

Issue # 7: Numerator Data - Descriptive Statistics 2021-2022

Ron Huang

September 21, 2025

This Write-up contains tables and plots for the descriptive analysis of the Numerator data. The original user-trip-item level data is transformed to user-month level data, with variables summarized at the monthly level for each user.

1. Tables

- FAH/FAFH department codes (less granular grouping) and soda category (more granular grouping) codes
- Number of users by state-year
- Demographics by treatment status
- Spending by treatment status
- Soda spending by treatment status
- Food and soda spending percentiles

2. Figures: Distribution of ...

- proportion of food spending out of total spending
- proportion of FAH/FAFH spending out of total food spending
- proportion of FAH/FAFH on SNAP out of SNAP spending
- soda spending/winsorized spending
- Proportion of soda spending out of total food spending
- proportion of soda on SNAP out of total SNAP spending
- proportion soda at home/away from home

Table 1: Food at Home vs. Food Away from Home Categories

Food At Home (Grocery)	Food Away From Home (QSR)
Snack	LSR Sandwiches & Wraps
Canned	LSR Beverages
Produce	LSR Breakfast
Dairy	LSR Desserts
Beverages	LSR Entrees
Packaged Bakery (Bread & Alternatives)	LSR Snack & Sides
Condiments	LSR Mexican
Frozen Foods	LSR Sauces & Condiments
Shelf Stable Meals	LSR Italian
Candy (Snacks)	LSR Salads
Baking & Cooking	
Meat	
Seafood & Fish	
Beans & Grains	
Refrigerated Foods	
Breakfast	
Pasta & Noodles	
Deli & Prepared Foods	
In-Store Bakery (Bread & Alternatives)	
Herbs & Spices	
Alcohol Beverages	
Misc. Food	
Fresh Meal Kits	
Ice	

Table 2: Soda Categories

Soda At Home (Grocery Beverages)	Soda Away From Home (QSR Beverages)
Soft Drinks	LSR Bottled Soda
Tonic & Club Soda	LSR Fountain Drink
Sparkling Juice & Ciders	
Prebiotic & Probiotic Soda	

Table 3: Number of Users in Affected and Unaffected States

State	2021	2022
Household affected in Jan 2026		
FL	22792	23077
IA	3060	3090
ID	1347	1360
IN	7740	7801
LA	4183	4232
NE	1953	1969
OK	3352	3381
UT	2309	2321
WV	2357	2378
Subtotal	49093	49609
Household affected after Jan 2026		
AK	554	560
CO	4265	4300
TX	24452	24729
Subtotal	29271	29589
Treated States	78364	79198
Control States	217082	219102
Total	295446	298300

Table 4: User-Month Panel - Demographics

		Mean (SD)		Min	Max
	Treated States	Control States	Total		
Income	78549.12 (58627.26)	83851.73 (62771.04)	82971.56 (62133.69)	10000.00	275000.00
Household Size	2.94 (1.48)	2.99 (1.50)	2.98 (1.50)	1.00	7.00
Age	48.69 (12.93)	47.34 (12.72)	47.56 (12.76)	19.00	67.50
Married	0.58 (0.49)	0.56 (0.50)	0.56 (0.50)	0.00	1.00
Education (years)	13.81 (1.32)	13.86 (1.34)	13.85 (1.34)	10.00	16.00
White	0.76 (0.43)	0.70 (0.46)	0.71 (0.45)	0.00	1.00
Black	0.08 (0.27)	0.10 (0.30)	0.10 (0.29)	0.00	1.00
Asian	0.03 (0.16)	0.07 (0.26)	0.07 (0.25)	0.00	1.00
Hispanic	0.11 (0.32)	0.11 (0.31)	0.11 (0.31)	0.00	1.00
Ever Child	0.25 (0.43)	0.27 (0.44)	0.26 (0.44)	0.00	1.00
Number of States	9	42	51		
Number of Users	49,684	249,145	298,829		
Average Number of Months per User	22.88	22.93	22.92		

Notes: NJ and NH have no data points. Income's 'less than 20000' category is coded as 10000, and 'more than 250000' is coded as 275000. Other income buckets are coded as the mean of a bucket. Education's 'advanced' category is coded as 16, and 'less than high school' is coded as 10.

