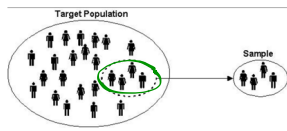


Data Collection  
 Lesson 2.: Sources of Bias in Data Collection: error  
 → not accurate or representative of population

Sources of bias in Sample Surveys



Sample

- not large enough sample.
- not representative
- improper sampling → be more random

Do 2.16



Data Gathering

- unclear wording.
- non-neutral
- giving a m answer
- not enough time given



Data Processing

- misrepresentation of results (miscounting)
- misinterpretation of result

## Formulating Good Survey Questions

→ can't be condescending in question  
Be neutral.

→ be non-judgemental.

Rewrite those 3 questions  
without bias.

- ① How do you recycle your batteries? suggests an answer
- ✓ How do you dispose of your batteries? neutral
- ②
- ③

## How to Create a Good Survey

i. • Write a catchy/indicative title

ii. • Write goal of survey

iii. • Variety of questions linked to goal.

Pg 60 a) - d)

Pg 62 - 63

2.17 - 2.19

• multiple choice (w one answer) → use it for sensitive questions

• short answer questions

• closed question (answer is yes/no)

• include a comment section

iv. • Focus on one goal.

# Representing Results Accurately

Calculating  $\bar{w}$  %  $\rightarrow$  percent implies a fraction.

IOWA VOTING INTENTIONS FOR DEMOCRAT CANDIDATE

Candidate	Number of Votes
Bernie Sanders	300
Pete Buttigieg	216
Joe Biden	204
Elizabeth Warren	180
Others	<del>300</del>

part  
100 whole (total)

Part of whole

a) What percent of Iowan voters support Sanders?

300 votes

with respect to all voters

$$\% = \frac{\text{part}}{\text{total}} \times 100\%$$

$$\% = \left( \frac{300}{(300 + 216 + 204 + 180 + 300)} \right) \times 100 = 25\%$$

Q2

d) A journalist saw these results and declared that Sanders has 33% of the Iowan vote. How did she get this result? Is this biased?

= (misrepresentation)

$$\left( \frac{300}{(300 + 216 + 204 + 180)} \right) \times 100\% = 33\%$$