Chapter 8: Data Visualisation

Exercises

Brian Fogarty

Exercise 1 - Bar Plots

a. Create a bar plot of `vfalter` (from the `VF England.csv` dataset) with the category labels at a 45-degree angle on the x-axis. Discuss what the bar plot shows you. (Hint: `vfalter` needs to be re-ordered so the values go from "Strongly disagree" to "Strongly agree".)

b. Create a new bar plot with `vote2017_dum` added as the second variable to the bar plot in 'a.' `vfalter` should again be on the x-axis with the dodged bars for the two categories of `vote2017_dum`. Use percentages on the y-axis instead of counts, add labels, and use `theme_minimal()`. Discuss what the bar plot shows you.

Exercise 2 - Smoothed Density Plot

a. Using the 2020 Scottish Index of Multiple Deprivation dataset (`simd2020.csv`), create a smoothed density plot of `crime_rate` and the grouping variable `urban`. Include labels and use `theme_minimal()`. Discuss what the plot shows you.

b. Re-create the plot in 'a.', but filter `crime_rate` to only plot values less than or equal to 2,000. Discuss what the plot shows you.

Exercise 3 - Scatterplots

a. Create a scatterplot with `crime_rate` on the y-axis and `not_participating` on the x-axis. Also, jitter and lighten (`alpha = .5`) the points, include labels, and use `theme_minimal()`. Discuss what the plot shows you.

b. Re-create the plot in 'a.', but filter `crime_rate` to only plot values less than or equal to 2,000 and filter `not_participating` to only plot values less than or equal to 30% (.3). Discuss what the plot shows you.

c. Re-create the plot in 'b.', but add `urban` as the third variable. Discuss what the plot shows you.

d. Re-create the plot in 'c.', but change the colours of the points (change the colours either manually or by using a palette).

e. Re-create the plot in 'c.', but use `urban` as a faceting variable instead. This will create two scatterplots - one for rural datazones and one for urban datazones. Discuss what the plot shows you.

For the answers see **Chapter 8 - Answers to Exercises**.