

**Surveys**

Presentation to the Audit Forum

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**Course Objectives**

- Present a range of survey methods and their strengths and weaknesses
- Writing survey questions that elicit high quality responses
- Survey pretesting

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**Definitions**

- **Questionnaire:** The structured instrument used to systematically collected data that are as accurate as possible.
- **Survey method:** The means by which survey data are collected (e.g., structured interviews, mail questionnaires, web questionnaires, etc.).

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## Survey Methods: Interviewer-Administered Structured Interviews

- **Interviewer-Administered Structured Interviews**
  - **Face-to-face interviews**
    - Conducted in-person
    - Interviewer verbally asks the questions and enters responses
    - Either hard copy, computer assisted (CAPI), or taped
  - **Telephone interviews**
    - Conducted by telephone (Either by staff or by a contractor)
    - Interviewer verbally asks the questions and enters responses
    - Either hard copy, computer assisted (CATI), or taped

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## Survey Methods: Self-Administered (1)

- **Mail surveys**
  - Sent out by mail (includes USPS, Fed-Ex, or other carrier) and returned by mail or fax
- **Web surveys**
  - Questionnaire resides on a GAO server that the respondent accesses through the Internet
  - Respondent receives an e-mail which includes the survey URL (address) and a unique username and password
  - Respondent completes the questionnaire via the Internet in one or more sessions
  - GAO does not consider the survey as an official response until the respondent answers a final question asking if he/she considers the survey to be "complete"

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## Survey Methods: Self-Administered (2)

- **Fax surveys**
  - Survey is faxed to the respondent
  - Responses may be returned by fax or mail
  - Faxes may be sent and returned to a dedicated computer
- **Electronic Questionnaires**
  - Survey questions are usually sent as an attachment to the e-mail or distributed using a CD that is mailed to the respondent.
  - There are many administrative and data processing issues with this method.
- **In-person – self-administered**
  - Survey is handed out to a respondent or group of respondents and the completed survey is collected directly or returned by mail, fax, or drop box.

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## Survey Tasks Timeline

- **Survey Tasks**
- 1. Plan overall job design . . . . .
- 2. Determine basic survey content . . . . .
- 3. Determine survey population/sample . . . . .
- 4. Develop questionnaire . . . . .
- 5. Prepare respondent list(s) . . . . .
- 6. Pretest questionnaire . . . . .
- 7. Finalize questionnaire/prepare for distribution . . . . .
- 8. Collect data and follow-up . . . . .
- 9. Transfer data to electronic file (edit questionnaire, enter, and verify entry)<sup>1</sup> . . . . .
- 10. Analyze data . . . . .

<sup>1</sup> Note: Task #9 is not necessary for Web surveys in that all data are entered directly by respondents.

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## Basic Factors Involved in Decision

- Ten issues generally should be considered when deciding on the most appropriate survey method for your data requirements
  - In addition, the strengths and weaknesses of each survey method for your particular data requirements generally should be factored in
  - Therefore, the decision boils down to:
 

**Issues**

**+**

**Strengths and Weaknesses**

**=**

**Best Survey Method**

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## Survey Method Selection Issues (1)

1. Time	How much time is available to develop the questionnaire and collect the data?
2. Resources and Costs	What staff resources and financial resources (for potential contracting) are available?
3. Sensitivity of survey data	How sensitive are the data being collected and how reluctant may respondents be to provide data?
4. Survey population characteristics	What are the characteristics of the survey population? (e.g., do they have Internet access, do they have low literacy levels, etc.)
5. Survey population/sample size	What is the survey population or sample size?
6. Survey formatting	Does the questionnaire require complex formatting features such as double or triple level matrices?

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## Survey Method Selection Issues (2)

7. Technical/complex nature of data being collected	Are respondents required to do complex or time consuming analyses or computation tasks?
8. Number & location of respondents for a single survey response	Does the survey require that multiple respondents (possibly at different locations) answer specific questions or sections of a <u>single</u> questionnaire?
9. Complexity/number of questionnaire skip patterns	Does the survey require numerous or complex skip patterns?
10. Requests to submit supplementary documentation	Are survey respondents asked to send GAO copies of documents to support or elaborate on questionnaire responses?

