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# PROJECT LUTHER:
## OPEN TABLE RATINGS TO PREDICT PRICE

- Can patron ratings predict average restaurant prices in Chicago?

## Hypothesis

- ## Hypothesis:
  - Specific user ratings more likely to be better predictors of price than others

## Data

- Data webscraped from:
  - www.opentable.com

- Chicago restaurants (n = 341)

Potential Model

- Linear Regression

Price ~ Overall Rating + Food Rating + Noise Rating + Ambience Rating + Service Rating

# Results



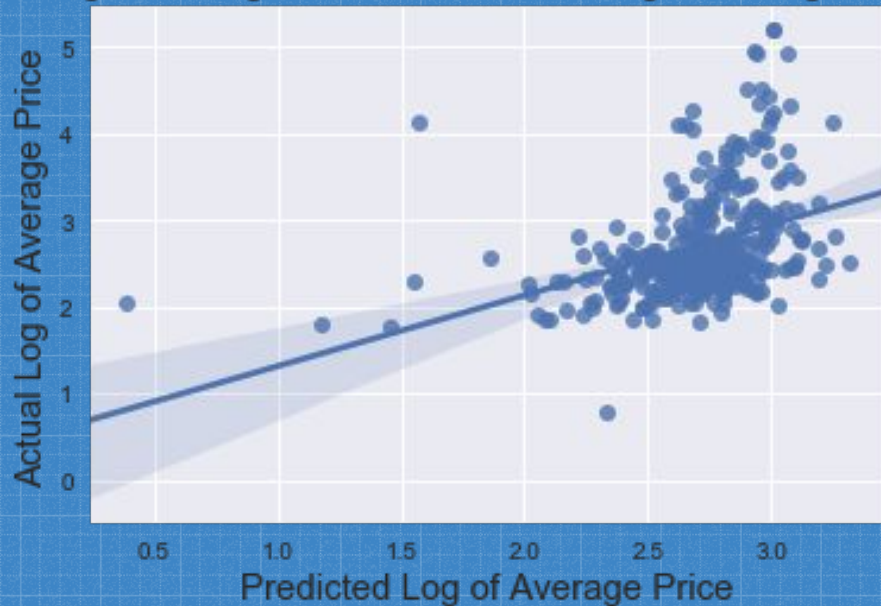Distribution of Average Restaurant Menu Item Prices in Chicago

# Results



Distribution of Log Transformed Average Restaurant Menu Prices Items in Chicago

Results

- Most viable model:

  Price ~ Overall Rating + Noise Rating + Service Rating

- Hypothesis?

# Results



Log of Average Price vs. Predicted Log of Average Price

- Original $R^2$: 0.96
- Cross Validation $R^2$: 0.14
- LassoCV $R^2$: 0.19
- RidgeCV $R^2$: 0.20

## Conclusions

- Overfitting
- 20% of variance in price explained by user ratings
  - Per ridge CV
- Useful for new and re-evaluating restaurants

Potential Next Steps

- Multicollinearity
- More data
- Other variables to explain variance?
  - Location, cuisine type, dress code, time since opening, awards, etc.
- Price as predictor

# Thanks!

ANY QUESTIONS?