



# **DEVELOPING A SURVEY PROGRAM EVALUATION PROCESS**

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# Developing a Survey Program Evaluation Process

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The Performance Assessment Rating Tool (PART) was instituted to encourage rigorous performance assessment to boost the quality of Federal government programs. For survey programs, an important component of performance assessment is the evaluation of each of the program's survey components and then the evaluation of the effectiveness of the overall program. This paper summarizes the results to date of a study to develop templates for evaluating individual surveys and to evaluate a program composed of a family of surveys.

For this investigation, we will develop two templates, one for the evaluation of an individual survey and one for the evaluation of a family of surveys that form a survey program. The goal will be to develop templates that an external group could use as guides to conduct survey program evaluations. To validate and refine the templates, we will use the templates to evaluate EIA's Petroleum Marketing Program and its 11 component surveys. Then, the templates will be updated to create the penultimate templates for survey and program evaluations.

## Program Evaluation Template for an Individual Survey

Program Evaluation for a family of surveys must begin with a summary evaluation of the individual surveys that comprise the survey program. Understanding the surveys that comprise a program is essential to assessing the effectiveness of their integration to create the survey program. The evaluation template for an individual survey will summarize aspects such as the following:

- survey objectives, including population subgroups for which separate estimation is desired;
- target population definition, exclusions and inclusions, and temporal dimension;
- sampling frame, including coverage of the target population and other quality issues;
- sample design type and the steps taken to implement it;
- sample size, amount and how derived, and associated precision;
- weighting, including nonresponse adjustments and poststratification;
- response rates and the outcome codes and definitions used for their derivation;
- edit and imputation procedures for missing data items and/or data records; and
- questionnaire content in terms of screening procedures, structure of form, and instructions.

Note that the steps in the summary evaluation contain many of the same steps that would be followed for EIA surveys that are not part of a "family of surveys" and need to be evaluated

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individually. The summary review that will be designed as the first step in the program evaluation will of necessity be less detailed and more descriptive in nature.

### **Program Evaluation for a Family of Surveys**

The Program Evaluation for a family of surveys will include a summary evaluation of each survey. The summary evaluation of each survey will cover the objectives, target population, frame, and sample design as a minimum, but most likely will comment on the components outlined in the previous section although not in the detail that would be done were the survey being evaluated separately. In addition, the Survey Program Evaluation will examine:

- which respondents report to which surveys, and the data requests made—to identify unnecessary burdens placed on survey respondents and whether the survey program needs restructuring;
- how the data within and across surveys are used in analysis and presented to the public and the relationship to the survey designs—to determine if one or more of the surveys should be modified;
- the relationship between question wording and consistency from EIA's and the respondent's points of view—to decide if there is a better design for forms and instructions;
- how well confidentiality protection is applied—to assure confidentiality and encourage response; and
- response issues and timeliness.

The program evaluation will identify strengths and weaknesses of the program and will result in recommendations for improvement and recognition of desirable design elements already in place. In addition to its use for a particular survey program, the methodology being developed could also be extended to do evaluations across survey programs that have related topic areas and populations such as electric power with natural gas, and petroleum supply with petroleum marketing.

### **Task Statement**

This project has been partitioned into phases and the activities that will occur under each phase.

Phase 1 of this task has the goal to produce a survey evaluation template that can be used as a guide to evaluate individual surveys. Phase 1 of this task has been completed.

Phase 2 of this task will involve the preparation of a program evaluation template for conducting the evaluation of a program that incorporates a family of surveys.

Phase 3 will be devoted to a proof of concept of the survey evaluation template by evaluating the 11 surveys comprising the petroleum marketing survey program.

Phase 4 will be devoted to a proof of concept test of the program evaluation template by conducting an evaluation of EIA's Petroleum Marketing Program. The program evaluation

template will be used to summarize the statistical and survey attributes of the petroleum marketing survey, highlighting strengths of the program and areas for improvement.

