

# Will encouraging dollar stores to become WIC vendors increase WIC participant access to WIC vendors?

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## Background

- Minimum stocking standards for WIC-retail vendors have been shown to enhance healthy food access <sup>1</sup>
- Marginalized communities may have inequitable access to WIC-authorized vendors <sup>2</sup>
- This may exacerbate existing barriers to healthy food access <sup>2</sup>

### Study Objectives

- (1) Examine accessibility to WIC-authorized vendors against a leading dollar store format among communities located in the Southeast USDA region
- (2) To determine if there is geospatial indication for encouraging a leading dollar store format to become a WIC vendor

## Methods

- Accessibility and geospatial distribution of WIC-authorized vendors and a leading dollar store format was assessed with ArcGIS
- Additional mapping variables included sociodemographic and USDA food access data

### Statistical Analysis

- Descriptive statistics quantified the number of a leading dollar store locations, WIC-authorized vendors, and WIC clinics
- American Community Survey data was used to calculate the population-weighted centroid and calculate average distance to a leading dollar store and WIC-authorized vendor locations

## Results

- Geospatial comparison of two example counties revealed an unbalanced distribution of a leading dollar store format compared to WIC-authorized vendors in a rural setting (n = 12, n = 5, respectively) and a balanced distribution of a leading dollar store format compared to WIC-authorized vendors in an urban setting (n = 32, n = 32, respectively) (Figure 2)

**Table 1. Characteristics and availability of a leading dollar store formats, WIC-authorized vendors, and WIC clinics and the calculated average distance by county**

State	Population under 5 years old (%) <sup>a</sup>	Total persons in poverty (%) <sup>a</sup>	Dollar stores (n-value)	WIC-vendors (n-value)	WIC-clinics (n-value)	Average Distance to Dollar Stores (mi.) <sup>b</sup>	Average Distance to WIC vendors (mi.) <sup>b</sup>
Alabama	5.8	15.5	848	707	120	6.4	5.3
Florida	5.3	12.7	964	2040	199	6.0	5.9
Georgia	6	13.3	987	1288	215	5.7	5.6
Mississippi	6	19.6	577	275	172	5.6	4.4
North Carolina	5.7	13.6	937	1695	139	5.6	5.0
South Carolina	5.6	13.8	594	404	591	5.7	5.5
Tennessee	6	13.9	867	795	109	6.09	2.8

<sup>a</sup> Data from 2019 1-year U.S. Census Bureau  
<sup>b</sup> Average, straight-line distance was calculated using the population-weighted centroid and a 10-mile search radius

