Preview Questions

1. What are the four cornerstones of quality surveys?
2. What has changed about surveying in the last 20 years?
3. What is the advantage of mixed-mode data collection?
4. How is the tailored design method different from other surveying methods?
5. What surveying challenges does the tailored design method address?

Reading Summary

Introduction

* There are numerous reasons for conducting a survey.
  + Understanding how attitudes about a topic vary with other characteristics is often the objective of the survey sponsor.
* There are also numerous uses for survey results.
  + Making capital investment decisions.
  + Setting policy.
* Surveys can be large or small.
  + Q: what is considered a large survey?
* Most surveys are based on samples of a target population.
  + Carefully selected sample surveys enable researchers to make inferences about a population that are only slightly less precise than a census of the entire population and much less costly.
* Non-survey methods used to collect data
  + Unstructured interviews
  + Focus groups
  + Participant observation
  + Content analysis
  + Simulations
  + Small group experiments
  + Records analysis
* A census is the opposite of a sample survey.
  + 100 percent of the target population is surveyed.

Four Cornerstones of Quality Surveys

* Minimizing the four main types of errors
  + Coverage error 🡪 sample frame does NOT accurately represent the population on the characteristic of interest.
  + Sampling error 🡪 difference between the estimate from sample survey and estimate from census survey
  + Nonresponse error 🡪 difference between the estimate generate when only some sampled units respond and estimate when all sampled units respond
  + Measurement error 🡪 difference between the estimate produced from the survey and the true value caused by inaccurate respondent answers
    - Types
      * Response bias 🡪 systematic shift in estimates
      * Response variance 🡪 variability in estimates of the same attribute taken over time
    - Causes
      * Poor question design
      * Survey mode effects
      * Interviewer behavior
      * Respondent behavior
      * Data collection mistakes
* Total Survey Error (TSE) framework attempts to minimize data inaccuracy within unavoidable constraints.
  + Often focuses on discrete actions.
  + Attempts to simultaneously control all four types of errors.

What Is Different About Surveying in the 2010s

* Many more ways of contacting survey respondents and more ways for respondents to complete surveys.
* Less need for an intermediary (i.e., interviewer) between surveyor and respondent.
* Traditional methods are still used for a variety of reasons.
* We can now connect with roughly 98% of U.S. households but there are more buffers that filter out unsolicited messages such as surveys.
* Traditional sample frames no longer provide the desired coverage of some populations.
* Different characteristics for different populations that prefer one communication medium over others.
* Web-based surveys have not lived up to their potential.
* Mail surveys are considered less desirable because they tend to have lower response rates and don’t enable intensive branching.
  + Up to 97% of U.S. households are accessible via mail surveys.
  + Mail has the lowest response rate and highest cost per response
* Single mode surveys are generally not as effective as they once were.

Why Emphasize Mixed-Mode Data Collection?

* More likely to minimize the four major sources of error and survey costs.
* Possibilities:
  + Offering respondents more than one way to complete a survey.
  + Contacting respondents in multiple ways even when only one collection method is used.
  + Creating synergy between contacts via different modes.
    - Postal request followed by an email with an electronic link to a web survey.
* Four types of mixed-mode surveys:
  + Type 1: Use one survey mode to encourage response by another mode.
  + Type 2: Use multiple survey modes to collect responses from the same respondent.
  + Type 3: Use multiple survey modes to collect responses from different population segments.
  + Type 4: Use multiple survey modes to collect responses from the same respondent at different times.
* Effect of four types of mixed-mode surveys
  + Types 1, 3 & 4 focus on minimizing coverage and nonresponse error.
  + Type 2 focuses on minimizing measurement error.
* Single-mode data collection still has value.
  + Mixed-mode data collection may be impractical or ineffective.

What is Tailored Design and Why Is It Needed?

* Researchers must tailor their survey designs to their situations.
* No simple set of procedures for designing surveys.
* Key considerations when designing surveys.
  + Topic knowledge
  + Survey sponsor objectives
  + Target population
  + Available resources
* Fundamental considerations
  + Reducing total survey error may undermine the quality of the information collected.
  + Survey procedure elements must operate synergistically to encourage all sample members to respond to the survey.
  + Build positive social exchange to encourage responses.

Preview Questions

1. What is social exchange theory?
2. How can social exchange theory be used to increase response rates?
3. What are the basic guidelines for applying social exchange theory to surveys?
4. What are the differences in how social exchange theory is applied to mixed-mode survey designs?
5. Why did the WSU doctoral student experience survey generate such a high response rate?

Reading Summary

Introduction

* Must reconcile contrasting views of survey sponsors and potential survey respondents.
* Survey request is usually an annoyance and intrusion for potential survey respondents.
  + Disinterest in the topic
  + Uncertainty about the requestor
  + Concerns about privacy
  + Concerns about security
* Surveyor actions often reinforce or exacerbate the concerns of potential survey respondents.
* Approach to addressing concerns of potential survey respondents is based on social exchange theory.
* Mixed-mode data collection is increasingly required because of changes in technology and communication patterns.

Example of a Survey with a High Response Rate

* Target population was doctoral students that had completed preliminary examination.
* One month for data collection
* Mail request with $2 incentive followed by an email with an electronic link. This was followed by a second email request then a second mail request offering the option of responding by mail. Finally, a third email request was sent.
* Cumulative response was 77 percent.
* Offering choice of multiple survey modes in initial request rather than at a later point tends to decrease final response rates 🡪 it complicates the potential respondent’s decision.

