SOME LESSONS LEARNED FROM SSA EXPERIENCE IN CONTRACTING FOR SURVEYS*

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ABSTRACT

Much of the Social Security Administration's program-oriented research and program evaluation is carried out through surveys conducted for SSA by the Bureau of the Census or by private contractors. The Statistical Methodology Group of SSA's Office of Research and Statistics conducted an in-house study of survey management procedures, giving special attention to the development of survey design specifications through interaction of the sponsoring agency and the survey organizations. The study procedures are described and some findings are given. A suggested checklist for use in the preparation of technical scope of work statements for survey RFP's is presented and discussed.

INTRODUCTION

Background - The number of surveys sponsored by Federal agencies has increased rapidly in recent years. With a few exceptions, the survey data are not collected and processed by the sponsoring agency. The work is either done by a private survey organization under contract, normally executed as the result of competitive bidding, or by another Federal agency under a reimbursable agreement. The Federal agency doing the greatest amount of reimbursable survey work is, of course, the Bureau of the Census.

During the past 2 or 3 years, several organizations have exhibited serious concerns about the quality of Federally sponsored surveys. The Subsection on Survey Research Methods of the American Statistical Association, with funding from the National Science Foundation, has recently completed a feasibility study for a project on the assessment of survey practices (Bailar and Lanphier, 1977). The findings were disturbing - for the 26 Federally sponsored surveys included in the study (a purposive sample), it was found that 10 failed to meet their objectives, 11 did not use probability sampling throughout, 4 had designs rated as poor by the investigators, and 15 either had response rates of less than 75 percent or their response rates could not be determined. On the basis of the feasibility study findings, ASA has applied to NSF for funding for a larger study, to be based on a probability sample of all surveys conducted during the reference period selected.

Other organizations which have recently concerned themselves with the quality of Federal surveys include the National Center for Health Services Research, the Joint Ad Hoc Committee on Government Statistics (1976), the Federal Paperwork Commission (1977), and the newly-formed Council for Applied Social Research, which has established an annual award for the "Best RFP of the Year".

*Opinions expressed are those of the authors and do not necessarily represent the positions or policies of their respective agencies.

Surveys sponsored by the Social Security Administration - Almost from the beginning of social security, surveys have been an important research tool for the Social Security Administration. Surveys of beneficiary populations are used to study issues such as adequacy of benefits, relation of benefits to income from all sources, and comparative program effects for population subgroups characterized by age, sex, race/ethnicity, education and other demographic and social variables. Surveys of potential beneficiaries (target populations) are used to determine participation rates for different groups, knowledge of programs and reasons for applying or not applying for benefits. As new benefit programs, such as disability, Medicare, and supplemental security income have been added to the original retirement and survivors program, surveys have been used to provide information about the new beneficiary and target populations.

The conduct of these surveys has passed through 3 stages. Initially, all surveys were conducted "in-house," i.e., by SSA district office personnel, according to specifications developed by the research staff in central headquarters. Starting with the Survey of the Aged in 1963, the Census Bureau has conducted several major national surveys for SSA on a reimbursable basis. Finally, since 1970, as the number and variety of surveys has increased, many of the surveys have been conducted under contract by private nonprofit and commercial survey research organizations.

Most, although not all SSA surveys are planned and carried out under the direction of the Office of Research and Statistics (ORS). Primary responsibility for these surveys rests with the program divisions of ORS - the Divisions of Retirement and Survivors Studies, Disability Studies, Supplemental Security Studies and, until recently, Health Insurance Studies.[1/] Typically, the appropriate division director takes overall responsibility for a survey and under his general direction a member of his staff, usually a social science research analyst, is designated as the project manager, and, for contract surveys, as the project technical officer. Each of the program divisions has one or more mathematical statisticians and they are generally called on to assist in various phases, such as survey design, evaluation of technical proposals, and analysis of results.

Direct responsibility for the procurement process for contract surveys rests with the Division of Contracting and Procurement in the Office of Management and Administration. Within ORS, the Office of Research Grants and Contracts provides assistance to ORS divisions in their contracting activities and takes direct technical responsibility for selected projects. HCFA has an individual with similar functions on the immediate staff of the Associate Administrator for Policy, Planning and Research.

A Study of Contract and Reimbursable Surveys - Early in 1976, one of the authors was asked to review and comment on the sample designs included in technical proposals submitted in response to an RFP for a new ORS survey. As a firm believer in the use of probability sampling, he was disturbed to find that some of the proposals did not call for probability sampling at all stages of the design, and he recommended that these proposals be disqualified. However, it turned out that this could not be done because the RFP had not specifically called for probability sampling. At best, these proposals could be given low scores on the relevant selection factors; however, they would not be disqualified from contention on this basis.

This experience led to a recommendation that RFP's for ORS surveys should routinely include a standard clause calling for the use of probability sampling. Prior to its eventual adoption, the proposed standard clause (see Exhibit A) was submitted to the ORS Statistical Methodology Group (SMG) for review. The SMG is an informal group of mathematical statisticians from the various divisions of ORS who meet periodically to discuss applications of statistical methodology in their work and to share experiences and problems. From time to time, ad hoc groups are formed from the SMG to address problems of general interest.

In the SMG's discussion of the proposed standard clause on probability sampling, it was pointed out that there might be other ways in which the quality of SSA contract and reimbursable surveys could be improved. There being general agreement on this point, a working group was established to undertake a study of SSA contract surveys. The object of the study was to review and evaluate SSA procedures for contracting with outside organizations to conduct statistical surveys and to identify those provisions of RFP's and contracts which are instrumental in specifying the quality of the survey design and execution, and to see to what extent such provisions have been fully complied with. It was expected that the study would serve as a basis for developing improvements in our survey contracting process in one or more of the following ways:

- By providing guidelines for preparing technical statements of work for inclusion in survey RFP's, covering such factors as specifications designed to insure high completion rates, required use of probability sampling, calculation of sampling errors, etc.
- By providing appropriate training and technical assistance to staff members preparing such technical statements of work to be performed.
- By suggesting improvements in the contractor selection process.

In this paper, we describe the design of the study and present some preliminary findings and some recommendations for improvement of survey management procedures based on these findings.

THE CONTRACT STUDY: DESIGN AND METHODOLOGY

Defining the Population - For the investigation it was deemed feasible to study all SSA contracts and reimbursable agreements involving surveys for which RFP's were issued and contracts executed for the 1975 and 1976 fiscal years (including the transition quarter). Frame problems were encountered in that some contracts on the original list did not actually involve statistical surveys and others represented follow-up surveys in which the original specifications had been prepared earlier. In one case the contract was essentially an "off-the-shelf" procurement where the survey design had not been specifically developed for SSA but was in place at the time of the contract. In general, the principle evolved that any situation which might provide insight into the area under study was included. From an original list of 19 contracts and reimbursable agreements, 13 were deemed to include surveys suitable for analysis and inclusion in the study.

Development of Survey Instrument - The development of the survey instrument was largely a heuristic process based on a review of several of the contract documentation sets. From these emerged a three-part data collection instrument. The first part was a cover sheet identifying the project, categorizing it as a contract or reimbursable agreement and, in addition, covering survey characteristics such as coverage, sample size and data collection procedures. These data were set up in a format convenient for the abstracting process.

The second part of the instrument was a narrative questionnaire going into considerable detail with respect to the coverage, sample design, frame, sample size, response rates, and collection procedures. A third part of the instrument consisted of a listing of source documents keyed to relevant portions of the narrative.

The instruments required some revision as the study progressed but remained substantially unaltered in content. A copy of the survey instrument may be obtained by writing either author.

Data Collection Procedures - The personnel available for the study, with one exception, participated in the study on a part-time basis--doing as much as other duties permitted. The chief manpower pool for the preparation of the narrative section were members of the Statistical Group described earlier. The principal sources of data were the files provided by the contracting management units and in some cases files provided by analysts who had been actively engaged in the development of the survey. A two-stage process was employed which consisted first of the collection of the source documents and preparation of the cover sheet (Part I of the Contract Study Questionnaire). The chief categories of source documents were planning memoranda, requests for proposal, contract documents, including the technical proposal of the successful offeror, costs estimates, supporting statements to requests for

OMB clearance, and interviewer and training manuals.

From these a full-time analyst prepared the cover sheet and, with the supporting documents, prepared a folder for each of the study contracts.

These folders were then distributed to members of the Statistical Methodology Group who undertook the preparation of the narrative and source document portions of the Contract Study Questionnaire. This activity in some cases involved going beyond the prepared record to ancillary files and discussion with survey analysts. After completion of the study questionnaire the results were distributed for comment to the project officers involved in the survey under review.

FINDINGS

The Study Population - The study population consisted of all ORS statistical surveys for which contracts or reimbursable agreements were executed during 1975 and 1976 fiscal years. The distribution of characteristics of the surveys included in the study is shown in Table 1.

Table 1 - ORS Survey Profiles: Number of Surveys with Designated Characteristics

Type of Agreement	**Status**
10 - Contract	2 - Complete
3 - Reimbursable	10 - Incomplete
Type of Contract	1 - Ongoing
8 - Fixed Price	**Reporting Unit***
4 - Cost Reimbursement	7 - Individual
1 - Cost Sharing	3 - Hospital
Type of Bidding*	5 - Other
4 - Sole Source	**Principal Collection Method***
8 - Competitive	6 - Telephone
Coverage	4 - Mail
11 - National	10 - Face to Face
2 - Other	**Pilot Study**
	4 - Yes
	9 - None or Not Applicable

The sample sizes for these surveys ranged from about 1,000 to 20,000, and the out-of-pocket costs (i.e. for contracts or reimbursable agreements) from a low of about $22,000 to a high of over $3,000,000. To give an idea of what these extremes represent, the $22,000 figure was for a mail survey with telephone followups addressed to utilization review officials in a sample of about 1,000 hospitals. The response rate was slightly under 50 percent. This survey was done as a small part of an evaluation of concurrent utilization review procedures. At the other end of the scale, the $3,000,000 + figure was for the Survey of Low Income Aged and Disabled, a survey in which two personal interviews were conducted, about one year apart, for a sample of about 20,000 persons receiving or potentially eligible for benefits under the Supplemental Security Income program.

