the questionnaire. In the postpayment situation, this is not the case. Trust that the researcher will complete the exchange has yet to have been established and the terms governing the rules of the exchange are usually not clearly defined (e.g., the respondent is left to interpret whether a partial completion of a questionnaire will be sufficient to "earn" the payment being offered).

To increase the effectiveness of the postpayment, therefore, it was reasoned that extra efforts would need to be made to compensate for the differences between the two types of incentive offers. First, respondents were offered a larger than token amount in the postpayment so as to lessen any concerns they might have about the terms of the exchange. Second, information about the incentive was printed in bold print in both the cover letters and an insert was used to explain the offer so as to highlight the terms of the exchange. Last, by having

interviewers deliver questionnaires directly to respondents, it was reasoned that they would be able to communicate the importance and legitimacy of the study to them, explain the incentive, and therein establish trust about the reliability of the offer.

The experimental design involved the varied use of an immediate follow-up and a postpayment financial incentive. Treatment one utilized both, treatment two and three utilized them separately, and treatment four utilized neither. A variable within all treatments was whether contact was successfully made with the respondent, another member of the household, or no one. This variable treatment was implemented through a protocol that limited interviewers to three visits to a potential respondent's home and specified that the questionnaire be left during the first visit in which contact was made with a "responsible" member of the household and the presence of an eligible respondent was determined. If a contact could not be made with the respondent or another member of the household during the three visits, then during the third visit it was left on the door of the household. This design allows us to determine the combined and separate effects of follow-ups and postpayment financial incentives. It also allowed us to analyze the relationship between delivery modes (i.e., directly to the respondent vs. other members of a household vs. being left at the door of the household). It was hypothesized that the highest response would be obtained through the combined use of follow-ups, incentives, and personal delivery and the lowest response in the absence of all three.

THE STUDY

The experiment to be reported was part of a study conducted to assess the employment training needs of "economically disadvantaged and working poor males" between the ages of 20 and 50 who lived in the State of Washington. This study had been commissioned by the 51st Legislature and governor of the State of Washington as part of an overall effort to determine the training needs of the state's work force, businesses, and economy.

Sample. In order to ensure that the sample represented the population of "economically disadvantaged and working poor males," the study used a special sampling design created by S. Heeringa (1988) to study a similar population of females for the "Washington Family Independence Study." Using area probability sampling methods, Heeringa's sampling design identified 100 residential areas throughout the state where the likelihood of finding household members who were at risk of going onto public assistance was high. Once those residential areas were identified, enumerators were sent to each area to locate and list all of the households in these area segments. Once they were identified, a master list was compiled identifying the location of each household.

The sample for this study consisted of 1,500 households that were randomly and systematically selected from these 100 area segments. The households identified were equally stratified by area segment so that 15 households were selected from each. It should be noted that just over half of the identified households (774 or 51.6%) were found to be ineligible for the

purpose of the study because they did not have males between the ages of 20 and 50 living in them, or the selected household represented a vacant or nonexistent household.

Questionnaire. The questionnaire was judged to be a demanding one. While it was constructed utilizing the Total Design Method (TDM) outlined by Dillman (1978) and printed in an attractive booklet format with a red and black graphic cover designed to reflect the major issue of the study, it was both long and complex.

It was 20 pages in length and contained 81 questions on employment, education, and training issues that were judged as not being salient nor interesting to the respondents. Additionally, 11 of the questions had 7 to 12 sub-items and on 7 other questions, the respondents were asked to rate or provide opinions on 8 to 12 different items. As a result, the respondents were asked to provide responses to 173 different items. Further, it was estimated that respondents would need an average of 45 minutes to complete this questionnaire. Thus, given the length and complexity of the questionnaire, the current study is deemed to represent a very difficult test of the ability to deliver questionnaires and retrieve them by mail.

