

ECO239 1st Group R – Assignment
Due Date: **November 22th (Friday) at 13:00**
(No Late HWs accepted. Submit a hard-copy.)

Things to submit:

- 1. Your report (code, output including figures, your findings/comments).**
- 2. Contribution Sheet (signed by all the group members)**
- 3. Honor Code (signed by all the group members)**

*Just stable together. No plastic covers, please.

This is a group assignment. Create a group of **maximum 4** members. Carefully read Honor Code before starting your assignment.

Question 1

Task 1: Determine your “research question”. Clearly state your problem, motivation and reasons for selecting the specific topic. (Be original, select an interesting/curious question!)

Task 2: Design a survey to answer your research question. Make sure to include both categorical (nominal & ordinal) and numerical (discrete and continuous) questions. Do not forget to include your response variable (Y). Report all the questions you ask in your report.

Task 3: Conduct the survey. Clearly identify your population, sample, sample size and sampling method. Avoid biased sample. State possible biases if exist.

Task 4: Data coding in excel. Submit your dataset.

Task 5: Import your data file to R program.

Task 6: Using both numerical and graphical summaries to describe your data. Comment on your findings. Think carefully what kind of graphs and summary statistics are necessary to be included in order to answer your research question.

Task 7: Analyzing the relationship between two variables.

- Select two numerical variables => Generate a scatter plot.
- Select one numerical, one categorical variable => Generate a boxplot.
- Comment

Task 8: State your conclusions based on your finding and answer your research question.

Question B

For this question, use gpa2019.csv data posted on the course webpage.

Conduct necessary analysis to answer the following research question.

Q: “What kind of characteristics do students with the higher GPA have?”