



National Measures of Food Access: Which Measures and What Do They Tell Us?

Symposium on Food Insecurity: Assessing Disparities,
Consequences, and Policies
University of Missouri, October 18-19, 2012

Michele Ver Ploeg
Economic Research Service, USDA





Outline

- How do we measure food access and what data do we use?
- What do we know about disparities in food access?
- How can individual measures of access may help us understand the problem better?
- How are food insecurity and food access related?



Themes on measuring food access

- Purposes matter.
 - My focus is national measures for policy monitoring and targeting.
 - National vs. local data and methods
- Area vs. individual measures
- We care about some foods more than others.
 - Healthy foods vs. less healthy foods



USDA Food Access Report to Congress (2009)

- Multiple measures of food access (distance to stores; direct measures from CPS; time use; prices paid; SNAP redemptions)
- Distance measures used 2000 Census and 2006 store data with 1 km-square grid analysis
- Updated in 2012 using 2010 Census, 2006-2010 ACS, 2010 store data.



Updated 2012 Estimates

- Area-based:
 - 27.9 million (9.7%) people live in low-income areas more than 1 mile from a supermarket (2010).
- “Quasi-individual”
 - 2.1 million (1.8%) households live more than 1 mile from store and do not have a vehicle. 1.4 million were in moderate/high income areas.
 - 35.6 million (11.6%) low-income individuals live more than 1 mile from store. 20.1 million were in moderate/high income areas.

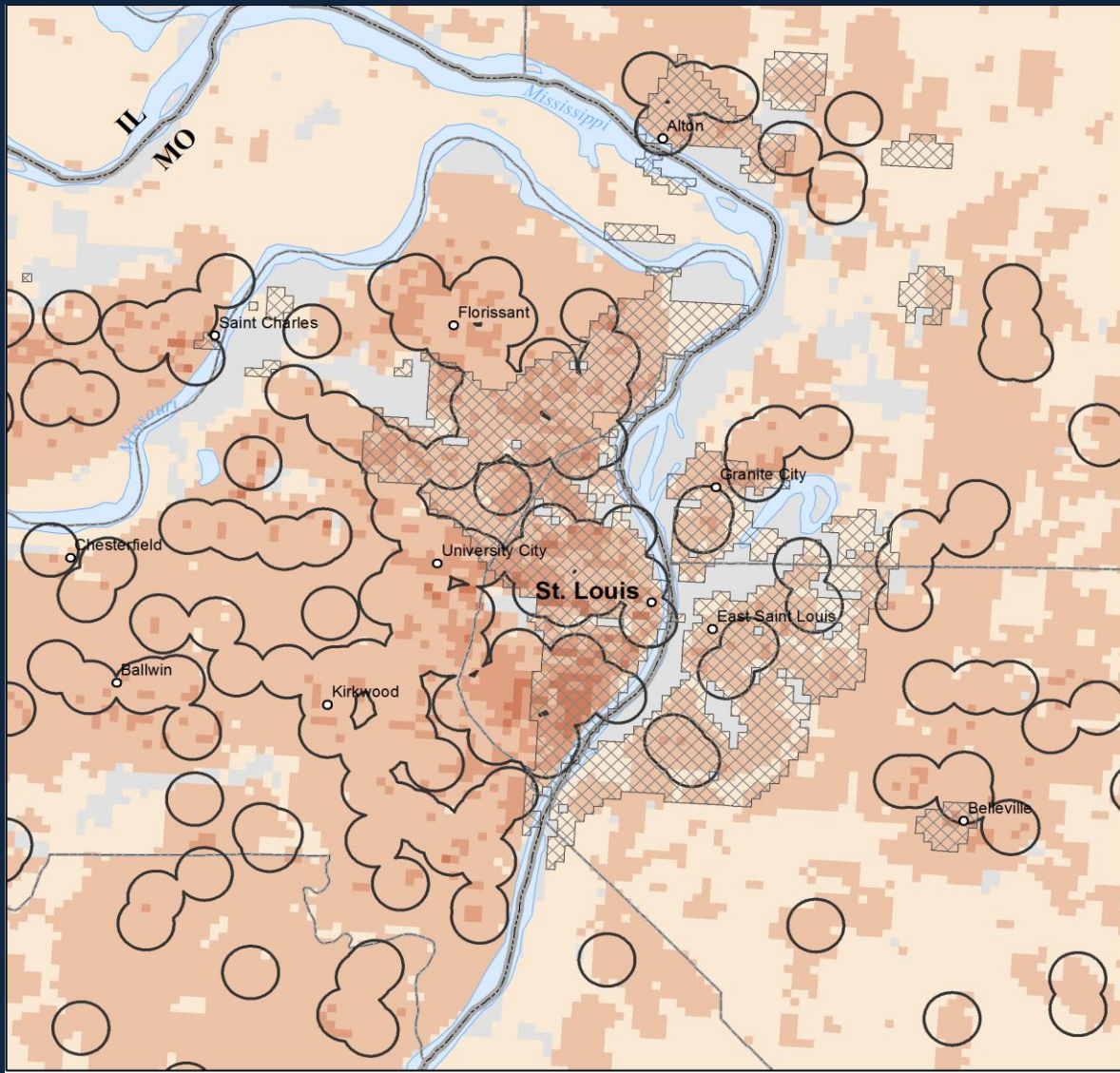
Disparities in distance to nearest supermarket (USDA, 2012)

