

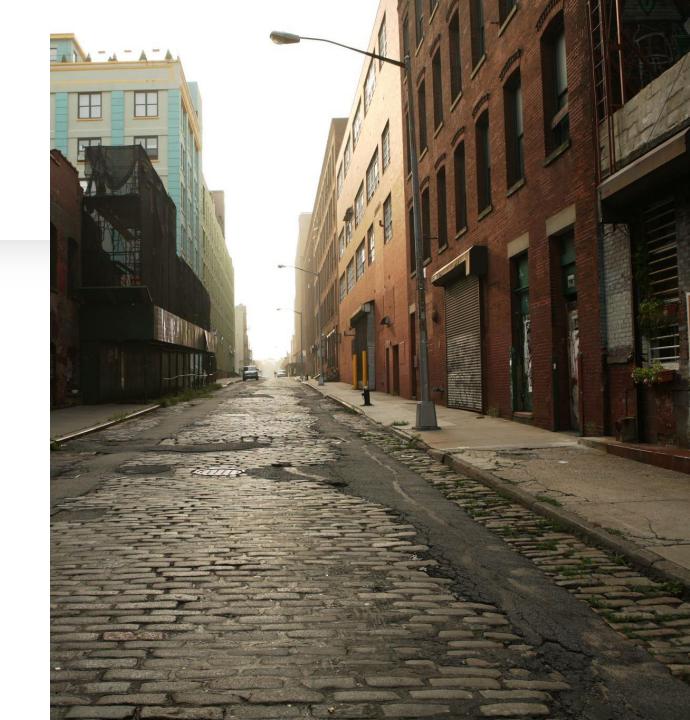
Homeless Population

Edwin Brown UMBC Data 690 Science Capstone



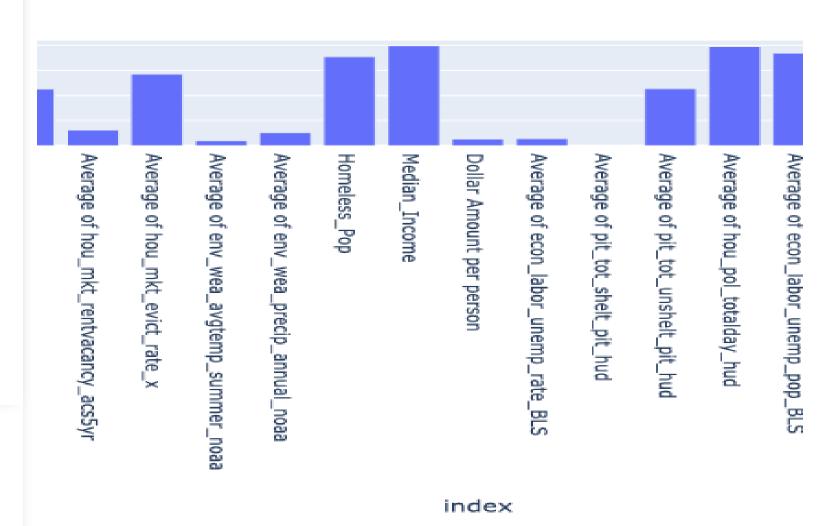
Features

- An unsheltered homeless person resides in: In a place not meant for human habitation, such as cars, parks, sidewalks, abandoned buildings (on the street).
- A sheltered homeless person resides in: In an emergency shelter.
- 19 Features
- 5 independent Features
- 1 dependent Feature



