04-analysis.Rmd

Results

Now that we have a better understanding of each of these regression methods, lets look at the data in order to see how each regression performed:

Table 1: Mean Squared Error For Each Regression

	Mean Squared Error
MSE of Least Squares	0.05
MSE of Ridge Regression	0.05
MSE of PLS Regression	0.05
MSE of PCR	0.31
MSE of Lasso Regression	0.05

Lets take a look at how the estimated regression coefficients differ for each regression:

Table 2: Beta Coefficients for Each Regression

	Coefficient Names	Coefficients for PLS Regression	Coefficients for Least Squares	Coefficients for Ridge Regression	Coefficients for P
Income	Income	0.18	-0.33	-0.64	-0
Limit	Limit	0.33	0.57	0.69	0
Rating	Rating	0.33	0.57	0.69	0
Cards	Cards	0.03	0.13	0.04	-0
Age	Age	0.00	-0.23	-0.01	-0
Education	Education	-0.00	0.04	0.01	-0
Gender.Male	Gender.Male	-0.00	-0.02	-0.02	0
GenderFemale	GenderFemale	0.00	0.02	0.02	-0
StudentYes	StudentYes	0.03	0.22	0.40	0
MarriedYes	MarriedYes	-0.00	-0.04	-0.08	-0
EthnicityAsian	EthnicityAsian	-0.00	0.01	0.02	0
EthnicityCaucasian	EthnicityCaucasian	-0.00	0.00	0.00	-0

Figure 1: Coefficient Plot