

# ENHANCING TRADER JOE'S EXPANSION STRATEGY

## WITH A DATA-DRIVEN LOCATION

### RECOMMENDATION SYSTEM



...And pickle popcorn!

They're bringing joy to the community!



# OVERVIEW

- Data Collection & Cleaning
- EDA
- Modeling
- Recommender System
- Next Steps

# DATA COLLECTION

- Trader Joe's Data
- US Household Income Data



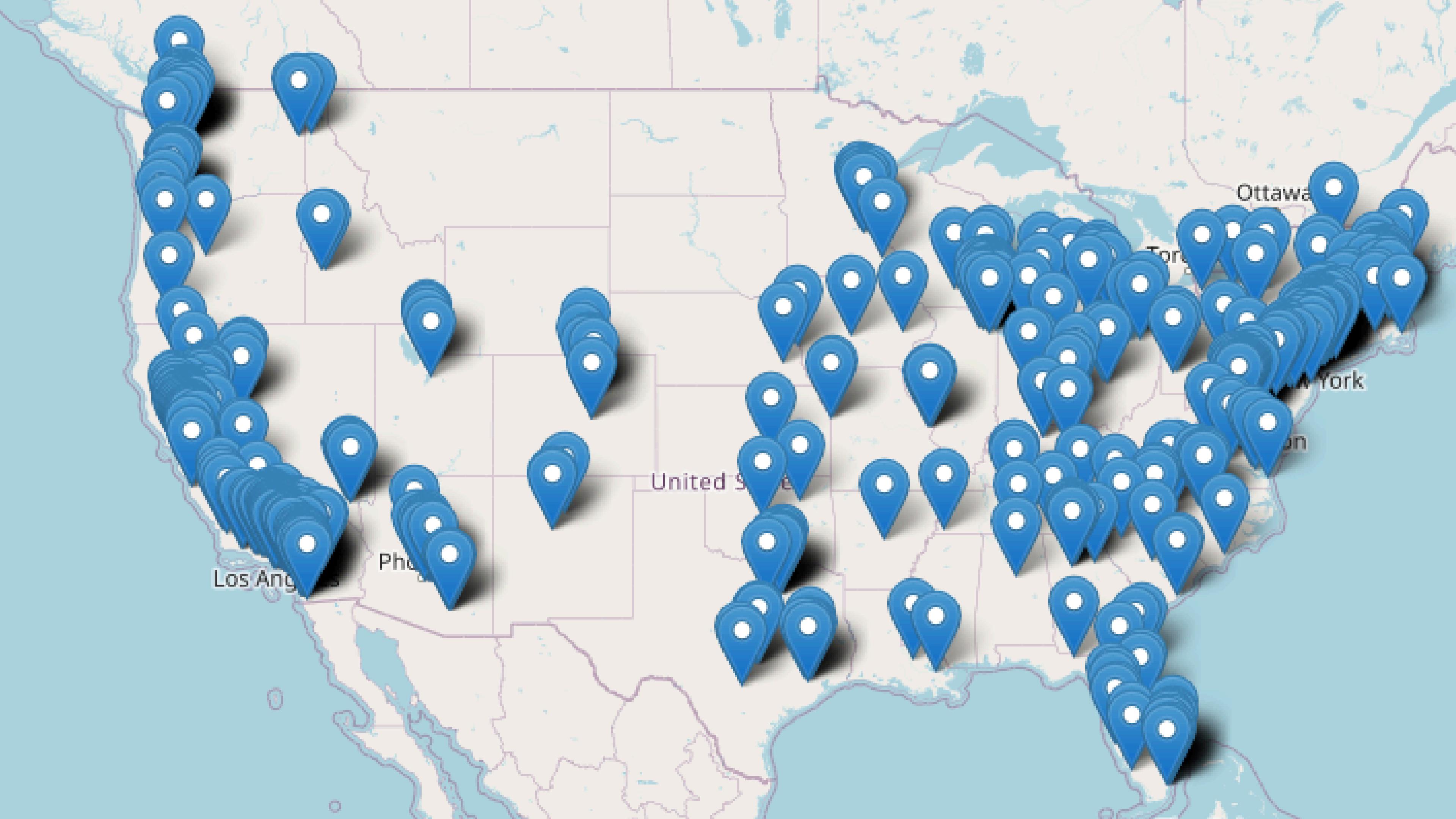
