SNAP and Local Supermarket Access

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Healthy Food Retail Policy Workgroup
February 1, 2017
Outline

• Concepts
• Recent Research
• Healthy Incentive Pilot (HIP) Retail Access
• Food Acquisition and Purchase Survey (FoodAPS)
Access to Automobiles
Low access and low income (1)

Orange shading represents poor access to a supermarket.

Note: Analysis at the block group level.
### Low access and low income (2)

<table>
<thead>
<tr>
<th>Urban</th>
<th>Rural</th>
</tr>
</thead>
</table>
| Low access: has ≥ 500 persons  
or ≥ 33% of population  
≥ 1 mile from supermarket | Low access: has ≥ 500 persons  
or ≥ 33% of pop  
≥ 10 miles from supermarket |
| Low income: low relative income  
or poverty rate ≥ 20% |

Orange shading represents tracts with low access and low income.

Note: Analysis at the census tract level.
Map of a hypothetical community food retail environment.

Note: The center of each circle represents a supermarket, and the circles represent neighborhoods lying less than one mile from a supermarket.
Map of the food retail environment in St. Louis

Source: Ver Ploeg et al., 2009. Note: the center of each circle represents a supermarket.
Outline

• Concepts

• **Recent Research**

• Healthy Incentive Pilot (HIP) Retail Access

• Food Acquisition and Purchase Survey (FoodAPS)
Recent Research

- Cummins et al. (2014) and Dubowitz et al. (2015). *Health Affairs*.
Pittsburgh, 2011.
Outline

• Concepts
• Recent Research
• Healthy Incentive Pilot (HIP) Retail Access
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Spatial Analysis
SNAP Participants & Poverty Were Concentrated in a Small Area of the County

Low-income areas are defined as Census block groups in which at least 20% of the population is living under the federal poverty line.
Coverage of Low-Income Areas by SNAP Retailers (of any type) Was High
But Coverage by HIP-Participating Supermarkets Was Lower
Outline

• Concepts
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Research Question

• What characteristics of the food retail environment are salient for low-income consumers’ shopping choices?
• How are those characteristics associated with food security and dietary quality outcomes?
Conceptual Framework

**Food Environment**
- Nearest supermarket:
  - < 0.5 miles
  - 0.5 - 1 miles
  - 1 – 10 miles
  - > 10 miles

**Household Resources**
- Income
- SNAP
- Automobile ownership

**Household Decisions About Primary Retailer**
- Distance to primary:
  - < 0.5 miles
  - 0.5 - 1 miles
  - 1 – 10 miles
  - > 10 miles
- Transportation to primary:
  - Own auto
  - Another auto
  - Other mode (bus, walking, cycling)
- Reason for choosing primary retailer:
  - Close
  - Low price

**Outcomes**
- Household food security
- Very good or excellent dietary quality
Food Acquisition and Purchase Survey

• Data collected
  – Household characteristics
  – Food acquisition and purchases in 7-day period
  – Locations of purchases and distance to retailers

• 4286 households in 4 resource strata

Adapted from USDA/ERS
Four Resource Strata

Household Resource Strata

Population Weighted Proportion

- Non SNAP, <=100% FPL
- Non SNAP, <=185% FPL
- Non SNAP, >185% FPL
- SNAP
Results

Household Resource Strata by Distance to Nearest Supermarket

Population Weighted Proportion of Distance to Nearest Supermarket

- **SNAP**
- Non SNAP, <=100% FPL
- Non SNAP, <=185% FPL
- Non SNAP, > 185% FPL

* The 1-10 and > 10 estimates were combined for non-disclosure purposes
Results

Household Resource Strata by Transportation Mode used for Food Purchasing

- SNAP
- Non SNAP, <=100% FPL
- Non SNAP, <=185% FPL
- Non SNAP, > 185% FPL

Population Weighted Proportion of Transportation Mode

- Own Auto
- Another Auto
- Other Mode
Results

Distance to Nearest Store by Transportation Mode used for Food Purchasing

Population Weighted Proportion of Transportation Mode

Distance to Nearest Supermarket

- Own Auto
- Another Auto
- Other Mode
Table 3: Food security and dietary quality for low-income sample (1 of 2)

<table>
<thead>
<tr>
<th>Distance to Nearest Super</th>
<th>Food security</th>
<th>Dietary quality</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>OR</td>
<td>CI</td>
</tr>
<tr>
<td>&lt; 0.5 miles</td>
<td></td>
<td>Reference</td>
</tr>
<tr>
<td>0.5 - 1 miles</td>
<td>0.86</td>
<td>0.66, 1.11</td>
</tr>
<tr>
<td>1 - 10 miles</td>
<td>0.83</td>
<td>0.54, 1.27</td>
</tr>
<tr>
<td>&gt; 10 miles</td>
<td>1.39</td>
<td>0.43, 4.49</td>
</tr>
</tbody>
</table>
### Table 3: Food security and dietary quality for low-income sample (1 of 2)

<table>
<thead>
<tr>
<th>Outcome: Transportation to Primary</th>
<th>Food security</th>
<th>Dietary quality</th>
</tr>
</thead>
<tbody>
<tr>
<td>Own auto</td>
<td>Reference</td>
<td>Reference</td>
</tr>
<tr>
<td>Another auto</td>
<td>0.59*</td>
<td>0.49*</td>
</tr>
<tr>
<td>Other mode</td>
<td>0.32*</td>
<td>0.78</td>
</tr>
</tbody>
</table>

CI: 0.38, 0.90, 0.26, 0.91, 0.47, 1.30
Discussion

- Distance to the nearest supermarket does not significantly predict food security self-reported household dietary quality.
- Even low-income Americans most commonly use automobiles to reach their primary food retailer.
Conclusion

• The most salient feature of the local food retail environment for low-income Americans may be the power to access to high-quality low-price supermarkets at reasonable driving distances.