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## Nutritional Evaluation of Food Bank Services in Chittenden and Addison Counties, Vermont

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Authors	George, Caroline;Norton, Casey;Pasanen, Mark;Urie, Patti Smith
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# Nutritional Evaluation of Food Bank Services in Chittenden and Addison Counties, Vermont

Students: Caroline George, Casey Norton

AHEC Faculty: Mark Pasanen, MD, Patti Smith Urie

Community Collaborators: Julia MacGibeny, Susanna Penfield

Community Agency: Feeding Chittenden, Addison Food Shelf

## Background:

Feeding Chittenden and Addison Food Shelf are programs that alleviate hunger in Vermont utilizing the Food Access Network. This Network allows customers to select food and have it delivered to a location of their choice, with an aim of providing healthier foods while reducing barriers and stigma.

## Methods:

Using nutritional standards adapted from a BMC Public Health study [1], food items delivered from March- May 2023 were scored based on category, amount of saturated fat, sodium, and added sugar. Scores included '1,' recommended often, '2,' recommended sometimes, and '3,' recommended rarely. Analysis was conducted on total offerings, total orders, and order pickup/drop-off locations in the two counties.

## Results:

The average score for the food offered in Chittenden v. Addison County was 1.69 v. 1.60 with Chittenden being 45.9% foods scored '1,' 39.3% '2,' and 14.8% '3,' and Addison being 51.7% '1,' 36.3% '2,' and 12.1% '3.' Although Addison offered more food options scored as '1' it demonstrated a higher average order score (1.83) compared to Chittenden (1.62). This trend continued when analyzing pick-up/drop-off locations as 71% of Addison sites versus 7.7% of Chittenden sites had foods scored '2' as their highest percentage of items ordered.

## Conclusion:

While at baseline one may consider a direct correlation between the food choices offered and the ordering habits of an individual, it is evident from this data that there are factors beyond ordering options that are impacting ordering habits. Previous research suggests an unexplained difference between rural and urban counties when it comes to dietary intake (Euler 2019). When considering the limitations of previous studies and the robust data available through this study in combination with Rural Urban Commuting Area (RUCA) Code, future research will be able to further explore the differences in nutritional habits by county, allowing more targeted interventions to address these differences

## Future Directions:

Going forward, there are many directions future research could pursue with CVOEO. Our initial research was a descriptive study of Chittenden and Addison counties stocked and outgoing foods. A metric we used in our data analysis was the selected drop-off locations. Additional metrics that could be used to analyze the data are the age of the registrant, the home zip code, and the referral source. Each of these metrics could allow for more information to be gathered about specific populations that utilize the Food Access Network. Additionally, an interventional study could be done. At the current moment, Chittenden, and Addison County list their produce and meats differently. Addison County lists the specific produce and meat, while Chittenden County offers "assorted" categories of each. Standardizing the listing and then studying potential changes in ordering trends is a potential direction for future study.