	20th Percentile Distance to Nearest Supermarket	Median Distance to Nearest Supermarket	80th Percentile Distance to Nearest Supermarket	Total
	2010	2010	2010	
Population Characteristics	Miles	Miles	Miles	Millions
All individuals	0.33	0.90	2.19	308.7
Income				
Low-income individuals	0.26	0.79	1.98	98.4
Higher income individuals	0.35	0.94	2.24	210.3
Expanded Race				
White	0.37	0.97	2.66	223.6
Black	0.24	0.69	1.35	38.9
Asian	0.16	0.64	1.10	14.7
Native Hawaiian/Pacific Islander	0.23	0.69	1.42	
American Indian/Alaska Native	0.36	1.06	5.09	
Other and multiple races	0.17	0.64	1.26	28.1
Hispanic Ethnicity				
Hispanic	0.17	0.64	1.25	50.5
Non-Hispanic	0.36	0.95	2.49	258.3
Vehicle Available (Households)				
Vehicle Available (Households)	0.34	0.90	2.26	105.8
No Vehicle Available (Households)	0.03	0.41	0.99	10.2

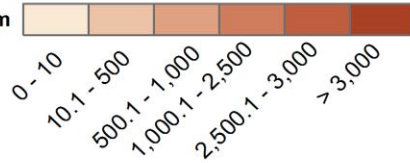
Distance to 3 nearest supermarkets

(USDA, 2012)

	20th Percentile Distance to Nearest 3 Supermarkets	Median Distance to Nearest 3 Supermarkets	80th Percentile Distance to Nearest Supermarkets
	2010	2010	2010
Population Characteristics	Miles	Miles	Miles
All individuals	1.0	1.9	4.8
Income			
Low-income individuals	0.9	1.8	5.0
Higher income individuals	1.0	2.0	4.7
Expanded Race			
White	1.1	2.2	5.7
Black	0.9	1.6	2.6
Asian	0.7	1.4	2.1
Native Hawaiian/Pacific Islander	0.8	1.6	3.1
American Indian/Alaska Native	1.1	2.8	12.8
Other and multiple races	0.7	1.5	2.5
Hispanic Ethnicity			
Hispanic	0.7	1.4	2.5
Non-Hispanic	1.1	2.1	5.3
Vehicle Available (Households)			
Vehicle Available (Households)	1.0	2.0	5.2
No Vehicle (Households)	0.4	1.3	2.2



Pop. per sq. half-km



1-mile distance to supermarket



Low income areas





USDA Food Desert Estimates (2011)

- Grid-based estimates of distance to the nearest supermarket aggregated to census tract level
- Focused on low-income census tracts
- A food desert is a low-income tract where more than 500 people of 1/3rd of the population is far from a supermarket (1 mile urban; 10 miles rural)
- 6,529 tracts with 13.6 million low access people in food deserts (4.9% of total U.S. population)
- These estimates will be updated later this year.



Characteristics of food deserts

- Among low-income census tracts, USDA defined-food deserts have:
 - Higher poverty rates
 - Greater share of minority residents (except in very dense areas)
 - Greater share of vacant housing units

- Dutko, Ver Ploeg, Farrigan (2012)



Other national-level area-based measures of food access

- The Reinvestment Fund Limited Supermarket Access areas
 - 24.6 million people live in LSAs (2011)
- CDC Healthy Tracts
 - 72% of census tracts contained at least one healthy food retailer (2009)




Area measures only imply food access

- Some individuals in poor access areas may not have access problems and some individuals in high access areas may have poor access.
- Access of an area can change and the access of the people that live there may or may not change.
- Individual and quasi-individual measures can capture some aspects of access limitations that areas measures cannot.



