Paycheck Protection Program (PPP) in California

Payroll Protection Program

What is the Payroll Protection Program (PPP)?

- The PPP was implemented in April 2020 to provide relief to small businesses that were impacted the coronavirus by providing 2.5 months of a company's average payroll that would be 100% forgivable if funds were used to retain employees.
- In January 2021, a second round of relief (PPS) was offered with stricter criteria including proof of a 25% revenue reduction in at least one quarter of 2020 compared to the prior year.

What data do we have?

- Since the loans were funded through the SBA, the loan information has been made publicly available. Our data set includes the all the PPP loans that were funded in California for both PPP and PPS.

Objective

- With this data set we hope to gain insights on how the loans were distributed across California.

Objectives

To be specific, we tried to answer the following questions:

1. What is the total count and the total amount of loans disbursed?
2. Which banks provided most of the loans?
3. What is the relationship between size of the loan and number of employees on the payroll?
4. Did business-owners of a particular race/ethnicity get more loans? If yes, is it statistically significant?
5. What is the industry-wide distribution of the loans? Which industries got more loans?
6. What is the geographical distribution of the loans made? Which county got the most loan?
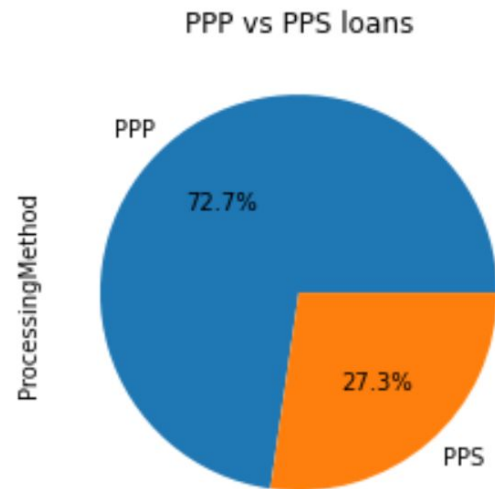
What is the total count of loans disbursed? What is the total amount of loans disbursed?

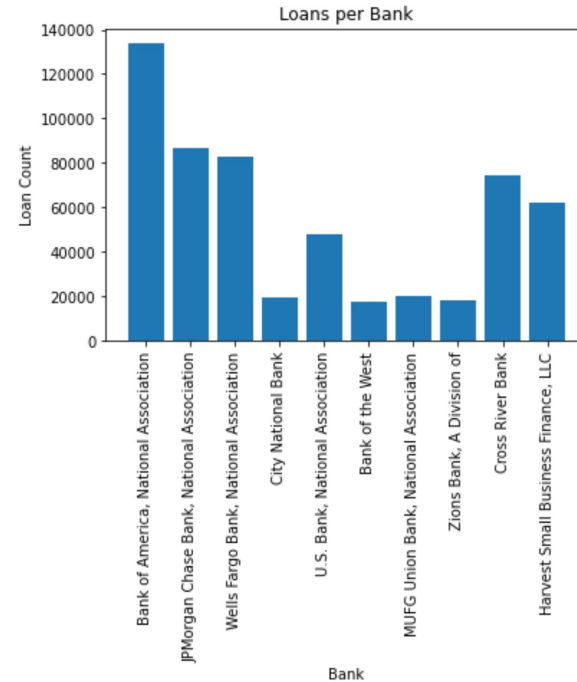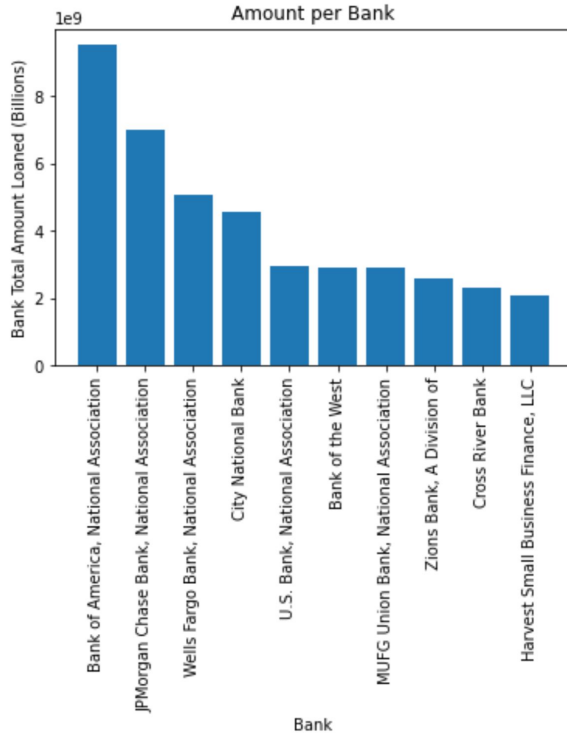-Total Amount of Loans ($B): $103B

-Total Loan Count: 1.3 Million

Amount per Loan Type
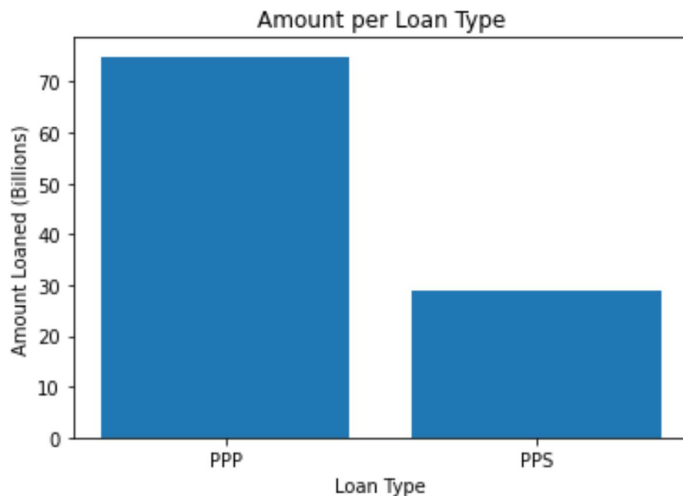
ProcessingMethod	Total Amount Loaned (B$)
PPP	74.986895
PPS	28.886138

