

Table of Contents

Appendix Table 1. Food and Beverage Groupings with Examples

General equation for fixed effect model of changes in nutritional profile of packaged food purchases at Walmart or other food retail chain

Creation of Inverse Probability Weights

Appendix Table 2. Descriptive statistics on inverse probability weights

Appendix Table 3. Year coefficients using different inverse probability weight approaches

Appendix Table 4. Household characteristics of the Nielsen Homescan sample in 2000 and 2013a (n=2,611,125)

References

Appendix
Packaged Food Purchases at Walmart and Other Food Retail Chains: Changes in Nutritional Profile From
2000 to 2013
Smith Tallie et al.

Appendix Table 1. Food and Beverage Groupings From Nielsen Modules, With Examples^a

| Food Group | Example of Nielsen modules |
|--|---|
| SSBs | Energy drinks, sports drinks, soda, fruit drinks |
| Fresh plain milk | Refrigerated milk |
| Coffee (grounds, beans, RTD) | Ground and whole bean coffee |
| Diet beverage | Carbonated soft drinks, <20 cal/100g |
| Tea (bags, loose, RTD) | Herbal tea, tea bags |
| Water and ice | Bottled water, bagged ice |
| Candy | Hard candy, chocolate, marshmallows |
| Savory snacks | Chips, pretzels, frozen hors d'oeuvres |
| GBD | Frozen cookie dough, ready-to-eat cookies, |
| RTE breads | Fresh bagels, fresh bread, frozen bread |
| RTE Breakfast | Ready-to-eat cereal, granola |
| Vegetables, fresh or frozen | Fresh carrots, frozen broccoli |
| Dairy-based dessert | Ice cream, sherbet, frozen novelties |
| Shelf-stable soups & stews | Ramen noodles, canned soup, soup mixes |
| Condiments & sauces | Ketchup, barbecue sauce, cocktail sauce |
| Alcohol | Wine, liquor, beer, malt beverage |
| Frozen entrees | Frozen dinners |
| Processed meat | Canned corned beef, lunch meat, bacon |
| 100% Juice | Drinks containing 100% juice |
| Fats and oils | Butter, olive oil, margarines and spreads |
| Cheese | American Cheddar cheese, cream cheese, mozzarella |
| Fruit, fresh & frozen | Refrigerated fruit salad, fresh apples, frozen fruits |
| Sweeteners | Granulated sugar, molasses |
| Vegetables, canned or dried | Canned tomatoes, canned artichokes |
| Yogurt | Refrigerated yogurt |
| Eggs | Fresh eggs |
| Pasta & rice | Boxed spaghetti, instant rice, pasta macaroni |
| Desserts, prepare-at-home | Brownie mix, cake mix, muffin mix |
| RTE, prepared dishes | Refrigerated entrees, refrigerated chili |
| Potatoes and corn | Dehydrated mashed potatoes, canned corn |
| Beef/pork | Frozen ground beef, frozen veal |
| Shelf-stable creamers, evaporated or condensed milks | Powdered creamer, liquid creamer |
| Beans and legumes | Garbanzo beans, lima beans, pinto beans |
| Refrigerated sweetened dairy drinks | Refrigerated shakes, eggnog |
| Nut and fruit spreads | Peanut butter, honey, jams, jelly |
| Canned mixed dishes | Canned lasagna, canned chow mein |
| Nuts and seeds | Nuts, unshelled |
| Flours | All-purpose flour, white wheat flour |
| Frozen/refrigerated dairy-based toppings/condiments | Sour cream, whipping cream |
| Salad dressing | Refrigerated salad dressing, dressing mixes |

Appendix
Packaged Food Purchases at Walmart and Other Food Retail Chains: Changes in Nutritional Profile From 2000 to 2013
Smith Tallie et al.

| | |
|---|--|
| Fruit, canned | Canned peaches |
| Frozen pizza | Frozen pizza |
| Seafood | Frozen breaded shrimp, frozen unbreaded fish |
| Cereals (requires cooking) | Wheat germ, hominy grits |
| Other fruit (dried, etc.) | Dried cranberries, raisins |
| Sweets, misc. | Chocolate syrup |
| Shelf-stable milks, milk substitutes and milk-based powders | Powdered milk |
| Shelf-stable Mexican-style products | Tortillas, Mexican shells |
| Poultry | Frozen poultry, canned turkey |
| Baby food | Baby cereal |
| Refrigerated/frozen dough products | Frozen pizza crust |
| Dry baking mix | Pancake mix, biscuit mix, pizza crust mix |
| Spices, seasoning, & extracts | Pepper, salt |
| Baking supplies | Baking powder, baking soda |
| Spreads and dips | Sandwich spread, garlic spread |

^a Food groups were based on Nielsen, which groups products into 624 modules according to the store section in which they are found (for example, tortilla chips and pretzels represent two modules.) We aggregated modules into 56 groups based on how products are consumed (for example, the tortilla chips and pretzel modules are in a group, “Savory Snacks.”)

General Fixed Effect Model For Changes in Nutritional Profile of Packaged Food Purchases at Walmart or Other Food Retail Chains

$$Y_{it} = \beta_0 + \beta_1 \text{Year}_y + \beta_2 \text{Unemployment}_{mq} + \beta_3 \text{Market}_{mq} + \beta_4 \text{Walmkt}_{mq} + \beta_5 \text{FPrice}_{mq} \\ + \beta_6 \text{WPrice}_{mq} + \beta_7 \text{Household}_{hq} + \beta_8 \text{Intx}_{hq} + \varepsilon_{hq}$$

Where $Y_{i,t}$ represents nutrient outcome of retailer PFPS for the i^{th} household in quarter q at a particular retailer (Walmart or other food retail chains). Year_y denotes indicator variables for each year. Unemployment_{qm} represents the quarter- and market-specific unemployment rate. Market_h represents market dummies. Walmkt_{mq} is the average number of Walmart stores per 100,000 people in market m in quarter q . FPrice_{qm} represents the average price of packaged foods at other food retail chains and WPrice_{hqm} represents the average price of packaged foods in quarter q , market m . Household_{hq} represents a vector of time-varying covariates, including: head of household education (\leq high school degree, some college, \geq college degree), household type (single adult, multiple adults with no kids, adult(s) with kid(s)) and household composition (numbers of women and men aged 19-49 and \geq 50y, and numbers of children aged 0-5y, 6-18y), income (low income \leq 130% federal poverty level; higher income $>$ 130% federal poverty level), and race/ethnicity (non-Hispanic white, Hispanic, non-Hispanic black, and non-Hispanic other). Intx_{hq} represents the interaction between key household SES characteristics (low income, household composition, race/ethnicity) and time. ε_{hq} represents unobserved time-varying characteristics. Separate models were analyzed for packaged food Walmart and other chain retailers.

Creation of Inverse Probability Weights

To deal with selectivity, or the idea that households who shop at Walmart might be different than households shopping at other food retail chains (FRC) every model includes a time-varying inverse probability weight for being a Walmart customer (i.e., being in the sample) or other FRC customer in a given quarter. The application of these inverse probability weights should create a more balanced sample between those who shop at Walmart and those who shop at other food retail chains. We use logistic regression to predict the probability of being a Walmart or other FRC customer in a given quarter, using market-level and household-level covariates which our previous work has shown to be associated with shopping at food retailers (LST, unpublished observations, 2015).

$$P(\text{Walmart or other FRC customer})_{hq} = \text{household size}_h + \text{householdtype}_h + \text{race}_h + \text{FPL}_{hq} + \text{WalmartAFP}_{mq} + \text{FoodstoreAFP}_{mq} + \text{Walmartdensity}_{mq} + \text{Unemploymentrate}_{mq}$$

Where h is household, q is quarter, and m is market.

