

Methodology for Measuring Neighborhood Access to CalFresh

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Federal statistics indicate that California has the lowest participation in federally funded food assistance of any state. According to the United States Department of Agriculture, Food and Nutrition Service (FNS), only 51 percent of eligible individuals participated in CalFresh, California's version of the Supplemental Nutrition Assistance Program (SNAP), in 2012.¹ By this measure, the state failed to provide CalFresh to approximately 3.9 million eligible Californians. However, those statistics do not account for the substantial share of otherwise-eligible residents who cannot participate due to their immigration status. In addition, county-level data developed by the California Food Policy Advocates (CFPA) shows that CalFresh participation rates vary considerably among California's counties.²

To better understand the true CalFresh participation rate for eligible individuals and households, the California Department of Social Services (CDSS) has developed a participation measure that takes the ineligibility of undocumented persons into account. The CDSS is also interested in conducting a spatial analysis of CalFresh participation using geocoding to identify where potential non-participating eligibles reside, where CalFresh reach is low and where more effective and targeted outreach strategies could be directed; advancing understanding of differences in and barriers to CalFresh access by examining spatial variations in participation at census tract, Zip code and intra-county regional levels; and creating tools to identify population subgroups currently receiving benefits at below-expected levels.

Who is eligible for CalFresh?

A CalFresh household consists of individuals who live and purchase and prepare food together. Household eligibility is determined by income. The gross income limit is 200% of FPL (\$3,255 per month for a household of three in 2015) and the net income limit, after deductions for expenses such as child care, is 100% of FPL (\$1,675 per month for a household of three in 2015). There are no limits for the value of a household's assets.

Since 1975, individuals receiving Supplemental Security Income/State Supplementary Payment (SSI/SSP) assistance have been ineligible for CalFresh. Individuals convicted of certain drug felonies, some college students and individuals with neither U.S. citizenship nor qualified legal immigrant status are also ineligible.³

County-level correlates of CalFresh participation

Initial investigations of factors that may explain county differences in CalFresh participation proved to be fruitless. Neither unemployment nor poverty rates are strongly correlated with participation rates. However, analysis of data on individuals speaking a language other than English pointed to the state's population of low-income unauthorized immigrants as a likely component of differences in participation. With one-quarter of all U.S. unauthorized immigrants

¹ FNS 2014.

² Birnbach and Shimada 2014.

³ Legislative Analyst's Office 2014.

living in California, inclusion of these individuals in the group assumed to be eligible for CalFresh would be misleading.⁴

While state-level estimates of the undocumented immigrant population are available from several sources and some county-level estimates have been published, below-county-level population estimates needed for this project were not available from existing surveys or research.⁵ To fill this gap, CDSS leveraged data on households in which children receive CalFresh benefits but adults do not. One reason a CalFresh household could be “CalFresh child-only” (CCO) is that the adults are undocumented immigrants. By developing an assumption about the share of CCO households that are child-only for a reason *other than* citizenship status, this methodology allows estimation of the number of undocumented immigrant adults in CCO households and the number of undocumented immigrant adults in CalFresh-eligible households without children, as described below.

Existing measures of SNAP/CalFresh program participation

The FNS Program Access Index (PAI) measures state-level SNAP participation by low-income individuals using the following formula:⁶

$$PAI = \frac{SNAP\ Participants - Disaster\ SNAP\ Program\ Participants}{Individuals\ with\ Income < 125\% \text{ below FPL} - FDPIR\ participants - SSI\ Recipients}$$

The FNS uses a threshold of 125 percent of FPL because that published state-level income-to-poverty tabulation from the American Community Survey (ACS) is the closest to the actual SNAP gross income limit of 130 percent of FPL. Since only three CalFresh eligibility criteria are used in the PAI, it is not a true measure of participation. Mathematica Policy Research calculates SNAP participation rates by state for FNS by applying SNAP income and asset eligibility rules to individual-level sample data and administrative records.⁷ The California Food Policy Advocates models its calculation of county-level PAI on FNS’ model. None of these measures reflects the true participation rate in California as the denominators include a portion of the estimated 2.83 million undocumented Californians who are not eligible for SNAP due to their immigration status.⁸

The CDSS Program Reach Index (PRI)

The CDSS’ first step in developing a more precise measure of CalFresh participation involved adjusting the PAI denominator’s poverty threshold from 125 percent of FPL to 130 percent of FPL using a straight-line extrapolation of American Community Survey (ACS) data. In addition, unlike the PAI (but like Mathematica’s participation rate), the PRI assumes that only half of California’s SSI/SSP recipients are ineligible for CalFresh due to cash-out; the other half are ineligible because their income exceeds the SSI/SSP limit.

