Problem Set 7

Bowei Dong

March 2024

Q6

	logwage	hgc	college	tenure	age	married
X	Min. :0.00494	Min. : 0.0	Length:2229	Min. : 0.000	Min. :34.00	Length:2229
X.1	1st Qu.:1.46037	1st Qu.:12.0	Class :character	1st Qu.: 1.583	1st Qu.:36.00	Class :character
X.2	Median :1.62519	Median :12.0	Mode :character	Median : 3.750	Median :39.00	Mode :character
X.3	Mean :1.62519	Mean :13.1		Mean : 5.971	Mean :39.15	
X.4	3rd Qu.:1.83740	3rd Qu.:15.0		3rd Qu.: 9.333	3rd Qu.:42.00	
X.5	Max. :2.26150	Max. :18.0		Max. :25.917	Max. :46.00	

This variable is MAR.

Q7

Q7-a

	Model 1
(Intercept)	0.708
	(0.116)
hgc	0.050
	(0.004)
collegenot college grad	0.168
	(0.026)
tenure	0.038
	(0.004)
	-0.001
	(0.0002)
age	0.0002
	(0.002)
marriedsingle	-0.027
	(0.014)
Num.Obs.	2229
R2	0.147
R2 Adj.	0.145
AIC	1091.2
BIC	1136.8
Log.Lik.	-537.580
F	63.973
RMSE	0.31

Q7-b

	Model 2
(Intercept)	0.708
	(0.116)
hgc	0.050
	(0.004)
collegenot college grad	0.168
	(0.026)
tenure	0.038
	(0.004)
	-0.001
	(0.0002)
age	0.0002
	(0.002)
marriedsingle	-0.027
	(0.014)
Num.Obs.	2229
R2	0.147
R2 Adj.	0.145
AIC	1091.2
BIC	1136.8
Log.Lik.	-537.580
F	63.973
RMSE	0.31

Q7-c

Q7-d

the coefficient I get for hgc is 0.050, which is much lower than the true value. The coefficients I get for hgc across the models are the same, though I am skeptical about this.

Q8

I have explored data from FEMA, this dataset includes 18 natural incidents on the county level, and it is a very nice panel data set. The model I will be using is an event study (ES) model, based on Adrien Bilal & Esteban Rossi-Hansberg (2023)

	Model 3
(Intercept)	0.708
	(0.116)
hgc	0.050
	(0.004)
tenure	0.038
	(0.004)
	-0.001
	(0.0002)
collegenot college grad	0.168
	(0.026)
age	0.0002
	(0.002)
marriedsingle	-0.027
	(0.014)
Num.Obs.	2229
R2	0.147
R2 Adj.	0.145
AIC	1091.2
BIC	1136.8
Log.Lik.	-537.580
F	63.973
RMSE	0.31

	Model 4
(Intercept)	0.708
	(0.116)
hgc	0.050
	(0.004)
collegenot college grad	0.168
	(0.026)
tenure	0.038
	(0.004)
	-0.001
	(0.0002)
age	0.0002
	(0.002)
marriedsingle	-0.027
	(0.014)
Num.Obs.	2229
Num.Imp.	5
R2	0.147
R2 Adj.	0.145