Using Social Exchange Concepts to Motivate Potential Respondents

* Theories suggesting what might motivate potential respondents
  + Cognitive Dissonance Theory 🡪 appeal to people’s desire to be act consistently with their past behavior
  + Reasoned Action Theory 🡪 appeal to positive attitudes toward surveys and subjective norms
  + Adult-to-Adult Communication Style 🡪 do not speak down to potential respondents
  + Influence Theory 🡪 Emphasizes scarcity of opportunity, reciprocation by respondents, and social proof
  + Leverage-Saliency Theory 🡪 Make positive features more salient and negative features less salient
  + Cost-Benefit Theory 🡪 Focus explicitly on costs and benefits for respondents
  + Gamification Theory 🡪 Make responding to surveys seem game like
* The above theories are psychological in nature.
* Sociological focus is concerned with how the survey materials fit with general culture in a way that affects response behavior.
* Social exchange theory
  + Compliance with a request more likely when people believe and trust that the rewards for complying will eventually exceed the costs of complying.
    - Q: Must rewards be individual in nature?
  + Not the same as economic exchange.
    - Only a general expectation of positive return.
    - Exact nature of benefits and why they will be provided are often not specified in advance (i.e., trust in the likely outcome rather than explicit bargaining).
    - Benefits can be social, psychological, economic, etc.
    - Not a rational behavior model.
* All decisions that individuals make about social interactions (e.g., completing a survey) are NOT always or even mostly the result of lengthy, careful consideration.
* Decision to respond to a web or mail survey is generally made in the first couple of days; most potential respondents decide almost immediately.
* Examples of influencers of potential respondent decision
  + Cultural influences
  + Respect for the requestor
  + Wanting to do interesting things

Does Social Exchange Still Apply in Today’s Asynchronous and Rapid-Fire Communication Environment?

* Social exchange theory developed during a time when society was significantly different than it is today.
* There is now more spontaneous social interaction.
* Social interactions are more distantly remote.
* People still make decision considering cost, benefits, and trust.
* Social exchange concepts may be more relevant in today’s environment.

Increasing the Benefits of Survey Participation

* Benefits to responding to surveys are likely limited.
* Many things people do for which they feel satisfaction involve helping others.
* Ways of increasing emotional satisfaction-based benefits for potential respondents
  + Specify how the survey results will be helpful
  + Ask for help or advice
  + Ask interesting questions
  + Sponsorship by a legitimate organization
  + Stress that opportunities to respond are limited
  + Convey that others have responded
  + Use incentives to encourage, but not require, reciprocity
    - Small advance incentive combined with a larger postpaid contingent incentive is often effective.
    - Incentives often help reduce nonresponse error.
    - Does NOT seem to have substantial effect on data quality.
  + Leverage the additive effects of benefits
    - Using several techniques in combination will generally increase response rates more than using just a single technique.
  + Do NOT deny the existence of benefits
    - Required IRB disclaimers often deny the existence of benefits

Decreasing the Costs of Participation

* Reduce the burden of length
* Reduce complexity
  + Respondents feel an increased sense of burden when they question whether they can provide accurate answers to survey questions.
* Use visual design principles to make questionnaires easier to complete
* Avoid subordinating language
  + Don’t make potential respondent feel obligated or beholden.
* Make responding convenient
* Don’t make potential respondents use survey modes that are uncomfortable for them.
* Don’t offer a choice of response mode in the initial request
* Minimize requests for personal and sensitive information
* Show similarity to other previous response to requests
  + Foot-in-the-door technique 🡪 make a small request followed by a larger request after compliance with the small request

Establishing Trust

* Trust is likely the single most important issue affecting response rates to surveys.
* Relevant to all survey modes.
* Survey sponsors should NOT make promises about benefits they can’t guarantee.
* Ways of instilling trust
  + Provide ways for potential survey respondents to confirm the authenticity of the survey
  + Emphasize sponsorship by a legitimate authority
  + Build upon previously established relationships and friendships
  + Provide a token of appreciation in advance
  + Assure confidentiality and protection of data
    - Excessively detailed explanations in situations with low data sensitivity will often raise concerns and deter response.
  + Design professional communications
    - Make each contact appear important
      * Personalized cover letters
      * Including a relevant picture on front of questionnaire
      * Provide information about the survey project
    - Do NOT make the survey information appear too much like a brochure

It’s More than Just Getting People to Respond

* Always consider response rates in conjunction with nonresponse error.
  + Do NOT increase response rates by obtaining data from uncertain types of respondents.
  + Avoid biasing the survey.
  + Do NOT employ techniques that have differential appeal to different segments of the target population.

Putting the Parts Together: Some Guidelines for Applying Social Exchange

* Use a holistic approach to survey design.
  + Consider all features of the survey effort; do NOT focus on just one element.
  + Communication occurs in multiple places within the elements of the survey.
  + The more information presented, the less likely potential respondents will remember it.
  + Survey requests that repeat the same content repeatedly don’t increase response rates.
* Social exchange concepts should be applied differently depending on the survey population, topic, sponsorship, and survey modes available.
  + The same elements don’t have to be used in very situation.
* Identify and evaluate whether to change or eliminate design constraints that are especially likely to have a negative impact on response and data quality.

Mixed-Mode Designs Provide New Opportunities for Applying Social Exchange

* Use multiple modes of communication to gain more opportunities to increase benefits, decrease costs, and build trust.
  + Mode of response does not need to be synonymous with the mode of contact.
  + Difficult to develop trust and convey benefits with single-mode survey designs.
* Use multiple modes of response to increase benefits, decrease costs, and build trust.
  + Potential survey respondents may be more receptive to one mode over others.
  + Alternative mode can provide a different stimulus.
* Utilize knowledge from past research and feedback from early contacts to adapt implementation procedures to reduce nonresponse error.
  + Communications via a different mode than the previous mode used are less likely to be ignored.
  + Adaptive design (also called responsive design) involves adjusting procedures during the data collection processed based on observations about the types of individuals who are responding and not responding.