⁴ Hill and Hans P. Johnson 2011.

⁵ See, for example, Hill and Johnson 2011.

⁶ FNS 2014. The FDPIR is the Food Distribution Program on Indian Reservations.

⁷ Cunyngnam 2014.

⁸ Hoefler, Rytina and Bake 2012, p. 5.

Geocodable data on the number of CalFresh and SSI recipients are from the Medi-Cal Eligibility Data System (MEDS). Poverty data from the ACS five-year summary file for 2008-2012 is extracted at one of four geographic scales depending on specific analyses: census tract, Zip code, place and county.

The Child-only Method

The next step was to develop a methodology for estimating the number of undocumented immigrant adults so they could be removed from the denominator. This methodology adds two basic assumptions to the PRI.

Assumption 1: Adults in 94 percent of CCO households are ineligible to receive CalFresh due to citizenship status while adults in the remaining 6 percent are ineligible to receive CalFresh due to reasons other than citizenship status, such as SSI/SSP receipt.

This assumption is based on analysis of data for counties in the region of California that had the highest PAI in 2010, according to county-level estimates from CFPA: the North and Mountain Region.⁹ The methodology assumes that this region has relatively few undocumented immigrants and that CCO households in this region are child-only almost entirely due to reasons other than citizenship.¹⁰ The median share of CCO households among all CalFresh households in counties in this region is 6 percent.

Assumption 2: On average, households with children and undocumented adults have 1.77 adults and households of undocumented adults and no children have 1.24 adults (Table 1). The ratio of undocumented adults in households with children to undocumented adults in households without children is 0.7.

⁹ The regional definitions are from MaCurdy, Mancuso and O'Brien-Strain 2000. The counties in this region used in this analysis are Amador, Butte, Calaveras, Del Norte, Humboldt, Inyo, Lake, Lassen, Mariposa, Mendocino, Modoc, Nevada, Plumas, Shasta, Siskiyou, Tehama and Tuolumne Counties. Alpine, Mono, Sierra and Trinity Counties are also in this region but had too few CalFresh cases to include in the analysis. The CFPA estimates were published in Shimada 2013.

¹⁰ The PPIC estimates unauthorized immigrants as a share of county population based on tax filings. Their estimates place all the North and Mountain Region counties at less than 2 percent unauthorized immigrants with the exception of Mendocino/Lake Counties (5 percent) and Colusa/Glenn/Tehama/Trinity (8.3 percent). No other counties have an estimated unauthorized immigrant share less than 2 percent (Hill and Johnson 2011).

Table 1. Characteristics of California Households with Undocumented Adults

Type of household	Number of households (in thousands)	Average number of adults per household
Households with Children		
Two parent	507	2
One parent	155	1
*Other	9	2
Total	671	
Weighted average		1.77
Households without Children		
Married couple	118	2
**Other families	29	3
Solo adult men	435	1
Solo adult women	137	1
Total	719	
Weighted average		1.24
Ratio, number of adults in households without children to number of adults in households with children		0.7

Sources: Number of households by type and number of adults per household type: Fortuny, Capps and Passel, 2007, Table 11; other data are the authors' calculations.

These assumptions allow the PRI denominator to be reduced by the estimated number of undocumented adults.

<p>PRI =</p> $\frac{\text{CalFresh Recipients} - \text{Disaster CalFresh Program Participants}}{(\text{pop} < 130\% \text{ FPL}) - (\text{SSI} * p) - \left((0.94 \text{ child-only households}) * 1.77 * \left(1 + \left(\frac{124}{177} \right) \right) \right) - \text{undocumented kids}}$

**p*: County proportion of SSI recipients at or below 130% FPL

Table 2 gives an example how the child-only methodology can be used to estimate the number of undocumented immigrant adults who are likely included in the PAI denominator because they meet the CalFresh income standard. An assumption about the poverty rate of undocumented immigrants can be applied to that number to estimate the total undocumented immigrant population.

