

Statistics: Survey Method Worksheet

In the following problems, identify the type of sampling used. Explain your choice.

1. In order to estimate the percentage of defects in a recent manufacturing batch, a quality control manager at Intel selects every 8th chip that comes off the assembly line starting with the 3rd, until she obtains a sample of 140 chips.
2. In order to determine the average IQ of ninth-grade students, a school psychologist obtains a list of all schools in the local public school system. She randomly selects five of these schools and administers an IQ test to all ninth-grade students at the selected schools.
3. In an effort to determine customer satisfaction, United Airlines randomly selects 50 flights during a certain week and surveys all passengers on the flights.
4. A member of Congress wishes to determine her constituency's opinion regarding estate taxes. She divides her constituency into three income classes: low-income households, middle-income households, and upper-income households. She then takes a random sample of households from each income class.
5. In an effort to identify whether an advertising campaign has been effective, a marketing firm conducts a nationwide poll by randomly selecting individuals from a list of known users of the product.
6. A radio station asks its listeners to call in their opinion regarding the use of American forces in peacekeeping missions.
7. A farmer divides his orchard into 50 subsections, randomly selects 4 and samples all of the trees within the 4 subsections in order to approximate the yield of his orchard.
8. A school official divides the student population into five classes: freshman, sophomore, junior, senior, and graduate student. The official takes a random sample from each class and asks the members' opinions regarding student services.

9. A survey regarding download time on a certain Web site is administered on the Internet by a market research firm to anyone who would like to take it.

10. A lobby has a list of 100 senators of the United States. In order to determine the Senate's position regarding farm subsidies, they decide to talk with every seventh senator on the list starting with the third.

Applying the concepts

For these problems, choose the best sampling method to obtain the individuals in the sample. Explain your choice. Explain how you would perform the sampling. Be prepared to present and defend your choice.

11. The city of Naperville is considering the construction of a new commuter rail station. The city wishes to survey the residents of the city to obtain their opinion regarding the use of tax dollars for this purpose.

12. The county Sheriff wishes to determine whether a certain highway has a high proportion of speeders traveling on it.

13. Target wants to open a new store in the village of Lockport. Before construction, they want to obtain some demographic information regarding the area under construction.