Supplemental Nutrition Assistance Program (SNAP) Access at the State and County Levels

Evidence From Texas SNAP Administrative Records and the American Community Survey

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United States Department of Agriculture

Economic Research Service

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Abstract

This report links Supplemental Nutrition Assistance Program (SNAP) administrative records from Texas to the American Community Survey (ACS) to estimate SNAP access rates for geographic and demographic subgroups, at both the State and county levels. The linked data allow us to measure SNAP participation more accurately than is possible with household survey data while also allowing us to estimate SNAP eligibility in the population. The large sample size of the ACS enables us to provide a breakdown of access rates by subgroups within the State and for demographic subgroups within the largest counties in Texas. The report provides Texas SNAP administrators with a profile of individuals who may benefit from expanded outreach.

Keywords: SNAP, Supplemental Nutrition Assistance Program, American Community Survey, ACS, Texas, households with children, food access, SNAP participation, eligibility, food assistance programs

Contents

Errata

On September 26, 2016, ERS corrected the legend that describes the categories in figure 4, "SNAP access rates in Texas by Congressional district, 2008-09." The map is unchanged but the ranges of each category have been corrected to show the right ranges of access rates.
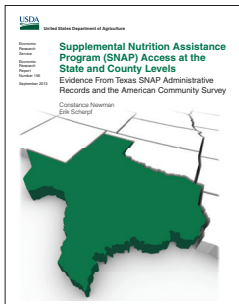
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In fiscal year 2012 (October 1, 2011 through September 30, 2012), about 1 in 4 Americans participated in at least 1 of the United States Department of Agriculture's (USDA) 15 domestic food assistance programs. Over 70 percent of USDA's total 2012 outlays went to these programs, and 73 percent of food assistance spending went to the Supplemental Nutrition Assistance Program (SNAP). Knowing the demographic characteristics of those who receive SNAP benefits and those who, among eligible individuals, do not is important for assessing and improving program performance.

What Is the Issue?

While State-level estimates of SNAP participation rates are published annually by USDA's Food and Nutrition Service, the data required to produce more detailed estimates within a State (i.e., at a county level) have previously not been available. Such estimates would be useful as States decide where to focus outreach expenditures. These detailed participation rates would also be helpful in assessing administrative performance in local areas and in guiding administrative policies and procedures. This report measures access to SNAP using a new approach that links State-level SNAP administrative records and the American Community Survey (ACS), which surveys a sample of about 2 million U.S. households each year on various demographic factors. The report provides estimates of detailed SNAP access rates for geographic areas (counties and congressional districts) and demographic subgroups in Texas during 2008 and 2009.

What Did the Study Find?

By linking a State's administrative data on SNAP participation to the ACS, this report demonstrates how a wide range of "access" rates (analogous to participation rates) can be estimated across various demographic and geographic groupings. SNAP access is estimated for subgroups in Texas distinguished by age, citizenship status, disability status, education, employment status, work experience, health insurance coverage, household composition variables, household language, previous location of residence, race, receipt of various forms of income or govern-

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ment assistance, rural/urban residency, school enrollment status, and veteran status. Among the more policy-relevant findings:

- The statewide access rate was estimated to be 62.8 percent of eligible individuals.

- Among the 25 Texas counties sufficiently large enough to support estimation, the SNAP access rate ranged from a low of almost 5 out of every 10 eligible individuals (45.7 percent in Denton County) to a high of almost 8 out of 10 (78.2 percent in Hidalgo County).

- Among the 32 Texas congressional districts in 2008-09, the lowest rate of SNAP access was 36.8 percent in the 7th District near Houston while the highest rate was 76.9 percent in the 15th District (partially adjacent to Texas' southern border).

- Elderly individuals (age 60+) who lived alone, or only with other elderly individuals, had an especially low rate of access to SNAP. The access rate of elderly individuals who lived with at least one non-elderly individual in the household is still lower than the statewide average for all individuals—although significantly higher than that of elderly individuals living alone.

- Consistent with prior national estimates, households with children had substantially higher access rates in Texas than households without children. Among households with children, couples had significantly lower access rates than female heads or even multiple-adult (noncouple) households, and couples with children made up the largest eligible subgroup of all households, by household composition, in the State.