Preview Questions

1. What are the essential definitions related to survey sampling?
2. What is current coverage?
3. What are the potential impediments to accessing a population?
4. What are some common sampling frames?
5. What is probability sampling?
6. What post-survey adjustments typically must be made?
7. How do you calculate sampling error?
8. What is nonprobability sampling?

Reading Summary

Introductory Information

* A census selects everyone in a target population.
* The 2010 U.S. Census cost $97 per household.
* The cost to conduct the U.S. Census has doubled each decade while the length of the questionnaire has doubled.
* Surveys allows a reasonably precise estimate of a target population from a relatively small sample of the target population.
* Following certain principles provides confidence that the sample is representative of the target population.

Essential Definitions and Their Use

* Target population is the group that the survey aims to describe.
* Sampling frame is the list from which the sample is drawn.
* Coverage of the sampling frame is the percent of the total target population included in the sampling frame.
* Coverage error is when units not included in the sample frame differ from units included in the sampling frame in some characteristic of interest.
* Stratification is grouping units on the sample frame into subgroups (i.e., strata) based on certain characteristics so that sampling can be performed independently for each subgroup.
  + Units can be selected using different procedures or rates for each subgroup.
* Oversampling is sampling units of a certain characteristic at a higher rate than found in the target population to ensure that there are enough units of the characteristic for the final analysis.
* Sampling error is the difference between an estimate produced from a sample and the value calculated using all units in the target population.
* Completed sample is the respondents to the survey.
* Survey weighting is adjusting survey data to account for units in the population being sampled at different rates resulting in the completed sample not matching the target population on key characteristics
  + Some types of people may be more likely to respond to a survey than others.
* Post stratification weighting is survey weighting based on demographic characteristics to correct for nonresponse differences across different types of people.
* Weighting error is variation in the final weighted estimates generated by the weighting process.
* Coverage and sampling error vary for each statistic estimated from the survey.

Current Coverage and Access Considerations

* Influencing factors
  + Who has access to the survey mode (i.e., communication device used to contact and survey potential respondents).
  + What frames are available that be used to sample members of the target population.
* Telephone surveys
  + Differences between who uses landlines and who uses cell phones.
  + People generally less willing to respond to telephone surveys than they used to be.
  + Call screening, particularly with cell phones, reduces response rate.
* Internet surveys
  + Internet access remains lower than telephone access.
  + Different experiences using computer to access internet compared to using a mobile phone.
  + Literacy effects who can respond to the survey.
* In-person surveys
  + Security entrances and gated communities restrict access.
  + Language barriers effect who can participate in the survey.
* Mail surveys
  + Literacy effects who can respond to the survey.

Common Sampling Frames and Assessing How Well They Cover the Population

* Area Probability Sampling
  + Mostly used for in-person data collection.
  + Expensive and time-consuming process.
  + Usually provides near complete coverage.
  + Often used where no address or population list is available.
  + Process steps
    - Area divided into clusters (e.g., state divided into counties)
    - Probability sample of the clusters is selected.
    - Each selected cluster is divided into smaller geographic areas.
    - Probability sample of the smaller geographic areas is selected.
    - Process is repeated down to the sample unit.
  + Challenges
    - Boundaries of geographic areas sometimes hard to define.
    - Identifying eligible units can be difficult.
    - The number of units in a multiunit structure may not be clear.
    - Group living quarters (e.g., dorms, assisted living facilities) can be problematic.
    - Determining who is a member of the household.
  + Address lists are replacing area probability sample frames.
* Addressed-Based Sampling
  + Access to U.S. Postal Service (USPS) Computerized delivery sequence file (CDSF)
    - Coverage is between 95% and 99% of all U.S. households.
    - Can only be used to update and correct an existing mailing lists that already contains at least 90% of the current mailing addresses in a designated area.
    - Useful for geographic stratification and targeting specific populations because geocoding to near-exact GPS coordinates.
    - Does NOT include names associated with address delivery points.
    - Available only through private commercial vendors.
  + Can be used with each of the four types of data collection modes.
* Random Digit Dialing (RDD) Sampling
  + Process
    - Area codes and prefixes (i.e., exchanges) selected based on the geographic area to be surveyed.
    - Four digit combinations randomly generated and appended to area code to produce a sample of all possible 10-digit telephone numbers.
  + Only 25% to 30% of the numbers generated will be working residential numbers.
  + List assisted RDD methods increase efficiency.
    - Efficiency increases to between 50% and 60%
    - Coverage decreases (can exclude 5% to 20% of households)
  + Dual-frame sampling uses both RDD landline and RDD cell phone frames.
    - Must eliminate the overlap between the two frames.
* Telephone Directories
  + Provides inadequate coverage for most general population surveys.
  + Often include complete mailing addresses.
  + More than 50% of the numbers may not be listed.
  + Cellphone-only households generally not listed.
* Internet Frame
  + There is no general population internet frame.
  + Useful data collection mode for specific populations.
  + Legal and cultural barriers to contacting randomly generated email addresses.
  + Internet service providers (ISPs) are private entities so there is no assumed right to contact people via email.
  + Self-selected panels of respondents increasingly being used.
  + Just about all online methodologies are nonprobability sampling.
    - Difficult to estimate how representative the sample is of the target population.
    - Not possible to calculate sampling error.
* Other Alternatives
  + Driver’s licenses
  + Voter registration lists
  + Consumer lists
* Reducing Coverage Error
  + Determining whether a list provides and adequate sample frame for the target population.
    - Does the sample frame contain everyone in the survey population?
    - Does the sample frame include people not in the study population?
    - Are sample units included in the sample frame more than once?
    - How is the sample frame maintained and updated?
    - Does the sample frame contain other information that can be used to improve the survey?
* Coverage Outcomes
  + Assess the coverage of the sample frame before selecting the sample and deciding how to implement the survey.
  + Multi-frame surveys sometimes used when on one sample frame is completely adequate.
  + Multiple modes often used to contact respondents.
  + Multiple modes often used to survey respondents.

Probability Sampling

* Every member of the sampling frame is given a known, nonzero chance of being included in the sample.
* Every possible sample one could draw from the sample frame can produce slightly different estimates for the statistic.
* Sampling error dependent on sample size and sample design.
* Sampling methods
  + Simple random sampling 🡪 Every member has equal independent chance
    - Possible to draw a sample in which groups are not accurate represented.
  + Clustering
    - Tends to increase sampling variance relative to simple random sampling
    - Requires more units to obtain the same amount of information as a simple random sample with fewer units.
  + Stratification
  + Proportionate sampling 🡪 groups or strata are sampled at rates equal to their size in the population.
  + Disproportionate sampling 🡪 groups or strata are sample at rates different than their size in the population
    - Useful for low incidence populations
  + Multistage sampling

How Large Should a Sample Be?

* Determinants
  + Desired level of confidence for the estimates.
  + Amount of sampling error than can be tolerated.
  + The amount of variation on the characteristic of interest in the population.
  + The size of the sample frame.
* For probability sampling, it is the size of the sample that affects precision, not the size of the target population.
* for a simple random sample
  + n = completed sample size needed for desired confidence level
  + p = proportion being surveyed (p = 0.5 is most conservative assumption)
  + q = 1-p
  + MoE = desired margin of sampling error
  + z = z-score or critical value for the desired confidence level
* Finite population correction (fpc) accounts for the size of the target population.
  + A given sample size provides more information for a smaller target population than for a larger target population.
* includes fpc for simple random sample
  + N = target population size
* Identifying Household Members and Within-Household Respondent Selection
  + Household member is often defined as living at a residence the majority of the time.
  + Kish method lists all household members by gender and age and then selects one member using previously developed random selection tables.
    - Used mostly for in-person and telephone surveys.
    - Rarely used for self-administered or internet surveys.
  + Rizzo method based on fact that roughly 85% of households have no more than 2 adults.
  + Birthday method selects the adult in the household who has had the most recent birthday or next upcoming birthday.
  + Quota sampling is a nonprobability method in which individual household members are selected to meet certain predetermined characteristics.

Post-Survey Adjustments and Calculating Sampling Error

* Weighting types
  + Base weight corrects for any differences in sampled members’ chances of being selected
    - Inverse of the probability of selection for each sample member.
    - Should include adjustments for probability of selection at each stage of sampling.
    - Reflects how many people in the target population are represented by each completed survey.
  + Nonresponse weights reduce the bias generated when not everyone sampled responds to the survey.
    - Inverse of the response rate for each group.
    - Propensity models can also be used to generate nonresponse weights.
    - Characteristic used in weighting needs to be known for both respondents and non-respondents.
    - Can only be done for characteristics included in every record of the frame.
  + Post-stratification weighting improves the representativeness of the survey sample by accounting for some groups being less likely to respond than others.
    - Weight the final sample to match the population based on characteristics.
    - Characteristics of target population must be known from another source.
    - Can only weight for characteristics measured in data set and asked about in the survey.
* Weighting is characteristic specific.
  + Can improve some estimates while biasing or having no effect on others.
* Calculating Sampling Error
  + for simple random sample
    - MoE = margin of sampling error
    - z = z-score or critical value for the desired level of confidence
    - p = proportion being test
    - q = 1-p
    - n = sample size
  + Can apply fpc for small populations
    - * N = size of target population
      * n = size of completed sample needed for desired confidence level
    - MoEAdj = (fpc)(MoE)
  + Design effect is a measure of the loss of precision in a sample design compared to a simple random sample of the same size.
    - Will vary for each estimate produced.
    - Sampling error should include design effect
    - MoEDE =

Nonprobability Sampling

* Less expensive than probability sampling
* Rely on volunteers with unknown selection probabilities
* Exclude large numbers of people from the selection process
* Methods
  + Intercept sampling
  + Snowball sampling
  + Respondent-driven sampling
  + Network sampling
  + Sample matching
* No single unifying framework

Preview Questions

1. What issues does one need to consider when preparing survey questions?
2. What are the components of a survey question?
3. What are the different types of survey question formats?
4. What are the key guidelines for choosing words and forming survey questions?

Reading Summary

Introduction

* Challenge of writing survey questions
  + Every potential respondent willing to answer.
  + Every potential respondent will interpret the question the way the surveyor intends.
  + Every potential respondent will be able to answer accurately.

