

Exploring venues categories in areas of high and low prevalence of obesity

Coursera Capstone

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Obesity

- A complex disease involving an excessive amount of body fat.
- Caused by a combination of inherited factors combined with environment factors, and personal choices in terms of diet and exercise
- Best defined by Body Mass Index (BMI) :

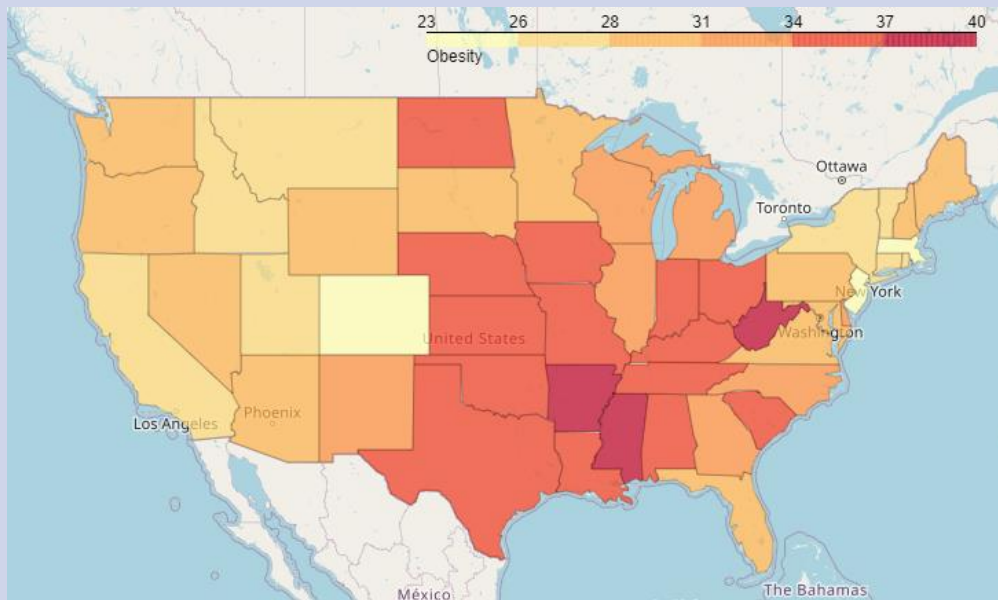
BMI	Weight status
Below 18.5	Underweight
18.5-24.9	Normal
25.0-29.9	Overweight
30.0 and higher	Obesity

Obesity across various regions

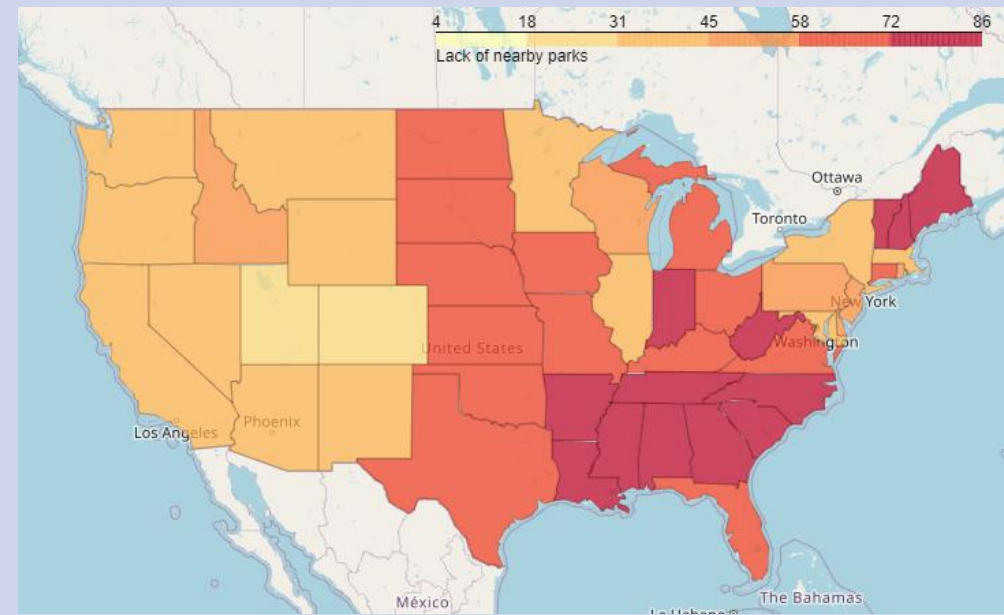
- Obesity prevalence varies across regions
- Are there variations in availability of places where people can engage in physical activity across regions, and if yes, how do these variations in availability correlate with obesity ?
- How does the business venues mix vary in regions with high versus low obesity ?
- We will be looking at states where low availability of places of physical activity correlates with high obesity. From these states we will be looking at the business venue mix (20 categories) in the counties with high versus low prevalence of obesity.
- Our data providers are CDC surveys, county data aggregates provided by Robert Wood Johnson Foundation and FourSquare

