**P2P Lending – Linear Regression**

**Model:** We have created a linear regression model which predicts borrower rate.

**Regressors**: The overall set contains amount borrowed, term, installment and grade. 4 subsets of these regressors are used:

* Grade, amount borrowed, term
* Grade, Installment, term
* Grade, amount borrowed, installment
* Amount borrowed, term, installment

**Practical Use:** Any person interested in getting a loan would be most interested in knowing the rate of interest he would have to incur based on his credit history, the amount of loan he borrows, and the time period. we have assumed the alphabetical grade represents a person’s credit history as we don’t have any other factors that would determine it.

**Result:** Among all the regressors, grade is the most determining factor of installment rate.

The table shows mean percentage error for each of the regressor set. The set which does not contain grade, has the highest mean error. This result can also be seen in the scatter plots below which show the residual error in each case.

|  |  |
| --- | --- |
| **Regressor set** | **Mean percentage error** |
| Grade, amount borrowed, term | 10.95 |
| Grade, Installment, term | 10.84 |
| Grade, amount borrowed, installment | 12.82 |
| Amount borrowed, term, installment | 27.39 |







