Transportation and Social Equity as a Way to Alleviate Poverty

The Case of Low-Income Neighborhoods in Savannah, GA

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What is Social Equity?

- It’s a term that implies a calculation of fairness, rights and justice.
- Fair access to livelihood, education, and resources. Full participation in the political and cultural life of the community and self determination in meeting fundamental needs.
- Is considered the corner stone of society, and it cannot be maintained for a few at the expenses of many.
• Aimed at discovering identifying factors contributing to obesity.

• Face to face interview questionnaires (Surveys) were conducted over a period of two(2) years in Chatham County, GA neighborhoods by Dr. Deden Rukmana. (2013 and 2014)

• There was a total of 424 surveys that were entered and cleaned from the raw data.

• Categories (Perceived General health status, Physical activities, community environment, walking assessment, individual and interpersonal supports and constraints, etc.)
• The lack of reliable and affordable transportation in the low-income neighborhoods of Savannah, GA, enhances severe health issues and makes it difficult for these residents to access the basic opportunities offered by society. (Food, Jobs, Education, Healthcare)

• The politics associated with transportation planning in urban neighborhoods hinders transportation equity and facilitates poverty.

• Residents are boxed into Food Desserts and forced to develop unhealthy eating habits.
Research Questions

• How is the social equity of residents living in the low-income neighborhoods of Savannah, GA affected by urban transportation planning?

• How do communities/neighborhoods shape health practices and determine the overall social equity of the community/neighborhood?

• How is social equity of the poor determined by their access to good public transportation?
Literature Review

- The politics of Transportation Policies
  Studies assessing equity in urban transportation plans conducted by (Mark & Brian, 1999), (Kirstin & Thill, 2011), and (Manaugh, Badami, & El-Geneidy, 2015) all showed how urban transport policies are biased towards certain neighborhoods and why equity is necessary for transportation planning. For this reason, transportation policies are characterized by a wide range of incommensurable impacts. They highlight how the service level of public transits varies based on the sociodemographic characteristics of the neighborhoods that they administer these services to.

- Going the distance without reliable and affordable public transportation
  The lack of affordable and reliable public transportation in low-income neighborhoods can cause the poor to become stranded and stuck in poverty as showed in scholarly articles produced by (Blumenberg & Agrawal, 2015), and (Hamrick & Hopkins, 2012). Low-income individuals have limited access to opportunities that may lift them out of poverty, and also to nutritious food, which results in poor diets which may lead to obesity and diet-related diseases.
There are six (6) low income neighborhoods across which the data was retrieved. A total of 424 residence surveyed.

- Kayton/Frazier Homes
- Hitch Village/Fred Wessels
- MLK Neighborhoods
- Yamacraw Village
- West Savannah Neighborhoods
- Blackshear Homes.
TABLE SHOWING THE DIFFERENT CATEGORIES OF DATA COLLECTED

<table>
<thead>
<tr>
<th>Categories</th>
<th>Survey Year</th>
<th>Total Number of Respondents</th>
</tr>
</thead>
<tbody>
<tr>
<td>First year Respondents</td>
<td>Year 1 (2012)</td>
<td>311</td>
</tr>
<tr>
<td>First Time Respondents From Second Year</td>
<td>Year 2 (2013)</td>
<td>37</td>
</tr>
<tr>
<td>First Time respondents Who answered second Year Survey</td>
<td>Year (2013)</td>
<td>21</td>
</tr>
<tr>
<td>Second time Respondents</td>
<td>Year (2013)</td>
<td>55</td>
</tr>
</tbody>
</table>
Table Showing Descriptive Statistics Of Body Mass Index For First Year Respondents (2012)

<table>
<thead>
<tr>
<th>BODY_MASS_INDEX</th>
<th>Frequency</th>
<th>Percent</th>
<th>Valid Percent</th>
<th>Cumulative Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Valid</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Underweight</td>
<td>6</td>
<td>1.9</td>
<td>2.2</td>
<td>2.6</td>
</tr>
<tr>
<td>Normal</td>
<td>95</td>
<td>30.5</td>
<td>35.1</td>
<td>37.6</td>
</tr>
<tr>
<td>Overweight</td>
<td>70</td>
<td>22.5</td>
<td>25.8</td>
<td>63.5</td>
</tr>
<tr>
<td>Obese Class I</td>
<td>42</td>
<td>13.5</td>
<td>15.5</td>
<td>79.0</td>
</tr>
<tr>
<td>Obese Class II</td>
<td>32</td>
<td>10.3</td>
<td>11.8</td>
<td>90.8</td>
</tr>
<tr>
<td>Obese Class III</td>
<td>25</td>
<td>8.0</td>
<td>9.2</td>
<td>100.0</td>
</tr>
<tr>
<td>Total</td>
<td>271</td>
<td>87.1</td>
<td>100.0</td>
<td></td>
</tr>
</tbody>
</table>

Histogram Showing Normal Curve Of BMI For First Year Respondents (2012)
**Data Analysis**

