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Problem Set 4

Exercise 1:
data_edu =

1	13
1	18
1	18
1	18
2	15
2	15
2	15
2	15
2	15
2	15
2	15
2	15
2	15
3	10
4	12
4	12
4	12
4	12
4	13
4	13
4	13
4	13
4	13
4	13
4	13
4	13
5	15
5	15
5	15

Exercise 2:
By coding myself
 2×3 table

	Estimate	SE	tStat
x1(β_1)	0.29807	0.0031449	94.778
x2(β_2)	0.097107	0.0015541	62.486

By GLS function
ans =

0.8470	0.0356
0.0897	0.0027
0.0375	0.0009

Exercise 3:
Between Estimation
 2×3 table

	Estimate	SE	tStat
x1(β_1)	0.99153	0.0014761	671.73
x2(β_2)	0.036716	0.0014334	25.615

Within Estimation
2×3 table

	Estimate	SE	tStat
x1(β_1)	0.99153	0.0014761	671.73
x2(β_2)	0.036716	0.0014334	25.615

First Time Difference Estimation
 2×3 table

	Estimate	SE	tStat
x1(β_1)	0.0042983	3.9954e-05	107.58
x2(β_2)	3.3946	0.005665	599.23

Exercise 4
First Part:
 5×3 table

	Estimate	SE	tStat

x1	0.070158	0.046963	1.4939
x2	-0.011658	0.017947	-0.64957
x3	0.019528	0.014551	1.342
x4	0.050553	0.083864	0.60279
x5	0.0074085	0.021556	0.34369

Second Part:
Bootstrap
std_beta =

  0.0001   0.0746   0.0218   0.0138   0.1124