Zip code match  
between  
DataFrames

Refined  
Income data  
to most  
recent data

Created a column  
to reflect store  
presence per zip  
code

# CLEANING

Eliminated  
Null Values

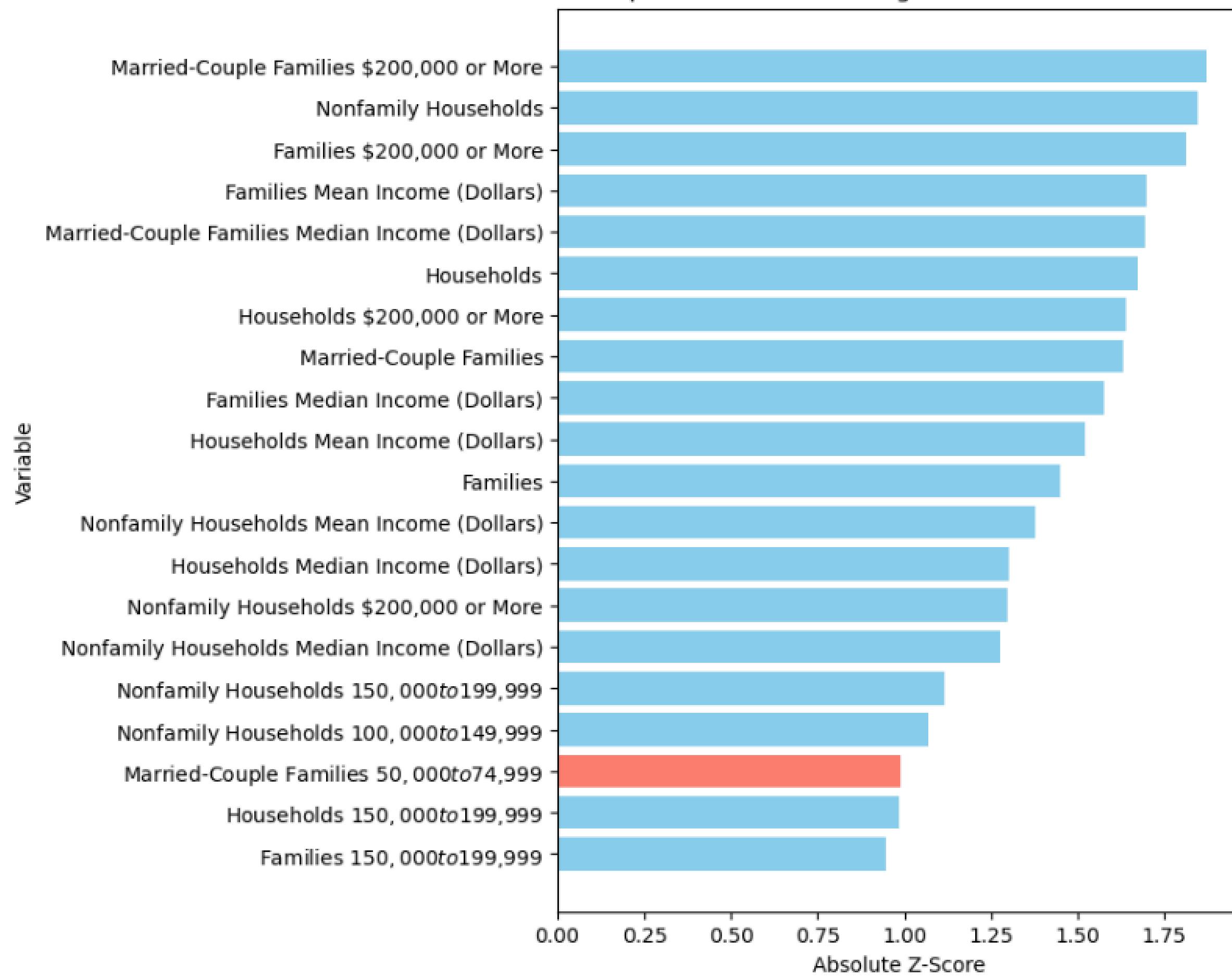


- Zip codes with Store: 556
- Zip codes without Store: 25689

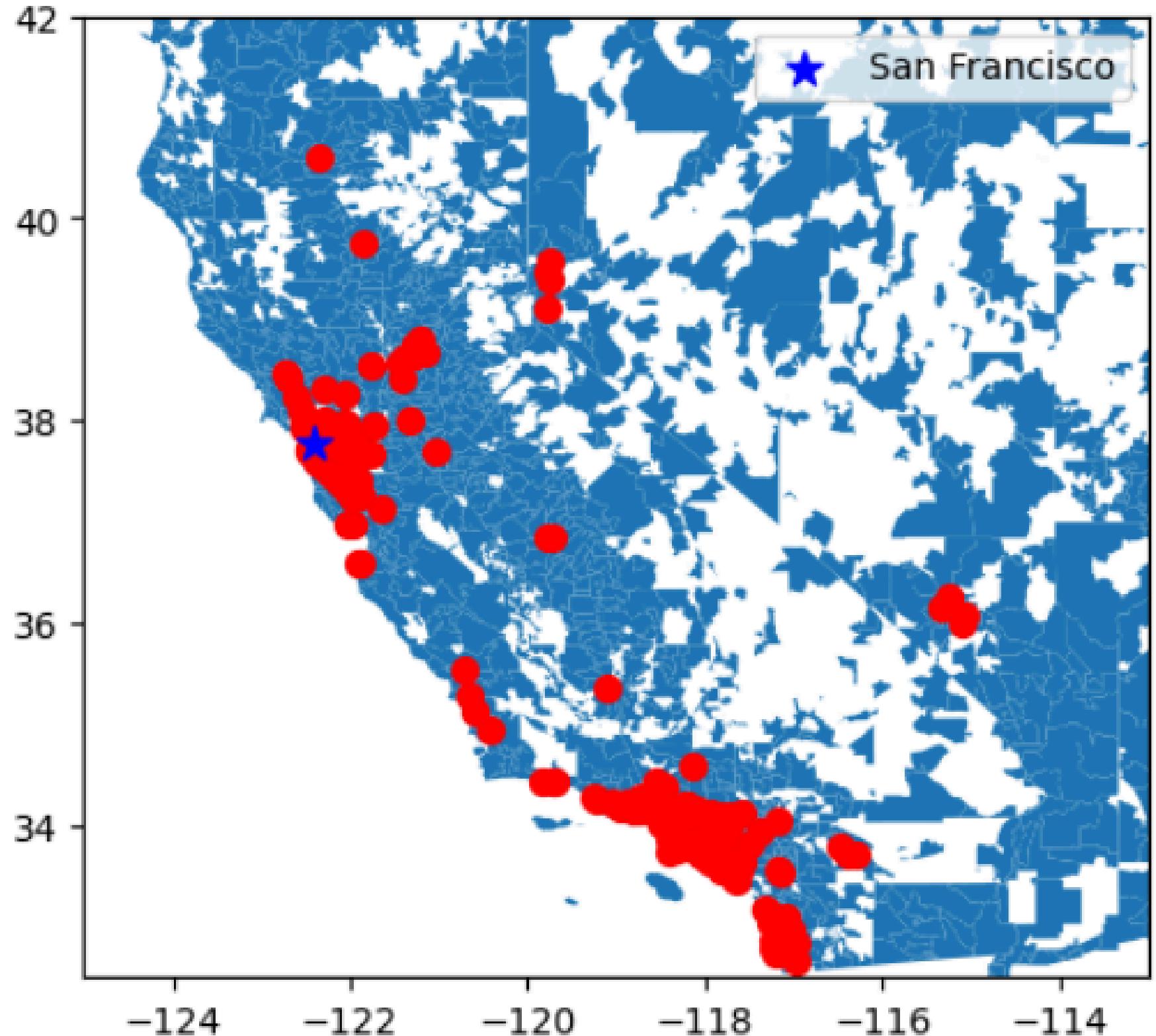
Thats  
ruff!



