Linkage of HUD Administrative Data with the Current Population Survey: Food Security Supplement

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Background

- HUD/PD&R -- USDA/ERS Collaboration
- USDA Economic Research Service (ERS) Report
- Published November 2020
- Uses 2011-2012 National Health Interview Survey (NHIS) linked with HUD administrative data
- Report Link
- Showed the power of using linked data to better understand food insecurity among HUD-assisted households

USDA
United States Department of Agriculture

Economic Research Service

Economic Research Report Number 277
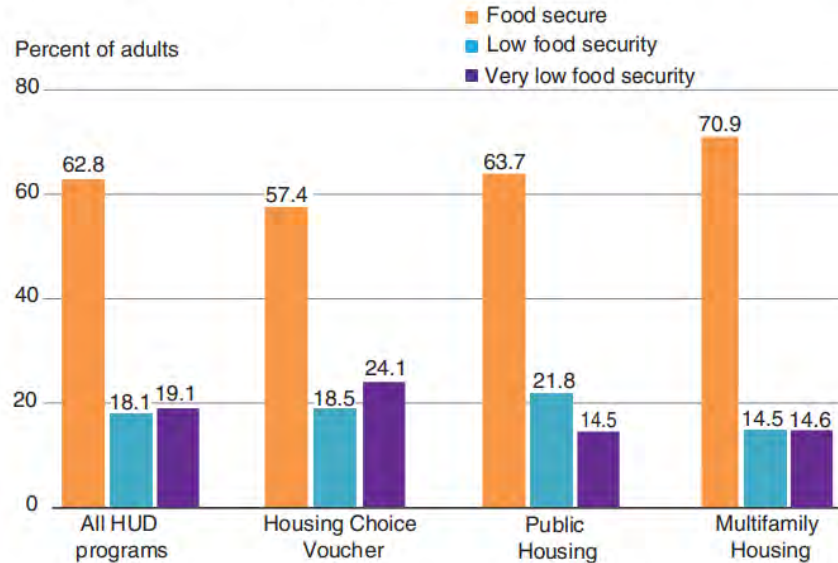
November 2020

Household Food Insecurity and U.S. Department of Housing and Urban Development Federal Housing Assistance

Veronica Helms, Alisha Coleman-Jensen, Regina Gray, and Debra L. Brucker

Key Findings From 2020 ERS Report

Figure 1

Prevalence of food security, low food security, and very low food security among adults receiving HUD assistance by HUD program type

Note: Food insecurity includes low and very low food security. Presented percentages are weighted.

Source: Data are from the U.S. Department of Health and Human Services, Centers for Disease Control and Prevention (CDC), 2011–2012 National Health Interview Survey (NHIS) linked to U.S. Housing and Urban Development (HUD) administrative data.

Key Findings From 2020 ERS Report

Table 7

Model-adjusted risk of living in a food-insecure household by HUD program type

	Predicted marginal proportion	SE	95 percent CI	p-value
HUD program type				
Housing Choice Voucher	0.41	0.02	0.36, 0.45	<0.001
Public Housing	0.37	0.03	0.32, 0.43	<0.001
Multifamily Housing	0.31	0.02	0.27, 0.36	<0.001

Notes: SE = standard error. 95 percent CI = 95 percent confidence interval.

Source: Data are from the U.S. Department of Health and Human Services, Centers for Disease Control and Prevention, National Center for Health Statistics, 2011–2012 National Health Interview Survey (NHIS) linked to U.S. Housing and Urban Development (HUD) administrative data.

No matter what we controlled for, <u>adults receiving housing choice vouchers had the highest rates of food insecurity</u> when compared to adults receiving project-based assistance.
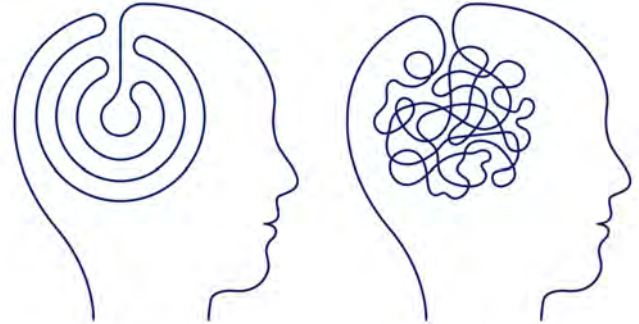
Other Relevant Research

- Recent Paper (April 2023): [Rental assistance improves food security and nutrition: An analysis of National Survey Data](#)

  - Investigates the impacts of rental assistance on food security and nutrition (pseudo-waitlist approach)

  - **Tenants with project-based assistance were less likely to experience food insecurity**

  - Rent-assisted individuals consumed 0.23 more cups of daily fruits and vegetables compared the pseudo-waitlist group

- Authors conclude: "*Findings suggest that the current unmet need for rental assistance and resulting long waitlists have adverse health implications, including decreased food security and fruit and vegetable consumption.*"

What Does this Mean?

