MACS 30150 PSet 1

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Question 1: Classify a model from a journal

(a) Article: Judd B. Kessler Corinne Low Colin D. Sullivan, 2019. "Incentivized Resume Rating: Eliciting Employer Preferences without Deception," *American Economic Review*, vol 109(11), pages 3713-3744.

(b) Citation:The authors tried to figure out that how the education, work experiences and other human capital properties influence the decision of the employers. Another concern was the discrimination in the labor market, in terms of race and gender. They used Incentivized Resume Rating (IRR), a new experimental paradigm to evaluate employer preferences. The employers were asked to evaluate resumes that were hypothetical, and they would be matching with real job seekers based on their evaluation results, which is an incentive. The authors implemented IRR with University of Pennsylvania Career Service office to study the preference of employers on the seniors in the recruiting process. The design of the study was that the employers were asked to rate on how interested they were about the hypothetical candidates and how likely the candidates would accept their offer. Each employer evaluated 40 unique, hypothetical resumes, and the the characteristics were independent across resumes. 72 employers were recruited to , and 2880 resumes were generated. The main results of this study are as follows. There is no evidence indicating that overall employers were less likely to hire women or minority groups. However, discrimination exists in evaluating the STEM candidates. In addition, the white female are less likely to accept offer than white male based on the employers' answer. Also, the return of prestigious internships are low for women and minorities. Lastly, the authors believed it fruitful to study whether employers had distorted beliefs about aggregate preference for diversity, because this can potentially harm women and minorities.[1]

(c) Statistical Model:

$$V_{i,j} = \beta_0 + \beta_1 GPA + \beta_2 Top\ Internship + \beta_3 Second\ Internship + \beta_4 Work\ for\ Money + \beta_5 Technique\ Skills + \beta_6 Female,\ White + \beta_7 Male,\ Non\text{-}White + \beta_8 Female,\ Non\text{-}White + \mu_j + \gamma_j + \omega_j + +\alpha_i + \epsilon_{ij}$$

In this regression, *GPA* indicates grade point average. *Top Internship* and *Second Internship* are a dummies respectively for having a top internship and an internship in the summer before junior year. *Work for Money* is a dummy for having paid job in the summer before junior year. Technical Skills is a dummy for having a list of skills that included a set of four randomly assigned technical skills. *Female, White*, *Male, Non-White*, and *Female, Non-White* are dummies indicating the gender and race of the candidate.

μ_j are dummies for majors, γ_j are dummies for leadership experience components, ω_j are dummies for the number of resumes the employer has evaluated so far, and α_i are employer fixed effects of rating deviation.[1]

(d) Exogenous and Endogenous Variables: Exogenous variables are *Top Internship*, *Second Internship*, *Work for Money*, *Technique Skills*, *Female White*, *Male Non-White*, *Female Non-White*, μ_j, γ_j, ω_j, and α_i. Endogenous variable is $V_{i,j}$.

(e) Classify Model: Static, linear, deterministic.

(f) Missing Variables: Potential missing variables can be *University Rank*, and *Extracurricular*. It is possible that the higher rank the university of the person is, the more likely the interviewer will hire the person. Usually, *GPA* along with *University Rank* are good indicators for the learning capacity. *Extracurricular*, how many extracurricular activities such as volunteer work, is a good signal for many personalities enthusiasm and altruism.

Question 2: Make your own model

(a) Model:

$$M = \beta_0 + \beta_1 Education + \beta_2 Income + \beta_3 Gender + \beta_4 White + \beta_4 Black + \beta_5 Disposable\ Time + \beta_6 Relationship + \beta_7 Pressure + \beta_8 House + \epsilon_i$$

(b) Output of Model: The variable M an endogenous dummy variable that $M = 0$ indicates *not get married* and $M = 1$ indicates *get married*.

(c) Complete Data Generating Process: This is a complete data generating process, because the observed phenomenon, decision on marriage , could be observed with the key factors.

(d) Key Factors: The explanatory variables in the regression are the key factors. *Education* indicates the years of education the person receives . *Income* matters because people might not decide to marry when they earn. *Gender* is a dummy indicating male or female. *White* and *Black* are dummies indicating the race of the person, and both equal to zero means *Other* races. *Disposable Time* indicates how many hours a day a person can manipulate on average. *Relationship* means whether the person currently has a partner. *Pressure* indicates level of pressure the person feels. *House* means whether a person owns a house.

(e) Why not others? *Education* matters because when people spend fewer years in school, they are likely to marry earlier. *Gender* is important because male and female have different inclination to marriage. *White* and *Black* are important because different race might have different culture in marriage. *Disposable Time* matters because whether people have enough disposable time is critical when people make marriage decision. *Relationship* is significant since usually one needs a mate before deciding marriage. *Pressure* is important because people feel more pressure might be less likely to marry. *House* is significant because people who want to form a family might be less likely to move. Some other factors are not so important, such as *Nearsightedness*, whether you are nearsighted, is not important because this is unrelated to the marriage decision.

(f) Preliminary Test: In order to obtain the information we need, a survey should be conducted. We can conduct a survey on people from heterogeneous groups, then we can regress on the data we have to check whether the explanatory variables are good.

References

[1] Judd B. Kessler, Corinne Low, and Colin D. Sullivan. "Incentivized Resume Rating: Eliciting Employer Preferences without Deception". In: *American Economic Review* 109.11 (Nov. 2019), pp. 3713–44.