PPP vs PPS loans

	Percentage of loans	Total Count
PPP	72.71	946907
PPS	27.29	355334

Which Banks provided most of the loans?
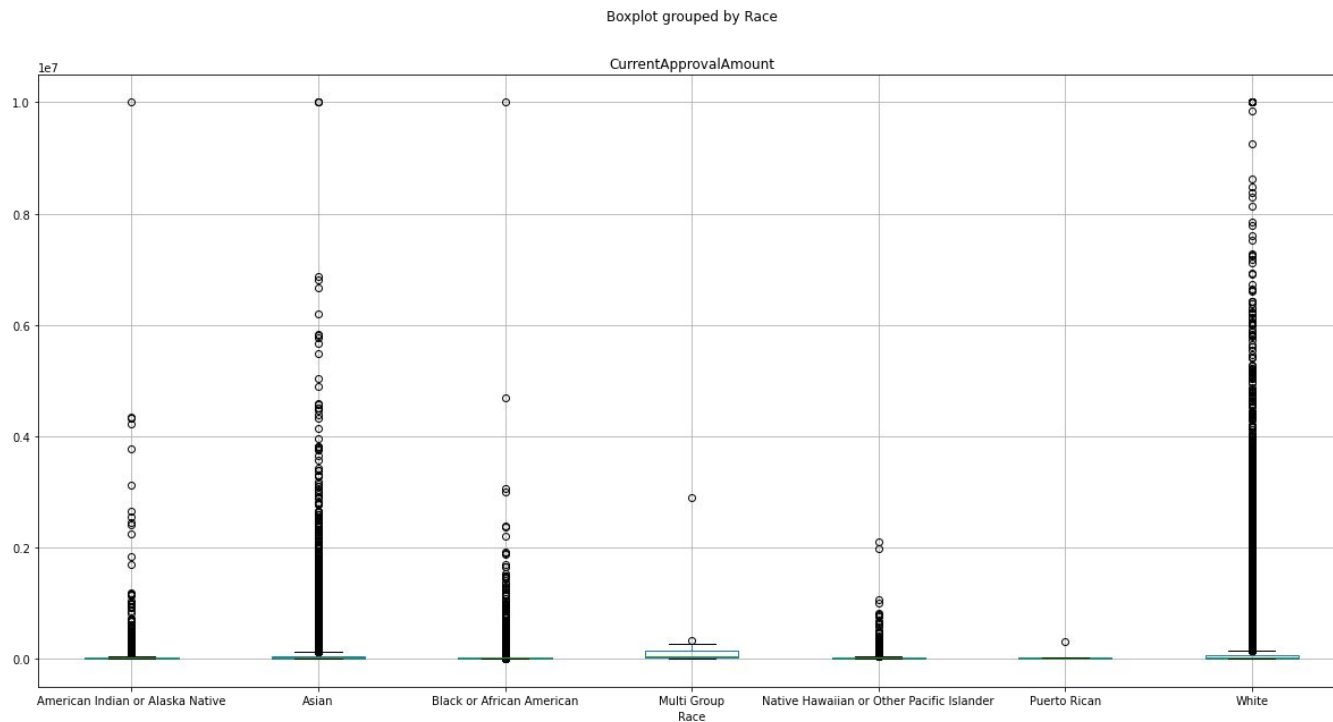

Amount per Bank

Loans per Bank

Does a high employee count increase the loan amount?

- Positive correlation
- PPP (total) is a strong correlation (=0.72)
- Black is a moderate correlation (=0.61)

- Can suggest that the size of the loan is determined on the employee count.
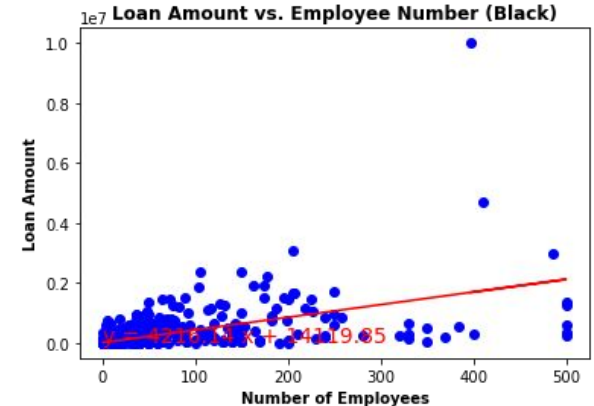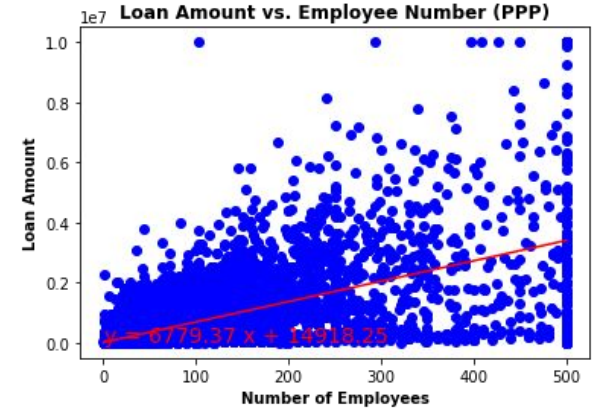
What ethnicity benefits the most from PPP?

Boxplot grouped by Race

CurrentApprovalAmount

Which ethnicity benefited the most?

