Allentest.txt

In the Allen Cognitive Level (ACL) Study, David and Riley (1990) investigated the relationship between ACL test scores and level of psychopathology. They collected the following data (allentest.txt) on each of 69 patients in a hospital psychiatry unit:

Response y = ACL score

Potential predictor x1 = vocabulary ("Vocab") score on Shipley Institute of Living Scale

Potential predictor x2 = abstraction ("Abstract") score on Shipley Institute of Living Scale

Potential predictor x3 = score on Symbol-Digit Modalities Test ("SDMT")

Coolhearts.txt

An Example: Heart attacks in rabbits. When heart muscle is deprived of oxygen, the tissue dies and leads to a heart attack ("myocardial infarction"). Apparently, cooling the heart reduces the size of the heart attack. It is not known, however, whether cooling is only effective if it takes place before the blood flow to the heart becomes restricted. Some researchers (Hale, et al, 1997) hypothesized that cooling the heart would be effective in reducing the size of the heart attack even if it takes place after the blood flow becomes restricted. To investigate their hypothesis, the researchers conducted an experiment on 32 anesthetized rabbits that were subjected to a heart attack. The researchers established three experimental groups:

1.Rabbits whose hearts were cooled to 6º C within 5 minutes of the blocked artery ("early cooling")

2.Rabbits whose hearts were cooled to 6º C within 25 minutes of the blocked artery ("late cooling")

3.Rabbits whose hearts were not cooled at all ("no cooling")

At the end of the experiment, the researchers measured the size of the infarcted (i.e., damaged) area (in grams) in each of the 32 rabbits. But, as you can imagine, there is great variability in the size of hearts. The size of a rabbit's infarcted area may be large only because it has a larger heart. Therefore, in order to adjust for differences in heart sizes, the researchers also measured the size of the region at risk for infarction (in grams) in each of the 32 rabbits.

With their measurements in hand (coolhearts.txt [1]), the researchers' primary research question was:

Does the mean size of the infarcted area differ among the three treatment groups — no cooling, early cooling, and late cooling — when controlling for the size of the region at risk for infarction?

Iqsize.txt

Brain size and body size study:

Recall that the iqsize.txt [6] data set contains data on the intelligence based on the performance IQ (y = PIQ) scores from the revised Wechsler Adult Intelligence Scale, brain size (x1 = brain) based on the count from MRI scans (given as count/10000), and body size measured by height in inches (x2 = height) and weight in pounds (x3 = weight) on 38 college students.

Peru.txt

This dataset consists of variables possibly relating to blood pressures of n = 39 Peruvians who have moved from rural high altitude areas to urban lower altitude areas (peru.txt [8]). The variables in this dataset are:

Y = systolic blood pressure

X1 = age

X2 = years in urban area

X3 = X2 /X1 = fraction of life in urban area

X4 = weight (kg)

X5 = height (mm)

X6 = chin skinfold

X7 = forearm skinfold

X8 = calf skinfold

X9 = resting pulse rate

Physical.txt

For n = 55 college students, we have measurements (Physical.txt [9]) for the following five variables:

Y = height (in)

X1 = left forearm length (cm)

X2 = left foot length (cm)

X3 = head circumference (cm)

X4 = nose length (cm)