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## Handout: Survey method evaluation checklist

Comparison of various survey methods.

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## Types of Data Typically Obtained in GAO Surveys

- Activities and Behaviors
- Attitudes and Opinions
- Quantitative (actual or estimated) information
- Factual Conditions

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**Considerations for Questions**

- Use clear and recent time frames
- Use clear definitions of terms and categories
- Issue may have many dimensions so multiple questions may be needed
- Some issues may be sensitive; respondents may be reluctant to provide information
- Response categories should include all important alternatives
- Consider availability and organization of records
- Consider the accuracy of information provided by respondents

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**Strategy for Developing a Set of Potential Survey Questions**

1. Start with the researchable question(s).
2. Define abstract terms; write sub-questions, increasing the level of specificity.
3. Develop a focused set of potential survey questions that address the sub-questions.
4. Test, evaluate and refine the survey questions.
5. Consider what possible responses to the survey questions will allow us to say in the report.

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**Diagnostic Questions to help Refine the Set of Possible Questions**

1. How will the question be used in a report?
  - background information
  - to establish or point to a condition
  - to develop criteria
  - to pinpoint causes of some condition
  - to establish the effects of a condition
2. Is there a better available source of information to answer the question?

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## Writing Questions That Elicit High Quality Responses

Good survey questions:

- **Are easy to comprehend:** The respondents will easily and consistently interpret the question in the way we intended.
- **Ask for information that is available:** The respondent will have the information needed to answer the question.
- **Minimize respondent burden:** The respondent will put forth the effort required to provide the answers.
- **Are unbiased:** The answers will be reliable and not biased by the manner in which we ask the question.

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## Goal 1: Question Comprehension

Questions should be structurally simple.

- Use words common to the respondent population
- Shorter words
- Fewer prefixes and suffixes
- Shorter sentences (25 words is college level)
- Simple sentences
- Avoid using too many prepositions (to, by, for, in, etc.)
- Typically state in question form not as a command

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## Goal 1: Question Comprehension

Questions should be clear and specific.

- Minimize use of abstract terms
- Define terms and concepts
- Minimize use of jargon and acronyms
- Qualify questions as appropriate (e.g., specify what to include and not include in a count of something)
- Have time markers as needed (e.g., last federal fiscal year, or last week)

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**Goal 1: Question Comprehension**

Aids to comprehension

- Category labels for subtopics within the survey
- Two-column format for readability of paper surveys
- Instructions for how to respond consistent in style and placement throughout (e.g., *Check one.*)
- Similar response option patterns and scales
- Effective use of white space/layout

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**Goal 2: Does the Respondent Have the Information Needed?**

- Is the respondent the “owner” of the information or are they a secondary source?

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**Goal 3: Respondent Burden**

Survey goal: The respondent will put forth the effort required to provide the answers.

Consequences of excessive burden:

- Fewer people answer the question.
- More people give estimates or abbreviated thinking, making the data less reliable.
- Fewer people answer the survey.

\*Tip: By minimizing respondent burden, more respondents will put forth the effort to respond

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**Goal 3: Respondent Burden (continued)**

Factors that add to burden

- Burden of time
  - to comprehend the question
  - to decide to answer it or not
  - to consult with others, if needed
  - to check records, if needed
  - to formulate a response consistent with the options given in the question
  - for all the questions on the survey
  - to assemble and return the survey

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**Goal 3: Respondent Burden (continued)**

More factors that add to burden

- Psychological burden
  - perceived relevance of the survey questions to the purpose of the study
  - perceived risk in responding honestly
  - perceived value to respondent in responding honestly (includes social, societal values)

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**Goal 4: Question Bias**

Effects of question wording

The way the question is asked can lead respondents to give inaccurate or inadequate answers.

Slight changes in the wording of a question can lead to very different responses.

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**Goal 4: Question Bias (continued)**

Avoid effects of known **response styles** that lead to inaccurate or unreliable answers

- Primacy (checking the first items in a list)
- Recency (checking the most recent items read or heard in a list)
- Social biases (desirability, acquiescence, status quo, making good impression, etc.)