Findings for Contract Surveys: Basic Survey Objectives - As described further in the section on "Application of the Study Findings", the main product resulting so far from this study has been a checklist for use in preparing technical scope of work statements for survey RFP's. In that checklist (see Exhibit B), we have listed a "minimum set" of survey objectives which must be provided by the sponsor as a basis for designing any survey. These are (a) definition of the survey population, (b) kinds of information to be collected, (c) use of probability sampling, (d) level of sampling error (reliability) desired, and (e) target response rate. The major findings from the study relate to these 5 items. For each item, we have asked the following questions:

1. Was a formal specification adopted?
2. At what stage in the survey process did the specification first appear, i.e., was it in an RFP, in a technical proposal, a contract amendment, the OMB clearance submittal, etc.?
3. Was the specification adequate?
4. Was it carried out?

Because several of the surveys studied are still underway, we were not always able to answer the last question.

A general finding about the specification of survey objectives was that there was a striking difference between those cases where the survey was the primary purpose of the contract and those where the survey was a secondary or minor part of a contract for an evaluation study. In the latter case, the specifications were much less likely to be clearly documented, and the overall quality of results, to the extent it was ascertainable, was in general less satisfactory.

(a) Definition of the survey population - The target population was judged to be well-defined in nearly all cases. Typically, this was covered in the scope-of-work section of the RFP. Two issues emerged:

(1) For national surveys (which most of ours were) the final result was frequently a probability sample in which members of the target population in the States of Hawaii and/or Alaska were given no chance of selection. In Census Bureau terms, the study was limited to the population living in the conterminous United States.

Obviously, this was done to keep costs down. However, residents of these 2 States might have a legitimate complaint if they are routinely excluded from most surveys.2/ Also, it suggests that some care should be taken in evaluating the costs of alternative proposals where the offerors have established national samples of primary units in which they propose to conduct the survey. The offeror who has excluded Hawaii and Alaska from the universe is offering a different product and one which intrinsically has a lower cost per interview.

(2) There were some ambiguities in defining the relationships between individual members of the target population, ultimate sampling units and reporting units. Usually but not always there is a one-to-one correspondence among all 3 types of

*Some surveys combined more than one classification

units. In some surveys there may be more than one type of reporting unit, e.g., individuals receiving SSI benefits and recipient units, such as a husband and wife receiving SSI benefits. Surveys related to income maintenance programs may deal with many kinds of units, including individuals, beneficiary units, families and households. If the reporting unit contains more than one person, it may be necessary to interview more than one person to collect the desired information. Therefore, in any discussion of sample size and/or number of interviews it is necessary to be precise about the kinds of units being discussed. Also, if the sampling frame consists of individuals, more than one of whom may be members of the same reporting unit, the multiple probabilities of selection for some reporting units must be taken into account in preparing estimates from the survey.

(b) Kinds of information to be collected - The documentation and adequacy of content specifications was not directly addressed in the study questionnaire; therefore, we do not try to present an overall evaluation. However, there are some relevant comments that can be made:

(1) In several cases, a draft questionnaire was made part either of the RFP, or of the technical proposal presented by the successful offeror. Putting the draft in the RFP gives the offeror a good basis for estimating costs of collecting and processing the data.

Processing costs are significantly increased by the inclusion of open-ended or unstructured questions, so the offeror needs to know whether and how these will be used.

(2) For various reasons, it may be useful to designate one or more key variables, representing the most important results to be obtained from the survey. These key variables may then be used to specify requirements for sampling reliability and also in the process of deciding whether or not an interview or questionnaire may be counted as "complete". Where appropriate, the definitions of these variables should include geographic (national, regional, State, etc.) and time (level or change) dimensions.

Most of the surveys reviewed in this study did not explicitly define key variables. We have seen one instance of an RFP for a periodic survey (issued after the end of the reference period for this study) where failure to specify the relative importance of estimates of level vs. estimates of change led to considerable difficulty in making a comparative evaluation of the survey designs proposed by different offerors.

(c) Use of probability sampling - The standard clause on probability sampling for RFP's (Exhibit A) was developed subsequent to the award of contracts for the surveys included in this study. Nevertheless, the record was almost uniformly good concerning the use of probability sampling in these surveys.[3/] The one clear exception was a case in which we contracted to obtain data on prices of drugs purchased by pharmacies from an ongoing market survey. A careful review of the selection procedures by ORS statisticians after we had been using the data for several months made it clear that some members of the universe had no chance of selection and that it was impossible to determine exact selection probabilities for stores in the sample.

