Iowa Prison:
Recidivism Classification

Business Problem

The Iowa Department of Corrections (IDC) wants to lower rates of recidivism and improve its strategies to help its prison population. Through modeling and data analysis, we want to understand where to begin focusing efforts.

1. Analyze data on recidivism among Iowa prison population
2. Identify features that can help predict recidivism
3. Make recommendations to IDC on where they should begin reviewing strategies

Data & Methods

26,000+ Prisoners

This analysis included over 26,000 persons released from Iowa prisons between 2010 and 2015

17 Features

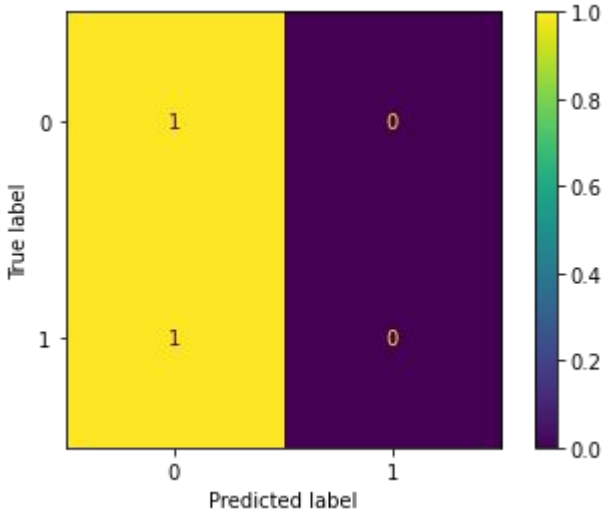
The data contained 17 features describing each prisoner, including things like their age, gender, race or the types of offenses committed

Machine Learning

Different machine learning classification algorithms were trained on this data to help us predict whether a person may re-offend and to understand which features are the best predictors

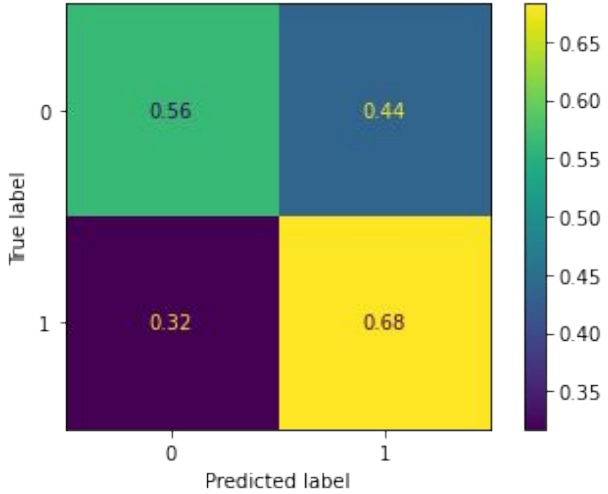
Model Performance

Baseline Dummy Model



Recall Score: 0.5

Final Model

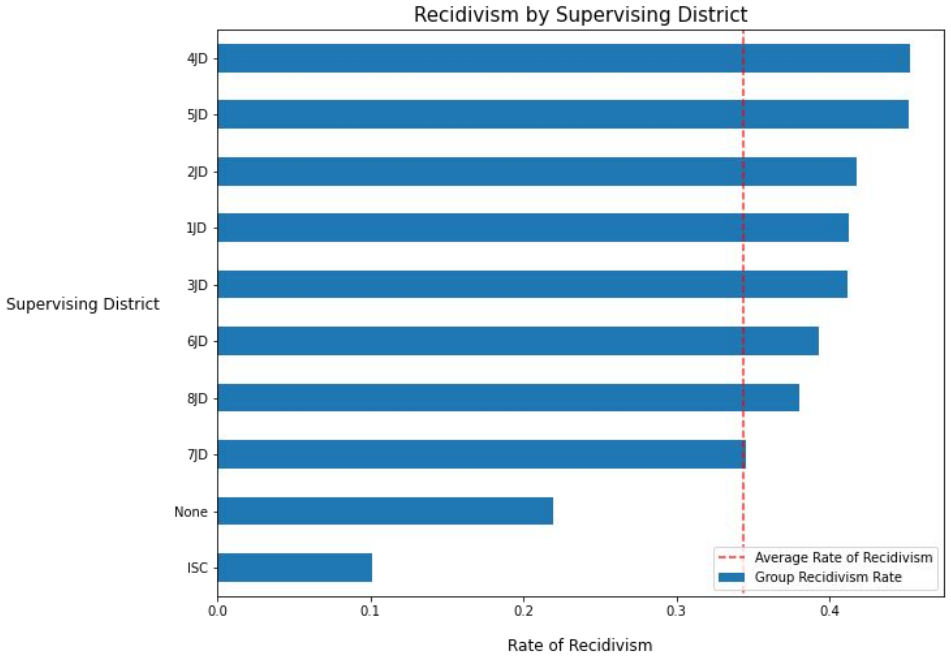


Recall Score: 0.62

The Results

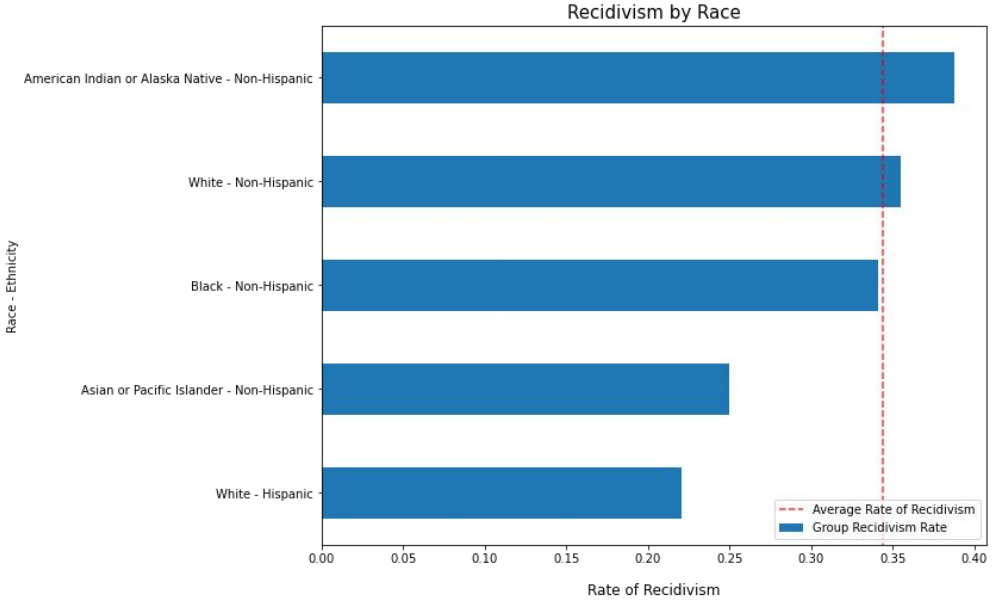
Persons released into the custody of Supervising Districts show higher likelihood of re-offending

- A majority of these districts were among the top recidivism predictors in our model
- District 7 had relatively better results and we should look to better understand what this district may be doing differently
- Interstate Compact (ISC) data looks low, but this is likely because persons released to ISC end up leaving Iowa, and data does not come in from other prison systems



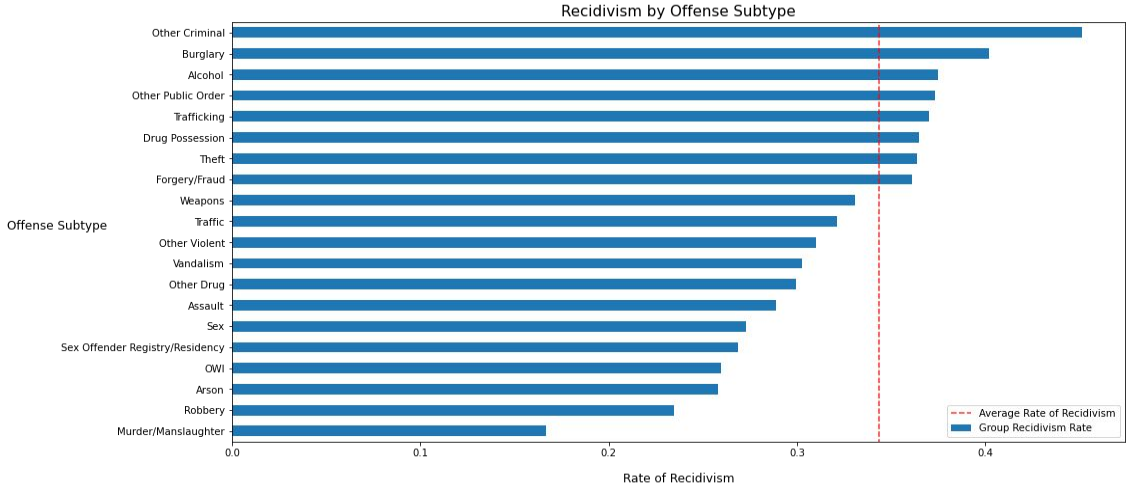
Current strategies are failing Non-Hispanic American Indian, Alaska Native prison populations

- Two Race/Ethnic groups showed above-average rates of recidivism: American Indian and Alaska Natives and White Non-Hispanic



