Sampling Issues

Sample Surveys in the Real World

Census – A census is a sample survey that attempts to include the entire population in the sample.

How sample surveys go wrong

- **Sampling Error** – Errors caused by the act of taking a sample. They cause sample results to be different from the results of a census.
  - **Undercoverage** – Some groups of the population are left out of the sampling process.

  *Examples:*

Some bad ways to sample

- One popular (and bad) form of sample design is the **voluntary response method**. Such samples tend to be biased because people with strong opinions are likely to respond. What’s the problem? → The kind of people who respond may **not** be representative of the population of interest.

  *Example: Ann Landers Poll*

- **Convenience Sampling** – Method based on choosing individuals easiest to reach.
  
  *Example: Surveys at Shopping Malls*
The two methods above can easily favor some parts of the population over others. We say that each method is biased.

A sampling method is said to be biased if it systematically favors certain outcomes.

**Question:** Would taking a larger sample using the two poor methods above eliminate bias? Explain.

- **Non-sampling Error** – Errors not related to the act of selecting a sample from the population. They can be present even in a census.
  - **Nonresponse** – refusal of participation.
  - **Response bias**
    1. **Interviewer Bias** – where the interviewer knowingly/unknowingly sways responses.
      (a) If you want to ask people their opinion about whether the Augusta National Golf Club should admit female members, do you think the gender of the interviewer could have an effect on their responses? Explain.
      
      (b) Suggest an issue for which the interviewer’s race could have an effect on people’s responses.

      Interviewers can unwittingly affect how people respond to survey questions.

    2. **Respondent Bias** – where respondent gives false replies. This is especially prevalent when subjects are asked sensitive questions.

    - **Wording of Questions** – confusing or leading questions can lead to strong bias. *See Augusta National Golf Club Survey.*
      Make sure you know the exact content of the questions used in a survey.