

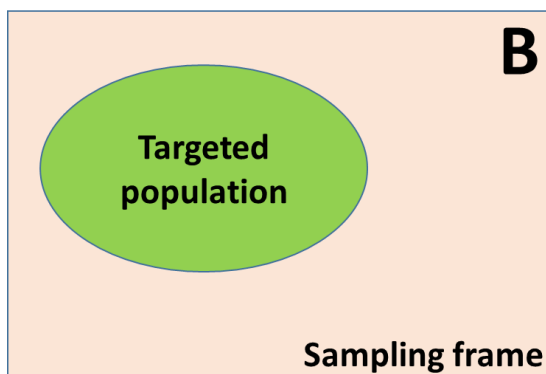
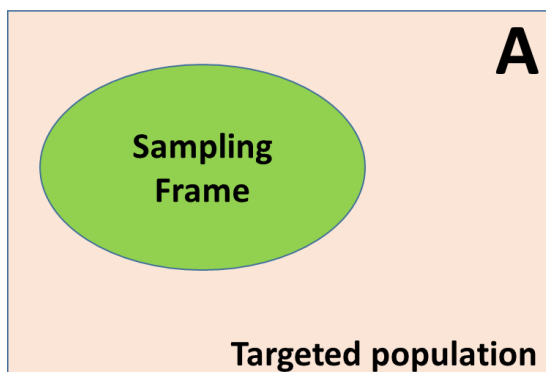
GER1000 Quiz 5

- 1) You are interested in the percentage of people with receding hairline in the population. Which of the following is/are reason(s) for taking a sample over a census?
- i) We use lesser time to take a sample rather than a census.
  - ii) The percentage of people with receding hairline in the sample is exactly the percentage of people with receding hairline in the population.
- a) (i) only
  - b) (ii) only
  - c) (i) and (ii)
  - d) None of the above

**Answer:** (a)

(Slide 9) The advantages of taking a sample over a census includes speed, cost and accuracy. Due to the presence of chance error, the percentages for sample and population may not be exactly the same.

- 2) Through a sample, Alice found out that E-payment is associated with age. She concluded that the population has the same result. Considering the sampling frame and the targeted population, which of the following would more likely cast doubt on the conclusion?



**Answer:** (a)

(Slide 17) A good sampling frame has to cover exactly or bigger than the target population so that every unit in the population has a known chance of being selected which corresponds to (b). Since the question is looking for the one that will more likely cast doubt on the conclusion, (a) is the answer.

3) For an assignment, students are asked to gather data on the mode of transport to campus. Three students have different approaches to gather these data. Which approach is giving a probability sampling plan?

- a) Student A created an online questionnaire and asked his friends on Facebook to help him spread the message.
- b) Student B asked computer centre to help her by sending an email to all students, asking about their opinion.
- c) Among all the lectures given throughout a week, student C randomly selected 100 module's lecture and interviews the first student who comes out of the classroom after lecture finishes.
- d) None of the above

**Answer:** (d)

A and B both will result in a volunteer sample. C is a multi-stage sampling plan but always surveying the first student who is coming out of the class makes the second stage non probability. Hence, D is the answer.

4) The registrar has the list of all students in the university, in alphabetical order. Among 25,000 students in the university, the investigator proposes to choose a number at random from 1 to 100. Starting from that number, every 100<sup>th</sup> person is included in the sample. Which of the following statements is/are false:

- i) This is an example of systematic sampling
  - ii) Since the names are in alphabetical order, resulting sample is not a probability sample
- a) (i) only
  - b) (ii) only
  - c) (i) and (ii)
  - d) None of the above

**Answer:** (b)

This is an example of systematic sampling. It is still a probability sample, because the starting number is at random (from 1 to 100), and thus the alphabetical order of names will not affect the probability method of sampling.

5) Which of the following must be true:

- a) Quota sampling is the same as stratified sampling
- b) A quota sample resembles the population in all respects
- c) Quota sampling is prone to unintentional bias in choice of units

**Answer:** (c)

Quota sampling tries to imitate only certain attributes of the population, which makes it highly prone to any unintentional bias. There may be other characteristics of the population that could affect the results of the study.