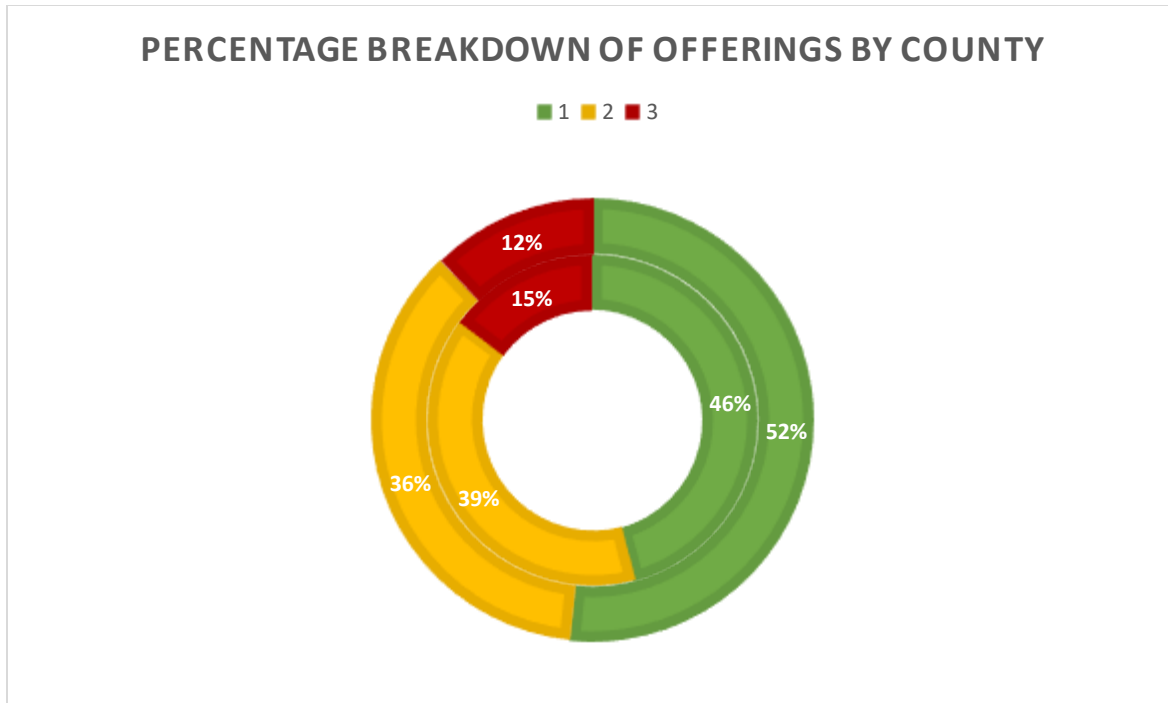


Figure 1: This figure demonstrates comparison of the percent breakdown by county with Addison being the outer ring and Chittenden being the inner ring.

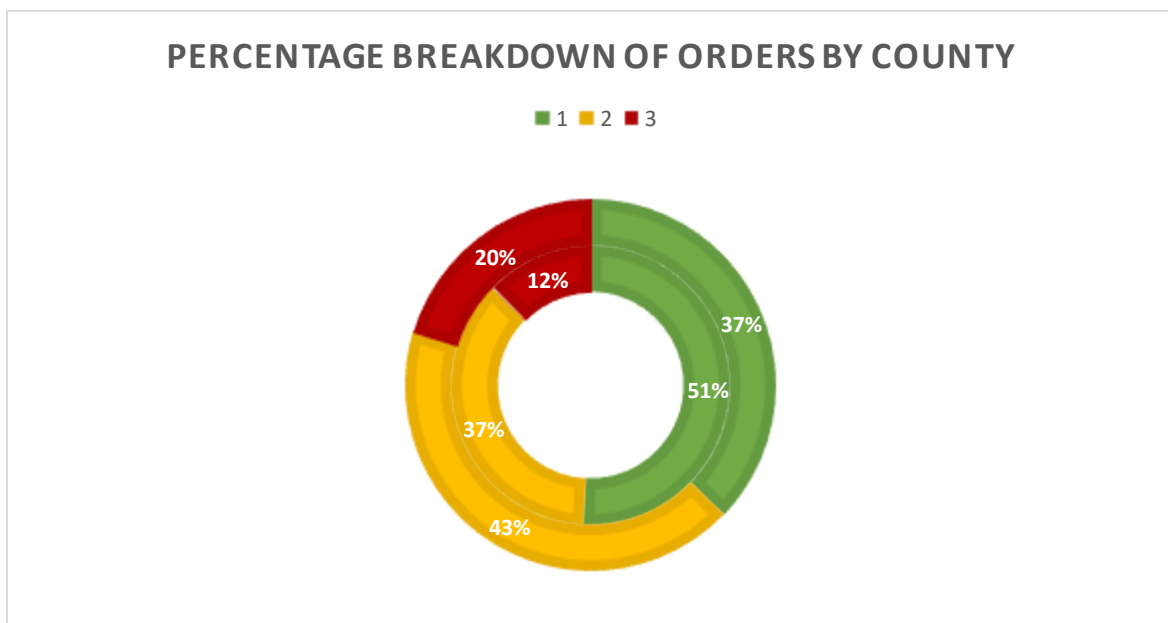


Figure 2: This figure demonstrates the percentage breakdown of orders by county with Addison being the outer ring and Chittenden being the inner ring. Addison demonstrated a higher average order score (1.83) compared to Chittenden (1.62).

