BUREAU OF SOCIOLOGICAL RESEARCH

Omaha Metro Nutrition Environment Measures Survey

Executive Summary & Data Report

April 2025

The contents of this report confrom to our highest standards for data collection and reporting. If you should have any questions or concerns regarding the infomation reported within, please contact us.

Bureau of Sociological Research
Department of Sociology
PO Box 880325 · Lincoln NE 68688-0325
402-472-3672 (local) · 800-480-4549 (toll free)
Email: bosr@unl.edu·http:bosr.unl.edu

List of Contributors

Omaha Metro Nutrition Environment Measures Survey Executive Summary & Data Report

This report was prepared by the staff of the Bureau of Sociological Research (BOSR) at the University of Nebraska-Lincoln. The following individuals have contributed to this report. Each contributor played an integral role in the production of this document.

Ryan Doud	**Project Management and Review & Editing**
Kim Meiergerd	**Supervision**
Zhenji Zhou	**Data Processing, Report Writing**

Suggested Citation (APA Style):

Bureau of Sociological Research. (2024). *Omaha Metro Nutrition Environment Measures Survey Executive Summary & Data report*. University of Nebraska-Lincoln.

Contents

Executive Summary 4
Methodology & Sample 5
Interrater Results 6
Scoring Criteria 9
Results 14
Contacts 19
Appendices 20
Appendix A: Survey Instrument 20
Appendix B: AAPOR Transparency Initiative Immediate Disclosure Items 25

Executive Summary

Access to healthy food choices is a major focus for dieticians/nutritionists, health educators, health policy makers, grocers' associations and consumers. By observing the availability, quality and price of food products in food outlets (from grocery stores to convenience stores) in the Omaha Metro area (i.e., Cass County, Douglas County, Pottawattamie County, and Sarpy County), our goal was to measure consumers' access to food commodities essential to a healthy diet. The Nebraska Nutrition Environment Measures Survey (NEMS) instrument (see Appendix A) allowed trained raters to assess, in a standardized way, the availability of healthy versus unhealthy food options in the following areas:

1. Fruits
2. Vegetables
3. Meat and Meat Alternatives
4. Grains
5. Milk
6. Snacks

The data-collection effort presented in this report was commissioned by the Sarpy/Cass Health Department to conduct empirical analyses of food outlets in the two counties. The Sarpy/Cass Health Department contracted with the Bureau of Sociological Research (BOSR) at the University of Nebraska-Lincoln for data collection and administration.

Methodology & Sample

The NEMS survey instrument (Appendix A) is a modified version of the Nutrition Environment Measures Survey (NEMS) that was developed by Dr. K. Glanz. Modifications were made to identify key areas of healthy access within urban and rural areas of Nebraska.

The Sarpy/Cass Health Department held trainings to teach volunteer raters what to look for and how to fill out the NEMS form. Raters were trained to record what they observed about the store's availability, quality and pricing on the items listed on the NEMS form. In addition to a set of survey packets, each volunteer observer was given an instruction sheet. Survey packets for each store included the NEMS survey instrument, informational letter for the store manager, and business-reply envelope.

The sample was provided to BOSR on June 3, 2024. The sample list included the store identification number; store name, address, city, zip code, and phone; owner name, address, city, state and zip code; and store designation. Survey instruments were sent to the Sarpy/Cass Health Department on June 14, 2024 for distribution to the raters.

The sample used for the project included only stores located in the Omaha Metro area (i.e., Cass County, Douglas County, Pottawattamie County, and Sarpy County). A total of 577 stores were sampled. There was one location duplicated, three ineligible locations, three stores not found, eleven stores closed, and six stores who refused to participate. A total of 553 valid stores are included in the final data.

All completed forms were sent to BOSR using the business-reply envelopes provided in the survey packets. All forms were in English. BOSR received all forms by August 28, 2024. BOSR staff completed data entry, cleaning, interrater tests and scoring calculations. Data entry was completed using SurVade with double-entry verification. The data was cleaned for missing values and erred skips. Only base cases (no interrater cases) are included in the final NEMS data set.

Interrater Results

Fifty-four stores (9.8% of the final sample) were sampled to test Interrater agreement (i.e., reliability) through forms completed by different raters. Based on the interrater comparisons, the mean reliability for the core variables in the data is 0.57. Kappa values approaching 1.0 with no missing items indicate strong agreement. Several variables, however, had far higher or lower reliability values than the mean. Analyses using variables with Kappa values lower than the mean should be cautioned with further review.

Table 1 below provides the n, missing, Kappa values, and Percentage of Agreement reported for the core variables found on the survey instrument. Kappa values were not computed for variables FRUAPPQ, FRUORGQ, FRUGRPQ, FRUCANTQ, VEGCARQ, VEGCARUT, VEGBRCQ, VEGBRCUT, VEGCAULQ, VEGTOMQ, VEGLETTQ, MLKSTP, MLKSQT, MLK1PT, MLK1QT, MLKSPACE and CHIPAVAL due to a missing value on one or more pairs or all raters providing the same rating across cases.

