

Monday January 11, 2021

An Introduction to the Spatial Equity Data Tool

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Why do we need equity tools?

- Many organizations committing to center equity in strategy, policy, and program decisions
- But there are no standardized definitions of what equity means or how to measure it
- Absent clear definitions and tools, equity analysis can be time and resource intensive

Why do we need equity tools?

- We conducted 39 interviews with city officials and community organization leaders in 6 focus cities

Austin TX, Boston MA, Kansas City MO, Philadelphia PA, Pittsburgh, PA

- Key finding: Organizations need **actionable tools** to embed equity into decisionmaking

Spatial Equity Tool

Spatial Equity Tool: What does it do?

- Allows user to upload **city** level geographic point data (ie data with latitudes/longitudes)
- Automatically calculates and visualizes demographic and geographic disparity scores on dashboard

Spatial Equity Tool: What can it be used for?

- Two broad use cases
 - Resident provided data (311, or participant surveys)
 - Place based programs (bike share stations, child care centers, food bank locations, etc)
- Can be used as planning, auditing, or exploratory tool

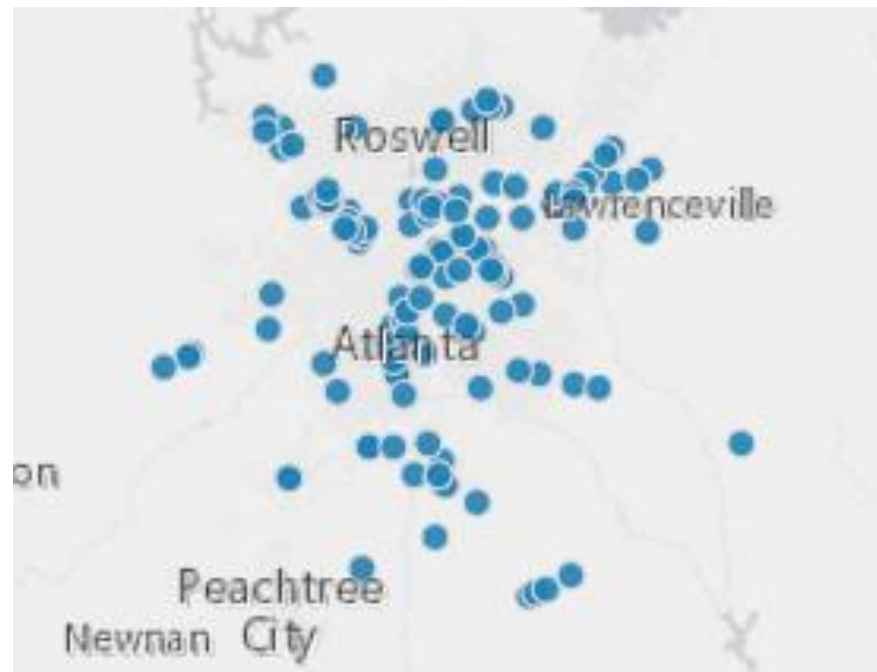
Spatial Equity Tool: Who is it meant for?

- **City agencies/non-profits:** To develop equity plans, evaluate existing programs, plan for future expansion, and engage the public
- **The public:** To analyze prior plan and investments, highlight inequities, and influence agencies' priorities and benchmarks

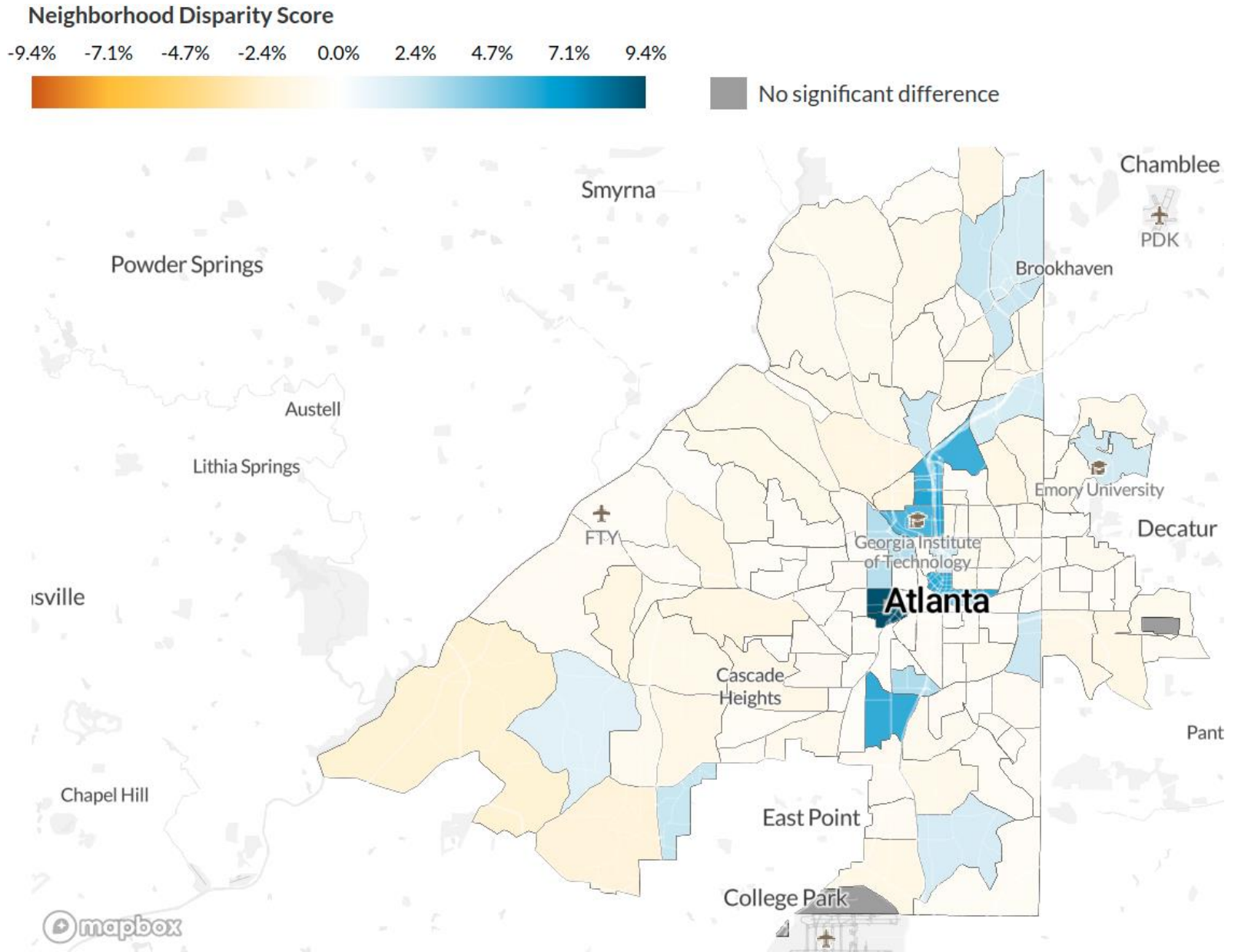
Case Study: College Facilities

College Community Facilities

X	Y	NAME
-84.4088	33.745	<u>SPELMAN COLLEGE</u>
-84.4046	33.712	ATLANTA TECHNICAL COLLEGE
-84.2956	33.77	AGNES SCOTT COLLEGE

