Supermarket Service Analysis in the Latino Population of Santa Ana, CA

Introduction

The city of Santa Ana, California is located in Orange County, one of the wealthiest counties in California, however it has the second highest rate of overweight and obese youth of the county at 55.7%. Having grown up in Santa Ana this information concerned me and I wanted to do an analysis of an obesity factor: supermarkets. I chose supermarkets because it has been found that neighborhoods with better access to supermarkets have lower obesity levels and residents of low-income and minority neighborhoods tend to have poor access to supermarkets. Knowing that the city has a majority Latino population I wanted to do an analysis would assess how supermarket accessibility in Santa Ana corresponded to 1) how much of the Latino population has good access and 2) the median household income.

Methods

All data layers were clipped into the Santa Ana city boundary and set to the same projection prior to analysis.

Supermarkets:

I selected stores that were big chain supermarkets and ended with 33 stores fitting the criteria. I selected these because big chain supermarkets tend to have more food variety and lower prices than convenience stores. Then I geocoded the points with their XY coordinates.

Census Data:

I edited the tables in Excel and then joined them to the points data layer for analysis.

References:


Results

Over all, only about 33.9% of the city’s population are in the service area blocks groups while 66.1% falls outside. Within the service area population 83.1% are Latino, but from the entire city only 39.3% of the Latino population falls within the service area block groups leaving 60.7% of the Latino population in the excluded service block groups. To find how median household income relates to the accessibility of supermarkets I divided them into four different classes. Class 1 is the lower income class, and only 46.8% of the lower income class fell within the service block groups. Class 2, the lower middle income class, has 30.7% of its population in the service block groups. Class 3, the upper middle income class, has 23.3% of its population in the service block groups. Class 4, the higher income class, contains 20.9% of its population within the service block groups.

Table 2—Population Totals for Latino and Median Household Income within Santa Ana, the Service Block Groups, and the Non-Service Block Groups

<table>
<thead>
<tr>
<th>Class</th>
<th>Total</th>
<th>Latino</th>
<th>Non-Latino</th>
<th>Class 1</th>
<th>Class 2</th>
<th>Class 3</th>
<th>Class 4</th>
</tr>
</thead>
<tbody>
<tr>
<td>All Block Groups</td>
<td>108,815</td>
<td>38,531</td>
<td>70,284</td>
<td>145,730</td>
<td>50,331</td>
<td>95,409</td>
<td>14,491</td>
</tr>
<tr>
<td>Service Block Groups</td>
<td>277,061</td>
<td>90,815</td>
<td>186,246</td>
<td>214,730</td>
<td>50,234</td>
<td>168,476</td>
<td>11,722</td>
</tr>
<tr>
<td>Non-Service Block Groups</td>
<td>255,857</td>
<td>148,776</td>
<td>107,081</td>
<td>14,491</td>
<td>14,491</td>
<td>14,491</td>
<td>14,491</td>
</tr>
</tbody>
</table>

Conclusion

In conclusion, the results show that the big chain supermarkets are not fully accessible to the majority of the city’s population and the majority of the Latino population, although the majority of the population within the service area is 83.1%. It appears that the supermarkets serve more of the Class 2 population out of all the other classes. At 46.8%, the majority of the population in the service block groups is in Class 1, however 53.3% of that population remains in the non-service block groups. Big chain supermarkets in Santa Ana need to increase their accessibility to the Latino population, Class 1 and Class 2 because they make up the majority of the city’s population, 27.7% and 55.5%, respectively.

One major limitation to this study is the use of block groups as a proxy to accessibility to the supermarkets. It does not reflect real life distance and access but it did work to get estimates of what percent of the Latino population in Santa Ana falls within that good accessibility group. The percentages calculated are estimates of the populations that fall within the service area of .5 miles and the population that falls outside.

References: