CA1bVdVeen

Ties van der Veen

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Group members

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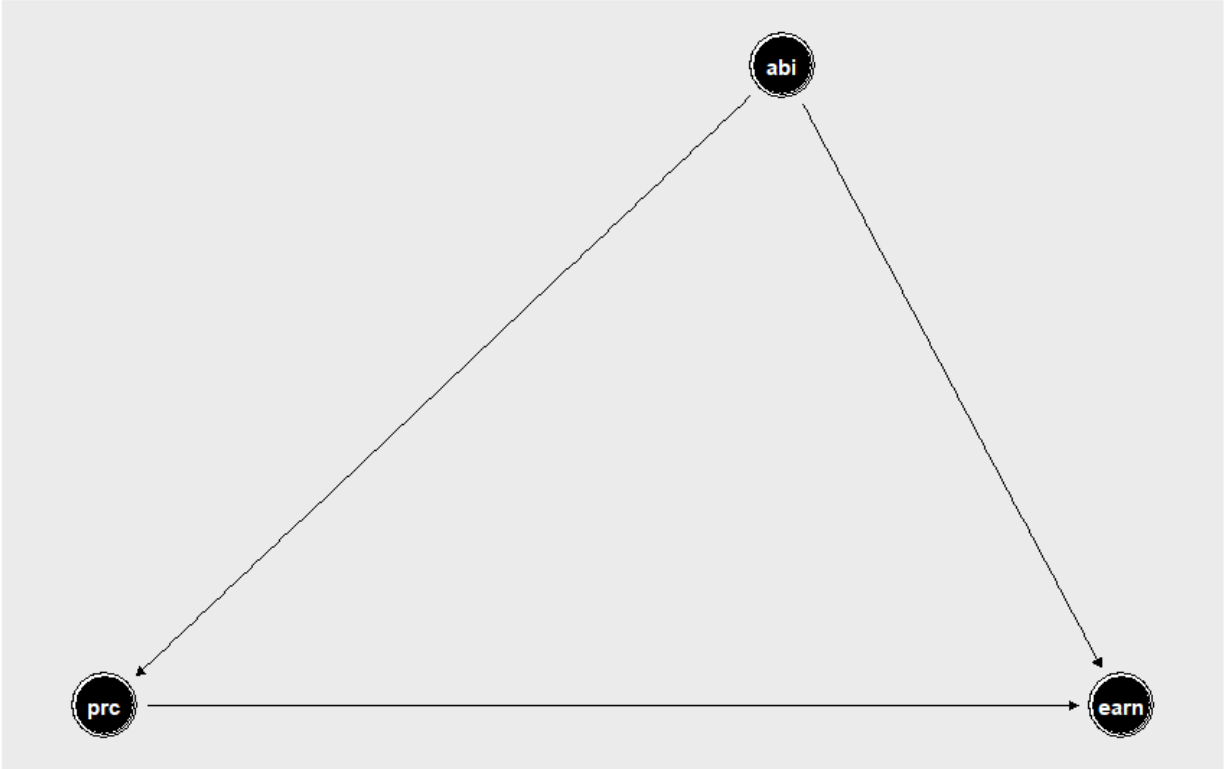
III. Potential Outcomes

(a) Y(0,i) = Student goes to a private school Y(1,i) = Student goes to a public school

(b) The private college could be better aligned with the preferences of the student, allowing for more potential growth and thus higher future earnings. Higher tuition for a private college could also provide the student with more opportunities to develop themselves in varying areas, due to the higher budget this college has compared to a public college.