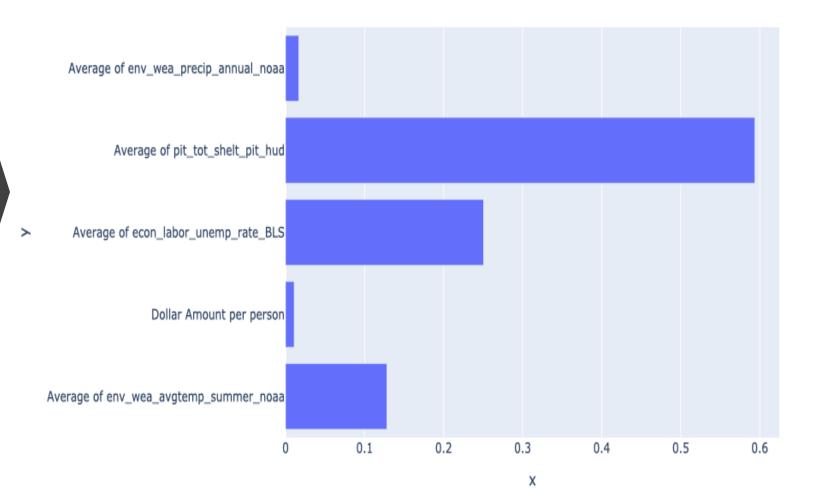
Feature P-Value less than 0.05

wer than 0.05



Features order of Importance

Features order of importance

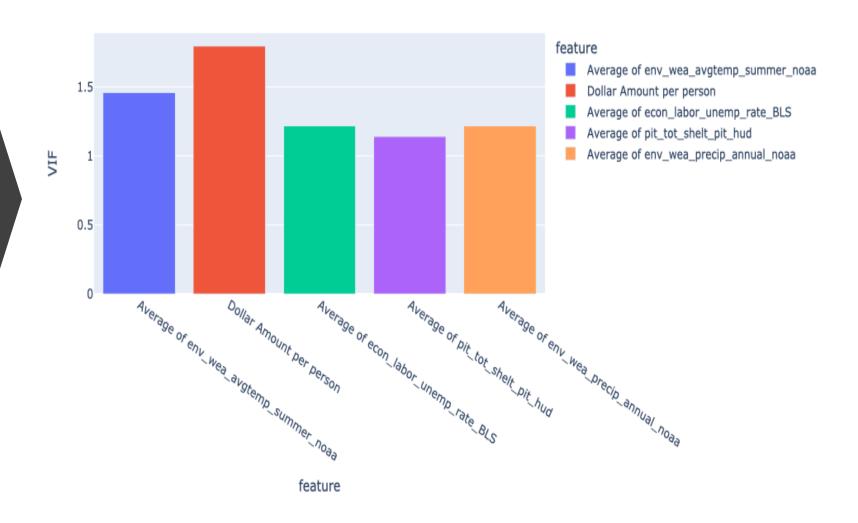


VIF equal to 1 are not correlated......VIF between 1 and 5 are moderately correlatedVIF greater th

