Tutorial 10 HT

Research Methods for Political Science - PO3110

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9 April 2019

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Set up: An history of procrastination

A procrastinating PhD Student feels a bit gloomy. He decides to discover the secrets of happiness using quantitative methods. In particular he seeks to explain the variation in Happiness among his peers in the (fictitious) country of Publicationland. He proposes a theory based on opportunity cost of working long hours (as he would rather play some Magic the Gathering) and formulates the following testable implication.

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He gathers data from a several PhD Students (receiving replies from 310 equally procrastinating peers) - further postponing the write-up of his thesis (let's assume it is a random sample). He tests his hypothesis using linear regression controlling for several factors that might have an impact on Happiness (see the descriptive statistics table).

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Task

He runs the model but after such an undertaking that consumed quite a lot of time, he remembers that he has a conference paper due in 48 hours. Thus he drops the project.

1. Before moving to the next slide: How would you deal with the ”gender” (1 for female and 0 for male) variable and the ”region” (1 = north, 2= centre, 3= south) variable?
2. Interpret the results. In particular: substantive effect, significance, model specification (write the actual equation) and goodness fit. How would you improve the model?

Descriptive Statistics

Statistic	N	Mean	St. Dev.	Min	Max
Happiness	310	4.455	1.498	0.000	10.000
Work Hours	310	45.000	8.959	30	60
Education Binary	310	0.339	0.474	0	1
IQ	310	97.071	12.391	59.850	127.259
Region	310	2.055	0.817	1	3

Results

	Dependent variable:			
	Happiness			
	(1)	(2)	(3)	(4)
Work hours	−0.045***	−0.016*	0.006	0.006
	(0.009)	(0.010)	(0.010)	(0.010)
IQ		0.046***	0.024***	0.024***
		(0.007)	(0.008)	(0.008)
Education Dummy			1.155***	1.147***
			(0.233)	(0.234)
Region(centre)				−0.211
				(0.179)
Region(north)				−0.114
				(0.183)
Constant	6.468***	0.708	1.511	1.601*
	(0.421)	(0.959)	(0.938)	(0.942)
Observations	310	310	310	310
R^2	0.072	0.187	0.247	0.250
Adjusted R^2	0.069	0.181	0.240	0.238
Residual Std. Error	1.446 (df = 308)	1.356 (df = 307)	1.307 (df = 306)	1.308 (df = 304)
F Statistic	23.743*** (df = 1; 308)	35.237*** (df = 2; 307)	33.457*** (df = 3; 306)	20.313*** (df = 5; 304)

Note: Standard Errors in parentheses *p<0.1; **p<0.05; ***p<0.01