**E366 First exercise: intergenerational income elasticity**

**Summer 2024**

**Description**

You will be working with data extracted from the IPUMS linked U.S. 1880-1910 sample. This project digitizes historical manuscript census returns from a variety of countries and makes them available to researchers. For this exercise, I have already processed some of the data for you. The sample is composed only of boys who were under 10 years old at the time of the 1880 census. I have noted their father’s occupation at the time and its earnings score.

**Preparing the data**

Inspect the dataset. What do you notice? What do we need to do before we begin?

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**Calculating intergenerational mobility**

Generate a scatter plot with son’s income score on the y-axis and father’s income score on the x-axis. What does the slope of the line of best fit represent? Calculate it.

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**Intergenerational income elasticity**

What is intergenerational income elasticity? How can we estimate it using a line of best fit?

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**The effect of measurement error**

Add random noise to the variable measuring son’s income score and recalculate the intergenerational income elasticity, as in the previous step. Does the coefficient change? What about the R2? Now add random noise to the variable measuring father’s income score and recalculate the intergenerational income elasticity using the original measure of father’s income. Does the coefficient change? What about the R2?

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**Bonus**

Compare the intergenerational mobility of different groups. Did boys from rural settings experience greater intergenerational mobility than those from urban settings? What about boys who were literate or those who were geographically mobile?

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