Probability sampling was a specific or implied requirement in the RFP in about half of the contract surveys studied. In other cases, its use was specified or documented at a later stage, e.g., in the successful proposal, in the contract, or in a contract amendment. Several contracts provided for an agency review of the proposed sample selection plan prior to execution. This has proved to be an effective method of avoiding unintentional departures from probability sampling and in some cases has led to more efficient designs.

Probably the most important lesson we have learned about probability sampling in this study and through experience with contract surveys is to be extremely careful when "buying in" to previously selected samples. Before agreeing to the use of a particular sample alleged to be a probability sample, agency representatives should insist on making a critical review of the design specifications and of the actual sample selection worksheets or other relevant materials. If the proposal calls for some modification of an existing sample used by the offeror, plans for such modifications should be fully reviewed. Modifications frequently proposed include expansion or subsampling of an existing sample or use of a set of PSU's designed for an area sample to select a sample from a list of program participants. In the latter case, if the participant list does not carry county codes, appropriate procedures or rules must be developed for associating each unit on the list with a particular county or other geographic unit used to define the PSU's in the area sample. From the point of view of sampling efficiency, if the distribution of program participants is not reasonably well correlated with the measures of size used by the offeror to select his PSU's, a larger sample will be needed to obtain the desired reliability of estimates.

(d) Level of reliability desired - Most of the RFP's for contract surveys took the more or less traditional approach of requiring a specified number of completed interviews. One or two also specified that these interviews be conducted in some minimum number of PSU's. Strangely, in one case the sample size was not specified at all in any of the procurement documents and in another, a rather wide range was given. We have also noted that if the sample size is not clearly specified in the RFP in terms of completed interviews (or alternatively, as the initial sample, with a minimum or target response rate), some offerors will treat it as the initial sample and some as the number of completed interviews.

Clearly, when requirements are given in terms of probability samples of fixed sizes, it is possible for offerors to meet these requirements with sample designs which vary substantially in terms of their expected reliability for estimates of specified population values. If these are the only RFP requirements relevant to reliability, the designs which produce less reliable estimates will, in general, tend to have lower costs, and thus be

at an advantage in the selection process.

This is not a simple problem to solve. Ideally, we might specify the desired reliability for a few key variables. In practice, this may be difficult for many reasons. We may not know enough about components of variance for these variables to set target reliabilities which can be reached within the budget allotted to the project. It may be difficult to persuade the users (in-house) of the data to select key variables and specify target reliabilities. Finally, it may be difficult to decide whether or not proposed designs will meet these targets. Nevertheless, we believe that this approach should be used when feasible.

In a recent survey RFP, we required that the proposed design produce estimates with reliability equivalent to estimates from a simple random sample of a specified size. This may be a useful procedure where most of the significant estimates from the survey will be proportions or percents based on attributes. We are not yet at liberty to discuss the results; however, we can say that the experience has shown that there is a dearth of specific data on design effects for different survey designs and variables.

(e) Target response rate - The study shows this to be the area which was neglected most in the procurement process. None of the RFP's specified a target response rate[4]; insofar as we could determine, only one specified in any detail the required efforts to obtain complete response.

In a majority of cases, an expected response rate or a reasonably complete description of the planned followup effort or both appeared either in the technical proposal (which is incorporated into the contract) or in a contract amendment. In one case, the contractor planned to review response rates for different cells based on respondent characteristics and do telephone followups for cells where response was low. We did not consider this to be a description of an adequate followup effort.

For one survey, we could not find any information about response rates until we reached the OMB clearance submittal. There we found both an expected response rate and a detailed description of planned followups! There may be a moral here for those who contend that the OMB clearance process is a waste of time.

With respect to actual performance, we have only partial information. This is partly because several of the surveys are still underway, but also is due in part to failure to document response outcomes fully.

Where we do have information we find that our surveys of beneficiary and target populations usually achieve a reasonably high response rate, but that the experience with surveys of health care providers, e.g., hospitals and physicians, has been less satisfactory. While this difference may be attributed in part to intrinsic difficulties in surveying the latter group, we believe it also results partly from giving insufficient attention to response problems during the procurement process.

Finally, in connection with followup effort, it is important to remember that costs are directly related to the amount of followup effort. As was the case for reliability, we must, in the procurement process, avoid giving an unfair advantage to the offeror who proposes a minimal or vaguely defined followup effort.

Findings for Contract Surveys: Deliverables- Part B, 1 of the Checklist for RFP's (Exhibit B) lists several possible "deliverables", i.e., concrete work products that are required to be delivered to the agency by the contractor at specified times. In some cases, these items must be approved by the agency before later stages of the survey process can start.