**Table Showing Descriptive Statistics Of Body Mass Index For First Time Respondents In (2013)**

<table>
<thead>
<tr>
<th>BMI</th>
<th>Frequency</th>
<th>Percent</th>
<th>Valid Percent</th>
<th>Cumulative Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Valid</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Normal</td>
<td>10</td>
<td>47.6</td>
<td>47.6</td>
<td>47.6</td>
</tr>
<tr>
<td>Overweight</td>
<td>5</td>
<td>23.8</td>
<td>23.8</td>
<td>71.4</td>
</tr>
<tr>
<td>Obese Class I</td>
<td>3</td>
<td>14.3</td>
<td>14.3</td>
<td>85.7</td>
</tr>
<tr>
<td>Obese Class II</td>
<td>2</td>
<td>9.5</td>
<td>9.5</td>
<td>95.2</td>
</tr>
<tr>
<td>Obese Class III</td>
<td>1</td>
<td>4.8</td>
<td>4.8</td>
<td>100.0</td>
</tr>
<tr>
<td>Total</td>
<td>21</td>
<td>100.0</td>
<td>100.0</td>
<td></td>
</tr>
</tbody>
</table>

**Histogram Showing Normal Curve Of BMI For First Time Respondents (2013)**

- **Mean**: 4.00
- **Std. Dev.**: 1.315
- **N**: 21
1. What is the average distance travelled by residents in low-income neighborhoods to the closest bus stop?

2. What is the average distance travelled by residents in low-income neighborhoods to the furthest bus stop.

3. How many bus routes are made available throughout low-income neighborhoods in Savannah, GA and What is the total number of Bus stops In and around low-income neighborhoods?

4. Do most low income residents travel more that a half mile radius to the closest bus stop from their home?
Geographic location of the low-income neighborhoods surveyed

Study Area Map
Transportation and Social Equity: The case of Low Income Neighborhoods in Savannah, GA
Concentration of poverty within the six (6) low-income neighborhoods surveyed.
Bus stops and bus routes available to low-income residents.

Public Transit Coverage Within Low-Income Neighborhoods
Transportation and Social Equity: The case of Low Income Neighborhoods in Savannah, GA

Sources: SAGIS, RS&H
Creation Date: 8/02/17
Quarter of a mile buffer showing coverage of public transit in Savannah, Chatham County
The average distance travelled from low income residents’ home to the closest bus stop.
Distance to the Nearest Bus Stop - Yamacraw Village

Transportation and Social Equity: The case of Low Income Neighborhoods in Savannah, GA

Sources: SAGIS, RS&H
Creation Date: 8/02/17
Distance to the Nearest Bus Stop-Kayton/Frazier Homes
Transportation and Social Equity: The case of Low Income Neighborhoods in Savannah, GA

Sources: SAGIS, RS&H
Creation Date: 8/02/17
Distance to the Nearest Bus Stop-MLK Neighborhoods
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Distance to the Nearest Bus Stop-Blackshear Homes

Transportation and Social Equity: The case of Low Income Neighborhoods in Savannah, GA
Distance to the Nearest Bus Stop-Hitch Village /Fred Wessels Homes

Transportation and Social Equity: The case of Low Income Neighborhoods in Savannah, GA

Sources: SAGIS, RS&H
Creation Date: 8/2/17
The Chatham Area Transit has 1526 bus stops along the bus route coverage shown in map 3. 59 of which are located in and the around the low-income neighborhoods of Savannah mentioned earlier. That is 3.85% availability to resident living in these Low-Income neighborhoods.
There are over 23 routes operating daily throughout Chatham County, however, only 7 routes are easily accessible from these low-income neighborhoods.

To answer the final research question most of the low income residents do travel more than a half mile radius in order to access the closest bus stop.

- Shortest commute to a bus stop 0.012 miles
- Longest commute to a bus stop 1.15 miles
<table>
<thead>
<tr>
<th>Low-Income Neighborhoods in Savannah, GA</th>
<th>Closest Distance travelled by a resident (linear units)</th>
<th>Closet distances travelled by a resident (Miles)</th>
<th>Furthest distances travelled by a resident (Linear units)</th>
<th>Furthest Distance travelled by resident (Miles)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Yamacraw Village</td>
<td>63.9400</td>
<td>0.01211</td>
<td>3182.79984</td>
<td>0.602803</td>
</tr>
<tr>
<td>Kayton/Frazier Homes</td>
<td>1009.6944</td>
<td>0.19123</td>
<td>4366.559999</td>
<td>0.826999</td>
</tr>
<tr>
<td>MLK</td>
<td>80.8896</td>
<td>0.01532</td>
<td>8010.9744</td>
<td>1.51723</td>
</tr>
<tr>
<td>Hitch Village/Fred Wessels</td>
<td>252.8592</td>
<td>0.04789</td>
<td>3364.4688</td>
<td>0.63721</td>
</tr>
<tr>
<td>West Savannah</td>
<td>1893.5664</td>
<td>0.35863</td>
<td>3297.6768</td>
<td>0.62456</td>
</tr>
<tr>
<td>Black Shear Homes</td>
<td>1352.3136</td>
<td>0.25612</td>
<td>2072.4528</td>
<td>0.39251</td>
</tr>
</tbody>
</table>
Indication of Findings

• The findings show that both bus routes and bus stops need to be expanded in and around the low-income neighborhoods of Savannah, GA.

• The need for self sufficiency

• If poor people acquire access to reliable and affordable public transportation that is in close proximity to their homes, social equity wouldn’t be characterized as an incommensurable case and the need to maintain social equity of the haves may no longer need to come at the expense of the have-nots.
Aims

• Share data with CAT, SAGIS, and HUD

The Next Step

• In the process of conducting a spatial analysis of bus stop conditions within Savannah, GA.

• Variables (Canopy, Sidewalks, Bus stop furniture, signs) - 15 of 23 routes completed

• Frequency

• Weekend routes
References


References


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• Advance GIS Professor- Mr. Kevin Macleod- Spatial analysis Assistance
Questions?

“Where there is injustice for one, there is injustice for all.”

~MLK