**Statistics-I (1st continuous evaluation activity, November 2017)**

A PhD psychology researcher works at a movie theater on the weekends. She claims that people eat more popcorn during action films than during comedies, especially for younger individuals (< 30 y.o.). To test this idea, she took advantage of the fact that there were two simultaneous full sessions on a Saturday, one with an action film (N=30 seats) and the other with a comedy (N=30 seats). The researcher computer how much popcorn each person bought (in euros) for each movie—as for the age (younger than 30 y.o. vs. 30 y.o. or older) this was estimated by the researcher. (For simplicity, you may assume that every person went to the movie theater alone; i.e., the spectators did not share the popcorn with the person next to them.)

**Question 1:**

a) Which is/are the independent variable/s? Which are the dependent variable/s?

b) How would you organize the data in SPSS? (#rows, #columns)

**Question 2:**

a) Is this an experiment or a quasi-experiment? Indicate why

b) Let’s assume that the researcher finds that people eat more popcorn during the action film than during the comedy. Can you think of a better, more controlled follow-up study?

We have the following dataset (<http://www.uv.es/mperea/perfectionism.sav>) in which we have data from a number of individuals who are either only-children or middle siblings. We have data on a perfectionism scale with 4 questions (each from 1 to 7 in a Likert scale; the 3rd question is INVERSE), their age, a measure on sincerity (out of 5 questions), data on an Introversion scale, data on a creativity scale, and data on nonverbal IQ.

**Question 3**

We want to separate the individuals in two groups of the same size according to their non-verbal IQ (i.e., a median split): lowerIQ (below the median) and higherIQ (above the median). Are there differences in the level of creativity between the two IQ groups? Copy/paste the box plot and write down the conclusions in two/three sentences—you may want to use some statistics to support your conclusions.

**Question 4**

Does “Non-Verbal IQ” follow approximately a normal distribution in the sample? Justify your answer using both graphs and statistics.