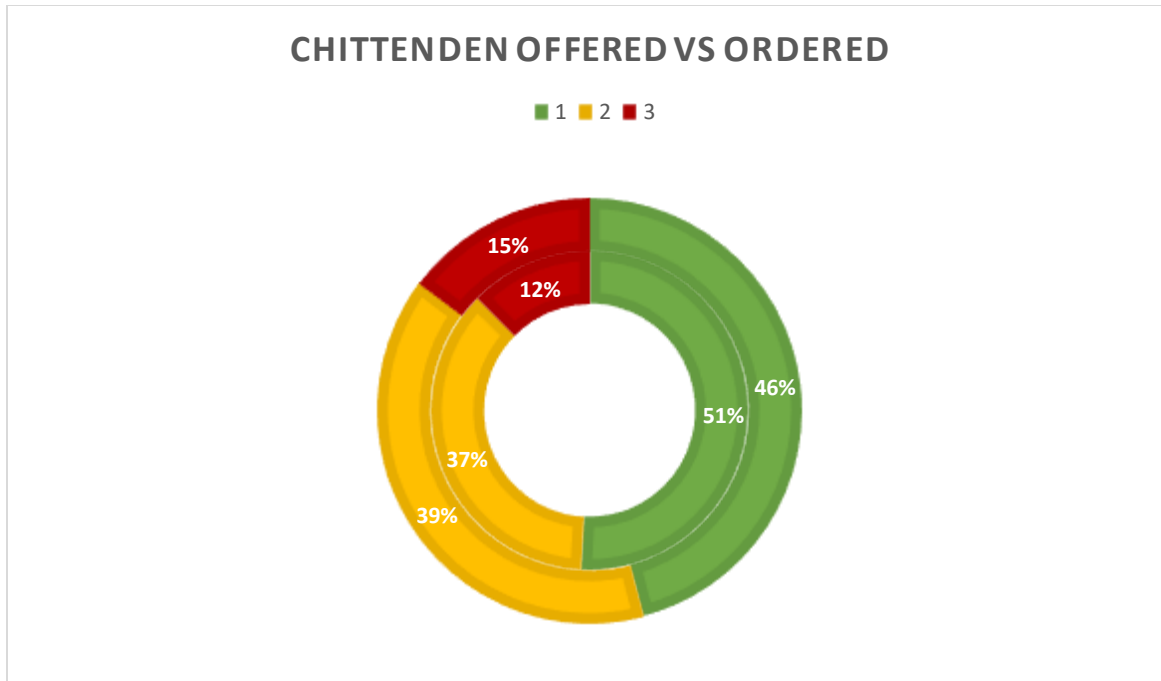


Figure 3: This figure demonstrates percentage breakdowns of offerings (outter ring) vs orders (inner ring) in Chittenden county.

