

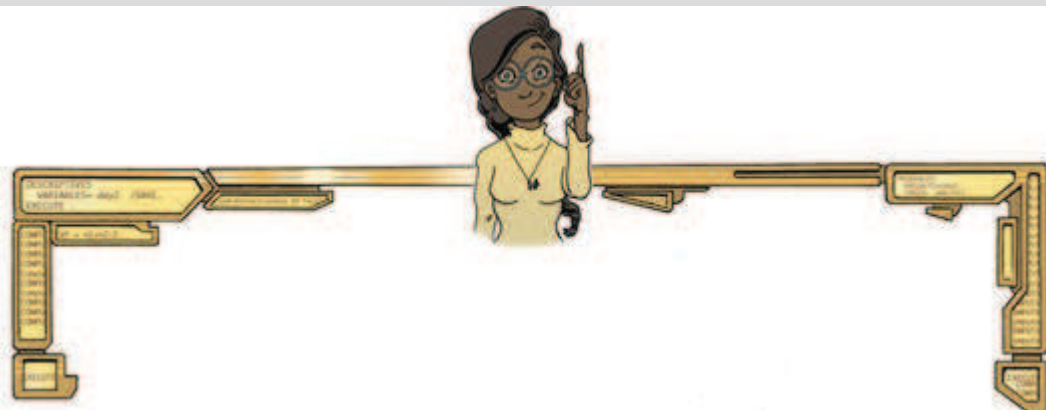
trying not to be a boring teacher. Nevertheless, my dad and Ken did get me going and soon enough, like my favourite record of the time, I was ready to ‘Take on the world’. Well, Wales at any rate ...

My dad, like me, never made it in his band, but, unlike me, did sing on the UK TV show *Stars in Their Eyes*, which made us all pretty proud.

8.11 Key terms that I’ve discovered

Biserial correlation
Bivariate correlation
Coefficient of determination
Covariance
Cross-product deviations
Kendall’s tau
Part correlation
Pearson correlation coefficient
Point-biserial correlation
Semi-partial correlation
Spearman’s correlation coefficient
Standardization

Smart Alex’s tasks



- Task 1: A student was interested in whether there was a positive relationship between the time spent doing an essay and the mark received. He got 45 of his friends and timed how long they spent writing an essay (hours) and the percentage they got in the essay (essay). He also translated these grades into their degree classifications (grade): in the UK, a student can get a first-class mark (the best), an upper-second-class mark, a lower second, a third, a pass or a fail (the worst). Using the data in the file *EssayMarks.sav*, find out what the relationship was between the time spent doing an essay and the eventual mark in terms of



percentage and degree class (draw a scatterplot too).

- Task 2: Using the *Notebook.sav* data from [Chapter 3](#), find out the size

of relationship between the participant's sex and arousal.



- Task 3: Using the notebook data again, quantify the relationship



between the film watched and arousal.

- Task 4: As a statistics lecturer I am interested in the factors that determine whether a student will do well on a statistics course. Imagine I took 25 students and looked at their grades for my statistics course at the end of their first year at university: first, upper second, lower second and third class (see Task 1). I also asked these students what grade they got in their high school maths exams. In the UK, GCSEs are school exams taken at age 16 that are graded A, B, C, D, E or F (an A grade is the best). The data for this study are in the file grades.sav. To what degree does GCSE maths grade correlate with first-year statistics grade?



- Task 5: In [Figure 2.3](#) we saw some data relating to people's ratings of dishonest acts and the likeableness of the perpetrator (for a full description see [Jane Superbrain Box 2.1](#)). Compute the Spearman correlation between ratings of dishonesty and likeableness of the perpetrator. The data are in HonestyLab.sav.
- Task 6: In [Chapter 4](#) (Task 6) we looked at data from people who had been forced to marry goats and dogs and measured their life satisfaction and, also, how much they like animals (Goat or Dog.sav). Is there a significant correlation between life satisfaction and the type of animal to



which a person was married?

- Task 7: Repeat the analysis above, taking account of animal liking when computing the correlation between life satisfaction and the animal to



which a person was married.

- Task 8: In [Chapter 4](#) (Task 7) we looked at data based on findings that the number of cups of tea drunk was related to cognitive functioning (Feng et al., 2010). The data are in the file Tea Makes You Brainy 15.sav. What is the correlation between tea drinking and cognitive

functioning? Is there a significant effect?



- Task 9: The research in the previous task was replicated but in a larger sample ($N = 716$), which is the same as the sample size in Feng et al.'s research (Tea Makes You Brainy 716.sav). Conduct a correlation between tea drinking and cognitive functioning. Compare the correlation coefficient and significance in this large sample with the previous task.



What statistical point do the results illustrate?

- Task 10: In [Chapter 6](#) we looked at hygiene scores over three days of a rock music festival (Download Festival.sav). Using Spearman's correlation, were hygiene scores on day 1 of the festival significantly



correlated with those on day 3?

- Task 11: Using the data in Shopping Exercise.sav ([Chapter 4](#), Task 5), find out if there is a significant relationship between the time spent



shopping and the distance covered.

- Task 12: What effect does accounting for the participant's sex have on the relationship between the time spent shopping and the distance



covered?

Answers & additional resources are available on the book's website at <https://edge.sagepub.com/field5e>