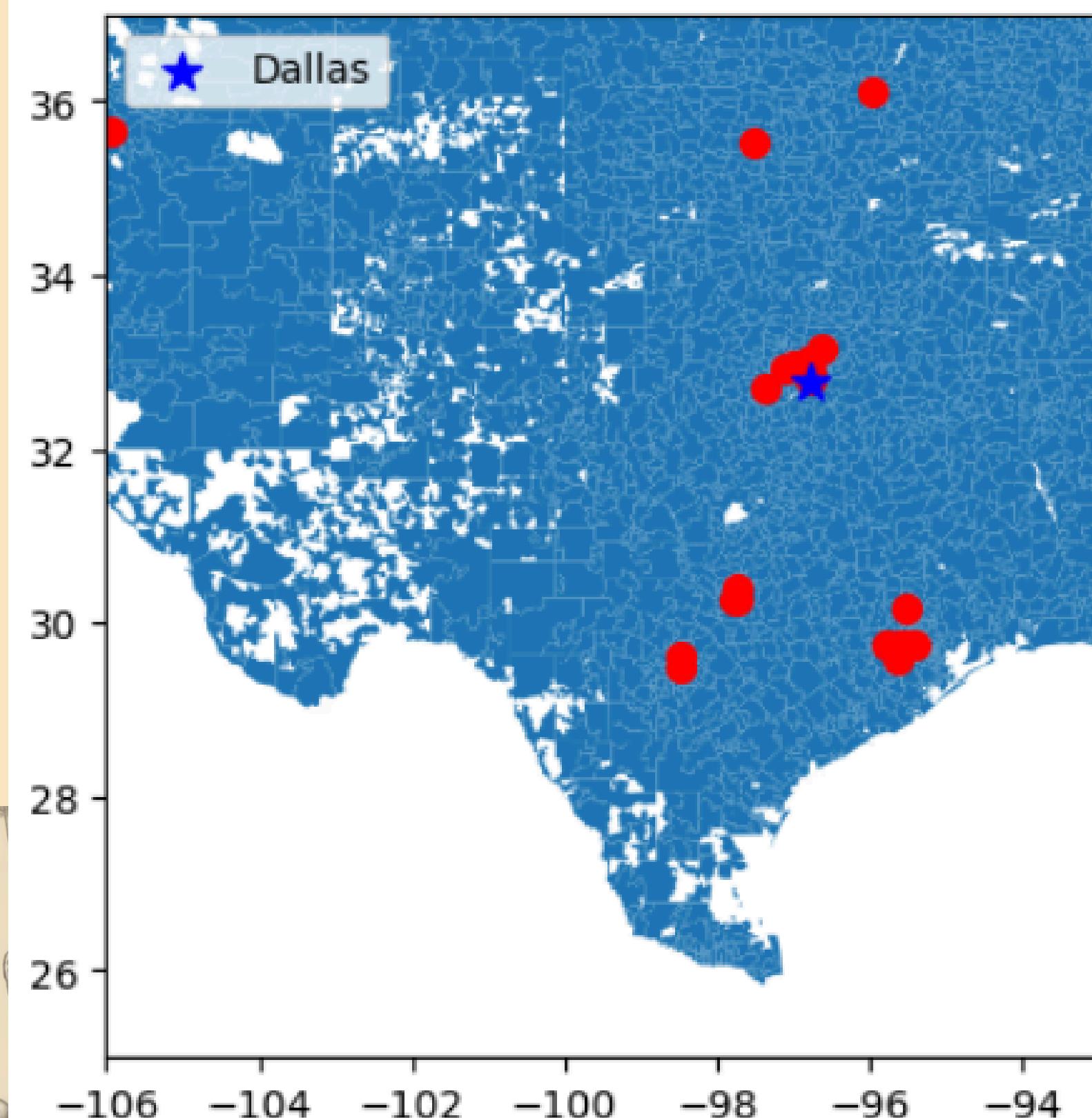
Top 20 Variables with Highest Absolute Z-Scores



