



FARMERS MARKET ACCESSIBILITY

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Flatiron Immersive Data Science: Module 3

Data Set: [Kaggle](#)

Slide Formatting & Infographics:
[Farmers Market Coalition](#)

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Information concerning the impact of food deserts and accessibility in the United States

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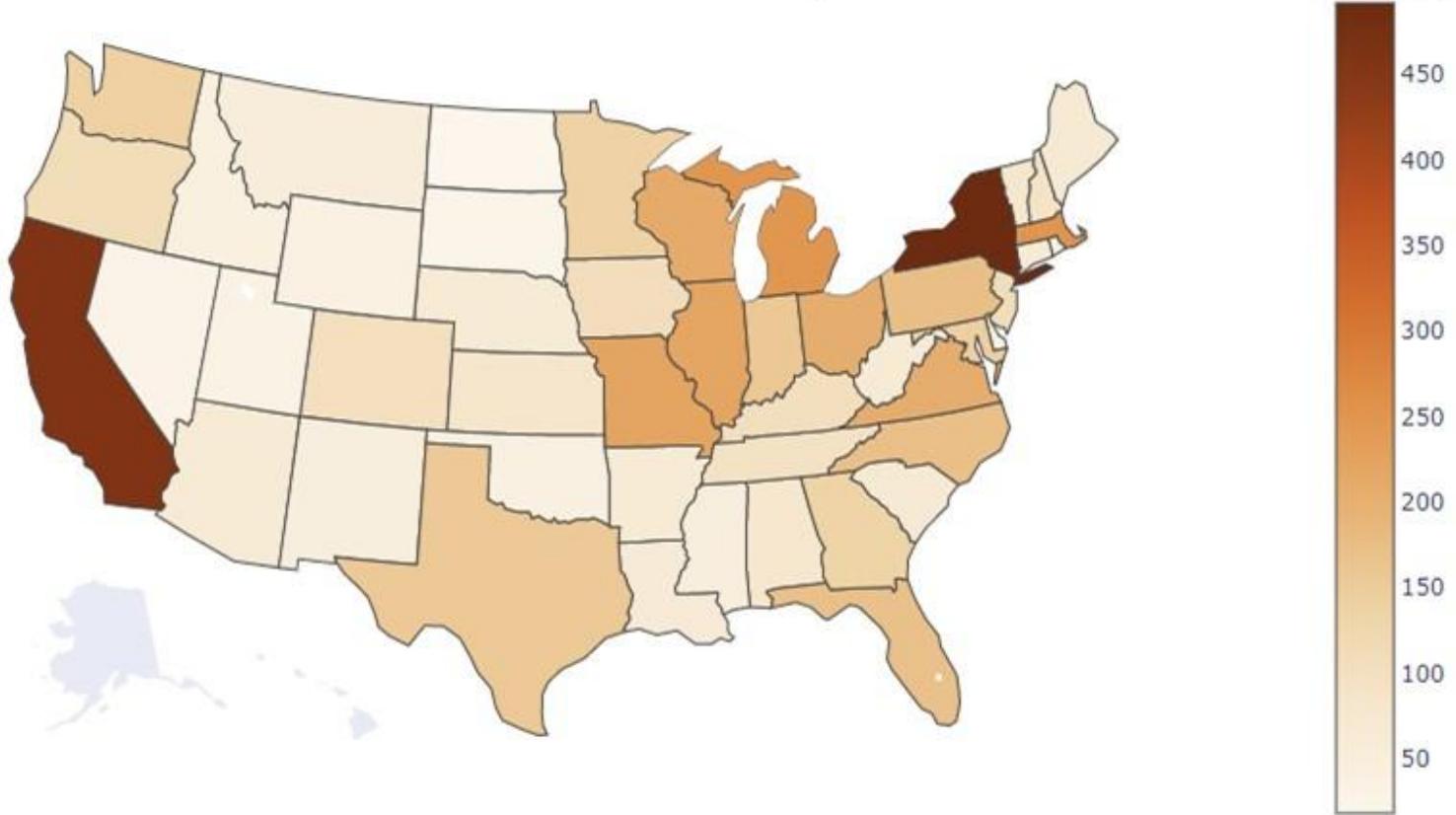
01

Overview

Comparing the data from **farmers markets** in the continental United States and respective financial information



Number of Markets by State



02

Topic Analysis

Comparing the data from **farmers markets** in the continental United States and respective financial information



WHY FARMERS MARKETS?



INCREASE ACCESS TO FRESH FOOD

\$22.4 million

in SNAP benefits were spent at farmers markets in 2017. That's fresh food for low-income Americans and increased revenue for local farmers.

60% of market shoppers in low-income neighborhoods say their market had better prices than the grocery store.

Markets bring fresh food to the neighborhoods that need it most.

LEARN MORE AT [FARMERSMARKETCOALITION.ORG](https://farmersmarketcoalition.org)

WHY FARMERS MARKETS?



PRESERVE FARMLAND + RURAL LIVELIHOODS



The U.S. loses an acre of farmland a minute to development.

25% of vendors
derive their sole source of income from the market.

The **7** Seattle farmers markets hosted by the Neighborhood Farmers Market Alliance support **9,491 acres of farmland in diversified production.**

LEARN MORE AT FARMERSMARKETCOALITION.ORG

WHY FARMERS MARKETS?