Table 1. Interrater Agreement (Kappa, reliability) on Core Survey Variables (N=54)

Variable	n	missing	Kappa	Percentage of Agreement
CASHREG	49	5	0.29	67.3
FRUAVAIL	49	5	0.60	81.6
FRUBANA	16	38	0.43	87.5
FRUBANQ	11	43	1.00	100.0
FRUBANPC	12	42	0.32	50.0
FRUBANUT	12	42	0.82	91.7
FRUAPPA	16	38	0.64	93.8
FRUAPPQ	12	42		100.0
FRUAPPPC	13	41	0.30	53.8
FRUAPPUT	13	41	0.70	84.6
FRUORGA	16	38	0.43	87.5
FRUORGQ	10	44		100.0
FRUGRPA	16	38	1.00	100.0
FRUGRPQ	8	46		100.0
FRUCANTT	16	38	0.87	93.8
FRUCANTQ	4	50		100.0
FRUKINDS	15	39	0.40	60.0
VEGAVAIL	50	4	0.66	86.0
VEGCARA	14	40	1.00	100.0
VEGCARQ	10	44		100.0
VEGCARPC	10	44	0.13	30.0
VEGCARUT	4	50		75.0
VEGBRCA	14	40	0.85	92.9
VEGBRCQ	7	47		100.0
VEGBRCPC	6	48	0.93	33.3
VEGBRCUT	6	48		33.3
VEGCAULA	14	40	0.51	78.6

Variable	n	missing	Kappa	Percentage of Agreement
VEGCAULQ	7	47		100.0
VEGTOMA	14	40	0.76	92.9
VEGTOMQ	9	45		100.0
VEGLETTA	14	40	0.43	71.4
VEGLETTQ	5	49		100.0
VEGKINDS	13	41	0.37	69.2
FFRUAVAL	54	0	0.87	94.4
FFRUKIND	15	39	0.36	66.7
FVEGAVAL	53	1	0.92	96.2
FVEGKIND	21	33	0.58	85.7
CFRUAVAL	54	0	0.59	83.3
CFRUKIND	35	19	0.31	54.3
CFRUCOMP	32	22	0.15	46.9
CVEGAVAL	54	0	0.82	92.6
CVEGKIND	37	17	0.40	75.7
BEEFAVAL	53	1	0.61	86.8
LBEEFAVL	8	46	0.60	87.5
LBEEFCMP	8	46	0.69	87.5
TUNAAVAL	54	0	0.58	83.3
TUNAWAVL	35	19	1.00	100.0
TUNAWCMP	34	20	0.27	55.9
RBEANAVL	50	4	0.68	84.0
DBEANAVL	50	4	0.80	90.0
CBEANAVL	51	3	0.59	80.4
BRDAVAIL	52	2	0.53	78.8
BRDWAVAL	29	25	0.72	86.2
BRDCOMP	28	26	0.47	67.9
BRDWKND	27	27	0.76	85.2
TORTAVAL	54	0	0.74	87.0
TORTWAVL	23	31	0.55	82.6
TORTWCMP	20	34	0.48	80.0
CERAVAIL	52	2	0.50	78.8
CERWAVAL	32	22	0.28	71.9
CERWKIND	32	22	0.33	56.3
RICEAVAL	54	0	0.43	74.1
RICEBAVL	29	25	0.36	72.4
RICECOMP	26	28	0.47	65.4
PASTAVAL	53	1	0.14	69.8
PASTWAVL	33	21	0.67	87.9
PASTCOMP	31	23	0.40	77.4

Variable	N	missing	Kappa	Percentage of Agreement
MLKAVAIL	47	7	0.46	83.0
MLKSPT	35	19		91.4
MLKSQT	35	19		94.3
MLKSHG	36	18	0.80	91.7
MLKSGAL	38	16	0.88	94.7
MLKSPC	10	44	0.47	60.0
MLK1PT	35	19		94.3
MLK1QT	35	19		88.6
MLK1HG	38	16	0.59	81.6
MLK1GAL	38	16	0.61	81.6
MLK1PC	10	44	0.39	40.0
MLK2PT	35	19	0.39	74.3
MLK2QT	33	21	0.57	84.8
MLK2HG	38	16	0.73	92.1
MLK2GAL	39	15	0.62	92.3
MLK2PC	27	27	0.72	63.0
MLKWPT	35	19	0.16	65.7
MLKWQT	33	21	0.40	78.8
MLKWHG	39	15	0.42	84.6
MLKWGAL	39	15	0.77	94.9
MLKWPC	26	28	0.72	61.5
MLKSPACE	22	32		77.3
CHIPAVAL	54	0		96.3
CHIPBAVL	52	2	0.32	69.2
PRETZAVL	54	0	0.45	72.2

Scoring Criteria

An essential component of the NEMS project was to develop an overall scoring system to categorize stores based on the food products available at the time of the observation. It is important to note that since this is a point-in-time observation, some stores that may be expected to score high may not due to inventory schedules, etc., at the time of the observation. Likewise, we may see scores fluctuate and even increase (i.e., improve) over time—should another NEMS review of stores Sarpy and Cass Counties be conducted. The two scoring methods are described below.

Method 1

The first scoring method is based upon the scoring structure used by the Nutrition Environment Measures Survey (NEMS) developed by Dr. K. Glanz. Modifications were necessary since the instrument and key measures were modified. The original scoring concept, however, was maintained so as to assess a "Total Score" and several sub-scores based on (1) availability, (2) price and (3) quality measures collected through the survey instrument.

AVAILABILITY & VARIETY POINTS

The fruit sub-score started at 0 (i.e., no fresh, frozen or canned fruit (*fruavail* = 2, *ffrukind* = 1, *cfrukind* = 1) with points being added based on the availability and variety of fresh, frozen and canned fruit items. Stores received 1, 2 or 3 points, respectively, for having 1-4, 5-9, or 10 or more kinds of fresh fruit. Stores received 1 point for having any frozen fruit available and 1 or 2 additional points, respectively, for having 1-2 or 3 or more kinds of frozen fruits *without added sugar*. Stores received 1 point for having any canned fruit available and 1 or 2 additional points, respectively, for having 1-2 or 3 or more kinds of canned fruits *in 100% juice or water*.

The vegetable sub-score started at 0 (i.e., no fresh, frozen or canned vegetables (*vegavail* = 2, *fvegkind* = 1, *cvegkind* = 1) with points being added based on the availability and variety of fresh, frozen and canned vegetable items. Stores received 1, 2 or 3 points, respectively, for having 1-4, 5-9, or 10 or more kinds of fresh vegetables. Stores received 1 point for having any frozen vegetables available and 1 or 2 additional points, respectively, for having 1-2 or 3 or more kinds of frozen vegetables *without sauce*. Stores received 1 point for having any canned vegetables available and 1 or 2 additional points, respectively, for having 1-2 or 3 or more kinds of canned vegetables *without sauce*.

The meat and meat alternatives sub-score started at 0 (i.e., no healthy meat or meat alternatives) with points being added based on the availability and variety of healthy meat and meat alternatives. Stores received 2 points each for having (a) *lean* (at least 90/10) beef, (b) canned tuna *packed in water*, (c) canned refried beans, (d) dried beans (legumes) and (e) canned beans (legumes not green beans).

The grains sub-score started at 0 (i.e., no whole grains) with points being added based on the availability and variety of *whole* grain items. Stores received 1 or 2 points, respectively, for having 1-2 or 3 or more different kinds of *100% whole wheat/grain* loaf breads. Stores received 2 points for having *whole wheat (3g or more of fiber per serving)* tortillas. Stores received 1 or 2 points, respectively, for having 1-2 or 3 or more kinds of *100% whole grain (less than 7 g of sugar per serving)* boxed cereals. Stores received 2 points each for having (a) *brown whole grain* rice and (b) *100% whole wheat* pasta.

The milk sub-score started at 0 (i.e., no low-fat milk) with points being added based on the availability and variety of skim and 1% milk products (i.e., pint, quart, half gallon, gallon). Stores received 1 point each for having (a) at least one skim milk product and (b) at least one 1% milk product. Stores received 1, 2 or 3 additional points, respectively, for having 3-4, 5-6, or 7-8 low-fat (skim and 1% combined) milk products. Stores with more shelf space dedicated to skim and 1% milk than 2% and whole milk received an additional 1 point.

The snacks sub-score started at 0 (i.e., no healthy snacks) with points being added based on the availability and variety of *baked* chips and hard pretzels. Stores received 2 points each for having (a) *baked* chips and (b) hard pretzels, both containing less than 3 g of fat per 1-oz. serving.

A combined availability score was calculated based on the sum of the fruit, vegetable, meat/meat alterative, grain and milk sub-scores.

Variables & Values

Below are the variable names and numeric value ranges (i.e., ordinal to maximum number of points available for the variable) for each of the 6 availability sub-scores and the total availability score.

fruscore - [Calc] Fruits: Availability Sub-score
vegscore - [Calc] Vegetables: Availability Sub-score
Range: 0 to 9

meatscore - [Calc] Meat/Meat Alternatives: Availability Sub-score
grainscore - [Calc] Grains: Availability Sub-score
Range: 0 to 10

milkscore - [Calc] Milk: Availability Sub-score
Range: 0 to 6

snackscore - [Calc] Snacks: Availability Sub-score
Range: 0 to 4

availscor - [Calc] Store Score on AVAILABILITY
Range: 0 to 48

PRICE POINTS

Prices were compared for eight products (canned fruit, beef, tuna, bread, tortillas, rice, pasta and milk) evaluated in the NEMS questionnaire. For each, the price for the same size low-fat or no-additive (i.e, no sugar or sauce) food product was compared to the food product with higher fat content or additives (i.e., sugar or sauce). Stores received -1, 1 or 2 points, respectively, when low-fat/no-additive items were evaluated as more, less or equal in price to the high-fat/additive items. Milk required the calculation of an average gallon price for low-fat milk and high-fat milk. In cases where a price value of $0 was entered, no milk comparison was calculated. Otherwise, stores received -1, 1 or 2 points, respectively, when the average gallon price for low-fat (i.e., skim and 1%) milk was evaluated as more, less or equal to

the average gallon price for high-fat (2% or whole) milk. The total price score summed all points received from each of the eight items evaluated on price.

Variable & Values
Below is the variable name and numeric value range (i.e., ordinal to maximum number of points available for the variable) for the total price score.

pricscor - [Calc] Store Score on PRICE
Range: -8 to 16

QUALITY POINTS
Quality was only assessed for fresh fruits and vegetables on the NEMS questionnaire, with 1=acceptable and 2=unacceptable. For each acceptable rating on bananas, apples, oranges, grapes and cantaloupe, the store received 1 fruit quality point. Stores receiving 1-2, 3 or 4-5 fruit quality points, respectively, received 1, 2 or 3 overall quality points. For each acceptable rating on carrots, broccoli, cauliflower, tomatoes and green leaf lettuce, the store received 1 vegetable quality point. Stores receiving 1-2, 3 or 4-5 vegetable quality points, respectively, received 1, 2 or 3 overall quality points. A maximum of 6 quality points was possible.

Variable & Values
Below is the variable name and numeric value range (i.e., ordinal to maximum number of points available for the variable) for the total quality score.

qualscor - [Calc] Store Score on QUALITY
Range: 0 to 6

TOTAL POINTS
Finally, a total score was calculated based on the sum of the availability, price and quality scores. Even though negatives points are possible on price, the points received for availability for the items for which they could receive a deduction in points cancel each other out or add points beyond the deduction, thus the overall scores are in the range of 0 to 70 points.

Variable & Values
Below is the variable name and numeric value range (i.e., ordinal to maximum number of points available for the variable) for the overall total store score summing the availability, price and quality total scores.

ttlscor - [Calc] Overall Store Score on AVAILABILITY, PRICE, QUALITY
Range: 0 to 70

Method 2
In addition to the "Total Score" scoring method, another scoring structure was calculated specifically to explore access to "healthy" food choices in the 5 food groups, excluding snacks, which will be used to

identify (1) food deserts and (2) opportunities for improvement. The criteria for the "Healthy Access" scoring method is detailed below.

"HEALTHY ACCESS" TO FRUITS & VEGETABLES
Criteria: 1 fresh plus 1 other form (canned or frozen in 100% juice/no sugar/no sauce) is *healthy* access.

Using the fresh fruits available variable (Fresh fruits available? 1=yes, 2=no), a fresh fruits access variable was created (1=access, 0=no access). Access variables were similarly computed to assess the availability of no-sugar-added frozen and canned fruits. Finally, a healthy fruits score was computed based on the original criteria of 1 fresh + 1 frozen &/or canned.

The same was done to compute a healthy access score for vegetables. That is, using the fresh vegetables available variable (Fresh vegetables available? 1=yes, 2=no), a fresh vegetables access variable was created (1=access, 0=no access). Access variables were similarly computed to assess the availability of no-sauce frozen and canned vegetables. Finally, a healthy vegetables score was computed based on the original criteria of 1 fresh + 1 frozen &/or canned.

Variables & Values
healthyfruit - [Calc] Healthy fruit forms (fresh, frozen, canned) score
0 - NO ACCESS: No healthy fruit
1 - LIMITED/MODERATE: One type of healthy fruit
2 - HEALTHY: Fresh fruit plus at least one other type of healthy fruit

healthyveggie - [Calc] Healthy vegetable forms (fresh, frozen, canned) score
0 - NO ACCESS: No healthy vegetables
1 - LIMITED/MODERATE: One type of healthy vegetable
2 - HEALTHY: Fresh vegetable plus at least one other type of healthy vegetable

"HEALTHY ACCESS" TO MEAT AND MEAT ALTERNATIVES (MA)
Criteria: 2 or more in terms of form (lean beef, tuna in water, beans) is healthy access.

Using the lean beef available (1=yes, 2=no), canned tuna in water available (1=yes, 2=no), and a combined (calculated) variable to determine if any one or more of the beans—canned refried beans, dry beans (legumes) or canned beans (legumes)—were available (1=yes, 2=no), a composite healthy access score was computed for meat/MA.

Variable & Values
healthymeat - [Calc] Healthy meat/MA score
0 - NO ACCESS: No healthy meat/MA
1 - LIMITED/MODERATE: One healthy meat/MA
2 - HEALTHY: Two or more healthy meat/MA

"HEALTHY ACCESS" TO GRAINS
Criteria: 3 or more WHOLE grains is healthy access.

Using the "whole grain" available variables for bread (*brdwaval*, 1=yes, 2=no), tortillas (*tortwavl*, 1=yes, 2=no), cereal (*cerwaval*, 1=yes, 2=no), rice (*ricebavl*, 1=yes, 2=no), and pasta (*pastwavl*, 1=yes, 2=no), a variable was computed to provides the total "forms" of whole grains (bread, tortillas, cereal, rice, pasta) available. Finally, a healthy grains score was computed based on the criteria of the availability of/access to 3 or more forms of whole grains.

Variable & Values

healthygrains - [Calc] Healthy grains score
0 - NO ACCESS: No whole grains
1 - LIMITED: One whole grain
2 - MODERATE: Two whole grains
3 - HEALTHY: Three or more whole grains

"HEALTHY ACCESS" TO MILK

Criteria: no milk or whole only is no/limited access; 2% would be moderate; and availability of skim and/or 1% is healthy access.

Using the availability variables for each type and size of milk, composite scores were generated to access the number of forms (i.e., sizes) of each milk type (i.e., skim, 1%, 2%, whole) on a scale of 0 (no forms of that type) to 4 (all forms—pint, quart, half gallon, gallon—available for that type). Finally, a healthy milk score was computed based on the criteria of the availability of/access to skim and/or 1% constituting "healthy access."

Variable & Values

healthymilk - [Calc] Healthy milk score
0 - NO ACCESS: No milk
1 - LIMITED: Whole only
2 - MODERATE: Includes 2%
3 - HEALTHY: Includes skim and/or 1%

OVERALL "HEALTHY ACCESS" SCORE

An overall "healthy access" score was computed based on the "healthy" value (healthyfruit=2; healthyveggie=2; healthymeat=2; healthygrains=3; healthymilk=3) for each of the five sub-scores (i.e. food categories) described above.

Variable & Values

Healthyaccess - [Calc] Overall Healthy Access in 5 Categories (Fruits, Vegetables, Breads, Meats, Milk)
0 - No healthy categories
1 - One healthy category
2 - Two healthy categories
3 - Three healthy categories
4 - Four healthy categories
5 - All five healthy categories

Results

This section highlights some of the preliminary results from the data based on the scoring criteria and various demographic or geographic variables on the stores included in the final data set.

As displayed in Table 2 below, stores overall scored comparably on the two scoring methods. Individual crosstabulations for each scoring method are reported and discussed to observe variations by store classification, observed store type; each of these is discussed below. To ease reporting for the 70-point "Total Score" criteria, the scores were recoded into an 8-point categorical variable.

Table 2. Crosstabulation: Total Score by Category (Max Score = 70) by Overall Healthy Access in Five Categories (Fruits, Vegetables, Grains, Meat/Alt, Milk)

	No healthy categories	One healthy category	Two healthy categories	Three healthy categories	Four healthy categories	All five healthy categories	Total
Score of 0	19	0	0	0	0	0	19
Score of 1-10	186	70	5	0	0	0	261
Score of 11-20	14	44	35	6	0	0	99
Score of 21-30	3	15	28	23	2	0	71
Score of 31-40	0	0	1	4	6	2	13
Score of 41-50	0	0	0	5	9	35	49
Score of 51-60	0	0	0	3	4	34	41
Score of 61-70	0	0	0	0	0	0	0
Total	222	129	69	41	21	71	553

Tables 3 and 4 present comparisons of the store's food establishment classification with the two scoring methods. A store was either designated as a full-service grocery store or a convenience store. Grocery stores like Bakers and Super Saver, and chain superstores like most Walmart and Super Target stores are included as full-service grocery stores, while gas stations, Walgreens, Dollar General, etc., are included in the convenience store category. Overall, 29.6% of full-service grocery stores scored between 51-60 by the "Total Score" method, and 27.2% of grocery stores scored between 41-50, while 45.6% of them scored in all five "Healthy Access" categories. Comparatively, 57.2% of convenience stores scored between 1-10 and 48.6% of them were "No healthy categories".

Table 3. Total Score by Categories (Max = 70) by Store Type

	Grocery Store	Convenience Store	Total
Score of 0	2	17	19
	1.6%	4.0%	3.4%
Score of 1-10	16	245	261
	12.8%	57.2%	47.2%
Score of 11-20	15	84	99
	12.0%	19.6%	17.9%
Score of 21-30	15	56	71
	12.0%	13.1%	12.8%
Score of 31-40	6	7	13
	4.8%	1.6%	2.4%
Score of 41-50	34	15	49
	27.2%	3.5%	8.9%
Score of 51-60	37	4	41
	29.6%	0.9%	7.4%
Score of 61-70	0	0	0
	0.0%	0.0%	0.0%
Total	125	428	553
	100.0%	100.0%	100.0%

Table 4. Overall Healthy Access in Five Categories (Fruits, Vegetables, Grains, Meat/Alt, Milk) by Store Type

	Grocery Store	Convenience Store	Total
No healthy categories	14	208	222
	11.2%	48.6%	40.1%
One healthy category	13	116	129
	10.4%	27.1%	23.3%
Two healthy categories	13	56	69
	10.4%	13.1%	12.5%
Three healthy categories	15	26	41
	12.0%	6.1%	7.4%
Four healthy categories	13	8	21
	10.4%	1.9%	3.8%
All five healthy categories	57	14	71
	45.6%	3.3%	12.8%
Total	125	428	553
	100.0%	100.0%	100.0%

Tables 5 and 6 show the total score and healthy access categories by observed store type. 38.8% of grocery stores scored between 41-50 and 32.7% of them scored between 51-60; while 54.1% of grocery stores had the highest health access category (All five health categories).

Table 5. Total Score by Categories (Max Score = 70) by Observed Store Type

	Grocery	Chain Superstore	Convenience	Ethnic	Health Food Store	Other	Total*
Score of 0	0	0	19	0	1	2	22
	0.0%	0.0%	5.1%	0.0%	20.0%	4.9%	4.0%
Score of 1-10	3	2	235	22	0	27	289
	3.1%	3.4%	63.0%	39.3%	0.0%	65.9%	52.3%
Score of 11-20	9	4	73	16	0	9	111
	9.2%	6.8%	19.6%	28.6%	0.0%	22.0%	20.1%
Score of 21-30	10	15	40	13	3	3	84
	10.2%	25.4%	10.7%	23.2%	60.0%	7.3%	15.2%
Score of 31-40	6	4	3	2	0	0	15
	6.1%	6.8%	0.8%	3.6%	0.0%	0.0%	2.7%
Score of 41-50	38	20	2	3	1	0	64
	38.8%	33.9%	0.5%	5.4%	20.0%	0.0%	11.6%
Score of 51-60	32	14	1	0	0	0	47
	32.7%	23.7%	0.3%	0.0%	0.0%	0.0%	8.5%
Score of 61-70	0	0	0	0	0	0	0
	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Total	98	59	373	56	5	41	553
	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%

*Sum of the Total percentages may be greater than 1 because a store can be categorized as multiple types.

