Week 9 Correlation

Investigate the correlation between the variables in the following datasets, using partial correlations where appropriate, and discuss your results.

essaymarks

A student was interested in whether there was a positive relationship between the time spent doing an essay and the mark received. The student recruited 45 of his friends and recorded the time spent writing an essay (hours) against the mark awarded (essay).

1. Draw a scatterplot of these data.
2. Test for normality.
3. Compute the sample correlation
4. Decide whether there is significant correlation.

distance

Data on how far people in the UK drive in certain years.
Is there a positive relationship between the year and how far each person in the UK drives?

timeofday

Data on how drivers overtake cyclists at different times of day.
Is there a positive relationship between the hour of the day and proximity?

eutax

Data on the amount of tax levied across the European Union each year.
Is there a relationship between the year and the level of tax levied across the European Union?

temprate

Records of body temperatures against heart rates.
Is there a positive relationship between body temperature and heart rate?

childdata

Age, memory span, IQ and reading score for a group of children.
Investigate the relationship between memory span and reading ability.

shoppostage

Data on the weight of parcels from a shop.
Investigate the relationship between the weight of packaging and the total weight of the goods when packed.

bloodpressure

Gender, smoking status, age, systolic blood pressure, diastolic blood pressure, heart rate and weight.
Investigate all relationships, and in particular the relationship between weight and heart rate when we statistically control for smoking.

examanxiety

Gender, time spent revising, exam performance, exam anxiety. Investigate the relationship

between exam performance and time spent revising; and the relationship that exists between the variables when we statistically control for exam anxiety.