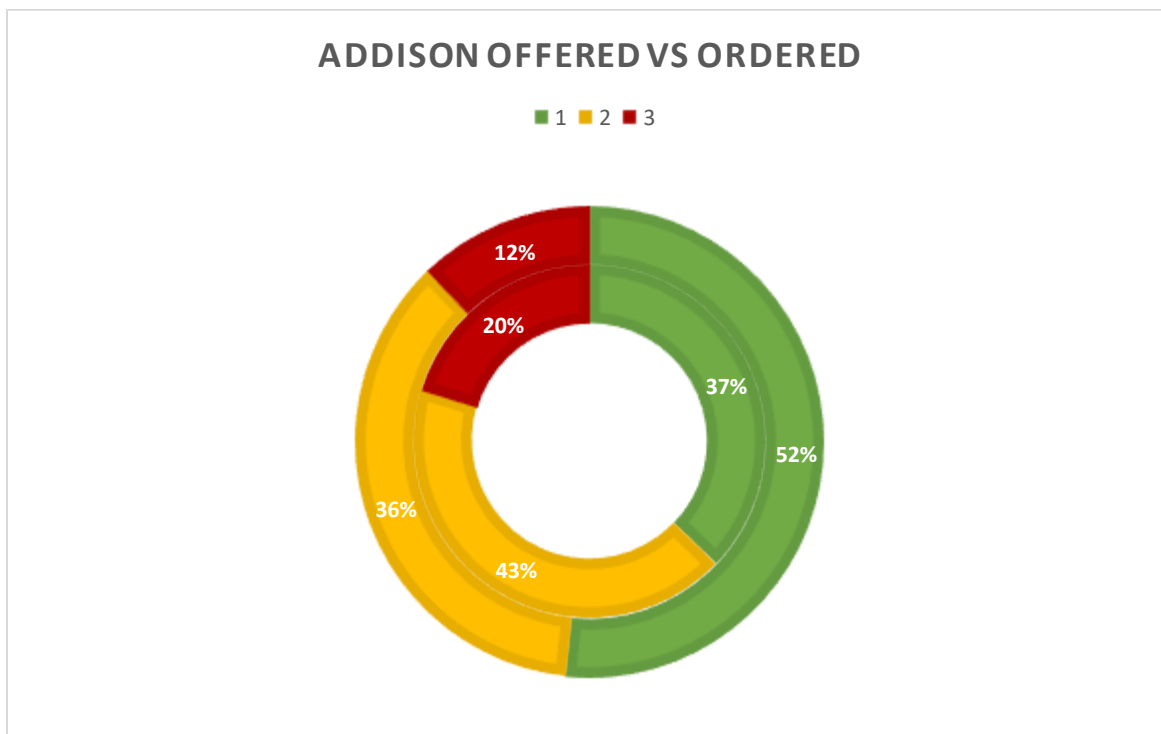


Figure 4: This figure demonstrates percentage breakdown of offerings (outter ring) vs orders (inner ring) in Addison county.