Table 5: User-Month Panel - Spending

	Treated States	Mean (SD) Control States	Total	Min	Max
Food Spending	488.47 (548.83)	455.63 (550.94)	461.08 (550.73)	0.00	58448.10
Total Spending	2217.23 (2095.54)	2229.73 (2083.77)	2227.65 (2085.73)	0.00	141545.72
Prop. of Total Spending on Food	0.22 (0.19)	0.21 (0.19)	0.21 (0.19)	0.00	1.00
Prop. of Food Spending on FAH	0.99 (0.05)	0.99 (0.06)	0.99 (0.06)	0.00	1.00
Prop. of Food Spending on FAFH	0.01 (0.05)	0.01 (0.06)	0.01 (0.06)	0.00	1.00
Prop of Food on EBT	0.42 (0.34)	0.43 (0.35)	0.43 (0.35)	0.00	1.00
Prop. of EBT Spending on FAH	1.00 (0.01)	1.00 (0.02)	1.00 (0.02)	0.00	1.00
Prop. of EBT on FAFH	0.00 (0.01)	0.00 (0.02)	0.00 (0.02)	0.00	1.00
Ever SNAP	0.13 (0.34)	0.14 (0.35)	0.14 (0.35)	0.00	1.00
Number of States	9	42	51		
Number of Users	49,684	249,145	298,829		

Notes: Prop. of food spending is calculated out of total spending. Prop. of FAH/FAFH spending and food on SNAP is calculated out of total food spending. Prop. of FAH/FAFH on SNAP is calculated out of total SNAP spending. Means are calculated by averaging users' monthly spending/proportion, pooled over time and users. No winsorization.

Table 6: User-Month Panel - Soda Spending

		Mean (SD)		Min	Max
	Treated States	Control States	Total		
Soda Spending	19.24 (42.89)	17.19 (41.35)	17.53 (41.62)	0.00	11283.16
Prop. of Food Spending on Soda	0.04 (0.08)	0.04 (0.09)	0.04 (0.09)	0.00	1.00
Prop. of Soda Spending on Soda at Home	1.00 (0.01)	1.00 (0.02)	1.00 (0.02)	0.00	1.00
Prop. of Soda Spending on Soda Away From Home	0.00 (0.01)	0.00 (0.02)	0.00 (0.02)	0.00	1.00
Prop of EBT Spending on Soda	0.05 (0.12)	0.05 (0.12)	0.05 (0.12)	0.00	1.00
Prop of Soda Spending on EBT	0.38 (0.41)	0.39 (0.42)	0.39 (0.42)	0.00	1.00
Number of Users	49,684	249,145	298,829		

Notes: Prop. of soda spending is calculated out of total food spending. Prop. of soda FAH/FAFH spending is calculated out of total food spending. Prop. of soda on SNAP is calculated out of total SNAP spending. Means are calculated by averaging users' monthly spending/proportion, pooled over time and users. No winsorization.

Table 7: User-Month Panel - Demographics (SNAP vs Non-SNAP)

		Mean (SD)		Min	Max
	Treated States	Control States	Total		
Income	52351.46 (53727.16)	87069.93 (62037.66)	82971.56 (62133.69)	10000.00	275000.00
Household Size	3.21 (1.68)	2.95 (1.47)	2.98 (1.50)	1.00	7.00
Age	48.15 (12.39)	47.48 (12.81)	47.56 (12.76)	19.00	67.50
Married	0.35 (0.48)	0.59 (0.49)	0.56 (0.50)	0.00	1.00
Education (years)	13.40 (1.42)	13.91 (1.32)	13.85 (1.34)	10.00	16.00
White	0.55 (0.50)	0.73 (0.44)	0.71 (0.45)	0.00	1.00
Black	0.19 (0.39)	0.08 (0.28)	0.10 (0.29)	0.00	1.00
Asian	0.06 (0.23)	0.07 (0.25)	0.07 (0.25)	0.00	1.00
Hispanic	0.18 (0.38)	0.10 (0.30)	0.11 (0.31)	0.00	1.00
Ever Child	0.38 (0.49)	0.25 (0.43)	0.26 (0.44)	0.00	1.00
Number of States	51	51	51		
Number of Users	35,717	263,112	298,829		
Average Number of Months per User	22.64	22.96	22.92		

Notes: Income's 'less than 20000' category is coded as 10000, and 'more than 250000' is coded as 275000. Other income buckets are coded as the mean of a bucket. Education's 'advanced' category is coded as 16, and 'less than high school' is coded as 10.

Table 8: User-Month Panel - Spending (SNAP vs Non-SNAP)

	Treated States	Mean (SD) Control States	Total	Min	Max
Food Spending	627.88 (662.70)	438.75 (529.99)	461.08 (550.73)	0.00	58448.10
Total Spending	2774.73 (2321.58)	2154.43 (2041.01)	2227.65 (2085.73)	0.00	141545.72
Prop. of Total Spending on Food	0.24 (0.18)	0.20 (0.19)	0.21 (0.19)	0.00	1.00
Prop. of Food Spending on FAH	1.00 (0.04)	0.99 (0.06)	0.99 (0.06)	0.00	1.00
Prop. of Food Spending on FAFH	0.00 (0.04)	0.01 (0.06)	0.01 (0.06)	0.00	1.00
Prop of Food on EBT	0.49 (0.34)	0.30 (0.32)	0.43 (0.35)	0.00	1.00
Prop. of EBT Spending on FAH	1.00 (0.02)	1.00 (0.02)	1.00 (0.02)	0.00	1.00
Prop. of EBT on FAFH	0.00 (0.02)	0.00 (0.02)	0.00 (0.02)	0.00	1.00
Ever SNAP	0.78 (0.41)	0.06 (0.23)	0.14 (0.35)	0.00	1.00
Number of States	51	51	51		
Number of Users	35,717	263,112	298,829		

Notes: Prop. of food spending is calculated out of total spending. Prop. of FAH/FAFH spending and food on SNAP is calculated out of total food spending. Prop. of FAH/FAFH on SNAP is calculated out of total SNAP spending. Means are calculated by averaging users' monthly spending/proportion, pooled over time and users. No winsorization. Food spending and total spending are higher for SNAP than Non-SNAP household, potentially reflecting the consequence of Numerator's monetary incentives. Household on SNAP, who tend to earn less income, tend to upload more receipt with larger values (incentives vary based on receipt value).

Table 9: User-Month Panel - Soda Spending (SNAP vs Non-SNAP)

		Mean (SD)		Min	Max
	Treated States	Control States	Total		
Soda Spending	28.89 (53.84)	16.01 (39.45)	17.53 (41.62)	0.00	11283.16
Prop. of Food Spending on Soda	0.05 (0.08)	0.04 (0.09)	0.04 (0.09)	0.00	1.00
Prop. of Soda Spending on Soda at Home	1.00 (0.02)	1.00 (0.02)	1.00 (0.02)	0.00	1.00
Prop. of Soda Spending on Soda Away From Home	0.00 (0.02)	0.00 (0.02)	0.00 (0.02)	0.00	1.00
Prop of EBT Spending on Soda	0.05 (0.11)	0.05 (0.14)	0.05 (0.12)	0.00	1.00
Prop of Soda Spending on EBT	0.46 (0.42)	0.27 (0.38)	0.39 (0.42)	0.00	1.00
Number of Users	35,717	263,112	298,829		

Notes: Prop. of soda spending is calculated out of total food spending. Prop. of soda FAH/FAFH spending is calculated out of total food spending. Prop. of soda on SNAP is calculated out of total SNAP spending. Means are calculated by averaging users' monthly spending/proportion, pooled over time and users. No winsorization.

