Economics Research Methods

Survey design and data collection

Dr. Peter Howley

Professor of Behavioral Economics

Economics Division

What we will do today

- Examine issues in relation to the design of surveys
  - *Questionnaire design*
  - *Sampling frame*
  - *Mode of delivery*
- How you can encourage people to respond
- Discuss two main types of surveys
  - *Representative, e.g. nation, region, university etc*
  - *Convenience samples*

Some tips when designing survey questions

- Don't impose your own value judgements or use leading questions
- Be aware of people's tendency to misrepresent themselves or their behaviour to paint themselves in a good light – *social desirability bias*
- Be very clear and precise with your questions
- Make sure you have a clear idea of what you want to accomplish.

Questionnaire design

- Be aware of hidden agenda's/ leading questions

  - can get a respondent to say almost anything if questionnaire is structured a certain way

Compare how you think people would respond to the following:

1. Do you agree or disagree with this statement: "There is a need for stricter gun laws."

Bias in surveys

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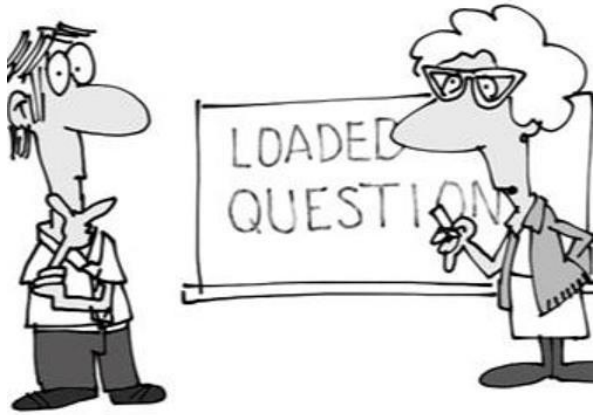
Compare how you think people would respond to the following:

1. Do you agree or disagree with this statement: "There is a need for stricter gun laws."
2. Many people have said that there is a need for stricter laws on dangerous weapons. Do you agree?

Bias (loaded questions) in surveys

1. Should concerned parents use infant car seats?
2. Do you think special car seats should be required for infant passengers?

3. Do you have any problems with your boss?
4. Tell me about your relationship with your boss?



"DO I LOOK FAT IN THIS?"

Usefulness of questions

What about this type of question frequently used by lobbyists and politicians

- Do you think we should spend more money increasing the size of our police force?

Questionnaire design: Social desirability bias

- Most people like to present themselves in a favourable light, so they will be reluctant to admit to unsavory attitudes or illegal activities in a survey

  - asking individuals how much they recycle or whether they look for eco-labels when buying a good may not lead to very accurate responses

- Expect social desirability bias to occur for sensitive questions and for it to be stronger in interview as opposed to self-administered questionnaires

  - *e.g. respondents have been more willing to admit shoplifting and drink-driving in a self-administered as opposed to an interviewer-administered survey*

- **Acquiescence (yea-saying)**

  - tendency to agree with statements when in doubt

Mixed methods – quantitative and qualitative questions

- A survey could have both open as well as closed ended questions

- Closed ended question: Usually asked in a precoded way where the participant is given a range of options and asked to tick or circle one

- Open ended

  - answers can vary in length, topic and style of response

  - give greater freedom of expression to the respondent which preserves the richness and spontaneity of a response

  - time consuming to code and open to bias on the part of the researcher in that they may misinterpret a response

- Use open-ended questions in surveys sparingly to either develop further questions or inform the categories to be used in a further study or to explore a topic in greater depth

Key terms when talking about surveys

Definition	Example
Target population	Households in Leeds or University of Leeds students
Sample frame	List of all household addresses or List of all students
Coverage rate	96% of all households in Leeds
Coverage error	People in newly built houses may not be covered
Sample	Units selected to survey (e.g. 1000 households)
Completed sample/Response rate	250 households (e.g. 25 % response rate)
Sampling Error *(potential difference between the sample and the population of interest)*	e.g. Plus or minus 3.9 percentage points

