EXPERIENCES WITH INCENTIVES IN A PUBLIC ATTITUDES SURVEY USING RDD

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The Survey of Public Attitudes Toward and Understanding of Science and Technology is a National Science Foundation (NSF), Division of Science Resources Statistics (SRS), survey that has been conducted since the early 1970s, generally every two years. In early years, the survey was conducted by a grantee. More recently, a contractor winning a competitive bid process conducted the survey. Historically, the survey had a 70-percent response rate, using random digit dialing (RDD) telephone data collection from a central location. Maintaining the 70 percent rate has become increasingly difficult, a growing problem with RDD surveys throughout the survey research community. In anticipation of continued problems with the response rate, the survey contract contained an option for the contractor to propose the use of financial incentives in an effort to achieve the highest possible response rate for the survey.

The decision to proceed with incentives in the two most recent surveys was based on a desire to maintain response rates. The conduct of the study and the proposed incentive experiment led to negotiations between SRS staff and the 1999 contractor (with appropriate consultation with Office of Management and Budget, OMB, staff) aimed at assessing the value of incentive offers. By changing the incentive approach used during the survey, information was collected related to questions of potential interest to Federal survey organizations and other RDD survey methodology users. (e.g.: Do the incentives work? What payment level is most effective?)

In the recently completed 2001 survey, there were continuing response rate problems. Incentive efforts, differing from those tried in 1999, were used, primarily in an attempt to increase the response rate at the end of a much shorter survey-fielding period than in recent past surveys. This paper presents the resulting response rates and other related information from the 1999 incentive approaches. The results from the 2001 survey were not available in time to meet the deadline for submitting this paper. In reporting on the results of the 1999 incentive approaches, this research provides an addition to the literature on survey closeouts and the impact of some incentive approaches on response rates.

The 1999 Survey

SRS desired an effective sample size of approximately 2,000 individuals using random digit dialing telephone survey methodology. The 1999 contractor (the Chicago Academy of Sciences, with NORC as the data collection subcontractor) purchased the original random digit dial sample from Survey Sampling, Inc. The sample of 7,200 telephone numbers (an oversample reflecting historic experiences with out-of-scope rates) was grouped into 32 replicates of 200 cases and two replicates of 400 cases. The 32 replicates were released from the start of data collection on March 27 through the end of the regular data collection period, April 17, 1999. (The two 400 case replicates were held in reserve and not released.)

In addition, addresses, when available, were purchased for approximately 1/3 of the sample. An advance letter was sent to these cases (with mailing information) explaining the study and providing an 800 number to request more information or to make an appointment for an interview. Analysis of this effort is not included in this report.

During the regular telephone interviewing period, from March 27 to May 12, no respondent fees were offered. At the end of this regular survey operation period there were 1,606 completes. The contractor reported that regular survey activities had reached the point where it was becoming increasingly difficult to obtain cooperation from potential respondents and that regular survey activities would not be likely to achieve the desired 70 percent response rate. (Note that SRS recognized that achieving a prespecified response rate level is not an indicator of overall data quality. The effort here was to attempt to maintain a level of response that users found acceptable in their basic evaluation of the survey.) Therefore, the contractor exercised the contract option to use an incentive approach. At that point, the response rate was under 60 percent -- well below the desired 70 percent response rate. Before starting the incentive approach, calls which were being sidelined in the "maximum calls" disposition (meaning ring, no answers and 17 attempts) were released on May 7th (to the 9th) for a final attempt before being declared "unlikely households" and moved out of pending cases. On May 13, 15 and 16, 1999, the first of several "tests" of various monetary incentive levels was conducted.

The 1999 Incentive Approaches

The incentive study progressed into three phases. The incentive experiment had two initial phases and a third closeout phase. The phases were:

PHASE

(1) This phase began after the contractor ceased regular survey activities. All active cases, except for previously scheduled callbacks, were eligible for this phase. These cases were "randomly" divided into four payment groups. Each group had a different incentive payment level. The members of each group were to be offered the payment level assigned to that group, either $0, $10, $20, or $30, if contact was made. This experiment was conducted for three days, overlapping the May 15 - 16 weekend.

(2) A modification of the incentive approach was developed after completing phase 1. During this phase, interviewers were instructed to continue contacting the remaining sample, except for those already scheduled from prior contacts, and to offer $10 to gain the cooperation of respondents who initially refused to participate.

(3) The final incentive approach, as was the case in phase 1, attempted to create experimental conditions to allow testing of the effects of incentive approaches. In this phase, remaining cases, not already scheduled for callback, were assigned to two new treatment groups using randomization instruction supplied by SRS. The two groups were offered of $0 and $20 respectively.

As each phase was completed, SRS staff held telephone conferences with the contractor to discuss the results and variations in protocol. The contractor was asked to provide data regarding outcomes from each approach. There was a need to complete the survey quickly and with the highest response rate possible, but also a need to create information about how incentives might be useful for the survey in the future. Thus, after each phase, the protocol for the next phase was developed, in a short timeframe, using the information provided by the contractor to the extent possible to help assess (1) the value of using an incentive (Is it a cost-effective way of increasing the response rate?), and (2) which protocol works best to increase response rate and survey timeliness. Therefore, we attempted to structure the incentive approaches in as much of an experimental manner as possible in order to provide results about incentives that could be of use to SRS and to other organizations.