Experimental Design. The sample was systematically divided into four equal groups that received the following treatments. Members of the first group (E1) were offered a check for $8.00 if they were eligible and returned a completed questionnaire and $4.00 if their household was ineligible and they returned their survey materials noting this. Additionally, they were to receive a telephone callback within 24 to 48 hours of delivery to remind them of the importance of the study, answer any questions they might have about the survey, and encourage their response. If the interviewer was unable to obtain the respondent's telephone number or unable to reach them by telephone, they were to mail them a postcard containing a handwritten note that would convey the same message as they would have provided in the telephone call. The second group (E2) was also offered the $8.00 post-incentive but did not receive the immediate follow-up contact. The third group (E3) received the immediate follow-up contact but was not offered a post-incentive. Members of the fourth group (E4) received neither the post-incentive nor the immediate follow-up contact.

Procedure. Face-to-face interviewers were assigned the task of delivering questionnaire packets to respondents at their homes. The packets contained a letter signed by the governor of the State of Washington that described the study, a cover letter from the director of the Social and Economic Sciences Research Center (SESRC) explaining the importance of the respondent's participation in the study, a copy of the questionnaire, and a stamped return envelope. Additionally, respondents selected to receive a post-incentive (those in groups E1 and E2) received a blue questionnaire insert on which they were asked to indicate whether a male between the ages of 20 and 50 lived in their household, provide their name and mailing address so that a check could be mailed to them, and list the age and sex of all household members.[2] Respondents in the other groups (E3 and E4) received a yellow questionnaire insert that only differed from the blue one in that there was no request for name or mailing address as these respondents would not be receiving a post-incentive check.

Interviewers were instructed to make up to three visits to each household until they were able to talk with a responsible adult (defined as someone 16 years of age or older). When they made contact with an adult household member, they were to ask to speak with the youngest male whose age was between 20 and 50. If that person was not available, they were instructed to give the packet to the person with whom they were speaking and request that he/she give the materials to the youngest male in that age bracket. If the selected respondent was available, the interviewers were to talk directly with him so as to explain the purpose and importance of the study, give him the packet containing cover letters, questionnaire, and inserts, and request that he complete and return the questionnaire.[3] Last, the interviewers were to obtain and record the respondent's name, mailing address, and telephone number. If the interviewer was not able to contact any adult household member by the third visit, they were then instructed to leave the questionnaire materials in a see-through plastic bag on the doorknob.

Interviewers delivered packets between the middle of June and the middle of July, 1990. Once it was determined that all packets had been distributed, all respondents on whom address information had been obtained, regardless of treatment, were mailed a follow-up postcard from the SESRC. These postcards were mailed on July 25, 1990. Consistent with the tenants of exchange theory, the purpose of the postcard was to thank respondents for their assistance. Additionally, it provided an opportunity to remind respondents of the importance of the study and prompt them to complete and return their questionnaire. On August 1, 1990, about one week after the postcards had been mailed, a second packet of questionnaire materials was mailed to those who had not yet responded. In cases where the name of the respondent was not known, it was sent to the address of the household. These packets contained new copies of the governor's letter, cover letter, questionnaire, blue or yellow questionnaire insert, and a stamped return envelope.

By August 6, 1990, less than a third of the eligible respondents (29.0%) had returned completed questionnaires. At that time, another follow-up was conducted with all non-respondents on whom we had obtained telephone numbers regardless of treatment group assignment. When the telephone interviewers called, they asked to speak with the respondent (if the face-to-face interviewer had obtained a name) or the youngest male who was between 20 and 50 years of age. If the respondent indicated that he had returned the questionnaire, the interviewer thanked him for his participation. If the respondent had not returned his completed questionnaire or did not remember the study, the interviewer asked him to participate by completing it over the phone.

RESULTS

Completion Rates. Table 1 displays the completion rate statistics for this study. Of the 1,500 household locations selected to be in the sample, just over half (54.5% or 818 locations) were considered to be ineligible for the purpose of this analysis. The majority of these ineligible locations (774/818 or 94.6%) were identified as either being households that were not occupied or households without 20 to 50 year old males living in them. The remaining 44 households were

excluded because the questionnaire materials had to be mailed to respondents because of time constraints rather than delivered by face-to-face interviewers.

