

Seminar 3

1. Random Sampling is best defined as a method of sampling:
 - a) that chooses items in such a way that each item and each group of n items is equally likely to be chosen or included in the sample.
 - b) that chooses items in a systematic way that necessarily included some items and does not include other items.
 - c) that sorts items into clusters and then samples from these clusters in a random way.
 - d) that sorts items into strata and then samples from these strata in a way representative of the population.

2. List the advantages of sampling over census.

3. Farlington Saving and Loan is considering a merger with Sentry Bank, but needs shareholder approval before the merger can be accomplished. At its annual meeting, to which all shareholders are invited, the president of FS&L asks the shareholders whether they approve of the deal. Eighty-five percent approve. Is this percentage a sample statistics or a population parameter?

4. A non-profit organisation is conducting a door-to-door opinion poll on municipal day-care centres. The organisation has devised a scheme for random sampling of houses, and plans to conduct the poll on weekdays from noon to 5 p.m. Will this scheme produce a random sample?

5. Bob Peterson, public relations manager for Power an Light, has implemented an institutional advertising campaign to promote energy consciousness among its customers. Peterson, wants to know if the campaign has been effective, plans to conduct a telephone survey of area residents. He plans to look in the telephone book and select random numbers with addresses that correspond to the company's service area. Will Peterson's sample be a random one?

6. The manager in charge of customer services of Turbo Wash Co. Ltd. is planning to conduct a survey to determine whether customers who purchased a washing machine from his/her company over the past six months were satisfied with the product. Using the warranty cards submitted by the customers after the purchase over the past six months, the manager made up a list of relevant customers and 220 of them were randomly selected. A questionnaire designed to assess customers' satisfaction with the washing machine was then mailed to each of them.
 - a) Describe the population and sample of the survey set up by the manager.
 - b) Describe the inference of interest in this survey.
 - c) Did the list made up by the manager cover the whole actual population of interest? Explain.

Seminar 3 (cont.)

7. Suppose that the BA Departmental Committee want to select six student representatives, from the current 138 BA first year students, to join the departmental committee.
 - a) Using the random number table provided to generate the random number, describe the method and procedure for selecting the sample by Simple Random Sampling. And identify the six students to be included in the committee if you begin at row 5 of the table and read across the row.
 - b) Describe how you would select a Systematic Random Sample. Identify the six students to be included in the committee, if you begin at row 5 of the random number table and read across the row.