Issues to Consider When Starting to Craft Survey Questions

* First consider what concepts need to be measured.
  + Write clear research questions or statements.
  + Define what is meant and not meant by each concept in the research question.
  + Break down concepts until you get to domains and subdomains that can be measured with a single question.
* Benefits of considering what concepts need to be measured before preparing survey questions:
  + Helps identify what one really wants to measure.
  + Helps reduce the chances of forgetting to ask about important concepts.
  + Helps ensure that one asks questions that measure what is intended to be measured.
* Investigate whether measures for the essential concepts have already been used in other surveys.
  + Sources of existing surveys
    - Inter-University Consortium for Political and Social Research (ICPSR)
    - iPOLL databank maintained by Roper Center for Public Opinion Research
* Consider the type of information a question is asking for.
  + Factual and demographic details are information that respondent have readily available and may be willing to share.
  + Attitudes and opinions are types of information that respondents may need time to answer and may not be willing to share.
    - Context can influence answers to these types of questions.
      * Preceding question
      * Type of response
      * Visual layout
  + Behaviors and events are also types of information that present additional challenges.
    - Memory fades over time.
    - Mundane events and individual episodes usually not precisely remembered.
    - People do not categorize this type of information by precise month and year.
* Consider what survey modes will be used to ask the questions.
  + Interviewer-administered surveys
    - Interviewer can provide extra motivation and assistance to respondents
    - Clarify the meaning of questions
    - Probe for more complete answers
    - Typically progress faster than self-administered surveys
    - Surveyor has less control over the survey delivery
    - Risk of social norms impacting measurement
      * Social desirability is the tendency to provide answers that put one in a positive light with the person asking the question.
        + Normative question order effects occur when respondents adjust their answers to later questions taking into account their answers to earlier questions to put themselves in a positive light with the interviewer.
      * Acquiescence is the tendency to agree with someone rather than disagree.
    - Interviewer bias is when the shift in estimates for a measure can be attributed to the presence of an interviewer.
      * Can also result from fixed interviewer characteristics such as gender and race; generally, only an issue when the question is directly related to the characteristic.
      * Interviewer experience can also influence respondent answers.
      * Reward structure for interviewers is often based on productivity measures rather than quality measures.
    - Interviewer variance is when different interviewers influence estimates in different ways.
      * Interviewers administer the same question differently.
      * Interviews conducted by the same interviewer are often more similar than interviews conducted by different interviewers which produces a clustering effect.
        + Interclass correlation (rho) can be used to measure this effect
  + Aural and visual communication modes
    - Voice characteristics influence telephone surveys
      * Words, inflection, tone
      * Respondents must rely on their working memory
    - Visual layout influences written questions
    - Primacy and recency effects influence survey measurements
      * Primacy is the tendency to choose from among the first categories offered regardless of their content.
      * Recency is the tendency to choose from among the last categories offered regardless of their content.
      * Which is more likely to occur partly depends on how the categories are communicated to the respondent.
  + Computerization
    - Eliminates skip pattern errors.
    - Enables fills (i.e., when answers to one question are incorporated into later questions).
    - Enables validation of answers using previous questions.
* Consider whether the question is being repeated from another survey or if the answers will be compared to previously collected data.
  + Will influence how much the question can be changed.
* Consider if respondents will be willing and motivated to answer the question accurately.
  + Motivation problems may stem from poor question design.
    - Question is difficult to read or understand.
    - Instructions are hard to find.
    - Response options are vague.
    - Question is too personal.
    - Objectionable wording of response options.
  + Think about the process respondents will use when trying to answer a question.
    - Perception
    - Comprehension
    - Retrieval
    - Formulation
    - Response

The Anatomy of a Survey Question and Types of Question Formats

* Components of a survey question:
  + The question stem is comprised of the words that form the actual query.
  + Additional instructions (e.g., definitions, examples)
  + Answer spaces or choices
* Open-ended questions preferable when the surveyor does not want to influence respondent answers by providing a set of answer choices (i.e., goal is to collect rich, detailed information).
  + In self-administered surveys, more respondents skip open-ended questions.
  + Nonresponse bias may be present in self-administered surveys.
  + Must be coded before they can be analyzed.
* Closed-end questions significantly influenced by response options provided.
  + Can use nominal or ordinal categories.
* Partially closed-ended question includes a set of response categories and an “other” response option.
  + Respondents are more likely to select among the categories provided.

Guidelines for Choosing Words and Forming Questions

* Choose the appropriate question format.
  + Recommended to vary the question format within the survey to improve measurement and ensure the usefulness of the final data.
  + Varying the format may also add variety and interest for respondents.
* Make sure the question applies to the respondent.
  + Rule of thumb: a survey question must require an answer from each person to whom it is asked.
  + Use filter questions.
  + Don’t make assumptions about the respondents.
  + Including an “if” qualifying is problematic.
    - Can’t distinguish between non-respondents and those to whom the question did not apply.
* Ask one question at a time.
* Make sure the question is technically accurate.
  + Using specialized terms accepted among the survey population will usually produce more accurate results.
  + If necessary, consult experts or members of the target population when preparing survey questions.
  + Technical inaccuracies can diminish the perceived credibility and legitimacy of the surveyor.
* Use simple and familiar words.
  + Rule of thumb: substitute a shorter, more easily understood word for one with six or more letters.
  + Avoid abbreviations and specialized phrases not understood by the target population.
  + Pretest survey questions with members of the target population of interest to identify potential problems.
* Use specific and concrete words to specify the concepts clearly.
* Use as few words as possible to pose the question.
* Use complete sentences that take a question form and use simple sentence structures.
  + Use interrogative sentences, not imperative sentences.
* Make sure “yes” means yes and “no” means no.
  + Do NOT use double negatives.
* Organize questions in a way to make it easier for respondents to comprehend the response task.
  + Place response options at the end of the question stem.
  + Do NOT include response options as part of the question stem.

Preview Questions

1. What are the guidelines for writing open-ended questions?
2. What are the guidelines for writing all types of closed-ended questions?
3. What are the guidelines for writing nominal closed-ended questions?
4. What are the guidelines for writing ordinal closed-ended questions?

Reading Summary

Introduction

* Very different results can be obtained depending on how a question is asked.

Guidelines for Writing Open-Ended Questions

* General comments
  + Types of open-ended questions
    - Descriptive
    - Numerical response
    - List of items
  + Responds have a great deal of flexibility in how to answer the question.
* Specify the type of response desired in the question stem.
  + Specify a response unit.
* Avoid making respondents and interviewers calculate sums.
* Provide extra motivation to respond.
  + Particularly important for descriptive open-ended questions, which impose a higher cost on the respondent.
  + Examples
    - Provide additional explanation of the importance of the question.
      * Loses effectiveness if used more than a few times per survey.
* Use nondirective probes to obtain more information on open-ended questions.
  + Examples
    - Are there any others? (relevant for lists)
    - Is there anything else? (relevant for descriptive open-ended questions)
    - How do you mean that? (relevant for descriptive open-ended questions)
    - Tell me more about that? (relevant for descriptive open-ended questions)
  + It’s important not to bias the response when using probing questions.
  + The type of probe used will influence the amount and type of information received.