STIMULATE LOCAL ECONOMIES



Locally-owned retailers, such as farmers markets, **return more than three times as much of their sales to the local economy** compared to chain competitors.

Growers selling locally create **13 full time jobs** per \$1 million in revenue earned. Those not selling locally create **3**.

LOCAL \$

Chain

Locally-owned

LEARN MORE AT FARMERSMARKETCOALITION.ORG

03

Data Analysis

Comparing the data from **farmers markets** in the continental United States and respective financial information



Data: Farmers Market

Dropped

Majority of instances
did not have social
media presence

Dropped

Zip codes were
inconsistently coded

Dropped

Lack of Seasonal
information

Engineered

Classified individual
products into broader
categories

Engineered

Binary encoded
website presence



Data: County Info

Dropped

Weird numbering system in place of traditional axis

Dropped

Areas outside of the continental US

Stripped

Numerical Information of punctuation

Engineered

Encoded States as numbers

Engineered

Median financial values by State



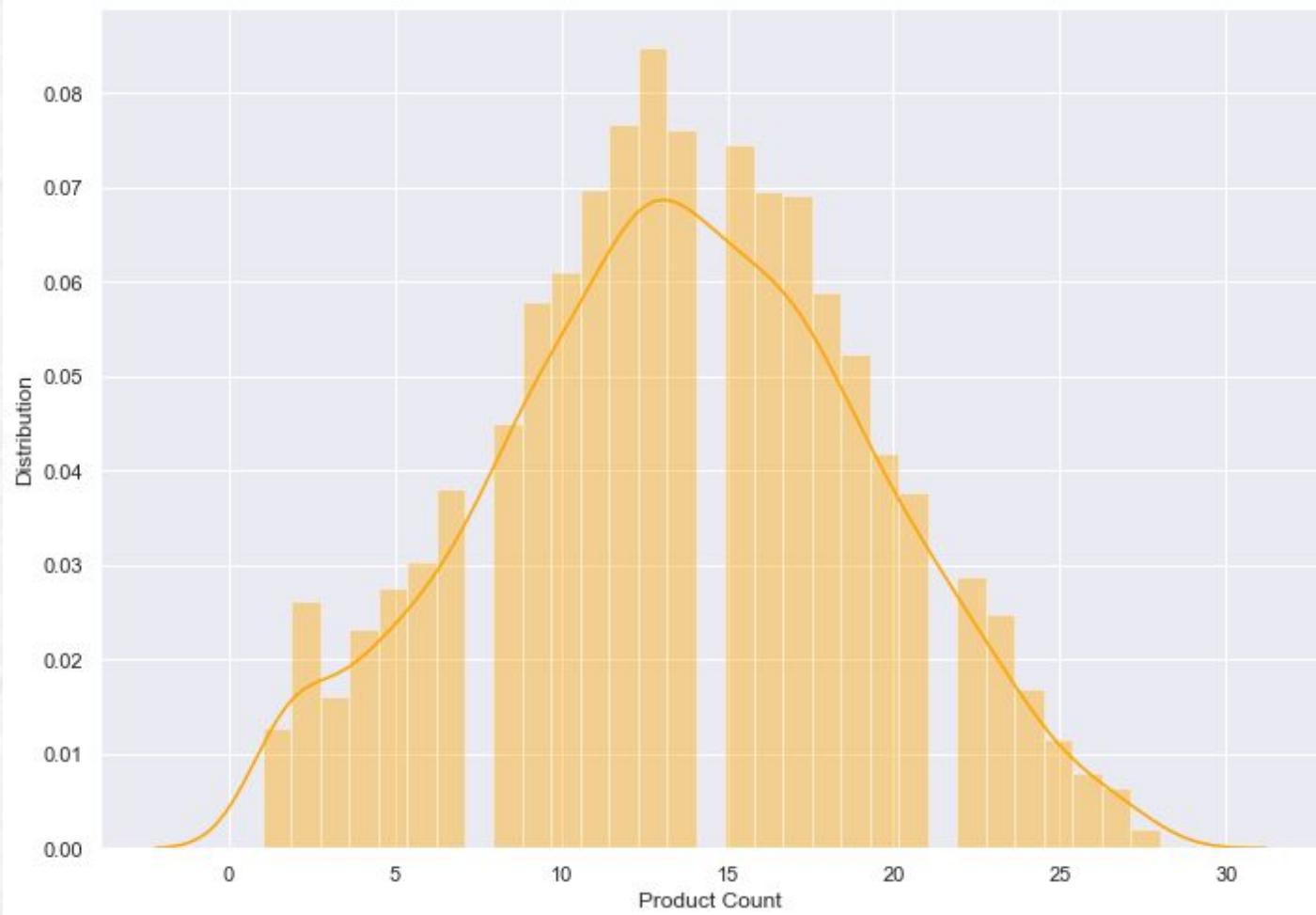
EDA: Question 1



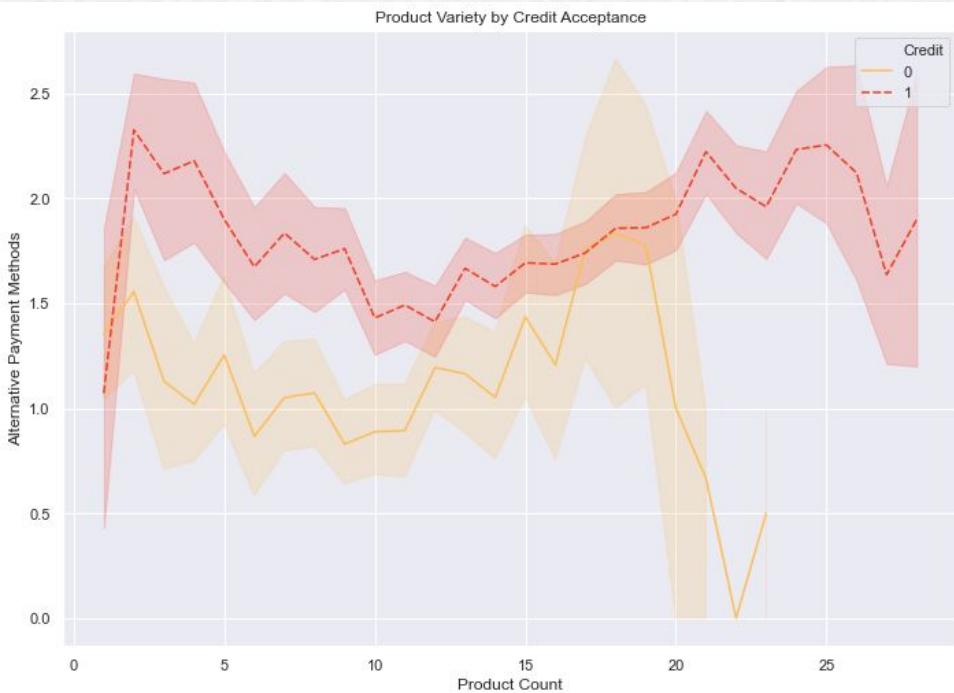
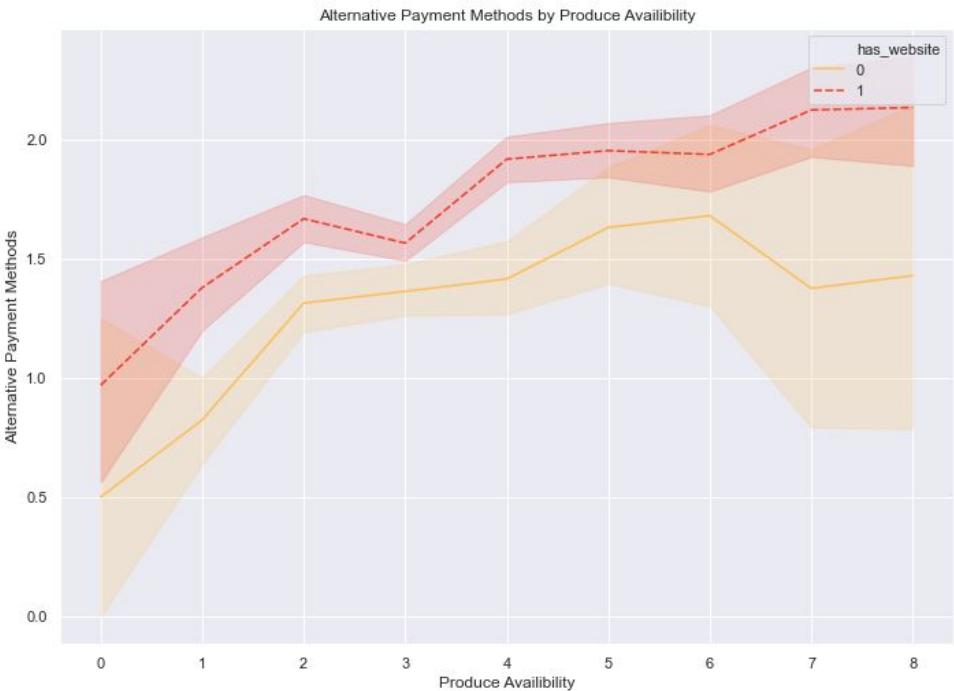
Does product variety correlate to alternative payment option?



