Problem Set # 1

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Problem 2

Part (a), (b) We set up a simple logistic regression model for the decision of getting married. Using Y to denote the decision of an individual to get married.

$$Y = \begin{cases} 1 = get\ married & if\ p \geq 0.5 \\ 0 = not\ get\ married & if\ p < 0.5 \end{cases}$$

where

$$log\frac{p}{1-p} = \beta_0 + \beta_1 AGE + \beta_2 AGE^2 + \beta_3 WAGE + \beta_4 HC + \beta_5 SEARCH + \beta_6 MATCH + \epsilon$$

AGE is the individual's age. We introduce the higher-order terms because the marriage may not depend linearly on the age of an individual.

$WAGE$ and HC are the wage income and human capital of the individual respectively. They reflect both the level of the person's current income as well as future potential income. They are positive indicators of marriage because people with higher incomes are more attractive. The chances of finding good spouses are higher. They are also more willing to participate in a marriage because it forms a synergy which magnifies the happiness in their life.

$SEARCH$ is the search cost in a marriage market. It is related to the male/female ratio and the time and efforts it takes to find a life-long partner.

$MATCH$ is a multi-dimensional measure. It contains race, education, interests, hobbies and etc. People will be more likely to marry someone with similar values along these dimensions.

Part (c). Given all the parameters and dependent variable data, we can simulate responses from the logistic regression to see people's decision to get married or not.

Part (d). The key factors that influence the outcome are individual characteristics(age, wage, human capital), the degree to which the other person matches the individual and the search cost in the marriage market. These correspond to demand, supply, and market structure from an economic perspective.

Part (e). These factors are important based on economic and sociological theory. Marriage can be understood as an expansion of household production unit. It will benefit the individual by creating synergy(with specialization and division of labor). The factors in the model are important in the sense that they indicate strong synergy.

Part (f). To do a preliminary test, we can do a regression test on some of the variables we can find easily data from the censors. For example, we can get the distribution of wage rates of different neighborhoods as well as people's marriage rates. Running a regression with some controls will test whether the prediction by our model is correct. Additionally, we can carry out a survey to find the relationship between people's attitudes toward marriage and different variables.