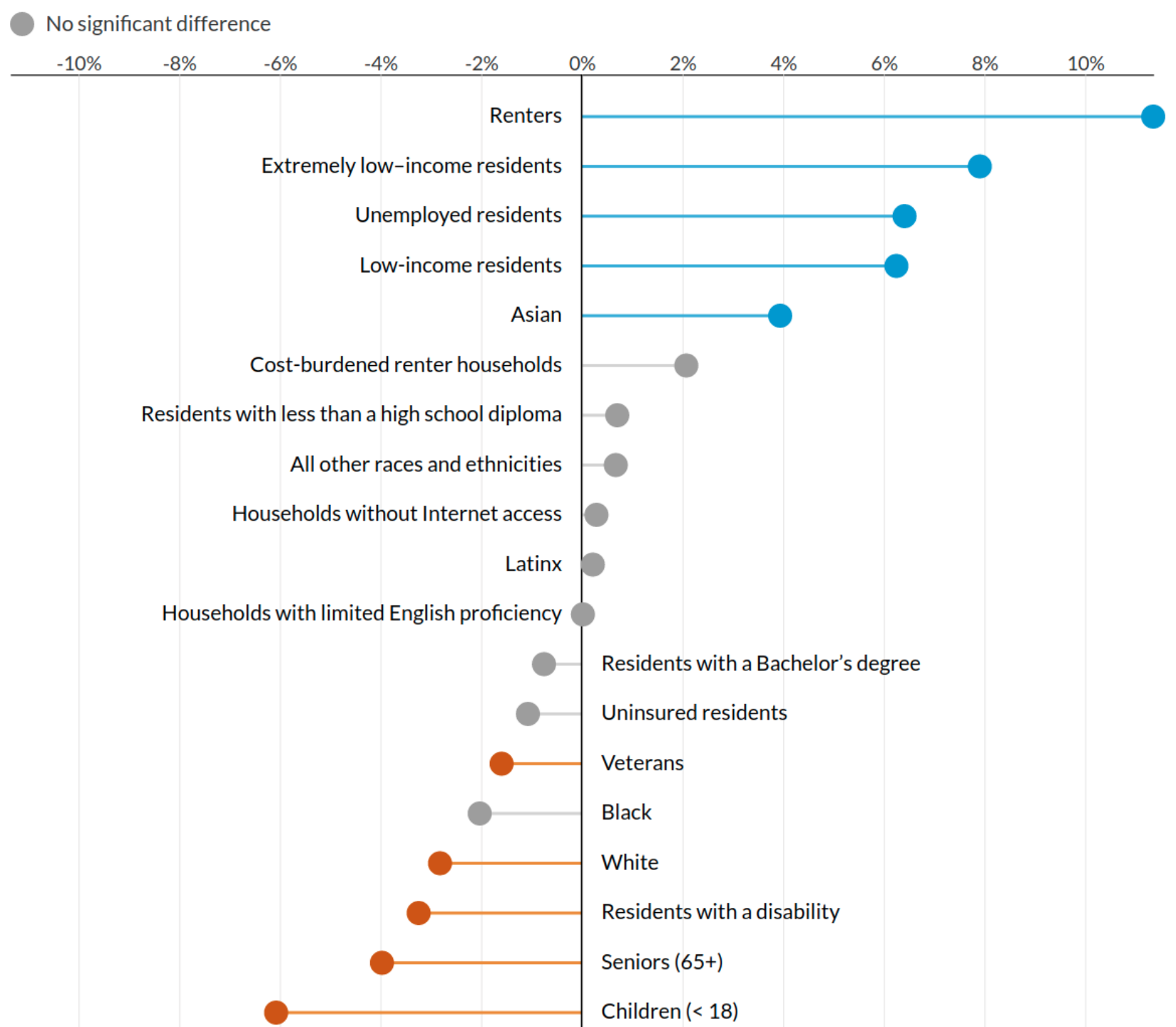


Atlanta College Facilities



Atlanta College Facilities


UNDERREPRESENTED



OVERREPRESENTED

You can use advanced options like weighting:

Choose a weight column

Selected weight


none selected

Cancel

Save

Or filtering:

