Environmental Nutrition Assessment (ENA) for Linn and Benton County Poverty Hotspots

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What do NEMS-S surveys measure?

- Type and location of food outlets
- Availability of healthful choices
- Pricing and promotion information and
- Placement of healthier food products within stores

Using 11 different measures, the survey calculates a **Composite NEMS Score** for each store.

**Composite NEMS scores range from -8 to 50**

Higher scores indicate a more healthful, affordable, and accessible food inventory.

- The New Ulm Minnesota Project
- Chenango Health Network NEMS Assessment
- Study of Food Access in Baton Rouge, LA

[https://www.med.upenn.edu/nems/applications.shtml](https://www.med.upenn.edu/nems/applications.shtml)
Reduced Item NEMS-S survey

- Approximately 10% as long as the full NEMS-S survey
- No significant differences in median NEMS composite scores for varying types of retail food outlets when compared to the full survey scores. (10)
- Median in-store audit time was reduced 25%–50%, without compromising measurement quality. (10)

Accessibility Items:

Lincoln County food retailers – store assessment included questions about:

- WIC
- SNAP
- Bike Racks
- Sidewalks with curb ramps leading to store, and
- Pedestrian crosswalks leading to parking lot/entrance

Pricing Information

- Milk
- 100% whole wheat bread
• Geographic concentrations of low-income residents

• **DHS County Quick Facts:** Prepared by Office of Business Intelligence (DHS) and the Office of Forecasting, Research and Analysis (DHS|OHA Shared Service) January 2017

• Compiled using; Census Bureau, DHS, Oregon Employment Department (OED), and SNAP data on all 36 counties

• Statewide, about 96 percent of SNAP clients have addresses that can be reliably located within a census tract
Poverty Hotspots:

- North Corvallis tracts 10.01, 6
- Tract 1 for South Corvallis
- Lebanon tract 309.3
- Sweet Home tract 304.01
- Albany tracts 208.01, 208.02, 205
- Monroe tract 104.
North Corvallis tracts 10.01, 6
Lebanon tract 309.3
Sweet Home tract 304.01
Albany tracts 208.01, 208.02, 205
Monroe tract 104.
61 total food stores were targeted

- Corvallis – 18 stores
- South Corvallis – 3 stores
- Albany – 17 stores
- Sweet Home – 9 stores
- Lebanon – 12
- Monroe – 2
### List of Food stores included in study

<table>
<thead>
<tr>
<th>Location</th>
<th>Store Name</th>
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<tbody>
<tr>
<td>Lebanon</td>
<td>Grocery Outlet</td>
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<tr>
<td>Lebanon</td>
<td>Mega Foods</td>
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<tr>
<td>Lebanon</td>
<td>Rite Aid</td>
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<tr>
<td>Lebanon</td>
<td>Crowfoot Market</td>
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<tr>
<td>Sweet Home</td>
<td>Thriftway</td>
</tr>
<tr>
<td>Sweet Home</td>
<td>U.S mini mart #1</td>
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<tr>
<td>Sweet Home</td>
<td>Main Street Market (coopers</td>
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<tr>
<td>Sweet Home</td>
<td>Speedy Mart</td>
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<tr>
<td>Sweet Home</td>
<td>Safeway</td>
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<tr>
<td>Sweet Home</td>
<td>Dollar General</td>
</tr>
<tr>
<td>Sweet Home</td>
<td>Circle K</td>
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<tr>
<td>Sweet Home</td>
<td>Chevron/US market #2</td>
</tr>
<tr>
<td>Sweet Home</td>
<td>Holley Market</td>
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<tr>
<td>Corvallis</td>
<td>Devi Indian Grocery</td>
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<tr>
<td>Corvallis</td>
<td>Market of choice</td>
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<tr>
<td>Corvallis</td>
<td>Grocery Outlet</td>
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<tr>
<td>Corvallis</td>
<td>Walmart Market</td>
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<tr>
<td>Corvallis</td>
<td>Grocery Depot</td>
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<tr>
<td>Corvallis</td>
<td>Trader Joe's</td>
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<td>Corvallis</td>
<td>Winco</td>
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<td>Corvallis</td>
<td>Natural Grocers</td>
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<td>Corvallis</td>
<td>Jacksons</td>
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<td>US Market</td>
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<tr>
<td>Corvallis</td>
<td>Corvallis Market #2</td>
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<tr>
<td>Corvallis</td>
<td>Rite Aid</td>
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<tr>
<td>Corvallis</td>
<td>HK Asian market</td>
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<tr>
<td>Corvallis</td>
<td>Fred Meyer</td>
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<tr>
<td>Corvallis</td>
<td>Seven Eleven</td>
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<tr>
<td>Corvallis</td>
<td>City Limits Country Store</td>
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<td>Seven Eleven</td>
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<td>S Corvallis</td>
<td>Bazaar International</td>
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<td>S Corvallis</td>
<td>Corvallis Southside Market</td>
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<td>South Co-op</td>
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<td>Monroe</td>
<td>Dairy Mart</td>
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<td>Dollar General</td>
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<td>Fred Meyer</td>
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<td>Bob'sFamilyMarket (US mini</td>
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<td>Albany</td>
<td>Target</td>
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<td>Winco Foods</td>
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<td>OroweatBakeryOut</td>
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<td>LaAguilaMexicaSto</td>
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<td>US Market</td>
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<td>Circle K</td>
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<td>Rite Aid</td>
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<td>Lebanon Market</td>
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<td>Lebanon</td>
<td>Oregon Mini mart (chevron)</td>
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<td>Lebanon</td>
<td>Safeway</td>
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<td>Lebanon</td>
<td>Knothole Market</td>
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<tr>
<td>Lebanon</td>
<td>7 eleven</td>
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<td>Lebanon</td>
<td>Walmart Superstore</td>
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<td>Lebanon</td>
<td>Dollar Tree</td>
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<tr>
<td>Lebanon</td>
<td>Walgreens</td>
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<tr>
<td>Lebanon</td>
<td>Grocery Outlet</td>
</tr>
</tbody>
</table>
Data Collection