- Tenant-based assistance often implies choice, but this finding contradicts that construct.

- **Main hypothesis:** Rent burden → Examined American Housing Survey but sample size was too limited

- **Other Issues** → Voucher lease up success and limited landlord participation

- **Is this finding consistent in other data sources?**

CPS:FSS-HUD Linkage

- Current Population Survey: Food Security Supplement (CPS: FSS) used by ERS for annual food security report

- Housed in the Census Integrated Research Environment (IRE) – so is HUD data!

Research Questions and Purpose

Goal: Better understand household food insecurity status among HUD-assisted households

Research Question: How does household food insecurity vary by housing assistance program type?

Objective: Estimate the prevalence of food insecurity among HUD-assisted households and examine differences across HUD program type

Purpose:
1. Verify prior results from NHIS-HUD
2. Support HUD/PD&R commitments in the Biden-Harris Administration National Strategy on Hunger, Nutrition, and Health (September 2022) → *"HUD will partner with USDA and the Census Bureau to better understand and address persistent food insecurity among HUD-assisted individuals already connected with nutrition assistance programs" (p. 34).*

Linkage Process: Data

- CPS Food Security Public Use Microdata
- CPS Food Security Internal Use File
- HUD's Rental Housing Assistance Administrative Records
- The Census Bureau's Master Address File
- The Census's Bureau Numident File

Linkage Process

1. Align the HUD Admin Data to the CPS-FS Data Collection Period
2. Probabilistically Link HUD Administrative Records to the MAF
3. Deterministically link HUD administrative records to the Numindent file
4. Attaching linking information to the CPS-FS PUMs
5. Link HUD admin data to the CPS-FS data via a two-step process
   - Deterministically link HUD admin data to CPS-FS housing units using Address
   - If there is no MAFID link was made, deterministically link the HUD admin data to CPS-FS data using head of householder.

Linking Assessment

Link Method

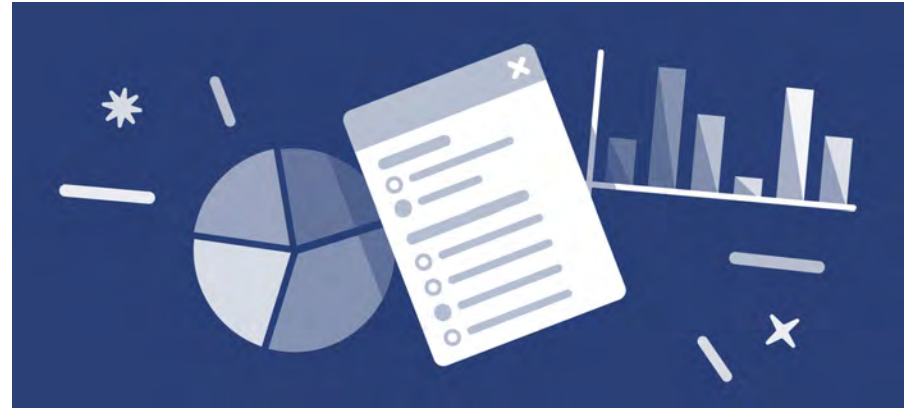|	2015	2016	2017	2018	2019	2020
PIK	24.39%	21.05%	24.32%	21.74%	21.21%	21.43%
MAFD	75.61%	78.95%	75.68%	78.26%	78.79%	78.57%

Is the CPS estimate of number of housing units statistically the same as the known number?

