

Iowa Liquor Tax Reform: Sales prediction

Iowa State Legislature is considering changing the state liquor tax. Here is what we can expect for the rest of 2016.

Influential Factors in Q1 data:

- Price per bottle (average)
- Volume sold (total Liters)
- Sales* (total)
- Excise tax (total)

As a controlled beverage state, liquor sales can disproportionately impact state revenue. We need to know how liquor sales vary across counties to accurately assess their impact.

About the model

Trained on:

10% of Q1 data + county population data

Validated on:

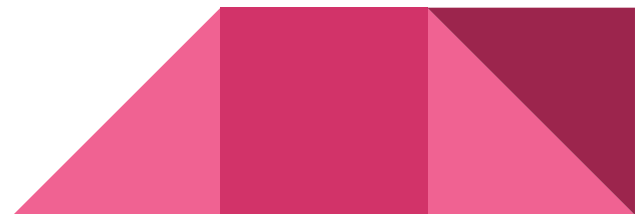
10% 2015 full year data

Regularized using:

Lasso Regression*

Limitations:

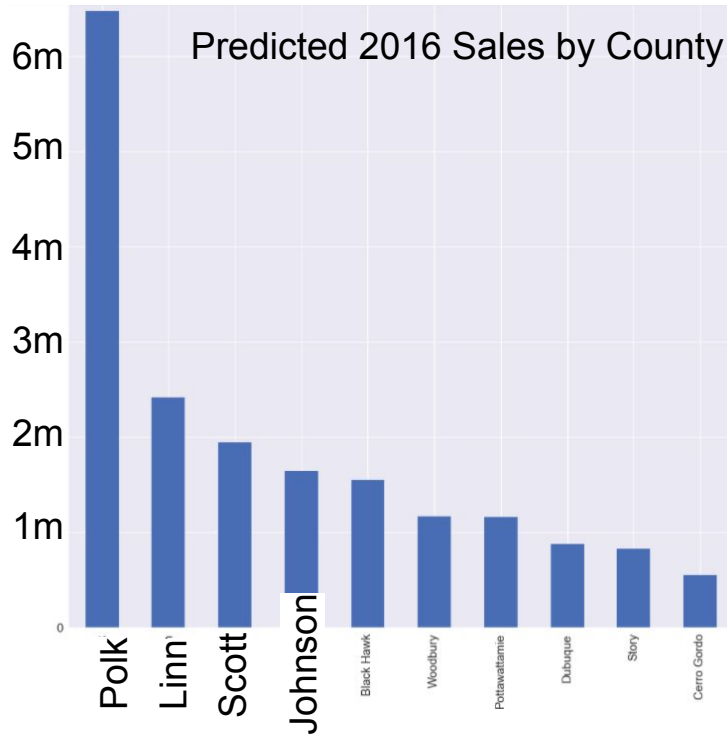
Based exclusively on 2015 data, so may be overfit to peculiarities of that year.



Our model projects 2016
annual sales to roughly be:
281,000,000.00

Conclusions:

The problem of being over-fit.



In the case of tax legislation, it is preferable to under predict than over predict liquor sales because it is a direct line to state revenue.

Further Research to Improve this model:

- More demographic data
- Classifying liquor stores by type
- Training the data on the whole year and taking seasonality into account. Months June and December are highest spikes in sales; January has the lowest sales.