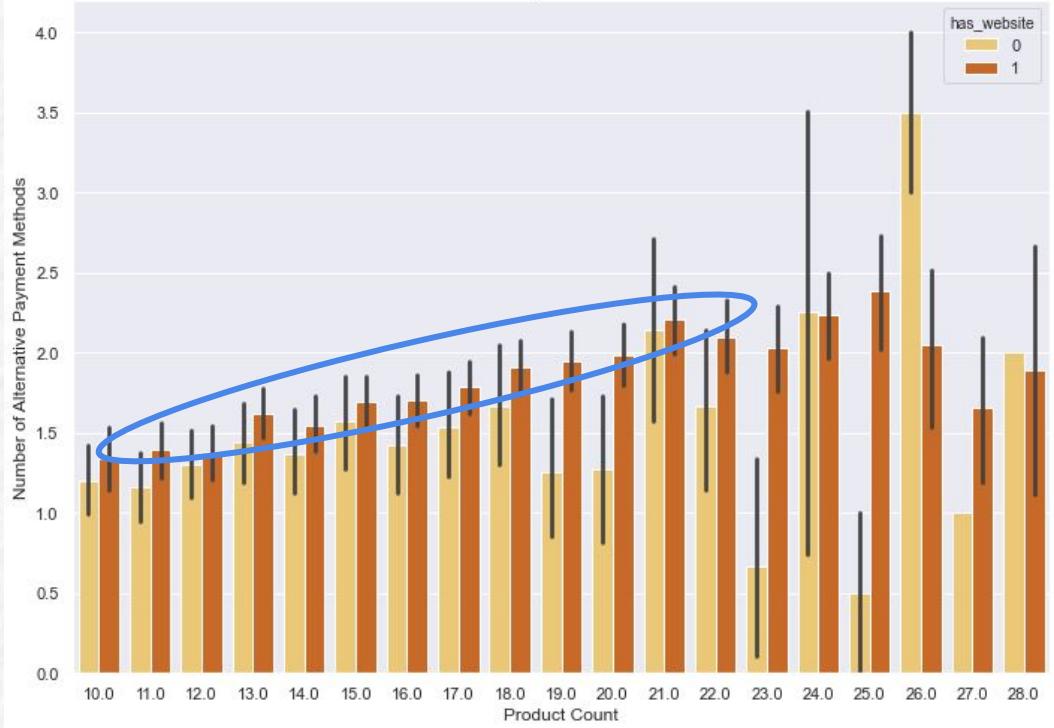
Distribution of Product Count



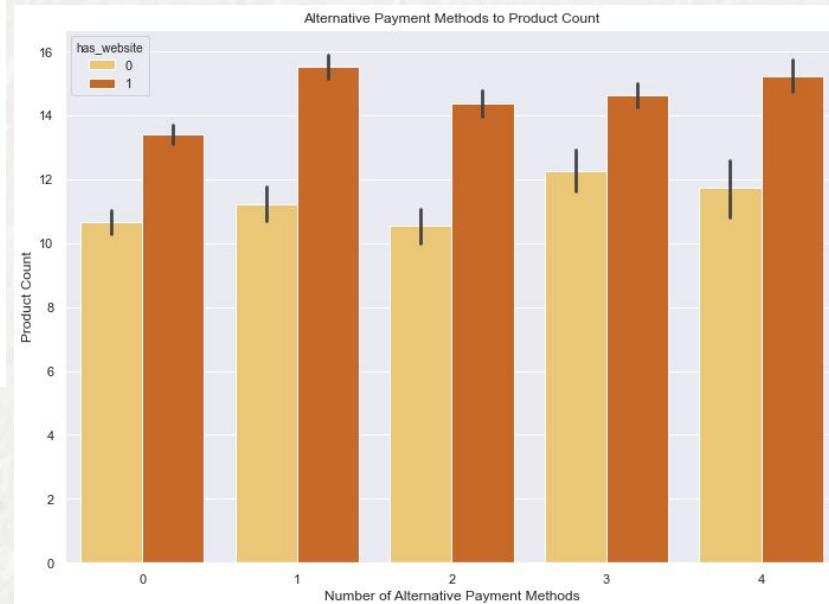
Both graphs show trends towards a greater variety of products increasing the likelihood that the market accepts alternative payments.



Website by Product Count



Interestingly: I found that whether or not a farmers market had a website was a better indicator of both product variety and



