Exploring Trends in California's Homeless Populations

Project Team

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Project Overview

This project explores homelessness in California and possible relationships in the following areas:

- Weather
- Unemployment Rates
- Housing
- Vocational Rehabilitation
- Education

Data Sources

Source	Description
California Open Data Portal	Yearly statewide and by-Continuum of Care total counts of individuals receiving homeless response services and use of vocational rehabilitation
State of California Employment Development Dept. Data Library	Unemployment data
US Census Bureau (American Community Survey)	Estimated population, education, and housing information based on annual data collection
National Centers For Environmental Information	Weather Data - Average Temperature & Precipitation

Additional Information

- **Continuum of Care (CoC)**: Regional homelessness service coordination and planning bodies. California has 58 counties but only 44 Continuums of Care because some counties are grouped into a single CoC.

- **Limitations of the Analysis**
    - Reliable data about homeless populations is difficult to obtain. Types of counts:
        1. Annual Point-in-Time counts (single night in January)
        2. "Experiencing Homelessness" = counting people as they access services
    - Public data on homeless counts only available on an annual basis
   - Limits ability to perform detailed time series analysis

Continuums of Care with the Largest Homeless Populations

**Top 10 by count and as a percentage of total population**
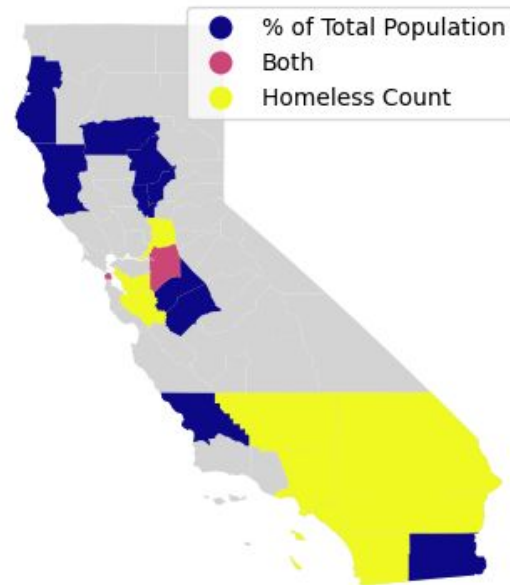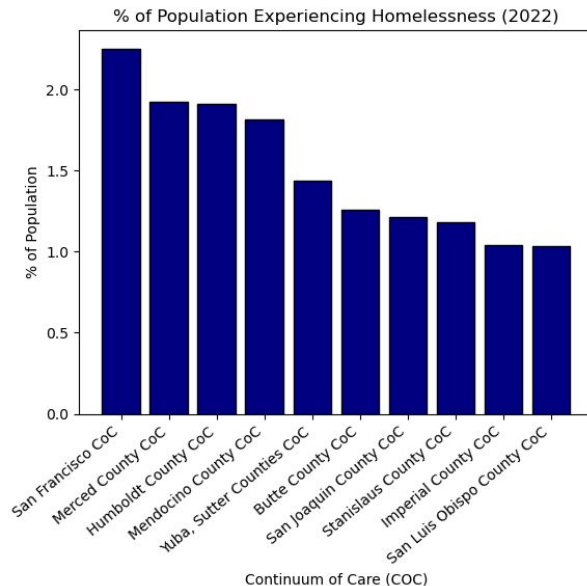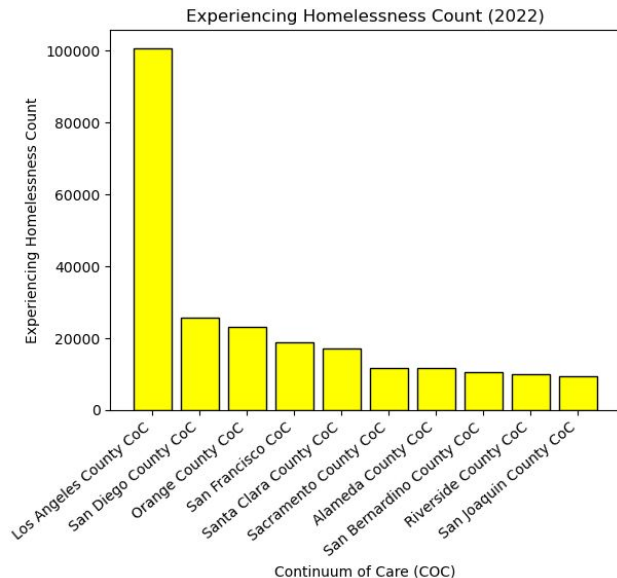
- San Francisco and San Joaquin are the only CoCs that are in the top 10 for both total homeless count and homeless count as a percentage of total population
- Southern California had a larger population of individuals experiencing homelessness in 2022, however, that population was more geographically dispersed than the Northern California population
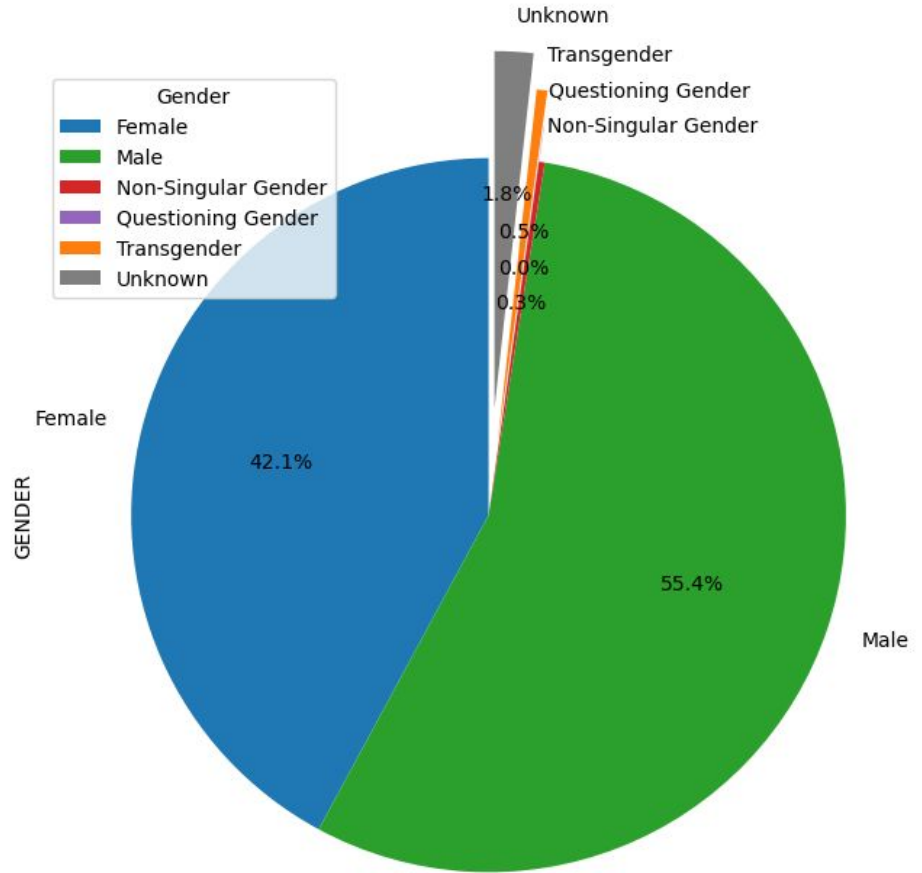
Demographics
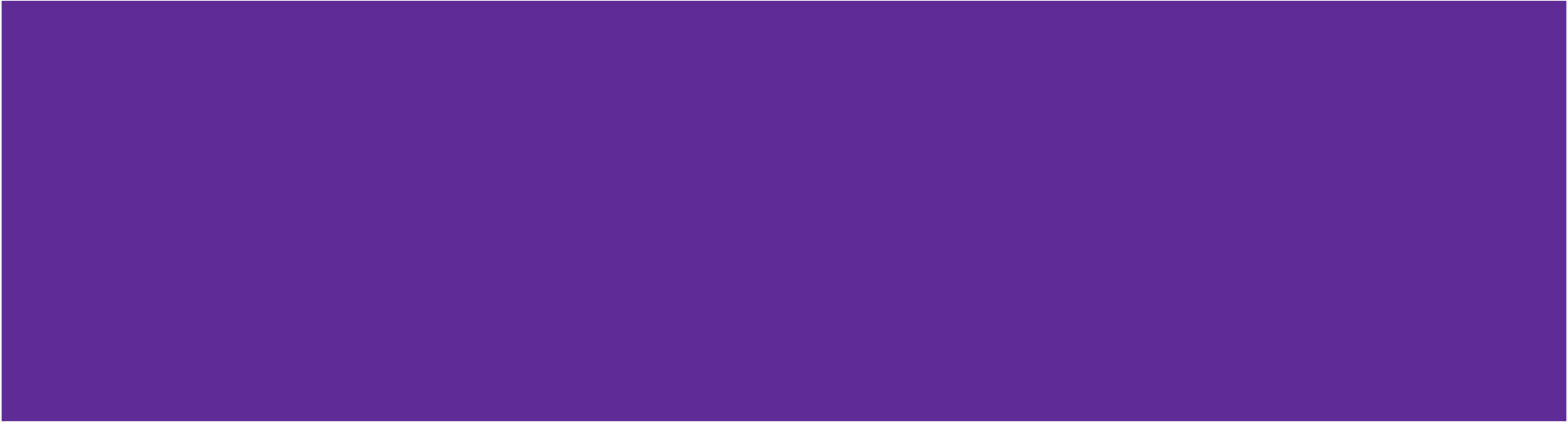
What is the composition of homeless individuals in terms of demographic characteristics?

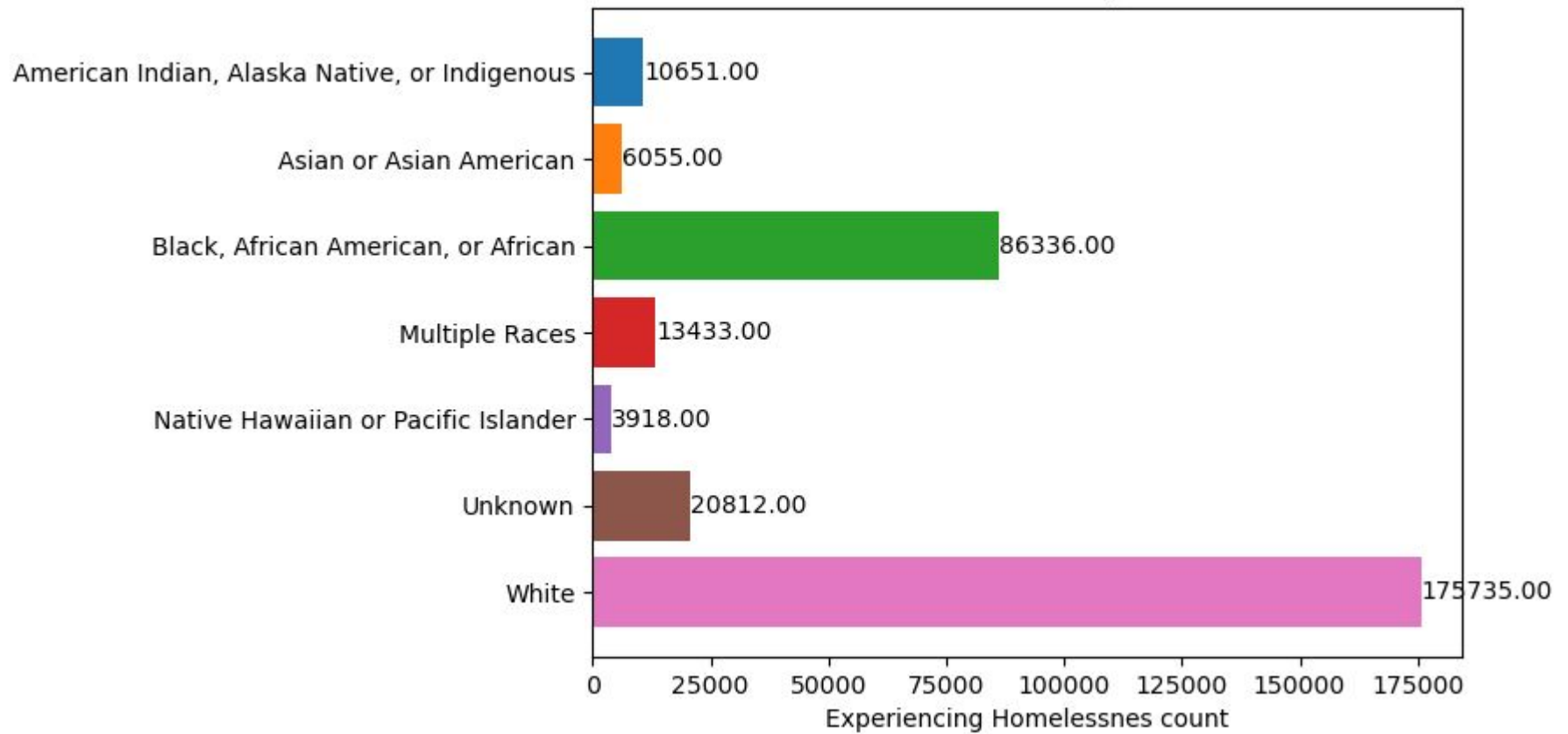Experiencing Homelessness by Age Group
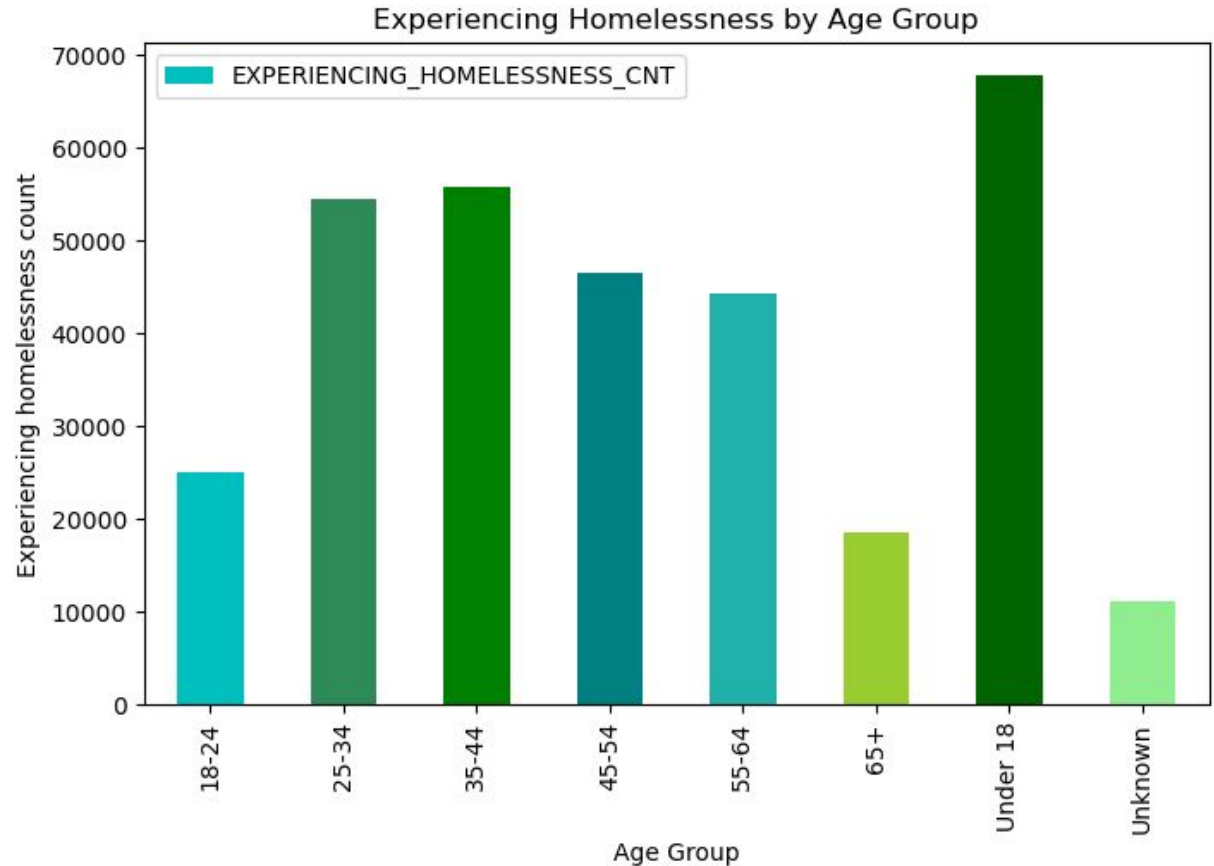
Experiencing homelessness by Gender

In the year 2022, the male homeless population in California was found to be higher than the female population, albeit with only a marginal difference between the two groups.

Homeless count by Race

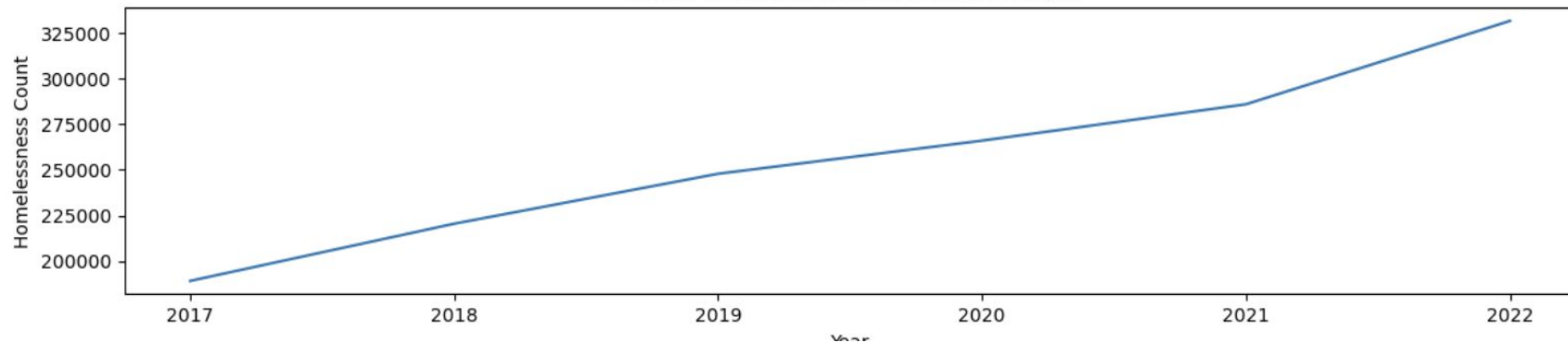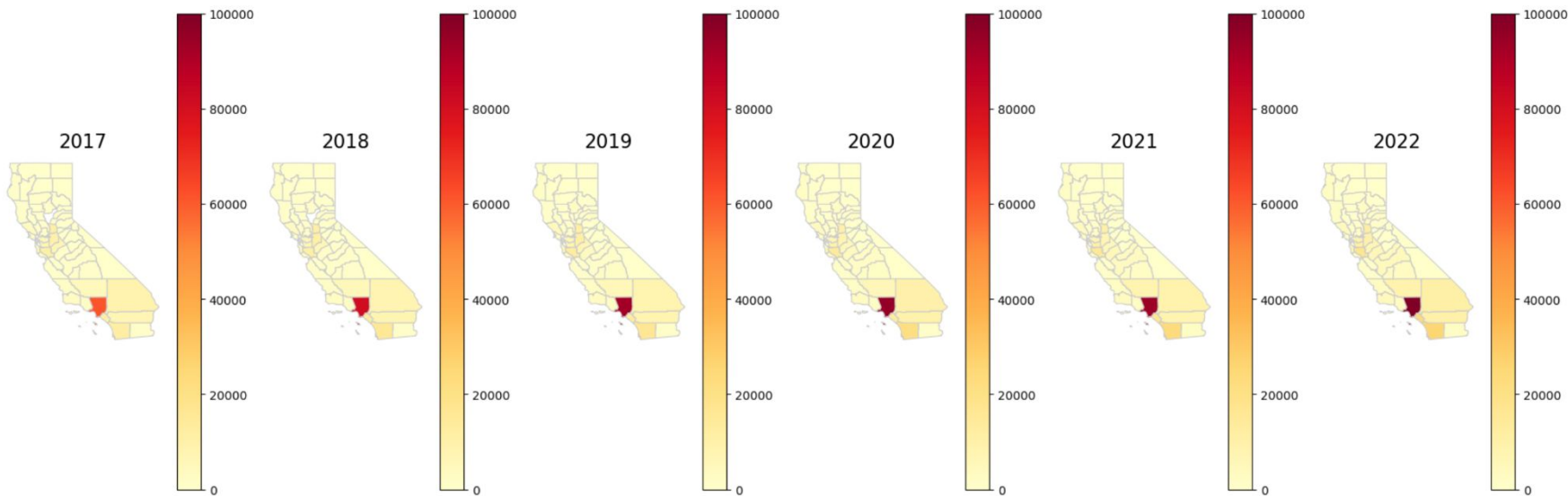| Race	Experiencing Homelessness count
American Indian, Alaska Native, or Indigenous	10651.00
Asian or Asian American	6055.00
Black, African American, or African	86336.00
Multiple Races	13433.00
Native Hawaiian or Pacific Islander	3918.00
Unknown	20812.00
White	175735.00

Weather

Trends in California Homelessness Count

Yearly homeless count per county

Counties ordered by the largest change in homelessness count between 2017 and 2022:

	County	Change
0	Los Angeles	39349.0
1	San Francisco	14392.0
2	San Diego	13889.0
3	Orange	12635.0
4	Santa Clara	6803.0
5	Alameda	4915.0
6	Merced	4870.0
7	Kern	4059.0
8	Contra Costa	3853.0
9	Riverside	3358.0
10	Madera	3174.0
11	Fresno	3174.0
12	San Bernardino	1981.0
13	Humboldt	1606.0
14	Tulare	1568.0
15	Kings	1568.0
16	Imperial	1361.0
17	Sacramento	1308.0
18	Placer	1238.0
19	Butte	1201.0
20	San Luis Obispo	1168.0
21	Santa Barbara	1091.0
22	Ventura	969.0
23	San Mateo	938.0
24	San Benito	927.0
25	Monterey	927.0
26	Mendocino	916.0
27	Yolo	905.0
28	Sonoma	868.0
29	Nevada	545.0
30	El Dorado	372.0
31	Lake	317.0
32	Tehama	275.0
33	Modoc	270.0
34	Lassen	270.0
35	Sierra	270.0
36	Plumas	270.0
37	Del Norte	270.0
38	Siskiyou	270.0
39	Shasta	270.0
40	Solano	270.0
41	Stanislaus	214.0
42	Santa Cruz	187.0
43	Marin	178.0
44	Trinity	148.0
45	Colusa	148.0
46	Glenn	148.0
47	Mariposa	99.0
48	Calaveras	99.0
49	Tuolumne	99.0
50	Amador	99.0
51	Inyo	-14.0
52	Mono	-14.0
53	Alpine	-14.0
54	Napa	-45.0
55	San Joaquin	-199.0
56	Sutter	NaN
57	Yuba	NaN

Change in Homelessness Count per County between 2017 and 2022
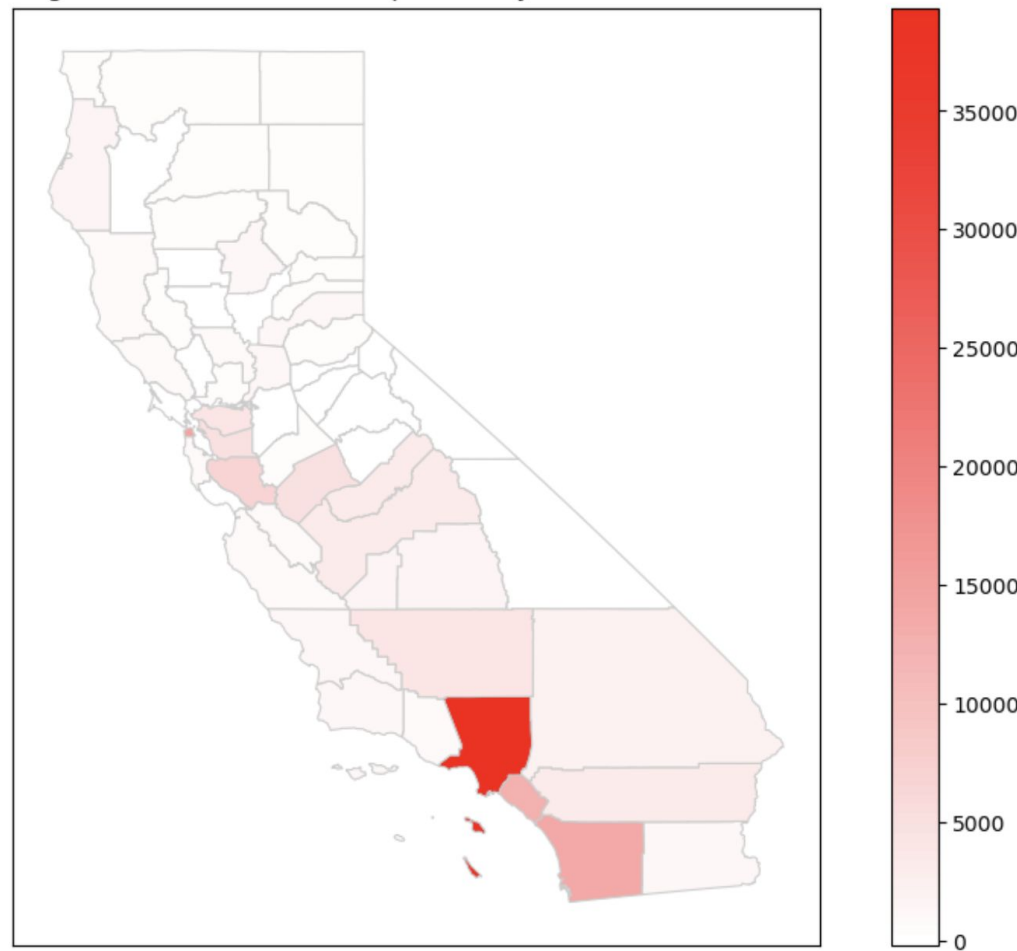
Counties ordered by the largest change in average weather between 2017 and 2022:

Year	County	Change	Average Weather 2017	Average Weather 2022
0	Butte	1.0	61.1	62.1
1	Tehama	0.6	60.1	60.7
2	Siskiyou	0.6	50.0	50.6
3	Amador	0.5	59.5	60.0
4	Glenn	0.5	61.4	61.9
5	El Dorado	0.4	55.3	55.7
6	Shasta	0.4	56.6	57.0
7	Trinity	0.4	53.7	54.1
8	Alpine	0.3	45.4	45.7
9	Calaveras	0.3	60.0	60.3
10	Yuba	0.2	62.3	62.5
11	Placer	0.2	55.0	55.2
12	Fresno	0.2	57.3	57.5
13	Madera	0.2	57.8	58.0
14	Contra Costa	0.2	61.5	61.7
15	Mariposa	0.2	57.0	57.2
16	Tulare	0.1	56.0	56.1
17	Yolo	0.1	63.1	63.2
18	Alameda	0.1	60.5	60.6
19	Solano	0.1	62.2	62.3
20	San Benito	0.1	60.7	60.8
21	Modoc	0.1	48.2	48.3
22	Nevada	0.1	53.7	53.8
23	San Joaquin	0.0	63.7	63.7
24	Tuolumne	0.0	51.8	51.8
25	Sacramento	0.0	63.7	63.7
26	Del Norte	0.0	52.4	52.4
27	Santa Clara	0.0	59.8	59.8
28	Lake	0.0	58.5	58.5
29	Kern	-0.1	63.8	63.7
30	Napa	-0.1	60.8	60.7
31	Plumas	-0.1	48.7	48.6
32	Colusa	-0.1	62.9	62.8
33	Mono	-0.2	45.8	45.6
34	Merced	-0.2	64.0	63.8
35	Santa Cruz	-0.3	58.9	58.6
36	Orange	-0.3	66.3	66.0
37	Kings	-0.3	65.6	65.3
38	Sierra	-0.3	48.7	48.4
39	Mendocino	-0.3	56.6	56.3
40	Inyo	-0.3	62.6	62.3
41	Sutter	-0.4	64.6	64.2
42	Los Angeles	-0.4	64.1	63.7
43	Stanislaus	-0.4	63.4	63.0
44	Humboldt	-0.4	54.8	54.4
45	Monterey	-0.4	60.4	60.0
46	Lassen	-0.4	48.3	47.9
47	Sonoma	-0.5	58.5	58.0
48	Marin	-0.6	57.5	56.9
49	San Luis Obispo	-0.6	61.7	61.1
50	Riverside	-0.7	70.7	70.0
51	San Bernardino	-0.8	68.7	67.9
52	Imperial	-0.8	76.3	75.5
53	Santa Barbara	-0.8	60.7	59.9
54	San Francisco	-0.9	58.5	57.6
55	San Mateo	-1.0	58.4	57.4
56	Ventura	-1.0	60.3	59.3
57	San Diego	-1.1	65.2	64.1

Change in Average temperature per County between 2017 and 2022
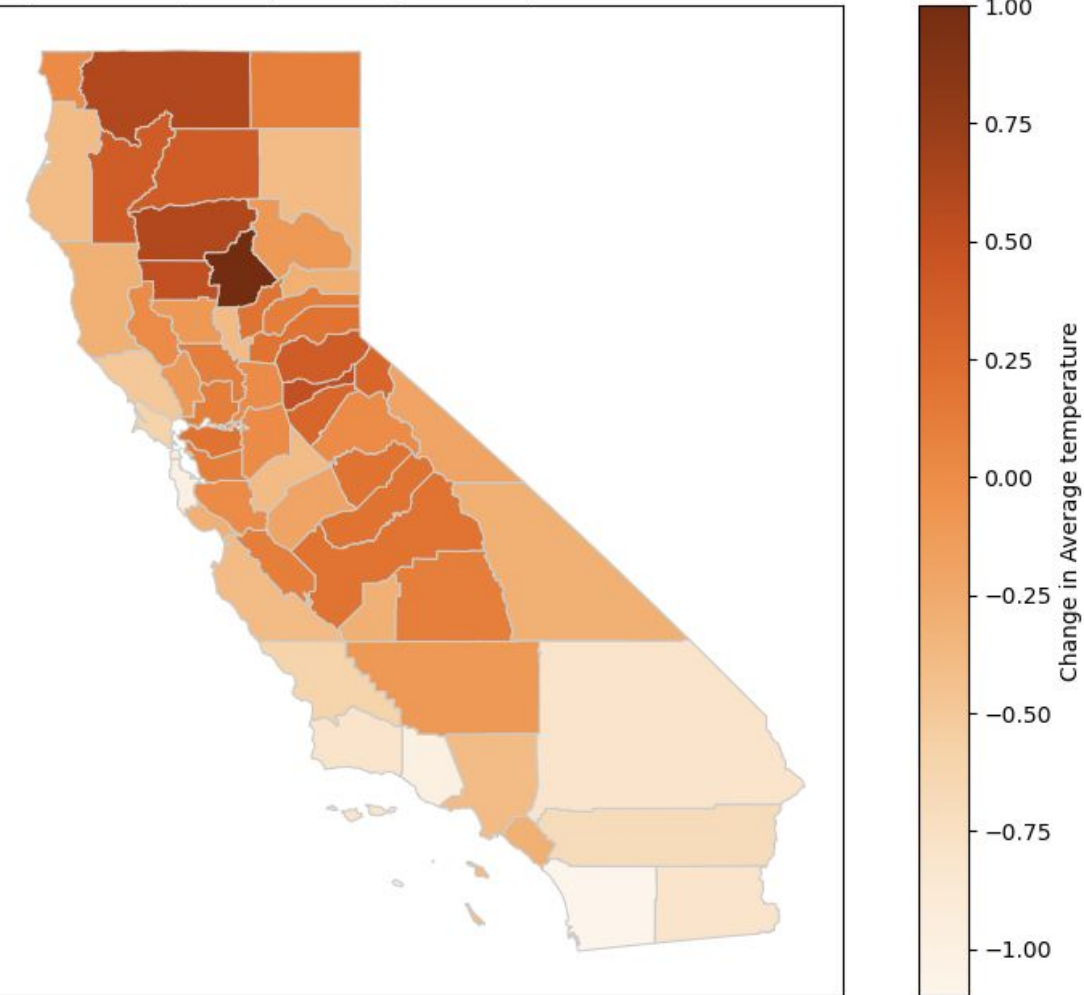
# Is there a correlation between the change in average temperature and homelessness?

Change in Homelessness vs. Change in Average Temperature per County
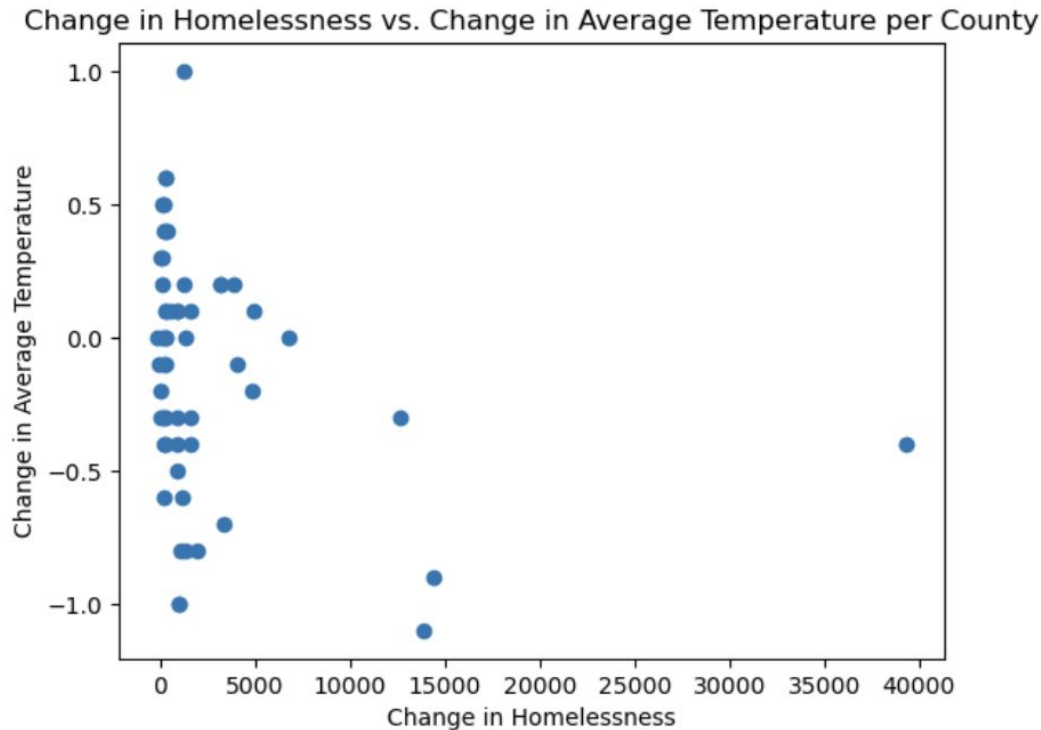
Correlation between change in homelessness and change in average temperature: -0.2597341431381372
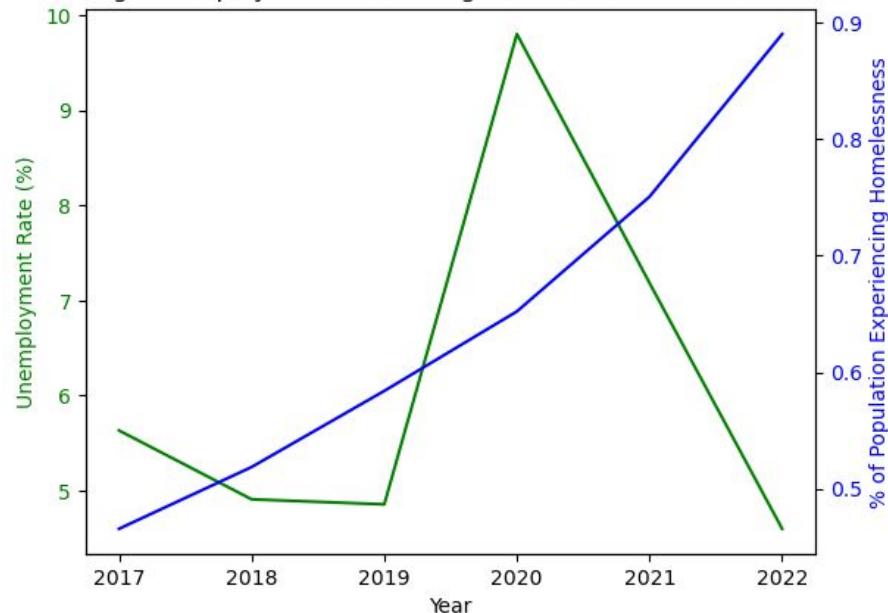
Unemployment

Can unemployment rates predict changes in homeless populations?

% of Population Experiencing Homelessness vs. Unemployment rate for California Continuums of Care 2017-2022

y = 0.27x + 6.0
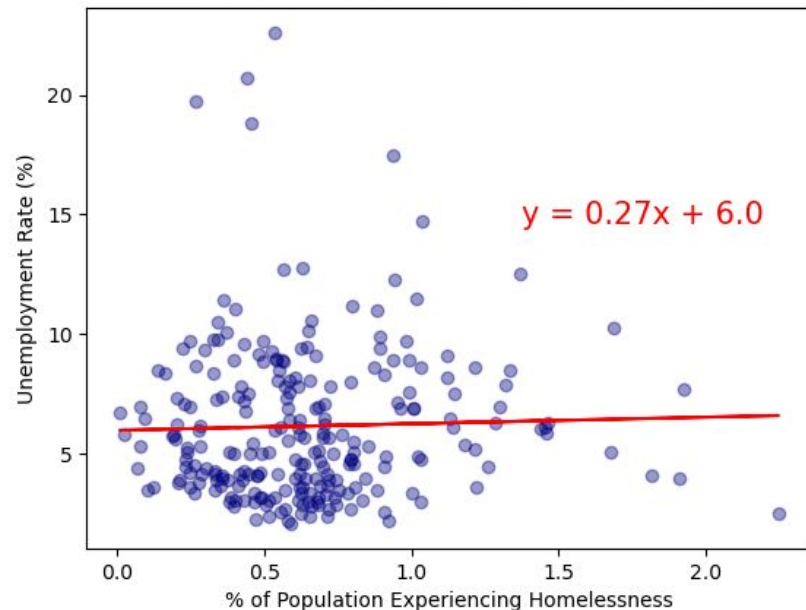
Avg. Unemployment Rate & Avg. Homeless Rate 2017-2022

- The r-value is 0.03. The linear regression is modeling a very weak relationship between average unemployment rate and average homelessness rate
- Due to high cost of living in California, wages and/or underemployment might be a better variable than unemployment rates.

Housing

Is there a relationship between Homelessness and Household Severe Overcrowding and in California?
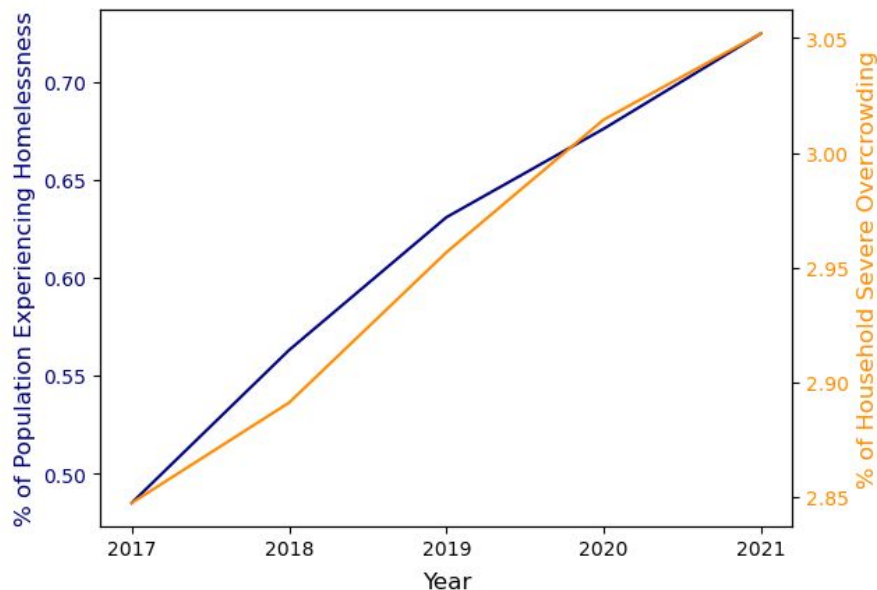
Household Severe Overcrowding is defined as households with more than 1.5 people per room
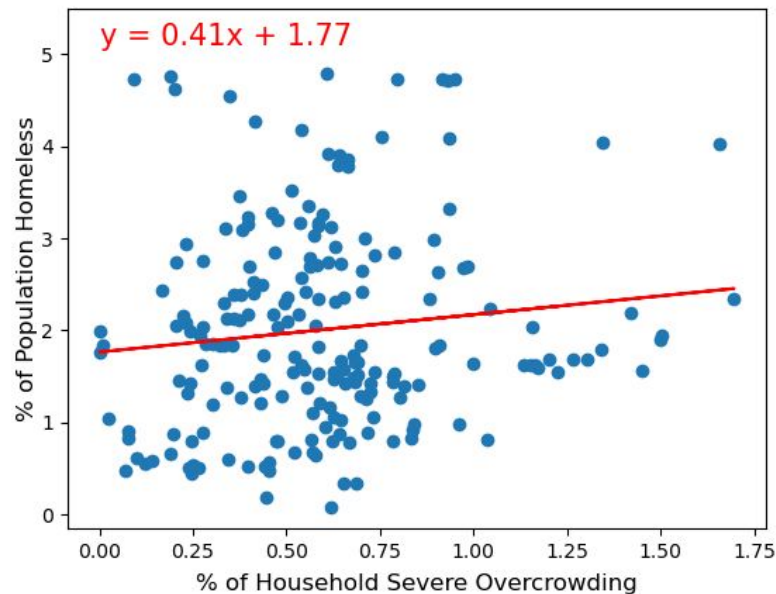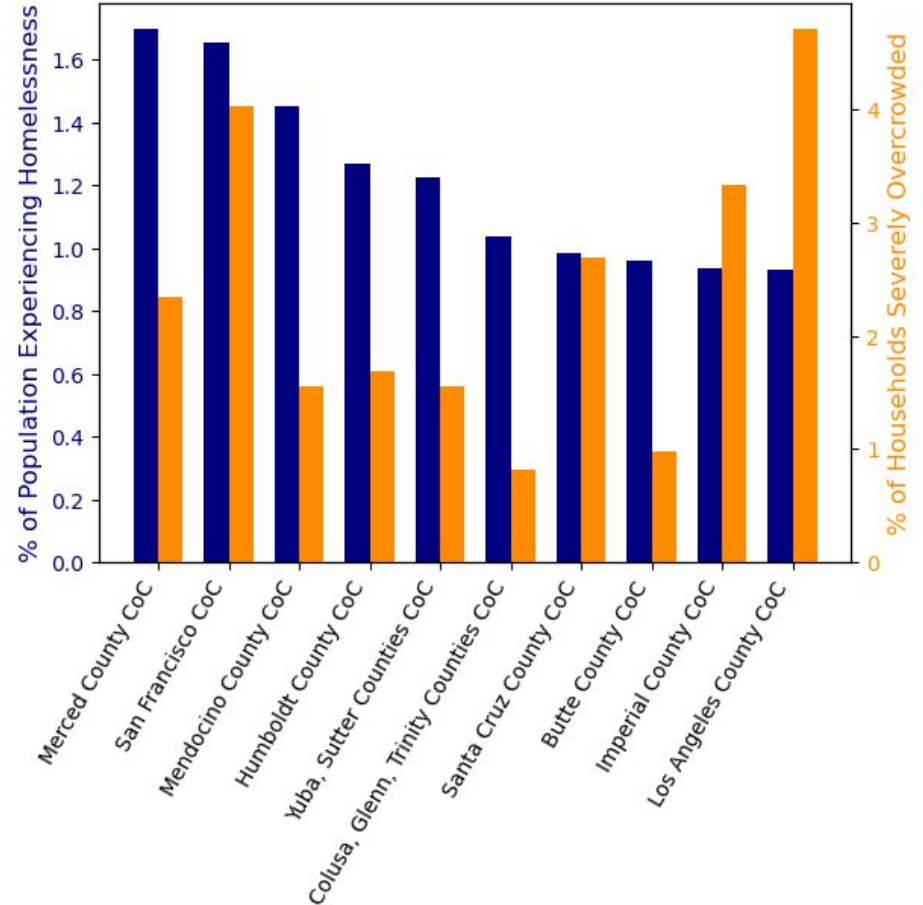
The r value for the linear regression is **0.12** indicating there does not appear to be a relationship between household severe overcrowding and homelessness.

# Top 10 Continuums of Care with the Highest % of Homelessness in 2021

LA, San Francisco and Imperial County were also one of the top 10 CoCs with the highest % of Household Severe Overcrowding

Further data gathering and analysis is needed in the following areas:

- Groupings of CoCs by geography, population density, and services provided to the homeless
- City level data across California

Is there a relationship between Homelessness and Households with Housing Cost Burden in California?

$$y = -0.0x + 0.64$$
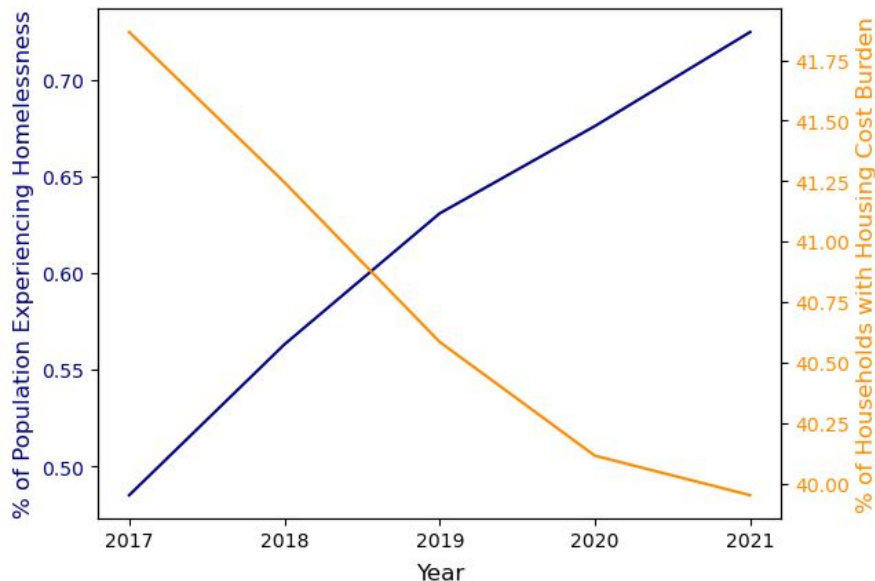
Households with Housing Cost Burden spend more than 30% of their income on rent, mortgage and other housing needs.
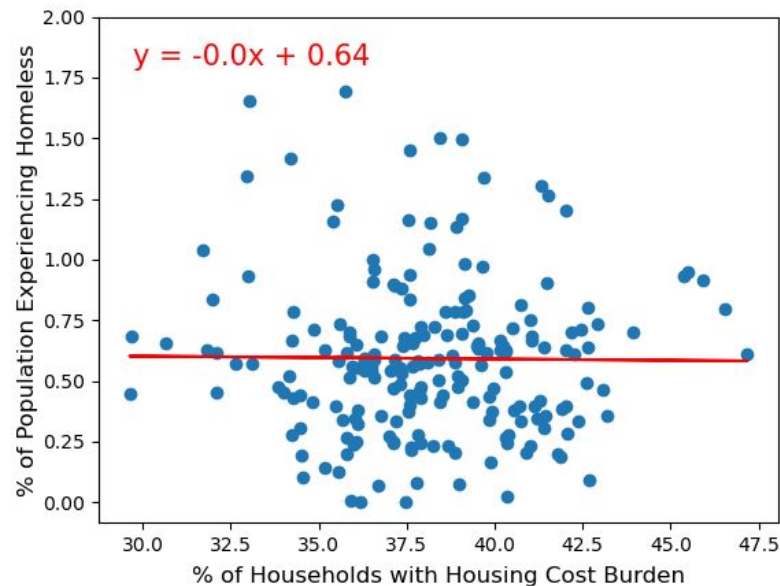
The r value for the linear regression is **-0.01** indicating there does not appear to be a relationship between households with cost burden and homelessness.

Vocational Rehabilitation

What is vocational rehabilitation?

- Program ran by the Department of Rehabilitation
- Provides a variety of services including
  - career guidance and counseling
  - job search and interview skills training
  - independent living skills
  - on the job training
  - employment preparation
 - assistive technology
  - and other services

What was I looking for?

- Hypothesis: There is a correlation between homelessness and the utilization of vocational rehabilitation
  - Mainly: negative correlations for the number of individuals receiving those services and a negative correlation for the number of successful closures of those services
    - Successful closure: when the individual has been working for 60 days or more after receiving services
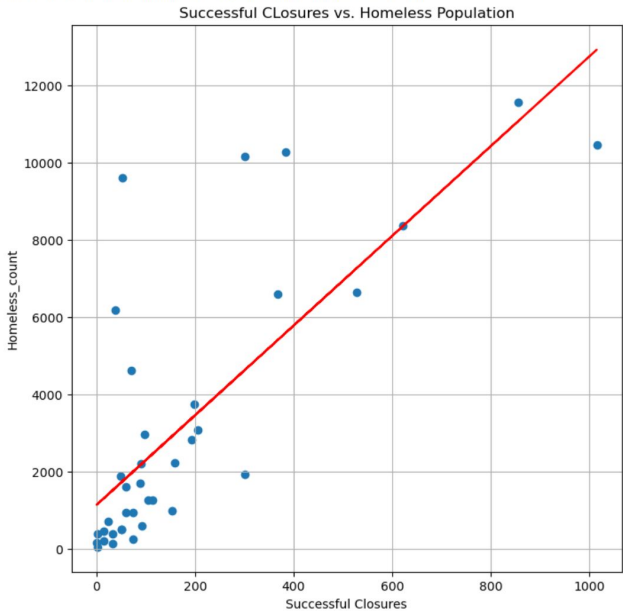
What I found

	COC_NAME	Number of Consumers	Successful Closures	Homeless_count
0	Alameda County CoC	4026	368.00	6,596.00
1	Alpine, Inyo, Mono Counties CoC	0	0.00	161.00
2	Amador, Calaveras, Mariposa, Tuolumne Counties...	167	1.00	383.00
3	Butte County CoC	883	104.00	1,270.00
4	Colusa, Glenn, Trinity Counties CoC	224	14.00	198.00
5	El Dorado County CoC	344	33.00	133.00
6	Fresno, Madera Counties CoC	2740	158.00	2,225.00
7	Humboldt County CoC	639	74.00	946.00
8	Imperial County CoC	1026	50.00	497.00
9	Kern County CoC	1768	71.00	4,614.00
10	Kings, Tulare Counties CoC	1416	98.00	2,964.00
11	Lake County CoC	155	1.00	51.00
13	Marin County CoC	436	60.00	1,620.00
14	Mendocino County CoC	587	24.00	708.00
15	Merced County CoC	846	92.00	591.00
16	Monterey, San Benito Counties CoC	1273	90.00	2,215.00
17	Napa County CoC	471	59.00	948.00
18	Nevada County CoC	288	15.00	462.00
19	Orange County CoC	6676	1,015.00	10,467.00
20	Placer County CoC	1200	113.00	1,260.00
21	Riverside County CoC	4442	528.00	6,641.00
22	Sacramento County CoC	4247	384.00	10,293.00
23	San Bernardino County CoC	5609	621.00	8,384.00
24	San Diego County CoC	8075	856.00	11,565.00
25	San Joaquin County CoC	1214	52.00	9,610.00
26	San Luis Obispo County CoC	966	88.00	1,705.00
27	San Mateo County CoC	1601	199.00	3,747.00
28	Santa Barbara County CoC	1908	192.00	2,820.00
29	Santa Clara County CoC	2301	300.00	10,157.00
30	Santa Cruz County CoC	722	49.00	1,881.00
31	Shasta, Siskiyou, Lassen, Plumas, Del Norte, M...	1343	74.00	252.00
32	Solano County CoC	1595	153.00	997.00
33	Sonoma County CoC	1725	206.00	3,086.00
34	Stanislaus County CoC	844	38.00	6,187.00
35	Tehama County CoC	285	33.00	395.00
36	Ventura County CoC	2878	301.00	1,926.00
37	Yolo County CoC	499	50.00	515.00