Four cornerstones of quality ‘representative’ surveys

Minimise the following

- Coverage error
- Sampling error
- Non-response error
- Measurement error

Probability sampling – key if trying to design a 'representative survey'

- **Probability sampling**: Every member of the population has a **known non-zero** chance of selection
  - *this principle which allows findings from a survey sample to be generalizable to a wider population (e.g. the UK as a whole, all university students in Leeds)*

- **Simple random sampling**: Everyone has the same probability of inclusion

- Various modifications to simple random sampling – designed to reduce costs but can increase sampling error (**e.g. often a trade off between sampling error and cost**)

- Always try and have some random mechanism of selecting individuals to survey if trying to be representative

Sampling error: Occurs because only a sample is asked to complete the survey and because every possible sample can produce slightly different estimates

Representative survey

- **Margin of error/precision**: The desired level of confidence one wishes to have in the estimates

  - e.g. How much sampling error can be tolerated

- The size of the population of interest is a factor but not as important as you think

  - It is mainly the size of the sample that affects precision **not the size of the population**

- **Relatively Few Completed Questionnaires Can Provide Surprising Precision at a High Level of Confidence – see reading material for more details and examples**

  - This is the reason that survey sampling is such a powerful political tool

  - One can estimate within ± 3 percentage points (*margin of error*) the percentage of people who have a high school education in a small county of 25,000 adults with 1,023 completes and can measure the same thing among the entire U.S. population of more than 300 million by obtaining only 44 more completes

Non-probability sampling – **convenience samples**

- For researchers interesting in generalising to a larger population then a probability sample is needed

- Non-probability samples **(e.g. convenience samples)** are frequently used as a basis for *testing and experimentation,* i.e. when the aim is not necessarily to generalise to a larger population

  Convenience sample – survey students in particular classes/subject groupings

  - note even if I surveyed all students who attended a particular lecture then this may not provide a representative view of this class!

  Representative sample – obtain a register of all students in Leeds and randomly select which ones to survey

- These are completely fine – just be aware of limitations

  - e.g. be careful in generalising findings from convenience samples to a wider population of interest

Sample size – some thoughts

- *Nationally representative surveys*- if looking to obtain a representative view of the population on some issue then the actual sample size is smaller than you think

  -key is probability sampling

  -Larger surveys will decrease your margin of error but diminishing returns when it comes to representativeness

- Having **adequate statistical power** is often the key consideration when thinking about the appropriate sample size

  - remember law of small numbers (more on this next week)

  - bigger samples give you more opportunity to detect and isolate 'treatment effects' when using field experiments

  - in observational studies bigger samples gives you more variation in your key variables of interest which can be really important

  - Minimum sample sizes are need for certain analytical procedures

Questionnaire administration

- *Self-administered*

  - mail (list of all addresses and send out a survey invitation to a selected group –response rate can be low)

  - hand out

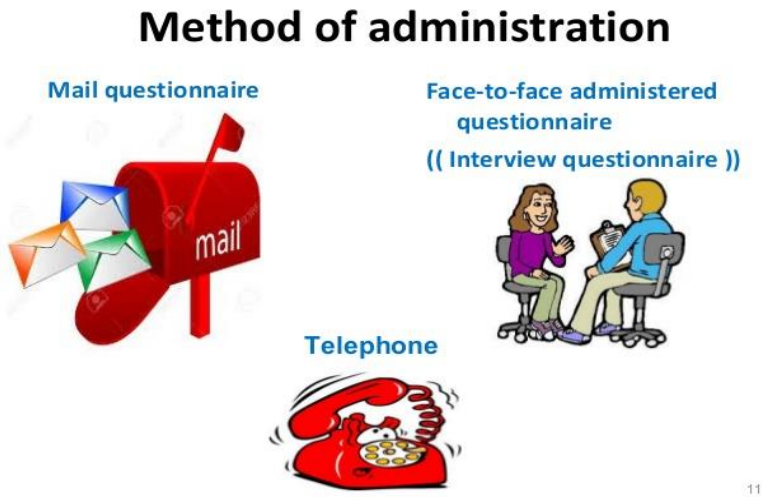
  - internet (distributed and returned by email) or link to an online questionnaire (e.g. survey monkey, kwiksurveys, **Qualtrics**)

- *Interview type survey*

  - telephone

  - face to face interviews

Each have their own advantages and disadvantages



Getting people to respond

- Think about how you would feel when given a request to complete a survey

  - annoyed? How can I make this go away? Disinterest in the survey topic? Etc. etc.