Most of these items were included in the majority of contracts studied. However, there were 4 items - h, i, j and m - which were rarely found in contracts. Significantly, these were all items which provide information about the quality of the survey results. It is almost as if we have been saying to contractors "Give us the data and the analysis on a timely basis, but don't tell us anything about errors in the data." Following is a brief discussion of these 4 items:

1. (Item h) A detailed and accurate accounting of the data collection results for the initial sample. This information is needed in order to

(a) Determine how well the contractor succeeded in meeting target response rates.

(b) Make appropriate adjustments for nonresponse in producing estimates from the survey data.

(c) Advise data users about potential nonresponse errors in the results.

(d) Set reasonable targets for response in later surveys.

2. (Items i and j) Quantitative information on the results of validation and verification in the data collection and processing operations. Most contracts provide for validation of a sample of the interviews conducted and for 100-percent or sample verification of coding and keying operations. However, we seldom ask for or receive information on the findings of these checks. Asking for such data might increase the probability that these checks would be taken seriously, and would provide further information of interest in connection with the analysis of the results.

3. (Item m) Estimates of sampling error. ORS has a policy of presenting sampling errors when results based on samples are published. However, the need to calculate sampling errors sometimes doesn't occur to the survey manager until fairly late, e.g., when the tabulations are completed and it is time to analyze the data and prepare a report. Consequently, we find that the contract seldom provides specifically for the calculation of sampling errors. In some cases this is deliberate, as we plan to do the calculations ourselves; however, even in such cases it is important to insure, through appropriate contract provisions, that the data turned over by the contractor include the information needed to calculate sampling errors based on the sample design actually used.

Findings for Reimbursable Surveys - Three reimbursable surveys were included in our study. A fourth was in scope but we have not yet compiled the relevant information. In all 4 cases the Bureau of the Census was the service agency and was completely responsible for data collection. Responsibility for the selection of samples depended on the frame used. If the frame was a list of SSA program participants, SSA selected the sample; if the frame was a Census or the Current Population Survey, the Census Bureau selected the sample according to agreed-on specifications. Responsibility for data-processing varied all the way from complete processing of questionnaires through the tabulation stage by Census to just the reverse. The confidentiality requirements for Census and Current Population Survey data are a factor in determining these arrangements. One of the 3 surveys included in the study is a continuing survey; the other 2, and the one not included are all longitudinal surveys, i.e., they involved 2 or more interviews with the same respondents.

With respect to the basic survey objectives discussed under the findings for contract surveys, we can make the following observations:

1. The survey population and kinds of information to be collected are usually fully and clearly specified, although not necessarily in a formal way.

2. Probability sampling is always used; both Census and SSA/ORS rely almost exclusively on probability sampling in their survey work.

3. Sample size is usually specified in terms of number of persons or households in the initial sample and number of PSU's. Since variance data on design effects are fairly readily available for Census PSU designs, this is equivalent to specifying reliability.

4. No target response rate is specified, and as far as we could determine, interviewer instruction manuals are not specific about the followup efforts, although general instructions for planning callbacks are included. Nevertheless, response rates, where known, are generally high. Response rates are normally reported in detail for the main survey, but it is sometimes difficult to determine the effects of nonresponse in preliminary screening operations or in the collection of data for the sampling frame (Census of Population or Current Population Survey). Often the combined effects of undercoverage in the frame and nonresponse in all phases leading up to and including the main survey are greater than is generally realized or reported.

An interagency reimbursable agreement is executed for each fiscal year in which work is carried out by the service agency. The description of the work to be done is usually much shorter and less detailed than a contract for a survey. Typically, it does not incoude a detailed time schedule for the work to be done and for "deliverables." Other documentation varies from one survey to another, depending on arrangements worked out between the staff of the 2 agencies who are responsible for the project. Interagency memoranda or letters are commonly used to transmit and react to more detailed specifications. For some of these surveys, we found it difficult, after the fact, to obtain information about all aspects of the survey design.

There are no easy answers in making a choice between the contract and reimbursable routes for a particular survey. It is probably fair to say that the sponsor has at least the potential for more direct control over and ability to monitor the survey operations with a contractor than he does where the work is done by Census. The contractor has a firm legal obligation to perform; whereas the Census Bureau must give priorities to the requirements of its own census and survey operations.

On the other hand, Census offers important advantages, including an experienced and well-supervised data collection staff, access to efficient sampling frames for surveys whose target populations are relatively small and scattered among the general population, and technical resources matched by only a few private survey organizations.

APPLICATION OF THE STUDY FINDINGS

The most important product of this study so far is the Checklist for RFP's for Contract Surveys (Exhibit B). We still regard the Checklist as preliminary and we hope, by presenting it to several reviewers and audiences, to receive numerous suggestions for improvement. Evaluation is needed from both agency sponsors and contractors, and from both survey technicians and analysts, and specialists in contracting procedures.

To make the Checklist more or less self-contained, we have included an introduction describing the general structure of an RFP for a survey. More detailed information explaining contracting procedures to the layman are available from several sources (cf. U.S. Department of Health, Education, and Welfare 1971, 1975).

