Abstract

This study sought to investigate the correlates of economic prosperity (median household income and low unemployment rates) in selected areas and their relationship to the educational attainment levels of the people who live in these areas. Also, the characterization of the areas sampled as urban/metropolitan or rural was taken into account. This was to investigate the validity of earlier findings suggesting that educated individuals locate to densely populated, urban areas more than to rural areas, making these areas more economically successful. Correlation analysis relating variables of economic prosperity and urban population data for 2000 Census tracts in the Carolinas were conducted. The calculation of 95% confidence intervals for the means for educational attainment, unemployment rates, and median household income for selected urban areas led to the conclusion that significantly for all three variables, the higher median household income levels can be found for Census tracts located within 25 kilometers (km) of cities with populations greater than 50,000. Unemployment rates, however, were not found to significantly vary with urban or rural areas and did not correlate strongly with educational attainment levels or median household income. The findings of this study suggest that urban areas have greater household income levels, on average, due, at least partly, to the high educational attainment levels of these areas. This trend was dependent on population of the cities which the census tracts surrounded and also the distances these tracts were located from these city centers.

Introduction

The work of Richard Florida (2002) has suggested that the presence of “talent” (a form of human capital defined as the percent of a population with a bachelor’s degree or higher) in certain areas contributes to these areas being more economically viable and attractive to companies seeking to hire qualified, skilled workers. In Florida’s 2002 research, he concluded that “talented” individuals located more to metropolitan areas (than to other areas) and that these metropolitan areas were the locations of a greater amount of job growth and economic prosperity than others. He also found that a significant correlation (p = 0.05) of 0.3882 existed between “talent” levels and per capita income in his sample of metropolitan areas. This observation can be related to P.M. Romer’s (1990) “new growth theory” where he states that the concentration of “talented” individuals in urban areas leads to greater economic growth in these areas. C. Simon (1998) also supports the notion that it is the concentration of human capital—particularly in the form of highly educated individuals—that has driven economic growth in many metropolitan areas in the United States over the past few decades. This project thus sought to investigate the correlates of economic prosperity using the states of North and South Carolina as its dataset to see if Florida’s (2002) findings concerning increased economic vitality in large, urban areas could be replicated.

Methods and Data Sources

The 2000 Census tract data was obtained from the U.S. Census Bureau’s website. The boundary files for the tracts can be located at <http://www.census.gov/geo/www/cob/2000_t20.html> while the tract data was obtained from Summary File 3 (SF3) and can be downloaded at a variety of geographic levels via <http://www.census.gov/sasweb/afius/>. The census tracts were uploaded into ArcMap. ArcGIS Access for processing and ge-referencing before being imported into Microsoft Excel for final formatting and finally imported into ArcMap and joined with the boundary shape files containing the geographic coordinates of each tract.

Table S1

<table>
<thead>
<tr>
<th>Teacher ID</th>
<th>Name</th>
<th>Title</th>
<th>School</th>
<th>Subject</th>
<th>Email</th>
<th>Telephone</th>
</tr>
</thead>
<tbody>
<tr>
<td>T1</td>
<td>John Smith</td>
<td>Teacher</td>
<td>School A</td>
<td>Math</td>
<td><a href="mailto:john.smith@email.com">john.smith@email.com</a></td>
<td>123-456-7890</td>
</tr>
<tr>
<td>T2</td>
<td>Jane Doe</td>
<td>Principal</td>
<td>School B</td>
<td>Science</td>
<td><a href="mailto:jane.doe@email.com">jane.doe@email.com</a></td>
<td>987-654-3210</td>
</tr>
</tbody>
</table>

All technical documentation regarding the 2000 Census Summary File 3 can be found in a PDF document created by the Census Bureau, found at <http://www.census.gov/prod/cen2000/doc/10.pdf>. The sites point file and population data was obtained from the Census Bureau 2000 “census places” folder in the GIS data downloads maintained at Furman University GIS department (N: Data USA census places.shp). Once all data had been incorporated into one ArcMap file consisting of a city and census tract layer, data analysis began by sampling tracts located within various distances of selected cities using the “select by location” query tool. New map layers were created from each successive distance query (an example of which would be: “select features from Census Tract Data shape files (and their subsequent attribute tables) that “are within a distance of” (km) from City point files of interest) and then all census tract data lying within various distance “rings” from city centers were exported from Microsoft Excel for analysis. These “rings” or “radii” from city centers were obtained by selecting out the unique tracts added as the selection distance from the city centers was increased from 0 to 5 km at 5 km increments. A below flow chart depicting the method in which the data was processed and prepared for analysis as well as a map depicting how census tracts (and their data) within varying distances of city centers were selected and created as new map layers for later data processing and analysis.

Discussion

The correlation analyses conducted in this study confirm previous findings relating the presence of educated individuals in an area to that area’s economic vitality (measured in this experiment as median household income and low unemployment rates). A value of 0.702 was calculated in this experiment between the percentage of the population with a bachelor’s degree or higher and median household income across all census tracts in the Carolinas of 0.702 was in fact greater than Florida’s (2002) correlation of 0.5882 found between educational attainment levels and per capita income in metropolitan areas. The fact that educational attainment and median household incomes were found to be statistically higher in areas within 25 km of cities of populations greater than 50,000 seems to confirm Florida’s (2002) hypothesis that educated individuals in urban areas create large, educational and economic growth in these areas (having greater household incomes and economic prosperity). Interestingly, the trend across all cities sampled, seems to imply the presence of “suburban rings of prosperity” around large cities with incomes for the entire region around these cities highest for those census tracts located between 10 and 20 km from the city centers. In conclusion, educational attainment and median household income are correlated and are higher in urban areas than in rural areas. The size of the city around which the census tracts are located also seems to impact the percentage of educated individuals located in these areas as well as the median household incomes of these areas; larger cities have a greater percentage of educated people and also have higher median household incomes.

References


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