Table 10: User-Month Panel - Food Spending Percentiles

percentile	food _s pending ₂₀₂₁	food _s pending ₂₀₂₂
50%	268.86	315.68
60%	367.38	427.72
70%	491.90	568.80
80%	664.78	761.76
90%	954.44	1082.06
95%	1244.64	1402.10
96%	1339.42	1505.90
97%	1462.96	1641.62
98%	1643.02	1837.22
99%	1971.38	2198.54
99.5%	2348.42	2611.06
100%	58273.02	43549.92

Table 11: User-Month Panel - Soda Spending Percentiles

percentile	soda _s pending ₂₀₂₁	soda _s pending ₂₀₂₂
50%	0.00	0.00
60%	0.00	0.00
70%	3.38	4.00
80%	8.88	11.36
90%	22.00	26.76
95%	38.38	46.38
96%	44.40	53.50
97%	52.66	63.32
98%	65.60	78.34
99%	90.18	107.54
99.5%	118.54	140.40
100%	3920.88	5606.84

Figure 1: Proportion of Food Spending

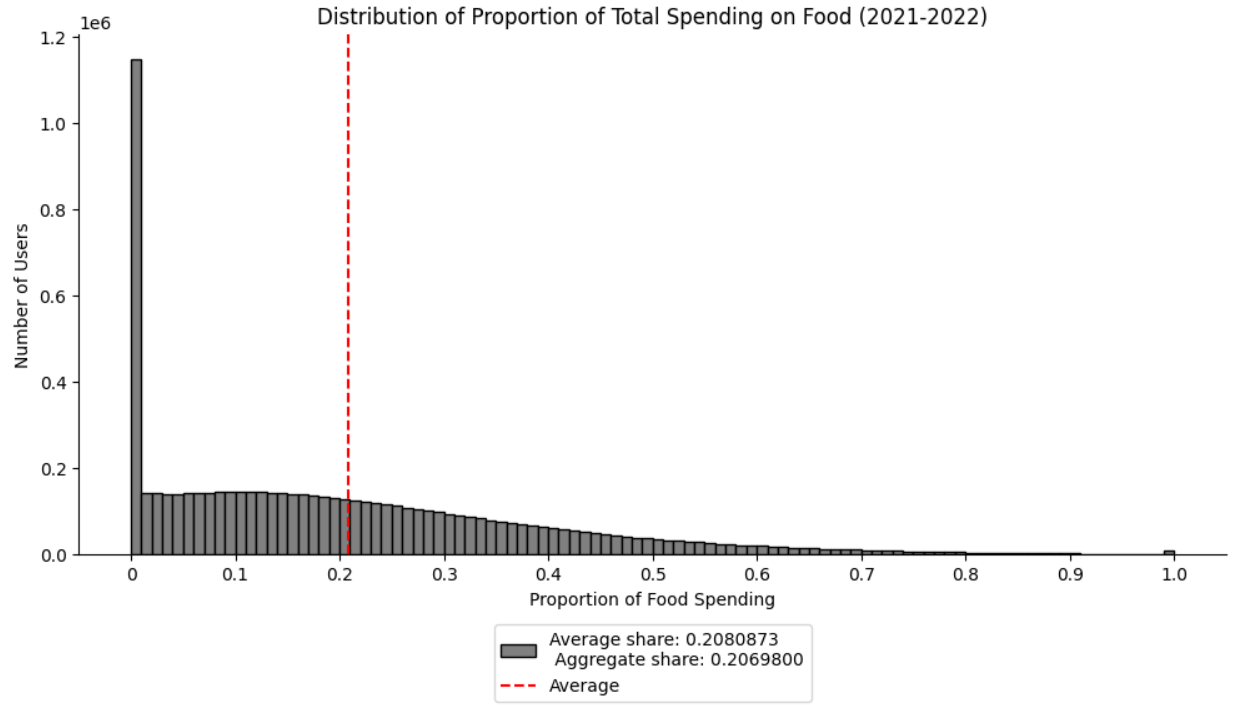


Figure 2: Proportion of FAH/FAFH Spending out of total food spending

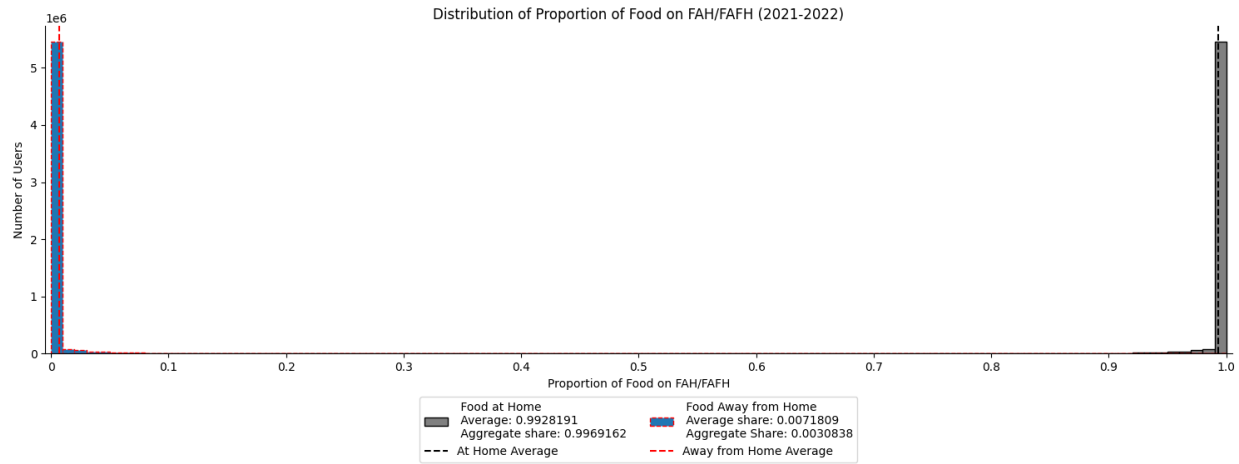
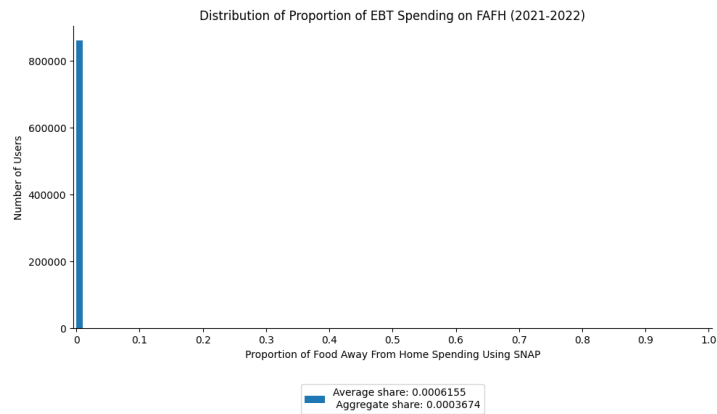