	2015	2016	2017	2018	2019	2020
All programs	Yes	Yes	Yes	Yes	Yes	Yes
Voucher	Yes	Yes	Yes	Yes	Yes	Yes
Public Housing	Yes	Yes	Yes	Yes	Yes	Yes
Private Multifamily	Yes	Yes	Yes	Yes	Yes	Yes

Preliminary Results

- CPS Survey Years 2015-2020
- Good sample size for outcomes when subsetting all program types together (90% CI < 1.6%)
- Some sample size issues when subsetting by program type or characteristic, even when setting all five years together
- Two-category outcome variable versus three-category outcome variable
- Unit of analysis change: household (prior 2020 study was person-level)

2015-2020 CPS-HUD: Characteristics of HUD-Assisted Households

All Program Categories

- Consistent with expectations (with some exceptions)

- 50% are vouchers households

- 50% are project-based households

- 71% have a household income to poverty ratio < 1.85

- 40% are households with older adults aged 62+

- 17% are households with children

- 45% of reference persons within the household identify as black, non-Hispanic

Some sample size constraints when subsetting by HUD program type (90% CI ranges hover around 2.5%-2.9% for project-based estimates)
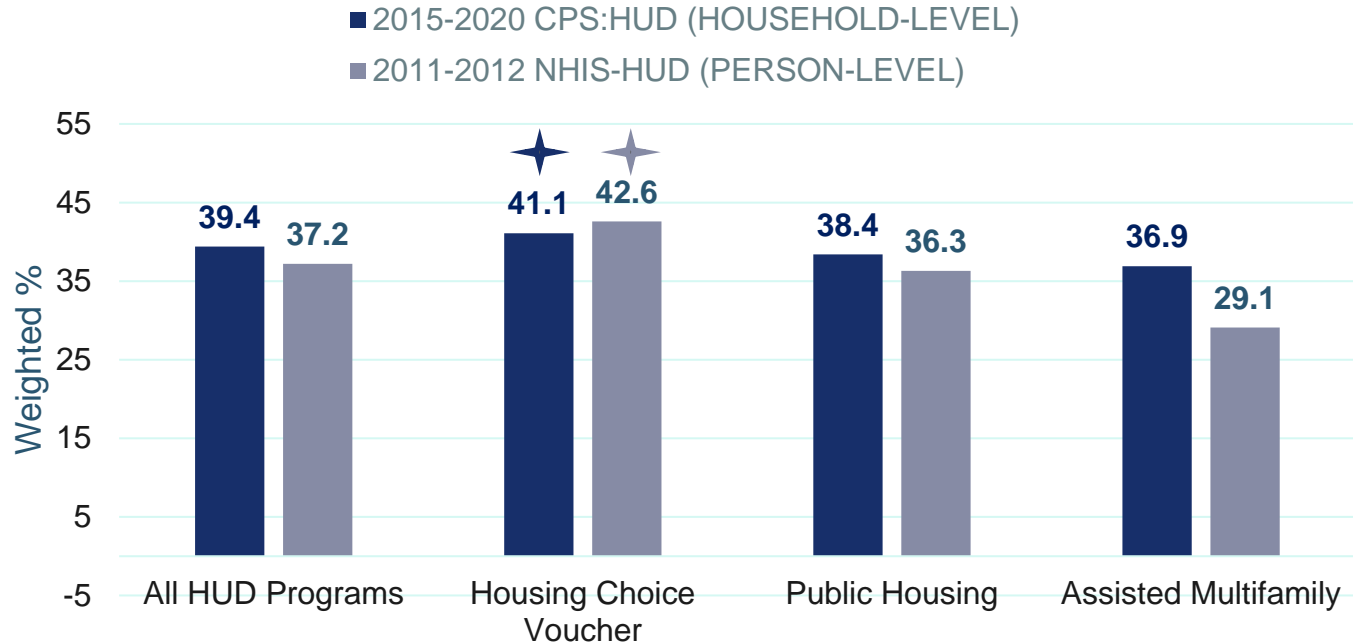
Preliminary Findings: 2015-2020 CPS-HUD

HUD-Assisted Households that are Food Insecure By HUD Program Category, 2015-2020 Current Population Survey: Food Security Supplement Linked with HUD Administrative Data

NHIS 2011-2012 vs. 2015-2020 CPS-HUD

HUD-Assisted Persons and Households that are Food Insecure By HUD Program Category and Linked Data Source

Food Insecurity Rates by Household Characteristic

- Shown estimates are for **all HUD-assisted program categories**

- Standard Errors (SEs) and 90% Confidence Intervals subset by specific program categories are high

- Example 90% CI Range
    All Programs: 3.8%
    Housing Choice Voucher Program: 5.4%
    Public Housing: 7.9%
    Multifamily Housing: 7.2%

Next Steps

- Examine rent burden as a mediator

- Publication

- Elevate this work for [Biden-Harris Administration National Strategy on Hunger, Nutrition, and Health](#)

Thank You!
Questions?

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