General Guidelines for Writing All Types of Closed-Ended Questions

* State both positive and negative side response options in the question stem for either/or types of questions.
* Develop lists of answer categories that include all reasonable possible answers.
* Develop lists of answer categories that are mutually exclusive.
* Consider what type of answer spaces are most appropriate for the measurement intent.
  + Generally, it takes respondents longer to answer visual analog scales than scales with radio buttons.
  + Avoid drop-down menus when possible because they present several difficulties.
  + Avoid presenting drop-down menus with only some of the response options visible from the outset.
  + Only use dynamic and interactive response features when one is certain they will provide better data without increasing response burden.

Guidelines for Nominal Closed-Ended Questions.

* Ask respondents to rank only a few items at once rather than a long list.
* Avoid bias from unequal comparisons.
  + Do not use value connotations in response options.
* Randomize response options if there is concern about order effects.
  + Anchoring is when respondents us an early response option as a standard of comparing later response options.
* Use forced-choice questions instead of check=all=that=apply questions.

Guidelines for Ordinal Closed-Ended Questions.

* General comments
  + Two types of closed-ended ordinal scales
    - Vague quantifier response options
      * Widely used because they reduce cognitive burden on respondents.
    - Natural metric response options
* Choose between a unipolar and bipolar scale.
  + Unipolar scale 🡪 zero falls on one end of the scale.
  + Bipolar scale 🡪 zero falls in the middle of two dimensions.
  + Which is used depends on the underlying construct.
* In general, limit scales to no more than five categories.
  + Too few scale points often result in response error.
  + Too many scale points result in clustering.
  + Scales of four or five categories have been shown to be more reliable and valid.
  + Non-substantive response options should NOT be used a midpoint; they should be placed at the end of the scale.
    - Research suggests that including or excluding a midpoint has little effect on data quality and analysis.
    - Research suggest that it generally makes no difference whether the most positive category is presented first or the most negative category is present first.
    - Scales should be presented consistently throughout the survey.
* Choose direct or construct specific-labels to improve cognition.
  + Make sure the response option scale matches the way the question is posed.
  + Reduces acquiescence and cognitive burden 🡪 less measurement error
  + Avoid the agree/disagree and satisfied/dissatisfied question format when these are not the construct being measured.
* Use natural metric instead of vague quantifiers whenever possible.
  + Be cognizant of reference point effects.
* Provide balanced scales where categories are relatively equal distances apart conceptually.
  + Equal number of positive and negative categories in bipolar scales.
  + Allows one to treat scalar results as interval-level variables.
* Verbally label all categories.
  + Polar-point scales have labels only at the endpoints of the scale.
    - Meanings of unlabeled midpoints are open to interpretation by respondents, which increases measurement error.
  + Fully labeled scales rate higher on reliability, validity, and respondent preference.
  + Fully labeled scales less susceptible to context effects.
* Remove numeric labels from vague quantifier scales whenever possible.
* Consider branching or decomposing bipolar scales to ease respondent burden and improve data quality.
  + Bipolar scales require respondent to consider direction and intensity.
  + Branching increases reliability and validity.
  + Don’t use branching if results will be combined or compared with other data that was not collected using branching because they will have different response distributions.
* Provide scales that approximate the actual distribution of the characteristic in the population.
  + Respondents are more likely to estimate mundane occurrences and are more likely to recall memorable events.
  + Asking the question using an open-ended format avoids the risk of biasing the response if the distribution is not known.

The Challenges of Writing Ordinal Closed-Ended Questions

* Survey designers must choose response options carefully.
* Respondents use the response option scale as a source of information about the distribution of options when making their selection.

Preview Questions

1. Why is visual design important for self-administered surveys?
2. What are the key concepts of visual design for surveys?
3. What are the general guidelines for the visual presentation of survey questions?
4. What are the general guidelines for the visual presentation of open-ended questions?
5. What are the general guidelines for the visual presentation of closed-ended questions?
6. What are the general guidelines for the visual presentation of questionnaire pages or screens?
7. What are the key take-aways from the case study?

Reading Summary

General Comments

* People perceive aural and visual information differently.
* Information that is read is more likely to be comprehended and remembered than information that is heard.
  + This difference increases as the complexity of the information increases.
* Information presented aurally places increased burdens on the recipient’s cognitive capabilities and memory.
* Written surveys require the respondent to have more specialized skills.
  + Reading
  + Writing
  + Type
  + Operate a computer
* Different modes present different types of challenges
  + Written survey 🡪 reporting challenges
  + Telephone survey 🡪 perception and comprehension challenges
  + Interviewer-administered surveys 🡪 measure error caused by interviewer misunderstanding
* Different modes provide different sources of additional meaning about questions
  + Aural surveys 🡪 paralinguistic features such as tone and emphasis
  + Visual surveys 🡪 graphical features and layout

Importance of Visual Design in Self-Administered Surveys

* Visual design can have as much impact on response and measurement as question wording.
* Good visual design performs the function of an interviewer
  + Help respondents complete the survey correctly and accurately.
* Other benefits of good visual design
  + Minimize measurement error
  + Minimize item nonresponse