Table 6. Overall Healthy Access in Five Categories (Fruits, Vegetables, Grains, Meat/Alt, Milk) by Observed Store Type

	Grocery	Chain Superstore	Convenience	Ethnic	Health Food Store	Other	Total*
No healthy categories	3	2	198	18	1	28	250
	3.1%	3.4%	53.1%	32.1%	20.0%	68.3%	45.2%
One healthy category	5	8	104	15	0	8	140
	5.1%	13.6%	27.9%	26.8%	0.0%	19.5%	25.3%
Two healthy categories	9	9	47	9	3	3	80
	9.2%	15.3%	12.6%	16.1%	60.0%	7.3%	14.5%
Three healthy categories	11	6	18	10	0	2	47
	11.2%	10.2%	4.8%	17.9%	0.0%	4.9%	8.5%
Four healthy categories	17	5	4	1	0	0	27
	17.3%	8.5%	1.1%	1.8%	0.0%	0.0%	4.9%
All five healthy categories	53	29	2	3	1	0	88
	54.1%	49.2%	0.5%	5.4%	20.0%	0.0%	15.9%
Total	98	59	373	56	5	41	553
	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%

*Sum of the Total percentages may be greater than 1 because a store can be categorized as multiple types.

The Women Infant Children (WIC) food and commodities program approves retailers based on a strict list of products that they must have available. We are able to assess how the WIC-approved retailers not only compare to their non-WIC counterparts, but also in terms of access to other healthy food products that are important to a balanced diet for everyone, but particularly women, infants and children. As reported in Tables 7 and 8, the majority of WIC-approved retailers scored 41-60 total points (33.7% scored between 41-50 and 36.6% scored between 51-60) and in all five "Healthy Access" categories (59.4%).

Table 7. Total Score by Categories *by* WIC Designation

	Non-WIC retailer	Approved WIC retailer	Total
Score of 0	19	0	19
	4.2%	0.0%	3.4%
Score of 1-10	259	2	261
	57.3%	2.0%	47.2%
Score of 11-20	92	7	99
	20.4%	6.9%	17.9%
Score of 21-30	52	19	71
	11.5%	18.8%	12.8%
Score of 31-40	11	2	13
	2.4%	2.0%	2.4%
Score of 41-50	15	34	49
	3.3%	33.7%	8.9%
Score of 51-60	4	37	41
	0.9%	36.6%	7.4%
Score of 61-70	0	0	0
	0.0%	0.0%	0.0%
Total	452	101	553
	100.0%	100.0%	100.0%

Table 8. Overall Healthy Access Score *by* WIC Designation

	Non-WIC retailer	Approved WIC retailer	Total
No healthy categories	222	0	222
	49.1%	0.0%	40.1%
One healthy category	123	6	129
	27.2%	5.9%	23.3%
Two healthy categories	57	12	69
	12.6%	11.9%	12.5%
Three healthy categories	28	13	41
	6.2%	12.9%	7.4%
Four healthy categories	11	10	21
	2.4%	9.9%	3.8%
All five healthy categories	11	60	71
	2.4%	59.4%	12.8%
Total	452	101	553
	100.0%	100.0%	100.0%

The SNAP (Supplemental Nutrition Assistance Program, formerly food stamps) food assistance program is another program concerned with contributing to people's nutritional health by making funds for food products available to those who may be at-risk for poor nutritional intake due to their socioeconomic status. We are able to assess how the SNAP-approved retailers not only compare to their non-SNAP counterparts, but also in terms of access to other healthy food products that are important to a balanced diet for everyone.

As reported in tables 9 and 10, only 8.8% of SNAP-approved retailers scored 51-60 total points and 44.0% scored between 1-10, while 15.3% provide access to all five "Healthy Access" categories with 34.5% had no healthy categories. Comparatively, 64.0% of Non-SNAP stores scored between 1-10, and 69.7% had a "No healthy categories" healthy access measure.

Table 9. Total Score by Categories *by* SNAP Designation

	Non-SNAP retailer	Approved SNAP retailer	Total
Score of 0	14	5	19
	15.7%	1.1%	3.4%
Score of 1-10	57	204	261
	64.0%	44.0%	47.2%
Score of 11-20	14	85	99
	15.7%	18.3%	17.9%
Score of 21-30	1	70	71
	1.1%	15.1%	12.8%
Score of 31-40	2	11	13
	2.2%	2.4%	2.4%
Score of 41-50	1	48	49
	1.1%	10.3%	8.9%
Score of 51-60	0	41	41
	0.0%	8.8%	7.4%
Score of 61-70	0	0	0
	0.0%	0.0%	0.0%
Total	89	464	553
	100.0%	100.0%	100.0%

Table 10. Overall Healthy Access Score *by* SNAP Designation

	Non-SNAP retailer	Approved SNAP retailer	Total
No healthy categories	62	160	222
	69.7%	34.5%	40.1%
One healthy category	17	112	129
	19.1%	24.1%	23.3%
Two healthy categories	5	64	69
	5.6%	13.8%	12.5%
Three healthy categories	3	38	41
	3.4%	8.2%	7.4%
Four healthy categories	2	19	21
	2.2%	4.1%	3.8%
All five healthy categories	0	71	71
	0.0%	15.3%	12.8%
Total	89	464	553
	100.0%	100.0%	100.0%

Contacts

For more information on the DCHD and SCHD NEMS data set or to request a copy of this report, please contact:

Leah Casanave
Division Chief
Community Health, Nutrition, & Clinical Services
Douglas County Health Department
1111 S 41st Street
Omaha, NE 68105
leah.casanave@douglascounty-ne.gov
(402) 444-7515

Sarah Schram
Director
Sarpy/Cass Health Department
701 Olson Drive #101
Papillion, NE 68046
sschram@sarpycasshealth.com
(402) 339-4334

Appendices

Appendix A: Survey Instrument

NUTRITION ENVIRONMENT MEASURES SURVEY (NEMS)

State of Nebraska - Observation of Food Outlets

STORE & OBSERVER INFORMATION

Store Name:

Location:

Observer ID: ☐☐☐

What is today's date?

