



# Questionnaire Design

## Indigenous Statistical Development Initiative



Delivering insight through data for a better Canada



Statistics  
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# Questionnaire Design Workshop

## Course Objectives

The course will provide an overview of questionnaire design including:

- Methods used to develop and test questions
- Types of questions
- Wording and sequencing of questions
- Questionnaire design for different modes of data collection
- Format and layout of questionnaires



# Today's Objectives

- We will be doing a condensed version of the Questionnaire Design Workshop where we will look at:
  - The steps used to develop questions
  - Why is the data collection method so important?
  - Types of questions
  - Wording of questions
  - Biased questions





# Steps in the Survey Process



Find•Gather•Protect



Analyze•Model



Explore•Clean•Describe

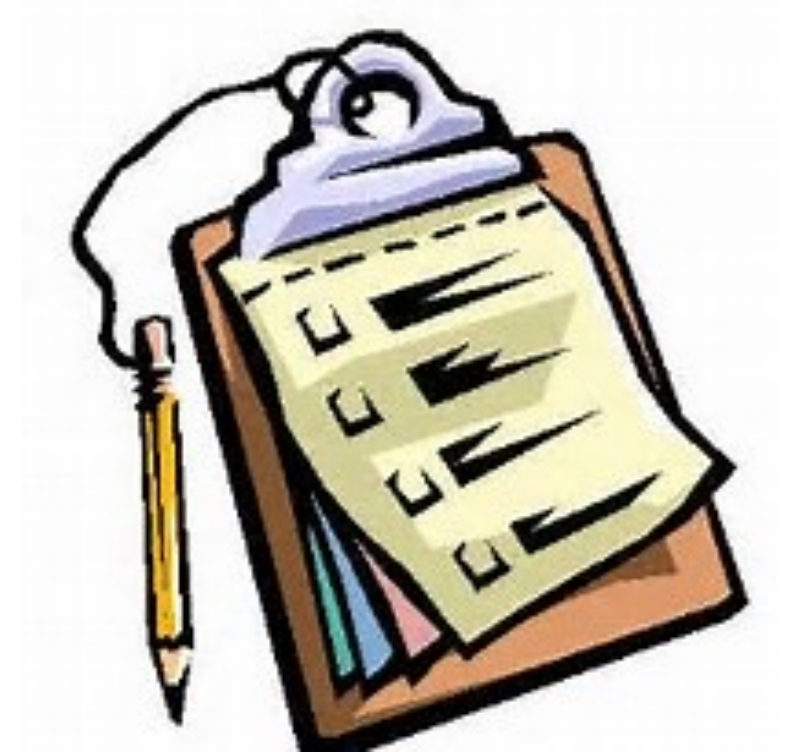
Tell the story





# What is a Questionnaire?

- A group or sequence of questions designed to obtain information on a subject from a respondent





# Questionnaire Development

Identify objectives/needs

Engagement

Review previous questionnaires

Draft questionnaires

Review questionnaire/Revise





# Identify Objectives: Ask yourself:

What are you trying to find out?

What is the problem?

What do we need to know?

Why is this question relevant?

What is the value added?

How will the information be used?

How quick do you need the information?





# Review Previous Questionnaires

- Examine questions used in similar surveys
- Same questions may be used
  - Ensures that questions have worked in the past
  - Useful for data comparability over time