- Method: Student's T-test
- Multi-group is not statistically different from any group(p>0.05) except white
- White group is statistically different from all groups(p<0.05)

- White-owned small businesses benefited the most from PPP

|	CurrentApprovalAmount
Race	
American Indian or Alaska Native	56916.692364
Asian	65242.057261
Black or African American	22583.140304
Multi Group	223578.550000
Native Hawaiian or Other Pacific Islander	34632.503576
Puerto Rican	55588.071429
White	99394.734056

Which Industries Got More Loans?

- The dataset included NAICS code for each small business that got a loan.
- The North American Industry Classification System or NAICS is a classification of business establishments by type of economic activity (process of production).
- It is used by government and business in Canada, Mexico, and the United States of America.
- From the NAICS codes we could come up with the industry-wide loan distribution.
- Service industries got more loans compared to manufacturing.

NAICS	Industry	Total Count of Loans	Percentage
54	Professional, Scientific, and Technical Services	176887	0.139
81	Other Services (except Public Administration)	171711	0.134
62	Health Care and Social Assistance	129833	0.102
48	Transportation and Warehousing	101188	0.079
72	Accommodation and Food Services	100846	0.079

Industry-wise Loan Distribution

Industry Wide Loan Counts

Industry Wide Loan Distribution
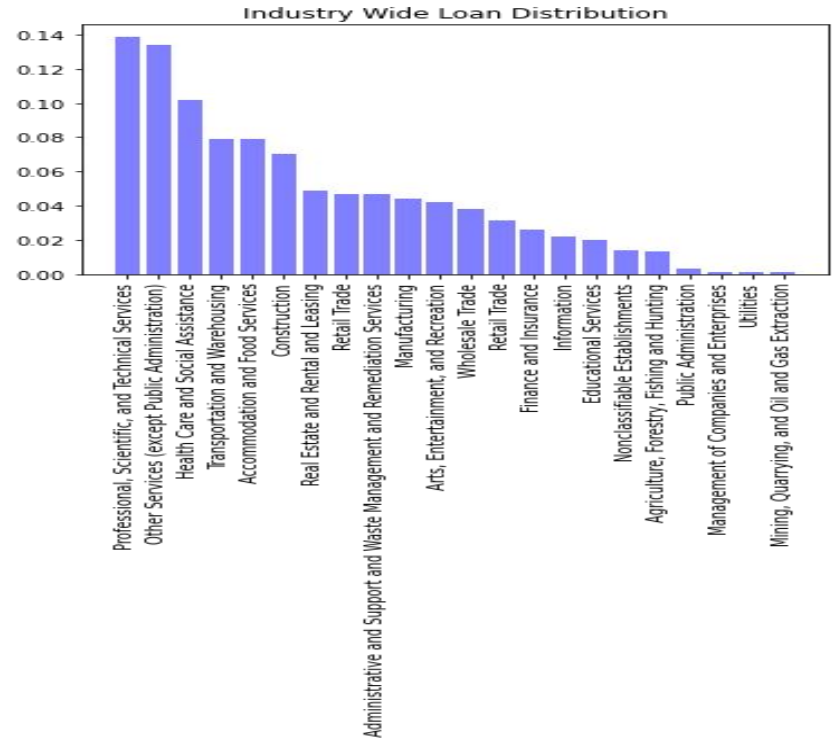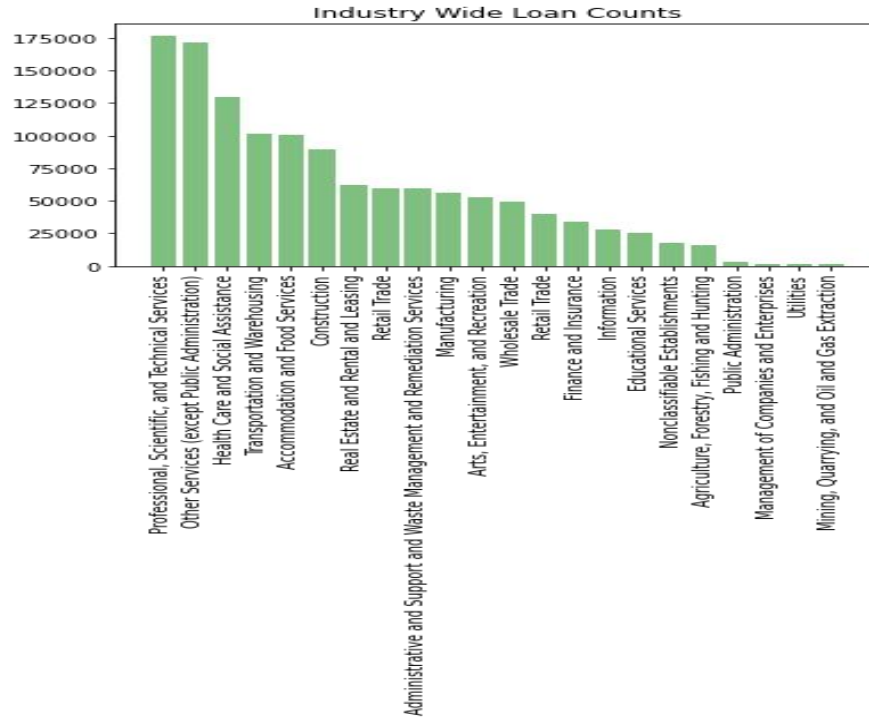
What is the geographical distribution of PPP loans in California?
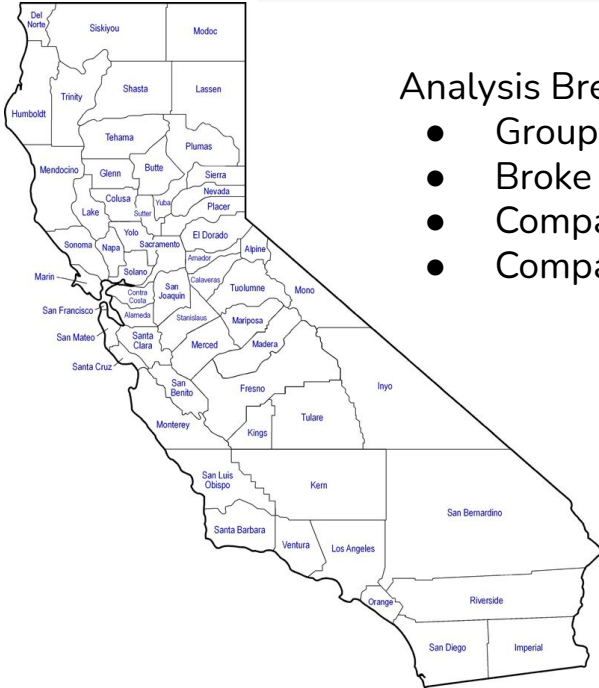
Analysis Breakdown
- Grouped data set by counties
- Broke out loans by PPP and PPS
- Compared total loan amounts by counties as
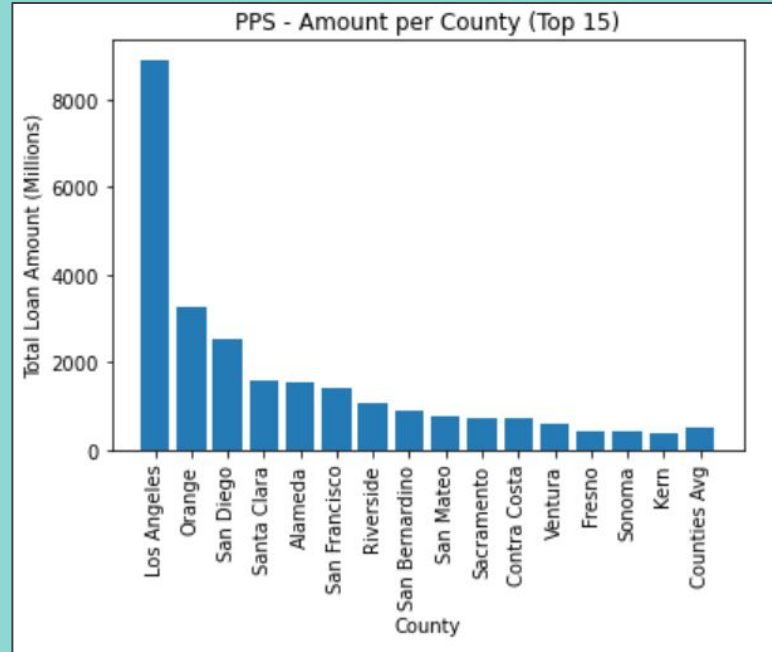- Compared total loan amounts per the counties population

