

Food Insecurity in Mississippi: A Study on Food Deserts and Food Swamps

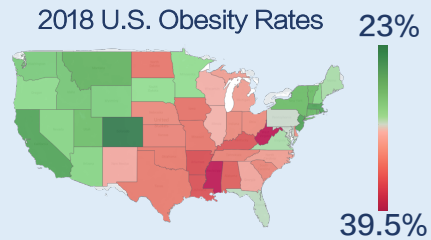
1 in 9
Americans experienced food insecurity in 2018

11 million
American children experienced food insecurity in 2018

Team 64
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Background

Food insecurity refers to unreliable access to enough affordable, nutritious food. This serious issue in the U.S. affected an estimated 1 in 9 Americans in 2018, equating to over 37 million Americans, including more than 11 million children. Research shows that a person's ability to afford or access healthy food increases their risk of obesity and diabetes, affecting overall health. We chose to focus on Mississippi, the state with the highest obesity prevalence, and investigated demographics as they relate to food insecurity.



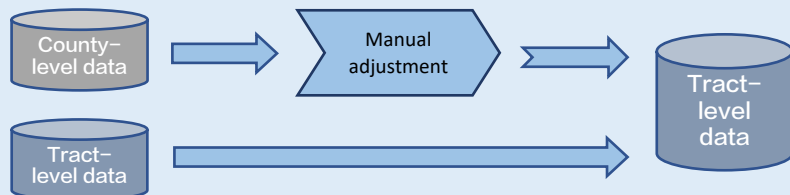
Mississippi recorded the highest rate of obesity in 2018 at 39.5%.

Food Desert:
Regions where people have limited access to healthful, affordable food

Food Swamp:
Regions where an abundance of fast food, junk food outlets, convenience stores, and liquor stores outnumber healthy food options

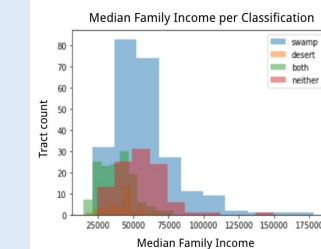
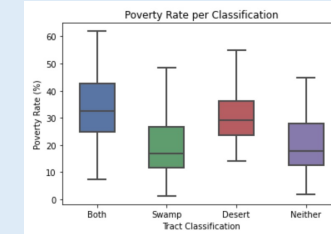
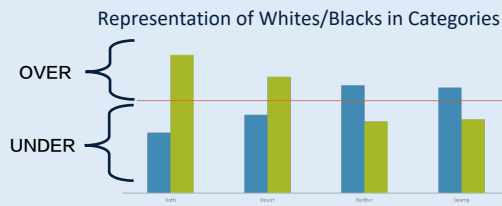
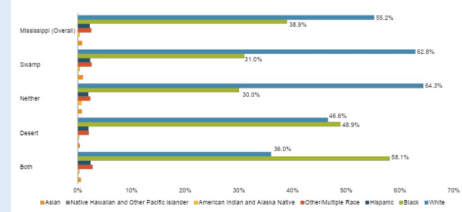
Modeling

The datasets used come from the United States Department of Agriculture, a government entity with open access data readily available. However, this data is reported at different levels (census tract, county, state, etc.) and required some reconciliation to be comparable.



Data

Identity Distribution per Classification



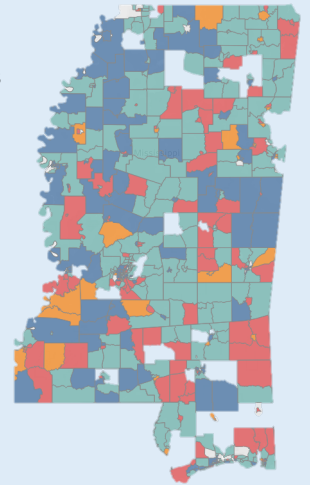
Classification Mapped to Tracts in MS

Swamps:
242 Tracts
1,170K Residents

Both:
143 Tracts
626K Residents

Neither:
102 Tracts
478K Residents

Desert:
36 Tracts
151K Residents



Above is the breakdown of races seen in each classification. Notably, Black and White residents make up approximately 94% of the overall state population but are not distributed equally among the classifications. Moreover, Blacks are overrepresented in "Both" and "Food Desert" categories where Whites are underrepresented, while the opposite is true for "Neither" and "Food Swamp" categories. The "Both" and "Food Desert" categories have the highest poverty rates as well as the lowest median family incomes.

Conclusion

Demographic distribution in Mississippi is far from equal. Blacks are overrepresented in the "Both" and "Food Desert" categories, categories which also experience more financial insecurity, where Whites are underrepresented. Conversely, in the "Neither" and "Food Swamp" categories, Whites are the most populous and have a higher tendency to live in tracts with higher incomes and lower poverty rates. More Black residents face inadequate access to healthy foods, either through distance or financial limitations. However, though White residents are more likely to have adequate access, they are inundated with unhealthy options; it seems that even with the option to select healthy foods, individuals may continue to select poor nutritional choices instead. Both lead to the same consumption of unhealthy foods that lends itself to increased obesity rates. Mississippi is primarily dominated by Food Swamps, with about 1,170,000 individuals residing in one. Interestingly, Food Deserts have the lowest number of residents, about 151,000, yet are more widely-known and have higher advocacy and policymaker attention. We hope to not only raise awareness about the Food Swamp phenomenon but encourage policymakers to increase educational efforts surrounding healthy food choices among its residents.