Assignment $\mathcal{N}^{\underline{o}}$ 1

released: 06.03.2022 at 18:00   **due:** 27.03.2022 at 13:00

Please upload one zipped file with your answers in a PDF-File (Task 1+2) and
an R script you used to produce them (Task 1). You only need to upload the
file once per group. Make sure that the names of all group members are listed
in the PDF.

Task 1: Describe and plot a social network   12 points

(a) load the `affective` network (`2400_affective_w1.csv`) and the gender
data (`2400_sex.csv`)

(b) recode the affective network of wave 1 into a friendship networks.
(*Hint*: the value +2 stands for friendship ties – see the data description
for details)

(c) calculate basic network descriptives for this friendship network

- network size (i.e., number of nodes), density, average degree, reci-
procity ratio, gender composition in class, count of same gender ties
(i.e., both nodes have the same gender)
- plus one other measure of your choice
- briefly interpret the measures (where sensible)

(d) plot the friendship network

- the plot has to be informative
- color the nodes according to the gender of the person
- the node size should be proportional to a centrality measure (of
your choice).

(e) Now also include the `trust` network (`2400_trust_w1.csv`) and plot them
both in one network plot (i.e., on top of each other).
(*Hint*: check the forum on moodle for an example)

(f) How large is overlap between the two networks? (i.e., how many ties between two people are present in both networks)

(g) In a short paragraph (max. 250 words), describe what you see in the network plot and comment on the overlap between the two networks.

All answers to these questions need to be printed in the PDF file. We will not run your R-Scripts to correct the assignment – we only use it to recreate your thought process in case the answers are wrong.

Task 2: Data collection strategies   8 points

(a) Compare the advantages and disadvantages of complete network data, snowball-sampled network data, and ego-centered network data. Describe at least one advantage and disadvantage for each type of data. (max. 400 words)

(b) Describe common and unique ethical challenges that these three types of network data have and how you would address them if you were to conduct an empirical study. List at least one common ethical challenge and one unique ethical challenge for each type of network data (total of 4 challenges).
(max. 400 words)

(c) Chose one of the three types of network data and come up with a research question that you (i) can and (ii) cannot address with this type of data. Indicate why. (*Hint:* A research question indicates what you want to find out in a particular piece of scientific work. A question that is presented to participants (e.g., 'who are your friends?') is not a research question.)
(max. 400 words)