Geog 570 - Advanced Spatial Analysis

Spatial Segregation Measured with a Location Quotient Controlling for Income: The case of Four Brazilian Cities

Objective
Test the Hypothesis Presented at (Telles, 2014):

“One’s ability to pay for housing is the only limit to where one can live. Otherwise, Brazilians of different colors are randomly distributed across urban neighborhoods.”

Method
A Standardized Location Quotient assuming a binomial process for the distribution of Black residents.

\[
SLQC_i = \frac{\ln(LQ_i) - E[\ln(LQ_i|I_i)]}{\sigma[\ln(LQ_i|I_i)]}
\]

Results

<table>
<thead>
<tr>
<th></th>
<th>Moran’s I Statistic</th>
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</thead>
<tbody>
<tr>
<td></td>
<td>SLQ</td>
</tr>
<tr>
<td>Brasilia</td>
<td>0.826*</td>
</tr>
<tr>
<td>São Paulo</td>
<td>0.768*</td>
</tr>
<tr>
<td>Salvador</td>
<td>0.775*</td>
</tr>
<tr>
<td>Porto Alegre</td>
<td>0.596*</td>
</tr>
</tbody>
</table>

Conclusion
Income is not a sufficient argument to explain the spatial segregation of Blacks within Brazilian cities

UP 460 - Transportation/Land Use Policy

The Effects of Accessibility on Commuting Time: The case of São Paulo – Brazil

Objective
Calculate the effect of accessibility to opportunities on the average commuting time of São Paulo TAZs

Method
Estimate an accessibility measure from a Transit Demand Model

\[
A_i = \frac{1}{E} \sum_{j=1}^{N} E_j f(c_{ij})
\]

where:

\[
f(c_{ij}) = \exp[\beta_1 c_{ij}]
\]

Regress commuting duration against accessibility and controlling parameters:

\[
\ln(c_n) = \gamma_0 + \gamma_1 \ln(A_n) + \Gamma \ln(X) + \epsilon_n
\]

Results

<table>
<thead>
<tr>
<th></th>
<th>Whole Sample</th>
<th>Excluding Central Residents</th>
</tr>
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<tbody>
<tr>
<td>Accessibility</td>
<td>-0.15***</td>
<td>-0.78***</td>
</tr>
</tbody>
</table>

Conclusion
Accessibility has a significant effect on commuting duration, the effect is more intense for residents of farther neighborhoods

ECON 514 – Urban Economics

Efficiency of Fare subsidies in Brazil: A Replication of Parry and Small (2009) to the Case of São Paulo

Objectives
Estimate the efficiency of transit subsidies in São Paulo, and evaluate how was it affected by the fare increase revoke.

Method

Results

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Conclusion
- Subsidies are inferior to optimal values;
- Fare raise revoke increased subsidy, however it is still below optimum
- Subsidy gains derive from low operating costs and high traffic congestion;