QS101: Introduction to Quantitative Methods in Social Science

Week 21: Recap and Model Specification

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Recap

Model Specification

Recap

Queries

- ▶ What is regression?

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- What is OLS?

More Queries

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More Queries

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More Queries

- Which test do we use to test for the significance of coefficients in a regression?
- How do we interpret the constant?
- What does *ceteris paribus* mean?

Even More Queries

What is our regression equation here?

```
. regress b_fimngrs_dv b_netuse b_jbhrs
```

Source	SS	df	MS
Model	1.6391e+10	2	8.1955e+09
Residual	8.8781e+10	40872	2172163.73
Total	1.0517e+11	40874	2573068.81

Number of obs =	40875
F(2, 40872) =	3772.95
Prob > F =	0.0000
R-squared =	0.1558
Adj R-squared =	0.1558
Root MSE =	1473.8

b_fimngrs_dv	Coef.	Std. Err.	t	P>|t|	[95% Conf. Interval]	
b_netuse	54.86892	3.428123	16.01	0.000	48.14972	61.58811
b_jbhrs	26.82213	.355873	75.37	0.000	26.12462	27.51965
_cons	1008.081	18.51395	54.45	0.000	971.793	1044.368

Model Specification

Attributes of a Good Econometric Model

► **Theoretical Consistency**

This is based on Lecture Notes from Jonathan Nagler, April 4, 1999, see also Gujarati, D. (2009) Basic Econometrics. 5th ed. McGraw-Hill Higher Education

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- ▶ **Parsimony** – Explain a lot with a little

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- ▶ **Predictive Power** – *Outside* the sample, the model is based on quantities observed *prior* to the time the prediction is needed

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What does this look like?

Variable	Economic Development		Social Change		Socio-Economic Development	
	Model 1	Model 2	Model 3	Model 4	Model 5	Model 6
Per capita GDP	0.00195 (0.012) **	0.00023 (0.042) **			0.00247 (0.019) **	0.00115 (0.026) **
GDP Growth	0.00195 (0.012) **	0.00023 (0.042) **			0.00247 (0.019) **	0.00115 (0.026) **
Life expectancy			0.014299 (0.020) **	0.026559 (0.048) **	0.005542 (0.754)	0.026217 (0.467)
Primary School Enrolment			0.000520 (0.032) **	0.015005 (0.020) **	0.000723 (0.835)	0.000301 (0.977)
Urbanisation			1.81448 (0.049) **	1.888424 (0.049) **	1.604648 (0.025) **	0.748154 (0.036) **
Africa		-0.00479 (0.023) **		-0.00475 (0.028) **		-0.00360 (0.016) **
Adj. R^2	0.52	0.53	0.23	0.23	0.58	0.59

Table 1: Probit Model: Socio-Economic Development and Democracy, Significance Levels: 99% ***, 95% **, 90% *, N: 1698