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**Goal 4: Question Bias (continued)**

Balance the question to avoid bias

- Give all sides of the issue equal treatment
- Balance the question "stem"  
"How satisfied or dissatisfied are you with ...."
- Balance the response options  
"Very satisfied" "Generally satisfied" (2 options)  
"As satisfied as dissatisfied" (the center option)  
"Very dissatisfied" "Generally dissatisfied" (2 options)

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**Summary: Characteristics of Good Questions**

- Easy to understand
- Request information available to respondent
- Minimize respondent burden
- Unbiased questions and answers

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## Choosing the best type of question to use

- Open-Ended Narrative
  - Background
  - Follow-up to a closed-ended question
  - Exploratory work (e.g., develop better understanding of an issue prior to developing closed-ended questions)
- Open-Ended Fill-in-the blank
  - Respondent enters a number or short answer
- Closed-Ended
  - You have developed knowledge of an issue
  - Results represent the entire target population or relevant subsets of the population (that is you need to make a specific estimate)

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## Things to Think About Open-Ended Narrative Questions

+easy to write  
 +allow respondents to answer in their own words  
 +provide a quote for the report  
 +can be analyzed using content analysis methods

-memory recall burden for respondent  
 -diverse responses complicate analysis  
 -time consuming to classify & quantify responses to open-ended questions  
 -aggregated results are less precise

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## Things to Think About Open-Ended Fill-in-the-Blank Questions

+provides exact answer  
 +efficient format  
 +easy to answer

**However,**

-must determine whether numeric responses are exact answers, estimates, or guesstimates  
 -verbal responses may have to be coded for analysis

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## Things to Think About Closed-Ended Questions

- +precise testimonial evidence for the report
- +responses easier & possibly quicker to analyze
- +less respondent burden—rely on recognition memory, not recall memory
- little opportunity to explore topic further
- may take longer to develop question and answer choices

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## Types of Structured Survey Questions (Closed-Ended Questions)

- Format
  - Stand-alone question with answer choices
  - Multiple questions with answer choices presented in a matrix
- Response options
  - Yes/No
  - Multiple choice (Check one/Check all that apply)
  - Rating
  - Ranking

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## Types of Structured Survey Questions Closed-Ended Questions: Yes/No

- +determine if a condition exists (e.g., Did you go to training on the new computer system?)
- +screen for subsequent questions
- Considerations
  - \*not appropriate for content that is complex or not dichotomous in nature
  - \*no depth of information: intensity (e.g., level of satisfaction), degree of uncertainty

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Types of Structured Survey Questions  
Closed-Ended Questions: Multiple Choice

- “Check one” or “Check all that apply”
- Respondent is given a range of answer choices and must pick one or more
- Instead of a “Check all that apply” question, consider a yes/no matrix so that you clearly know which are yes and which are no

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Types of Structured Survey Questions  
Closed-Ended Questions: Multiple Choice

- Considerations
  - Difficult to design good questions and answer choices
  - Question writer must have a thorough understanding of the subject matter
  - Answer choices must be:
    - comprehensive
    - logically ordered
    - not overlapping
    - relevant

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Types of Structured Survey Questions  
Closed-Ended Questions: Rating

- Respondents choose one response from an ordered range of response options
- Response choices can address:
  - strength or intensity of an attitude or opinion
  - quantifying amounts & frequency (time, event)

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## Types of Structured Survey Questions Closed-Ended Questions: Rating

- Bipolar rating scale (middle is midpoint with two positives and two negatives)
  - Very satisfied, Generally satisfied, As satisfied as dissatisfied, Generally dissatisfied, Very dissatisfied
- Unipolar rating scale (from none to more and more)
  - Always or almost always, Most of the time, About 1/2 of the time, Some of the time, Never or almost never

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## Types of Structured Survey Questions Closed-Ended Questions: Rating

- + Easy to write
- + Easy to answer
- + Responses can be quantified
- + Intensity of response can be captured

- \* Questions must be neutral, unbiased
- \* Answers must be neutral, unbiased
- \* Respondent forced to choose one answer
- \* Usually a "don't know" or "can't judge" response option is offered

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## Rating Scale Question in Matrix Form

How satisfied are you with each of the following aspects of your job?