- A lack of facility with English may be an important barrier to SNAP participation. With its large Hispanic population, this is a particular policy concern in Texas. According to the Census Bureau's classification of linguistic isolation among Spanish speakers, "isolated" Spanish-speaking households exhibited access rates 13 percentage points lower than "non-isolated" Spanish-speaking households.

How Was the Study Conducted?

The study uses data from the American Community Survey (ACS) collected in 2009 by the U.S. Census Bureau, linked to 2008-09 administrative data from Texas SNAP files, which contain the universe of SNAP recipients in Texas. With a sample size of about 2 million U.S. households each year, the ACS is a nationally representative survey of the population of the United States designed to support statistical analysis of small spatial areas. We applied State and Federal program rules to simulate SNAP eligibility for individuals in the linked sample with information available in the ACS. We also employed a weighting method that takes into account sample loss from unmatchable records.

We use the term "access rates" to clearly distinguish our estimates from the official State SNAP participation rates published by USDA's Food and Nutrition Service (FNS). We produce these estimates using a different methodology in terms of the underlying data sources used, the approach to estimating program eligibility, and the time period examined. The access rates estimated in this report measure access (or participation) among eligible individuals based on annual income measures, whereas the participation rate measures participation among eligible individuals in a representative month. Our measure is also distinct from a third, more timely but approximate measure of participation—the Program Access Index.

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Introduction

A key measure of the performance of the Supplemental Nutrition Assistance Program (SNAP) is the extent to which assistance reaches its target population. Annual estimates of monthly State and national participation, or access, rates—the proportion of eligible individuals who receive SNAP benefits—are prepared on behalf of USDA's Food and Nutrition Service (FNS), the agency that administers SNAP at the Federal level (Leftin et al., 2011; Cunnyngham et al., 2011; USDA Food and Nutrition Service, 2011a). These estimates of SNAP access at the State and national levels have been critical for assessing and improving program performance. However, more detailed estimates of SNAP access within a State could aid program administrators in targeting outreach efforts to underserved populations and areas and in administrative reform.

This report presents a profile of SNAP access in Texas during 2008 and 2009. Using SNAP administrative records linked to the American Community Survey (ACS), we estimate patterns of SNAP access for geographic areas and subpopulations within Texas. The results presented here, although specific to Texas, could be replicated for other States as SNAP administrative records are made available. We call our estimates "access" rates as opposed to "participation" rates in order to distinguish them from official estimates of participation since the goals and basic methodology differ.[1]

Established methods for estimating SNAP participation rates at the national and State levels use both administrative records and household survey data (Cunnyngham et al., 2011; Leftin et al., 2011). They use aggregate participant counts available from administrative databases, such as the FNS National Data Bank, to obtain the number of SNAP participants for the numerator of the rate. The denominator—the estimated total number of eligible individuals (in the country or in a State)—is based on household survey data, especially the Current Population Survey (CPS).

Our approach also employs SNAP administrative records and household survey data: we simulate SNAP eligibility with the ACS and measure program access with State administrative records. However, instead of using each data source independently to obtain aggregate counts, as in the studies noted above, we link the two at the individual level to determine whether an individual estimated to be

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[1] Although in this report "access" rates and "participation" rates both measure the proportion of program participants in the estimated program-eligible population, we maintain the terminological distinction to emphasize that the rates derived in this report differ in important ways from the official State SNAP participation rates published by FNS (see, for instance, Cunnyngham et al. (2011)). These differences include the underlying data sources used and the method by which program eligibility is estimated. Most notably, the access rates estimated in this report measure the proportion of program participants among individuals estimated to be eligible on the basis of annual income measures, whereas the official State participation rates measure the proportion of participants among eligible individuals in a representative month. The use of the term "access rate" is not meant to imply the presence of any type of barrier to program entry but merely the receipt of SNAP benefits.

