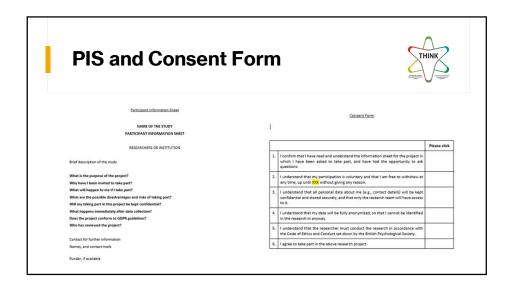


First thing first...



- · Ethical issues needs to be covered
- https://www.gov.uk/data-protection
- https://gdpr-info.eu/
- · Data Protection Act
- · Avoiding any harm
- · Creating an inclusive and accessible study
- https://www.ukri.org/councils/esrc/guidance-for-applicants/researchethics-guidance/



Survey Research



• We start with operational definition

Some examples: safe driving or

the effects of radio tuning on driver attention

Survey Research



• We start with operational definition

Some examples: the effects of radio tuning on driver attention







Sampling in Survey Research

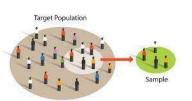


- Use sample to represent the larger population
 - "Representative": similar to
- Requires careful selection of a sample

Basic Terms of Sampling



- Population
 - · Set of all cases of interest
- Sample
 - Subset of population drawn from sampling frame
- Element
 - Each member of the population



Biased Samples



- A biased sample
 - Characteristics of the sample differ systematically from those of the population.
 - Sample over-represents or under-represents segment(s) of a population
 - Goal: Generalize survey findings from representative sample to the population
 - Example: Imagine you want to investigate a travel mode choice study and so conduct a survey inside a mall.

Survey Methods



- · Four methods for obtaining survey data
 - Mail surveys
 - · Internet surveys
 - Personal interviews
 - · Telephone interviews
- · Each method has advantages and disadvantages.
- · Choose method based on research question.

Constructing a Survey

- · three general types of survey questions:
 - · Facts and demographics;
 - · Behaviors; and
 - · Attitudes and beliefs
- · Best choice for selecting a measure
 - · Use measure already shown to be reliable and valid in previous research.
 - · If no suitable measure is found, create a questionnaire or measure.
- · Creating a reliable and valid questionnaire is not easy.
- · Reliable: consistently
- · Valid: a survey measures what we want to measure.

Constructing a Survey

- · Important first steps
 - Decide what information should be sought
 - Decide how to administer
 - Write a first draft
 - Reexamine and revise questionnaire based upon expert advice.
 - Pretest
 - · Review results and edit

Guidelines for Writing Survey Questions

- Choose how participants will respond: Open-ended or closed-ended questions
- With closed-ended questions, a limited number of response alternatives are given.
 - · It is easier to assign values to responses.
 - · There is a fixed number of response alternatives.
 - Closed-ended questions are more likely when the dimensions of the variables are well defined.
- With open-ended questions, respondents are free to answer any way they like
 - · This can yield valuable insights into what people are thinking.
 - · More time is required to categorize and code the responses.

What to avoid...

- · Write clear, specific questions
 - · Avoid ambiguity
 - · Avoid double-barreled questions
 - Avoid leading questions and loaded questions
 - · Avoid response bias
 - · Avoid jargon and technical terms
 - · Avoid phrasing questions with negatives

The importance of decreasing the possibility of human error

- Ease the work
- · Age as the year of birth
- Higher scores for higher points for the given characteristics
- Use of the categorical variables

Problem	Example	Explanation	Solution
Double-barreled	Have you suffered from headaches and nausea in the past week?	A person may respond "no" if both symptoms have not occurred at the same time, or may respond "yes" if either symptom has occurred.	Write two separate questions.
Leading	Most people favor the use of solar energy. What do you think?	Bias may occur if respondents feel pressure to respond as "most people" do, regardless of their true opinion.	Do not lead respondents to a particular response. A better question is, "What do you think about the use of solar energy?"
Loaded	Do you agree with the racist propaganda issued by your state senator?	Questions with emotion-laden words (e.g., racist, propaganda) can bias responses.	Avoid loaded terms, and have your questions reviewed by individuals who represent a range of viewpoints.

examples

- «What would help you to cycle, walk more or use public transport?»
- «Is your infrastructure supportive of modes of transport?»

	Negative wording	Simplicity	Double-barreled	Loaded
Professors should not be required to take daily attendance. 1 = (Strongly Disagree) and 5 = (Strongly Agree)				
2. I enjoy studying and spending time with friends on weekends.				
3. Do you support the legislation that would unfairly tax hardworking farmers?				
I would describe myself as funny and intelligent.				
5. Do you believe the relationship between cell phone behavior and consumption of fast food is orthogonal?				
Restaurants should not have to be inspected each month.				
7. Are you in favor of the boss's whim to cut lunchtime to 30 minutes?				

Ordering of questions



- Counterbalancing of survey questions: protects your results from the effects of boredom
 - · Self-administered questionnaires
 - · Place most interesting questions first
 - · Personal and telephone interviews
 - · Demographic questions first
 - · Use funnel questions and filter questions as needed.

Finalizing the Survey



- Formatting:
 - Provide an attractive and professional appearance.
 - · Ensure it is neatly typed and free from errors.
 - When using a particular scale format, use it consistently.
- Sequencing of questions:
 - · Put the most interesting and important questions first.
 - · Group-related questions.
- · Refining questions:
 - Give the questions to a small group and have them think aloud while answering.

Ways to increase response rate



- · Make it attractive! (Using images or QR codes in ads)
- · Clarify issues related to ethics, provide PIS, consent and debrief
- · Responding requires minimal effort
- Topic of survey is interesting to respondents
- · Respondents identify with organization or sponsor of survey

Thinking Critically About Survey Research

- · Correspondence Between Reported and Actual Behavior
 - · Survey responses may not be truthful.
 - Reactivity
 - Social desirability
 - Accept people's responses as truthful unless there's reason to suspect otherwise.
 - Use a multimethod approach to answering research questions.



What can we ask in transportation studies....

- 1. Demographic Questions
- 2. Mode of Transportation
- 3. Frequency and Purpose of Travel
- 4. Accessibility and Convenience
- **5. Satisfaction with Current Transportation Options**
- 6. Barriers and Challenges
- 7. Preferences and Priorities
- 8. Awareness and Usage of Transportation Programs
- 9. Future Travel Behavior
- 10.Open-Ended Questions



References

- Cozby, P. C., Bates, S., Krageloh, C., Lacherez, P., & Van Rooy, D. (1977). Methods in behavioral research. Houston, TX: Mayfield publishing company.
- · Ask Chat GPT!