Socioeconomic differences among spatial distribution of food production and distribution points for commercial urban farms in Chicago, IL
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Background

• Food is generally produced in poorer rural areas and sold to wealthier urban areas.
• Food inequality also exists within North American cities, where many residents are food insecure, meaning they “lack consistent access to enough food for an active, healthy life.”
• Urban Commercial Farms (UCFs) produce and distribute food in urban areas to retailers.
• UA is upheld as a sustainable supplement to traditional agricultural to improve food security in impoverished neighbourhoods. However, some evidence suggests that UA contributes to spatial inequalities via eco-gentrification.

Objectives

Is there a distributional pattern of UCFs and their sale points across Chicago? Is there a socioeconomic status (SES) difference between where farms are located and where products are sold?

Data and Methods

Data: 27 UCFs; 54 sale points. Locations were geocoded into two shapefiles.
• Choropleth map made using 2016 Chicago Census data by census tract for three indicators:
  • Median household income
  • Mean home value
  • Percent racialized minority.

Statistics: Spatial statistics were calculated for mean center, standard distance and standard deviational ellipse.

Statistical analyses: Median differences in SES were calculated via the Kruskal-Wallis H-test ($p=0.01$):

$$H = \frac{12}{N(N+1)} \sum_{j=1}^{k} R_j^2 - 3(N+1)$$

Results

• Most UCFs are primarily located in lower SES areas.
• Produce grown is primarily distributed to higher SES areas.
• Our research challenges the notion that UA unequivocally reduces food insecurity.
• Findings suggest that there is a net transfer of benefits to wealthier neighbourhoods.
• UCFs in Chicago replicate unequal global transfer of agricultural products, challenging its sustainable image.

Acknowledgements

Many thanks to Brian Robinson for guiding this research and to Tim Elrick and Kareem Hammami for GIS support.

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References