### Stores in California



### Stores in Texas



# CLASSIFICATION

## MODEL

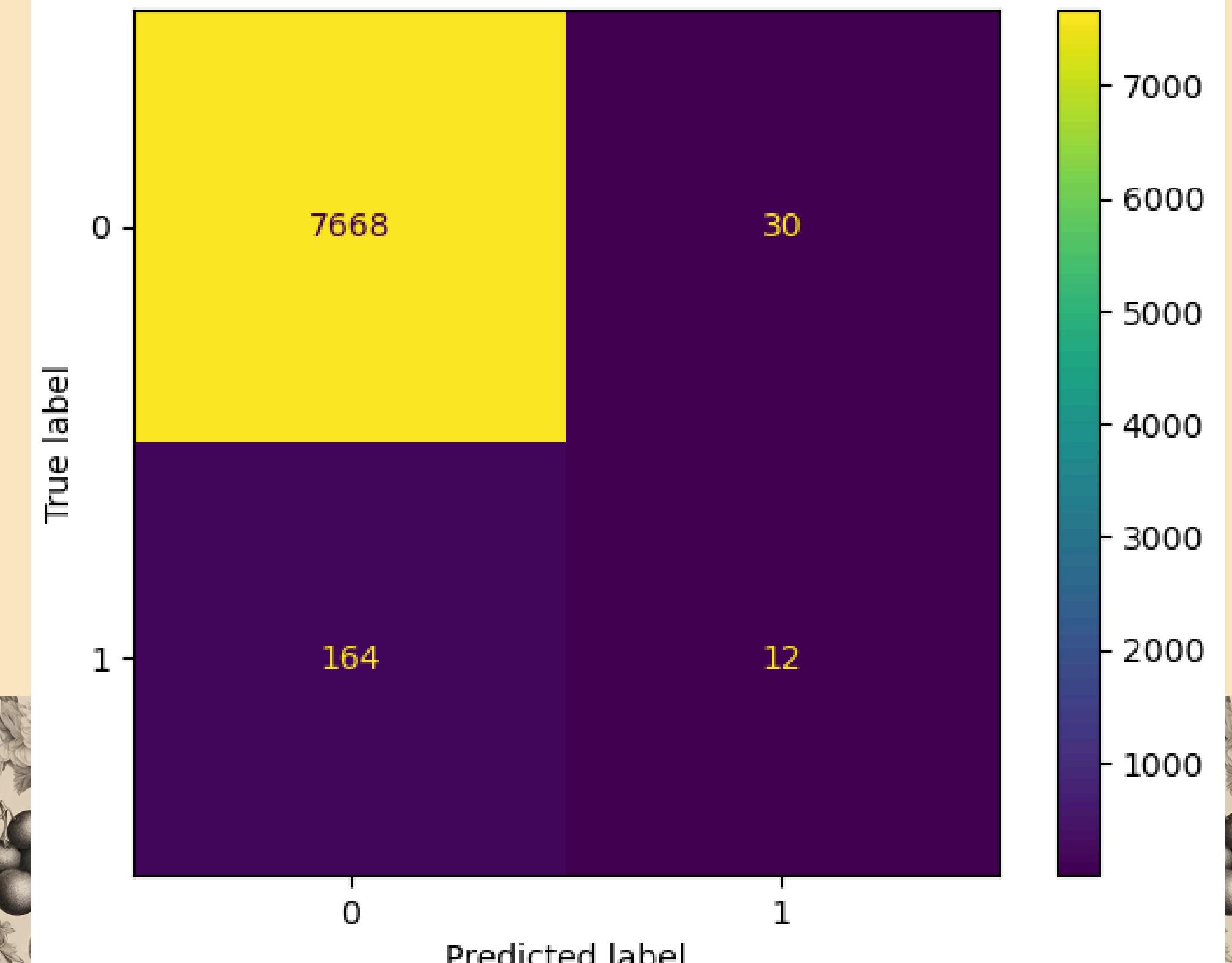
XGBoost

Accuracy: 0.975

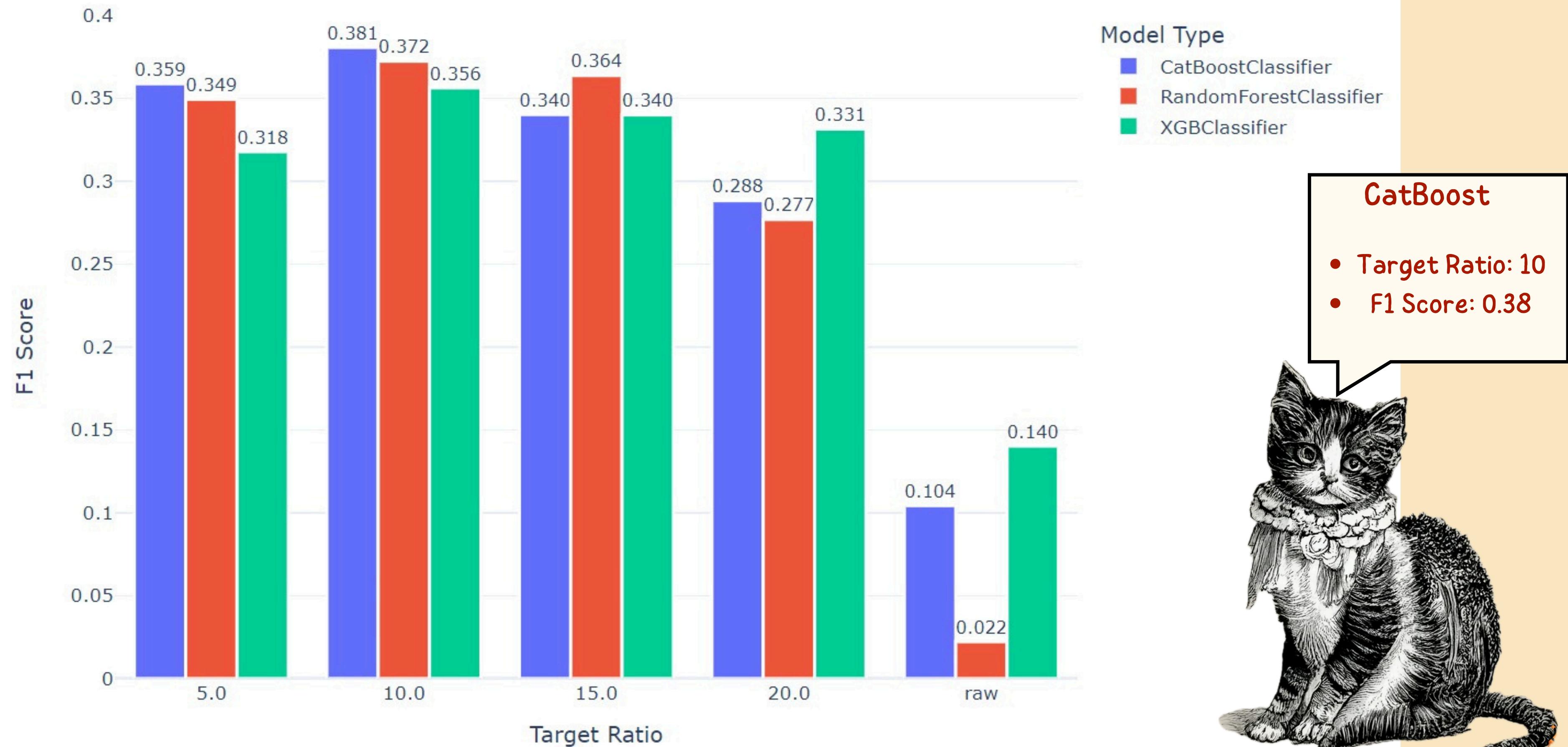
F1 Score: 0.11



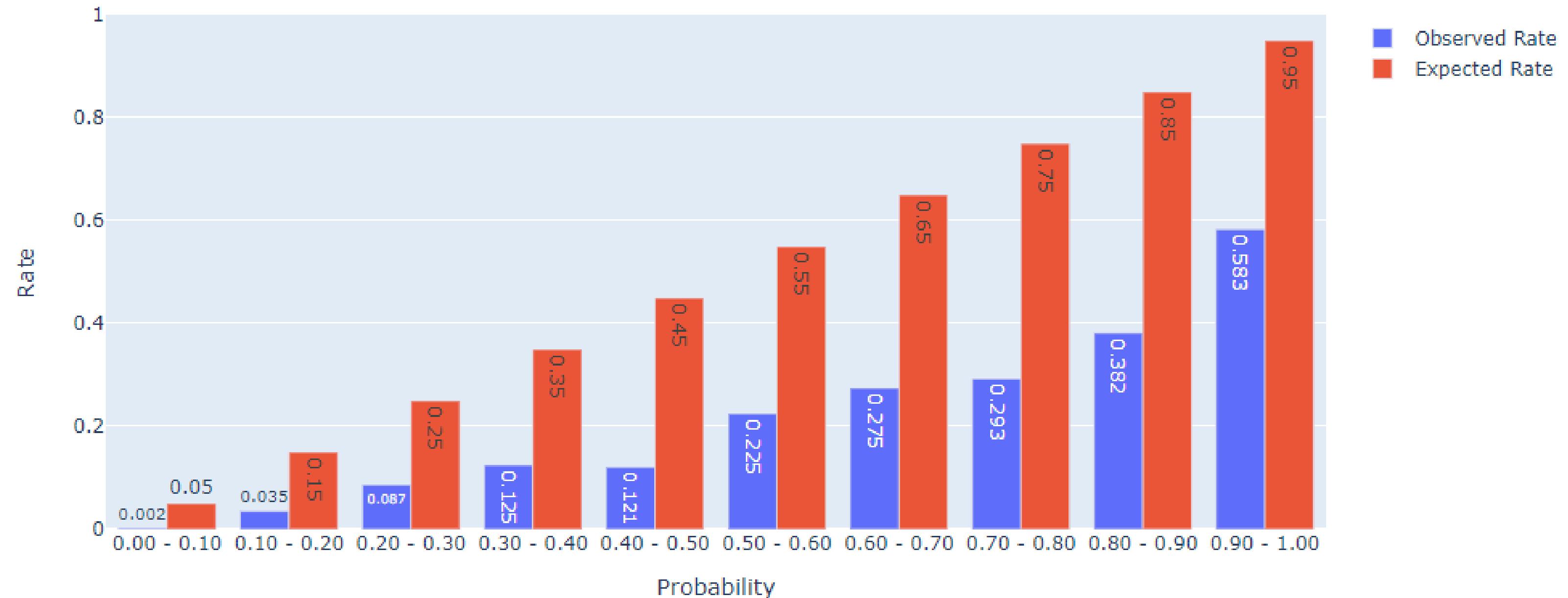
XGBoost Classifier



## Model Performance by Target Ratio



## Model Calibration



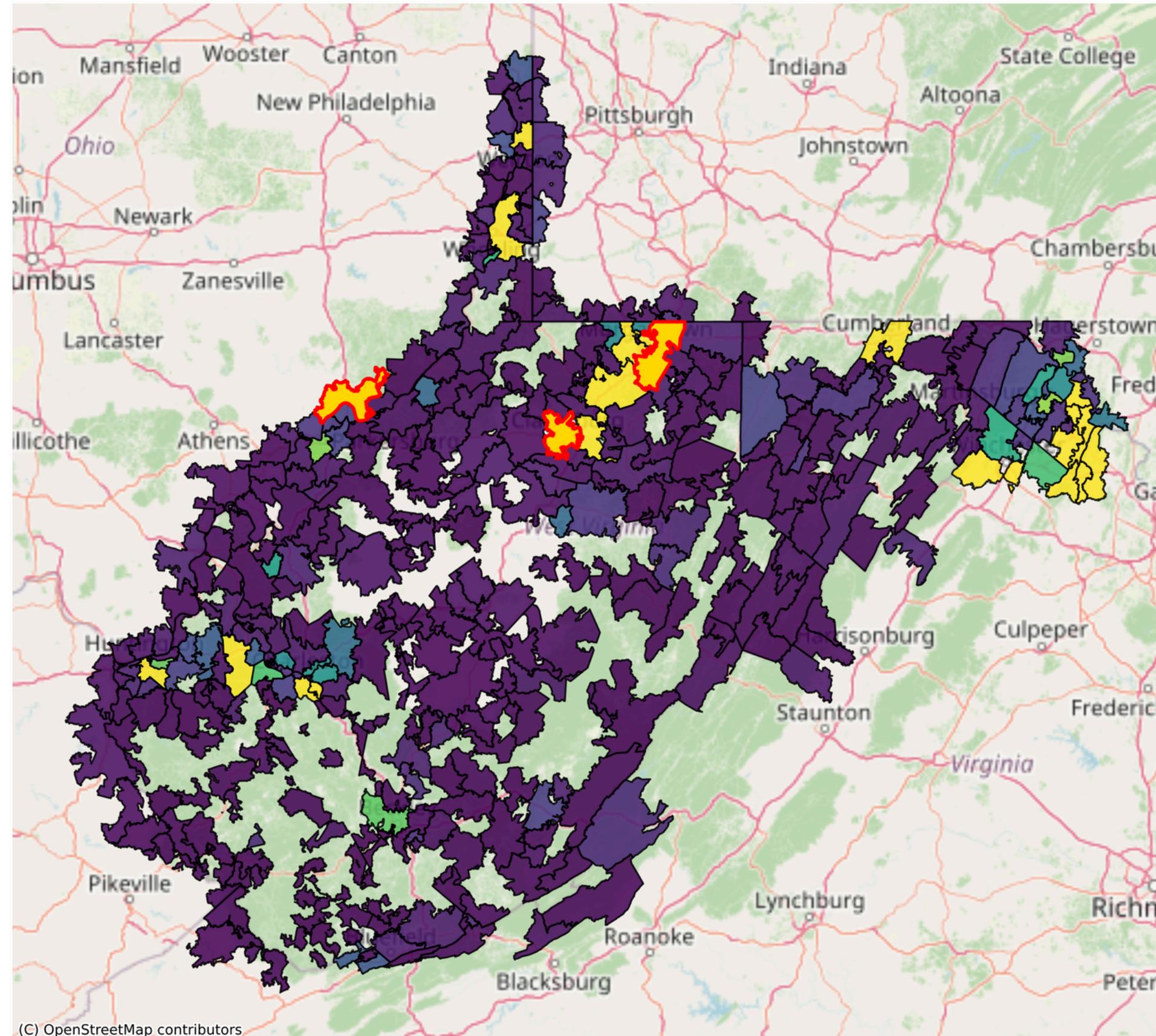
