

sort of had the last laugh on the goalkeeping front. At the end of my time at primary school we had a five-a-side tournament between local schools so that kids from different schools could get to know each other before going to secondary school together. My goalkeeping nemesis was, of course, chosen to play and I was the substitute. In the first game he had a shocker, and I was called up to play in the second game during which I made a series of dramatic and acrobatic saves (at least they are in my memory). I did likewise in the next game, and my nemesis had to sit out the whole of the rest of the tournament. Of course, five-a-side goals are shorter than normal goals, so I didn't have my usual handicap. When I arrived at secondary school I didn't really know a position other than goalkeeper, and I was still short, so I gave up football. Years later when I started playing again, I regretted the years I didn't spend honing ball skills (my teammates regret it too). During my non-sporting years I read books and immersed myself in music. Unlike 'the clever one' who was reading Albert Einstein's papers (well, Isaac Asimov) as an embryo, my literary preferences were more in keeping with my intellect ...

[18](#) Despite worshipping the ground my granddad walked on, I ended up supporting the local rivals of the north London team that he supported.

6.15 Key terms that I've discovered

Bootstrap

Contaminated normal distribution

Hartley's $F_{\max}$

Heterogeneity of variance

Heteroscedasticity

Homogeneity of variance

Homoscedasticity

Independence

Kolmogorov–Smirnov test

Levene's test

M-estimator

Mixed normal distribution

Outlier

P-P plot

Parametric test

Q-Q plot

Robust test

Shapiro–Wilk test

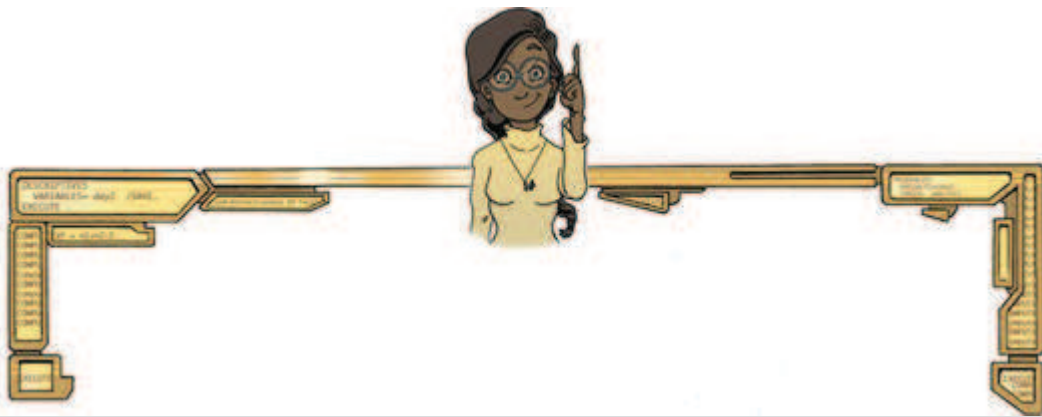
Transformation

Trimmed mean

Variance ratio

Weighted least squares

Smart Alex's tasks



- Task 1: Using the Notebook.sav data from [Chapter 5](#), check the assumptions of normality and homogeneity of variance for the two films



(ignore sex). Are the assumptions met?

- Task 2: The file SPSSExam.sav contains data on students' performance on an SPSS exam. Four variables were measured: exam (first-year SPSS exam scores as a percentage), computer (measure of computer literacy in percent), lecture (percentage of SPSS lectures attended) and numeracy (a measure of numerical ability out of 15). There is a variable called uni indicating whether the student attended Sussex University (where I work) or Duncetown University. Compute and interpret descriptive statistics for exam, computer, lecture and numeracy for the sample as a whole.



- Task 3: Calculate and interpret the z -scores for skewness for all variables.



- Task 4: Calculate and interpret the z -scores for kurtosis for all variables.



- Task 5: Use the *split file* command to look at and interpret the



descriptive statistics for numeracy and exam.

- Task 6: Repeat Task 5 but for the computer literacy and percentage of



lectures attended.

- Task 7: Conduct and interpret a K-S test for numeracy and exam.



- Task 8: Conduct and interpret a Levene's test for numeracy and exam.



- Task 9: Transform the numeracy scores (which are positively skewed) using one of the transformations described in this chapter. Do the data



become normal?

- Task 10: Use the *explore* command to see what effect a natural log transformation would have on the four variables measured in



SPSSExam.sav.

Answers & additional resources are available on the book's website at

<https://edge.sagepub.com/field5e>