Phase 1

Note that while we analyze the data as though cases were randomly assigned, in the actual assignment protocol created by the contractor, payment levels were assigned to interviewers. Each incentive amount was randomly assigned to an interviewer across the three days. Each interviewer was assigned a group of cases each day and only that interviewer worked on those cases that day. As interviewers made contact with an eligible respondent, an offer was made to the respondent and that case was assigned to the payment group based on the offer amount made. For example, interviewer A was assigned to offer $20 for cooperation on the first day. Interviewer A called 100 numbers on that day in which A was allowed to offer the $20 incentive. Of the 100 numbers called, interviewer A made contact with 20 eligible respondents in which the cash incentive was offered. These 20 respondents became part of the Phase 1 $20 group. (Note: SRS has made no formal assessment of how this randomization scheme has impacted the generalizability of the "experiment," but wishes to note the variation from case randomization so that readers use appropriate cautions when considering the results.)

The first payment incentive phase lasted for three days. At the end of the three-day period, 175 cases had been contacted and offered an incentive while 61 cases had been contacted but not offered an incentive (Table 1). The effort resulted in 50 additional respondents from those offered incentives (34 completes and 16 appointments later completed). All other cases available to phase 1 sampling were not reached during this weekend experiment. The number of completes increased by almost 100, up to 1,705 at the completion of phase 1. At this point, the contractor anticipated having to pay 80 percent of the remaining 295 cases needed to reach the goal of 2,000.

The results of phase one of the experiment indicated that approximately 15 percent of respondents who were personally contacted by an interviewer completed the interview immediately, without the offer of an incentive (see Table 1). An additional 41 percent of contacted respondents were willing to make an appointment for a later date, but it is important to recognize that many of these appointments were not kept. Nearly 20 percent of respondents who were contacted personally by an interviewer and offered some financial incentive for participation agreed to do the interview immediately and an additional 36 percent of this group made an appointment for a later date. The 19.4 percent completed among all those offered a cash incentive is not statistically significant from the 14.8 percent completed in the

nonincentive group. The appointment rates do not differ significantly either. Refusal rates were remarkably consistent among groups.

The weekend experiment results found in Table 1 show that the percent of respondents who continue to refuse is not influenced by the offer of an incentive. But the number of immediate completions is slightly higher and the number of deferrals to a latter date is slightly lower for respondents offered an incentive, considering the three levels of incentive in the aggregate.

In the Phase 1 (weekend) experiment, respondents were assigned to one of four groups randomly. Group One received no incentive offer. Group Two received an offer of $10 for participation. Group Three received an offer of $20 for participation. Finally, Group four received an offer to $30 to participate in the study. The results – although not statistically significant due to small cell populations – suggested that $30 might be most effective, with 24 percent of the contacted respondents agreeing to be interviewed immediately (see Table 1).

Phase 2

For the two weeks after the weekend experiment, the contractor proposed that uncooperative respondents be offered $10 for participation initially, followed by a $20 incentive if they still refused, and capped by a "final" $30 offer for participation. The contractor believed that, given the results of the weekend experiment, it appeared likely that this procedure would yield the highest number of completed cases (and the highest response rate) in the shortest period of time. Further, the contractor believed that the approach would cost approximately the same amount that would be required for a longer field period with no incentive or with a lower incentive. Given the time frame in which a decision needed to be made and insufficient data to support the case, SRS would not accept this approach.

Many of the remaining households in the study had been contacted numerous times in attempts to contact the selected respondent, but the respondent was unavailable. Often, indicating that the selected person is not available is simply a way of declining the interview without directly saying so. Yet, some respondents have work schedules that keep them away from their telephone most evenings and weekends, including workers in the retail trade, food services, travel, and recreation industries. When this survey was conducted in 1997, the field period was extended for nearly a month to obtain 2,000 interviews and a response rate of 70 percent. On the basis of the experience with the survey to date and available data, SRS and the contractor negotiated to reach an agreement that data collection continue after the weekend experiment, using a $10 incentive.

For the two-week (May 17 to June 1) phase 2 collection period, the contractor continued to make calls and interview respondents, offering a $10 incentive to all individuals (not already scheduled for call back) who refused to participate in the study. (During this period those pending cases from the original experiment weekend continued to be worked and their original incentive was offered if contact was made.) During this two-week period, interviewers were able to make contact with the selected respondent in 34 percent of the outstanding cases. Interviews were completed with 18 percent of the contacted respondents Appointments were

made for an additional 32 percent of the cases (Table 1). This effort brought an additional 72 respondents.

The small number of cases and the lack of a control group in phase 2 largely precluded obtaining statistically significant information from phase 2 data. Still, one might argue that there is some slight increase in completions. Further, this group, already prone not to cooperate, may be inclined to make a faster decision of final refusal using the phase 2 incentive (49 versus 44 percent).