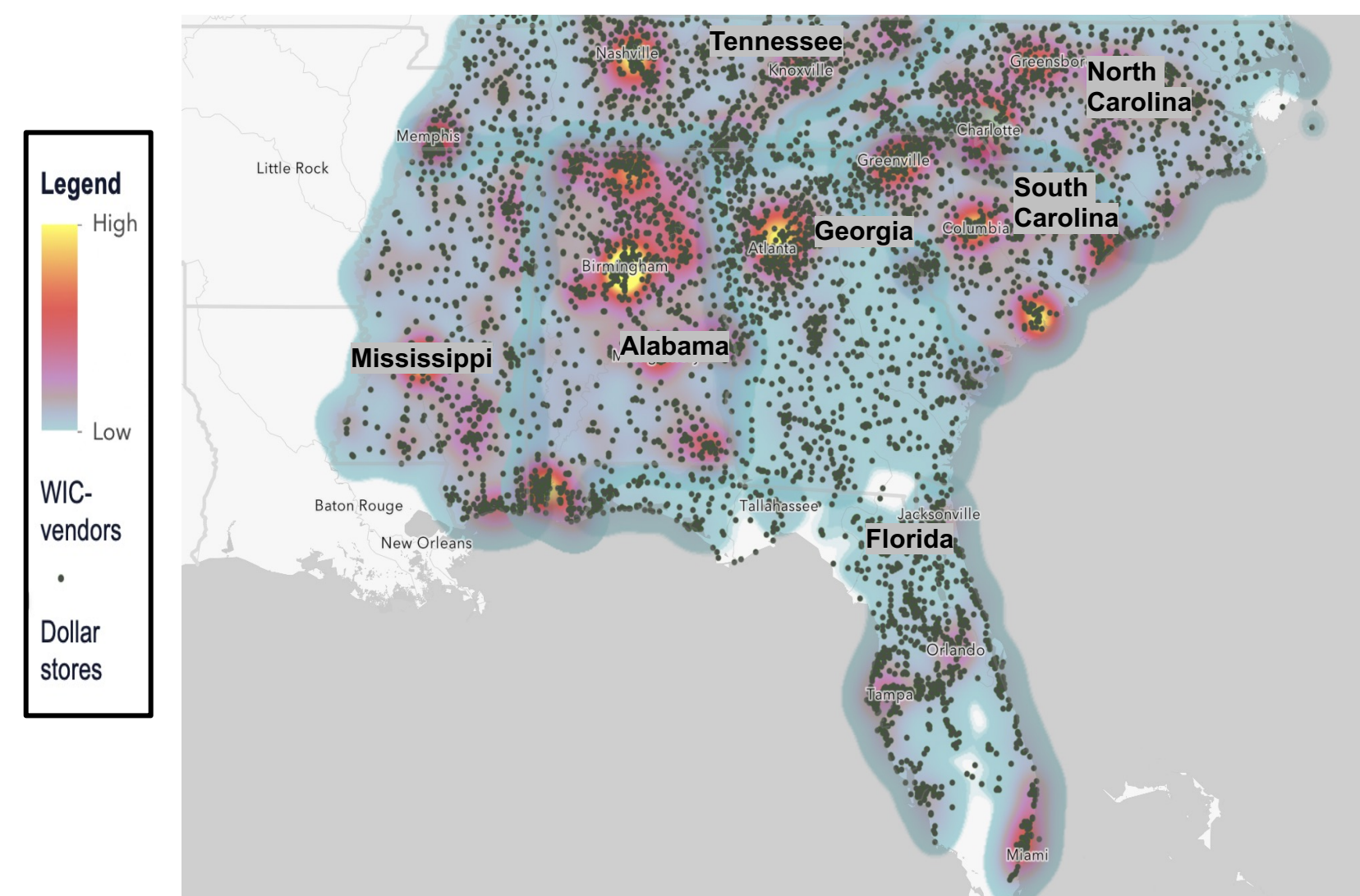
## Implications

- The WIC program serves as a vital nutritional safeguard for material and child populations with nutritional and socioeconomic risk
- Findings from this study could encourage a leading dollar store retailers to participate in the WIC program, thus increasing healthy food access for these vulnerable populations

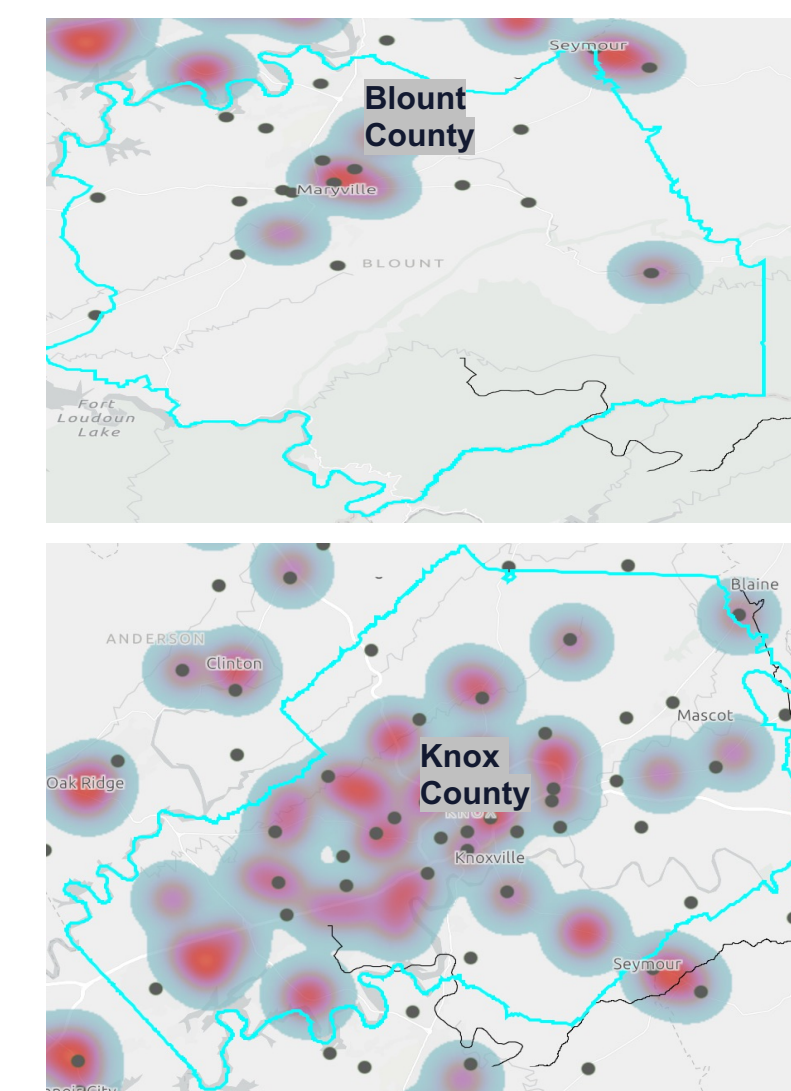
## Future Work

- Collaboration with topic experts to establish additional research objectives and future directions
- Plan for a formal statistical analysis and further geospatial analysis

## Data Visualization



**Figure 1. Geospatial distribution of a leading dollar store formats and WIC-authorized vendors located in the Southeast USDA region**



**Figure 2. Geospatial comparison of the distribution of a leading dollar store formats and WIC-authorized vendors in a rural (Blount County, TN) verse urban setting (Knox County, TN)**

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## References

1. Andreyeva, Tatiana, Joerg Luedicke, Ann E. Middleton, et al. 2012. "Positive Influence of the Revised Special Supplemental Nutrition Program for Women, Infants, and Children Food Packages on Access to Healthy Foods." *Journal of the Academy of Nutrition and Dietetics* 112(6):850-858.
2. Kirsten, Grimm, Latetia, Moore, Kelley, Scanlon. Access to Healthier Food Retailers - United States, 2011. Vol. 62. 2013:20-26. *Morbidity and Mortality Weekly Report*