Stat 576 topics for final exam

Cluster sampling

PPS sampling

Horvitz-Thompson estimator

Design effect

4 methods of estimating the size of a population

Non-response

Regression in a complex sample

Issues to Consider Before Question Writing

– What concepts need to be measured?

– What type of information is the question asking for?

– Is this question being repeated from another survey and/or will answers be compared to previously collected data?

– Will respondents be willing and motivated to answer accurately?

- Non-Response
  – Incomplete answers
  – Skipped questions
  – Survey not turned in

Issues to Consider Before Question Writing (cont.)

– What survey modes will be used to ask questions?

- Interviewer vs. non-Interviewer
  - Social Desirability: Tendency to provide answers that put one in a good light with the person who asks the questions
  - Acquiescence: Tendency to agree with someone rather than disagree
- Aural vs Visual
  - Primacy: Tendency to more frequently choose from among the first categories offered regardless of their content
  - Recency: Tendency to more frequently choose from among the last categories offered regardless of their content
- Computerized vs non-Computerized

Question Format

– Open-Ended
  - Descriptive
  - Numerical
  - Lists
– Closed-Ended
  - Nominal
  - Ordinal
– Partially Closed-Ended
  - Almost exactly like Closed-Ended, except allows an Other response

General Guidelines for Forming Questions

– Choose the appropriate question format
  • Affects how respondents handle the question
  • Bad formats lead to varied interpretations
– Make sure the question applies to the respondent
  • How does one respond to questions that don't apply?
– Ask one question at a time
– Make sure the question is technically accurate
– Use simple and familiar words
– Use specific and concrete words to specify concepts clearly

General Guidelines for Forming Questions (cont.)

- – Use as few words as possible to pose the question
  - Contradicts using specific and concrete words
    - – Remedied by being specific and concrete, then removing unnecessary words
- – Use complete sentences that take a question form, and use simple sentence structures
- – Make sure "yes" means yes and "no" means no
  - Double negatives lead to people unintentionally favoring a "no"
- – Organize questions in a way to make it easier for respondents to comprehend the response task

Guidelines for Forming Open-Ended Questions

– Specify the type of response desired in the question stem

– Avoid making respondents (or Interviewers) calculate sums; when possible, have the computer do it

– Provide extra motivation to respond

– Use non-directive probes to obtain more information on open-ended items

  • Get as much information as possible

General Guidelines for Forming Closed-Ended Questions

– When asking either/or types of questions, state both the positive and negative side in the question stem

– Develop lists of answer categories that include all reasonable possible answers

– Develop lists of answer categories that are mutually exclusive

– Consider what types of answer spaces are most important for the measurement intent

Guidelines for Forming Nominal Closed-Ended Questions

– Ask respondents to rank only a few items at once rather than a long list

– Avoid bias from unequal comparisons

– Randomize response options if there is a concern about order effect

  • Primacy and recency effects

  • Anchoring: An early response option forms a standard of comparison for later response options

– Use forced-choice questions instead of check-all-that-apply questions

  • Check-all-that-apply asks respondents to choose items that apply

  • Forced-choice asks for judgments about items independently

Guidelines for Forming Ordinal Closed-Ended Questions

- Choose between a uni-polar and bipolar scale
  - Uni-polar: Measures gradation along one dimension where zero-point falls at one end of the scale
  - Bipolar: Measures gradation along two dimensions where zero-point falls in the middle
- Choose an appropriate scale length
  - In general, limit to four or five categories
- Choose direct and construct-specific labels to improve cognition
- If there is a natural metric, use it instead of vague quantifiers

Guidelines for Forming Ordinal Closed-Ended Questions (cont.)

- Provide balanced scales where categories are relatively equal distances apart conceptually
  - Equal spacing allows scalar results to be treated as interval-based variables
- Explicitly label all categories
  - Labeled categories hold more weight than non-labeled categories
- Remove numeric labels from vague quantifier scales whenever possible
- Consider branching (or decomposing) bipolar scales to ease respondent burden and improve data quality
- Provide scales that approximate the actual distribution of the characteristic in the population, or ask the question in open-ended format to avoid biasing responses

Guidelines for Question Order

– Why is the question order important?
  - Questionnaires aren't a collection of independent questions
    – Earlier questions can affect the context of later questions
  - Good question order reduces non-response and measurement error
– Group related questions that cover similar topics together
  - Allows questionnaire to flow like a conversation between people
– Begin with questions likely to be salient to nearly all respondents and choose the first question carefully
  - Psychological observation that people continue acting in a way as the cost of doing so rises

Guidelines for Question Order (cont.)

