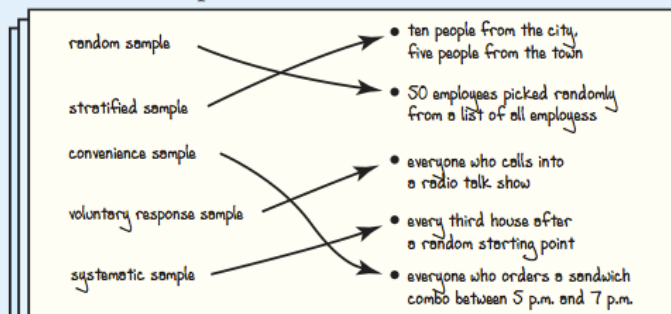


Market Research: Collecting Data

Key Ideas

- A population is the whole group of individuals being studied. It is not always practical or cost effective to survey everyone in a large population. You might survey a sample of the population.
- A sample is any part of the population.
- A random sample ensures that all people have an equal chance of being selected for a study. You can use data from a random sample to make predictions about the population. Systematic samples and stratified samples are types of random samples.
- Voluntary response samples and convenience samples are types of non-random samples.



population

- all of the individuals in the group being studied
- for example, the population in a federal election is all eligible voters

sample

- any group of individuals selected from the population
- for example, a sample of the population in a federal election might be 100 individuals chosen from each province or territory

Link the Ideas

There are several different types of samples.

convenience sample

- a sample created by choosing individuals from the population who are easy to access

random sample

- a sample created by choosing a specific number of individuals randomly from the whole population. *Random* means that each individual has an equal chance of being chosen. As a result, a random sample is likely to represent the whole population. Data from a random sample can be used to make predictions about the population. Stratified samples and systematic samples are types of random samples.

stratified sample

- a sample created by dividing the whole population into distinct groups, and then choosing the same fraction of members from each group

systematic sample

- a sample created by choosing individuals at fixed intervals from an ordered list of the whole population

voluntary response sample

- a sample created by inviting the whole population to participate

Market Research: Collecting Data

Part 2 - Complete the following based on the information you have read.

When we are collecting data, what do we mean by the following?

Population -

Sample -

Complete the following table.

| Definition for Type of Sample | Example |
|--------------------------------------|----------------|
| 1. | |
| 2. | |
| 3. | |
| 4. | |
| 5. | |
| 6. Biased Sample | |

Market Research: Collecting Data

Example 1: Identify the Population

Identify the population for each situation. Then, state whether you would survey the population or a sample of the population. Explain your reasoning.

- A bicycle store owner wants to know which brand of mountain bike her customers prefer.
- The school board wants to know how many hours of homework students do each day.
- A candle manufacturer wants to know how many of its candles are made with flaws.



Solution

- The population is the store's customers. It depends on the size of the store. A small store might survey all of its customers. A large, busy store would likely survey a sample of customers. For them it would be time-consuming and costly to survey all of the customers.
- The population is students in schools within the school board. The school board would likely survey a stratified sample of its students. They would want to include the same fraction of students at various grade levels because the amount of homework done varies from grade to grade.
- The population is all candles made by the company. A small company might check each candle made. A large company might check every tenth candle. It would be costly and time-consuming to check every item.

Example 2: Identify a Sample

For each situation, describe how the sample could be selected. Identify the type of sample.

- A teacher wishes to get feedback from her class about the school dance. She plans to survey 5 students out of a class of 30.
- A telephone company wants to determine whether a fitness centre would be well used by its 3000 employees. The company plans to survey 300 employees.
- A chain store is trying to decide whether to open a store in Camrose, Alberta. The company decides to survey people in Camrose and three nearby towns. The population of each location is shown in the table.
- A marketing research company mails surveys to all of the adult residents in a town. The survey asks about brands of consumer products. The residents are asked to mail their responses in a prepaid envelope.
- A restaurant owner wants to know the favourite pizza topping of his customers. He plans to survey every customer who orders a pizza in his restaurant between 5:00 p.m. and 10:00 p.m. one evening.

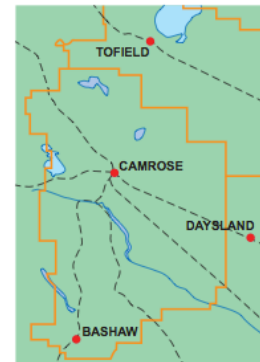
| Location | Population |
|----------|------------|
| Camrose | 16 000 |
| Bashaw | 825 |
| Tofield | 1 876 |
| Daysland | 876 |

Market Research: Collecting Data

Solution

You can use different types of samples in a survey. These are some possible solutions.

- a) The teacher could put all the students' names in a box and draw five names. This is a *random sample*.
- b) The company plans to survey 300 out of their 3000 employees. To ensure that the sample fairly represents the population, the company might interview every tenth person on the payroll list. This is a *systematic sample*. This type of sample is time and cost efficient.
- c) Since the city has more people who use the company's products than the nearby towns, the company could survey 25% of the population in each location. This is a *stratified sample*. Since 25% of each group is surveyed, the same proportion of each town is represented in the sample. In this case, the company would survey 4000 people from Camrose, 206 people from Bashaw, 469 people from Tofield, and 219 people from Daysland.
- d) The marketing research company is inviting all residents to participate. This is a *voluntary response sample*. This sample may not represent the population because only those who are interested will respond.
- e) This is a *convenience sample*. It is not random since only customers who order pizza are surveyed. However, the sample does target customers who will provide useful input. These customers are easily accessible. The sample provides the owner with information right away and costs no extra money.



For each situation, is there a different type of sample that might be used? If so, explain what type of sample and how you would organize it.

Market research is about collecting data. List ways in which market research may be conducted. What type of sample will each method provide?

- 1.
- 2.
- 3.
- 4.
- 5.

**Next Steps: Read over the examples included above.
Complete Worksheet 11.2 – Collecting Data**