Table 2. Using the child-only methodology to estimate the number of CalFresh-eligible undocumented immigrants and total number of undocumented immigrants in Fresno County

Factor to estimate	Formula	Number
Number of CCO households in Fresno County, 2011	--	15,136
Number of households that are child-only due to the parents' citizenship status	$15,136 \times 0.94$	14,228
Number of CalFresh-poor undocumented adults residing in child-only households	$14,228 \times 1.77$	25,184
Total number of CalFresh-poor undocumented adults, including those residing in households without children	$25,184 \times 1.7$	42,812
Estimated poverty rate for undocumented immigrants ¹¹	--	32.5%
Fresno's poverty rate for all individuals relative to the statewide average	$23.4\% \div 15.07\%$	1.55
Estimated poverty rate for undocumented immigrants in Fresno County; assume this is the share of undocumented immigrants who are CalFresh-income-eligible	$1.55 \times 32.5\%^*$	50.5%
Estimated total number of undocumented persons in Fresno County	$42,812 / .505$	84,858

Validation of the PRI

The child-only methodology produces a statewide estimate of California's undocumented immigrant population that is within range of two other estimates. First, while estimates for individual counties vary, as shown in Table 3, CDSS' statewide total for 2011 of 2.865 million is close to the Public Policy Institute of California's (PPIC) estimate of 2.875, which is based on analysis of tax returns. Second, the Department of Homeland Security (DHS) estimated California's 2011 undocumented immigrant population at 2.83 million.¹²

¹¹ Estimates of poverty rates for undocumented immigrants in the United States vary widely. In 2003, 27 percent of unauthorized immigrant California adults and 38 percent of their children were poor (Fortuny, Capps and Passel 2007, pp. 32-33); the Pew Hispanic Center put the March 2008 poverty rate for unauthorized immigrants at 21 percent (Passel and Cohn 2009, p. 17); and 56.6 percent of unauthorized immigrant California adults were poor in 2009 according to the California Health Interview Survey (Wallace et al. 2012, p. 10).

¹² Hoefler, Rytina and Baker 2012.

Table 3. Estimated number of undocumented immigrants for the ten counties with the largest CCO populations, 2011

County	CDSS, Child-Only Methodology	PPIC
Los Angeles	964,501	916,000
Orange	258,774	289,000
San Bernardino	179,320	150,000
San Diego	156,366	198,000
Riverside	154,095	146,000
Fresno	84,858	49,000
Santa Clara	117,211	180,000
Kern	72,614	46,000
Sacramento	97,995	65,000
Alameda	94,062	124,000
Statewide total	2,864,504	2,876,000

Source for PPIC data: Hill and Johnson 2011, pp. 16-17.

Limitations of the PRI

The reliability of the PRI is sensitive to the accuracy of address information in MEDS and of ACS estimates of the number of individuals below 130 percent of FPL at the selected geographic level.

Address issues

- In some rural counties, substantial numbers of CalFresh recipients' addresses in MEDS are listed as Post Office boxes; the recipient's actual street location may be in another Census tract or Zip code.
- A single address such as a county welfare department may be used in MEDS for hundreds or thousands of beneficiaries who may be homeless or live some distance from the listed address. For instance, more than 6,100 CalFresh recipients are reported at one Los Angeles County address and more than 5,100 are reported at a single Fresno County address.
- Some MEDS addresses cannot be matched to the geocode database due to data entry errors.

Data issues

- The ACS analysis finds no CalFresh-eligible persons in some Census tracts and reports that there are more SSI/SSP and CCO households than CalFresh-eligible individuals in some others. In these cases the PRI denominator is negative or 0.
- Some ACS tract-level estimates of income-eligible persons are lower than the number of persons receiving CalFresh. This leads to an PRI value greater than 1.

Both the address issues and the data issues become more widespread at more fine-grained levels of geographic analysis.

Combining the child-only methodology with geocoding to locate pockets of non-participating CalFresh eligibles

The addresses of persons who received CalFresh in June 2013 were geocoded and the resulting geographical database was merged with ACS 2007-2011 and 2008-2012 geodatabase files. This step merges all the fields in the CalFresh data with the fields in the tract-level data files from ACS.¹³ The addresses of SSI recipients were also geocoded. Maps can be produced from this database showing program reach by geographic area.

Preliminary analysis of sub-county regions based on Zip codes in Los Angeles County suggests that CalFresh participation among eligibles is lower in regions in which non-English-speakers are a minority.

Discussion

The child-only methodology provides a more nuanced measure of CalFresh participation among income- *and citizenship*-eligible individuals than the PAI or Mathematica's program participation rates. Estimates of the undocumented immigrant population using the child-only methodology are broadly consistent with county-level estimates from PPIC and state-level estimates from PPIC and DHS. Combining the child-only methodology with geocoding allows CalFresh participation to be analyzed in the context of the local communities in which eligible individuals live. This spatial analysis can be conducted with confidence at the county level and for certain regions within counties. In some areas, where most recipient addresses are geocodable, Zip code or tract-level analysis may be feasible.

¹³ Elements in the merged database include age, ethnicity, language, family composition, marital status, housing tenure, length of residence, education, nativity, English-only status and proportion below poverty.

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