Choose a column to filter by

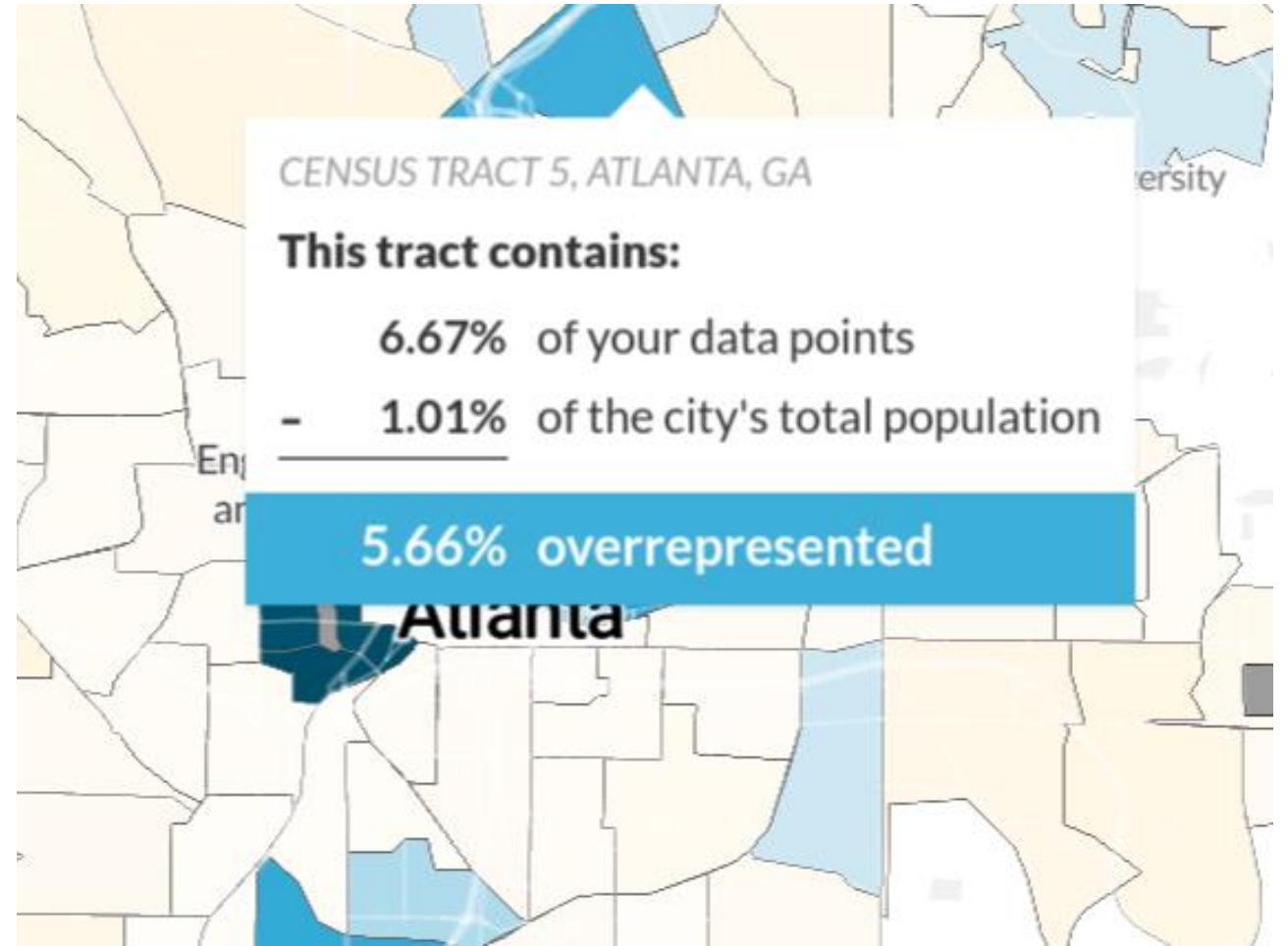
 

APPLY FILTER

Applied filters

How does it work?

- Compares user uploaded data to baseline data from the American Community Survey




How does it work?

- Users can also change the baseline population to compare their data against



Geographic distribution of your data compared with the city's

total population 

total population

low-income population

population without Internet access

population of cost burdened renter households

senior population

Why should you use the tool?

- Creates standardized definitions of equity
 - Allows for comparisons across time, policy domains, and cities
- Democratizes data analysis capabilities
- Allows analysis to be performed in seconds

How has this tool been used?