The Checklist is already being used informally in connection with some RFP's for new surveys. If it stands up after review and informal testing, we expect to recommend, for our respective agencies:

1. That the Checklist be distributed to all current and potential survey managers and project technical officers, and that seminars be conducted for staff members to explain, illustrate and discuss its use.

2. That every survey RFP be reviewed, prior to issuance, by a qualified user of the Checklist.

We have chosen to concentrate on this phase of survey management because we believe that there is no acceptable alternative to building in quality at the beginning of a survey.

While we believe that use of the Checklist will lead to some improvements, it will certainly not solve all the problems associated with survey procurement. Some of these are discussed in the next section.

SOME UNRESOLVED PROBLEMS

Based on our findings in this study and on recent direct experience with the procurement process, we have identified two aspects of survey procurement which we believe require special attention. The first of these - the establishment of response rate requirements - is peculiar to surveys. The second - the selection process - is, of course, much broader in scope.

Response Rate - The establishment of response rate requirements on close analysis becomes a tangled thicket. Interconnected are problems involving potential harassment of nonrespondents, the burden imposed on respondents, and measurement of the incremental benefits derived in terms of total survey error.

Contractual approaches to securing required response rates are varied but not of a nature to totally guarantee results. For example, in the context of the fixed price contract several approaches are possible. For a given price, a specified initial sample size and level of response may be required. Should the company fail to meet these requirements there is no payment.

Not a very satisfactory situation! Another approach would be to establish a variable payment rate tied to the level of response obtained. This incentive approach leaves the financial commitment uncertain but may be more equitable. However, unless coupled with a minimum response requirement, it also leaves the ultimate response rate highly uncertain. Another approach would be to establish a minimum level of accomplishment, and to impose penalties in terms of reduced payment for failure to reach this level.

The most extreme contractual approach to the level of response problem is the employment of the cost plus fixed fee contract. This may be coupled with incentives also, but the chief feature is the commitment to cover all costs associated with the effort. Bluntly, the Government pays the costs or the company stops work.

An indirect approach to response level is the provision in the contract of specific procedures and effort to be exerted in followup of nonresponse. This would include the number of followup visits, telephone calls, or communications required to meet contract requirements. These could be included under the various types of contracts discussed above. Unless the follow-up procedures are rigorously specified, their effectiveness may vary substantially depending on how they are interpreted.

In some situations nonresponse becomes a specific element in the sample design with provision made for double sampling with followups.

The general principle of accountability can be rendered explicit in the RFP as explained earlier in connection with the findings about "deliverables" in contract surveys. Specifically, the contract should require a full accounting of the data collection results obtained for the initial sample, as described in B, 1, h of the Checklist (Exhibit B). Inclusion of this requirement may be expected to provide an incentive for better response results.

We have not had enough experience with different methods of specifying response targets to reach any general conclusions. Further experimentation with alternative approaches is needed.

The Selection Process - Some of the problems considered above as well as problems associated with the evaluation phase of competitive proposals may conceivably be dealt with by a restatement of the entire process. This approach is offered as a beginning, tentatively, and hopefully, recognizing that it may be substantially at variance with existing procurement regulations and policies.

Under the present procedures for negotiated contracts, both technical quality and price enter into the selection process, and their respective weights in the final decision are not always clear.

Our proposal is that the price of the contract be fixed and that the selection be made solely on the basis of technical quality. Thus, offerors would be informed in precise terms of the objectives and the exact budget for the survey and asked to submit technical proposals which, in their opinion, would minimize total survey error for designated key variables.

RFP's, under this system, would not be very different. The scope of work statement would still describe, in fairly precise terms, the target population, the kinds of data required, the time schedule, and specific items to be delivered to the agency. Instructions for technical proposals would specify items to be described by the offeror, including sample design, data collection procedures, data processing and analysis procedures, quality control techniques to be applied, relevant experience of the organization and identification and experience of staff to be assigned to the project.

One important difference would be that the sample size, sampling variability and target response rate would not be included in the scope of work, nor would the use of specified data collection and processing procedures. Each offeror would, however, be expected to cover these items in his technical proposal and to justify his proposed design, as well as to present the usual schedules of work and man-hour allocations by function.

The technical evaluation would become the key to the selection process. Evaluation factors would not differ greatly from those currently in use, but they should cover all possible sources of error in the data, with weights assigned in proportion to the expected importance of each source of error. Specific factors covering sampling error (a function of the proposed sample design) and expected nonresponse error (a function of the proposed data collection procedures) should be included.

Preliminary ratings would be assigned to the proposals submitted and, by a process similar to that now in use (or possibly just by using a numerical cutoff), clearly inadequate proposals would be eliminated as technically not acceptable.

Where necessary the remaining offerors would be contacted, but solely for the purpose of clarification, not for modification of their proposals.

Final ratings would be assigned and the proposal with the best rating would be selected.

