# PB4A7 Seminar 3

## MT Week 3, 16 October 2024

## Overview:

During this seminar:

* We will go through Seminar 3 exercises.
* Please conduct your analyses on your do-files and keep a log-file.

***About the Dataset:***

We will use a dataset from a randomised controlled trial/natural field experiment conducted by Marianne Bertrand and Sendhil Mullainathan, who sent 4,870 fictitious resumes out to employers in response to job adverts in Boston and Chicago in 2001. The resumes differ in various attributes including the names of the applicants, where some of the names are distinctly white sounding and some distinctly black sounding (in the US context).

\*\* Note: this is the same dataset you used in Seminar 1 and 2.

## Exercise 3 questions: Linear regression with one regressor

1. Regress education on yearsexp. Interpret the coefficient. What does the result tell us?
2. Create a set of dummy variables to capture the different levels of education on yearsexp.
3. Test the null hypothesis that there is no effect of earning a college degree on yearsexp using an OLS regression model. State the alternate hypothesis.
   1. Interpret the estimated coefficient.
   2. Based on the results, do you reject the null hypothesis? Explain using t-statistic, p-values and confidence intervals.
   3. What is the prediction for an applicant who has not earned a a college degree?
   4. What is the prediction for an applicant who has earned a a college degree?
4. Test the null hypothesis that there is no effect of earning a college degree on yearsexp using an OLS regression model using robust Standard Errors. Do the coefficient values change?
5. Test the null hypothesis that there is no effect of earning a college degree on yearsexp using ANOVA.