Method of data collection

Characteristics of respondents

Response burden

Complexity of the data to be collected

Sensitivity of the information asked

Need for comparability over time/other surveys

## Considerations



## Why is Data Collection Important?

High cost

Requires extensive human & physical resources

Time-consuming

Direct impact on data quality





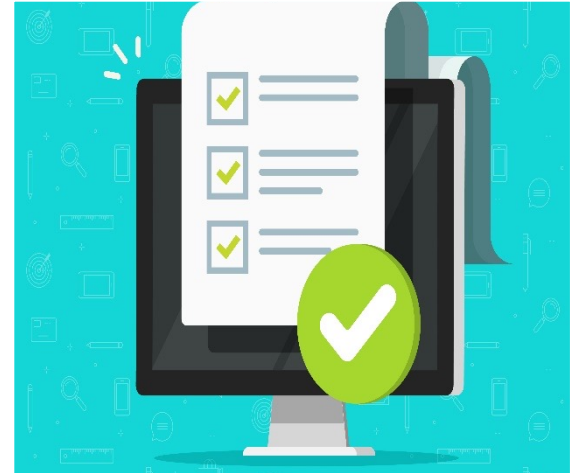
# Data Collection Methods



Face-to-face  
interviewing



Telephone  
interviewing



Self-Completed





# EXERCISE: Close your eyes (Telephone Interview)





# EXERCISE: Close your eyes (Telephone Interview)





# EXERCISE: Close your eyes (Telephone Interview)



# Considerations in Questionnaire Design



- Types of questions
- Question wording
- Sequencing of questions
- Format of questionnaire
- Instructions
- Introductions





# Types of Questions

## Open-ended Questions

- Respondents are free to express their answers in their own words.

## Closed-ended Questions

- Respondents must choose their responses from a list of possibilities provided to them.





# Open-ended and Closed-ended Questions: Examples

## Open-ended Question

[Including yourself], how many persons usually live here, at this address, as of today?

## Closed-ended Question

What was the main reason you were not available to work last week?

- Own illness or disability
- Caring for own children
- Caring for elder relative (60 years of age or older)
- Other personal or family responsibilities
- Going to school
- Vacation
- Already have a job
- Other - Specify

Source: Statistics Canada, Indigenous Peoples Survey, 2022



# Number of Answer Choices

- In most circumstances, the number of answer choices should be kept to a relatively small number – just 4 or 5 at most – especially in telephone surveys.
- Research indicates that people have a hard time keeping more than this number of choices in mind at one time.

**Question taken from the 2022 Indigenous Peoples Survey: Which of the following types of child care arrangements do you currently use?**

Indigenous-specific child care program (e.g., Head Start, or First Nations, Inuit or Métis day care program)	Daycare centre, nursery school, preschool, or CPE	Care by a relative other than parent	Care by a non-relative in your home (e.g., a nanny)	Family child care home (e.g., home based daycare or home based child care)	Before or after school program	Other child care arrangement
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	Open-ended Questions	Closed-ended Questions
Advantages	<ul style="list-style-type: none"> <li>• Allow respondents to create their own answers in their own words</li> <li>• Useful when approaching a new area of research</li> <li>• Useful in qualitative research</li> <li>• Can develop the response categories for closed-ended questions</li> <li>• Used to get exact numerical data</li> <li>• Add variety to a survey</li> </ul>	<ul style="list-style-type: none"> <li>• Easier for the respondent to answer</li> <li>• Faster to answer</li> <li>• For the researcher, closed-ended questions are easier to code and analyze</li> <li>• Cheaper to code and analyze</li> <li>• Provide a consistent frame of reference for all respondents</li> </ul>
Disadvantages	<ul style="list-style-type: none"> <li>• Demanding for the respondent</li> <li>• Time consuming</li> <li>• Coding scheme must be developed</li> <li>• Analysis and interpretation of results is difficult and expensive</li> </ul>	<ul style="list-style-type: none"> <li>• Assume researcher is able to identify the most common responses and design categories for them</li> <li>• May elicit an answer where no knowledge or opinion exists</li> <li>• May oversimplify an issue</li> <li>• Force respondents to unnaturally categorize themselves</li> <li>• No room for self-expression</li> </ul>





# Types of Closed-ended Questions

TWO CHOICE

MULTIPLE  
CHOICE

CHECKLIST

RANKING

RATING  
SCALES





# Two-Choice Questions

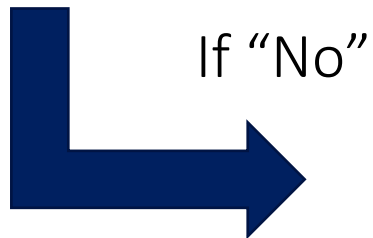
The respondent is given 2 alternatives and must choose one

- “Yes or No” questions are the most common form
- Simple and quick
- Can become tedious
- Can be useful as filter questions

Do you have a regular medical doctor?

Yes

No



Why do you not have a regular medical doctor?

Source: 2022 Indigenous Peoples Survey , Statistics Canada





# Multiple-Choice Questions

- Questions that offer respondents a variety of different responses to choose from.
- Answer categories must be mutually exclusive and exhaustive
- 2 types of multiple-choice questions:

## Single Answer

- Only allow respondents to select one answer from a list of options.

## Multiple Answer

- Allow respondents to select all responses that apply from a list of options.



# Multiple-Choice Questions

How often do you use the Internet in a typical month?

- Daily
- A few times a week
- Once a week
- At least once a month
- Less than once a month
- Never

On average, how often do you eat vegetables? Please include fresh vegetables as well as frozen or canned vegetables.

- Two or more times a day
- Once a day
- A few times a week
- About once a week
- Never/hardly ever





# Checklist Questions

The respondents are given several alternatives from which they can choose more than one. (*i.e. mark all that apply*)

- equivalent to a series of “yes/no” questions
- categories must be exhaustive
- categories should be mutually exclusive
- more difficult to analyze







## Example of Checklist Question

- What members of your family and other people usually live here at this address? (*Mark all that apply*)

- Spouse (husband/wife)
- Common-law partner
- Mother
- Father
- Son/Daughter
- Brother/Sister
- Foster father/mother
- Foster son/daughter
- Grandfather/mother (include great-grandfather/mother)
- Grandson/daughter
- In-law
- Uncle/Aunt
- Other related
- Unrelated



# Multiple Choice vs. Checklist

What is the main reason that has kept you from working at a full-time job? (mark only one)

55%  
16%  
1%  
3%  
18%  
2%  
5%  
**100%**

Going to school  
No full-time jobs available in my area  
No full-time jobs available in my field  
Health problems  
Caring for own children  
Retired  
Other

60%  
62%  
10%  
58%  
61%  
5%  
5%  
**261%**

What are the reasons that have kept you from working at a full-time job? (mark all that apply):



# Ranking Questions

The respondents are asked to arrange all (or some) of the given alternatives in order

- Can be used in almost any instance that a checklist question is used
- Provides more information than checklist questions
- VERY difficult to answer
- Warning: Do not make assumptions about the distance between the ranks





# Ranking Questions

Below is a list of factors that can cause difficulty using public transit. Please rank them according to how much difficulty they cause you. (*mark 1 beside the most difficult, 2 beside the second most difficult, etc.*)

- \_\_ Getting on the bus
- \_\_ Getting off the bus
- \_\_ Getting to the bus stop
- \_\_ Reading bus name
- \_\_ Standing while bus moves
- \_\_ Getting into a seat





# Alternatives to Ranking Questions

Below is a list of factors that can cause difficulty using public transit. Please check all those that cause you any difficulty

- \_\_\_A. Getting on the bus
- \_\_\_B. Getting off the bus
- \_\_\_C. Getting to the bus stop
- \_\_\_D. Reading bus name
- \_\_\_E. Standing while bus moves
- \_\_\_F. Getting into a seat

Of the items checked above, which one causes you the MOST difficulty? \_\_\_



# Rating or Scale Questions

The respondents are asked to choose from answer categories that measure the strength of a response.

- A series of multiple-choice questions
- Suitable for opinions
- Scales are subjective measures
- “No opinion/don’t know” can be valid
- Keep number of categories in a scale low





# Rating or Scale Questions: Thurstone Scale

For each statement that I read you, please tell me if you agree or disagree.

I have spent time trying to find out more about (First Nations/  
Métis/Inuit/Aboriginal] history, traditions and culture.

- Agree
- Disagree





# Rating or Scale Questions: Likert Scale

How would you rate your level of satisfaction with your [business/job]?  
Would you say that you are... ?