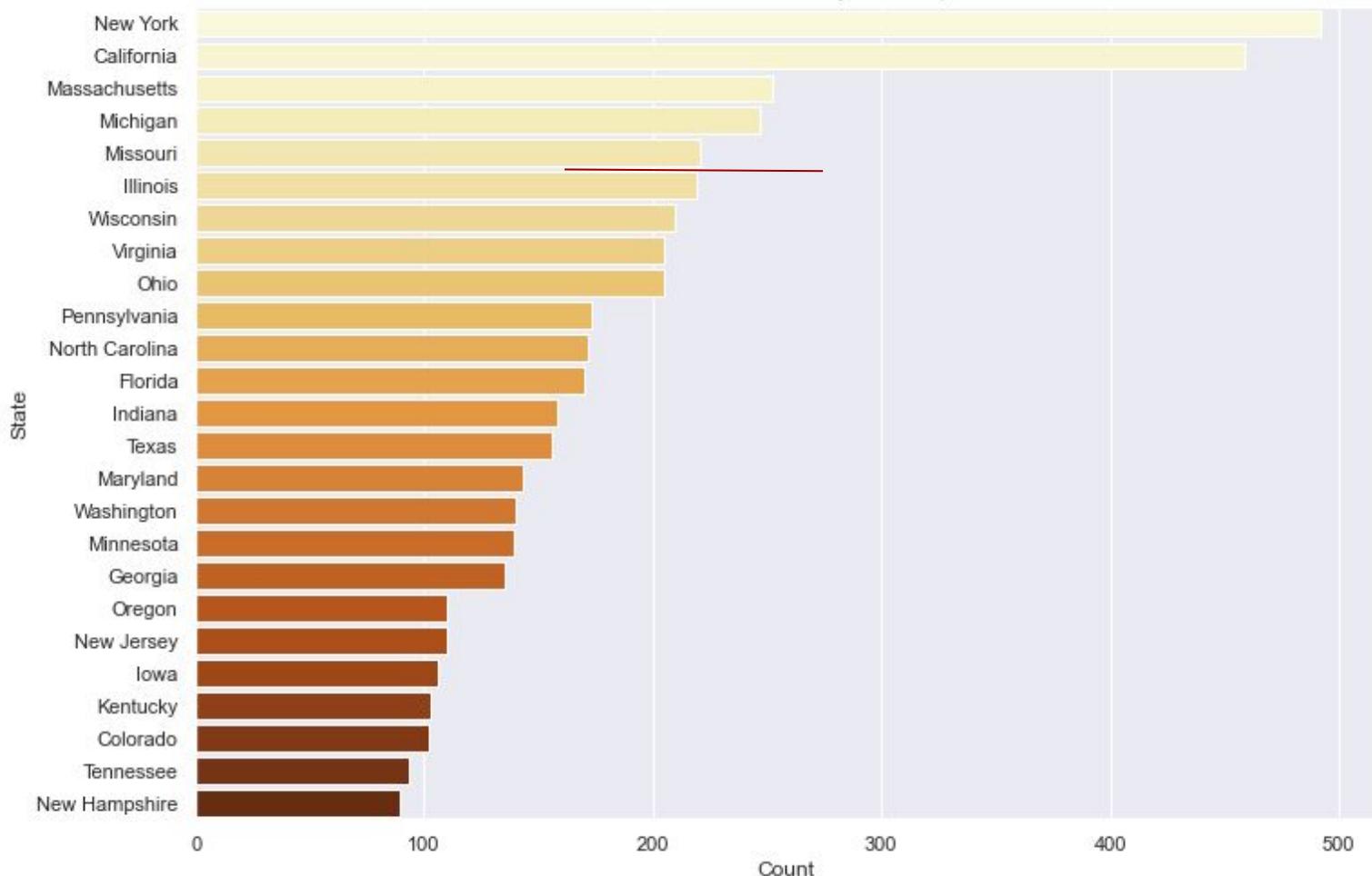
EDA: Question 2



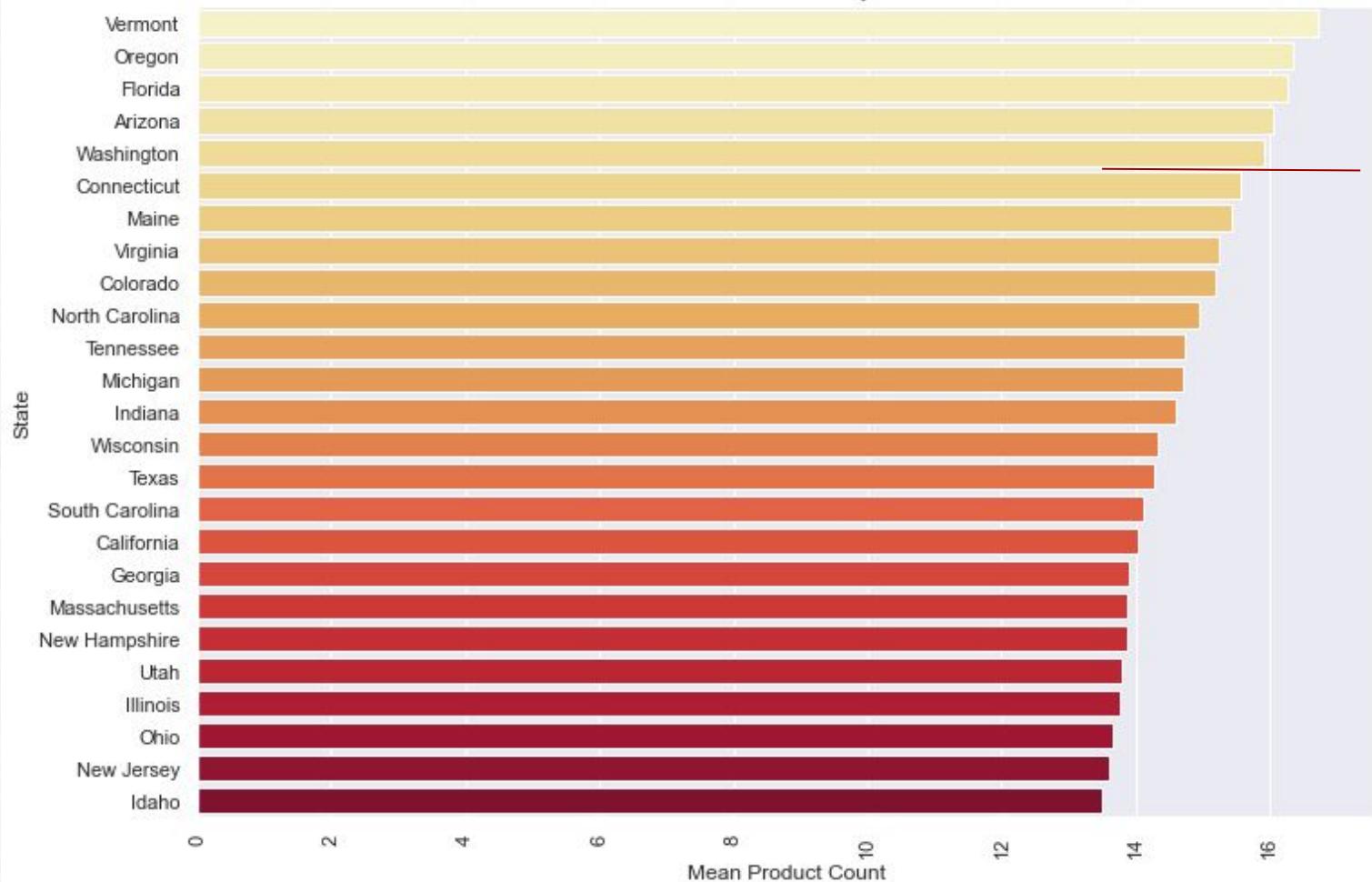
What is the correlation between a State's population and finances to Market availability?