# RECOMMENDER SYSTEM

- Predict Probabilities for Store Presence
- Rank zip codes based on probability where there is no store presence
- Choropleth map to visualize the probability of opening a store within zip codes of a specified state



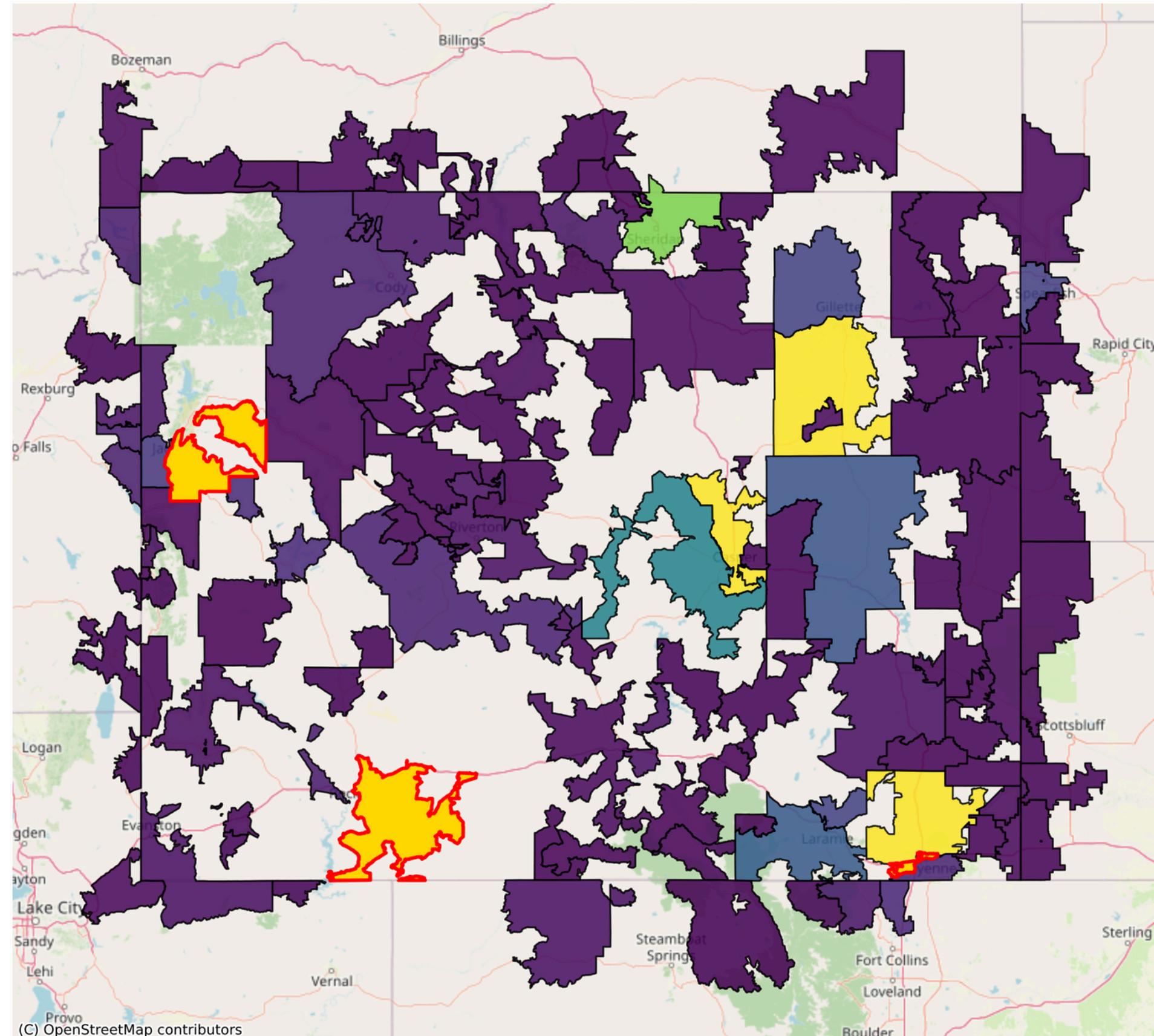
	state_name	total_stores
50	Wyoming	0
1	Alaska	0
48	West Virginia	0
41	South Dakota	0
34	North Dakota	0
26	Montana	0
11	Hawaii	0
24	Mississippi	0