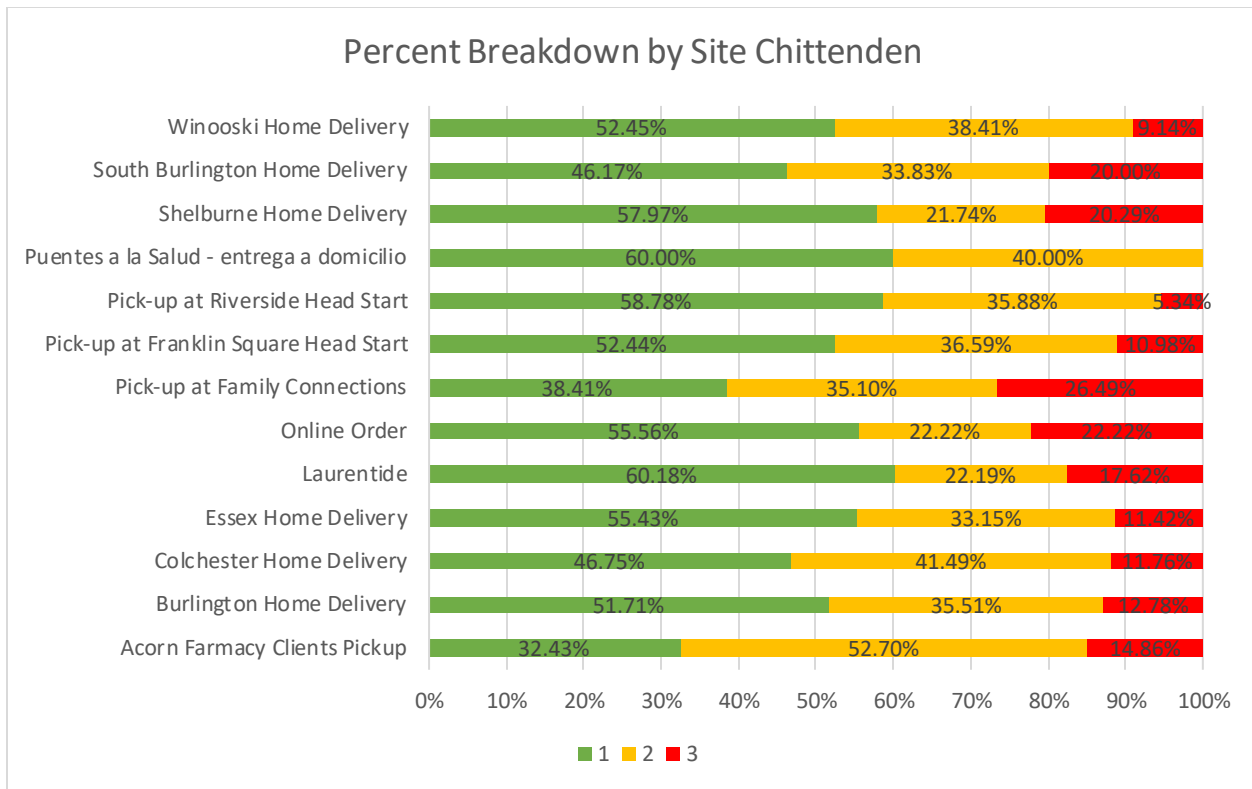


Figure 5: This figure demonstrates the percentage breakdown by Chittenden County pick up location.

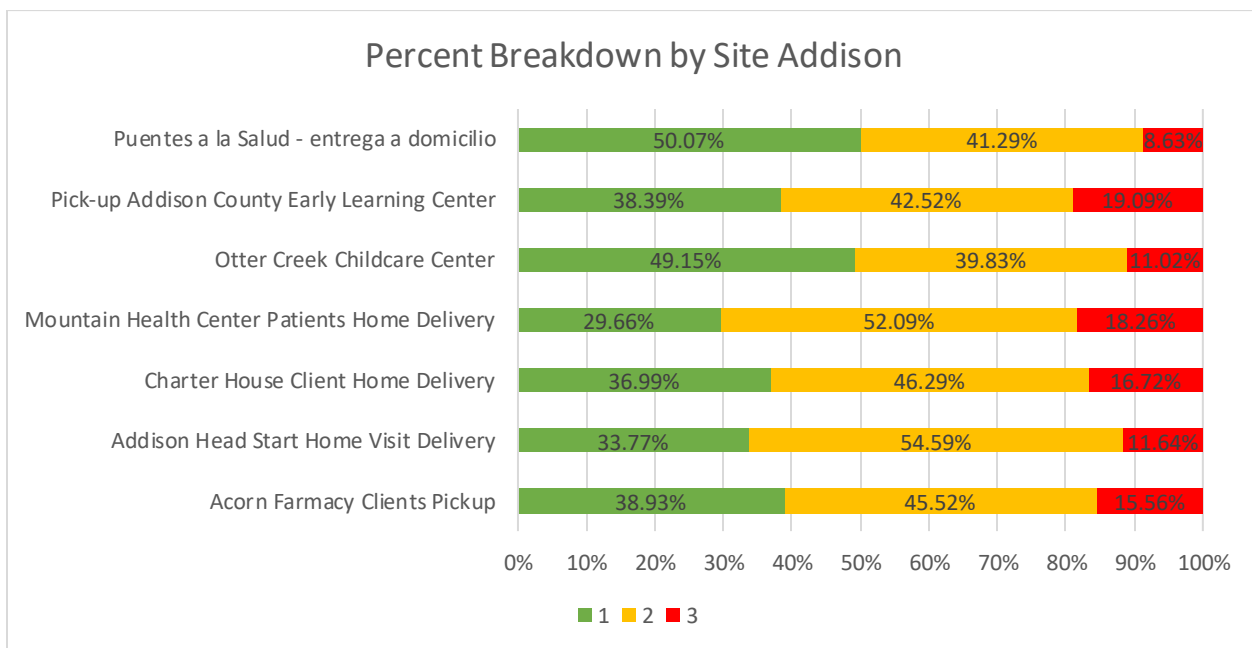


Figure 6: This figure demonstrates the percentage breakdown by Addison County pick up location.