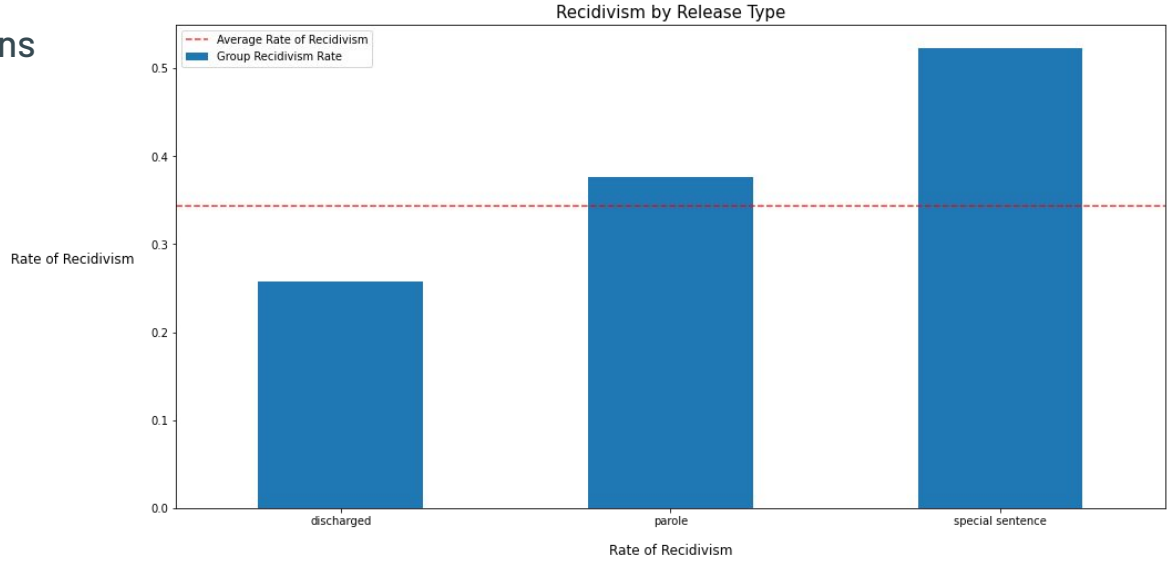
We need to know more about “Other Criminal” Offenders

- The “Other Criminal” offense subtype showed to be one of the top 3 predictors of recidivism
- The vague name makes it harder to better understand this population
- The IDC should re-evaluate how it classifies these offenders

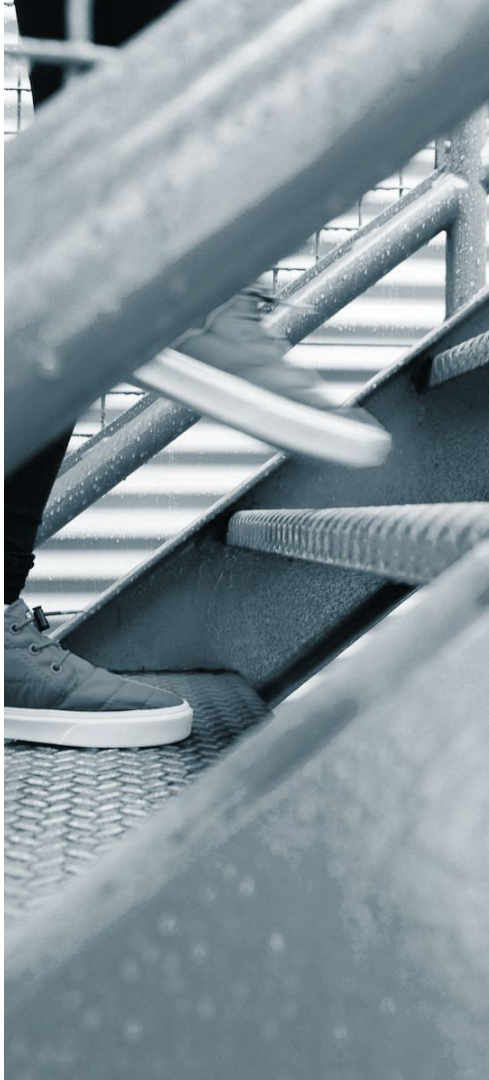


Persons released on a “special sentence” have a high risk of returning to prison

- Collect more information on persons released from prison on a special sentence
- This group showed one of the highest rates of recidivism compared to other characteristics



Next Steps



Next Steps & Conclusions

- Begin describing the “Other Criminal” offense subtype in a clearer or more specific way
- Investigate differences in policies and practices between Supervising District 7 and others
- Investigate why current practices lead to disproportionately worse outcomes for American Indian and Alaska Native populations
- Investigate why persons released on a special sentence are more likely to return to prison

Future Research Opportunities

- Collect data on the types of strategies and programs different inmates have been part of to study their efficacy
- Look into data on how persons who return to prison get there (parole violations, technical violations, new offenses, etc.)

THANK YOU

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Any questions?

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