- Place sensitive or potentially objectionable questions near the end of the questionnaire
- When a series of filter and follow-up questions are used, ask all the filter questions before asking the follow-up questions
  - Only applicable to computerized surveys
- Ask questions about events in the order the events occurred
- Avoid unintended question order effects

Question Order Effects

– Questions order effects result from respondents drawing on past responses to interpret and answer questions

– How do responses compare?

- Contrast vs Assimilation

– What processes drive question order effects?

- Cognitive vs Normative

Cognitive Question Order Effects

- – Assimilation
  - Priming: Early questions bring to mind material that is more accessible for answering later questions
  - Carryover: Respondents perceive two questions as related
- – Contrast
  - Anchoring: Early questions set a standard to which later questions are compared
  - Subtraction: Considerations used in earlier questions are left out of judgment in later questions

Normative Question Order Effects

– Assimilation
- Norm of Even Handedness: Respondents answer the second question similar to the first in an attempt to be fair
  – Justice and Fairness
- Consistency: Respondents answer a second question in order to appear consistent
  – Presentation of self in good light

– Contrast
- Appearing Moderate: Respondents attempt to appear neutral by selecting some items but rejecting others
  – Presentation of self as regular; not extreme

How To Test Questions and Questionnaires

- Obtain feedback on the draft questionnaire from content, questionnaire, and analysis experts
- Conduct cognitive interviews of the complete questionnaire in order to identify wording, question order, visual design, and navigation problems
  - Determines whether respondents comprehend questions as intended
  - Think-Aloud
  - Retrospective Interview
- Conduct experimental evaluations of questionnaire components
- Conduct a small pilot study with a subsample of the population to evaluate the questionnaire
  - Gives insight into item non-response, question distributions, etc.

How to Test Questions and Questionnaires (cont.)

– Use eye tracking to learn how respondents are visually processing questionnaires

– Conduct testing in the mode or modes that will be used to complete the questionnaire

  • Ensures test results are valid for the intended questionnaire

– Document and archive all aspects of the design

  • Allows survey to be replicated to confirm results

Guidelines For Web and Mobile Questionnaires

- Decide how the survey will be programmed and hosted
- Evaluate the technological capabilities of the target population
  - Coverage and access considerations
- Take steps to ensure that questions display similarly across different devices, platforms, and user settings
- Offer a questionnaire optimized for mobile (browser or app based)
  - Covers users that use mobile devices for internet
- Decide how many questions will be presented on each web page and how questions will be arranged

Guildelines for Web and Mobile Questionnaires (cont.)

- Create interesting and informative welcome and closing screens
- Develop a screen format that emphasizes the respondent rather than the sponser
- Use a consistent page layout across screens and visually emphasize essential information for completing the survey while de-emphasizing non-essential information
- Allow respondents to back up in the questionnaire
- Do not require responses to questions unless absolutely necessary for the survey
- Design survey-specific and item-specific error messages to help respondents troubleshoot any issues they may encounter
  - Should provide a link to return to the questionnaire where they previously were

Guidelines for Web and Mobile Questionnaires (cont.)

- Evaluate carefully the use of interactive features, balancing improvements in measurement with the impact on respondent burden
  - Saving responses
  - Braching respondents to additional questions based on responses
  - Providing error messages
- Do not include a graphical progress bar
- Use audiovisual capabilities of the web sparingly, and evaluate the differential effect they may have on respondents
- Allow respondents to stop the survey and finish completing it at a later time
- Whenever possible, collect paradata that provide feedback on how the respondent interacts with the questionnaire

Implementing Web and Mobile Questionnaires

- To the extent possible, personalize all contacts to respondents
    - Avoid overpersonalization to prevent contacts being treated as spam
- Consider sending an incentive electronically with the survey request
- Use multiple contacts and vary the message accross them
    - Spread out contacts to avoid annoying respondents
- Carefully and strategically time all contacts with the population in mind
- Keep email contacts short and to the point

Implementing Web and Mobile Questionnaires (cont.)

– Carefully select the sender name, sender address, and subject line text for email communications

- Sender name and address should appear professional
- Subject line text should be phrased as a request

– Take steps to ensure that emails are not flagged as spam

– Assign each sample member a unique ID number

- Prevents multiple submissions by respondents
- Limits access to the sample

– Work within the capabilities and limits of the web server(s)

Quality Controlling and Testing Web and Mobile Questionnaires

- Obtain expert review and conduct cognitive interviews, experimental evaluations, and pilot studies of web implementation materials and procedures
- Test the survey using a variaty of devices, platforms, connection speeds, browsers, and user-controlled settings, and test the database to ensure that items are collected and coded correctly
- Establish a procedure for dealing with bounced emails
- Establish a procedure for tracking incentives
- Establish a procedure for dealing with respondent inquries
  - Aids with troubleshooting
- Implement a system for monitoring progress and early completes
- Develop procedures to ensure data security