Factors in Unemployment During COVID-19 Pandemic

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Business Problem

Problem: The coronavirus pandemic and efforts to curtail it have impacted households' employment status and economic well-being in a variety of ways.

Solution: Create a classification model to understand which factors contribute most to unemployment.

Impact: Using these factors, policymakers can target which populations will need aid the most.
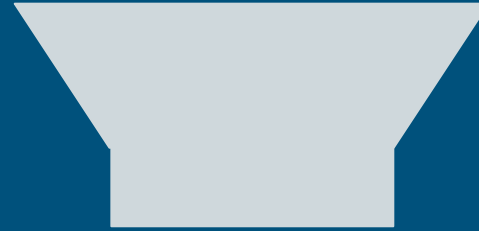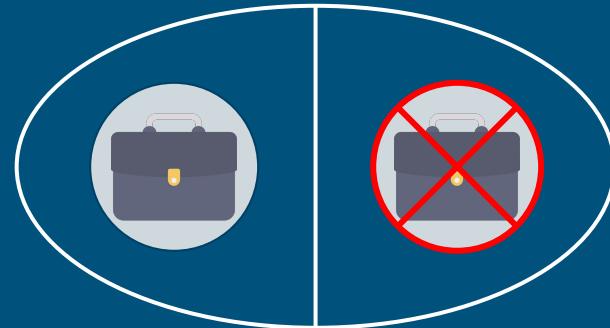
Demographic Features

Labor Features

Environmental Features

Classifying Employment Status

Data Overview

Sources

United States Census Bureau

The New York Times

kaggle

Description

- ~3900 adult heads of household employed as of April 2020

- ~70 features of each individual created

Demographic

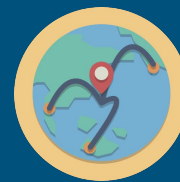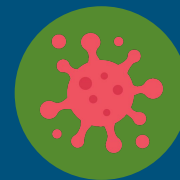### Labor

Environmental

Marital Status

Age

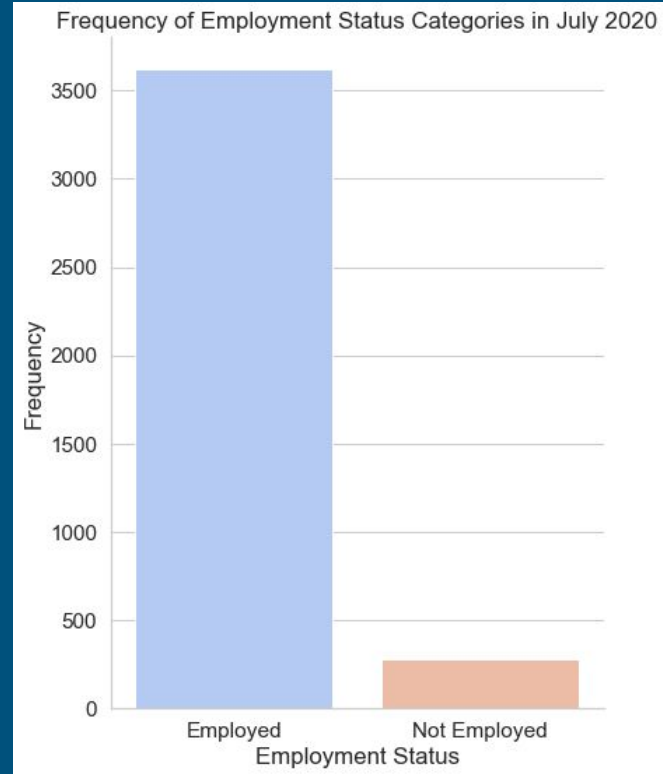### Hours Worked

COVID-19 Increases

State Politics

Status of Employment in July 2020

About 300 people in our population became unemployed or left the workforce from April to July
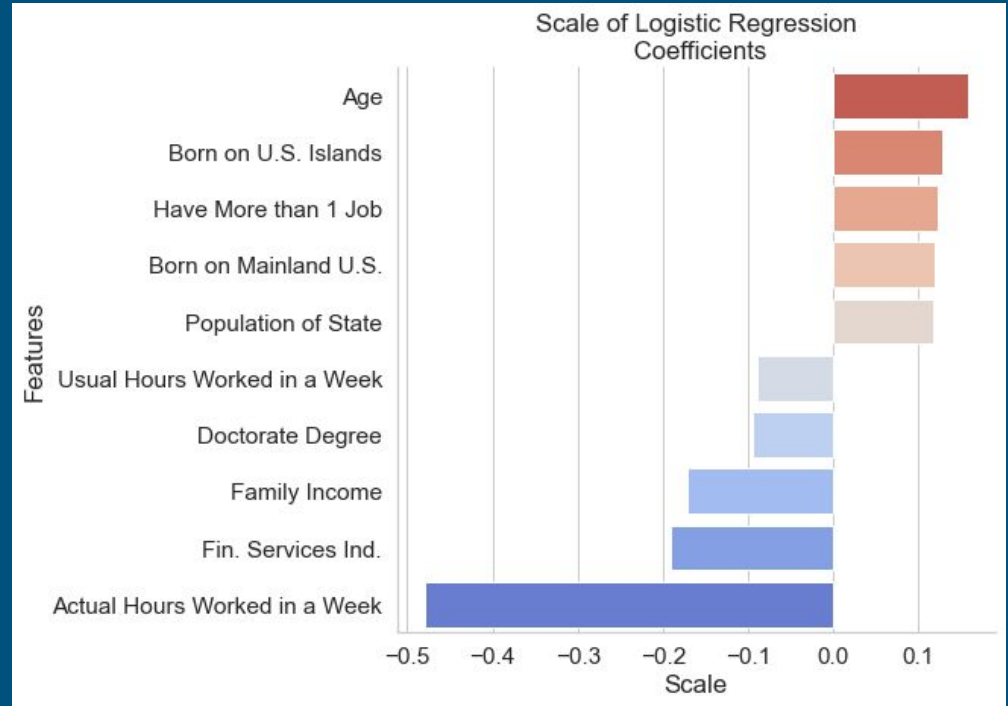
Expected Outcomes:

