

Exercises

Course 5 - Inferential statistics

Winter 2024

The objective of these exercises is to perform inferential statistics on a set of data.

Or the brain_size_Mod.xlsx database describing the characteristics of brains according to a scientific study (Willerman, 1991). This database includes the following features.

1. Gender: Male or female
2. FSIQ: Full IQ score based on the four Wechsler subtests (1981)
3. VIQ: Verbal IQ score based on the four Wechsler subtests
4. PIQ: Performance IQ score based on the 4 Wechsler subtests
5. Weight: body weight in pounds 6. Height: height in inches 7. MRI_Count: total number of pixels from the 18 MRI scans 8. The Activity variable, which describes the activity, has been added for the course simulations

Hypothesis testing

The objective of a research project is to determine the value of FSIQ within the Canadian population. For this, a sample of 40 observations was collected. Four researchers put forward four different research hypotheses. What do you think of each of these hypotheses?

1. The first thinks that the average of the variable FSIQ the population is equal to 100.

2. The second thinks that the mean of the variable FSIQ the population is equal to 112.
3. The third thinks that the average of the FSIQ population variable is greater than 160.
4. The fourth says that the mean of the FSIQ population variable is less than 90.