Results
- Total loan amounts for both PPP and PPS seemed consistent with population size
- Loan amounts per capita showed more concentration in counties surrounding the bay area
- More rural counties seemed to have lower loan amounts per capita
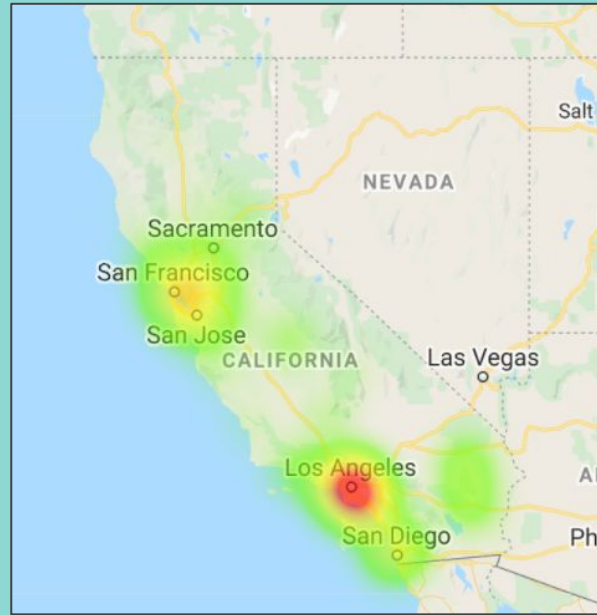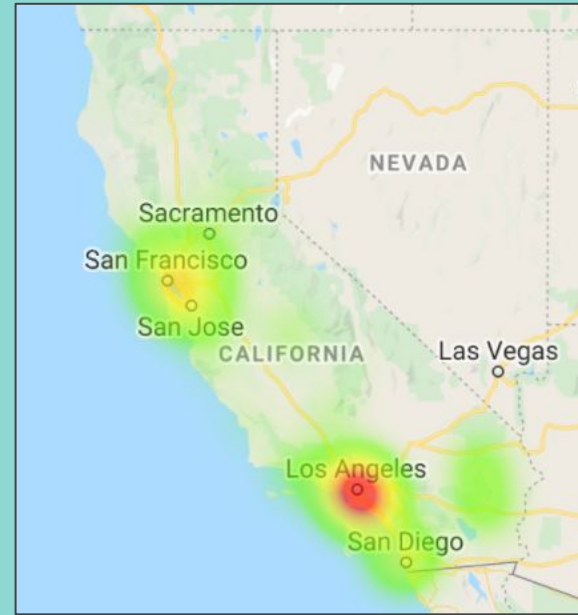
County Breakdowns - Total Loan Amount
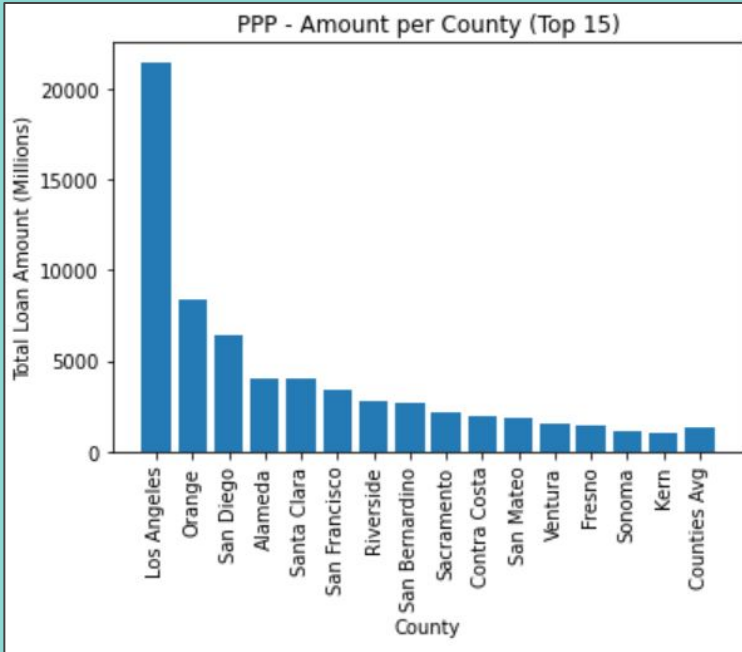
PPP - Loan Total