Phase 5 will involve taking what was learned in evaluating the petroleum marketing survey program and its 11 component surveys to create penultimate templates for the survey evaluation and the program evaluation.

### **Questions for the Committee**

The survey evaluation template is included in the Appendix. We would appreciate comments on the template in particular:

- Are there additional items that should be included?
- Do some items need to be modified or expanded?
- Is this overkill for evaluation of an individual survey?

The program evaluation template is still in the preparation phase. We would appreciate comments on what the committee considers to be the most important components of evaluating a program that incorporates a family of surveys.

## **APPENDIX**

### **Survey Evaluation Template**

# Survey Evaluation Template

## **Survey Name:**

Name of survey and (if applicable) the family of surveys to which it belongs.

## **Brief Description of Survey:**

Include subject matter, sponsors, and periodicity (one-time, repeated cross-sectional, or longitudinal).

## **Survey Objectives:**

Describe the primary purpose for the survey. Compile a detailed list of the uses for which the data are to be input and the research questions that the data must answer. Indicate whether the survey is primarily intended for descriptive purposes versus policy research. List reporting domains for which separate estimation is needed. Indicate when and to what extent comparisons will be made to other surveys or to previous cycles of the same survey.

## **Target Population:**

Delineate the entire set of population units for which the survey data are to be used to make inferences. If business entities are involved, indicate the level of the business forming the units of the target population. If inferences are desired for multiple population units, then document each unit. Be specific so that inclusions and exclusions from the target population can be completely understood. Specify the temporal and geographic aspects of the target population units. Specify the treatment of units whose characteristics change over time. Describe the treatment of units that enter the population (births), exit it (deaths), or assume a new identity (movers, ownership changes, mergers).

## **Sampling Frame:**

Describe the list or mechanism used to enumerate population units for sample selection and data collection purposes. Specify differences between the units comprising the target population and the units comprising the frame. Delineate the relationship between frame units and target population units (one to one, many to one, one to many). Discuss whether duplicate listings are present and how treated in frame building. Discuss the extent to which target population members may be missing from the frame and what is known about the characteristics of the uncovered units. If appropriate, discuss size measures available/constructed for the frame and their accuracy.

**Sample Design:**

Note whether the survey is based upon a sample or a census of population members. For samples, provide an overview of the design, including whether selection procedures involve explicit or implicit stratification, the sample selection method(s), any multiple stages or phases of selection, definition of strata, use of size measures, and unique or unusual approaches. Present the rationale for the sample design chosen.

**Sample Allocation:**

Summarize the sample size allocation to strata and the methodology involved. Describe the precision constraints/guidelines used to determine sample size in terms of completed interviews. List assumptions made about response and eligibility rates that were used in converting the sample allocations into the number of cases to be selected from each strata.

**Data Collection:**

Summarize steps in data collection. Review outcome codes in terms of capture of available information about nonrespondents based upon where nonresponse occurs in the interview process. Review response and eligibility results for the survey—tabular display best with outcome codes and formulas given. Screener and questionnaire review in terms of target population definition, capture of data needed for weighting, structure of form, and instructions. Review of mailout package materials if pertinent.

**Editing and Imputation:**

Review data cleaning and editing methods. Document relative magnitude of data records changed in processing or set to missing and whether too much/not enough editing has been done. Review imputation procedures in terms of method(s) used, their appropriateness, and the extent of missing data replaced. Document QA procedures implemented to ensure data quality.

**Weighting:**

Summarize steps in weighting and treatment of nonresponse/undercoverage. QA procedures implemented during weighting. Agreement between weight totals and external data sources.

**Data Analysis:**

Review reports to determine uses made of the data and domains of particular importance based upon frequency of use. Review other uses that are being made of the data, such as using the data as input for model building. Relate findings back to sample design and data capture.

**Summary of Findings:**

Summarize the findings of the evaluation with respect to the ways in which the survey is incorporating appropriate survey methods and/or creative or innovative procedures. Summarize any areas where the survey departs from what would be considered best practices and provide recommendations for improvement.