- Users have analyzed:
 - Traffic camera placements in Chicago, IL
 - Sidewalk funding allocations in Bloomington, IN
 - Solar panel tax credits in Washington
 - 911 requests in Denver, CO
 - Car crashes involving pedestrians in Cincinnati, OH

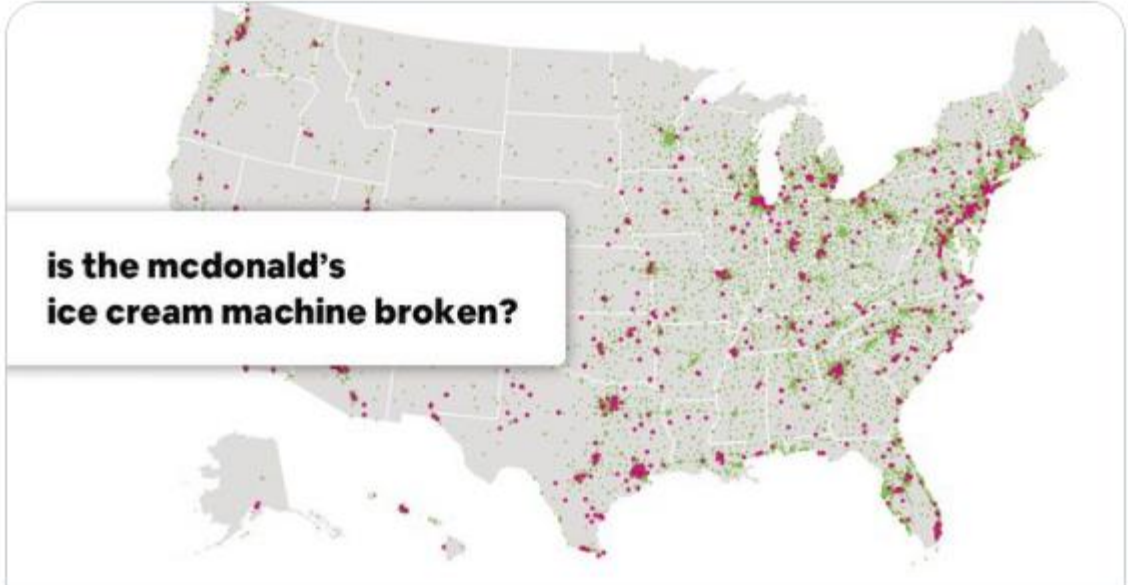
How has this tool been used?



rashiq @rashiq · Oct 22, 2020



I reverse engineered mcdonald's internal api and I'm currently placing an order worth \$18,752 every minute at every mcdonald's in the US to figure out which locations have a broken ice cream machine



mcbroken
is the mcdonald's ice cream machine broken?
mcbroken.com

846

13.4K

35.4K



How has this tool been used?

