

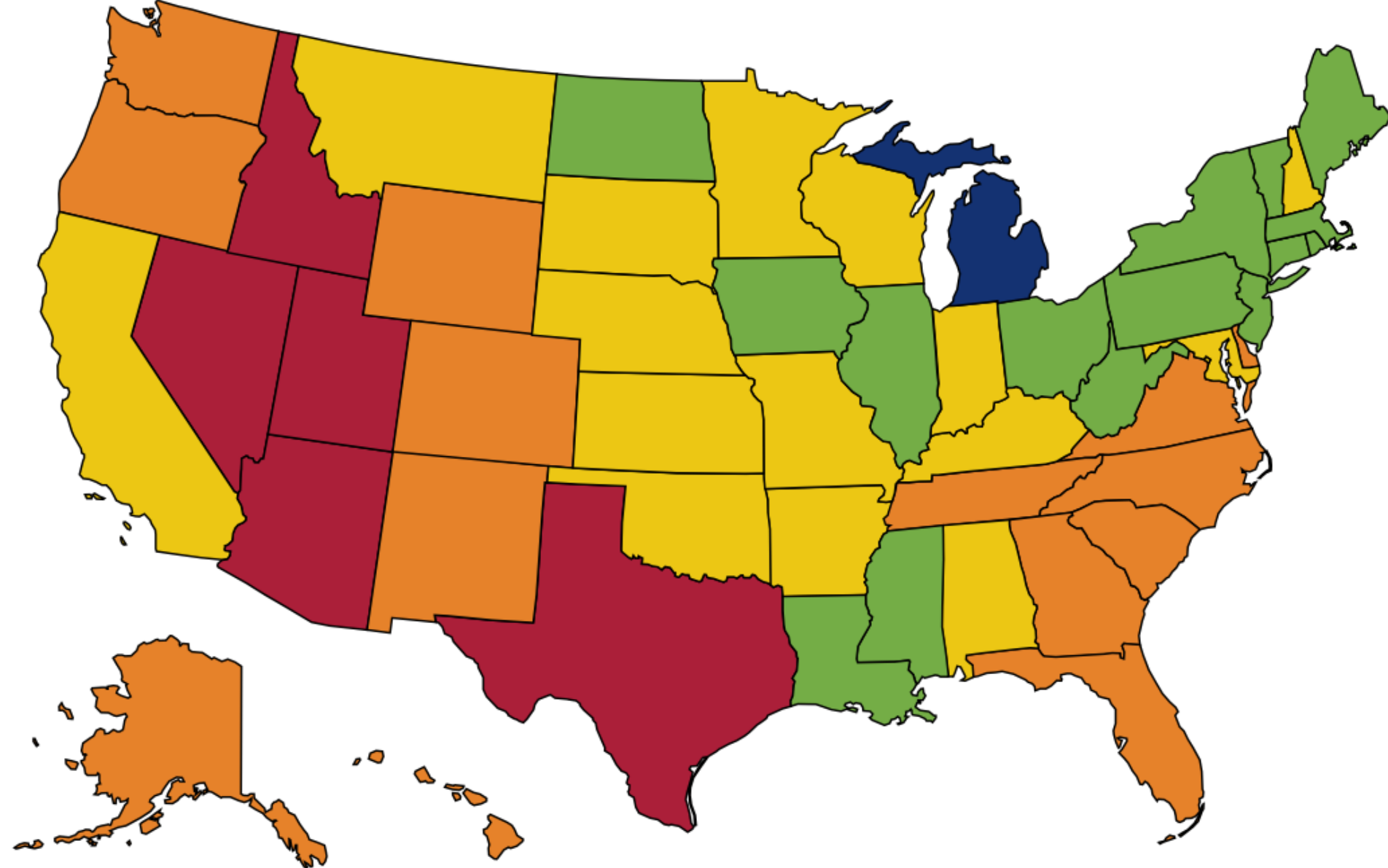
# Population Growth Rate Variation Among the Fifty States

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## Introduction

The following research attempts to explain what may cause population growth rates to be higher in some states than it is in other states. Currently, in the United States, Nevada and Idaho are the fastest growing states in the country. Both states have a population growth rate of 2.1% over the past year. While Nevada and Idaho experienced a wide population growth, New York and Illinois experienced a decline in population by roughly fifty thousand people. Florida had the highest level of net domestic migration, and Texas had the largest numeric growth. These numbers explain that the United States population is growing steadily, but why are some states noticing a bigger growth in population then other states? Why are some states noticing a decline in population then other states? Population growth rate is the percentage of an increase or decline of people residing in a city, state, or country. Population growth or decline in the different states in the United States can be caused by many factors, such as unemployment rates, family incomes, the type of schools in the state, and tax rates.

## United States Population Growth 2000 to 2010



>20%   >10%   >5%   >0%   <0%

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## Materials and Methods

If jobs are unavailable in a state, individuals may lean toward not moving to that state. A high level of research has linked economy and population rates to go together hand in hand. Factors such as unemployment rate, which would decline a state's economy, decrease a state's population growth rate (Glaeser 1993). *Hypothesis 1: As unemployment rates increase, the population decreases.*

According to Koles, people prefer to live in places that have a low tax rate then a high tax rate because a low tax rate means that less of their earned income is being given to the government.