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Insert Table 1
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For the 682 eligible households (154 from treatment group E1, 180 from treatment group E2, 160 from treatment group E3, and 188 from treatment group E4), two sets of completion rates are displayed. The first set represents the completion rates as of August 6, 1990, the day on which the final telephone follow-up began. The second set represents the completion rates as of September 27, 1990, the last day of data collection on the project. In addition to these two sets of completion rates, the increase in the percent of respondents completing the survey between August 7th and September 27th is noted. The degree to which this difference represents the effect of using a final telephone follow-up is unknown because we weren't always able to identify whether completed questionnaires that were returned by mail were completed as a result of a call from a telephone interviewer or because the respondents had just gotten around to completing the questionnaires.

From reviewing Table 1, one will observe that by August 6th, less than a third (29.0%) of all eligible respondents had returned their completed questionnaires. Of those receiving both the post-incentive offer and immediate follow-up (treatment group E1), just over a third (33.8%) returned completed questionnaires. Respondents who were only offered the post-incentive (treatment group E2) returned completed questionnaires at much the same frequency (32.8%). Of those respondents who only received the immediate follow-up (treatment group E3), 33.8% returned completed questionnaires. However, only 17.6% of those respondents who did not receive either a post-incentive offer or an immediate follow-up (treatment group E4) returned completed questionnaires.

A similar pattern is observed from reviewing the total completion rates obtained at the end of the study. First, almost half of the eligible respondents (45.2%) completed and returned their questionnaires. The percent of completed questionnaires for each treatment group is as follows: E1 = 50.0%, E2 = 50.0%, E3 = 46.9%, and E4 = 35.1%.

When one compares these final completion rates, one finds no significant difference in the rates obtained as a result of offering the post-incentive, providing the immediate follow-up, or offering the post-incentive and providing the immediate follow-up. One does, however, find a highly significant difference in response rates between those receiving a special treatment (groups E1, E2, or E3) and those not receiving any treatment (X^2 = 10.6, d.f. = 1, N = 682, p = .001).

Completion Rates and Delivery Method. It was reasoned that direct contact with all eligible recipients of the questionnaire would increase the likelihood of obtaining a response. In

addition to interviewers having the opportunity to describe the incentive offer to those receiving this treatment and the importance and legitimacy of the study to everyone they contacted, the perceived "costs" associated with having to take the time to review a rather bulky pack of materials (two cover letters, a long and complex questionnaire, a questionnaire insert, and a stamped returned envelope) were also expected to be reduced. However, the degree to which this difference in delivery would lead to different response rates was unknown. To determine this, the interviewers were asked to record whether the questionnaire packets had been delivered directly to the respondent, to some other adult in the household, or left on the door knob of the respondent's home.

Table 2 displays the percent of respondents who did and did not return completed questionnaires by the method used to deliver questionnaire packets. Almost two thirds of the respondents who had packets delivered to them personally (65.6%) returned completed questionnaires. Whereas only 54.0% of those respondents whose questionnaires were handed to someone else in the household and less than a fifth (17.4%) of those whose questionnaires were left on the door knob were completed. A chi-square of 109.0 with 2 degrees of freedom and p = 0 indicates that it is very unlikely that the differences observed are due to chance. Further, a difference of proportions test was conducted to compare the results obtained from each method of delivery with the results of the two other methods. All differences were statistically significant (Delivery to respondent vs. someone else: $X^2 = 6.4$, d.f. = 1, N=453, p = .01; Delivery to respondent vs. doorknob: $X^2 = 103.05$, d.f. = 1, N = 434, p = 0; Delivery to someone else vs. doorknob: $X^2 = 62.4$, d.f. = 1, N = 433, p = 0).