eligible for SNAP in the ACS actually received benefits in the administrative records.[2] With this linked microdata, we are able to estimate SNAP access rates for almost any desired variable grouping, limited only by what is available in the ACS. For this report, we present SNAP access rates for select demographic, economic, and geographic subgroups. Microdata also afford the flexibility to produce detailed cross-tabulations, such as for demographic characteristics at the county level. To illustrate, we also present access rates by select demographic characteristics within the seven largest counties in Texas.[3]

Because SNAP receipt has been found to be substantially under-reported in household survey data, we use administrative records, rather than the ACS, to measure access. Meyer and Goerge (2011) found "false negative" reporting rates of 32 percent in Illinois and 37 percent in Maryland.[4] Such under-reporting of program receipt can lead to substantially under-estimated participation rates. Moreover, as Meyer and Goerge show, household characteristics that are important in explaining SNAP participation are also related to the probability of misreporting SNAP participation. Estimated participation rates for demographic subgroups may therefore be even less reliable.

The available SNAP administrative records contain information on individuals who received program benefits in Texas. By supplementing household survey data with administrative records, we obtain a sample that, when appropriately weighted, is representative of the entire State population for that year. Household survey data also provide the demographic information necessary to estimate program eligibility and to characterize SNAP participants and nonparticipants in a detailed way. Only two household surveys in the United States are large enough to support State-level estimates: the ACS and the CPS. While the CPS contains more information on each sampled household that would be useful for estimating program eligibility, we opted for the ACS because its larger sample size supports both State-level and, crucially, county/district-level estimates of SNAP access.[5] The resulting linked microdata set thus provides rich demographic information on both participating and nonparticipating households, while addressing the misreporting of SNAP receipt found in the ACS.

In this report, we estimate SNAP eligibility according to the standard definition. Many States, including Texas, have adopted an alternative set of eligibility rules, known as broad-based categorical eligibility (BBCE), that apply to certain applicants in lieu of the standard eligibility rules. Technically, most households that qualify under BBCE rules are categorically eligible for SNAP if they have received a benefit from either Temporary Assistance for Needy Families (TANF) or TANF-related Maintenance-of-Effort (MOE) programs. Qualifying benefits can range from receiving a TANF- or MOE-funded brochure to being referred to a social services "800" number.

In this report, we present results using the standard eligibility rules in order to facilitate comparisons with past estimates (for Texas) and future estimates using this methodology for other States (which may not have similar BBCE policies as in Texas).

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[2]See the Appendix for a description of the Texas administrative data.

[3]Microdata also open up the possibility of modeling the participation decision. However, we do not pursue that in this report.

[4]False negatives are defined as survey reports of nonreceipt that are contradicted by the administrative records. Rates of false positives—reports of receipt not substantiated by the administrative records—are much lower: 0.8 percent in Illinois and 0.5 percent in Maryland.

[5]The final sample of the 2009 ACS was roughly 1.9 million households (excluding group quarters), including 306,081 in Texas alone. By contrast, final sample sizes in the CPS come to about 60,000 households.

Related Research

This report contributes to the literature on SNAP participation by analyzing the individual's participation decision using household survey data linked to administrative records. Previous studies have used linked administrative records mainly to explore underreporting of SNAP participation in household surveys (Meyer and Goerge, 2011; Taeuber et al., 2005; and Taeuber et al., 2004, Marquis and Moore, 1990; Bollinger and David, 1997). This study is among the first to estimate SNAP access using SNAP administrative microdata linked to a household survey.[6]

Other research has used both administrative records and household survey data to estimate participation rates at the State and national levels (Cunnyngham et al., 2011; Leftin et al., 2011; USDA Food and Nutrition Service, 2011a). Leftin et al. (2011) estimate a participation rate at the national level by year and by broad demographic subgroupings; Cunnyngham et al. (2011) estimate State-level participation rates for all eligible individuals and the working poor; and USDA (2011a) provides an annual Program Access Index (PAI).

For the numerator of the participation rate, these studies use aggregate participant counts from administrative databases, such as the USDA Food and Nutrition Service (FNS) National Data Bank. For the denominator, the studies use household survey data, typically the CPS, to estimate the total number of eligible individuals in a given geographic region. While this line of research combines administrative data on SNAP participation with household survey data, it does not link the two data sources at the individual or household level, as is done here. Instead, the emphasis is on obtaining an accurate estimate of an overall participation rate at the national and State levels and for a few broad demographic subgroups.