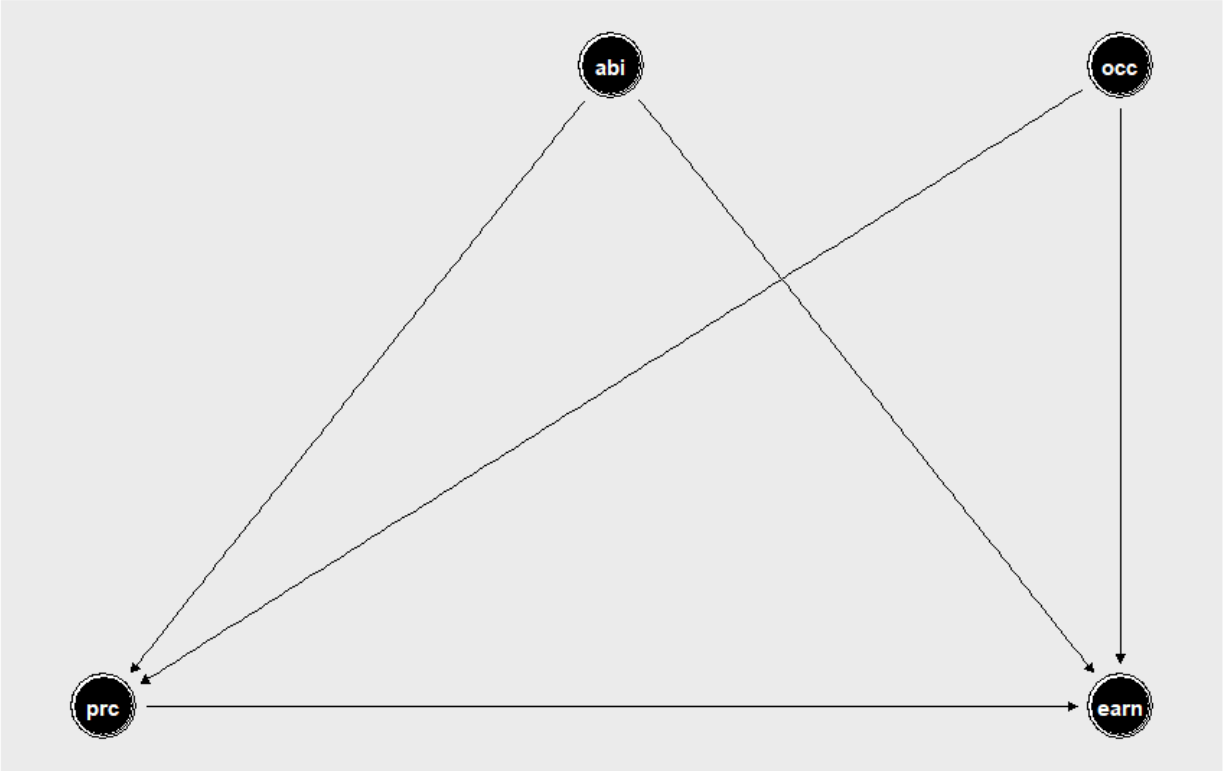
IV. Causal Diagram



(a)

(b) This variation can appear through many factors that are not closely related to earnings potential. Friends going to a certain college, experiences while visiting an open day, stories from family members that went to a certain college, etc. This assumption is probably fairly realistic, although there are

certain matters included in this variation that have a much larger impact on someone's final decision. But studying these effects would require a much different set of data than what is available in this set.



(c)
Occupation could be considered a confounder, dependent on whether someone applied to a certain college to get into that occupation (which they couldn't have done if they went to a different college). What's important is that they had this occupation in mind before they selected which college they wanted to go to, and whether this choice mattered (not going to a certain college -> not getting that occupation).

(d) SAT-scores are a test of ability. This (ability) is a confounder as discussed in (a).

V. Descriptive statistics

PrivateUni	mean_Earnings1996
0	72500
1	92000

VI. Regression Analysis

Call: lm(formula = Earnings1996 ~ PrivateUni + d_ApplicantGroup_A, data = college, subset = d_ApplicantGroup_A == 1)

Residuals: 1 2 3 5.000e+03 -5.000e+03 1.137e-12

Coefficients: (1 not defined because of singularities) Estimate Std. Error t value Pr(>|t|)
(Intercept) 110000 7071 15.556 0.0409 * PrivateUni -5000 8660 -0.577 0.6667

d_ApplicantGroup_A NA NA NA NA
— Signif. codes: 0 ‘***’ 0.001 ‘**’ 0.01 ‘*’ 0.05 ‘.’ 0.1 ‘ ’ 1

Residual standard error: 7071 on 1 degrees of freedom Multiple R-squared: 0.25, Adjusted R-squared: -0.5
F-statistic: 0.3333 on 1 and 1 DF, p-value: 0.6667

(a) I excluded Applicant Group B as well, since it wouldn't make sense that groups C and D are excluded but B isn't (since mixing any of those groups gives unusable results). The estimation results suggest that for this applicant group, going to a private college did not affect their future earnings.

(b) The unconditional comparison overestimates the treatment effect because it compares earnings across applicant groups.