  - Decisions to respond are almost never the result of a careful consideration of the pros and cons of survey – **often spur of the moment and based on quick impressions**
    - *the questionnaire looks like it could be interesting*
    - *the interviewer seems really nice*
    - *I could really help this person by responding*
    - *It won't take up too much time*
    - *The interviewer has made me feel like my views are important*

Pay attention to what goes on in people's minds and try and get people to think this way about your survey!

The psychology behind questionnaire design – some illustrations

Think how you would feel when presented with the following
A brief email from an unknown organisation – directly asks people to click on a link in order to complete a survey
Survey questions that are difficult to respond to
Survey questions that are difficult to understand
Very long and tedious
An open ended question about income at the start of the survey
Receive a letter emblazoned with “Survey enclosed. Respond immediately”

Increase the benefits for people

- Many people feel a sense of reward from knowing that they have helped others – *altruism*

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- Provide a token of appreciation in advance
- Stress that opportunities are limited (perhaps most useful in mail surveys with reminder letters)

The psychology of survey design

What do you think would happen in the following circumstances

- *Reminding individuals that many others have completed the survey?*
- *Offering individuals a choice of ways to respond?*
- *Offering individuals a reward – say £2 for completing the survey*

The psychology of survey design

- Avdeyeva and Matland (2013):

  Control group received no incentive,

  Treatment 1: A second group received 50 rubles ($1.65) with the survey request (***no conditions attached***)

  Treatment 2: was promised six times that amount once survey was completed and returned

  - Which group Control or Treatment 1 or 2 had the highest response rate?

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- Use material resources **to encourage (but not require** reciprocity)

  - *something simple like a thank you note can be effective*

The power of reciprocity!

- As an experiment a University Professor sent Christmas cards to a sample of perfect strangers. Although he expected some reaction, the response received was amazing – holiday cards addressed to him came pouring back from the people who had never met nor heard of him.

Decrease the costs of participation

- Reduce burden of length
- Reduce complexity
- Use visual design principles
- Be careful with language
- Make it convenient (easy) to respond

Establish Trust

- Provide ways in which authenticity can be established
- If possible emphasise sponsorship by a legitimate authority
- Assure confidentiality and protection of data
- Use a professional design

Final thoughts

- Get into a respondents state of mind

- **Three key principles – make a good impression!**

1. Make it salient

2. Make it relevant

3. Make it interesting

- Be aware of question limitations

External reading

- **Excellent guide to all aspects of survey design**: *Internet, phone, mail and mixed-mode surveys by Dillman et al*. available on Minerva.

Qualtrics is an excellent online survey tool freely available to all University of Leeds students

- Students requiring a Qualtrics account can self-enrol. To do this, click "Don't have an account?" on the link below and follow the instructions. There is no need to enter an access code.
- https://leedsubs.eu.qualtrics.com/login
- **Do not create trial accounts** – trial accounts have limited functionality and any data collected cannot be downloaded or analysed. It is not possible to upgrade a trial account to a full account meaning data may be lost**

- When creating a Qualtrics survey you must gain consent from all respondents if you are to collect personal data, such as their name or email address. You can see an example of how to include this at the beginning of your survey, as well as further information on data storage and your GDPR obligations, in the FAQ section: https://www.qualtrics.com/uk/platform/gdpr/
- Qualtrics provide extensive user tutorials, guides, and FAQs: https://www.qualtrics.com/support
- Weekly webinars: https://www.qualtrics.com/support/training-tools/webinars