

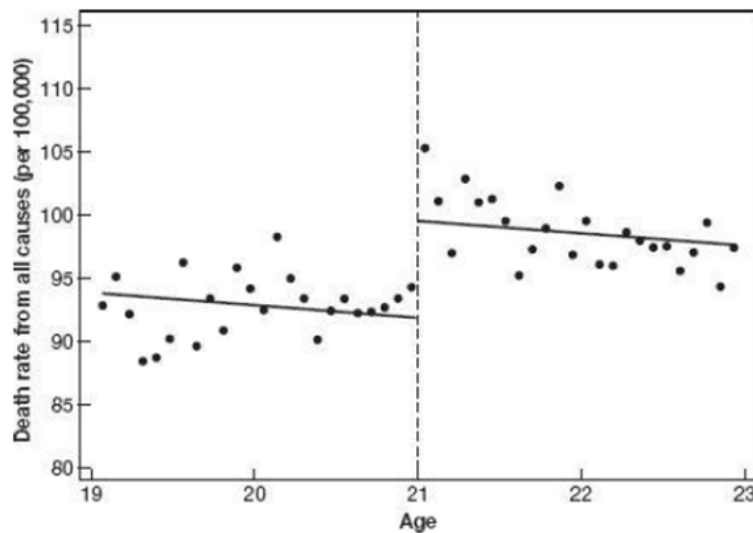
Principles of Empirical Analysis

Final exam Questions*

*Note: the real exam will have three questions!!

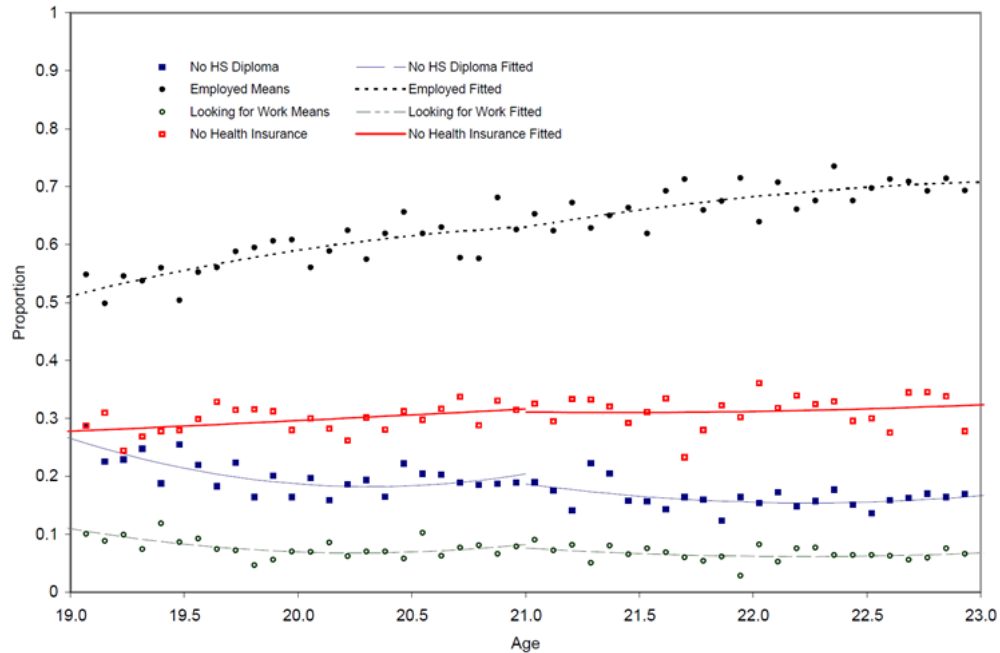
Question 1

Below is a figure from the lectures relating death rate and age.



Notes: This figure plots death rates from all causes against age in months. The lines in the figure show fitted values from a regression of death rates on an over-21 dummy and age in months (the vertical dashed line indicates the minimum legal drinking age (MLDA) cutoff).

- (a) What is the research design called that this figure is related to?
- (b) What are the three fundamental components related to this research design? What are they specifically in this case?
- (c) What is the underlying assumption needed for this design to work?
- (d) Below is another figure from the lectures. Explain why this figure enhances the plausibility of the research design.



Question 2

You are interested in the effect of mandated mask wearing on the spread of the coronavirus. From January 1 2021 onwards, some Finnish municipalities mandated mask use in all public venues, while other municipalities did not. You are given weekly data on municipal level infection rates from November 1 2020 to March 31 2021 for all municipalities.

- How would you test whether mandating masks has affected the spread of the coronavirus using this data? Illustrate your strategy using a figure. What is your research design called?
- What are the key assumptions for your research design to work? Can you directly test these assumptions? How plausible do you think these assumptions are in this particular case?