Figure 3: Proportion of FAH/FAFH SNAP Spending out of total SNAP spending

(a) Food Away



(b) Food at Home

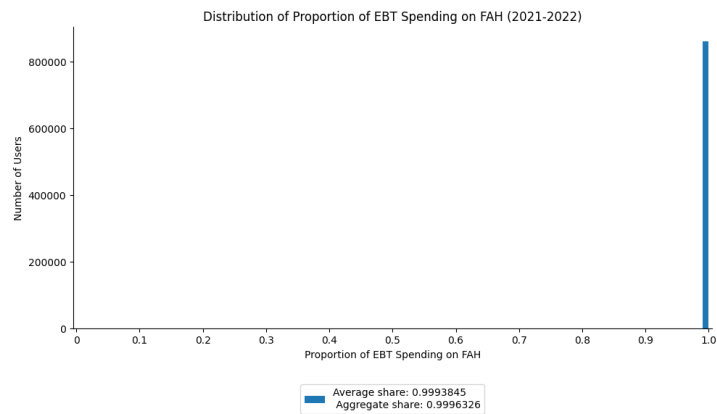
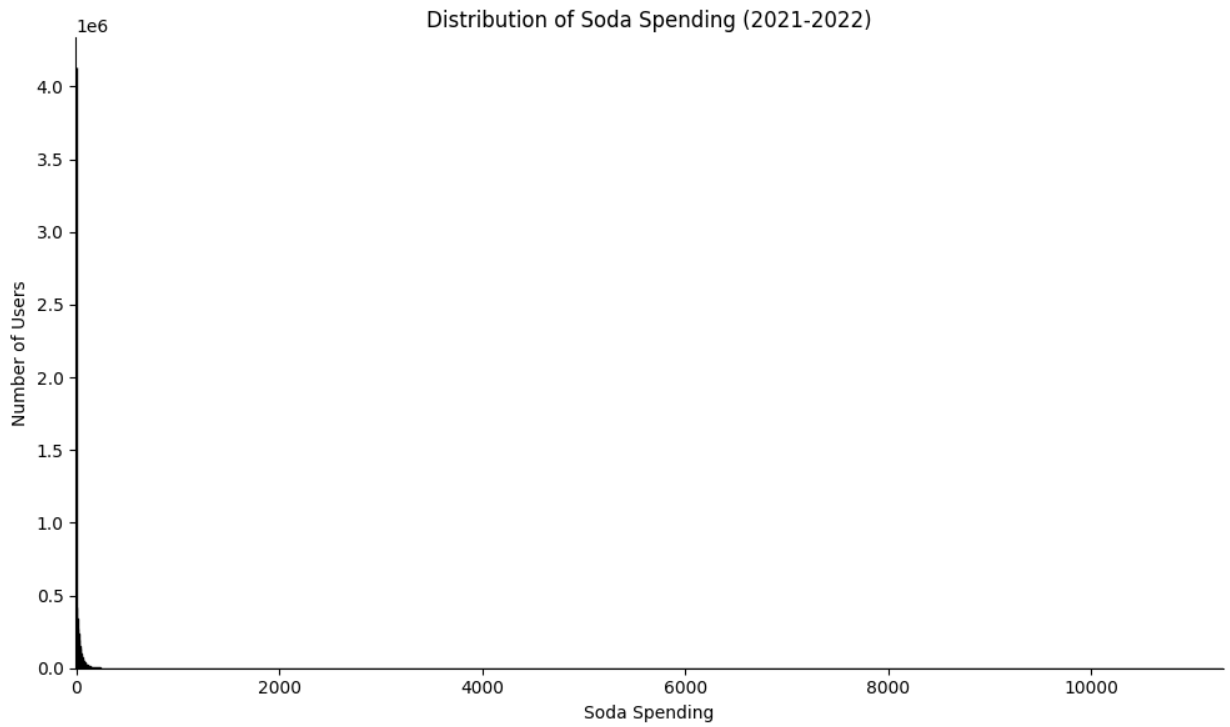