Choropleth Map for Probability of Opening a Store in West Virginia



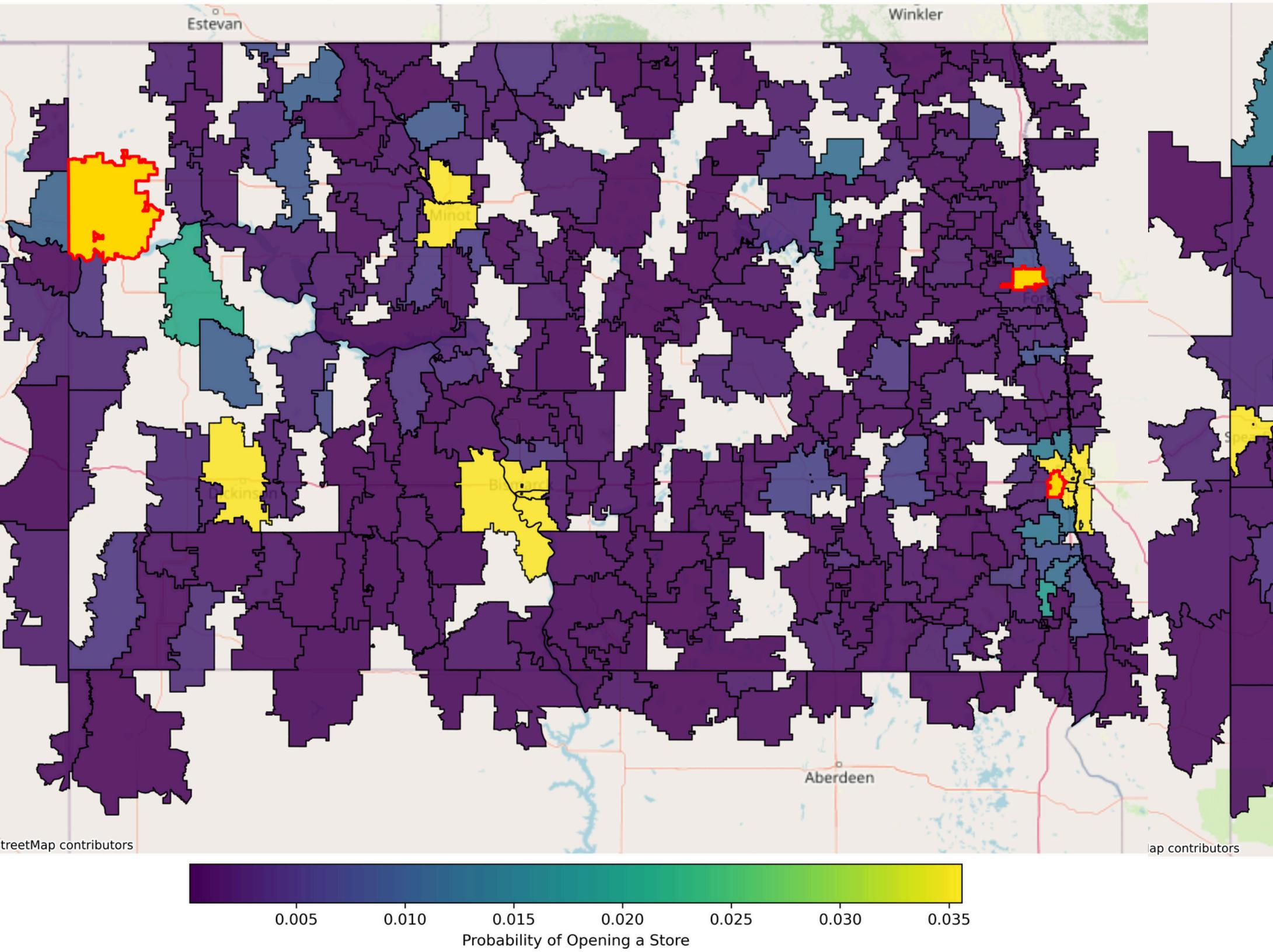
Probability of Opening a Store

Choropleth Map for Probability of Opening a Store in Wyoming

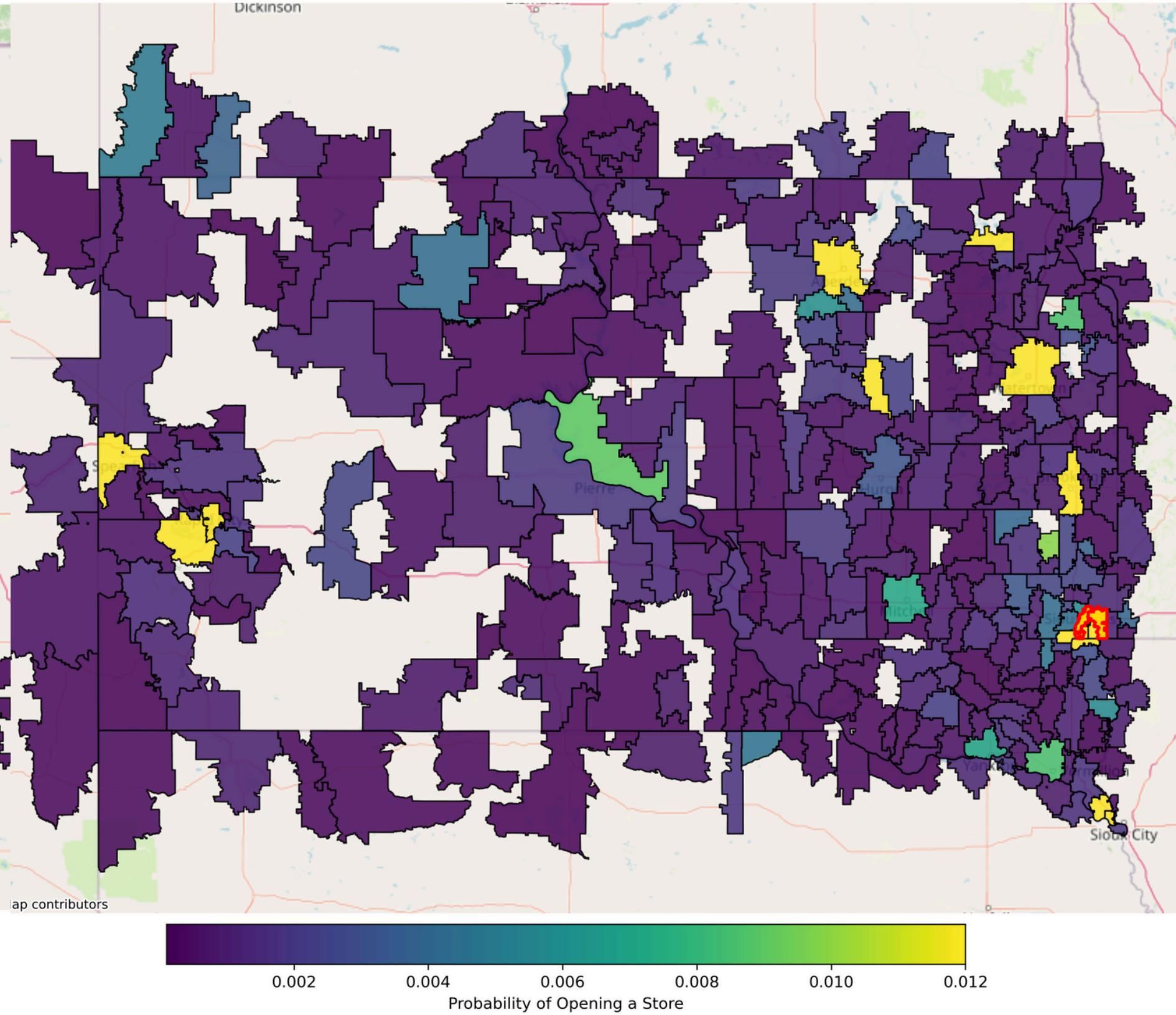


