Elementary Statistics: Solution to Homework 3

Solution

Page 155 Problem 3.2:

a) The school the students attend (public or parochial school).
b) The kind of sport (different types of body to start with).
c) The type of job (industry models and staff agency are different types of persons).

Page 157 Problem 3.6:

a) Observational study.
b) Chance of getting a heart attack.
c) Depression.
d) Statistic (numerical value attained from the samples).
e) Confounding variables (to be specific lurking variables).

Page 165 Problem 3.14:

a) A retrospective observational study since we conduct the study by using the past data.
b) Confounding Variables (to be specific lurking variables).
c) People who are older have more chance to risk breast cancer and expose to pesticides

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Page 172 Problem 3.20:

a) Pupil's progress on piano after one year of lessons.
b) Teaching methods.
c) $4 \cdot 6 \cdot 5 = 120$ units.

Page 183 Problem 3.26:

a) treatments are assigned to subjects.

Page 198 Problem 3.46:

a) An experiment.
b) iv) an explanatory variable.
c) i) a response variable.

Page 199 Problem 3.50:

a) ii) explanatory variable.

b) i) response variable.

c) iv) a retrospective observational study. The study asked people who convicted of violent crimes(Y) to study their childhood abuse level(X). It is the study of a past event.

Page 200 Problem 3.52:

a) 7.2% for Seldane-D.   11.4% for Placebo.

b) Placebo helps constructing a control group. In this study we can see placebo effect from the table. The number of people who have headache or drowsiness from placebo are more than the real drugs.

c) None of the doctors and patients know which drugs they give or are given.

Page 204 Problem 3.60

a) An experimental study.

b) Methods of teaching.

c) There are confounding variables. For examples, the skill of teaching of the teachers or students' ability from different class to learn.

d) No, the students were selected by the teachers.

e) H_0: The average test scores of the two classes are the same. H_1: The average test scores of the two classes are the different.

f) The p-value is > 0.1.

g) We can't answer this question. The answer depends on whether the p-value $> .15$ or $\leq .15$.

Page 219 Problem 4.2

a) Quantitative discrete variable.

b) Quantitative continuous variable.

c) Quantitative discrete variable.

d) Quantitative continuous variable.

Page 227 Problem 4.10:

a) 69%

b) 22% of $1752 = 385.44$ (or about 385).