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Q1

(b) APA citation style:

Antecol, H., Bedard, K., & Stearns, J. (2018). Equal but Inequitable: Who Benefits from Gender-Neutral Tenure Clock Stopping Policies?†. American Economic Review, 108(9), 2420–2441. https://doi-org.proxy.uchicago.edu/10.1257/aer.20160613.

(c)This article's primary objective is to estimate the effect of tenure clock stopping policies on the probability that assistant professors at top-50 economics departments are granted tenure. To achieve this goal, the authors want to allow for the possibility that the effect of clock stopping policies may be different for men and women. Here is the model:

$$\boldsymbol{Yugit} = \beta_1 GN_{ut} + \beta_2 GN_{ut} \times F_{ugit} + \beta_3 GN_{ut} \times E_{ut} + \beta_4 GN_{ut} \times E_{ut} \times F_{ugit} + \beta_5 FO_{ut} + \beta_6 FO_{ut} \times F_{ugit} + \beta_7 FO_{ut} \times E_{ut} + \beta_8 FO_{ut} \times E_{ut} \times F_{ugit} + \zeta X_{ugit} + \eta Z_{ut} + \rho_{gt} + \psi_{ug} + \varepsilon_{ugit}$$

Y is the outcome of interest (e.g. tenure at the policy university).

u, g, i and t indicate policy university, gender, individual and the year the policy job started. **F** is an indicator for Female. **GN** is an indicator equal to 1 if individual i starts their career at an institution with a gender-neutral tenure clock stopping policy in place and zero otherwise. The indicator **FO** is defined equiv-alently if the individual starts their career at a university with a female-only policy in place. The variable **E** is an indicator for jobs starting in years zero through three after policy adoption.

The vector **X** includes indicators for being female (F), PhD program rank, and an indicator for having done a postdoc. The vector **Z** includes time-varying university level controls collected from the Integrated Post-Secondary EducationData System (IPEDS) including the number of undergraduate students, number of graduate students, faculty size, aver- age salary of full professors, average salary of assistant professors, annual revenue, the fraction of the faculty who are female, and the fraction of the faculty who are full professors.

ρ is a vector of gender-specific year fixed effects for the year the policy job started (cohort effects), $\boldsymbol{\psi}$ is a vector of gender-specific university fixed effects, and **ε** is an error term.

(d) Exogenous: u, g, i, t, F, GN, FO, E, X, Z, ρ, ψ, ε

Endogenous: Y

(e) This is a dynamic because it represents the behavior of the object over time.

It is a non-linear model because it multiplies two variables together.

This is a stochastic model because it estimate probability distributions of potential outcomes by allowing for random variation in one or more inputs over time.

(f) I think the model is missing the bonus part given by universities when tenures publish articles or win prize, which is also a valuable variable for outcome of interest.

Q2

(a) Y=1 means married, Y=0 means not married

Y=$\beta_0 + \beta_1 x_1 + \beta_2 x_2 + \beta_3 x_3 + +\beta_4 x_4$

x_1 indicates whether you get into a relationship x_1=0 means yes, x_1=1 means no

x_2 indicates the age which is allowed by national law to get married, x_2=0 means don't get allowed, x_2=1 means get allowed

x_3 indicates the accident situation such as female get pregnant, x_3=0 means don't get pregnant, x_3=1 means get pregnant

x_4 indicates the education level

Also, the model should satisfy the condition $\beta_0 + \beta_1 + \beta_2 + \beta_3$=1

The probability of deciding to get married:

Pr(Y=1|x)=G($\beta_0 + \beta_1 x_1 + \beta_2 x_2 + \beta_3 x_3$)

G(w)=Λ(w)=exp(w)/(1+exp(w))

(b) endogenous is Y

(d)The key factors are $x_1,\ x_2,\ x_3, and\ x_4$

(e)Because the first factor (relationship) and second factor (age pass the legal law) are the prerequisite conditions for a person to decide whether he/she want and can get married. The third factor (accident situation) may be happen in a relationship, and if it has happened, it is important for people to decided whether they decide to get married or not. The last reason may be the education level, and my surmise will be the higher education lead to the late marriage since people may achieve their education goal first then consider about marriage. These four reasons are important because they are decided by people themselves not others. For example, the factor like original family condition is not decided by themselves.

(f) I will design a survey to ask 100 random participants from Amazon MTurk the questions about their relationship status, age, whether they face an accident situation, and finally get how strong their willingness of marriage is in the near future. After the questionnaire survey, get the regression according to this survey to see whether the factors are significant in real life.