**Variable Discussion**

Dependant variable – average cases over 14 days

Independent variables

* Density per county
* Mobility for groceries
* Percent over 65
* Transit scores; public transport
* Climate data
* Active physicians per 100,000

**Age Over 65**

The age distribution of a population, particularly the proportion of individuals over 65, is essential in studying COVID-19 spread and impact. Older adults are more susceptible to severe illness and complications from COVID-19. They are also more likely to require hospitalisation and intensive care. By examining the share of the population over 65, we can assess the potential burden on healthcare systems and identify regions where protective measures and vaccination campaigns might need to be prioritised to protect this vulnerable group.

**Active Physicians over 100,000**

The availability of healthcare resources, such as active physicians per 100,000 population, is a critical factor in managing and mitigating the effects of the COVID-19 pandemic. Areas with a higher number of active physicians can provide better medical care, testing, and treatment, which can help control the spread of the virus and reduce mortality rates. By analysing the distribution of active physicians, we can understand the capacity of different regions to respond to the pandemic and highlight areas that may need additional support and resources to effectively manage the healthcare demands caused by COVID-19.

**Density per County**

The density per county, which measures the number of people living in a given area within a county, is an important factor in the spread of infectious diseases like COVID-19. Higher density means more people are concentrated in a smaller area, increasing the likelihood of person-to-person transmission through close contact. By analysing density per county, we can assess how different population concentrations impact the rate of new infections. This information can help identify areas that might need more stringent public health measures to control the spread of the virus.

**Stationary Model**

**Time Series Model**