Problem Set 1

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Problem 1

(a)

The paper is chosen from *American Economic Review: Estimating Group Effects Using Averages of Observables to Control for Sorting on Unobservables: School and Neighborhood Effects* (Altonji, 2018).

(b)

See the References section.

(c)

The main model presented in the paper is that for a student i, his/her latent variable for school attendance is

$$\boldsymbol{Y_s i} = \boldsymbol{X_i \beta} + x_i^U + \boldsymbol{Z_s \Gamma} + z_s^U + \boldsymbol{\eta_{si}} + \boldsymbol{\xi_{si}} \tag{1}$$

where $\boldsymbol{X_i}$ is the observed student's characteristics, $\boldsymbol{Z_s}$ is the observed neighbourhood-level characteristics, while x_i^U and z_s^U are the unobserved student's and neighbourhood characteristics, respectively.

(d)

The school attendance is the endogenous variable, while the student's and the neighbourhood-level characteristics, regardless of being observed or unobserved, are exogenous variables.

(e)

The model is static since it is time-invariant, and is also linear. The model is stochastic since it allows error terms.

(f)

It may be valuable to add some variables such as family income, and the distance from the student's home to the nearest school.

References

Altonji, J. G., Mansfield, R. K. (2018). Estimating Group Effects Using Averages of Observables to Control for Sorting on Unobservables: School and Neighborhood Effects†, 108(10), 2902–2946.

Problem 2

(a)(b)

Let Y be the indicator of whether getting married, while Y=1 means deciding to get married. A reasonable model would be

$$Y = \beta_0 + \beta_1(Age) + \beta_2(AnnualIncome) + \beta_3(AttendCollege) + \beta_4(NumberOfPartners)$$

(c)

These variables can be reliably obtained through census and questionnaires.

(d)

The key options would be the individual's age (naturally), and the individual's need and ability to get married, while these characteristics can be measured by variables such as his/her annual income, education level, and number of past partners.

(e)

Based on the research done by Becker (1973), the marriage is in the market and those who choose to get married gain from the marriage. Thus we need to focus on variables that are possibly relevant to the gain from the marriage, such as his/her income.

(f)

After obtaining the data for the variables, run a regression and test on βs to see whether those variables are significant.

References

Gary S. Becker, "A Theory of Marriage: Part I," Journal of Political Economy 81, no. 4 (Jul. - Aug., 1973): 813-846.