- Very satisfied
- Satisfied
- Neither satisfied nor dissatisfied
- Dissatisfied
- Very dissatisfied







## Things to consider when developing rating question

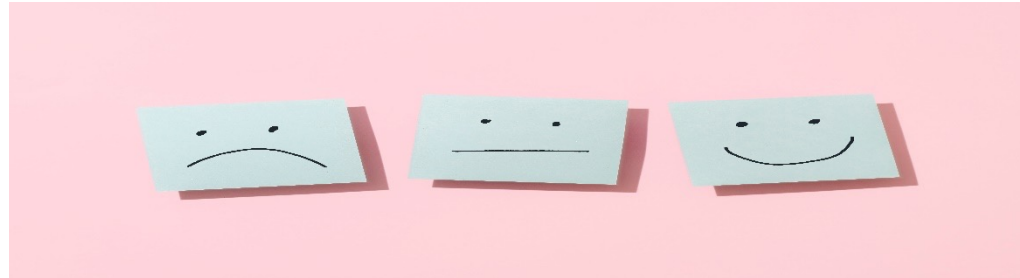
How many response categories should the scale have?

Should a “Don’t know/No opinion” or “Not applicable” response category be provided?





# Rating Questions



**How satisfied are you with our customer service?**

- Very satisfied
- Satisfied
- Dissatisfied
- Very dissatisfied

**How satisfied are you with our customer service?**

- Very satisfied
- Satisfied
- Neither Satisfied nor dissatisfied
- Dissatisfied
- Very dissatisfied



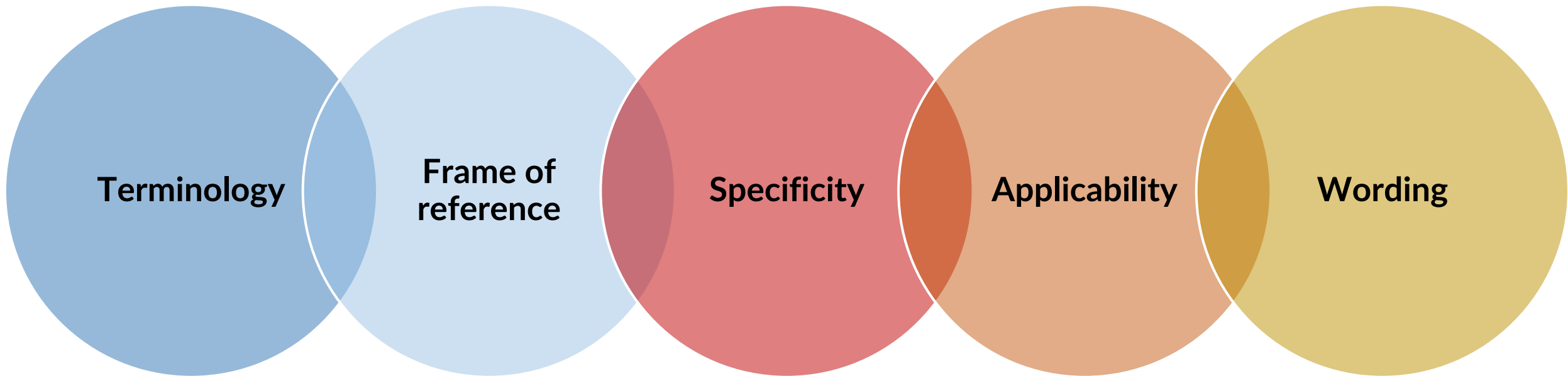


# Question Wording





# Considerations in Questionnaire Design and Wording





# Keep it Simple

- Make sure that all the terms are appropriate for the population being surveyed
- Avoid technical words or specialized jargon with which respondents are unfamiliar
- If needed, respondents should be given additional clarification or definitions



**Vs.**      **Have you ever received a pneumococcus vaccination?**  
**Have you ever received a flu vaccine?**



## Specify the frame of reference

In the past 12 months, did you hunt, fish or trap?

- Yes
- No
- RF
- DK

Source: 2022 Indigenous Peoples Survey, Statistics Canada



## Specify the reporting units

How long is your usual drive to work?

**Possible answers:**

60 mins

40 kilometers

20 miles

On a typical workday, how many kilometers do you usually drive to and from work daily?

----- kilometers





# Types of Biased Questions

**Leading Questions**

**Loaded Questions**

**Double-Barreled**

**Double negatives**







# Types of Biased Questions: Leading Questions

How great is our educational program?

**Problem:** Sways respondents to answer a question one way, as opposed to leaving them room to decide on their own.

**Ways to fix the problem:** Phrase your questions objectively and provide answer scales with equally balanced negative and positive options.