Farmers Markets Count by State: Top 25



Mean Product Count by State



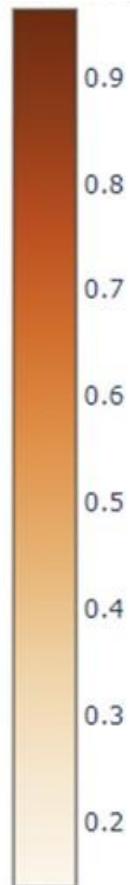
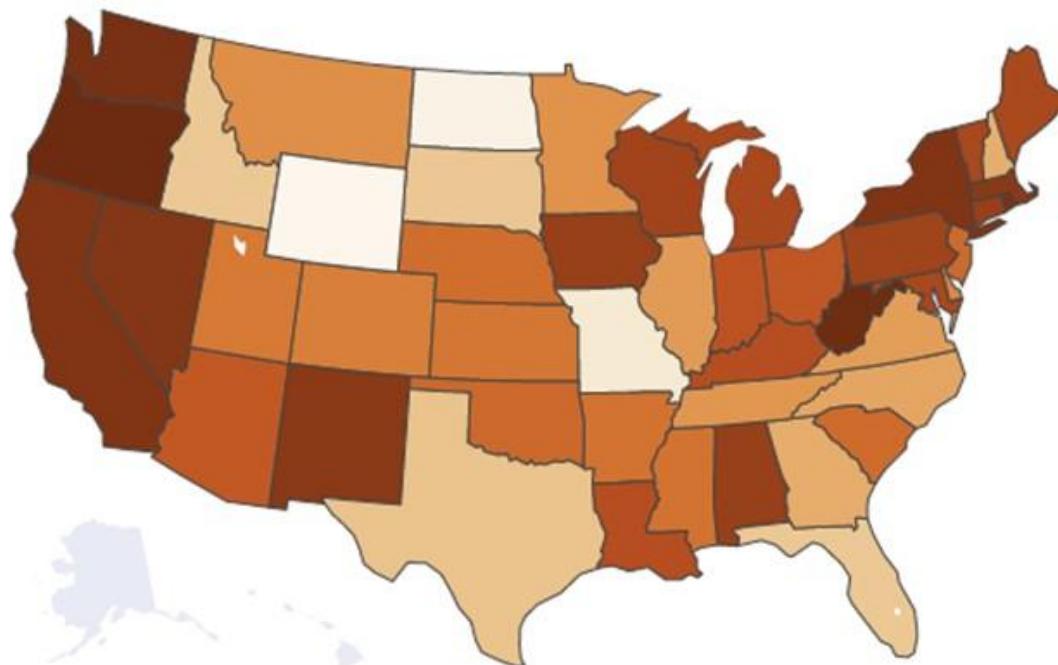
EDA: Question 3



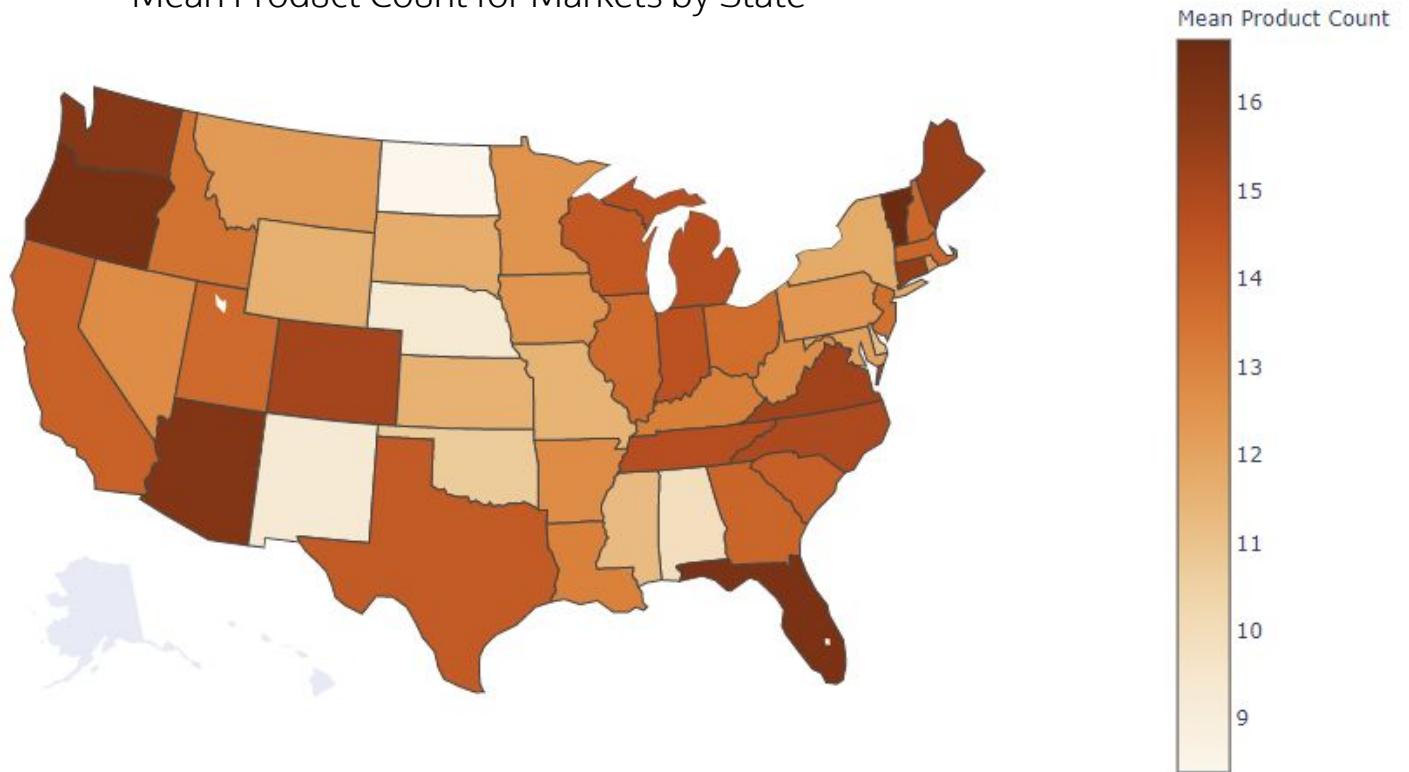
How do urban areas compare to rural areas in terms of accessibility
(both to the product itself and to alternative payment methods)?