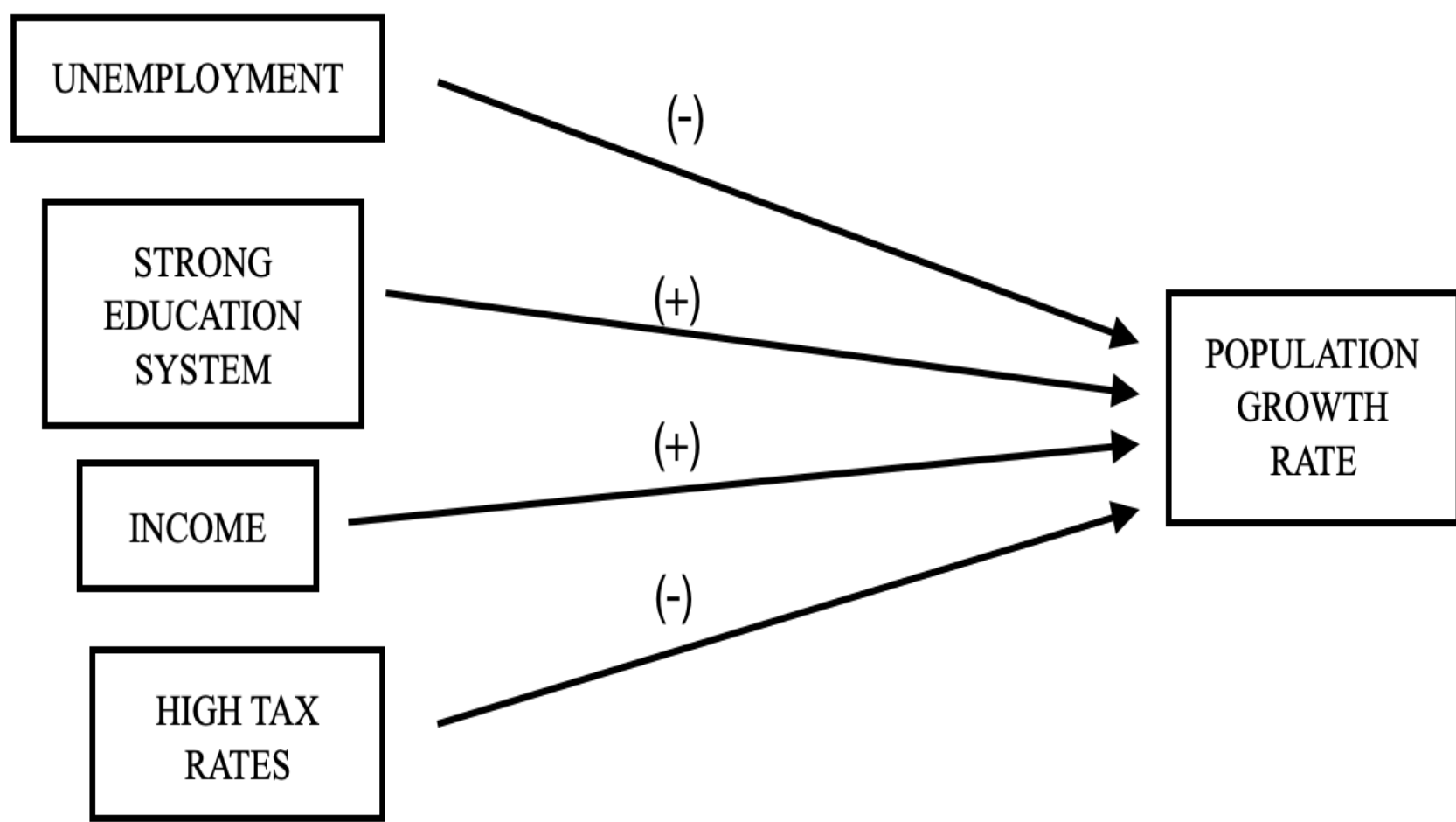
*Hypothesis 2: The lower the tax rate, the more of an increase in population.*

Durlauf explains how a neighborhood or state someone lives in can explain one's income or what someone's income will be in the future because of the area, surrounding, and atmosphere they were raised in and learned from.

*Hypothesis 3: Changes in an individual's income will affect population growth rates.*

Parents may consider moving to a state that has better education ratings then a different state (Glaeser 1993).

*Hypothesis 4: As education systems become stronger, population will increase.*



### Dependent Variable: Population Growth Rates

Population growth rate will be measured over a ten-year time period .from 2000-2010, with data provided by the United States Census reports. Population growth rate will be calculated by examining a state's population in 2000 and in 2010, then looking at the percent that the population changed over that time frame.

### Independent Variable 1: Unemployment

Unemployment will measure the percentage of people that are jobless in each state, which will help to explain if states with high unemployment rates witness a smaller percentage in population growth. Data statistics regarding unemployment rates will be collected from the Bureau of Labor Statistics.

### Independent Variable 2: Tax Rates

Tax rates will measure a state's average local and state sales tax. Sales tax is defined as taxes on purchases. Federal taxes will not be included in the data because federal taxes are created by the federal government and are uniform throughout all fifty states, while state and local taxes are created by the states and counties within the state.

### Independent Variable 3: Income

Income will measure how much the resident's average income for the state increased over the ten-year time frame. Data for the average incomes was collected from Bureau of Economic Analysis. The change in average incomes will show if states with a higher population growth rate also contains an increase in average incomes for the state.

### Independent Variable 4: Education

Education will be measured by a state's high school graduation rate. It is assumed that states that give a great deal of focus on its education system have more students graduating then states that put a less of an emphasis on education. Data for the graduation rates was collected from the National Education Association.

## Results

In order to understand my results, I used the multivariate regression equation with unstandardized regression coefficients. Because my data numbers fluctuated in an uncommon manner, I did not take my multivariate regression equation to its most parsimonious form or reproduce it using standardized Betas. The table used to model the results from the multivariate regression equation for the research is as follows:

**Table 1: Independent Variable Effects toward Dependent Variable**

	Unstandardized Beta	Standardized Beta	t
INCOME	.206	.218	1.666
SCHOOLS	-0.375	-0.347	-2.496*
TAXRATE	-1.970	-0.354	-2.646*
UNEMPLOYMENT	.865	.254	1.895

R-squared = .404\*\*

Y-intercept = 40.794

The t value shows if the data collected is statistically significant or not. Income and unemployment are not statistically significant. Therefore, income and unemployment do not affect population growth rates as predicted. Schools and tax rates are statistically significant. Therefore, school systems and tax rates affect population growth rates. Since R-squared is .404, school system graduation rates and state and local sales tax rates explain 40% of the variance in population growth rate percentages among the fifty states. Both schools and tax rates have an almost equivalent effect on population growth rate because the standardized Beta is very close to one another for both variables. The negative number in the t value for schools shows that as graduation rates drop, the population growth rate drops. The negative t value for tax rates shows that as tax rates go up, population growth rates drop.

**Table 2: Independent Variable Results**

Hypothesis	Independent Variable	Accept or Reject
H1	Unemployment	Reject
H2	Tax Rate	Accept
H3	Income	Reject
H4	Education	Accept

Although, it was believed that all four variables, unemployment, tax rates, income, and education, would have an impact on population growth rates for the fifty states, only tax rates and education influence population growth rates, while unemployment and income do not influence population growth rate.

## Conclusion

Unemployment may have had no significance to population growth rate because people may not be able to control where they move just because of the unemployment rate in that state. Unemployment rates are always changing in every state, therefore, when individuals chose to move to a certain state, the unemployment rate may not have been severe and may have changed after they moved there. It is also possible that people move to different states after they have a secure job in that state or because they are being relocated for work, which is something that this research did not focus on. Further detailed research can still prove that unemployment rates may influence where people move to in a specific part of a state. It is possible that looking at the state's overall unemployment rate may show no significance but looking at separate cities within a state's unemployment rate may show significance because it is more specific data that is being analyzed. Income may not have had significance to population growth rates because people may move to a state regardless of their income but decide to live in a wealthier or less expensive city within that state. States that focus on having a good education system with strong teachers and teaching policies will result in more of a population growth then states with weak education systems in place. States that do not set high state and local sales tax policies will notice more of an increase in population then states with high taxes.

For forthcoming research on population growth rates, it may be in one's interest to explore if education and tax rate still have an impact on population growth rates, or if income and unemployment still do not have an impact on population growth rates based on more recent data from when the new 2020 census is released. This research can also be taken further by looking at major populated cities in every state and comparing the cities tax rates and education system with the city and states population growth. Different independent variables can also be tested with the same dependent variable, on why some states have a higher population growth over other states. Some other variables that could help explain population growth rates in states may be attractions in the states, for example beaches, weather, people may prefer the cold or hot, transportation systems, if busses are available, the type of people residing in the state, or moving closer to family. Crime rates may also play a role into individual's decision to move to a certain state, because everyone would prefer to live in a safe environment.

The results from this research can also be examined further. The results showed that people prefer to live in states with low tax rates and good education systems, but for good education systems to be enforced, public schools require tax money to hire the best teachers, buy many school supplies and technological devices, and to build and renovate schools in poor conditions. This shows that individuals looking for good school system's, but lower taxes contradicts one another. Therefore, could it be that individuals are looking for good private school systems in a state versus public schools? Since private schools are not funded by local, state, or the federal government, it would seem more logical for individuals to want lower taxes and good private school systems when considering moving to a certain state.

The topic and research conducted in this paper can be taken to many more levels and expansions because surely, population growth rate cannot be explained or affected by just the two variables found to be significant in this research.

## Literature Cited

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Introduction facts collected from United States Census Reports