PPS - Loan Total

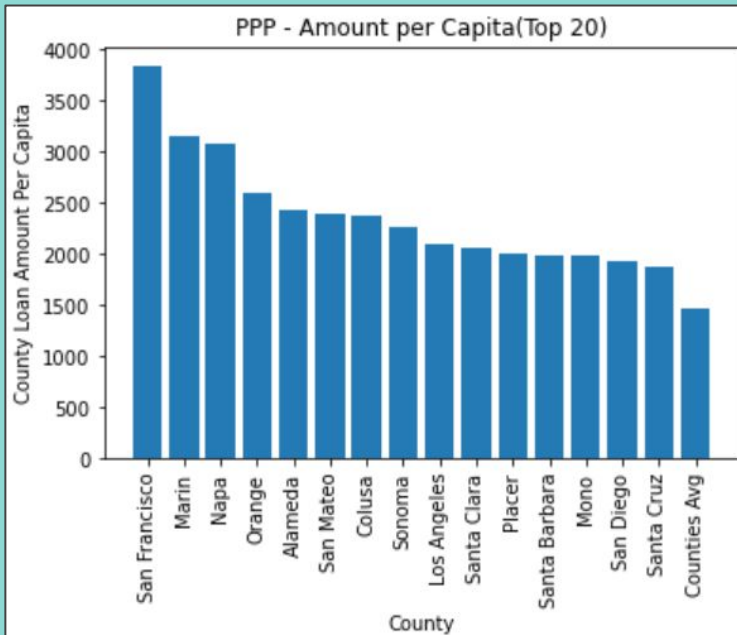# County Heat Maps - Total Loan Amount
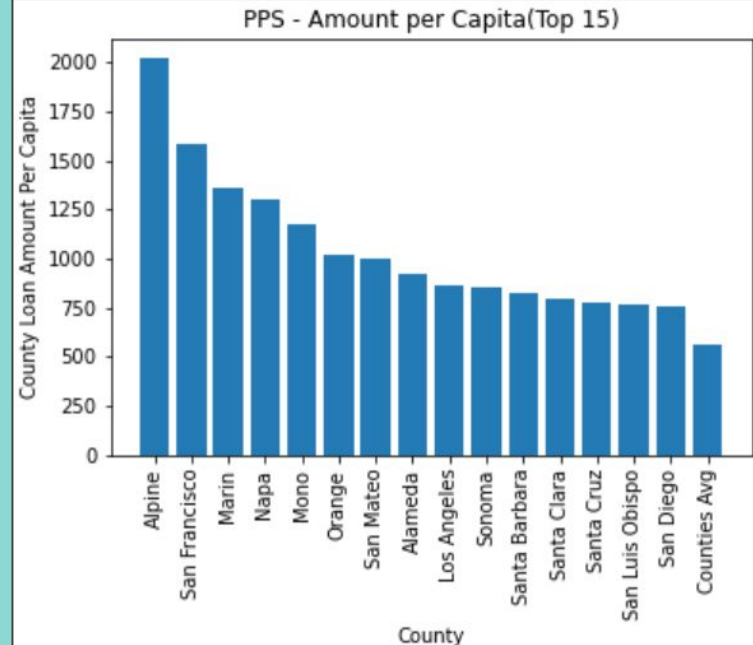