☐☐ / ☐☐ / ☐☐

MM DD YY

Did you talk to a store manager?

- ○ Yes
- ○ No

How many cash registers are in this store?

- ○ 1
- ○ 2 - 4
- ○ 5 or more

What type of store is being rated?

MARK ALL THAT APPLY

- ☐ Convenience store
- ☐ Grocery store
- ☐ Chain superstore
- ☐ Ethnic store
- ☐ Health food store
- ☐ Other (specify in box)

Start time:

☐☐ : ☐☐ ○ a.m. ○ p.m.

HOUR MINUTE

End time:

☐☐ : ☐☐ ○ a.m. ○ p.m.

HOUR MINUTE

Record below any comments that will help us understand your rating of any item or section in the survey *or* of this store overall.

Page 1 of 5

☐ **Page Complete?**

FRESH FRUITS & VEGETABLES

Are fresh fruits available? ○ Yes ○ No → If no, move to **fresh vegetables**.

	Available	Quality	Price	Per
Bananas	○ Yes ○ No	○ A ○ UA	$ ☐.☐☐	☐ ○ pc ○ lb
Apples	○ Yes ○ No	○ A ○ UA	*Preferred pricing for Red Delicious* $ ☐.☐☐	☐ ○ pc ○ lb
Oranges	○ Yes ○ No	○ A ○ UA		
Grapes	○ Yes ○ No	○ A ○ UA		
Cantaloupe	○ Yes ○ No	○ A ○ UA		

Total kinds (not varieties) of fresh fruits available: ○ 1 - 4 ○ 5 - 9 ○ 10 or more

Are fresh vegetables available? ○ Yes ○ No → If no, move to section on next page.

	Available	Quality	Price	Per
Carrots	○ Yes ○ No	○ A ○ UA	*Preferred pricing for 1-lb whole carrots* $ ☐.☐☐	☐ ○ lb
Broccoli	○ Yes ○ No	○ A ○ UA	$ ☐.☐☐	☐ ○ bunch/each ○ lb
Cauliflower	○ Yes ○ No	○ A ○ UA		
Tomatoes	○ Yes ○ No	○ A ○ UA		
Lettuce (Green Leaf)	○ Yes ○ No	○ A ○ UA		

Total kinds (not varieties) of fresh vegetables available: ○ 1 - 4 ○ 5 - 9 ○ 10 or more

☐ **Page Complete?**

FROZEN FRUITS & VEGETABLES

Are frozen fruits available? ○ Yes ○ No → If no, move to **frozen vegetables**.

Total kinds of frozen fruits (without added sugar) available: ○ 0 ○ 1-2 ○ 3 or more

Are frozen vegetables available? ○ Yes ○ No → If no, move to **canned fruits**.

Total kinds of frozen vegetables (without sauce) available: ○ 0 ○ 1-2 ○ 3 or more

CANNED FRUITS & VEGETABLES

Are canned fruits available? ○ Yes ○ No → If no, move to **canned vegetables**.

Total kinds of canned fruits (in 100% juice or water) available: ○ 0 ○ 1-2 ○ 3 or more

Price: canned fruit in 100% juice vs. canned fruit in heavy syrup? ○ More ○ Less ○ Equal ○ NC

Are canned vegetables available? ○ Yes ○ No → If no, move to next section.

Total kinds of canned vegetables (without sauce) available: ○ 0 ○ 1-2 ○ 3 or more

MEAT & MEAT ALTERNATIVES

Is ground beef available? ○ Yes ○ No → If no, move to **tuna**.

Is lean (at least 90/10) ground beef available? ○ Yes ○ No

Price: lean (at least 90/10) ground beef vs. less lean (85/15, 80/20) ground beef? ○ More ○ Less ○ Equal ○ NC

Is canned tuna available? ○ Yes ○ No → If no, move to **beans**.

Is canned tuna packed in water available? ○ Yes ○ No

Price: canned tuna packed in water vs. canned tuna packed in oil? ○ More ○ Less ○ Equal ○ NC

Are canned refried beans available? ○ Yes ○ No

Are dried beans (legumes) available? ○ Yes ○ No

Are canned beans available (legumes not green beans)? ○ Yes ○ No

☐ **Page Complete?**

GRAINS

Is loaf bread available? ○ Yes ○ No → If no, move to **tortillas**.

- **Is 100% whole wheat/grain bread available?** ○ Yes ○ No
- **Price: 100% whole wheat/grain bread vs. white bread?** ○ More ○ Less ○ Equal ○ NC
- **Total # of different 100% whole wheat/grain loaf breads:** ○ 0 ○ 1-2 ○ 3 or more

Are tortillas available? ○ Yes ○ No → If no, move to **cereals**.

- **Are whole wheat tortillas (3 g or more of fiber per serving) available?** ○ Yes ○ No
- **Price: whole wheat tortillas vs. refined tortillas?** ○ More ○ Less ○ Equal ○ NC

Is boxed cereal available? ○ Yes ○ No → If no, move to **rice**.

