

# THINK Seminar:

## Transport survey design for communities & grass roots groups


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the Transport and Health Integrated research Network

# 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/research-ethics-guidance/>

# PIS and Consent Form



Participant Information Sheet

NAME OF THE STUDY  
PARTICIPANT INFORMATION SHEET

RESEARCHERS OR INSTITUTION

Brief description of the study

What is the purpose of the project?  
Why have I been invited to take part?  
What will happen to me if I take part?  
What are the possible disadvantages and risks of taking part?  
Will my taking part in this project be kept confidential?  
What happens immediately after data collection?  
Does the project conform to GDPR guidelines?  
Who has reviewed the project?


Contact for further information  
Names, and contact mails

Funder, if available

Consent Form

	Please click
1. I confirm that I have read and understand the information sheet for the project in which I have been asked to take part, and have had the opportunity to ask questions.	
2. I understand that my participation is voluntary and that I am free to withdraw at any time, up until <b>XXX</b> without giving any reason.	
3. I understand that all personal data about me (e.g., contact details) will be kept confidential and stored securely, and that only the research team will have access to it.	
4. I understand that my data will be fully anonymized, so that I cannot be identified in the research in anyway.	
5. I understand that the researcher must conduct the research in accordance with the Code of Ethics and Conduct set down by the British Psychological Society.	
6. I agree to take part in the above research project.	

# Survey Research



- We start with **operational definition**

*Some examples:*  
safe driving or  
the effects of radio tuning on driver attention

## Survey Research



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## 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
<b>Double-barreled</b>	<i>Have you suffered from headaches and nausea in the past week?</i>	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.
<b>Leading</b>	<i>Most people favor the use of solar energy. What do you think?</i>	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, <i>"What do you think about the use of solar energy?"</i>
<b>Loaded</b>	<i>Do you agree with the racist propaganda issued by your state senator?</i>	Questions with emotion-laden words (e.g., <i>racist</i> , <i>propaganda</i> ) 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
1. 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?				
4. 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?				
6. 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!