**Please rate your level of satisfaction as to how the educational program has met your needs (1 being very dissatisfied and 5 being very satisfied).**



# Types of Biased Questions: Loaded Question

Which Inuit land claims agreement are you a beneficiary of? (provides list of Inuit land claims)

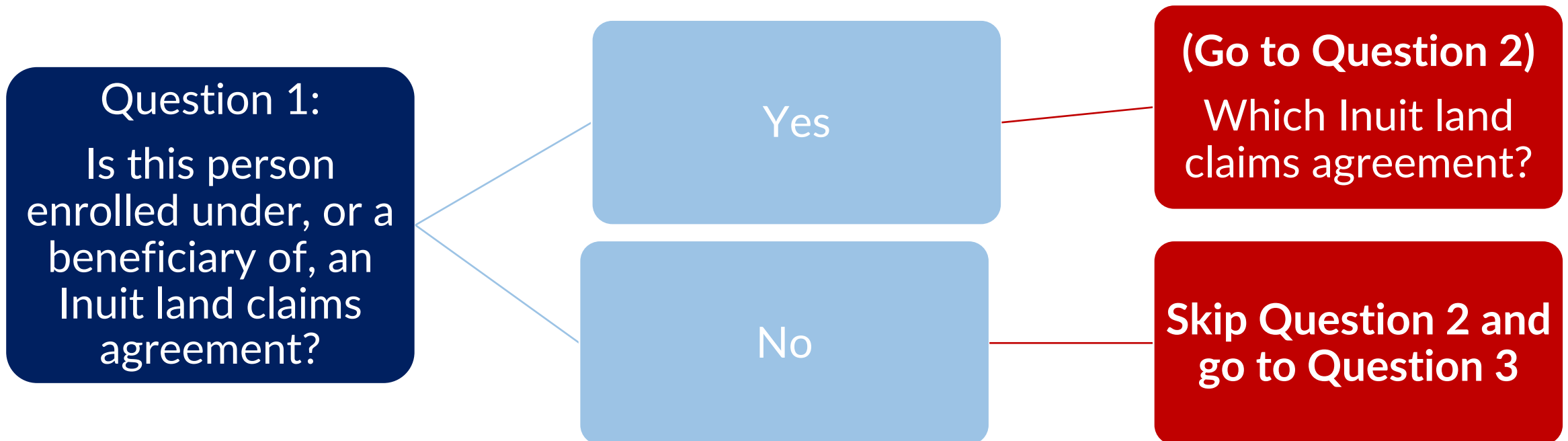
**Problem:** It contains an assumption about the respondent

**Ways to fix the problem:**

- Don't make unfounded assumptions about your respondents. Skip the question if it's irrelevant
- Provide an answer option that the respondent can use to tell you that the scenario isn't applicable to them.



# Question Skip Patterns



Source: 2022 Indigenous Peoples Survey, Statistics Canada





# Types of Biased Questions: Double-Barreled

Do you have asthma or arthritis?

**Problem:** Asking for a single answer when there are two or more questions within a single question.

**Ways to fix the problem:**

- Ask one question at a time.
- Do not overcomplicate it.



# Types of Biased Questions: Double Negatives

Do you oppose not allowing the board to pass Bill ABC?

## Problem:

- It includes 2 negative words, potentially confusing or misleading the participant completely.
  - If the respondent cannot understand the question, their answer will be meaningless and the resulting data will be useless.

## Ways to fix the problem:

- Rephrase the question using the positive or neutral version of the phrase.

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# Impact of Questionnaire Wording

In your opinion, should **Sunday shopping** be allowed in Ontario; that is, should stores that want to stay open on Sunday be allowed to stay open on Sundays if they want to?

## Results:

73%	In favour of Sunday shopping
25%	Opposed to Sunday shopping
2%	No opinion

In your opinion, should a **Sunday pause day** be adopted in Ontario; that is, should the government make Sunday the one uniform day a week when most people do not have to work?

