Overview

This exercise is designed to help students:

understand five types of sampling methods;

determine appropriate sampling methods and their strengths and weaknesses; and

increase their confidence in using quantitative reasoning to explain sampling methods.

Instructions

This exercise reviews five common sampling methods for quantitative data analysis (simple random, systematic, cluster, stratified, and convenience) in psychology and has students apply them to a specific research question: how much of a newspaper consists of advertisements? Students must have a basic understanding of the five sampling methods to complete the exercise, so this activity will follow a previous class lecture/discussion of different sampling methods in psychology.

The class of 24 students will be divided into small groups of 2-3 students. Each group will be assigned one of the five sampling methods and each student will receive a multiple-section daily New York Times. Using their assigned sampling method, each group will pick an appropriate sample of pages and estimate the total amount of advertising in the newspaper. They will then calculate a mean percentage of advertising based on their sample. Groups will present their sampling method and results to the rest of the class, providing a good basis for discussion of the strengths and weaknesses of the various sampling methods used. All of these components are detailed on the worksheet that each student uses to complete the activity.

Exercise Format

Before students begin the exercise, I will pick a couple of pages from the newspaper and discuss what would be an accurate estimate of the advertising on that page with the larger class before they do it in their individual groups. I will also tell the groups that those using a simple random or systematic sampling technique should use a sample of 10 pages, so that group results can be compared.

I will visit groups as they are discussing their strategy for sampling, so that they do not go through the entire sampling process incorrectly. Rather than tell them how to sample, I will pose questions for them to think about. For instance, if the group is using a simple random sample, I don't want students to just randomly open up to a page of the newspaper and use that as one for the sample. I will ask them, "Is that really random?" I will then encourage them to come up with a less biased way of "randomly" selecting pages (such as using a random number table).

Depending on the size of the class, there will probably be more than one group using the same sampling method. This will help aid discussion about the results and provide opportunities for revision by groups if those using the same method obtain different estimates.

**UNDERSTANDING DIFFERENT SAMPLING METHODS
WORKSHEET**

1. First, before you do anything, answer the following question:

   a) What proportion of the entire newspaper do you think is made up of advertisements? Your guess should be expressed as a %: _____

2. Next, talk with your group members and figure out how to sample the newspaper with your assigned sampling method. Your sample size should consist of 10 to 15 pages, depending on your group's assigned sampling method. A 'page' is one side of the newspaper page. Describe how you will select the pages for your sample (be specific and detailed):

3. If there is one advertisement on about one half of the page, you would record 50% for that page. Record your data in the spreadsheet below:

Sample Page Number	Percentage of Page That is Advertisements

   a) Calculate a mean percentage based on your sample (this is your sample statistic): _____

   b) Do you think this is the best sampling method to use for this research? Why or why not?

4. Discuss your group results with the rest of the class. Record the results obtained for your sampling method as a bar chart below.

Advertising
%

Sampling Method

_____
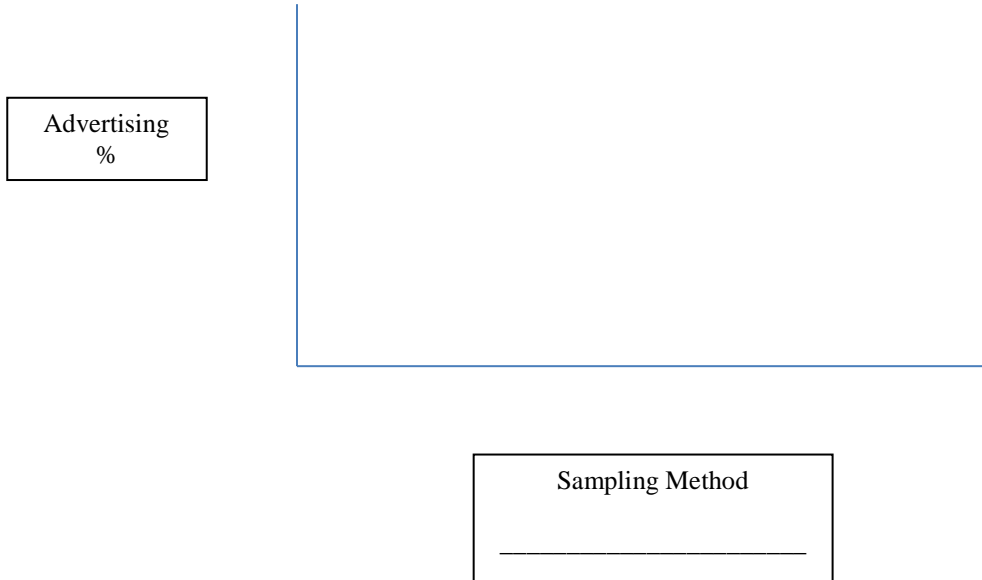
5. Answer the following questions:

    a) Why is knowledge of the specific sampling procedures used and the characteristics of the sample important to consider regarding the results?

    b) How confident are you about understanding different sampling methods and their strength and weaknesses?
        Very confident _____   Somewhat confident _____   Not at all confident _____

6. Bonus question: Estimate the advertising revenue for the *New York Times* in one week. Explain any assumptions you make in order to determine this calculation.

    New York Times weekly advertising revenue: $_____

    Assumptions: