

SAMPLING SYNOPSIS

Activity type Consolidation

This handout is in three parts. The main task is to complete a table of the main five sampling methods including a definition (presented as three key points – this matches the common exam requirement to provide a 3-mark answer) and a picture to illustrate the method.

The handout is plain awaiting their colourful illustrations! Students then devise their own mnemonic for recalling these methods and answer questions on target populations.

Practical use

Individual: homework

Additional notes

Encourages students to consolidate this material and also reflect on how they will learn it.

Answers

- a) Tory voters
- b) people with a spider phobia
- c) separated infant monkeys
- d) South African Whites
- e) blind people.

CHOOSING A SAMPLE

Activity type Consolidation

This worksheet covers various aspects of sampling by requiring students to choose samples for some studies. It

looks at disadvantages of certain methods and includes some maths.

Practical use

Individual task for class or homework

Additional notes

Maths content:

Percentages and proportions

Answers

1. a) How would she select a random sample from the workforce? (2)

Place all the names of the workers into a computer database and use a computer program to select 50 at random (or place all names in a hat and pick out 50).

- b) How would she select a stratified sample? Be precise! (4)

30 shop-floor workers, 5 supervisors, 10 office staff, 3 buyers, 2 management staff. Students should then say how these numbers are to be selected, e.g. randomly within each subset.

- c) For this investigation, which method of sampling would be better and why? (2)

A stratified sample is probably better than a random sample in this instance because you are dealing with small numbers and are therefore at risk of some groups not being represented at all with random sampling. For example, you may well not get any management representation from a random sample.

- d) Why are volunteer samples unlikely to be representative? (2)

Because volunteers are not representative of the general population. They are likely to be helpful, keen and curious therefore results obtained from such a group cannot necessarily be generalised to the population as a whole.

2. Think of at least **three** ways in which the sample so obtained is likely to be biased. (3).

There is likely to be bias in terms of:

- Gender: magazines are aimed at one sex.
- Age: readers are usually in their twenties, maybe thirties.
- Socio-economic class: certain magazines appeal to certain demographic groups and you have to be able to afford them but not feel they are intellectually beneath you!

3. a) What percentage of the target population is the sample? Show your working. (3)

$$125/2500 = 0.05 = 5\%$$

b) How would he draw a systematic sample of the target population? (2)

Get all the school registers and take every 20th student from the first to the last register (20 x 125 = 2500 therefore you take every 20th student).

c) How would he obtain a random sample of the students? (2)

Give every student a number and use a random number generator to select 125. Using a hat is rather impractical but credit-worthy as long as described properly (pull 125 names out).

GIVE US A CLUE

Activity type Quiz

This is a quiz covering the topics so far studied in this chapter: aim, hypothesis, IV and DV, operationalisation

of variables, sampling, experimental design.

handout number

6.11

Practical use

Individual assessment in class

Additional notes

Give students the answers and get them to mark each other's. Most of it is straightforward but they will benefit by thinking about whether a fellow student's hypothesis

is worthy of full marks. They might also consider whether it should be non-directional or directional.

Answers

1. How many participants took part in the study? (1)

40

2. a) What type of sampling was used? (1)

Opportunity sampling

b) Suggest **one** disadvantage of this sampling method. (2)

It is unlikely to be representative of the target population because it is drawn from one group of students who are all similar in terms of age, socio-economic class and educational attainment so the findings cannot necessarily be generalised to the wider population.

c) Suggest **one** advantage of this sampling method. (2)

This method is convenient. It saves the researcher a good deal of time and effort finding participants and thus is less costly than most other sampling methods. (In addition, with certain investigations, such as the one in this question, the bias in the sample is unlikely to cause major problems.)

d) Suggest another sampling method the students could use and explain how it would be done. (3)

E.g. volunteer sampling: the students ask for volunteers to take part in the study by displaying a notice on the school noticeboard. E.g. random sampling in which the students choose a target population, such as the whole school, and select a number of participants by drawing names from a hat.

3. What is the aim of the study? (1)

To investigate whether cues help people remember.

4. Write a suitable hypothesis for the study. (2)

Participants given a cue (in the form of the first and last letters) will remember more words than participants not given a cue.

5. What is the IV and DV in this study? How were each operationalised? (6)

IV is whether or not cues were provided. The DV is amount of recall.

The IV was operationalised by providing participants with the first and last letter of the word, or not.

The DV was operationalised by counting the number of words correctly recalled.

6. a) What was the experimental design of the study?

Repeated measures

b) Give one advantage and one disadvantage of this type of experimental (participant) design.

An advantage is that this method controls for individual differences in the participants so you do not get a situation in which one group has a better memory than the other and that this, rather than the IV, causes differences in the two conditions.

A disadvantage is that there may be order effects: participants may experience boredom and/or fatigue, which could make the second condition artificially poor or there could be a practice effect which may make the second condition better.

c) Describe how the student experimenters could have used a different experimental design for this study.

They could use an independent groups design in which participants were divided into two groups and only took part in one conditions of the IV, in other words, one group memorised a list with clues and the other memorised the same list with no clues.

7. Draw a histogram of the data from Condition B with an appropriate heading and labels. (4)

Histogram to show the frequency of scores in a memory test: condition with no clues