Vif = not correlated

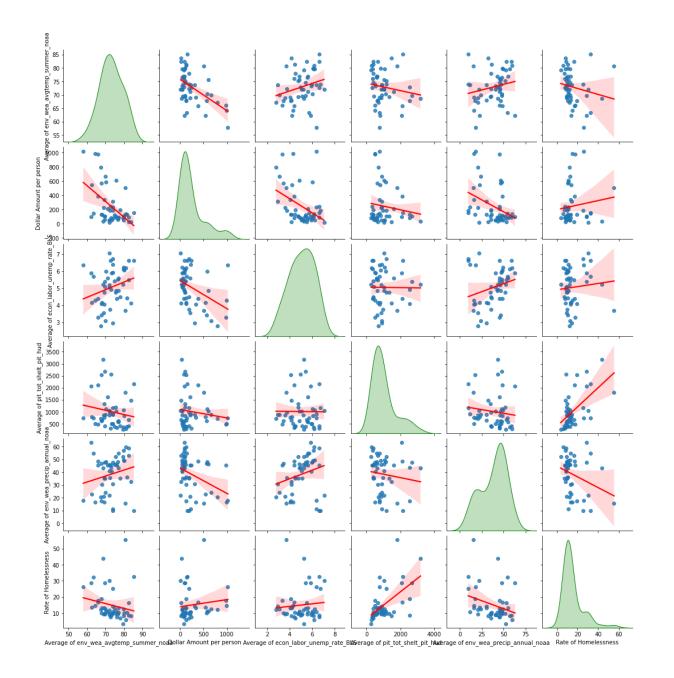
Vif 1 < 5 moderately correlated

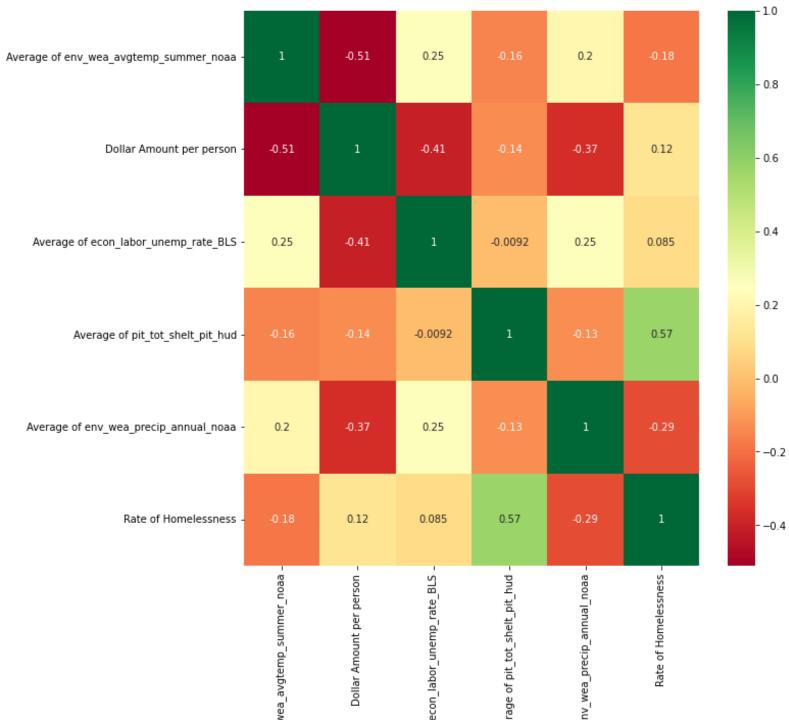
Vif 5 > correlated



Positive:
Dollar Amount,
Unemployment,
Sheltered

Negative:Weather,
Precipitation

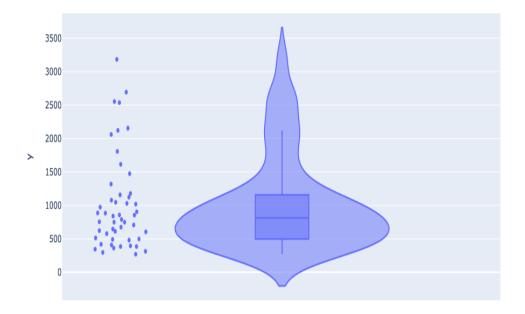




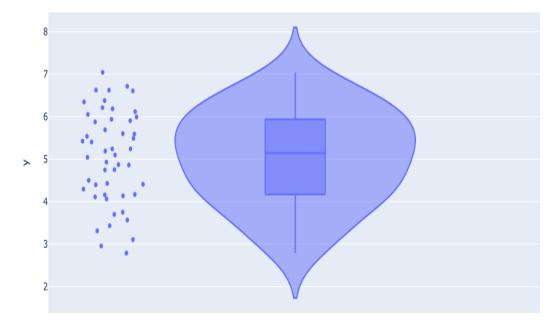
Numeric Correlation

- Weather
- Accessibility
- Economic

Most of Homelessness occurs in low Sheltered access areas

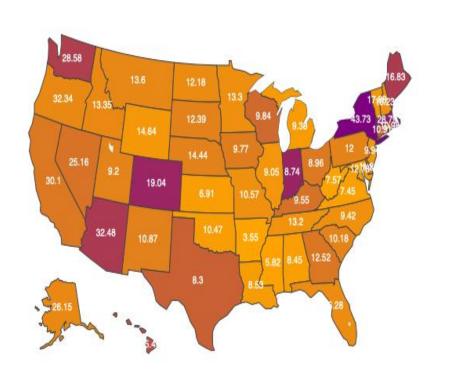


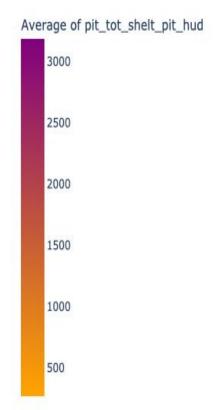
Homelessness in relationship to higher unemployment Rate



