Project Luther Proposal

Predicting the Economic Impact of Highly-Educated Residents on Incomes of Lower-Education Residents

Alexy Abramson

I) Abstract

For Project Luther, the problem that I will attempt to solve is whether having a higher number of individuals with high levels of education (defined here as having a Bachelor's Degree or higher) increases, decreases, or has no effect on the incomes levels of individuals with lower education levels. Some of the assumptions that the model developed will test include that the benefits of having more individuals with high levels of education including a high level of diverse cultures and economic opportunities will positively impact the quality of life in the community, not just as a whole, but also for its lesser educated members.

II) Methodology

In order to isolate the impact of higher education residents on the income levels of lesser-educated residents, it is necessary to first find the levels between other features to ensure that there is no omitted variable bias. To begin, we will find the levels of the minimum wage (since that leads to higher wages), the prevalence of the three major economic sectors (which have different wage levels), the unemployment rate, the percentage of residents in the labor force, and the number of employers per labor force member, as proxies for measuring employment opportunities and demand for labor. Furthermore, the level of income for high-income residents will be considered to flush out any impact that having an increased amount of income would have on the community instead of only the presence of individuals with high education levels.

The data will then be run through a model with all of these components using a linear regression model taking into account all of the different features mentioned above.

III) Data

Y: Income of low-income residents
X_0: Percentage of residents with high education levels
X_1: Minimum wage level by community
$X_{2\text{-}4}$: Prevalence of economic sectors (agricultural, industrial, service)
$X_{5\text{-}6}$: Unemployment rate for high and low education individuals
X_7: Percentage of population in the labor force
X_8: Number of employers in community (scaled to labor force)
X_9: Income of high-education residents

The data collected will be from the county level as it has a large enough data set to discover trends and has data available for all of the specified features and it is all available. The bulk of the data will be collected from the American Community Survey with supplemental data to be found from other reputable sources.