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Insert Table 2

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Interaction Between Treatments and Method of Delivery. At first glance, it appeared that the different response rates observed for those receiving and not receiving special encouragement indicated that there was no difference in the effect that an incentive offer and immediate follow-up had on increasing response rates. However, the different response rates resulting from how the questionnaire materials were delivered indicate that interviewer-respondent communication played an important role in encouraging response. Since it is extremely important that an incentive offer be clearly communicated to the respondent for it to have the desired effect, it would appear quite possible that the lack of difference found between the offer of the post-incentive and use of immediate follow-ups is a result of the incentive offer not being clearly communicated to the respondent.

To examine this possibility, Table 3 was created. This table displays the percent of respondents who did and did not return completed questionnaires in each of the treatment groups for each of the delivery methods. Upon examination of these results, one does find a statistically significant difference in the response rates as a result of the four treatments for those respondents who had direct contact with the face-to -face interviewers ($X^2 = 8.39$, d.f. = 3, N = 227, p = .04).

Further, one finds these response rates to be in the predicted direction. However, when one compares the response rates of those whose questionnaire materials were left with someone else in the household and those whose materials were left on the door knob, the differences resulting from the effects of the treatments are statistically insignificant.

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Insert Table 3
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Completion Rates and Type of Immediate Follow-Up Used. From the above results, it should be clear that the degree of personal contact that respondents and face-to-face interviewers have when delivery occurs does increase the likelihood of response. Is this effect, however, similarly displayed during the follow-up?

Table 4 displays the percent of respondents receiving the immediate follow-up who did and did not complete questionnaires by the method of follow-up contact used. Most of these respondents (223/291 or 76.6%) were sent a post-card while the others received a telephone call. Of those who were sent the post-card, over two fifths (43.5%) completed questionnaires. Of those who were telephoned, however, over four fifths (80.9%) returned completed questionnaires. The difference in these response rates is statistically significant (X^2 = 29.29, d.f. = 1, N =291, p = 0). Thus, as with the original delivery, the degree of personal contact made between the respondent and face-to-face interviewer during the follow-up does appear to influence the respondent's willingness to respond.

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Insert Table 4
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DISCUSSION

To interpret the findings of this study, we must distinguish between the results that were due to the experimental design and those which were identified using statistical controls. Experimentally, this study has shown that the use of a post-payment financial incentive and an immediate telephone or mail follow-up by the person who delivered the questionnaire does improve response over that which can be obtained when using neither. By controlling for questionnaire delivery method, we have shown that personally handing questionnaire materials to the respondent improves response substantially, especially in conjunction with a postpayment financial incentive offer and immediate follow-up. Personally handing questionnaire materials to another household member to give to the eligible respondent improves response significantly over simply leaving the questionnaire materials on the door knob and also works better with a financial incentives and immediate follow-up than without either of them.

It is possible that eligible respondents who were at home when the interviewer called, and therefore received the questionnaire packets personally, are individuals who are more likely to return completed questionnaires. This possibility needs to be explicitly recognized. At the same time, however, the percent of those personally receiving the questionnaire, 65.6% across all experimental groups, was much larger than the 17.4% percent of response from households where it was left on the door knob. Thus, it seems unlikely that differences in personal characteristics could account for all or even most of the differences in response rates. None-theless, it remains an issue that should be pursued in future research.

The final response rates of 65 percent overall and 70 percent for the groups in which the financial incentive and immediate follow-up were used represent response rates that are competitive with the best that could be obtained by random digit telephone surveys and which could be obtained through face-to-face interviews only at a much greater cost. These results suggest the tantalizing possibility that in this era when face-to-face interviewers find it increasingly difficult to get into peoples' homes to conduct lengthy interviews, comparable response rates can be obtained through personal delivery of mail questionnaires.

