

# Response to Esposito's “Some Thoughts on the Use of Field Tests to Evaluate Survey Questionnaires”

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The views expressed in this presentation are those of the  
author and do not represent changes in OMB policy.



# Overview

- Role of Field Testing in Questionnaire Evaluation
- When Should Agencies Conduct Field Tests?
- How do Federal Agencies Use Field Tests?
- Implications for Q-Bank



# Role of Field Testing in Questionnaire Evaluation

- Key part of the process of developing and evaluating questions
- Involve more realistic production conditions and personnel
- Introduce more variables than laboratory methods, which generally precede field testing
- Field tests often include experiments, and may include behavior coding, and may be the source of data for IRT modeling.



# When Should Agencies Conduct Field Tests?

- *Questions and Answers When Designing Surveys for Information Collections*
  - When developing new questionnaires
    - To see how respondents actually answer questions, and
    - Identify potential data quality problems, such as high item nonresponse rates.
    - To gather data to refine questionnaire items and scales and assess reliability or validity.
  - When planning a change in methodology or questions in an ongoing survey
    - To obtain quantifiable data to decide among the different questions.
    - To measure the effect of the change in methods or questions on resulting estimates.



# When Should Agencies Conduct Field Tests?

- *Standards and Guidelines for Statistical Surveys*
  - **Standard 1.4:** Agencies must ensure that all components of a survey function as intended when implemented in the full-scale survey and that measurement error is controlled by conducting a pretest of the survey components or by having successfully fielded the survey components on a previous occasion.



# When Should Agencies Conduct Field Tests?

- **Guideline 1.4.2:** Use field tests prior to *implementation of the full-scale survey* when some or all components of a survey system cannot be successfully demonstrated through previous work. The design of a field test should *reflect realistic conditions*, including those likely to pose difficulties for the survey. Elements to be tested include, for example, frame development, sample selection, *questionnaire design*, data collection, item feasibility, electronic data collection capabilities, edit specifications, data processing, estimation, file creation, and tabulations. A complete test of all components (sometimes referred to as a dress rehearsal) may be desirable for highly influential surveys.



# How Do Federal Agencies Use Field Tests?

- New survey questionnaires or a major redesign of an ongoing survey.
  - Methodological as well as questionnaire changes
- Some periodic surveys (as opposed to ongoing collections), build in some kind of field test prior to each new collection period.
  - to assess new content or ordering or other methodological changes being considered



# How Do Federal Agencies Use Field Tests?

- The first 50 or 100 fielded cases may be treated as a pretest
  - To make sure the items and the programmed instrument are functioning as planned.
  - May involve interviewer and/or respondent debriefings
  - Also some quantitative analysis of item responses
  - The goal is often to use the field test as a “trial run” and make only minor adjustments as necessary before going forward with the full-scale collection.





# How Do Federal Agencies Use Field Tests?

- The field test is a separate and distinct precursor to the full-scale collection
  - Focus on obtaining quantitative data for further analysis to refine the survey instrument.
  - Assess timing of the administration
  - Assess how items are functioning
    - Distribution of responses and item missing rates
    - Psychometric analyses of item characteristics



# How Do Federal Agencies Use Field Tests?

- To compare different questions through split panel tests.
  - May utilize a separate sample, such as a “methods panel” for the survey or may be used on “live” production sample depending on the survey.
  - May involve one or more modes depending on the modes used in the survey and the available resources.
  - For a major redesign effort, an agency may launch a large-scale separate survey in parallel to production survey to assess the impact of the new survey and/or methods on the key survey estimates.



# The American Community Survey (ACS) Contest Test

- ACS is the replacement for the Decennial “long form” that is sent to 2.9 million households per year.
- Process for adding/changing content
  - Agency justification to Census and OMB
  - Cognitive testing
  - Split-panel field test
- Field test conducted on a large sample separate from the ongoing ACS
  - Testing must be conducted in all three modes of data collection: mail, CATI, and CAPI.



# The American Community Survey (ACS) Contest Test

- The primary results are quantitative comparisons of different questions in terms of panel response rates, item response distributions, and item response rates.
  - Additional qualitative and quantitative methods, such as interviewer debriefings and behavior coding are often included.
  - Also typically include a reinterview to assess reliability over time.



# The American Community Survey (ACS) Contest Test

- In 2008 tested two different versions of a Field of Degree question
  - For National Science Foundation’s Division of Science Resources Statistics.
- The results from the content reinterview were key to assessing which of the two versions better captured the field of degree.
  - An open-ended question asking for the respondent’s major performed much better than a set of response categories
  - Respondents had a difficult time figuring out which category best fit their major degree and so they checked multiple categories



# Hospital Consumer Assessment of Health Plans Survey (HCAHPS)

- AHRQ and its contractors developed and cognitively tested items on hospital patients perceptions of their care.
- 66 items administered to medical, surgical, and obstetric patients who had an overnight hospital stay at one of 109 hospitals in Maryland, Arizona, or New York
- The focus of the field test was to obtain sufficient data for psychometric analysis



# Hospital Consumer Assessment of Health Plans Survey (HCAHPS)

- Data Analysis consisted of
  - Exploratory factor analyses were conducted to guide refinements to the initially hypothesized structure,
  - The revised structure was evaluated using item-scale correlations, internal consistency reliability, and correlations with global ratings.
  - The revised instrument included 32 questions tapping seven domains of care as well as several global items.
  - Additional analyses were also conducted to identify variables for case-mix adjustment.



# National Assessment of Education Progress (NAEP)

- NAEP is the source of the Nation's report card, providing an indication evaluation of how well students and schools are performing.
- NCES employs several strategies to develop NAEP items:
  - Small and large-scale pilot testing to test potential assessment items and select those that will be included on the final instruments.
  - Pilot tests are conducted with nationally representative samples of students to gather information about performance across the whole spectrum of student achievement.
  - In general, two items are tested for each one that will appear on the final instrument.





# National Assessment of Education Progress (NAEP)

- NCES conducts “pre-calibration tests” of the final instruments (after pilot testing) to obtain IRT parameters in advance of the main assessment.
- Thus, the data from the main assessment can then be analyzed using the defined item parameters and produce scale scores much more quickly.



# National Survey of Drug Use and Health (NSDUH)

- SAMHSA collects data on the use of alcohol, tobacco, and illicit substances to track the prevalence of substance use in the U. S. for all persons 12+ years of age.
- SAMHSA conducted separate validity and reliability studies using field tests
- Validity study used a separate sample (from the main) and obtained hair and urine specimens to compare to laboratory results to self-reports.
- Reliability Study used a subsample of the main sample and reinterviewed respondents between 5 and 15 days later .



# Implications for Q-Bank

- Field tests provide vital information to assist in the development, refinement, and selection of survey questions
- Wide range of field test designs and purposes
  - Corresponding array of quantitative and qualitative data
- Hopefully, creative and useful ways will be found to incorporate this information