**Table 1** Healthy eating research nutrition standards<sup>c</sup>

Food Category	Choose Often			Choose Sometimes			Choose Rarely		
	Saturated Fat	Sodium	Added Sugars	Saturated Fat	Sodium	Added Sugars <sup>a</sup>	Saturated Fat	Sodium	Added Sugars
<b>Fruits and Vegetables</b>	≤ 2 g	≤ 230 mg	0 g	100% juice and plain dried fruit ≥ 2.5 g <sup>b</sup>			≥ 2.5 g <sup>b</sup>	≥ 480 mg	≥ 12 g
<b>Grains</b>	First ingredient must be whole grain AND meet following thresholds: ≤ 2 g      ≤ 230 mg      ≤ 6 g			≥ 2.5 g <sup>b</sup>			≥ 2.5 g <sup>b</sup>	≥ 480 mg	≥ 12 g
<b>Protein</b>	≤ 2 g	≤ 230 mg	≤ 6 g	2.5–4.5 g	231–479 mg	7–11 g	≥ 5 g	≥ 480 mg	≥ 12 g
<b>Dairy</b>	≤ 3 g	≤ 230 mg	0 g	3.5–6 g	231–479 mg	1–11 g	≥ 6.5 g	≥ 480 mg	≥ 12 g
<b>Non-Dairy Alternatives</b>	≤ 2 g	≤ 230 mg	≤ 6 g	≥ 2.5 g	231–479 mg	7–11 g	≥ 2.5 g	≥ 480 mg	≥ 12 g
<b>Beverages</b>	0 g	0 mg	0 g	0 g	1–140 mg	1–11 g	≥ 1 g	≥ 141 mg	≥ 12 g
<b>Mixed Dishes</b>	≤ 3 g	≤ 480 mg	≤ 6 g	3.5–6 g	481–599 mg	7–11 g	≥ 6.5 g	≥ 600 mg	≥ 12 g
<b>Processed and Packaged Snacks</b>	None			If a grain is the first ingredient, it must be a whole grain AND meet following thresholds: 0–2 g      0–140 mg      0–6 g			≥ 2.5 g	≥ 141 mg	≥ 7 g
<b>Desserts</b>	None			None			All desserts		
<b>Condiments &amp; Cooking Staples</b>	Not ranked								
<b>Miscellaneous Products</b>	Not ranked								

<sup>a</sup> Use the added sugars value when available on the Nutrition Facts label. If it is not available, use the total sugar value. The thresholds are the same for all categories except fruits and vegetables and dairy. For both fruits and vegetables and dairy, total sugar thresholds are ≤ 12 g for the Choose Often tier, 13–23 g for the Choose Sometimes tier, and ≥ 24 g for the Choose Rarely tier

<sup>b</sup> The threshold for saturated fat is the same for the choose sometimes and choose rarely categories. All saturated fat values ≥ 2.5 g should be ranked as choose sometimes. The overall ranking is based on the lowest tier of any nutrient. Thus, a grain with 3 g of saturated fat (choose sometimes), 300 mg of sodium (choose sometimes), and 13 g of added sugar (choose rarely) would fall into the choose rarely tier, while a grain with 3 g of saturated fat (choose sometimes), 300 mg of sodium (choose sometimes), and 10 g of added sugar (choose sometimes) would fall into the choose sometimes tier

<sup>c</sup> Thresholds based on serving size of the United States Nutrition Facts label

Table 1: The BMC Nutritional Standards

References:

1. Levi R, Schwartz M, Campbell E, Martin K, Seligman H. Nutrition standards for the charitable food system: challenges and opportunities. BMC Public Health. 2022 Mar 14;22(1):495. doi: 10.1186/s12889-022-12906-6. PMID: 35287656; PMCID: PMC8919136.