Abstract

Both political, social, and economic rhetoric has long propagated the presupposition of a stable career, financial well-being, and lifetime happiness given a respectable level of educational attainment. To examine this assumption on a large scale at both the high school and college level was the goal of this research.

In analyzing county-level socioeconomic data, models in this study utilized data from 4 different sources to compile educational attainment, unemployment rate, poverty rate, crime rate, household income, and 22 control variables.

This research paper applies the methods of linear model regression, Anova, LASSO, neural networking, and a variety of plots in order to determine whether education is statistically significant in evaluating several different measures of success within a county and by extension, to broader communities like sovereign nations. In order to graph and subset the coefficients of statistically significant variables, this research paper employs 4 simple linear regression models to determine the importance of educational attainment for all success metrics. Through further curiosity, neural networking was employed to predict the success metrics of a county based on a collection of contributing socioeconomic variables with a statistical spotlight on educational attainment as it was the topic of inquiry in this study.

Through our analysis, results reveal that educational attainment, both at the high school and undergraduate level have the utmost statistical significance in relation to a county's socioeconomic well-being, superseding all 22 control variables. The neural networking model yielded the same findings with an $\sqrt{MSE}$ of 4.5 which was lesser than the linear regression model.

Final models from this study reveals that educational attainment, both at the high school and undergraduate level, does have a significant impact on a US county's median household income, unemployment rate, poverty rate, and crime rate. Results from this study can be used to give many a quantifiable representation of the importance or unimportance of both high school and higher-level education for their future and have real implications in policy making in both domestic and global education.