A look at the maps

Incidence of Obesity

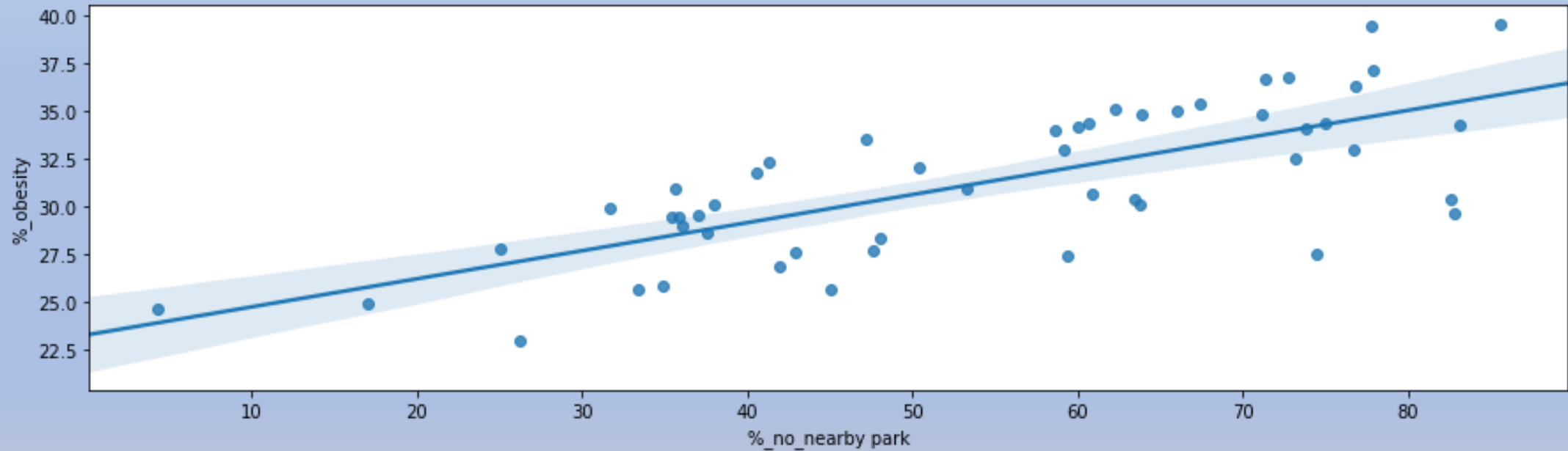


States with higher number of people surveyed saying they don't have a park within ½ mile



Not a match across the board, however the maps do bear some similarity

Lack of a nearby park vs Obesity



Linear regression confirms a higher incidence of obesity where more survey respondents indicate there is no nearby park

What are the states that rank highest and lowest for obesity and availability of parks ?

Park within 1/2 mile		
Abbr	State	% access
SC	South Carolina	16.9
AR	Arkansas	22.1
MS	Mississippi	22.2
AL	Alabama	23.2
TN	Tennessee	25
NV	Nevada	64.6
MA	Massachusetts	66.6
OR	Oregon	68.3
CO	Colorado	73.8
UT	Utah	74.9

