

Predicting Food Deserts Using Census Tract Data

Jose Ramirez



What Is A Food Desert?

- **USDA defines a food desert as an area where at least 33% of the population:**
 - **Lives farther than 1 mile from a grocery store in urban areas**
 - **Lives farther than 10 miles from a grocery store in rural areas**



Why Predict Food Deserts?

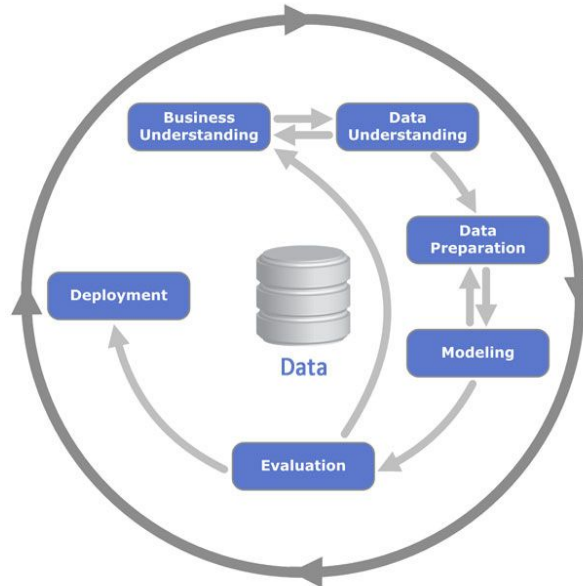
- Diabetes - world leader
- Obesity - world leader
- USDA last released a food desert locator in 2015
- Model to predict where food deserts are likely to occur
- Update the model as new socioeconomic data is brought to light
- NFFI



Data

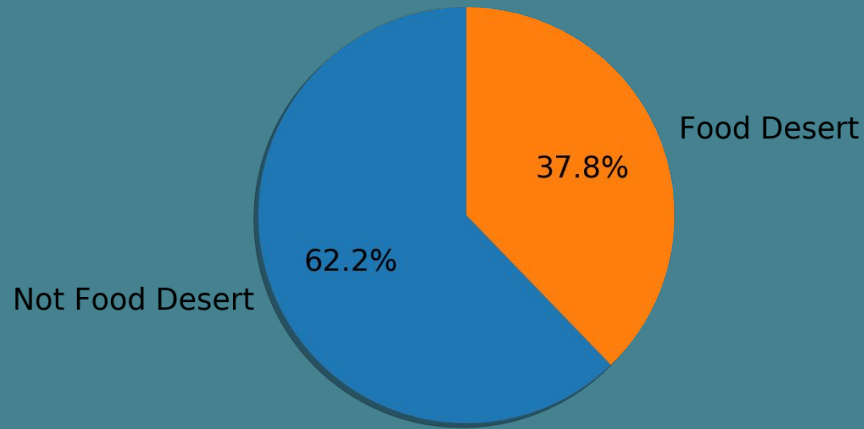
- ERS.USDA
- CENSUS
- Census Tracts
- 72,865 rows and 51 features

CRISP-DM Process Diagram

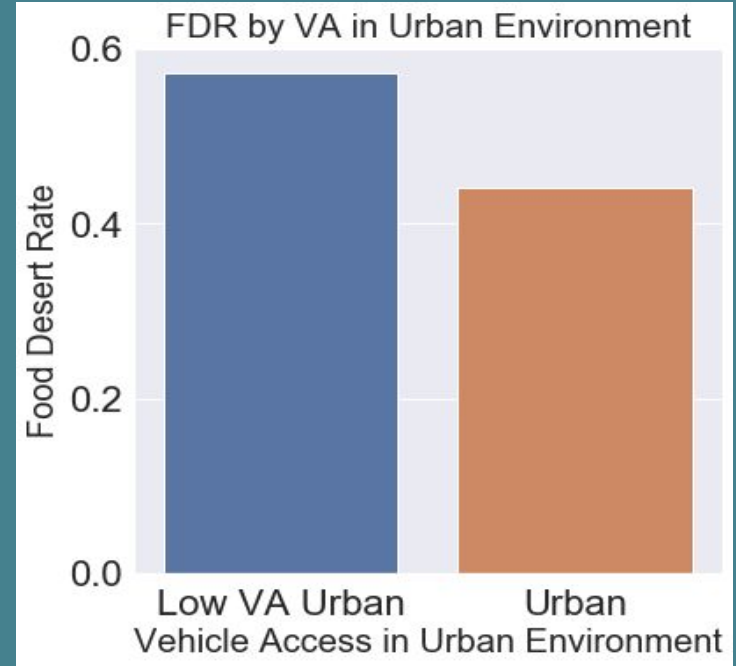


Source: Kenneth Jensen

EDA / Feature Engineering



Class Imbalance



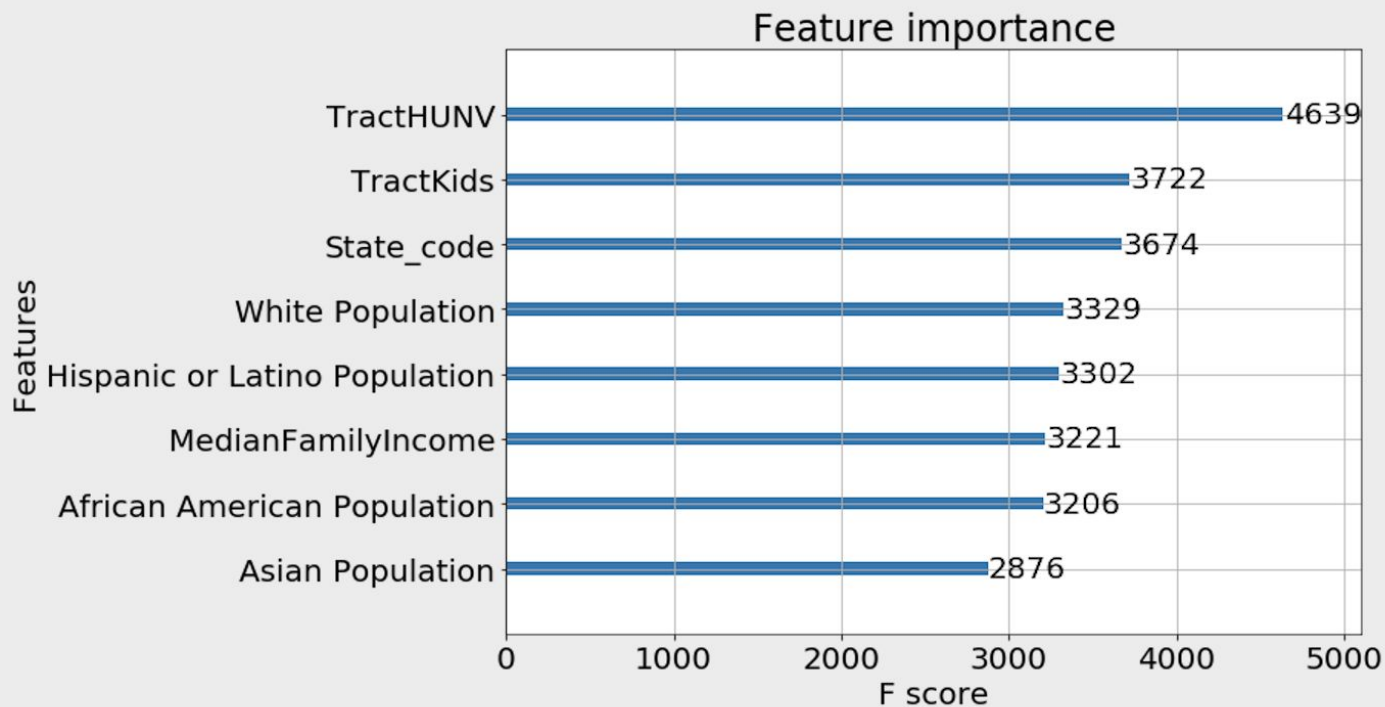
P-Value of 2.28×10^{-163}
Test Statistic of 27.24

Modeling Selection



Model Type	Recall	F1 Score
Baseline Model	.40	.42
Decision Tree	.75	.68
Random Forest	.77	.70
XG Boost	.80	.67

Conclusions



Next Steps

- Food Swamps



Any Questions?



Sources:

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<https://ottawamagazine.com/eating-and-drinking/live-where-basics-are-missing-how-about-access-to-fresh-affordable-food-if-so-you-may-live-in-a-food-desert-even-downtown/>

<https://spoonuniversity.com/lifestyle/food-desert-obesity-rates>

<https://www.bluezones.com/2017/11/news-food-swamps-contribute-obesity-food-deserts/#:~:text=A%20food%20swamp%20is%20an,access%20to%20affordable%2C%20nutritious%20food>

<https://today.uconn.edu/2017/11/food-swamps-predict-obesity-rates-better-food-deserts/>