PPP - Loan Total

PPS - Loan Total

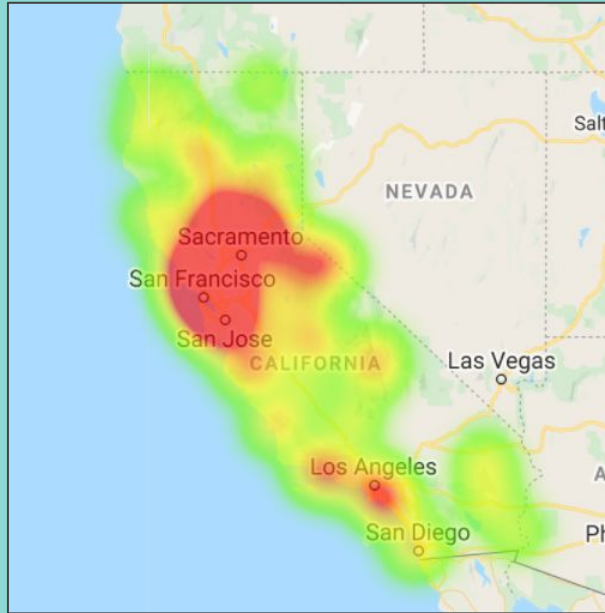# County Breakdowns - Amount Per Capita

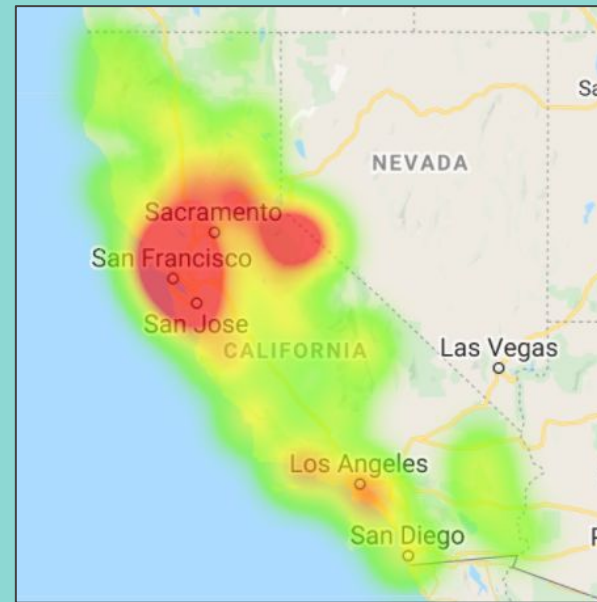PPP - Loan Total Per Capita

PPS - Loan Total Per Capita

County Heat Maps - Amount Per Capita

PPP - Loan total per Capita

PPS - Loan total per Capita

Summary

- For 74% of the small business, the first round of government backed loans was enough to keep the business from having a 25% reduction in revenue in 2020 compared to prior year.
- Bank of America, JP Morgan Chase and Wells Fargo had the most presence in facilitating loans in California measured both by dollar value and loan counts.
- The data suggests that the number of employees does influence the loan amount.
- White-owned small businesses benefited the most in comparison with other ethnicities.
- The service industry needed more loans compared to manufacturing. The top 5 service industries accounted for more than 53% of the total loan counts.
- Counties clustered around the Bay area received the most loans per capita for both PPP and PPS

Open For Questions!

Thank you!

Paycheck Protection Program