Rhody Food on the Move

Are Food on the Move mobile markets effectively located for improving access to fruits and vegetables to low-income Rhode Island residents?

Introduction

The Rhode Island Public Health Institute’s (RIPHI) “Rhody Food on the Move” (FOTM) is a mobile farmers market project that aims to improve both food and nutritional security of Rhode Island residents. The mobile markets are located throughout the state to specifically increase access to fruits and vegetables for low-income communities.

While limited geographic access is one major component of food security in communities, another significant structural barrier includes the high cost of fresh fruits and vegetables. Therefore, FOTM utilizes a financial incentive program that doubles the value of Supplemental Nutrition Assistance Program (SNAP) dollars for SNAP participants to use at these markets.

The purpose of this project is to determine whether FOTM mobile markets are effectively located to improve access to fresh produce, particularly for low-income children and older adults.

Methodology

Data sources: Rhode Island census tracts were downloaded from the U.S. Census Bureau as a TIGER shapefile. Poverty and Food Stamp/SNAP by census tract data were downloaded from the U.S. Census Bureau’s American Fact Finder. This dataset was created using 2011-2015 American Community Survey (ACS) 5-Year Estimates. Location and sales data for the FOTM markets was provided by the RIPHI. County boundaries and RIPTA bus routes were downloaded from Rhode Island GIS (RIGIS).

Indicators: ACS data on “Percentage of families and people whose income in the past 12 months is below the poverty level (All families)” was used as a proxy for poverty levels. ACS data on “Percent households receiving food stamps/SNAP; Estimate; Households” was used as a proxy for households receiving SNAP benefits. ACS data on “Percent households receiving food stamps/SNAP; Estimate; Household Type- With children under 18 years” was used as a proxy for families with children receiving SNAP benefits. ACS data on “Percent households receiving food stamps/SNAP; Estimate; With one or more people in the household 60 years and over” was used as a proxy for families with elderly members receiving SNAP benefits.

Data joins: The demographic data were joined to the TIGER file by census tract to create choropleth maps for the SNAP data. The percent of households, children and elderly receiving SNAP benefits was divided into quintiles to easily draw comparisons across the maps.

Geocoding: The locations of the mobile markets were geocoded to obtain the longitude and latitude coordinates using the Texas A&M Geocoder. The coordinate system used was GCS, North American 1983.

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Cartographer: Marbury Jacobs

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Results

Through choropleth mapping and geocoding, we are able to better understand how mobile market locations relate to poverty levels and the percent of SNAP recipients. We can determine the areas of highest need in terms of SNAP participation, and look specifically at populations of interest, including children and older adults. We can also assess whether the mobile markets are helping meet the food and nutritional needs of SNAP participants by comparing the percent of electronic benefits transfers (EBT) at each market location.

Map 1 indicates that the majority of the Providence County markets are located in areas with the most families living below poverty. One Kent County market is located in a census tract with the lowest percentile of families living in poverty, while three others appear to be more-appropriately located. The two Washington County markets are located in or very close to the census tracts with the highest percentile of families living in poverty.

Maps 2, 3 and 4 illustrate how the percent of SNAP sales vary depending on the market and its location. The sites with the highest percent of EBT sales are primarily concentrated in the city of Providence. While the percent of households and families with children receiving SNAP benefits is high in the city of Providence, the percent of families with older adults receiving SNAP benefits is lower in the city and higher throughout much of the rest of the state.

Discussion

By spatially comparing poverty and SNAP participation rates to the market locations and sales data, it is evident that many of the FOTM mobile markets are located in areas of high SNAP participation for children and households in general. However, it does not appear that the markets are also situated to meet the needs of many families receiving SNAP with at least one elderly member.

There does not appear to be a trend between the percent of EBT sales and SNAP participation, as there are markets in the highest-need areas with EBT sales ranging from only 3% to 51% of total sales. Further analysis should include methods to increase outreach to SNAP participants in these high-need areas. Additional analysis may also include mapping public transportation routes (such as RIPTA) as well as the locations of other food vendors throughout the state that accept SNAP benefits.