Background

- SNAP was formed to address food insecurity and improve diet quality. SNAP benefits are available to eligible households, including SNAP participants.
- Rural environment tends to have higher poverty rates, lower access to nutritious food, and face economic decline.
- Rural SNAP participants are especially vulnerable to poor health outcomes compared to participants in urban areas.
- COVID-19 affected supply chains and had major economic and social impacts especially in low income populations.

Methods

- Transaction data from a large grocery store chain with 496 stores in 86 of North Carolina’s 100 counties.
- Counties classified as rural or urban using USDA definitions.
- SNAP shoppers identified by payment type.
- >32,000 store-month observations from October 2019 to December 2020.
- Outcomes: Share of total calories purchased from nutritionally-relevant food groups.
  - Fruits, vegetables, legumes and nuts (FVLN all)
  - FVLN without salt/fat/sugar (FVLNNA)
  - Sugar sweetened beverages (SSB)
  - Junk food (JF)
  - Processed meats and seafood (PM)
- Random effects linear regression models were used to estimate differences in sales before and after COVID-19.

Pre/Post COVID-19 Onset Share of Calories

<table>
<thead>
<tr>
<th>Food Category</th>
<th>Pre COVID (95% CI)</th>
<th>Post COVID (95% CI)</th>
<th>Difference (95% CI)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Fruits, Vegetables, Nuts, and Legumes without Additives</td>
<td>8.26% (8.18, 8.33)</td>
<td>8.20% (8.13, 8.27)</td>
<td>-0.06% (-0.11, 0.00)</td>
</tr>
<tr>
<td>All Fruits, Vegetables, Nuts, and Legumes with and without Additives</td>
<td>13.56% (13.42, 13.71)</td>
<td>13.37% (13.24, 13.50)</td>
<td>-0.20% (-0.30, -0.10)</td>
</tr>
<tr>
<td>Sugar Sweetened Beverages</td>
<td>10.33% (10.10, 10.56)</td>
<td>9.89% (9.71, 10.08)</td>
<td>-0.43% (-0.53, -0.33)</td>
</tr>
<tr>
<td>Junk Food</td>
<td>31.36% (31.22, 31.49)</td>
<td>30.04% (29.91, 30.17)</td>
<td>-1.32% (-1.41, -1.22)</td>
</tr>
<tr>
<td>Processed Meats and Seafood</td>
<td>5.51% (5.44, 5.58)</td>
<td>5.60% (5.54, 5.66)</td>
<td>0.09% (0.05, 0.13)</td>
</tr>
</tbody>
</table>

Estimates from random effects regression models including only SNAP sales per month observations, comparing October 2019 to December 2019 (pre) to October 2020-December 2020 (post). Models were adjusted for county demographic differences, percent of total transactions that are SNAP, percent of total loyalty cards that are SNAP, mean number of non-SNAP transactions, and Food Environment Index deviations. **Pre/post differences are statistically significant at an alpha of 0.05.**

Results

- A store being located in a rural county was significantly associated with lower share of calories from sugar sweetened beverages and junk food.
- Before and After COVID-19 Onset
  - Lower share of cals from FVLN all, SSBs, and JF
  - Higher share of cals from PM

Implications

- Needs for stronger SNAP vendor standards with specifications on stocking more healthful foods.
- Incentive/Disincentives for SNAP participants to buy more healthful foods and less unhealthy foods.
- Need for protective measures around supply chains during major global events to ensure healthy options are available for SNAP participants.

References


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