The above is an over-simplified outline of a complex process, and undoubtedly it would require some changes and additions in order to function well. A key consideration is the qualifications of the technical evaluation panel. Members should be well-versed in both the theory and practice of statistical surveys. Not all agencies have this kind of expertise in-house; if not, it should be sought from outside.

We cannot pretend that this process would always buy the best (minimum total error) product for the agency. Factors contributing to errors in surveys are many and their individual and joint effects on total error are not fully predictable. However, we believe that selection based on technical merit rather than price would, over time, upgrade the quality of contract surveys (which presently is not all it should be) and would simplify the contracting process in important ways.

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FOOTNOTES

1/ Under the 1977 reorganization of DHEW, the Medicare program was transferred to a new agency - the Health Care Financing Administration. At the same time, the AFDC program was transferred into SSA, so in all probability ORS will be conducting surveys of its beneficiaries and target population.

2/ Alternatively, those who consider most survey research to be an unwarranted invasion of privacy might be delighted!

3/ In this section we are concerned only with the intent to use probability sampling. Some of the surveys had low response rates raising questions as to whether the data actually obtained could be characterized as probability samples.

4/ Some later RFP's have included response targets.

REFERENCES

Bailar, B. A. and Lanphier, C. M.

1977 Development of Survey Methods to Assess Survey Practices: A Report of the American Statistical Association Pilot Project on the Assessment of Survey Practices and Data Quality in Surveys of Human Populations. National Science Foundation Grant No. SOC 74-22902, Washington, D. C.

U.S. Department of Health, Education, and Welfare

1971 The Negotiated Contracting Process: A Guide for Project Officers. Office of the Secretary, Washington, D. C.

U.S. Department of Health, Education, and Welfare

1975 Contracting for Surveys in the Health Services Administration. Health Services Administration, Office of Planning, Evaluation and Legislation, Washington, D. C.

Joint Ad Hoc Committee on Government Statistics

1976 "Report of the Joint Ad Hoc Committee on Government Statistics", Statistical Reporter (September):301-310.

Federal Paperwork Commission

1977 Final Report of the Value/Burden Study Group (Circulating Draft). Part 4, C "An Assessment of Federal Survey Practices Done Under Contract and Grant". Value/Burden Study Group, Washington, D. C., IV-21 to IV-86.

Exhibit A - STANDARD CLAUSE ON USE OF PROBABILITY SAMPLING

Unless otherwise specified in the statement of work, any offeror's response to this Request for Proposal (RFP) shall contain probability sampling methods for the selection of respondents or subjects for any survey or other study in which sampling from a defined population is required. Sampling plans and cost proposals shall be based on such methods. If, however, an offeror feels that a nonprobability sampling approach would be more efficient, he may elect to submit an alternate proposal in addition to the required proposal. The alternate proposal must be fully justified and contain a separate cost proposal. Any offeror not submitting a basic proposal utilizing probability sampling methods shall be considered nonresponsive to the RFP.

Exhibit B - A CHECKLIST FOR RFP's FOR CONTRACT SURVEYS

Introduction - An RFP for a contract survey typically consists of two main parts:

A. Instructions to offerors on how to prepare a proposal and submit it to the agency. This section is subdivided into:

1. General instructions, including a brief description of the purpose of the proposed contract and a description of the evaluation factors which will be used to rate the technical proposals. Frequently, a statement is included giving the expected man-years or man-hours of professional effort considered necessary for the project. This information is intended to assist offerors in preparing their proposals.

2. Technical proposal requirements. This section lists the kinds of information which each offeror is expected to provide in his technical proposal. Normally, the technical proposal of the offeror to whom the contract is awarded (with any changes made in the process of negotiation) is made a part of the actual contract.

3. Business management proposal instructions.

B. Contract provisions, including "scope of work" statement. The scope of work statement sets out the background, objectives and specifications for the survey operations to be performed by the contractor. The amount of detail in the specifications may vary from one RFP to another, depending on the desires and technical expertise of the issuer.

This checklist is not intended to be a complete set of instructions for preparing an RFP. The final responsibility for preparation of RFP's rests with the procurement staff. The purpose of this checklist is to call attention to the principal elements of survey design and practice that determine the quality and utility of the outcome, and to suggest appropriate ways of treating these elements in the RFP. The goal, as in any survey, is to maximize the amount of information per dollar spent, keeping in mind that information is a function of the amount of error in the data.

A basic decision - At the outset, it is necessary to choose between the two basic methods of payment - fixed price and cost plus fixed fee. This choice is a subject of controversy, especially between issuers and offerors. Most, but not all, ORS contracts for surveys have used fixed price. Without trying to have the last word in this controversy, it is suggested that the fixed price approach is best if the issuer has a pretty good idea of what he wants and its cost is reasonably predictable.

Checklist

A. Instructions to offerors. The following should be included

1. Purpose of the survey

a. General statement of survey objectives

b. Are substantive results intended to be definitive, or is survey intended as a pilot test, or feasibility study?

c. Is survey descriptive or analytic?

d. How will results be used?

2. Information to assist bidders

a. Sampling frames, if any, available from agency.

b. Information on sampling and nonsampling errors obtained in similar surveys.

c. Agency policy on taping and other methods of monitoring interviews.

d. Whether use of government franked envelopes will be permitted for survey mailings.

e. Information on the contractor selection process, including a list of the selection factors to be used and their respective weights.

3. List of items that must be covered in offeror's technical proposal*

a. Detailed description of proposed sample design, including:

(1) Sampling frame

(2) Sample selection procedures

(3) Estimation procedure

(4) Procedure for estimation of variances

b. Data collection procedures

(1) Principal collection method(s)--face-to-face interviews, telephone interviews, mail questionnaires, other--with justification for method selected, especially in terms of expected quality of response.

(2) Procedures for training interviewers (if applicable).

(3) Methods to be used to achieve target response rate (see item B, 2, a, (5)).

(4) Methods and techniques to be used for minimizing response errors, especially for items known to be difficult or sensitive.

(5) Plans for supervision of interviewers and validation of their work.

(6) Plans for review and any necessary followup of questionnaires turned in by interviewers or returned by mail.

c. Processing procedures (if applicable)

(1) Clerical, coding and editing procedures--pretesting, personnel, training, verification.

(2) Keying procedures--verification

(3) Computer edits

(4) Procedures for tabulation and analyses

d. Procedures for protecting rights of data subjects and respondents, and for safeguarding confidential information.

e. Information on facilities and past experience.

(1) How will contractor arrange for necessary interviewing staff?

(2) Location, experience of interviewing staff to be used for survey.

*If the issuer wishes to pre-specify some of these elements, they should be omitted here and covered in the scope of work statement. See Part B, 2.

(3) Data processing facilities. Is any of data processing to be subcontracted?

(4) Brief summary of results and identification of agency references for last three completed surveys and for other surveys similar to this one. Indicate minimum set of items to be reported for each survey.

f. Name and experience of proposed project director and other key personnel who will work on this survey, with amount of time to be spent and principal functions for each person.

B. Contract provisions

1. "Deliverables". These are items which must be delivered to and accepted by the government at specified times.** Consider each of the following as a possible deliverable:

a. Periodic progress reports.

b. Draft questionnaire(s)

c. Proposed sample selection procedures.

d. Draft training materials and instructions for interviewers.

e. A report on pretest findings.

f. Draft specifications and instructions for data processing operations.

g. A specified number of copies of all final questionnaires, forms, instruction manuals, training materials, processing specifications, and other documents used in the survey operations.

h. A full accounting of the data collection results for the initial sample, with the following breakdown:

(1) Cases determined to be eligible

(a) Completed interviews
(b) Incomplete, by reason

(2) Cases determined to be ineligible, by reason

(3) Cases for which eligibility was not determined

i. Results of validation of interviews

j. Information on error rates found in verification of coding and keying operations.

k. Edited data tapes. If individual identifiers are needed (e.g., to merge survey and SSA program data) this should be specified.

l. Tabulations

m. Estimates of sampling error

n. Final report, including analysis of results and full report of survey operations, to the extent not covered by other items.

**Delivery dates should be specified in terms of time elapsed after award of contract. It may be desirable to have contingency provisions to allow for possible delays in agency or OMB clearances.

2. "Scope of work" provisions. These are specifications which the offeror must follow

a. Minimum set (should be included in all RFP's)

(1) A clear and complete definition of the survey population, including specifications of reporting units (e.g. individuals, households, beneficiary units) and of geographic coverage.

(2) Kinds of information to be collected, including specification of key variables.

(3) Required use of probability sampling at all stages of selection, and right of agency to review selection procedures.

(4) Level of reliability (sampling error) required for one or more key statistics. These requirements must be compatible with funds available for the survey.

(5) Target response rate. The term "response rate" should be clearly defined, including what is meant by a "completed questionnaire".

b. Optional items (may be included if considered appropriate)

(1) Requirements for pretesting.

(2) Acceptable data collection procedures. For example, for some purposes, mail questionnaires may not be considered acceptable. However, such restrictions should not be imposed unless there is good evidence to support them.

(3) Use of specific sampling frames and sampling selection procedures.

(4) Draft questionnaire(s). This will be helpful to offerors in estimating data collection and processing costs.

C. Some things to avoid in RFP's

1. Incomplete specifications

a. A sample of 1,000 persons. Does this mean 1,000 completed interviews or an initial sample of 1,000?

b. Estimates with a coefficient of variation of 5 percent. Which variables are subject to this requirement?

2. Over-specification. See item B, 2, a, (4). If the budget and the level of reliability are both specified, the budget should be large enough to achieve the desired level of reliability without cutting corners on other design features that affect the overall quality of the results.

3. Unnecessary constraints on survey design. Specific collection and processing procedures should neither be required nor ruled out unless there is objective evidence for doing so. Survey organizations should be allowed to demonstrate their expertise and ingenuity in developing the technical proposal.