Percentage of Markets with Alternative Pay by State



Mean Product Count for Markets by State

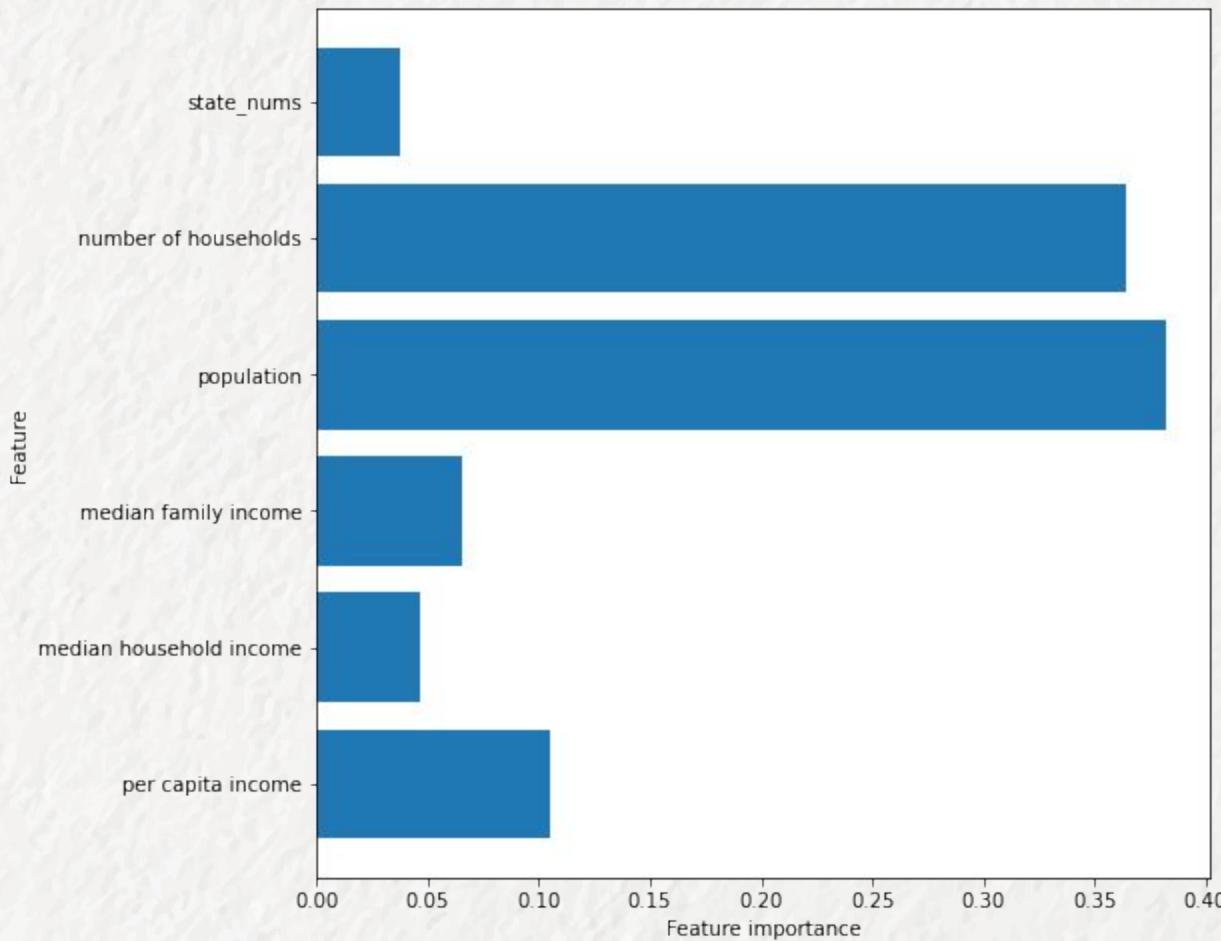


04

Prediction Modelling

Comparing the data from **farmers markets** in the continental United States and respective financial information