Learning Objective #4

1. Are there any data related to the topic?
   - Yes
   - No

2. What are the sources of data?
   - Public records
   - Surveys
   - Interviews
   - Other

3. Describe the methodology used to collect the data.
   - Observational study
   - Experimental design
   - Survey
   - Other

4. What is the sample size?
   - 100
   - 500
   - 1000
   - Other

5. How was the data analyzed?
   - Descriptive statistics
   - Inferential statistics
   - Qualitative analysis
   - Other

6. What are the limitations of the data collection process?
   - No
   - Yes

7. How were the data collected from each type of source?
   - Interviews
   - Surveys
   - Observations
   - Other

8. What are the potential biases in the data collection process?
   - No
   - Yes

9. How many different types of data were collected?
   - 3
   - 5
   - 10
   - Other

10. What were the data collection tools used?
    - Questionnaires
    - Interviews
    - Surveys
    - Other

11. What were the data collection methods used?
    - Observations
    - Interviews
    - Surveys
    - Other

12. What were the data collection procedures used?
    - Random sampling
    - Convenience sampling
    - Stratified sampling
    - Other

13. What were the data collection challenges?
    - Resource limitations
    - Participant availability
    - Data confidentiality
    - Other

14. What were the data collection costs?
    - Low
    - Medium
    - High
    - Other

15. What were the data collection timelines?
    - Short
    - Medium
    - Long
    - Other

16. What were the data collection ethics?
    - Compliance
    - Non-compliance
    - Other

17. What were the data collection risks?
    - Security breaches
    - Data loss
    - Other

18. What were the data collection benefits?
    - Improved decision-making
    - Increased knowledge
    - Other

19. What were the data collection limitations?
    - Inadequate data
    - Incomplete data
    - Other

20. What were the data collection outcomes?
    - Positive
    - Negative
    - Mixed
    - Other

21. What were the data collection implications?
    - Future research
    - Policy implications
    - Other

22. How will the data be used?
    - For decision-making
    - For research
    - For education
    - Other

23. Are there any data availability issues?
    - Yes
    - No

24. How will data availability be addressed?
    - Data sharing
    - Data storage
    - Other

25. What were the data collection tools used for analysis?
    - Statistical software
    - Spreadsheet
    - Other

26. What were the data collection challenges?
    - Resource limitations
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Analysis – Overall

- Composite NEMS scores showed 35.49 (highest) to 1.77 (lowest)
- Grocery Stores had significantly higher NEMS scores than other stores.
- 42% of stores carried fresh vegetables
- 50% of stores carried fresh fruit, but only 34% carried 5 of more
- 55% of stores carried Healthy Cereals
Accessibility and Pricing

