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***Invited presentation at the 2018 Southern Agricultural
Economics Association Annual Meeting, February 2-6, 2018,
Jacksonville, Florida***

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Measure Food Security Rate Using Internet Survey

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Food Security

- The United States Department of Agriculture (USDA) measures the extent of household food insecurity every year
- The food security survey is conducted as a part of the Current Population Survey (CPS) by the U.S. Census Bureau, which partially involves expensive in-person interviews
- Collected data from CPS is analyzed and reported by USDA's Economic Research Service (ERS)
- **12.3** percent of households were food insecure in 2016 (ERS, 2017)

Research Questions

- What if a researcher wants to study a new aspect of food security that requires questions not currently asked in the CPS?
- Using internet surveys to measure food security would be less representative, but also less expensive.
- Are they 'good enough' to justify conducting?
- Perhaps so, if food security rates using the internet survey mimics those in the CPS.

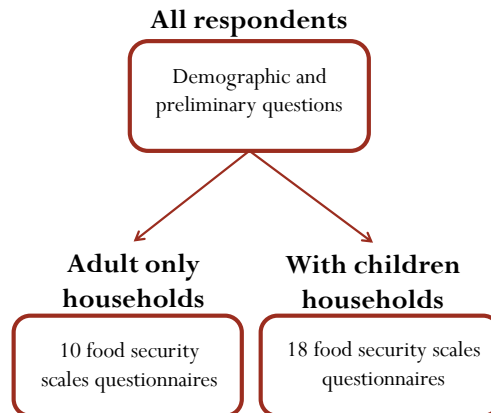
Objectives

- Conduct an internet survey of Americans.
- To the extent possible, ask the identical food security questions used in the CPS.
- Compare the percent of food insecure households in the internet survey to percent in the CPS.
- If they are not similar, observe their differing demographics, and evaluate if sample balancing (also known as raking) can reconcile the food insecurity rates.

Internet Survey Design

Contains three sections

- Demographic questions
- Questions used to compute the food security scales
- Other questions regarding the importance of food versus other amenities (not analyzed here)



Internet Survey Design

Preliminary Question

Which of these statements best describes the food eaten in your household in the last 12 months?

- Enough of the kinds of food I want to eat
- Enough but not always the kinds of food I want to eat
- Sometimes not enough to eat
- Often not enough to eat
- Don't know or refuse to answer

If households answer 'enough of the kinds of food I want to eat' and report a household level twice that of the poverty level, the food security questions are skipped as the household is assumed to be 'food secure'.

This is referred to as 'screening'.

The exact screening procedure differs across years.

Internet Survey Design

Example of the Food Security Scale Questionnaires

"I was worried whether my food would run out before I got money to buy more."
Was that often, sometimes, or never true for you in the last 12 months?

- Often true
- Sometimes true } **Affirmative**
- Never true
- Don't know or refuse to answer

"I couldn't afford to eat balanced meals."
Was that often, sometimes, or never true for you in the last 12 months?

- Often true
- Sometimes true } **Affirmative**
- Never true
- Don't know or refuse to answer

"The food that I bought just didn't last, and I didn't have money to get more."
Was that often, sometimes, or never true for you in the last 12 months?

- Often true
- Sometimes true } **Affirmative**
- Never true
- Don't know or refuse to answer

Survey Implementation

- Administrated in December 2016 by survey company SSI (Survey Sampling International)
- SSI selects the sample to be representative in terms of gender, race, ethnicity, and geographic location.
- A total of 1,563 respondents completed the survey

Data

Summary Statistics of the Internet Survey, ERS/CP Survey, and American Community Survey

	Internet Survey December 2016 (N= 1,563 respondents)	ERS/CPS 2011-2015	American Community Survey (ACS) ¹
Percent of...	Households		
With three or more members	55.0%	38.1%	38.7%
With income < \$20,000	17.0%	16.2%	17.7%
With unemployed member	24.4%	8.1%	8.3%
Who own their home	60.0%	66.1%	63.9%
Who use SNAP benefits	19.3%	9.5%	-
Who use food pantries	14.7%	6.2%	-
Percent of...	Survey respondents		Individuals in households
Ethnicity: white only	77.4%	80.5%	73.5%
Bachelor's degree	27.5%	35.1%	18.5%
Female	53.5%	49.0%	50.8%

1. Source: U.S. Census Bureau, 2011-2015 American Community Survey 5-Year Estimates (N=2,268,152 housing units).

Calculating the Food Security rate

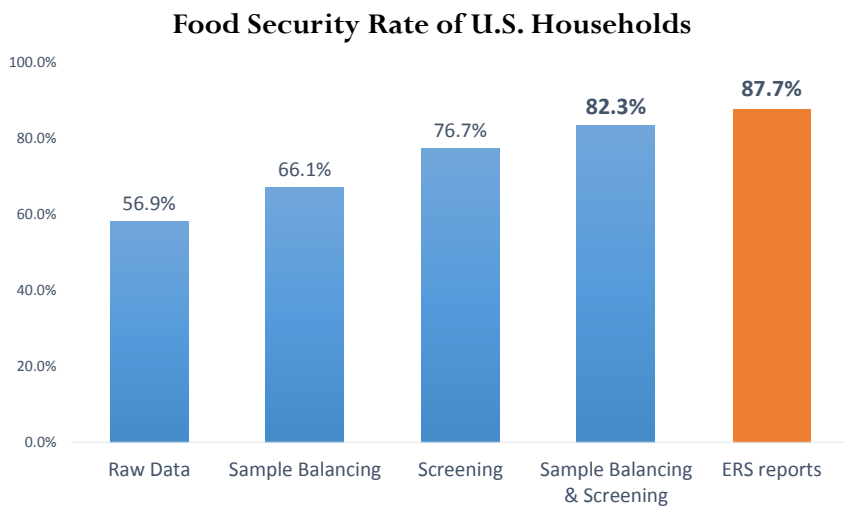
- Count the numbers of affirmative answers of each respondent

	Adults only households	With children households
Food Secure {	Food Secure 0 affirmative answers	0 affirmative answers
	Marginal Food Security 1-2 affirmative answers	1-2 affirmative answers
Food Insecure {	Low Food Security 3-5 affirmative answers	3-7 affirmative answers
	Very Low Food Security 6-10 affirmative answers	8-18 affirmative answers

Calculating the Food Security rate

- **Sample balancing**
 - to make the sample behave as if demographic profile for the internet survey matched that of the ACS representative by the U.S. Census Bureau statistics (Household income level, Gender, Education, home-ownership, Ethnicity, Unemployment rate, etc.)
- **Screening-out process**
 - assumed that households that both report incomes above 200% of the poverty household income level and respond to the preliminary question are food secure

Preliminary Results



Thank you