Chapter 10: Bivariate Analysis

Exercises

Brian Fogarty

Exercise 1

a. Using the `VF England.csv` dataset, create a cross-tabulation between `vfalter` and `vote2017_dum` that includes column percentages. Discuss the relationship between the two variables. (Hint: `vfalter` needs to be re-ordered so the values go from "Strongly disagree" to "Strongly agree".)

b. Test whether there is a statistically significant relationship between `vfalter` and `vote2017_dum` using a Chi-Squared test.

c. If the relationship is statistically significant (in 'b.'), use an appropriate measure of association to determine and interpret the strength of the relationship.

Exercise 2

a. Perform a correlation analysis between `crime_rate` and `Income_rate` from the `simd2020.csv` dataset. Is the correlation statistically significant? If yes, interpret the correlation coefficient.

b. Perform a correlation analysis between `crime_rate` and `Employment_rate` from the `simd2020.csv` dataset. Is the correlation statistically significant? If yes, interpret the correlation coefficient.

c. Perform a correlation analysis between `crime_rate` and `not_participating` from the `simd2020.csv` dataset. Is the correlation statistically significant? If yes, interpret the correlation coefficient.

Exercise 3

Following the code in the *Visualising Correlation* section of Chapter 10, create a scatterplot between `crime_rate` and `Income_rate` that includes a correlation line and the correlation value as text on the plot.

For the answers see **Chapter 10 - Answers to Exercises**.