PS7_Maddy

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1 Question 6

Log wages are missing at a rate of 25 percent. I think that logwage is Missing Not at Random (MNAR). Some may be unemployed, some may have forgotten to report their wage, others may be embarrassed of their wage.

2 Question 7

As seen in the model summary, none of the models are close to the true $\hat{\beta}_1 = 0.093$. Models 1, 3, and 4 give the closest values to $\hat{\beta}_1$. Overall, the regression imputation models do a good job predicting $\hat{\beta}_1$ and the models while mean imputation struggles to perform.

3 Question 8

For my project, I have yet had an opportunity to begin to compile my data. However, I am interested in using FIES (Food Insecurity Experience Scale) to analyze food insecurity and its effect on various national economies. While I have not quite figured out how I will do this, the RM.weights packages, the FIES website, and gapminder r package will all be potential paths to take in my analysis.

	Unique (#)	Missing (%)	Mean	SD	Min	Median	Max
logwage	675	25	1.6	0.4	0.0	1.7	2.3
hgc	17	0	13.1	2.5	0.0	12.0	18.0
tenure	260	1	6.0	5.5	0.0	3.8	25.9
age	13	0	39.2	3.1	34.0	39.0	46.0
logwage2	675	0	1.6	0.3	0.0	1.6	2.3
logwage3	1226	0	1.7	0.4	0.0	1.7	2.3

	Model 1	Model 2	Model 3	Model 4
(Intercept)	0.534	0.708	0.534	0.532
	(0.146)	(0.116)	(0.112)	(0.147)
hgc	0.062	0.050	0.062	0.062
	(0.005)	(0.004)	(0.004)	(0.005)
as.factor(college)not college grad	0.145	0.169	0.145	0.140
	(0.034)	(0.026)	(0.025)	(0.035)
poly(tenure, 2, raw = T)1	0.050	0.038	0.050	0.050
	(0.005)	(0.004)	(0.004)	(0.005)
poly(tenure, 2, raw = T)2	-0.002	-0.001	-0.002	-0.002
	(0.000)	(0.000)	(0.000)	(0.000)
age	0.000	0.000	0.000	0.001
	(0.003)	(0.002)	(0.002)	(0.003)
as.factor(married)single	-0.022	-0.027	-0.022	-0.025
	(0.018)	(0.014)	(0.013)	(0.018)
Num.Obs.	1669	2229	2229	1686
Num.Imp.				10
R2	0.208	0.146	0.277	0.208
R2 Adj.	0.206	0.144	0.275	0.205
AIC	1179.9	1093.8	925.5	
BIC	1223.2	1139.5	971.1	
Log.Lik.	-581.936	-538.912	-454.737	
F	72.917	63.461	141.686	