Quiz 4.

1. The following is the related section on sampling from a journal paper titled: "Pain tolerance predicts human social network size". What is the sampling method in this study?

Methods

Participants. The study was advertised for healthy adults aged 18–35 years, recruited predominantly from the University of Oxford. Exclusion criteria were recreational drug use or drug replacement therapy. Participants were requested not to consume alcohol (within 24 hours) or smoke (within 3 hours) prior to the study, given the analgesic properties of these substances.

The mean age of respondents was 21.7 years (range = 18–34 years). In total 107 subjects (30 males and 77 females) took part in the study. Six data points were excluded from the analysis due to either questionnaire inadequacies or failure to perform the pain test correctly. The study was approved by the University of Oxford's Medical Sciences Inter-Divisional Research Ethics Committee and the methods were carried out in accordance with the approved guidelines. All participants gave written informed consent.

A) Simple Random Sampling

B) Multi-stage Random Sampling

C) Quota Sampling

D) Volunteer Sampling

Explanation:

D is the answer. The Keyword in this description is the advertisement. That means individuals have seen the advertisement and volunteered to participate in the study.

2. Suppose you want to estimate the percentage of NUS students who like the new food court in the Science Faculty, using a representative sample of 200 students. Suppose you go to the food court one Wednesday morning. To select the sample, you first draw a number from 1 to 10 at random. Say, for example, you get number 6. Then you ask the 6th, 16th, 26th, ... students who come out to participate in the survey. Assume the response rate is 100%. What is the method of sampling and does this sample represent the targeted population?

A) Simple Random Sampling, Yes

B) Simple Random Sampling, No

C) Systematic Sampling, Yes

D) Systematic Sampling, No

Explanation:

D is the answer. This is a systematic sampling method however, frame of the sampling is wrong. Result of this survey can be reliably generalized to students that have used the food court in that particular day. Please notice that even if we use a probability sampling scheme, as long as the sampling frame is wrong, the sample will not be representative of the targeted population.

3. In a radio program casted from a local radio station, the DJ asks people to call and specify the amount they are planning to spend for Valentine's Day. What type of sample are we getting here?

A) A volunteer sample

B) A stratified sample

C) A cluster sample

D) A systematic sample

Explanation:

A is the answer. This is a volunteer sample and the results of this survey can be reliably generalized to those who have participated in this survey.

4. In a study on the association between the type of diet and happiness, 3000 individuals were recruited via a newspaper advertisement in Singapore. Afterwards, using a random procedure, individuals were assigned into treatment and control group. Treatment receiving Mediterranean diet and control receiving normal local diet. Level of happiness is then measured daily via micro surveys using a mobile application. The study continued for one month and all the individuals participated till the end. Which of the following is/are accurate?

I. The results of this study are generalizable to the people of Singapore.

II. This is an observational study.

A) Only (I)

B) Only (II)

C) (I) and (II)

D) Neither (I) nor (II)

Explanation:

D is the answer. This is a volunteer sample and as such, the results cannot be generalized to all Singaporeans. This is a randomized controlled experiment because we have assigned the individuals to control and treatment via a random procedure.

5) Which of the following samples will likely produce the least bias?

A) A simple random sample of 2520 people with 10% response rate.

B) A simple random sample of 360 people with 70% response rate.

C) An online survey with 252 responses.

Explanation:

B is the answer. In unit 4 of chapter 3 we told you that non-response distorts the results of studies. Usually non-respondents differ from respondents. We need to study the extent of the effect in order to reduce the bias of the collected information.