Probability of Opening a Store

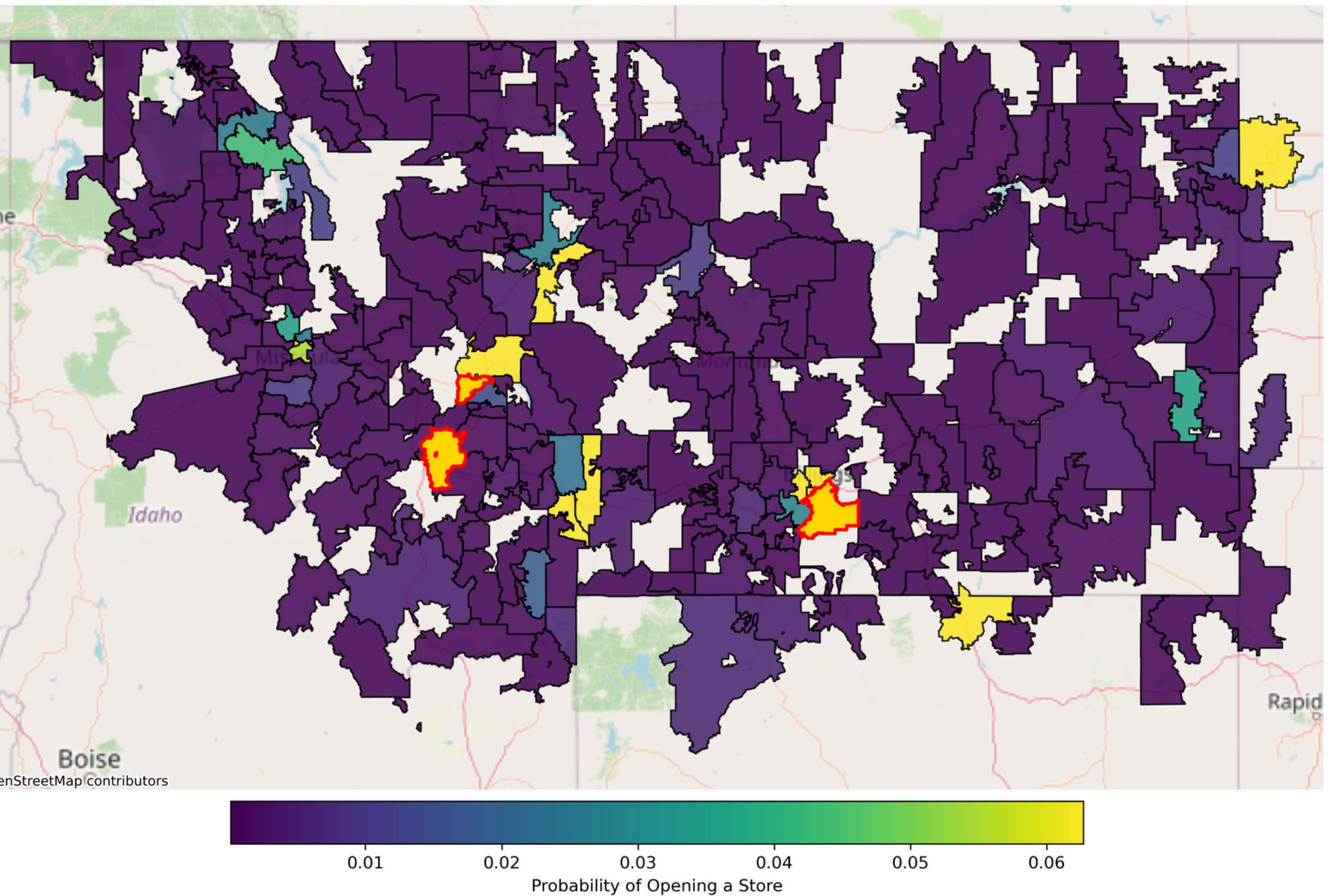
Choropleth Map for Probability of Opening a Store in North Dakota



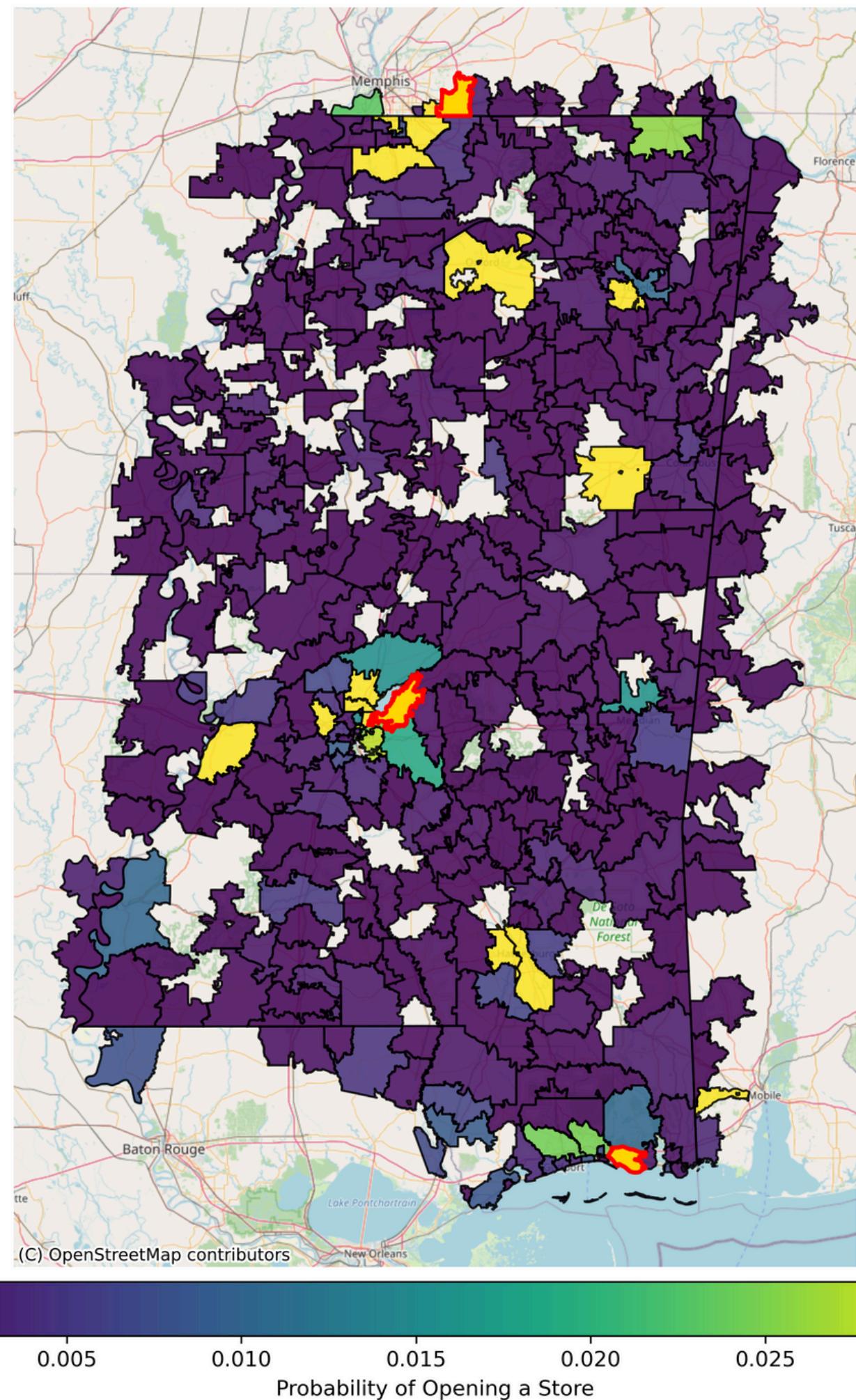
Choropleth Map for Probability of Opening a Store in South Dakota