"Healthy" cereal examples: Cheerios, Grape Nuts, Total, Shredded Wheat, Wheaties, Bran Flakes

- **Are "healthy" (100% whole grain with less than 7g of sugar per serving) boxed cereals available?** ○ Yes ○ No
- **Total # of "healthy" (100% whole grain with less than 7g of sugar per serving) boxed cereals available:** ○ 0 ○ 1-2 ○ 3 or more

Is (uncooked) rice available? ○ Yes ○ No → If no, move to **pasta**.

- **Is brown whole grain rice available?** ○ Yes ○ No
- **Price: brown rice vs. refined rice?** ○ More ○ Less ○ Equal ○ NC

Is (uncooked) pasta available? ○ Yes ○ No → If no, move to section on next page.

- **Is 100% whole wheat pasta available?** ○ Yes ○ No
- **Price: 100% whole wheat pasta vs. enriched pasta?** ○ More ○ Less ○ Equal ○ NC

☐ **Page Complete?**

MILK

Is milk available? ○ Yes ○ No → If no, move to next section.

	Pint	Quart	Half Gallon	Gallon	Price Per Gallon Compare within same brand (cheapest, store brand).
Skim	○ Yes ○ No	○ Yes ○ No	○ Yes ○ No	○ Yes ○ No	$ ☐ . ☐☐
1%	○ Yes ○ No	○ Yes ○ No	○ Yes ○ No	○ Yes ○ No	$ ☐ . ☐☐
2%	○ Yes ○ No	○ Yes ○ No	○ Yes ○ No	○ Yes ○ No	$ ☐ . ☐☐
Whole	○ Yes ○ No	○ Yes ○ No	○ Yes ○ No	○ Yes ○ No	$ ☐ . ☐☐

Shelf Space for Milk: Measure only if skim and/or 1% milk is available.

How much shelf space is dedicated to skim / 1% milk compared to 2% / whole milk?

○ 50% or more of shelved milk is skim / 1%

○ Less than 50% of shelved milk is skim / 1%

SNACK FOODS

Are chips available? ○ Yes ○ No

Are baked chips (with less than 3 g of fat per 1 oz serving) available? ○ Yes ○ No

Are hard pretzels (with less than 3 g of fat per 1 oz serving) available? ○ Yes ○ No

Please review this questionnaire to make sure all items are complete. Once each page has been verified as complete, return to Page 1 to record any comments and enter your end time. Please return your finished assessment to the Bureau of Sociological Research using the postage-paid envelope in your assessment packet.

☐ **Page Complete?**

Appendix B: AAPOR Transparency Initiative Immediate Disclosure Items

1. Who sponsored the research study. **Executive Summary**
2. Who conducted the research study. **Executive Summary**
3. If who conducted the study is different from the sponsor, the original sources of funding will also be disclosed. **Executive Summary**
4. The exact wording and presentation of questions and response options whose results are reported. This includes preceding interviewer or respondent instructions and any preceding questions that might reasonably be expected to influence responses to the reported results. **Appendix A**
5. A definition of the population under study and its geographic location. **Methodology & Sample**
6. Dates of data collection. **Methodology & Sample**
7. A description of the sampling frame(s) and its coverage of the target population, including mention of any segment of the target population that is not covered by the design. This many include, for example, exclusion of Alaska and Hawaii in U.S. surveys; exclusion of specific provinces or rural areas in international surveys; and exclusion of non-panel members in panel surveys. If possible the estimated size of non-covered segments will be provided. If a size estimate cannot be provided, this will be explained. If no frame or list was utilized, this will be indicated. **Methodology & Sample**
8. The name of the sample supplier, if the sampling frame and/or the sample itself was provided by a third party. **Methodology & Sample**
9. The methods used to recruit the panel or participants, if the sample was drawn from a pre-recruited panel or pool of respondents. **N/A**
10. A description of the sample design, giving a clear indication of the method by which the respondents were selected, recruited, intercepted or otherwise contacted or encountered, along with any eligibility requirements and/or oversampling. If quotas were used, the variables defining the quotas will be reported. If a within-household selection procedure was used, this will be described. The description of the sampling frame and sample design will include sufficient detail to determine whether the respondents were selected using probability or non-probability methods. **Methodology & Sample**
11. Method(s) and mode(s) used to administer the survey (e.g., CATI, CAPI, ACASI, IVR, mail survey, web survey) and the language(s) offered. **Methodology & Sample**
12. Sample sizes (by sampling frame if more than one was used) and a discussion of the precision of the findings. For probability samples, the estimates of sampling error will be reported, and the discussion will state whether or not the reported margins of sampling error or statistical analyses have been adjusted for the design effect due to weighting, clustering, or other factors. Disclosure requirements for non-probability samples are different because the precision of estimates from such samples is a model-based measure (rather than the average deviation from the population value over all possible samples). Reports of non-probability samples will only provide measures of precision if they are accompanied by a detailed description of how the underlying model was specified, its assumptions validated and the measure(s) calculated. To

avoid confusion, it is best to avoid using the term “margin of error” or “margin of sampling error” in conjunction with non-probability samples. **Methodology & Sample**

13. A description of how the weights were calculated, including the variables used and the sources of weighting parameters, if weighted estimates are reported. **N/A**
14. If the results reported are based on multiple samples or multiple modes, the preceding items will be disclosed for each. **N/A**
15. Contact for obtaining more information about the study. **Contacts**