The results of this study suggest that the method of using face-to-face interviewers to deliver mail questionnaires does have the potential for generating responses rates similar to those obtained using more traditional methods (i.e., telephone or mail surveys). To do so, however, the methodology used in this study will need to be refined. Of most importance is the need to increase the probability of direct personal contact between the interviewers and respondents. This is because the data reported here indicate that the amount of contact that occurs during both delivery and follow-up is significantly associated with higher rates of response (see Tables 2 and 4, respectively).

Another way to refine this methodology would be to utilize techniques such as incentives and follow-ups to encourage response. This is because the results also showed that the response rates of those having direct contact with interviewers do differ significantly when these techniques

are employed. More specifically, the response rates of those respondents who were offered both the postpayment incentive and provided the immediate follow-up were 24.8 per-centage points higher than of those who received no special treatment (77.4% for those in E1 vs. 52.6% for those in E4, see Table 3).

Refining the methodology so as to increase the amount of interviewer-respondent contact should not be that difficult, especially when one considers the limits of this study. First, the amount of interviewer-respondent contact might be increased significantly if a less stringent sampling design were used. For example, had this study merely sought to sample adults rather than select only males between 20 and 50 years of age, the number of interviewer-respondent contacts reported here would have doubled from 227 to 453 because the households where materials were handed to "someone else" would have been considered to be households having direct respondent contacts. A second refinement would be to increase the number of interviewer visits so as to also increase the probability of contacting a respondent. Since this study only required interviewers to make a maximum of three visits per household, there is certainly a full range of possibilities that could be tested and yet, still remain cost effective.

Refining this methodology so as to find the most efficient means of response inducement would seem to require more research. The effectiveness of a postpayment incentive would appear to depend on whether interviewers have some contact with respondents. Regardless of efforts made to increase the probability of contact, there will always be households where the occupants are not available to meet with interviewers. To not be concerned with the high degree of nonresponse from these households that the results of this study suggest would occur with the use of a postpayment incentive, would seem to increase the possibility of noncoverage error since this inability to come into contact with respondents could be demo-graphically related.

The effectiveness of immediate follow-up contacts would also appear to be limited by the degree of personal contact that occurs between interviewer and respondent at the time of delivery. This is because the most effective means of follow-up was shown to occur as a result of telephone contact. In order to conduct a follow-up by telephone, one needs to obtain the respondent's telephone number which in this study only occurred when interviewers were able to meet respondents at delivery.

To overcome these limitations, it would appear that efforts should be made to develop response inducement techniques that are useful in both the contact and noncontact situation. One possibility might be to develop incentive techniques that compensate for the lack of direct personal contact. For example, one might consider utilizing a prepayment incentive when no contact is made. Another method might be to use a small prepayment incentive to encourage the respondent to contact the interviewer to arrange a convenient time when questionnaire materials might be delivered. At delivery, the respondent could then be offered the postpayment incentive

as an inducement to complete the questionnaire and the interviewer could solicit a telephone number to be used when conducting a follow-up. The possibilities available for exploration would appear to be abundant.

The advantages to refining this methodology include the following. First, the non-coverage error associated with not being able to adequately sample household populations because of inadequate lists can be eliminated by using sampling methods (i.e., area probability sampling methods) that are not dependent upon the use of outdated lists. Second, one can avoid having to incur the high costs of conducting face-to-face interviews. Third, without having to conduct face-to-face interviews, one also can avoid having to spend an inordinate amount of time collecting data as the time needed to conduct a delivery drop-off is quite comparable to the time needed for conducting a mail survey. Fourth, when calculating response rates, it is important that the number of ineligible sample members be accounted for. By using face-to-face interviewers to deliver questionnaires as opposed to mailing them, it would appear that the ability to identify ineligibles is greatly enhanced over the usual method of relying on respondent self-reports.

Finally, we appear to be in an era where it is unlikely that response rates can be increased for any individual method of surveying respondents, and if anything, they are on the decline. For this and other reasons, increased attention is being focused on mixed mode surveys, whereby respondents' objections to one or another method and/or researchers' concerns over costs can be overcome. The procedures used in this study offer one additional way in which face-to-face and telephone interviews might be supplemented. It is in this context that the delivery-retrieval methods examined here may ultimately prove their greatest usefulness to survey organizations.