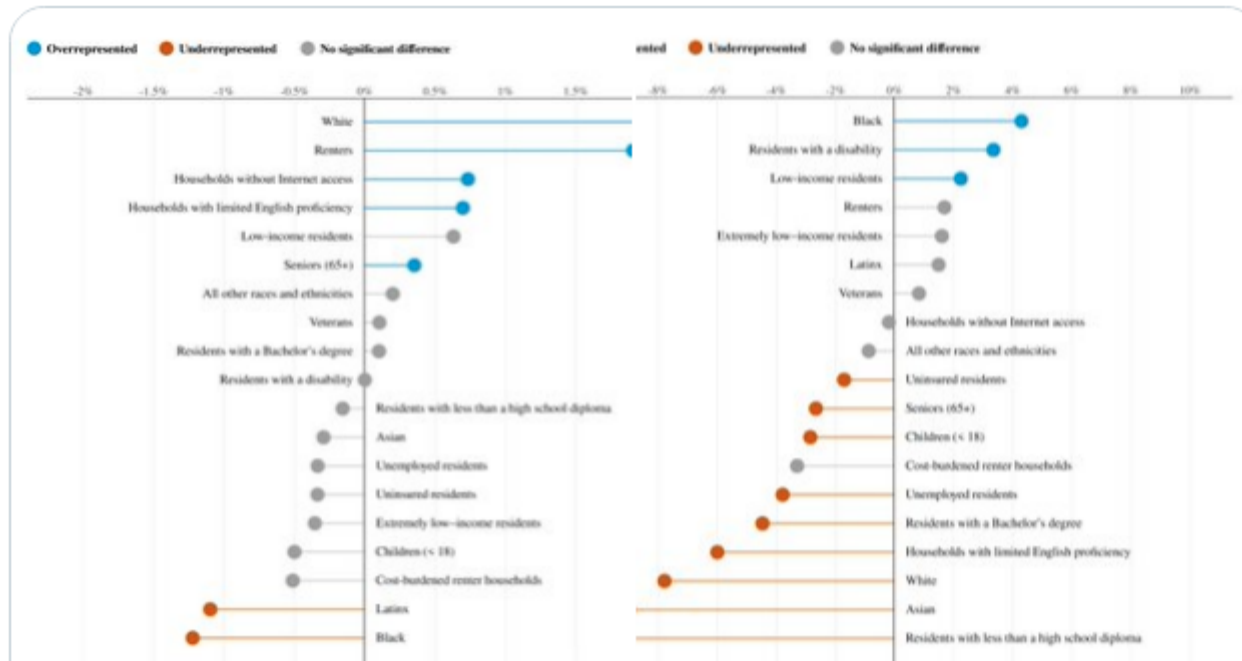


Mark Stosberg
@MarkStosberg



Replying to @rashiq

I ran the McBroken data through the Spatial Equity Data tool. apps.urban.org/features/equit... It found McDonalds are slightly overrepresented in white areas (first image) while locations with broken ice cream machines skew Black and low-income. (second image)



Questions/Feedback?

Discussion Questions

- How do you currently incorporate data and equity into your strategy development?
- How would you use a tool like this in your own work?

Challenges and Limitations

Technical Limitations of the Tool

- Tool doesn't take into account accessibility of each data point
- Tool only works at the *tract* level for 1 city at a time
- Only works for US cities population greater than 50,000
- Tool only has a few curated baseline datasets which may not be appropriate for your data

Questions this tool **can** answer

- Compared to the population distribution in a city:
 - Are certain areas of the city over/underrepresented in my data?
 - Are certain demographic groups over/underrepresented in my data?
 - Are these results significant after taking into account margins of error in Census figures?

Questions this tool **can't** answer

- Is the quality/accessibility of the services equal across the city?
- Is the population distribution the right measure to compare my data against?
- **Why** are certain areas / demographic groups overrepresented in my data?

Obstacles to using the tool:

- You need **access** to geographic point data
- May need **technical capacity** to download/create geographic data
- May need **context** to understand why under/over-representation exists and how to address it

Access

Obstacles: Access to data

- Main prerequisite to the tool is access to point level data (ie datasets with latitude/longitude)
- If you have data with addresses or census tracts, you're halfway there!

Sources of data for Atlanta

- Atlanta Regional Commission [Open Data Hub](#)
- Atlanta Dept of City Planning [Data Hub](#)
- Google Datasets
- Individual city or state agencies (ie DOT, DPH)

Technical Capacity

Obstacles: Technical Capacity

- If you have address data, you need to geocode data to get latitudes/longitudes
 - For more information: [Data@Urban blog post](#)
- If you have census tract data, you need to get centroid of the tract as latitudes/longitudes
 - [Missouri Census Data Center Geocorr](#)

Context

Obstacles: Context

- Key question: Why are there disparities in your data?
- Potential reasons include:
 - Data collection issues
 - Program implementation issues
 - Historical inequities
 - Mismatched baseline datasets

Obstacles: Context

- Reminder: Tool is one part of a larger decision-making process including lived experiences, and community input
- Using Tool to facilitate community engagement:
 - Understanding community priorities + collaborating to design strategy
 - Create environment where all feel comfortable sharing (e.g. Data Walks)

Ideas for Future Work

- Add other geographies (e.g. state, county, metro area)
- Incorporate drive/transit/walk times
- Incorporate additional baseline datasets
- Work with organizations to apply tool to specific issues

Discussion Questions

- What additional resources/support would your organization need to use a tool like this for strategy development?
- What additional features would be most useful to your organizations if added to the tool?

Want our Code or Data?

- Everything is open source!
 - **Code:** <https://github.com/UrbanInstitute/ui-equity-tool>
 - **Tool:** <https://apps.urban.org/features/equity-data-tool/>
- Happy to advise/help folks expand our methodology

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