Visual Design Concepts and Their Application to Surveys

* Four types of visual design elements
  + Words
  + Numbers
  + Symbols (e.g., an arrow to indicate direction)
  + Graphics (e.g., text boxes, check boxes, radio buttons, shaded backgrounds)
* Each element has properties that can be manipulated.
  + Size
  + Font
  + Color
  + Brightness
  + Location
  + Shape
* People process and give meaning to visual elements in multiple steps.
  + Basic page layout
    - Pre-attentive processing 🡪 subconscious scanning of the page
    - Bottom-up processing🡪 visual scene
  + Information organization
    - Figure/ground orientation 🡪 differentiate individual visual elements
    - Attentive processing 🡪 conscious processing of elements
    - Bottom-up processing
    - Top-down processing 🡪 cultural knowledge, prior experiences, expectations
  + Task completion
    - Attention placed on smaller area for more focused processing
    - Top-down processing
* Gestalt grouping principles
  + Principle of proximity
  + Similarity of size
  + Similarity of shape
  + Similarity of contrast
  + Common region
  + Elemental connectedness
  + Continuity
  + Closure
  + Common Fate
  + Layering of principles

Guidelines for the Visual Presentation of Survey Questions

* Use darker and/or larger print for the question stem and lighter and/or small print for the answer choices and answer spaces.
* Use spacing to help create subgrouping within a question.
* Visually standardize all answer spaces or response options.
* Use visual design properties to emphasize elements that are important to the respondent and to deemphasize those that are not.
* Choose font, size, and line length to ensure the legibility of the text.
* Integrate special instructions into the questions where they will be used rather than including them as free-standing entities.
* Separate optional or occasionally needed instructions from the question stem by font or symbol variation.

Guidelines for the Visual Presentation of Open-Ended Questions

* Provide a single answer box if only one answer is needed and multiple answer boxes if multiple answers are needed.
* Provide answer spaces that are sized appropriately for the response task.
* Encourage the use of proper units or a desired response format, provide labels and templates with answer spaces.

Guidelines for the Visual Presentation of Close-Ended Questions

* Align response options vertically in one column or horizontally in one row and provide equal distance between categories.
* Place non-substantive options after and separate from substantive options.
  + Visual midpoint of scale should align with conceptual midpoint of scale.
* Consider using differently shaped answer spaces (circles and squares) to help respondents distinguish between single- and multiple-answer options.

Guidelines for the Visual Presentation of Questionnaire Pages or Screens

* Objectives
  + Help respondents perceive and understand the layout and organization of the page.
  + Help them recognize and follow the navigational path through the page.
* Establish grouping and subgrouping within and across questions in the questionnaire.
* Establish consistency in the visual presentation of questions and use alignment and vertical spacing to help respondents organize information on the page.
* Use color and contrast to help respondents recognize the components of the questions and the navigational path through the questionnaire.
* Visually group related information in regions by using contrast and enclosure.
* Use visual elements and properties consistently across questions and pages/screens to visually emphasize or deemphasize certain types of information.
* Avoid visual clutter.
* Avoid placing questions side by side on a page so that respondents are not asked to answer two questions at once.
* Minimize the use of matrices and grids and when they cannot be avoided, minimize their complexity.

Preview Questions

1. How should questions be ordered on a survey questionnaire?
2. How do you test questions before including them on the final questionnaire?
3. How do you test for question order effects?

Reading Summary

Introductory Comments

* Asking for sensitive information early in the questionnaire may cause many potential respondents not to answer at all.
* Asking questions that seem unrelated to the topic may cause potential respondents to question the real purpose of the survey.
* One question might bias the response to a later question if they are about highly correlated topics.

Question Order

* Each question must be evaluated in term of its individual content and its role in the larger context of the survey objectives.
* Properly ordered questions can help motivate respondents and reduce item nonresponse, survey nonresponse, and measurement error.
* Guidelines
  + Group related questions that cover similar topics.
    - Ordering a questionnaire is like organizing a conversation.
    - It makes it easier for the respondent to recall the information necessary to respond accurately to the survey questions.
  + Begin with questions that are likely to be relevant to most respondents.
    - This builds commitment with the respondents.
    - The first question strongly influences whether sample members choose to participate.
    - The first questions need to be connected to the purpose of the questionnaire.
    - Consider adding interest-getting questions to a survey for the sole purpose of developing commitment.
    - It’s preferable to distinguish between those respondents who are screened out and those that choose not to respond to the survey.
  + Place sensitive and potentially objectionable questions near the end of the questionnaire.
    - Respondents less likely to quit (i.e., reduces item nonresponse and survey nonresponse).
    - Questions may seem less objectionable in light of the questions already answered.
  + Ask all filter questions before asking the follow-up questions.
    - Minimizes the chance that respondents will intentionally answer filter questions in a way to avoid triggering follow up questions (i.e., motivated underreporting).
  + Ask questions about events in the order the events occurred.
    - Reduced the cognitive burden on the respondent.
    - Remembering one event can help with recall of the next event in the sequence.
  + Avoid unintended question order effects.
    - People tend to give answers by considering things they have already said.
    - Contrast effects are when responses to questions become more different.
    - Assimilation effects are when responses to questions become more similar.
    - Cognitive-based order effects are when early questions influence the way later questions are mentally processed.
    - Normative-based order effects are when early questions invoke a social norm that affects the way later questions are answered.
    - Priming and carryover can result in assimilation effects.
    - Anchoring can produce either assimilation or contrast effects.
    - Subtraction effects are when important considerations used to answer an earlier question are not considered for later questions.
    - Norm of evenhandedness is when person judges someone from outside their group for something and feels the need to apply the same standard to someone from inside their group.
    - Respondents try to answer later questions in a way that is consistent with their answers to earlier questions.
    - Respondents avoid extreme responses to question when a more social situation will potentially follow.
    - Summary questions tend to be scored lower by respondents when ask after the specific questions.

Testing Questions and Questionnaires

* Testing questions and questionnaires helps diagnose and resolve problems before distributing the survey in the field.
* Distributing a problematic survey will increase the potential for error.
* Testing methods are not interchangeable; different methods reveal different issues.
  + Cognitive interview 🡪 how people understand the question
  + Small field test 🡪 how a planned implementation will work
  + Experiment 🡪 which strategy is most effective
* Guidelines
  + Obtain feedback about the draft questionnaire from expert reviews.
    - A caveat is that many content experts are not well trained in survey questionnaire design.
    - Use a variety of experts (e.g., content experts, questionnaire design experts, data analysis experts).
  + Conduct cognitive interviews of the complete questionnaire to identify wording, question order, visual design, and navigation problems.
    - Test respondents are asked to think aloud when responding to the questions.
    - Practice questions are used to train the respondent in the technique.
    - Examples of protocols available at [www.sesrc.wsu.edu/dillman/](http://www.sesrc.wsu.edu/dillman/).
    - Retrospective interviewing has respondents answer the survey questions silently while the interviewer simply observes; at the end the interviewer asks the respondent about their experience completing the questionnaire 🡪 useful for evaluating navigation through a survey.
    - It’s difficult to know if an issue uncovered is relevant to a significant portion of the potential respondents.
  + Evaluate questionnaire components by conducting experiments.
    - The up-front costs of experiments are often offset by the back-end cost savings in data collection (e.g., higher early response rates reducing the amount of more expensive follow-up contacts).
  + Evaluate the questionnaire itself with a small pilot study of a subsample of the study population.
    - Can also be useful to evaluate implementation procedures and interviewer performance.
    - Pilot studies are also helpful for developing cost estimates for the actual study.
  + Use eye tracking to understand how respondents visually process questionnaires.
  + Conduct testing in the modes that respondents will use to complete the questionnaire.
  + Document and archive all aspects of the survey design.

Preview Questions

1. What are the general guidelines for designing web and mobile questionnaires?
2. What are the general guidelines for implementing web and mobile surveys?
3. What are the general guidelines for testing and controlling the quality of web and mobile surveys?

Reading Summary

Overview Information

* Speed, low cost, and economies of scale make web and mobile surveys attractive.
* About 91% of all adults in the United States have cell phones.
* Roughly 56% of all adults in the United States have smartphones.
* Approximately 21% of all adults with cell phones use them as their primary means of accessing the internet.

Guidelines for Designing Web and Mobile Questionnaires

* What to consider when evaluating software options for surveys.
  + The design flexibility and ease of use of the software.
  + The amount of control one has over the data.
  + The degree of access provided to the data.
  + The cost of the software.
* Collection options
  + Fillable PDFs returned by email.
  + Embed survey in email or text message.
    - Limited control over visual appearance.
    - Respondent entries shifts content.
    - Difficult to complete on cell phones and mobile devices.
* General guidelines
  + Decide how the survey will be programmed and hosted.
  + Evaluate the technological capabilities of the survey population.
  + Ensure that questions display similarly across different devices, platforms, browsers, and user settings.
    - Program for the lowest likely screen resolution
      * typically 800 x 600 pixels for desktop screens
      * typically 640 x 960 pixels for smartphones
    - Center align main survey questionnaire region.
  + Offer a questionnaire optimized for mobile.
  + Decide how many questions will be presented on each web page.
  + Decide how questions will be arranged on each web page.
  + Create interesting and informative welcome and closing screens with wide appeal.
  + Emphasize the respondent rather than the survey sponsor in the screen format.
  + Use a consistent page layout across screens.
  + Emphasize essential information and de-emphasize non-essential information.
  + Allow respondents to navigate backwards in the survey.
  + Do NOT require response to questions unless absolutely necessary for the survey.
  + Include survey-level and item-specific error messages to help respondents resolve issues they may encounter when completing the survey.
  + Decide whether to use interactive features based on their effect on measurement error and respondent burden.
  + Do NOT include a graphical progress indicator.
  + Use audiovisual capabilities sparingly.
    - Respondents may not have the proper equipment or settings.
    - Longer download times.
    - May detrimentally effect measurement.
  + Allow respondents to stop the survey and complete it at a later time.
  + When possible, collect para-data that provides feedback about how the respondent interacts with the questionnaire.

Guidelines for Implementing Web and Mobile Surveys

* Personalize all contacts with the potential respondent.
  + Necessary to invoke social exchange.
  + Prepare email contacts as if writing to a business acquaintance that you do not know well to strike the right tone.
  + Consider sending an incentive electronically with the survey request.
    - Electronic gift certificates
    - Electronic gift cards
    - Money transfers via a service (e.g., PayPal)
  + Use multiple contacts and vary the message.
  + Email practices to avoid:
    - Ignoring grammatical and punctuation practices.
    - Writing in all capital letters.
    - Using acronyms.
    - Using special characters and symbols.
  + Strategically time all contacts with the sample population.
  + Keep email contacts short and to the point.
  + Carefully select the sender name and address and the subject line text for the email.
  + Minimize the chance of email survey requests being flagged as spam.
    - Use plain text rather than HTML messages.
    - Send individual emails and do NOT use the CC and BCC fields.
    - Avoid certain words
      * Offer
      * Free
      * Cash
      * Win
      * Prize
    - Use a spam analyzer to evaluate the message before sending it.
  + Assign each sample member a unique identification number.
  + Work within the capabilities and limits of the web server.

Guidelines for Testing and Controlling the Quality of Web and Mobile Surveys

* Have experts review the survey materials and procedures.
* Conduct cognitive interviews of target population to evaluate materials and procedures.
* Perform experimental evaluations and pilot studies of materials and procedures.
* Test the survey in a variety of ways:
  + Devices
  + Platforms
  + Connection speeds
  + Browser types
  + User-controlled settings
* 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 inquiries.
* Implement a system for monitoring progress and evaluating early completes.
  + Examine the data set and the server logs to identify problems.
* Develop a procedure to ensure data security.