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FOOTNOTES

1. This paper reports an experiment applied to a study commissioned by the Washington State Office of Financial Management and administered through the Washington Institute for Public Policy at the Evergreen State College, both in Olympia, Washington. Financial support for the experiment was provided by the Washington State University Social and Economic Sciences Research Center in Pullman, Washington. Appreciation is expressed to Irv Lefberg of the Office of Financial Management, Greg Weeks and Carole Webster of the Institute, and John Tarnai and Charles Huffine of the Research Center for their contributions to this study. This paper was originally presented at the 1991 American Association for Public Opinion Research (AAPOR) meetings in Phoenix, AZ on May 17, 1991.

2. It should be noted that the difference in experimental treatments was not expected to be recognized by respondents in the various treatment groups. The study was conducted over a large area, an entire state, with respondents identified through random selection and treatment randomly assigned. However, had a respondent questioned the lack of the incentive offer, we were prepared to provide them with the same post-incentive offered to those in groups E1 and E2.

3. It should be noted that if the interviewer could determine that there was no eligible household member, they were instructed to note this and return the materials with this note to the SESRC.

Table 1. Completion Rate Statistics

Description	TOTAL	Treatment Groups E1	E2	E3	E4
QUESTIONNAIRES DELIVERED	1,500	366	388	362	384
Ineligible Households	774	201	197	192	184
Completed Cases Excluded[a]	7	1	3	1	2
Non-Completed Cases Excluded[a]	37	10	8	9	10
ELIGIBLE HOUSEHOLDS	682	154	180	160	188
Percent Completed by 08/06/90	29.0	33.8	32.8	33.8	17.6
Percent Completed by 09/27/90	45.2	50.0	50.0	46.9	35.1
Increase in Completion Rates	16.2	16.2	17.2	13.1	17.5

[a] These 44 cases were excluded because the interviewer was unable to deliver the questionnaire materials to the respondents' households. They were mailed.

Table 2. Completion Rates By the Type of Delivery Method Used.

		How Questionnaire Was Delivered		
Completion Status	TOTAL	Handed to Respondent	Handed to Someone Else	Left on Door Knob
Did Complete	46.5	65.6	54.0	17.4
Did Not Complete	53.4	34.4	46.0	82.6
N	660	227	226	207
		X^2 = 109.0	D. F. = 2	p = 0

Table 3. Percent Who Did and Did Not Complete Questionnaires By The Type of Delivery Method Used.

Delivery Method		TOTAL	Treatment Groups E1	E2	E3	E4
HANDED TO RESPONDENT						
Completed		65.6	77.4	70.9	62.9	52.6
Not Completed		34.4	22.6	29.1	37.1	47.4
	N	227	53	55	62	57
		X^2 = 8.39	D.F. = 3	p = .04		
HANDED TO SOMEONE ELSE						
Completed		54.0	54.7	63.3	54.7	43.3
Not Completed		46.0	45.3	36.7	45.3	56.7
	N	226	53	60	53	60
		X^2 = 4.87	D.F. = 3	p = .18		
LEFT AT THE DOOR						
Completed		17.4	15.9	21.0	18.9	14.1
Not Completed		82.6	84.1	79.0	81.1	85.0
	N	207	44	62	37	64
		X^2 = 1.17	D.F. = 3	p = .76		

Table 4. Percent of Respondents Receiving Immediate Follow-Up Who Did and Did Not Complete Questionnaires By Type of Follow-Up.

		Type of Immediate Follow-Up	
Completion Status	TOTAL	Telephone	Post-Card
Did Complete	52.2	80.9	43.5
Did Not Complete	47.8	19.1	56.5
N	291	68	223
	X^2 = 29.19	D. F. = 1	p = 0

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