

HW 2

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Chapter 10

2)

a)

I am not sure we have been taught this yet??? The question is asking if MJ causes GPA or if GPA causes MJ. The first direction is stating that the use of MJ will alter the GPA; whereas the second is stating the change in GPA will alter the MJ use.

b)

A third variable can exist such as SES which will impact the relationship between MJ and GPA. This third variable can either mediate the relationship (explain the causal mechanism from MJ to GPA) or moderate (interact with the relationship between MJ and GPA) the relationship between these variables.

3)

An example of an ambiguous time ordered relationship is the chicken or the egg debate in evolution.

4)

Controlling for a variable involves removing the

5)

6)

9)

10)

11)

14)

Chapter 11

1)

a)

These data appear to display a strong positive relationship. As income increases so crime.

b)

It now appears to have a negative relationship. As the residualized income increases crime decreases.

c)

the regression equation is $Y_{crime} = \beta_0 + \beta_{income} \times X_i == Y_i = -11.526 + 2.609 \times X_i$

d)

the regression equation is $Y_{crime} = \beta_0 + \beta_{income} \times X_{j,i} + \beta_{urban} \times X_{j,i+1} == Y_i = 40.261 + -0.809 \times X_i + 0.649 \times X_{i+1}$

e)

Here we see the extent to how collinear the relationship between income and urban environments are. Specifically the correlation between these two variables is $r = .73$ which suggests that are very strongly correlated.

f)

(i) $== Y = 40.261 + 0 \times 0.646 + X \times -0.809$

(ii) $== Y = 40.261 + 50 \times 0.646 + X \times -0.809$

(iii) $== Y = 40.261 + 100 \times 0.646 + X \times -0.809$

2)

a)

(i) $Y = .2 + .5 * 4.0 + .002 * 800 = 3.8$

(ii) $Y = .2 + .5 * 3.0 + .002 * 300 = 2.3$

9)

11)

14)

17)