- Workers in hospitality industry hit hardest
- Older workers would drop out of employment due to COVID concerns
- Political alignment of state would have an impact

Frequency of Employment Status Categories in July 2020
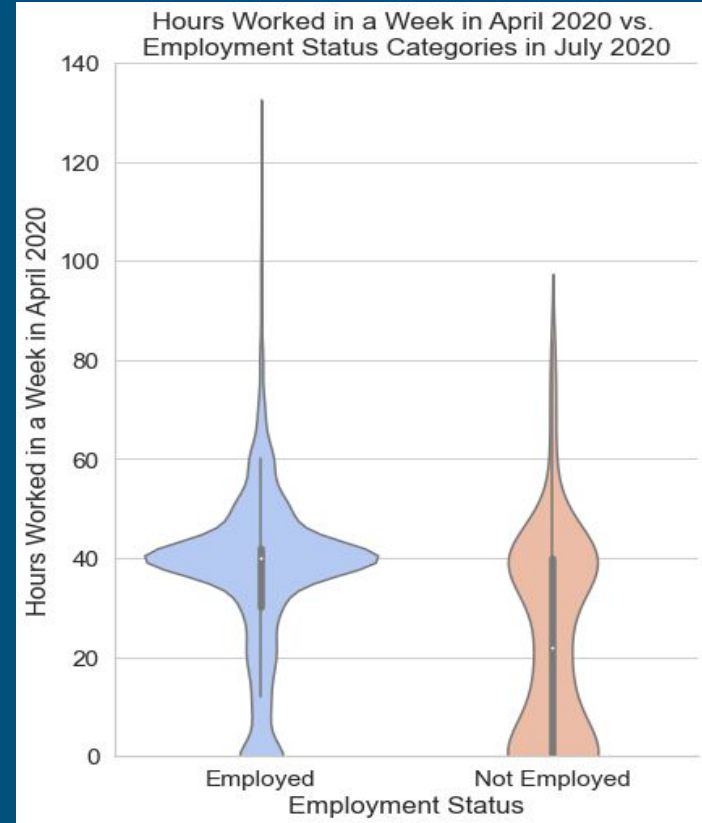
Findings - Factors in Unemployment

- The more you work and the more money you make, the more likely you are to be employed

- Unexpectedly, hospitality industry did not appear in the top 10 most important factors

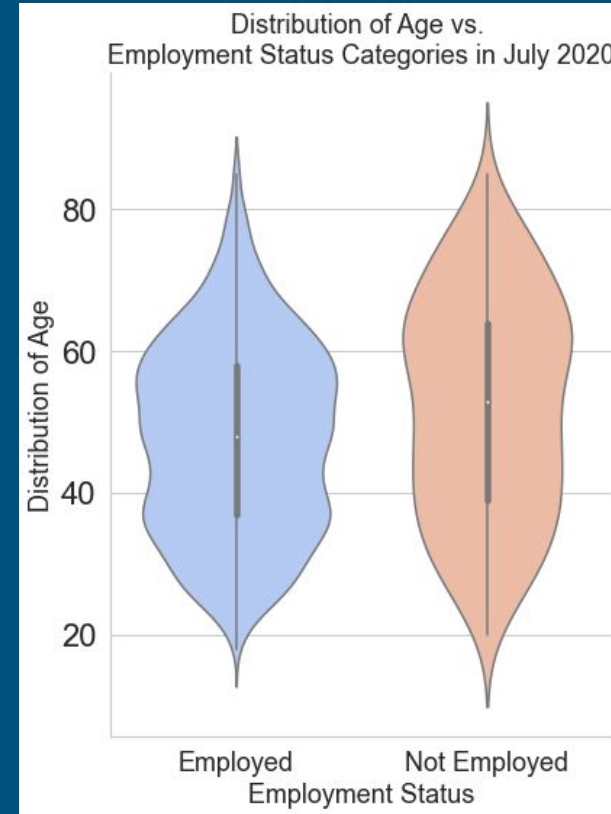Scale of Logistic Regression Coefficients

Hours Worked

- The distribution of people who lost their jobs had two clusters, one for full time and one for part time.

- People who were still employed in July worked longer hours and tended to not have two jobs

Hours Worked in a Week in April 2020 vs. Employment Status Categories in July 2020

Age

- Surprisingly normal distribution given population is heads of household

- Above age 60 more people went out of the workforce than those below 40

Distribution of Age vs. Employment Status Categories in July 2020

Recommendations

- We should be searching for high risk areas based on the proportion of part-time employees, total household income and the average age.

Next Steps for Improving Model

- Look for more granular geographic data
- Find a "control" dataset to compare our results
- Use historical data (Dot com bubble burst, housing crisis)

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