**First Continuous Evaluation, November 2023, Statistics-I**

Two psychologists want to explore two partly related questions: (1) whether higher levels of preference for solitude in individuals are associated with higher nonverbal IQ (abstract intelligence); and (2) whether higher levels of preference for solitude in individuals are associated with higher verbal IQ (verbal intelligence). To examine these questions, the psychologist recruit 200 college students and collect, for each participant, their measures of preference for solitude, verbal IQ, and nonverbal IQ. For exploratory analyses, they also collected information on gender and age.

1.a Is this an experimental or correlational design? Why?

1.b How many rows and columns will we need to analyze the data? Justify your answer.

2.a What plots can we use for each of the two research questions? Justify your answer.

2.b Let’s suppose that the psychologist found is a sizable association between the preference of solitude and nonverbal IQ, but that the association of solitude and verbal IQ was virtually null. What could you (reasonably) do in future research to characterize those individuals who have a preference for solitude?

We have the following database (<https://www.uv.es/mperea/9novb.jasp>), which contains a number of variables in a sample of participants. We ask the following two questions.

3. Does the variable “Recall” follow a normal distribution? Justify your answer with plots and statistics. Copy/Paste the supporting evidence with JASP.

4. First of all, we want to EXCLUDE all individuals of 19 years or younger. Then, we want to examine whether there are differences in “global\_extroversion” between the “sincere” students and those students who “failed” the sincerity test. To obtain the measure of “global\_extroversion”, you just have to compute the SUM of the three extroversion questions. Please, indicate in one/two sentences the main conclusion with the support of statistics and plots from JASP.