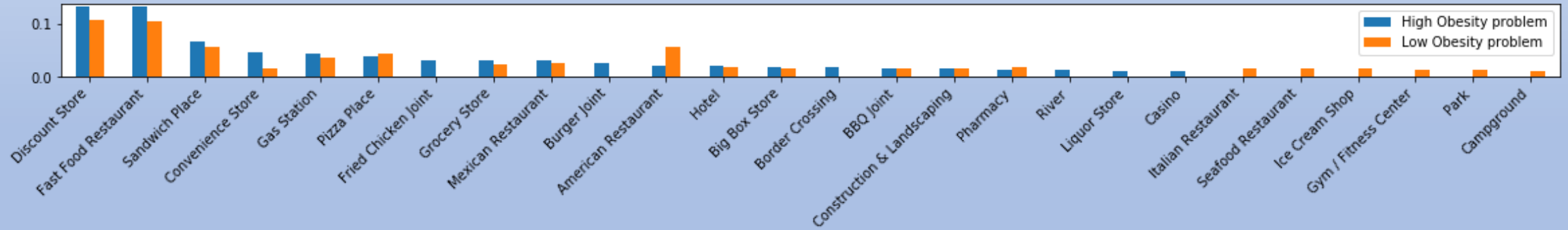
Obese (BMI 30.0 - 99.8)		
Abbr	State	% obese
MS	Mississippi	39.47
AR	Arkansas	37.12
LA	Louisiana	36.76
KY	Kentucky	36.62
AL	Alabama	36.24
CO	Colorado	22.95
MA	Massachusetts	25.69
CT	Connecticut	27.42
UT	Utah	27.75
ID	Idaho	28.36

We found for some states on both lists that we will explore further. These are states where having a low or high rate of availability of physical activity correlates well with having a high or low obesity rate.

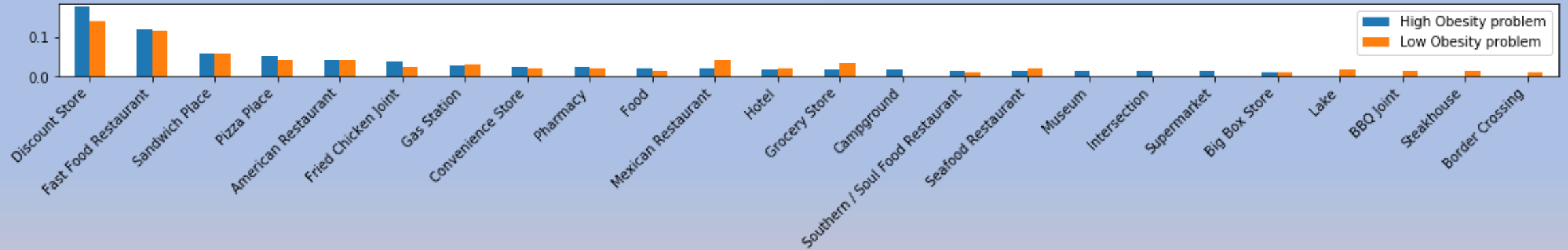
*The states on both tables were actually taken from states with populations in the interquartile range, to avoid comparing very large and very small states.