Accuracy & Precision

Accuracy

86.46%

Precision

0.0: 0.67
1.0: 0.89

Recall

0.0: 0.57
1.0: 0.92

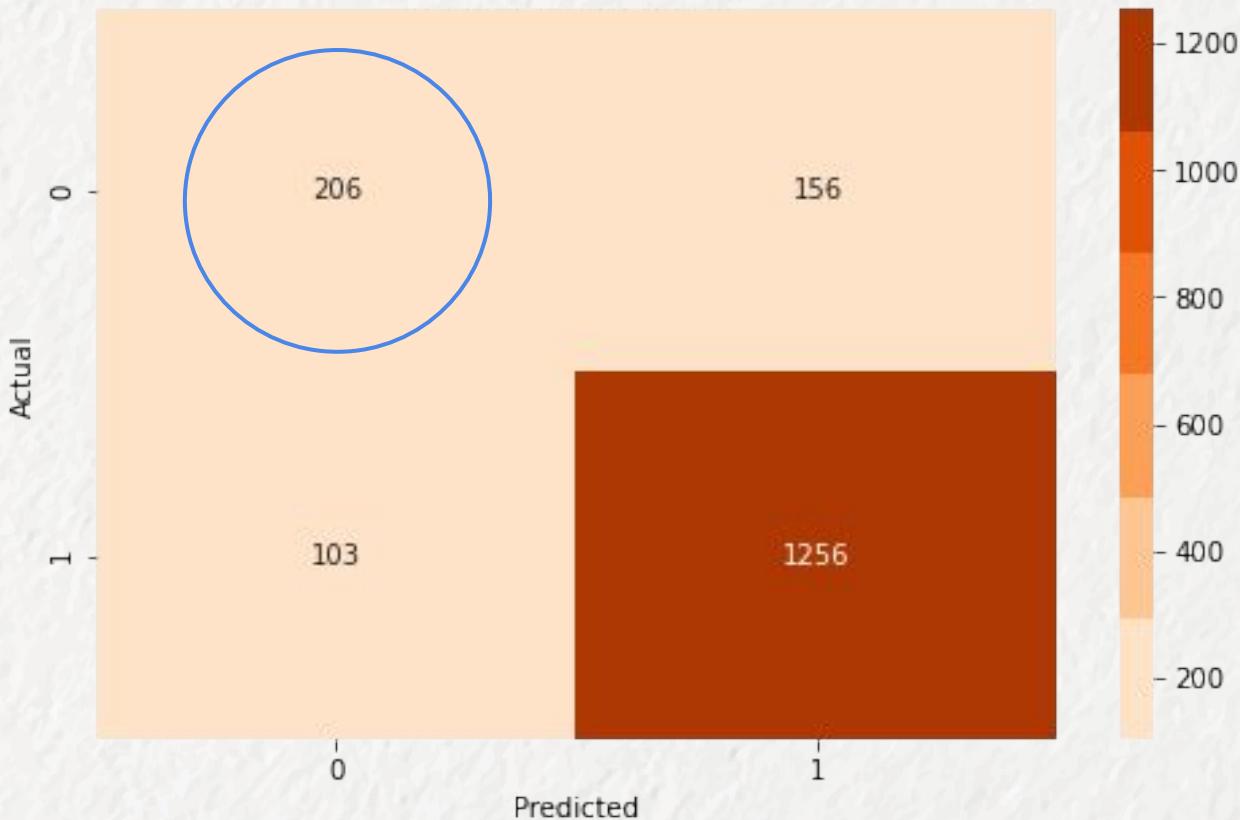
Goals

Find more parameters for training in an effort to increase accuracy and precision.

Cleaning and including zip codes would both add a feature and I believe have a significant impact on scores.



Confusion Matrix-RF



05 Future Work



06

Conclusion & Wrap Up

Comparing the data from **farmers markets** in the continental United States and respective financial information



Benefits of Farmers' Markets



Access to fresh,
nutritious foods

Supports Local
Economy



Encourages Healthy
Communities



Good for the Environment:
Reduces "Food Miles"

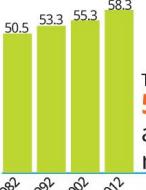


PUT YOUR MONEY WHERE YOUR FARMER IS

THE STATE OF AMERICAN FARMERS

Between 1992 - 2012
31 MILLION acres of farmland were lost to development.

Source: American Farmland Trust, 2018



The average farmer is over **58 years old** and approaching retirement.

Source: National Young Farmers Coalition, 2017

New farmers get their start at markets.
43% of farmers at farmers markets have been farming for **UNDER 10 YEARS**

Source: USDA Census of Agriculture, 2012

Shake the Hand that Feeds You

Find us online to learn more about farmers markets and find one near you!

farmersmarketcoalition.org | [/ fmc.org](https://fmc.org) | [@fmcORG](https://fmcORG) | [/ farmersmarketcoalition](https://farmersmarketcoalition) | [/ fmcORG](https://fmcORG)



Thank You!!!