Not enough Shelters & Higher unemployment, Higher Homelessness

Rate of Homelessness and Average sheltered each state

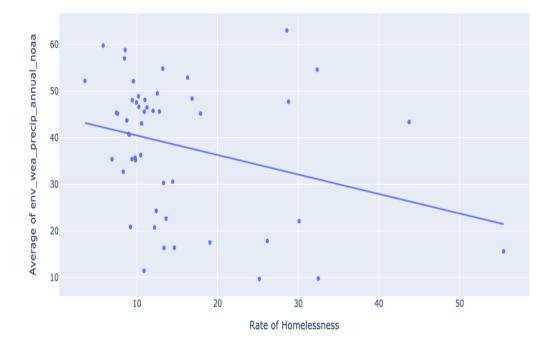




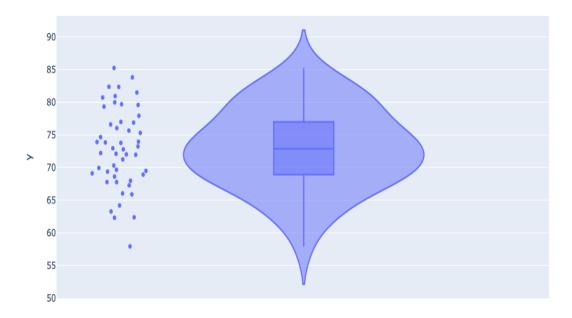
In 2016, 119,000 Homelessness people in California

Need for 1049 shelters , California has an average of 3%

Rate of Homelessnes in relationship to Precipation



Rate of Homelessnes in relationship to higher Temperature

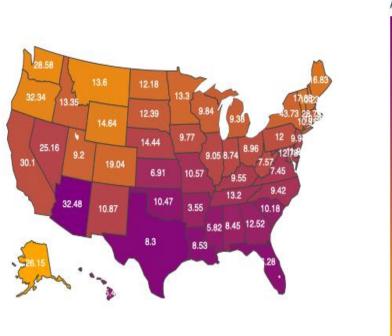


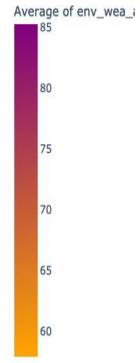
Climate Change Impact

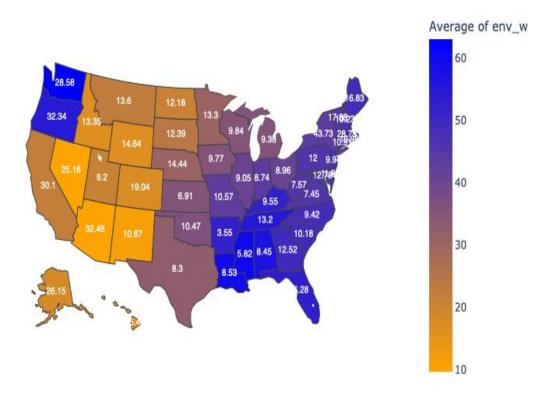
Climate Impact

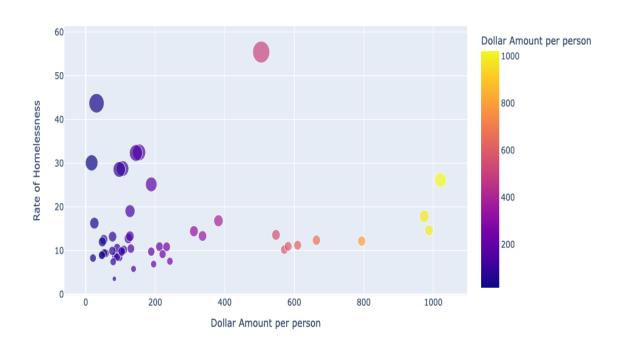
Rate of Homelessness and Average of env_wea_avgtemp_summer_noa