Figure 4: Soda Spending

(a) unwinsorized



(b) winsorized at 99.5%

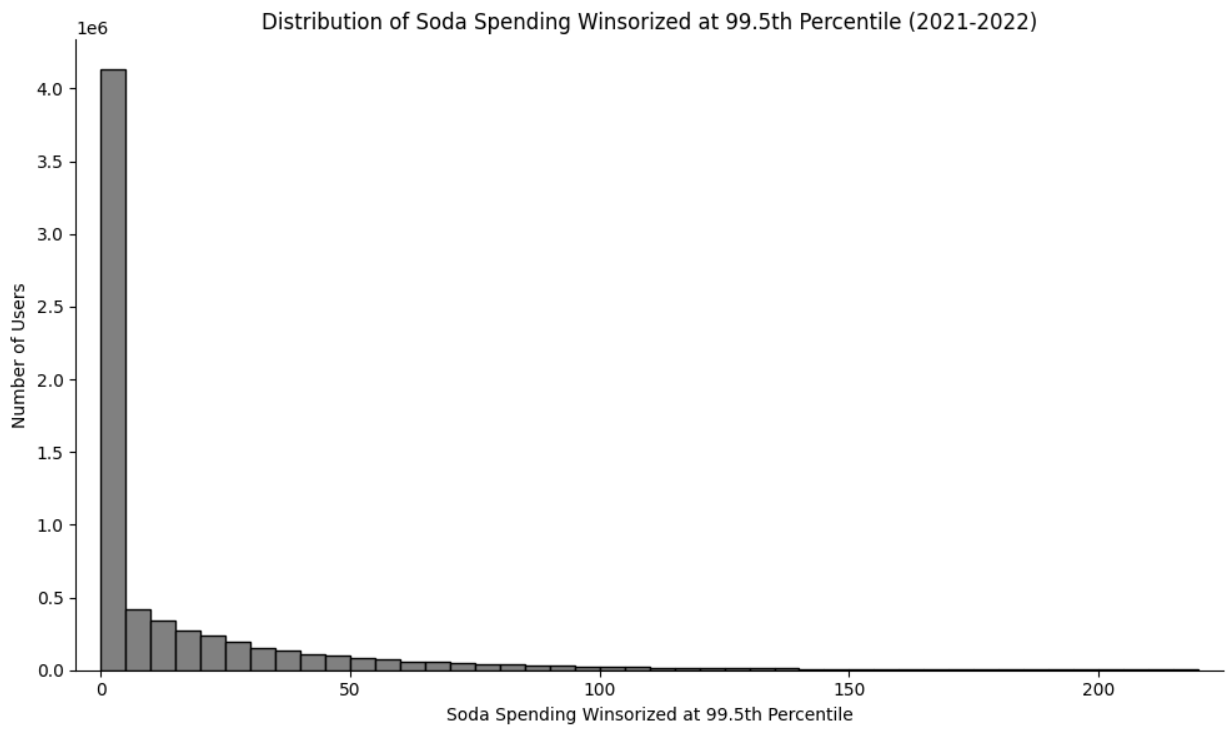


Figure 5: Proportion of Soda Spending out of total food spending

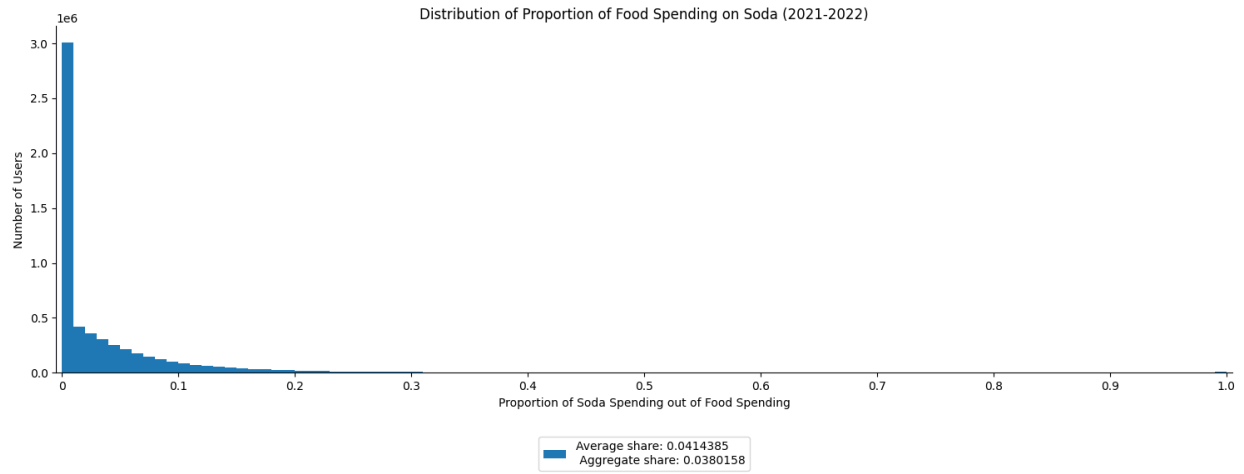