Direct measures of food access

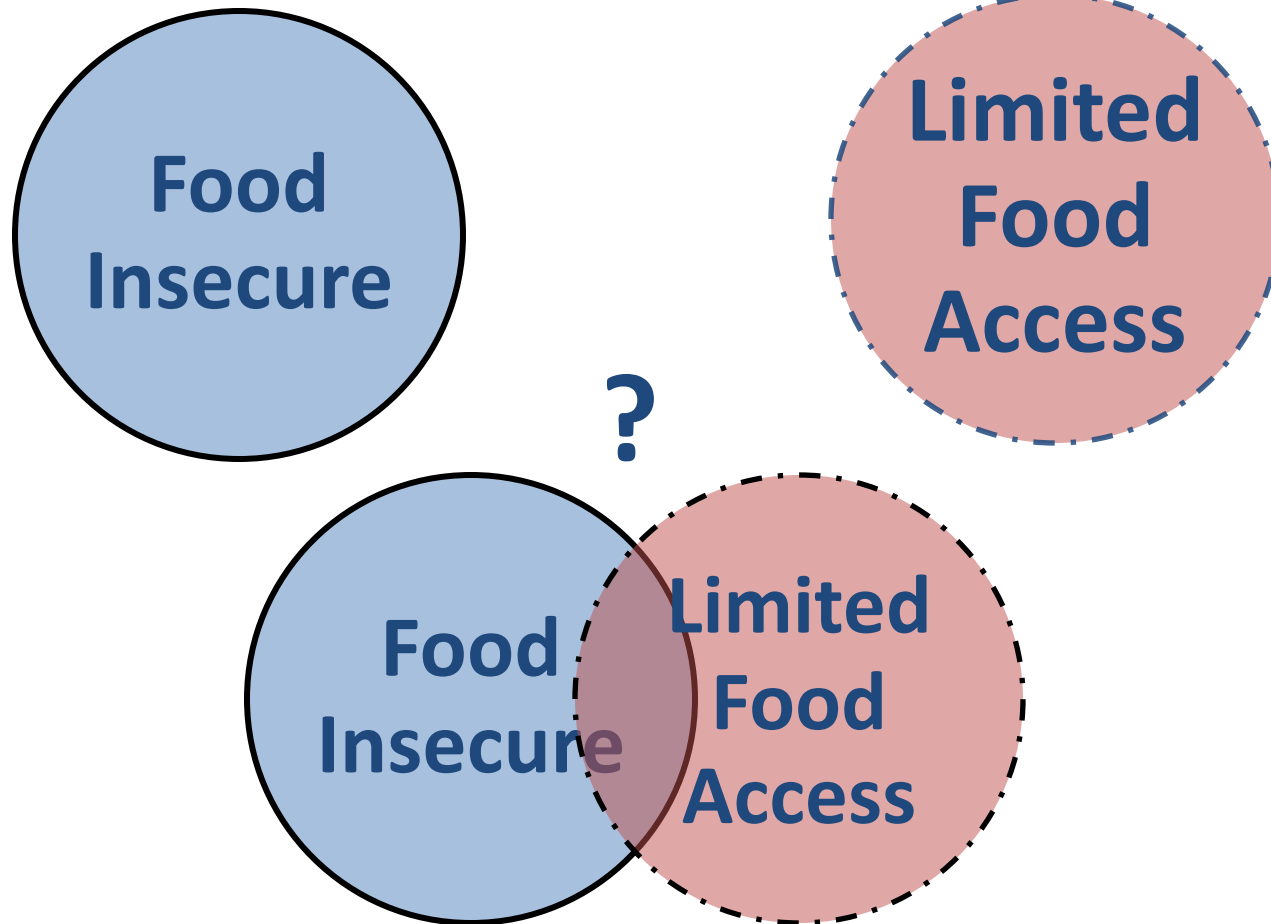
- 2001 Current Population Survey
 - 5.7% of households did not always have enough food or enough of the kinds of foods they wanted because of access limitations
- FRAC Gallup Survey (2011)
 - 8.2% of respondents reported that it was not easy to get affordable fresh fruits and vegetables
- Perceptions of food access (Moore et al., 2008; Sharkey et al., 2010)



Disparities using individual measures: Estimates and potential measures

- Shopping by store type
 - Broda et al. (2009)
 - 88% of SNAP redemptions at SM or LG (USDA, 2011)
- Shopping frequency
- Travel mode and time spent traveling to grocery stores
 - 19.5 minutes in low-income/low access areas vs. 15.5 minutes in low-income/high access areas (USDA, 2009)
- Prices paid
 - Broda et al. (2009)
 - FoodAPS and FoodAPS Geography study

Food Access and Food Insecurity





Conceptual differences in food insecurity and food access

- Unit of analysis:
 - Food insecurity: individual-based
 - Food access: most often area-based (e.g. neighborhoods or census geographies)
- Measurement method:
 - Food insecurity: measured with direct questions of individuals
 - Food access: measured indirectly and almost always by ‘implied’ access as opposed to ‘realized’ access.
- Quality, types, and prices of food matter for food access measurement.
- Policy approaches are very different.



Conclusions and Suggestions

- Disparities in food store access are sometimes surprising...
...but it clearly appears that some low-income areas experience food access limitations.
- Individual and direct measures of food access are at least as important as area measures.
- Fruitful future research on the relationship between food access and food insecurity.



Resources

- Food Desert Locator:
<http://www.ers.usda.gov/data-products/food-desert-locator.aspx>
- Food Environment Atlas:
<http://www.ers.usda.gov/data-products/food-environment-atlas.aspx>
- Policy Map (LSAs):
<http://www.trfund.com/TRF-LAA-widget.html>
- Shelly Ver Ploeg: sverploeg@ers.usda.gov