Choropleth Map for Probability of Opening a Store in Montana



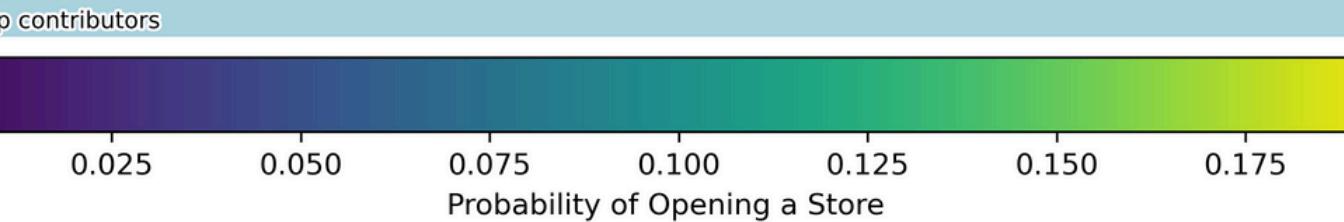
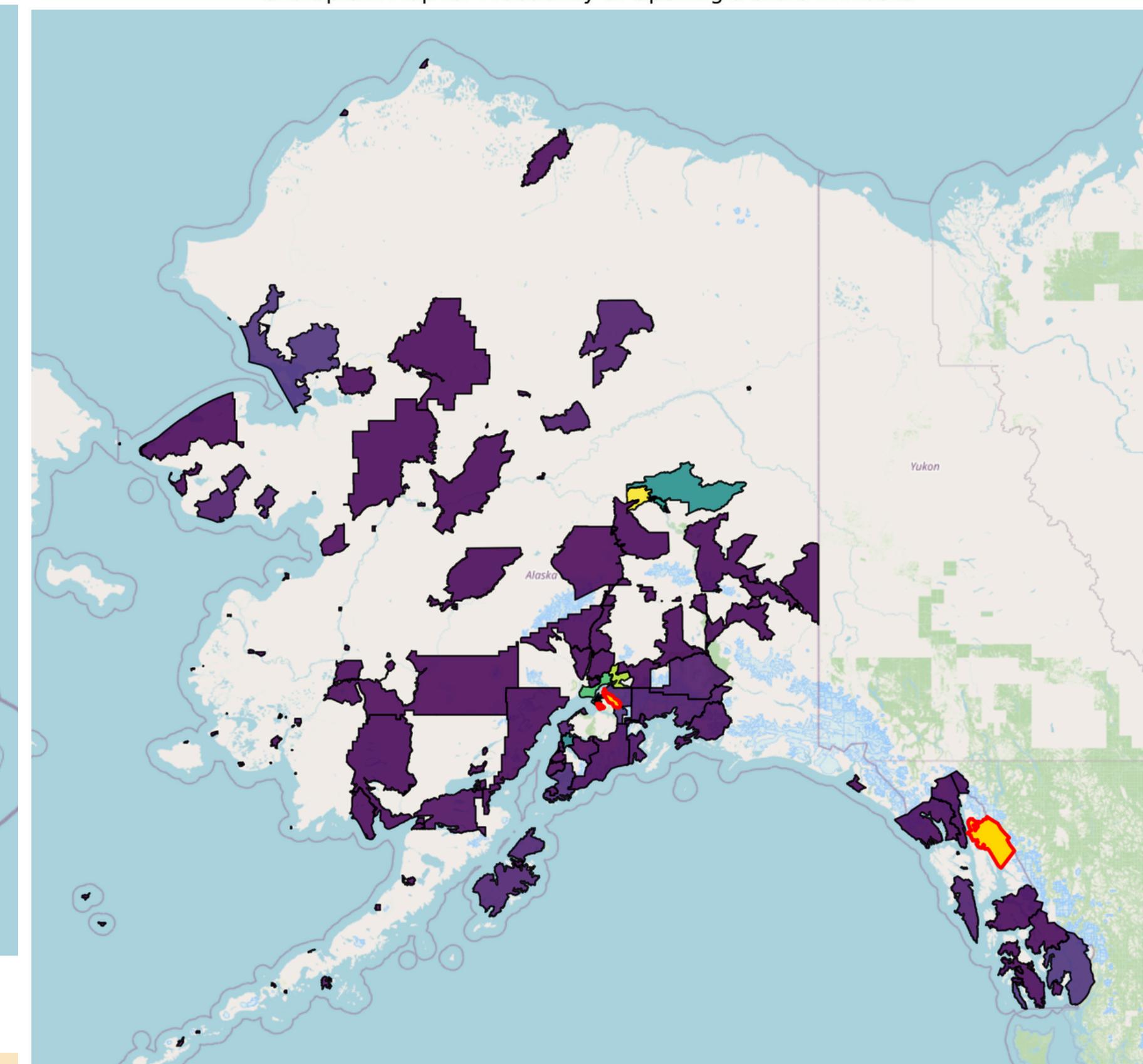
Choropleth Map for Probability of Opening a Store in Mississippi



Choropleth Map for Probability of Opening a Store in Hawaii



Choropleth Map for Probability of Opening a Store in Alaska



# NEXT STEPS

- Conducting thorough market research in potential expansion areas.
- Exclude states with a high concentration of stores before training the model.





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