## Results:

50%	Opposed to Sunday pause day
44%	In favour of Sunday pause day
6%	No opinion



# Questionnaire Design: Measuring Change over Time



- Asking the same questions at different points in time allows us to report on change in the overall views of the general public
- Use the same wording if you want to measure changes over time
- Be sensitive to where the question is asked in the questionnaire to maintain a similar context as when the question was asked previously



# Social Desirability Bias

The tendency to provide answers which are most in accord with social norms

## Examples of Sensitive Questions

- 'Did you vote in the last election?'
- 'Have you ever driven a motor vehicle after having had too much to drink?'
- 'Have you ever shoplifted anything?'







## Categories of Sensitive Questions

Establishing questions	<ul style="list-style-type: none"><li>• Age, race, income, etc.</li></ul>
Invasion of privacy	<ul style="list-style-type: none"><li>• Politics, religion, sexual activities, etc.</li></ul>
Illegal behavior	<ul style="list-style-type: none"><li>• Drug use, theft, other illegal activities</li></ul>
Posing a risk if the information is disclosed	<ul style="list-style-type: none"><li>• Cheating on a test, taxes, thoughts on their employer</li></ul>
Emotionally distressing	<ul style="list-style-type: none"><li>• Victimization, grief, disability</li></ul>
Unpopular behavior or attitudes	<ul style="list-style-type: none"><li>• Racism, abortion</li></ul>
Socially desirable responses	<ul style="list-style-type: none"><li>• Voting, wearing a mask during COVID, eating healthy</li></ul>





# Potential Consequences of Asking Sensitive Questions

- People refuse to even start your survey (if the topic is sensitive) or they break off and do not finish the survey once they reach the sensitive questions
- Respondents agree to complete the survey, but they leave the sensitive questions blank or answer “Don’t Know”
- Respondents provide inaccurate responses – they may overreport socially desirable behaviours and under report socially undesirable behaviours





# Reducing Social Desirability Bias

## Preparing the respondent for the questions

*Use Lead-in sentences explaining that a sensitive question will follow*

“The next questions are about sexual behaviours. Some questions may sound sensitive to you, but they are included in this survey because they will help monitor important public health issues such as risk of sexually transmitted infections and unintended pregnancies..”

**Canadian Community Health Survey**

## Using Closed-ended questions

*Provide a range of response categories*

What was your total personal income before deductions last year? (Include income that you received from wages, salaries, and all other sources.)

**Statistics Canada**



# Ways to Reduce Social Desirability Bias:

## Everybody approach:

- Introduce by suggesting the behaviour is not uncommon

## Response justification technique:

- State some possible reasons for the behaviour

## Even once technique:

- Determine whether the respondent has even once done something before asking about their current behaviour





# Reducing Social Desirability Bias: Examples

Do you smoke cigarettes?

- Yes
- No

*Vs.*

Approximately how often do you smoke cigarettes? Would you say...

- Often
- Sometimes
- Rarely
- Never

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# Reducing Social Desirability Bias: Examples

In the last election,  
did you vote?

- Yes
- No

**Vs.**

Many people find it hard to get out  
and vote. Others are discouraged by  
the choice of candidates. What about  
you? In the last election, did you  
vote?

- Yes
- No

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## Reducing Social Desirability Bias: Examples

In the past 12 months, how often did you smoke marijuana?

- Never
- Once or twice
- Monthly
- Weekly
- Daily or almost daily

**Vs.**

The latest research says marijuana use is becoming quite common among Canadians. Have you ever tried marijuana?

- Yes
- No
  
- If “yes”, In the past 12 months, how often did you smoke marijuana?



# Assure Confidentiality or Anonymity

- If your survey is secure and confidential, let respondents know right up front
- In the survey introduction, describe what steps are taken to protect responses
- Do you ask the person's name on a survey?
  - If you do, state that respondents' names will never be associated with their responses, rather all responses will be combined and reported as a group

Please remember that everything you say will remain strictly confidential.

Source: 2022 Indigenous Peoples Survey, Statistics Canada







## Provide Context for Questions

- Reveal why you are asking the sensitive question
- Example, when asking someone about whether they rent or own a home, you might clarify that the purpose of the question is to understand whether affordable housing seems readily available within certain communities and that ultimately the survey aims to help people
- You may simply state that they are “*for statistical purposes only.*”

To better understand your health information, it is important to know if you are pregnant. Are you pregnant? Yes No

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