Figure 6: Proportion of Soda SNAP Spending out of total SNAP spending

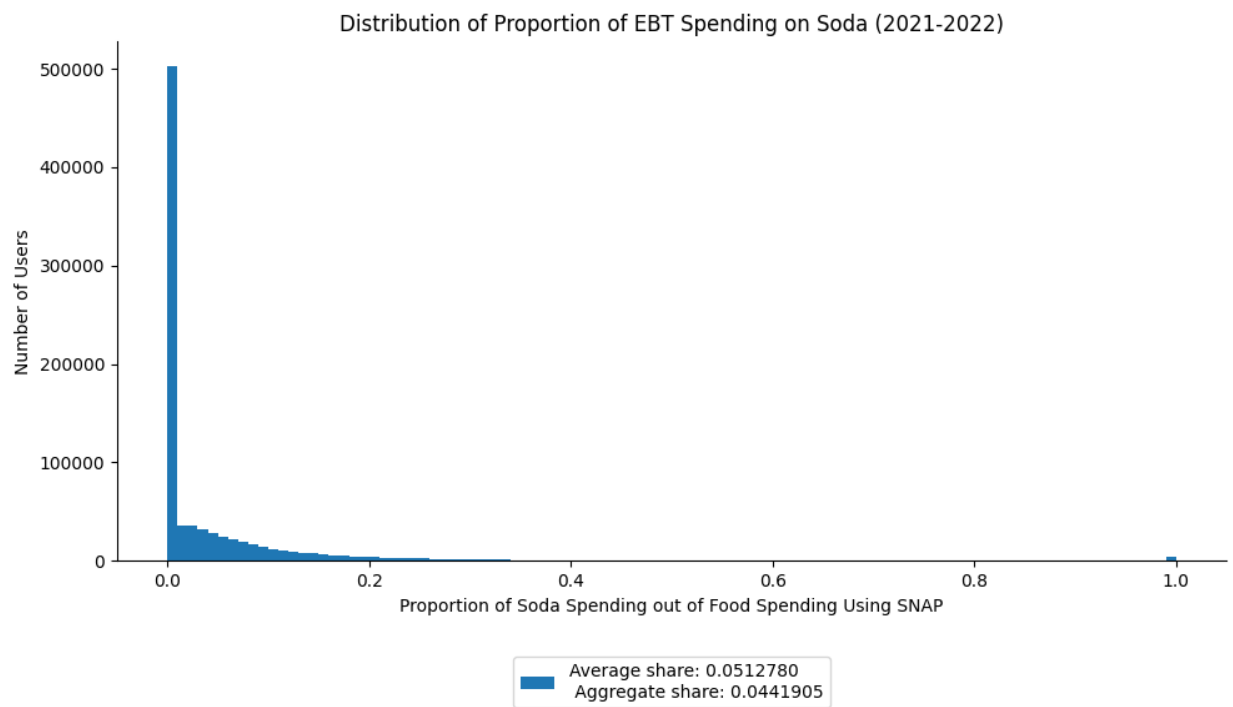


Figure 7: Proportion of Soda FAH/FAFH Spending out of total soda spending