	Very Satisfied	Generally satisfied	As satisfied as dissatisfied	Generally dissatisfied	Very dissatisfied
	▼	▼	▼	▼	▼
a. Opportunities to make meaningful contributions to jobs..	L	L	L	L	L
b. Opportunities to increase analytical skills.....	L	L	L	L	L
c. Access to your supervisor.....	L	L	L	L	L

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**Types of Structured Survey Questions**  
**Closed-Ended Questions: Ranking**

- Respondent asked to order response options with respect to a particular characteristic such as:
  - importance
  - priority
- Consideration:
  - Respondents are forced to value one alternative over another no matter how close they are.
  - Respondents often do not follow instructions.
  - Ranking can be derived from ratings which are easier to administer.

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**Types of Structured Survey Questions**  
**Closed-Ended Questions: Ranking**

- Additional considerations
  - Difficult to write
  - Difficult to answer if there are many choices
  - Do not measure the amount of differences between options or the intensity
  - Cannot indicate responses with equal ranking

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**Pretesting Surveys:**  
**Why pretest?**

- To obtain valid and reliable answers:
  - Create understandable questions
  - Determine whether respondents have the information to answer questions
- Minimize respondent burden and increase chances for a higher response rate (ideally 70% plus)

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## Types of question testing activities

- Reviews
  - Technical review by survey specialists (e.g. ARM)
  - Review by subject matter experts
  - Proofreading by team members
- Cognitive interviews
- Focus group discussions
- Behavior coding
- Usability tests (web surveys)
- Field or pilot testing (dress rehearsal for large surveys)

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## Before the Pretest

- Planning the overall pretest program
- Decisions based on:
  - Level of difficulty
  - Importance of accurate information (risk)
  - Time period (lack of time is never an excuse; you may get unusable data or lack a key question)
- Consider the logistics (roles and responsibilities; selecting respondents, sites, number of pretests; technique for pretesting)

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## Selecting the Site

- Face-to-face alternatives
  - Respondent's worksite (access to data or colleagues may be a consideration)
  - GAO premises
  - Meeting venue (e.g., conference)
  - Other convenient location
- Remote alternatives
  - Telephone with pre-mailing
  - Combined on-site meeting and conference call

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## Determining the Number of Pretests

- Number of respondents depends upon:
  - Degree of variation in population
  - Length of survey
  - Existence of major skip patterns in questionnaire
- Number of versions and revisions depends upon:
  - Amount of knowledge about the population, and certainty about study goals and initial survey draft
  - Knowledge about accessibility of information
  - Risk of job
- There is no magic number of respondents or pretests! (GAO guidance=minimum of 5)

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## Overall Pretest Process

- Replicate basic aspects of survey mode
  - Always replicate the basic mode – e.g. self-administered versus interviewer-administered
  - Exactly match the mode (e.g., web, paper, phone, in-person)
- Respondent answers the questions on the questionnaire
- Interviewer asks follow-up questions (probes)

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## During the pretest: Cognitive pretests

- Respondent sharing thoughts and ideas as they try to think about the question. You learn how respondents turn this information into an answer.
- Two types of approaches:
  - **Retrospective Debriefing** Pretests – complete questionnaire before discuss. Review each question, item by item
  - **Concurrent Probing** Pretests – discuss each question as it is answered.
- Techniques:
  - Observation: Look for excessive time, not following skip patterns, body language
  - “Think Aloud”: Stream of consciousness; Some respondents find this difficult
  - Probes: Direct probes and indirect probes

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### Respondent's overall opinions of questionnaire

- Objectivity of the study and questionnaire
- Length of the questionnaire
- Sensitivity of questionnaire or any items
- Level of motivation to answer questionnaire
- Ease or difficulty of questions
- Appropriateness of questions
  - Add any questions?
  - Remove any questions?

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### Following the Pretest Session

- Document findings
- Resolve any conflicting information
- Review questionnaire objectives
  - Respondent burden
  - Respondent cooperation
  - Respondent knowledge and understanding
- Revise questionnaire
- Test revised questionnaire as needed

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### When do we stop pretesting?

- Professional judgment
- Sufficiently valid and reliable for purposes
- Iterative process
- Minimize, not eliminate, error
- No new information
- Run out of time

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## Thank You!

- That concludes my presentation.
- I will take questions from you. And, I will be around until tomorrow if you want to discuss any of the materials I presented.

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