The Potential for Mobile Markets to Improve Food Access and Affordability:
A Market Basket Analysis

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What are Mobile Markets?

- Tucson Community Food Bank operates a Value Food Store (VFS) selling groceries at 30-70% discount
- Mobile Markets take VFS products to isolated areas of Pima County
  - New Pascua Yaqui Pueblo: Closest 2 stores 2.7 – 4.25 miles away
  - Old Nogales Highway Colonia: Closest 2 stores 5 – 5.6 miles away
  - For comparison, 90% of California population within 2 miles of full service grocery store

Research Questions

- What are Mobile Markets?
- What is the extra cost of purchasing a healthier market basket?
- Are healthier items available at stores near the study area?
- How much could Mobile Market purchases reduce the cost purchasing the Thrifty Food Plan and healthier market baskets?
- How much do Mobile Market customers save on their actual purchases (because purchased items may not always match market basket items)?

Methods & Data

- Interviewed mobile market customers about
  - Food shopping behavior
  - Self-reported change in behavior
- Grocery stores surveyed to construct market baskets
  - Thrifty Food Plan (TFP)
  - Healthier Basket based on Jetter & Cassady study
    - 8% less fat
    - Substantially more fiber
- Mobile market substitution
  - Substitute mobile market prices into market baskets
  - Recalculate basket cost and savings from mobile markets
- Cost savings from actual mobile market (mm) purchases
  - Begin with actual mm purchases
  - Calculate costs of these purchases if made at nearest grocery store

![Graph showing cost savings and mobile market prices](image)

Result 1 – Healthier basket costs 12% more than TFP

<table>
<thead>
<tr>
<th></th>
<th>2006</th>
<th>2007</th>
<th>Both Years</th>
</tr>
</thead>
<tbody>
<tr>
<td>TFP</td>
<td>$105.25</td>
<td>$115.18</td>
<td>$110.22</td>
</tr>
<tr>
<td>Healthier</td>
<td>$115.58</td>
<td>$131.58</td>
<td>$123.58</td>
</tr>
<tr>
<td>Cost Difference</td>
<td>$10.33</td>
<td>$16.40</td>
<td>$13.37</td>
</tr>
<tr>
<td>Percent Difference</td>
<td>10%</td>
<td>14%</td>
<td>12%</td>
</tr>
</tbody>
</table>

Result 2 – Whole grains, lower fat cheeses & meats most likely to be missing at local grocery stores

Result 3 – Shopping at mobile markets reduce market basket costs $9-$12 / week (8-11%)

<table>
<thead>
<tr>
<th></th>
<th>2006</th>
<th>2007</th>
<th>Both Years</th>
</tr>
</thead>
<tbody>
<tr>
<td>Baseline cost savings</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>TFP</td>
<td>$9.42</td>
<td>$14.48</td>
<td>$11.95</td>
</tr>
<tr>
<td>Healthier</td>
<td>$6.62</td>
<td>$12.50</td>
<td>$9.56</td>
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</tbody>
</table>

Result 4 – Mobile market prices substantially less than at local grocery stores

<table>
<thead>
<tr>
<th></th>
<th>Low Volume</th>
<th>Higher Volume</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cost of Items Sold</td>
<td>$137.52</td>
<td>$266.71</td>
</tr>
<tr>
<td>Difference from Mobile Market Cost</td>
<td>$54.43</td>
<td>$99.01</td>
</tr>
<tr>
<td>Store Cost as a % of Mobile Market Cost</td>
<td>166%</td>
<td>195%</td>
</tr>
<tr>
<td>Mobile Market % Discount from Store Cost</td>
<td>38%</td>
<td>36%</td>
</tr>
<tr>
<td>Community Cost Reduction per Dollar of Mobile Market Sales</td>
<td>$0.66</td>
<td>$0.59</td>
</tr>
</tbody>
</table>

Result 5 – Cost effectiveness hampered by extremely small sales volume

<table>
<thead>
<tr>
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<th>Low Volume</th>
<th>Higher Volume</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total Community Cost Reductions per Mobile Market Visit</td>
<td>$54.43</td>
<td>$99.01</td>
</tr>
<tr>
<td>Community Cost Reduction per Dollar of Mobile Market Sales</td>
<td>$0.66</td>
<td>$0.59</td>
</tr>
<tr>
<td>Community Cost Reduction per Dollar of Mobile Market Labor Costs</td>
<td>$0.40</td>
<td>$0.73</td>
</tr>
</tbody>
</table>

Discussion

- Mobile markets offered significant percent cost reductions
  - Items purchased at mobile markets would cost >50% more at local stores
  - Mobile market purchases could reduce weekly costs of TFP or healthier market basket by >10%
- Absolute cost reduction to community quite small
  - Program has small sales volume
  - Costs of delivery high relative to local cost savings

Policy Postscript

- Tucson Community Food Bank has subsequently moved from expanding the number of mobile markets
  - Instead, now reducing number of sites
  - Expanding hours and sales volume of existing sites
  - This should improve cost-effectiveness of overall program

Acknowledgements

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