

Research Question

Residents of urban versus rural counties in the United States face significantly different challenges as a product of their environments. Our research focuses on 2 main questions:

1. What are the main differences in urban-rural economic, social, and health structural barriers?
2. How do these barriers change over time?

Challenges

- Datasets come from many sources
- Each source formatted the data differently
- There are more than 3,000 counties resulting in large datasets
- No universally agreed upon definition of “rural”
- County boundaries change over time
- “Rural” is not a homogenous term, there are degrees of rurality

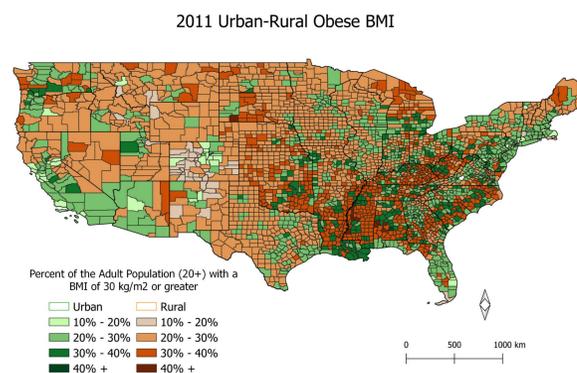
Main Focus

Data Management

The main goal of our team this summer was to aggregate all available United States county-level data into one main database in order to ease data access and analysis. We specifically targeted data that we thought could have an affect on the health, economic, and social wellbeing of a county. Each dataset was unique which made comparison difficult. We used Stata to format and organize the datasets.

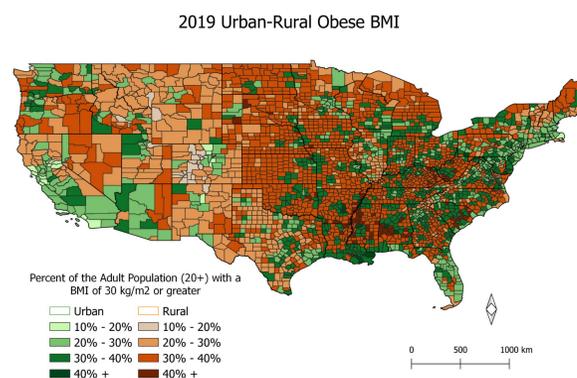
Maps

The majority of my time was spent mapping the datasets in QGIS, an open source mapping software. First, each measure had to be georeferenced onto a county map of the US. Then, I categorized the data to show different quantities of each measure to make it clear which counties were strongly affected by each variable. In total, I created over 20 maps covering topics such as Body Mass Index (pictured above), Income Inequality, and Children in Single Parent Households (pictured right).



Findings

Rural counties have a higher BMI than urban counties.
The eastern half of the country has faster changing BMIs than the west.
The country as a whole has an increasing BMI



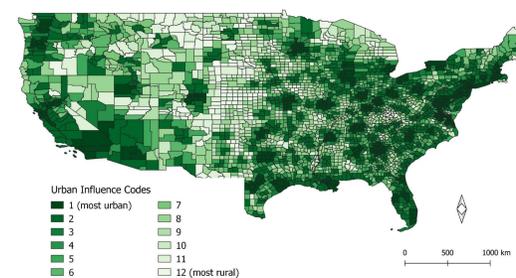
What does “rural” mean?

A county’s classification as either “urban” or “rural” has consequence because government agencies use it to inform where they allocate funding. The controversy is that each agency has their own definition for what they deem “rural” which vary enough to result in conflicting policy implications. There are at least 11 urban-rural classification systems – the Economic Research Service (ERS) at the USDA alone has four.

Common factors taken into account when distinguishing what is “rural” are population and adjacency. The latter is informed by the Central Place Theorem that states that physical adjacency to urban centers results in economic integration and an increase in opportunities. The breakdown of these factors is one reason for the variance in the classification systems.

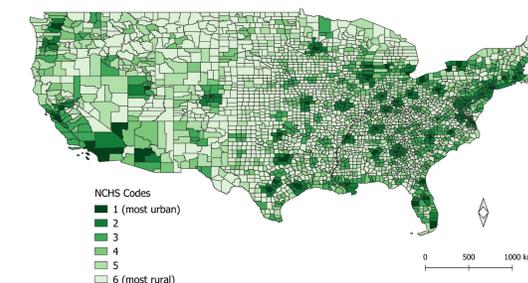
Another reason is that each coding system is designed to study a specific issue. Some subdivide urban areas in order to better understand the needs of inner cities. Others create degrees of rurality to distinguish the kinds of rural and their needs. We had to decide what classification framework worked best for our research purposes. We chose the ERS Rural-Urban Continuum Codes which contains 9 levels – 3 urban and 6 rural – because it breaks down rurality without overcomplicating and it widely used.

Urban Influence Codes 2013



Notice the coding systems vary resulting in counties being classified differently.

National Center for Health Statistics System 2013



Above: From the ERS at the USDA

Right: From the National Center for Health Statistics