Assignment 2

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Assignment

In this assignment you will have create a risk adjustment system for some population in a country without a name. The data are stored in "data_assignment2.csv". Some of the variables included are associated with healthcare cost, while others don't.

Extra information: We know that "healthy people" are profitable for an insurer. Unfortunately, we do not observe this variable. However the health status of enrollees is associated with other variables.

Extra information: Insurer E has a small market share and it not able to negotiate well with the health care providers. Therefore, this insurer pays higher prices for health care than the other insurers.

Extra information: We have added the variable "Order_age" to help you with plotting. The variable itself does not mean anything. It just orders the variable "Age category" from low to high.

Hints:

- Keep in mind the sheets from Lecture 6 (adverse selection)
- Keep in the mind the goals of the risk adjustment as presented by Johan Visser

1. Read the data in R and do some exploratory data analysis (2 points)
   - summary of the data
   - create some graphs
2. Estimate a simple model based on age category and gender and present the results (2 points)
3. Find groups in the population that are profitable and groups that are loss-making based on the simple model (3 points)
4. Estimate a better model and motivate why you include (or not) extra variables in addition to the simple model (3 points)

You can mail your solution before November 18 2022, 17,00 hours to m.c.mikkers@tilburguniversity.edu