• 46% of total stores in the study offered bike racks
• 49% of the stores assessed had crosswalks
• 77% of all stores assessed in the study had sidewalks with ramps
• some stores with high NEMS scores also have very high prices for milk (figure 4)
• 82% of stores surveyed accepted SNAP
• 24% of stores offered WIC
Corvallis and South Corvallis

- North and South hotspots combined averaged the highest Average Composite NEMS score (18.08) in study.
- the highest scoring store (35.494) Walmart Market
- 81% of stores in the Corvallis hotspot sell low-fat milk
- 52% of stores sold whole-wheat bread
- 71% of stores sold healthy cereal
Accessibility and pricing

- 28% of the stores assessed accepted WIC, and 86% accepted SNAP
- 67% of stores assessed offered bike racks
- 42% had crosswalks
- 90% had sidewalks with curb access
- Corvallis averaged $3.01 per gallon of low-fat or skim milk
- 100% whole wheat bread cost an average of $2.50

3 stores in South Corvallis

- Average Composite NEMS score 11.06
- Includes CO-OP (28.41)
- 1 store accepted WIC, 2 stores accepted snap.
Lebanon

- Average Composite NEMS score of 17.44 - the second highest in the study
- Without Mega Foods, it drops to 14.56, second lowest
- 42% of stores sold fresh fruit
- 33% of stores sold vegetables.
- 50% sold healthy cereals
- 75% sold low-fat milk
- 50% sold whole-wheat bread.

**Accessibility and pricing**
- had 24% of their stores accepting WIC
- 86% of their stores accepting SNAP
- highest percentage of stores with adequate sidewalks with ramps (92%)
- 83% of stores had crosswalks
- 33% of the stores assessed offered bike racks
Sweet Home

- Average Composite **NEMS score of 10.48** - lowest average with only two grocery stores (Safeway and Thriftway)
- 33% of the stores sold fresh vegetables
- 44% of stores sold fresh fruit; however two of those stores offered two or less fruits.
- <50% of stores sold low-fat milk or whole-wheat bread
- 33% of stores sold healthy cereals.

**Accessibility and pricing**
- 88% had adequate sidewalks
- 33% of stores offered bike racks or appropriate street crossings
- 22% of stores offered WIC
- 66% of stores offered SNAP
- $2.93 average low-fat milk price
- $2.03 average 100% whole wheat bread price
Albany

• Average Composite **NEMS score of 16.53**
• Safeway had the highest score (30.36)
• 50% of stores sold fresh fruit, 17% of those stores sold three or less varieties of fruit
• 47% of stores sold fresh vegetables
• 38% Grocery stores, 38% Convenience stores.
• 56% of the stores assessed sold whole-wheat bread
• 47% of stores sold cereal with seven grams of sugar per serving or less (healthy cereal)

**Accessibility and price**
• 88% of stores accepted SNAP
• only 24% accepted WIC
• 29% of had bike racks
• and 47% of stores in Albany had adequate sidewalks and crosswalks.
• The Monroe hotspot is unique because of its large size relative to the number of stores and people within it.

• Average Composite NEMS score of 15.98

• NO full grocery store

• Dari Mart (NEMS score of 20.08) has been designed with an adequate produce display and deli where raw meats like beef and chicken are sold.

**Accessibility and price**

• Neither of the stores assessed in Monroe accepted WIC, but they both accepted SNAP
What the data tells us?

• Calculated NEMS scores are low in every high-poverty hotspot assessed in the study compared to other studies.

• Hotspots with an even balance between grocery stores and convenience stores had better average NEMS scores.

• Consistent with current research, grocery stores offer more healthful food selections than convenience stores.

• Convenience stores tend to be less centrally located therefore they tend to be more accessible, especially to individuals who walk or ride their bike.

• This study *highlights* how stores cluster together, mostly in high traffic areas.
What we still need to learn . . .

- Distances Linn and Benton county residents travel for their food and modes of transportation.
- Consumer behaviors (where people are shopping).
- Utilize the **full NEMS-S survey** - *Washington State NEMS study found a wider range of NEMS scores when using full NEMS.*
- Other components of the food environment should be included into future studies of the food environment – i.e. farmers markets, restaurants, hospitals, schools, etc.
Citations


Office of Business Intelligence (DHS) and the Office of Forecasting. (2014) DHS County Quick Facts. Research and Analysis (DHS|OHA Shared Service)


Questions?
Thank you for coming

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