FPL=Indicator variables for federal poverty level decile

Household size= indicator variables for number of individuals in household

Household type= indicator variable for household composition: single adult, multiple adult(s), adult(s) with child(ren)

AFP= weighted average price of foods and beverages purchased

Walmart density= average annual Walmarts per 100,000 individuals

Appendix
Packaged Food Purchases at Walmart and Other Food Retail Chains: Changes in Nutritional Profile From 2000 to 2013
Smith Tallie et al.

The weights are then stabilized^{1,2} by including in the numerator the overall probability of being a Walmart customer in a given quarter:

$$\frac{P(\text{Walmart or other FRC customer}_q)}{P(\text{Walmart or other FRC customer})_{hq} = \text{household size}_h + \text{householdtype}_h + \text{race}_h + \text{FPL}_{hq} + \text{WalmartFPI}_{mq} + \text{FoodstoreFPI}_{mq} + \text{Walmartdensity}_{my} + \text{Unemploymentrate}_{mq}}$$

These stabilized weights were then truncated at the upper and lower 0.3rd percentile to reduce the influence of large weights. Large weights occur when individuals who had very high likelihoods of being a Walmart or other FRC customer, were not customers; or when households who had very low likelihoods of being a Walmart or other FRC customer, were customers.³ In this sample, these large weights occurred primarily because the Walmart density variable was a very strong predictor of whether someone shopped at Walmart or not, especially for markets with no Walmart. Individuals who shopped at Walmart despite the presence of no Walmart in their market (or vice versa) tended to have more extreme weights. Progressively truncating these weights increases precision by eliminating the influence of large weights.³ We chose to truncate at the 0.3rd and 99.7th percentiles because this allowed us to remove outliers and achieve a more stable weight while still retaining the greatest sample possible. Results appeared robust to the use of various types of inverse probability weights (Appendix Tables 2 and 3).

Appendix
Packaged Food Purchases at Walmart and Other Food Retail Chains: Changes in Nutritional Profile From 2000 to 2013
Smith Tallie et al.

Appendix Table 2. Descriptive Statistics on Inverse Probability Weights

| | Mean | SD | Minimum | Maximum |
|---|------|------|---------|---------|
| Walmart | | | | |
| IPW | 4.86 | 13.5 | 1.02 | 744 |
| Stabilized IPW | 1.00 | 0.89 | 0.24 | 225 |
| Stabilized IPW, truncated at 0.3 rd and 99.7 th percentiles | 0.99 | 0.65 | 0.36 | 6.11 |
| Other FRCs | | | | |
| IPW | 1.48 | 0.04 | 1.00 | 1.48 |
| Stabilized IPW | 1.00 | 0.20 | 0.08 | 141 |
| Stabilized IPW, truncated at 0.3 rd and 99.7 th percentiles | 0.99 | 0.11 | 0.28 | 1.96 |

IPW, inverse probability weights; FRC, food retail chain

Appendix
Packaged Food Purchases at Walmart and Other Food Retail Chains: Changes in Nutritional Profile From 2000 to 2013
Smith Tallie et al.

Appendix Table 3. Year Coefficients Using Different Inverse Probability Weight Approaches

| Energy density (kcal/100g) | | | | | | | |
|----------------------------|----------------------------|----------------------------|-------------------------------|----------------------------|----------------------------|-------------------------------|-------------------------------|
| | Other food retail chains | | | No IPW | Walmart | | Truncated IPW ^a |
| | No IPW | Stabilized IPW | Truncated IPW ^a | | Stabilized IPW | Truncated IPW ^a | |
| | β (SE) | β (SE) | β (SE) | β (SE) | β (SE) | β (SE) | β (SE) |
| 2000 | ref | ref | ref | Ref | ref | ref | ref |
| 2001 | -0.29 (0.21) | -0.29 (0.21) | -0.29 (0.21) | -8.66*** (0.83) | -9.62*** (1.60) | -9.79*** (1.52) | |
| 2002 | 0.52* (0.23) | 0.51* (0.23) | 0.51* (0.23) | -10.38*** (0.82) | -14.40*** (1.64) | -13.05*** (1.50) | |
| 2003 | -1.57*** (0.24) | -1.58*** (0.24) | -1.58*** (0.24) | -17.88*** (0.85) | -20.58*** (1.63) | -20.91*** (1.54) | |
| 2004 | -2.14*** (0.25) | -2.15*** (0.24) | -2.15*** (0.24) | -25.40*** (0.89) | -27.08*** (1.75) | -27.93*** (1.62) | |
| 2005 | -1.97*** (0.26) | -1.98*** (0.25) | -1.98*** (0.25) | -30.75*** (0.95) | -34.26*** (1.84) | -34.56*** (1.72) | |
| 2006 | -2.84*** (0.26) | -2.85*** (0.26) | -2.85*** (0.26) | -35.49*** (0.98) | -39.90*** (1.91) | -39.60*** (1.77) | |
| 2007 | -2.78*** (0.30) | -2.78*** (0.30) | -2.78*** (0.30) | -43.76*** (1.14) | -48.11*** (2.23) | -48.20*** (2.02) | |
| 2008 | -4.38*** (0.35) | -4.39*** (0.35) | -4.39*** (0.35) | -51.29*** (1.29) | -56.29*** (2.52) | -56.57*** (2.26) | |
| 2009 | -5.04*** (0.44) | -5.05*** (0.44) | -5.05*** (0.44) | -51.31*** (1.47) | -57.20*** (2.76) | -57.71*** (2.46) | |
| 2010 | -4.66*** (0.45) | -4.68*** (0.45) | -4.68*** (0.45) | -53.84*** (1.50) | -59.63*** (2.81) | -60.15*** (2.50) | |
| 2011 | -7.06*** (0.46) | -7.09*** (0.46) | -7.09*** (0.46) | -55.55*** (1.56) | -61.70*** (2.96) | -62.33*** (2.62) | |
| 2012 | -8.09*** (0.48) | -8.13*** (0.48) | -8.13*** (0.48) | -60.49*** (1.68) | -66.53*** (3.26) | -67.30*** (2.85) | |
| 2013 | -10.67*** (0.51) | -10.71*** (0.51) | -10.71*** (0.51) | -66.18*** (1.77) | -72.62*** (3.42) | -73.55*** (2.98) | |
| Sugar (g/100 g) | | | | | | | |
| | Other food retail chains | | | No IPW | Walmart | | Truncated IPW |
| | No IPW | Stabilized IPW | Truncated IPW | | Stabilized IPW | Truncated IPW | |
| | β (SE) | β (SE) | β (SE) | β (SE) | β (SE) | β (SE) | β (SE) |
| 2000 | ref | ref | ref | ref | ref | ref | ref |

Appendix
Packaged Food Purchases at Walmart and Other Food Retail Chains: Changes in Nutritional Profile From 2000 to 2013
Smith Tallie et al.

| | | | | | | |
|------|---------------------------|---------------------------|---------------------------|---------------------------|---------------------------|---------------------------|
| 2001 | -0.07*** (0.02) | -0.07*** (0.02) | -0.07*** (0.02) | -1.08*** (0.09) | -1.27*** (0.18) | -1.27*** (0.17) |
| 2002 | 0.00 (0.02) | 0.00 (0.02) | 0.00 (0.02) | -1.45*** (0.08) | -1.90*** (0.18) | -1.79*** (0.17) |
| 2003 | -0.27*** (0.02) | -0.27*** (0.02) | -0.27*** (0.02) | -2.31*** (0.09) | -2.71*** (0.19) | -2.79*** (0.17) |
| 2004 | -0.51*** (0.02) | -0.51*** (0.02) | -0.51*** (0.02) | -3.23*** (0.09) | -3.59*** (0.20) | -3.65*** (0.18) |
| 2005 | -0.66*** (0.02) | -0.66*** (0.02) | -0.66*** (0.02) | -3.64*** (0.10) | -4.16*** (0.20) | -4.19*** (0.19) |
| 2006 | -0.77*** (0.02) | -0.77*** (0.02) | -0.77*** (0.02) | -3.95*** (0.10) | -4.55*** (0.21) | -4.54*** (0.20) |
| 2007 | -0.82*** (0.03) | -0.82*** (0.03) | -0.82*** (0.03) | -4.66*** (0.12) | -5.36*** (0.25) | -5.37*** (0.23) |
| 2008 | -0.95*** (0.03) | -0.95*** (0.03) | -0.95*** (0.03) | -5.39*** (0.13) | -6.12*** (0.28) | -6.15*** (0.25) |
| 2009 | -0.90*** (0.04) | -0.90*** (0.04) | -0.90*** (0.04) | -5.29*** (0.15) | -6.09*** (0.30) | -6.14*** (0.27) |
| 2010 | -0.90*** (0.04) | -0.90*** (0.04) | -0.90*** (0.04) | -5.33*** (0.15) | -6.14*** (0.31) | -6.18*** (0.28) |
| 2011 | -1.08*** (0.04) | -1.08*** (0.04) | -1.08*** (0.04) | -5.56*** (0.16) | -6.45*** (0.33) | -6.50*** (0.29) |
| 2012 | -1.28*** (0.04) | -1.28*** (0.05) | -1.28*** (0.05) | -6.11*** (0.17) | -7.01*** (0.36) | -7.08*** (0.32) |
| 2013 | -1.71*** (0.05) | -1.71*** (0.05) | -1.71*** (0.05) | -6.81*** (0.18) | -7.78*** (0.38) | -7.86*** (0.33) |

Saturated fat (g/100g)

| | Other food retail chains | | | Walmart | | |
|------|---------------------------|-----------------------------------|----------------------------------|---------------------------|-----------------------------------|----------------------------------|
| | No IPW β (SE) | Stabilized IPW β (SE) | Truncated IPW β (SE) | No IPW β (SE) | Stabilized IPW β (SE) | Truncated IPW β (SE) |
| 2000 | ref | ref | ref | ref | ref | ref |
| 2001 | 0.01 (0.01) | 0.01* (0.00) | 0.01* (0.00) | -0.12*** (0.02) | -0.14*** (0.04) | -0.14*** (0.03) |
| 2002 | 0.06*** (0.01) | 0.05*** (0.01) | 0.05*** (0.01) | -0.13*** (0.02) | -0.19*** (0.04) | -0.16*** (0.03) |
| 2003 | 0.05*** (0.01) | 0.05*** (0.01) | 0.05*** (0.01) | -0.22*** (0.02) | -0.25*** (0.04) | -0.24*** (0.03) |
| 2004 | 0.04*** (0.01) | 0.04*** (0.01) | 0.04*** (0.01) | -0.30*** (0.02) | -0.34*** (0.04) | -0.33*** (0.04) |
| 2005 | 0.02** | 0.02*** | 0.02*** | -0.45*** | -0.49*** | -0.49*** |

Appendix
Packaged Food Purchases at Walmart and Other Food Retail Chains: Changes in Nutritional Profile From 2000 to 2013
Smith Tallie et al.

| | | | | | | |
|------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|
| | (0.01) | (0.01) | (0.01) | (0.02) | (0.04) | (0.04) |
| 2006 | 0.02 | 0.02* | 0.02* | -0.52*** | -0.59*** | -0.57*** |
| | (0.01) | (0.01) | (0.01) | (0.02) | (0.04) | (0.04) |
| 2007 | -0.02 | -0.02* | -0.02* | -0.69*** | -0.74*** | -0.73*** |
| | (0.01) | (0.01) | (0.01) | (0.03) | (0.05) | (0.05) |
| 2008 | -0.05*** | -0.05*** | -0.05*** | -0.88*** | -0.95*** | -0.93*** |
| | (0.01) | (0.01) | (0.01) | (0.03) | (0.06) | (0.05) |
| 2009 | 0.03* | 0.03* | 0.03* | -0.82*** | -0.91*** | -0.90*** |
| | (0.01) | (0.01) | (0.01) | (0.04) | (0.07) | (0.06) |
| 2010 | 0.09*** | 0.09*** | 0.09*** | -0.87*** | -0.96*** | -0.95*** |
| | (0.01) | (0.01) | (0.01) | (0.04) | (0.07) | (0.06) |
| 2011 | 0.07*** | 0.07*** | 0.07*** | -0.91*** | -1.01*** | -1.00*** |
| | (0.01) | (0.01) | (0.01) | (0.04) | (0.07) | (0.06) |
| 2012 | 0.06*** | 0.06*** | 0.06*** | -1.02*** | -1.12*** | -1.11*** |
| | (0.02) | (0.01) | (0.01) | (0.04) | (0.08) | (0.07) |
| 2013 | -0.03 | -0.03 | -0.03 | -1.14*** | -1.25*** | -1.23*** |
| | (0.02) | (0.01) | (0.01) | (0.04) | (0.08) | (0.07) |

Sodium (mg/100g)

| | Other food retail chains | | | Walmart | | |
|------|--------------------------|------------------|------------------|------------------|------------------|------------------|
| | No IPW | Stabilized IPW | Truncated IPW | No IPW | Stabilized IPW | Truncated IPW |
| | β | β | β | β | β | β |
| | (SE) | (SE) | (SE) | (SE) | (SE) | (SE) |
| 2000 | ref | ref | ref | ref | ref | ref |
| 2001 | 0.46 | 0.47 | 0.47 | 1.98 | 3.60 | 3.65 |
| | (0.48) | (0.47) | (0.47) | (1.41) | (2.16) | (2.10) |
| 2002 | 0.09 | 0.09 | 0.09 | 4.63*** | 4.43* | 5.32* |
| | (0.51) | (0.51) | (0.51) | (1.40) | (2.26) | (2.08) |
| 2003 | -1.20* | -1.21* | -1.21* | 2.18 | 5.61* | 5.20* |
| | (0.54) | (0.55) | (0.55) | (1.45) | (2.28) | (2.14) |
| 2004 | -2.32*** | -2.32*** | -2.32*** | -3.83* | -0.40 | -1.38 |
| | (0.55) | (0.55) | (0.55) | (1.52) | (2.44) | (2.26) |
| 2005 | -2.12*** | -2.14*** | -2.14*** | -8.78*** | -4.87 | -5.89* |
| | (0.57) | (0.58) | (0.58) | (1.62) | (2.56) | (2.40) |
| 2006 | -5.21*** | -5.25*** | -5.25*** | -12.73*** | -7.92** | -9.05*** |
| | (0.59) | (0.59) | (0.59) | (1.66) | (2.66) | (2.46) |
| 2007 | -6.73*** | -6.76*** | -6.76*** | -20.04*** | -13.60*** | -15.45*** |
| | (0.68) | (0.69) | (0.69) | (1.93) | (3.12) | (2.84) |
| 2008 | -5.76*** | -5.76*** | -5.76*** | -18.95*** | -12.74*** | -15.06*** |
| | (0.79) | (0.81) | (0.81) | (2.20) | (3.57) | (3.19) |
| 2009 | -9.64*** | -9.64*** | -9.64*** | -20.17*** | -13.32*** | -16.07*** |
| | (0.98) | (1.00) | (1.00) | (2.49) | (3.98) | (3.52) |
| 2010 | -11.27*** | -11.29*** | -11.29*** | -29.14*** | -21.92*** | -24.77*** |

Appendix
Packaged Food Purchases at Walmart and Other Food Retail Chains: Changes in Nutritional Profile From
2000 to 2013
Smith Tallie et al.

| | | | | | | |
|------|------------------|------------------|------------------|------------------|------------------|------------------|
| | (1.00) | (1.03) | (1.03) | (2.55) | (4.06) | (3.59) |
| 2011 | -14.08*** | -14.11*** | -14.11*** | -31.27*** | -23.90*** | -27.07*** |
| | (1.02) | (1.04) | (1.04) | (2.65) | (4.28) | (3.75) |
| 2012 | -17.68*** | -17.69*** | -17.69*** | -36.09*** | -27.35*** | -31.16*** |
| | (1.08) | (1.11) | (1.11) | (2.87) | (4.70) | (4.08) |
| 2013 | -19.89*** | -19.88*** | -19.88*** | -37.90*** | -28.80*** | -33.00*** |
| | (1.14) | (1.17) | (1.17) | (3.02) | (4.94) | (4.28) |

^a IPWs truncated at the upper and lower 0.3rd percentile

Note: Boldface indicates statistical significance, * $p < 0.05$, ** $p < 0.01$; *** $p < 0.001$
 IPW, inverse probability weights

Appendix
Packaged Food Purchases at Walmart and Other Food Retail Chains: Changes in Nutritional Profile From 2000 to 2013
Smith Tallie et al.

Appendix Table 4. Household Characteristics of the Nielsen Homescan Sample in 2000 and 2013^a (n=2,611,125)

| | 2000 | 2013 | <i>p</i> ^c |
|--|-------------|-------------|-----------------------|
| Household composition | | | |
| Single adult, % ^b | 25% | 25% | 0.070 |
| Multiple adults, no children <18y, % | 46% | 52% | <0.001 |
| Adults, with children <18, % | 28% | 22% | <0.001 |
| Race/ethnicity | | | |
| Non-Hispanic white, % | 85% | 81% | <0.001 |
| Hispanic, % | 5% | 5% | 0.243 |
| Non-Hispanic black, % | 8% | 9% | <0.001 |
| Non-Hispanic other, % | 2% | 4% | <0.001 |
| Maximum household education | | | |
| High school or less, % | 23% | 17% | <0.001 |
| Some college, % | 31% | 29% | <0.001 |
| ≥College degree, % | 46% | 54% | <0.001 |
| Income ^d | | | |
| Federal poverty level ≤130% | 6% | 10% | <0.001 |
| >130% | 94% | 90% | <0.001 |
| Walmart stores/100,000 people, mean (SD) | 0.2 (0.3) | 1.0 (0.6) | <0.001 |
| Unemployment rate, mean (SD) | 3.9 (0.9) | 7.8 (1.6) | <0.001 |
| Walmart average food price, mean (SD) | 72.2 (12.3) | 103.1 (4.4) | <0.001 |
| Other FRCs average food price, mean (SD) | 84.6 (8.4) | 117.6 (6.5) | <0.001 |

^a University of North Carolina calculation based in part on data reported by Nielsen through its Homescan Services for all food categories, including beverages and alcohol for the 2000-2013 periods, for the U.S. market. Copyright © 2014, The Nielsen Company.

^b Column percents.

^c For categorical variables, from proportions testing and for continuous variables, from t-tests, comparing households in the sample in 2000 and 2013.

^d Supplemental Nutrition Assistance Program (SNAP) eligibility based on household income using percent of annual federal poverty level

References

1. Hogan JW, Lancaster T. Instrumental variables and inverse probability weighting for causal inference from longitudinal observational studies. *Stat Methods Med Res.* 2004;13(1):17-48. <http://dx.doi.org/10.1191/0962280204sm351ra>.
2. Cole SR, Hernán MA. Constructing inverse probability weights for marginal structural models. *Am J Epidemiol.* 2008;168(6):656-664. <http://dx.doi.org/10.1093/aje/kwn164>.
3. Seaman SR, White IR. Review of inverse probability weighting for dealing with missing data. *Stat Methods Med Res.* 2013;22(3):278-295. <http://dx.doi.org/10.1177/0962280210395740>.