States with High Obesity Rates

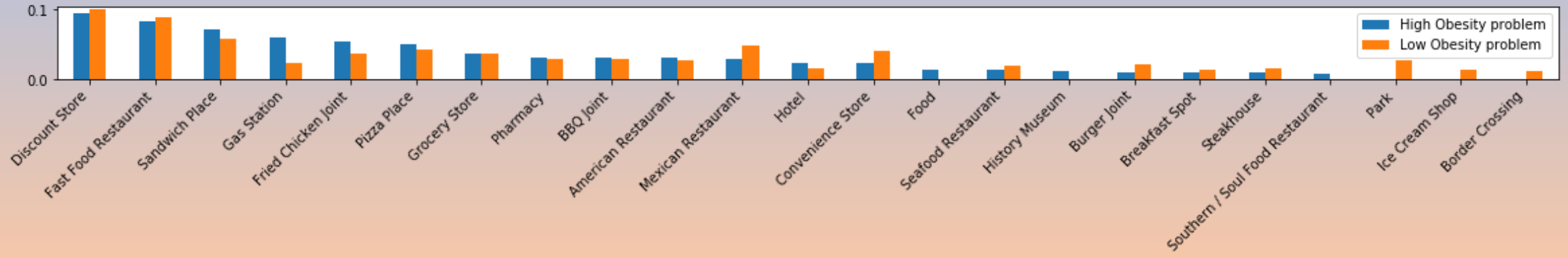
Arkansas



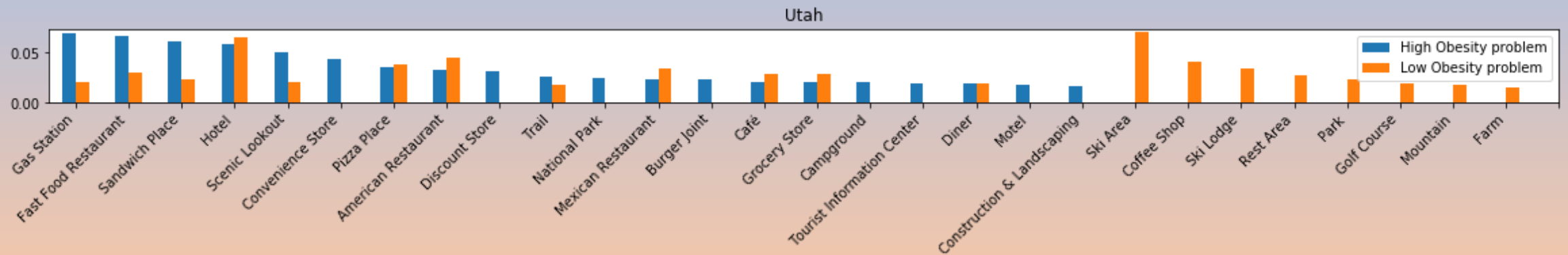
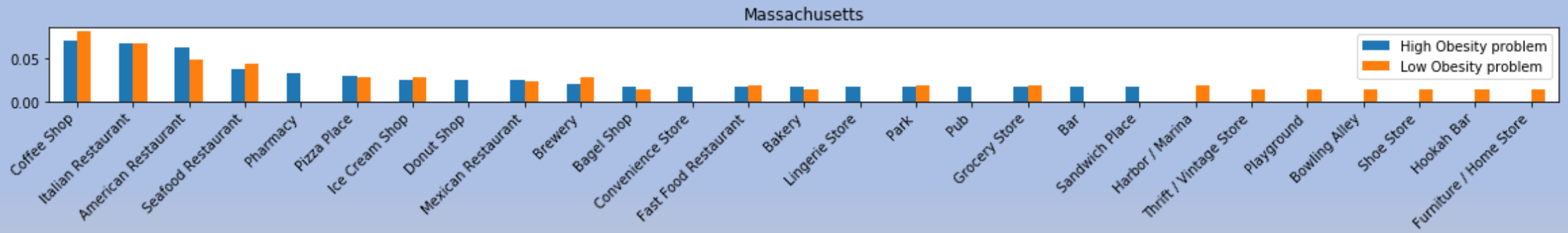
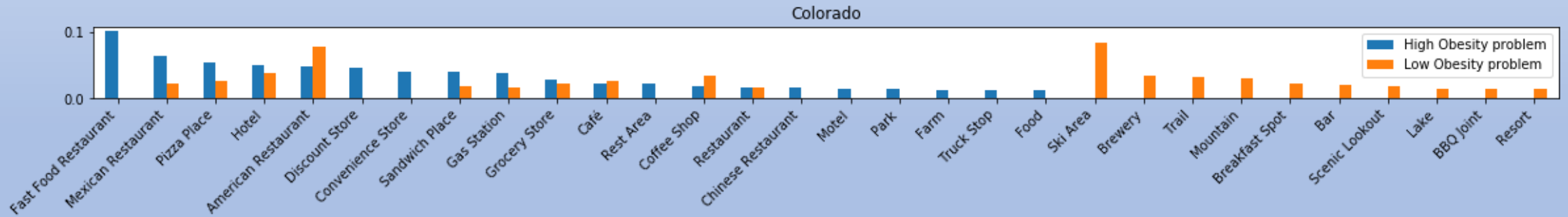
Mississippi



Alabama



States with Low Obesity Rates



Results

- States where prevalence of obesity is high, have a lot of discount stores, fast food restaurants, sandwich places, pizza places, and the counties with high prevalence of obesity vs low prevalence of obesity don't have a much different ranking between ranking between these.
- States of UT and CO are somewhat different because of the opportunities for outdoor activities provided by the mountain areas. In these states fast food restaurants, sandwich places, discount stores, pizza places are associated with high obesity.
- In Massachusetts however the number of fast food restaurants, pizza places and discount stores is quite low in general (ranking in the second half as frequency both in the high and low obesity areas) .

Conclusion:

- Analysis of the business categories in areas of high versus low incidence can provide interesting insights.