The correlation between homeless rate and unemployment rate is 0.8

Number of Consumers vs. Homeless Population
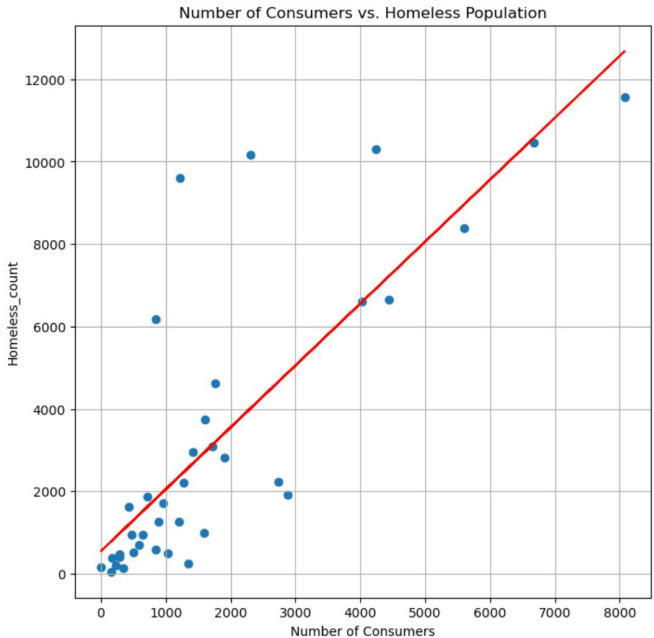
The correlation between homeless rate and unemployment rate is 0.77

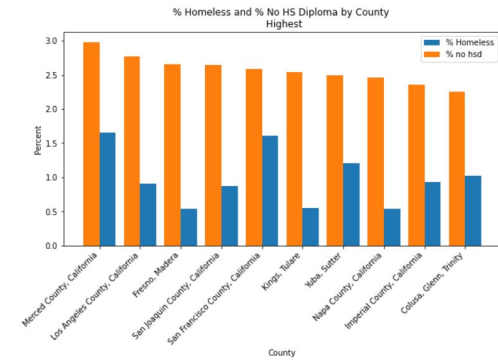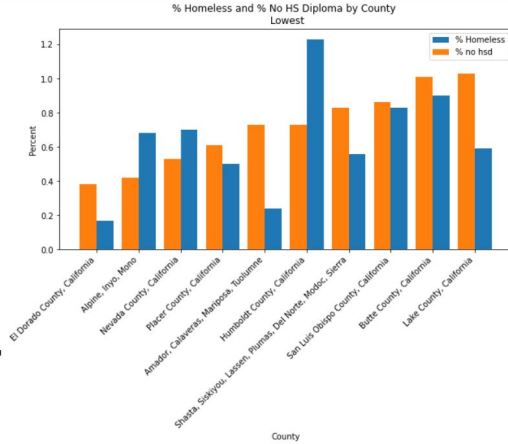**Successful CLosures vs. Homeless Population**

Conclusions

- Analysis: There is a correlation between the variables I looked at
- Limitations: operational definition of homelessness may have affected the data
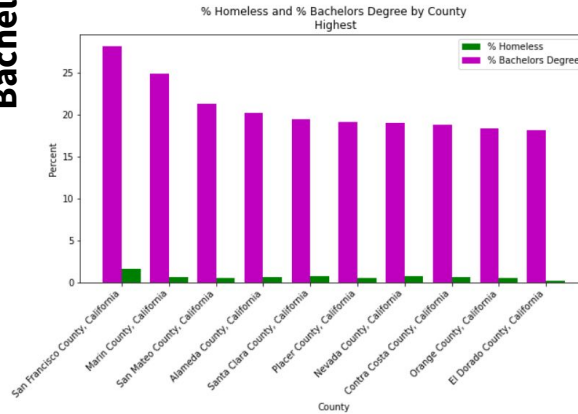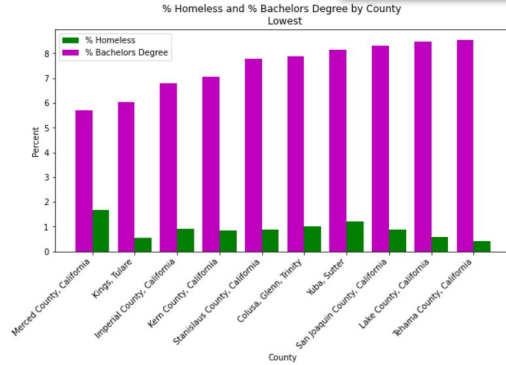 - Data was portrayed as totals and not percentages

Education

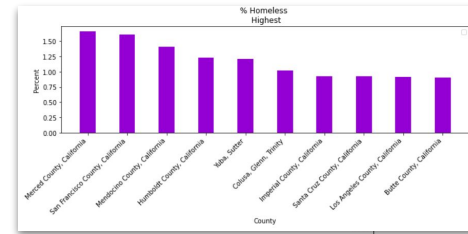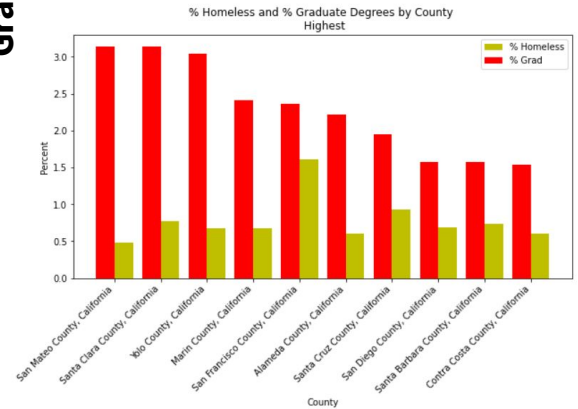# 10 Lowest and Highest Counties for Educational Attainment

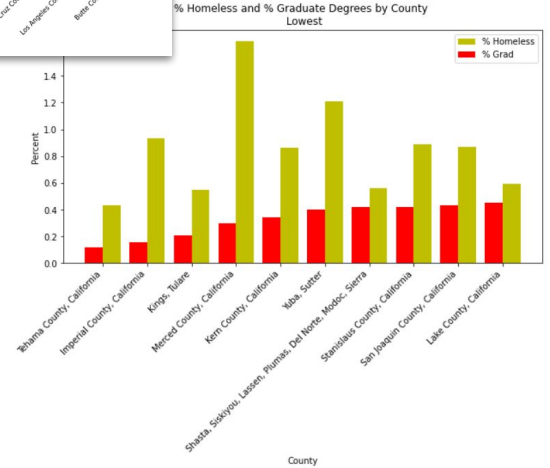10 Counties w/Highest Homeless Rates

Conclusions

- Merced, being the county with the highest rate of homelessness, also has the highest rate of adults with no HS diploma, lowest rate of bachelor's degree, and third lowest for graduate degrees
- Higher rates of Graduate degrees seem to correlate with low rates of homelessness
- San Francisco is an outlier in many categories, with high rates of educational attainment as well as homelessness.

Questions?