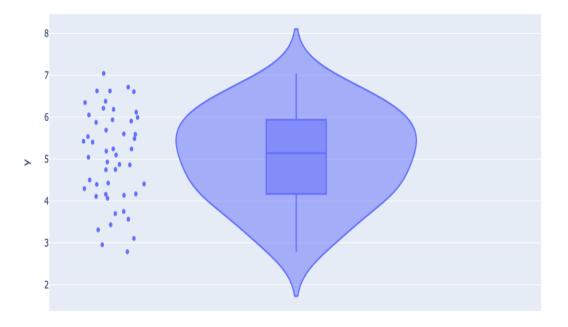
Rate of Homelessness and Average of env_wea_precip_annual_noaa





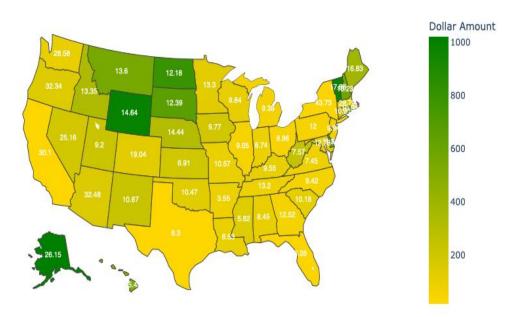




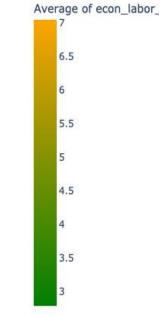


Economic Impact

Median Dollar amount per 10,000 person (2016)







Economic Impact

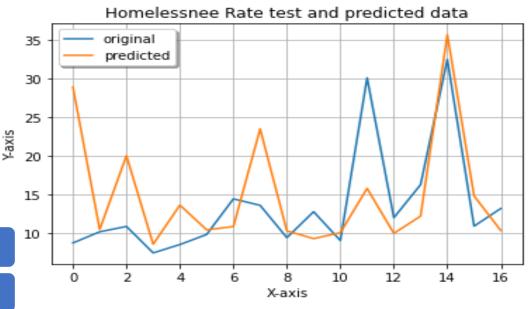
Best Model

R-squared: 0.42798600017979627

MSE: 53.04453210617563 RMSE: 7.283167724704383

SGDRegressor,





	Model	R-squared	CV mean score	Mean_Sq Error	Root Mean Square
0	(StandardScaler(), DecisionTreeRegressor())	1.00	-0.18	88.94	9.43
4	(StandardScaler(), XGBRegressor(alpha=0.4, bas	1.00	0.19	94.79	9.74
1	(StandardScaler(), (DecisionTreeRegressor(max	0.89	0.33	54.69	7.40
5	(StandardScaler(), LinearRegression())	0.51	0.01	54.39	7.38
3	(StandardScaler(), Ridge())	0.51	0.08	52.33	7.23
6	(StandardScaler(), Lasso(alpha=0.4))	0.50	0.16	50.47	7.10
2	(StandardScaler(), BayesianRidge())	0.49	0.19	46.22	6.80
7	(StandardScaler(), SGDRegressor(alpha=0.4))	0.46	0.26	42.68	6.53

Insights and Factors

- Some of highest rate of Homelessness occurs in tourist states
 - Hawalli
 - New York
 - Arkansas
 - Oregan
 - California
- Some of lowest rate of Homelessness per state(high precipitation, Mild Temp.)
 - Arizona
 - Mississippi
 - Kansas
 - Virginia
 - West Virginia
- The less precipitation (snow, rain, etc) and more temperature raise
- High unemployment

17.883617197731645 7.45143018005166 9.944693195314334 10.23378121734049 28.577113062568607 25.16276889775644 7.574673611846855 9.837839184814323 14.44065279720793 14.63703734067064 13.601657522157849 8.4531079719532 10.571147218119155 26.14928817324308 5.815186805347831 3.553563367046738 13.299028687205976 32.48391699751828 9.383278104005722 30.099859574583117 28.78543182331664 12.779967977778247

What is next?

Graph Analysis

Revise based on comments

Add features impact homelessness base on access to drinking water