Table 1: Offers and Dispositions for the Incentive Approaches and Additional Conversion Efforts, 1999 Survey of Public Attitudes Toward and Understanding of Science and Technology

Type of Incentive	Total N of Cases	Number of R's Offered Incentive	Number			Percent		
			Comp. Interview	Appoint-ment	Refusal	Comp. Interview	Appoint-ment	Refusal
Phase 1 - Weekend Experiment								
None	325	61	9	25	27	14.8	41.0	44.3
$10	325	52	10	19	23	19.2	36.5	44.2
$20	325	65	10	26	29	15.4	40.0	44.6
$30	325	58	14	18	26	24.1	31.0	44.8
Offers combined	975	175	34	63	78	19.4	36.0	44.6
Total	1300	236	43	88	105	18.2	37.3	44.5
Phase 2 - Additional Two Weeks of Refusal Conversions								
$10	1176	395	72	127	196	18.2	32.2	49.6
Phase 3 – Close-out Two-level Experiment								
None	280	278	23	NA	96	8.3	NA	34.5
$20	529	529	79	NA	129	14.9	NA	24.4

NA – not applicable, survey closeout

At the end of the second phase of the experiment, 115 respondents had been offered and accepted financial compensation. After completing the survey, a few respondents changed their minds because they did not want to give out their mailing addresses (to receive their checks), so the actual number getting compensation was less than 115. The total amount given out was $1,110. The incentive option was budgeted at $2,000, and while the contractor did not go over that budget, the budget for interviewing time was exceeded.

The contractor was encouraged by the results. The contractor believed that a three to four percentage point improvement might be obtained in the immediate completion rate, which would save significant interviewer costs in the follow-up and tracking of these cases. Furthermore, if this pattern were to continue, the study would be completed sooner and there would be a smaller chance of any unforeseen events occurring during the field period. Thus, the contractor requested permission to continue data collection after phase 2 with an offer of a financial incentive of at least $10 for participation in the study.

Phase 3

After phase two of the incentive activities, all data collection for this survey was halted until sufficient data was available to justify an approach to a continuation of the survey and the supplemental funds requested by the contractor. SRS requested more analysis to assess the need for the incentives to complete the survey and achieve the desired response rate.

The first additional information requested concerned the disposition of the 88 appointments reported by the contractor from the original weekend experiment. An additional 17 completions were obtained from this group during the following two weeks. The contractor did not report the number of hard refusals, but the project manager reported that virtually all of the remaining cases were still eligible to be tried again.

The additional completions made a much stronger case for the value of the incentive offers. Only one additional completion was obtained from the cases to which no incentive offer had been made, while 16 additional completions were obtained from respondents to which some level of prior offer had been made.

Next, SRS inquired into the number of the 72 completions during the two weeks of phase 2 that required an incentive. The contractor reported that all of the 72 respondents were offered a $10 incentive, but that only 67 actually provided a name and address for the mailing of a check. The other five declined to provide that information, or concluded that a check for $10 was not worth the effort.

Agreement to fund and continue the incentive experimentation was reached. The continuation of data collection conformed to the following adjustments to the experimental design:

> A. All outstanding cases for which an appointment was scheduled remained in the experimental group for which the appointment was last discussed. Experimental groups to that point include Phase 1 and 2. These carryover appointments would not be part of the phase 3 incentive experimental cases.

B. The experimental units, the remaining cases from the experiment not having been offered one of the experimental "treatments" (1,176 minus the 395 phase 2 contacts minus some extraneous units, were randomly assigned to one of two additional experimental groups as follows:

1. 1/3 of the cases, but not less than 280 cases were to have no incentive offered.
2. 2/3 or the balance of the cases if the minimum of 280 was necessary in group 2 would have a fixed incentive of $20 offered.

C. Increasing incentive levels would not be offered.

D. Cases from groups 2 and 3 above would be randomly assigned to interviewers.

The final respondent fee experiment was initiated on June 30 (Phase 3) and was stopped on August 5. Assignment to the two new treatment groups, those offered $0 and those offered $20 were assigned per randomization instruction supplied by SRS. Table 1 show that the phase 3 $20 incentive was more likely to result in a completed interview than no offer (15 versus 8 percent).

Conclusions

The experimentation with incentives during this survey indicates that a monetary incentive resulted in at least a small increase in completion rates during the closeout period of this survey. The incentive may also help refusals give that indication earlier in the sequence of callbacks, thus saving recall resources. Before basing decisions to implement similar incentive approaches in future surveys, SRS also needs to study the call back counts and other cost information. Since data quality is not based solely on response rate, but depends upon the nonresponse adjustment methods used, the incremental responses impact on quality of overall survey results needs to be measured against the added cost to the survey. Recognizing that response rates for RDD surveys are declining, SRS needs to design experiments up front for future surveys, rather than being forced into the position of creating ad hoc approaches and experiments under the pressure of survey deadlines.

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