Todd Estep
DSC530 - Data Exploration and Analysis
Professor Metzger
3/2/2025

Final Project

For this final project I wanted to analyze the cost of living, minimum wage and median household income across the US by county. I wanted to see if either the minimum wage or the median household income had a major effect on the cost of living. I also wanted to see how sustainable living on either of these incomes would be in different counties in America.

When looking at the minimum wage, it was quite clear that it had little effect on the cost of living. The PMF analysis where I divided counties into minimum wages over and under $12/hour, were largely identical. The scatterplot also showed that a wide range of costs of living were present across all minimum wages. I also found it disheartening to see such a large part of the minimum wage vs cost of living ratio histogram was covered at about the 40% range, and that no minimum wage worker had a ratio above 1. This would mean that all minimum wage workers are not earning enough to sustain themselves.

When looking at the median household income, there was a medium positive correlation between that and the cost of living. I think that the cost of living is a very complicated variable that can't be explained in one statistic, and my analysis agreed with that notion. Two elements stuck out in my analysis, one that there were a significant number of counties where even the median household income vs cost of living ratio was less than 1, where even average families can't afford to sustain 1 person. Another thing that stood out was just how perfectly the lognormal distribution model fit, although I do wish I understood exactly what this meant more.