Visualizing Data

Fundamentals of R - Homework

2023

- All materials for the exercises below are available on Moodle.

- Please submit your answers as a HTML or a PDF file generated with Rmarkdown.

- Please make sure to include code chunks and plots in submitted the document.

- Please add titles, legends, and themes to your plots for clarity.

Income of International Organizations

The 'io_income_rs.csv' dataset contains a non-random sample from funding data from some international organizations:

Table 1: The Financial Underpinnings of IOs

Variables	Description
year	Year of donation.
donor	Donor (e.g. USA, Swirtzerland, IKEA Foundation).
type_donor	Type of the donor (public or private).
amount_nominal	Amount of donations in USD.
issue_area	Issue area of recipient organization.

Please load the dataset and get acquainted with it. We will be working with it in this homework.

Question 1

a-) Plot a histogram showing the distribution of donations per year.

b-) Plot various histogram showing the distribution of donations by public and private donors. What do we learn?

Question 2

Has the amount that Switzerland donates to all issue areas increased over time? Please illustrate this relationship in a line plot, colored by the respective issue areas.

Question 3

Create a scatter plot containing all donations by year and issue area. Please add a smoothed line to show the direction of the relationship. The smoothed lines should be colored "red".

Question 4

Plot the distribution of all donations in the before the year 2010 (including the year 2010) and in after the year 2010 comparing public and private donors. Are there outliers for either of these types of donors before 2010? What about after 2010? (Tip: box plots are great for distributions! Please treat year as factor and scale the nominal amount using "scale_y_log10(labels = scales::dollar)").

Question 5

Create a bar plot displaying the top 10 overall donors and their total donations to all international organizations. Please color the donors by their type (i.e. public or private).

Question 6

Please plot, however you choose, the relationship between amount donated, type of donor, and issue area. Please interpret the plot.