Cunnyngham et al. (2011) and Leftin et al. (2011) both employ the same methodology for estimating the number of eligible individuals (see box, "Related Research on SNAP Participation/Access"). They simulate eligibility criteria that are not available, or poorly measured, in the CPS with the aid of other data sources, primarily the Survey of Income and Program Participation (SIPP) conducted by the U.S. Census Bureau. This includes the (household) composition of the SNAP unit, asset eligibility for SNAP, TANF receipt, Social Security's Supplemental Security Income (SSI), and net income. The researchers calibrate simulated TANF and SSI participants to match administrative data, and they adjust SNAP participant totals for benefits issued in response to disasters or issued in error. To obtain more precise estimates of participation rates at the State level, Cunnyngham et al. (2011) use a Bayesian shrinkage estimator, which averages direct sample estimates of State participation rates with the predicted rates from regression models using 3 years of pooled cross-section data.[7] This estimator improves the precision of their annual State-level estimates at the expense of introducing some bias.

The reports by Cunnyngham et al. (2011) are released with a 2-year timelag and therefore would not be a timely measure of access with which to evaluate States' performance each year. To this

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[6]Meyer and Goerge's 2011 study used administrative records from Illinois and Maryland linked to the ACS, but they did not attempt to approximate SNAP-eligible households other than to restrict the sample to households with income below twice the poverty line.

[7]Peterson et al. (2010) also employ the ACS to simulate eligibility in Puerto Rico, and they supplement ACS data with administrative data from Puerto Rico's Nutrition Assistance Program, a program that is similar to SNAP. Their approach largely follows that of Cunnyngham et al. (2011) and Leftin et al. (2011) in that they simulate monthly income, SNAP unit composition, assets, and other expenses used to calculate net income.

Related Research on SNAP Participation/Access				
Study	**Primary data sources**	**Estimation of SNAP eligibility criteria**	**Coverage**	**Estimation of Participation Rate**
Leftin et al. (2011)	1. SNAP program operations data 2. CPS ASEC	Comprehensive simulation of eligibility criteria using CPS and other data sources	National level for demographic subgroups	Aggregates from different data sources in numerator and denominator.
Cunnyngham et al. (2011)	1. SNAP program operations data 2. CPS ASEC	Comprehensive simulation of eligibility criteria using CPS and other data sources	State level for the entire population and for the working poor	Aggregates from different data sources in numerator and denominator.
Peterson et al. (2010)	1. SNAP program operations data 2. ACS	Comprehensive simulation of eligibility criteria using ACS	State level (Puerto Rico only)	Aggregates from different data sources in numerator and denominator.
USDA PAI	1. SNAP program operations data 2. ACS	Estimated number of individuals under 125% poverty using ACS	State level	Aggregates from different data sources in numerator and denominator.
Taueber (2005)	1. Maryland SNAP administrative records 2. ACS (Supplementary Survey 2001)	General estimate of some eligibility criteria	State level (Maryland only)	Linked microdata used to estimate proportion of "eligible" individuals who participated.
Fellowes and Berube (2005)	1. County-level SNAP operations 2. Decennial Census	General estimate of some eligibility criteria	Select urban counties and MSAs	Aggregates from different data sources in numerator and denominator.
FRAC (2011)	1. State SNAP program operations data 2. ACS (3-year)	General estimate of some eligibility criteria	Select cities and counties	Aggregates from different data sources in numerator and denominator.

end, the PAI was devised to meet the statutory timeframe requirement to pay performance rewards for a fiscal year prior to the end of the following fiscal year (USDA, 2011a). Like the participation rate estimated in Cunnyngham et al. (2011), the numerator for each State PAI is the State-level SNAP participant count taken from the National Data Bank (with some adjustments for recipients of Disaster SNAP and the Food Distribution Program on Indian Reservations). The denominator is based on the number of individuals estimated in the ACS to have annual incomes below 125 percent of the Federal poverty level in that State. Hence, the PAI is an imprecise measure of program access. It does, however, have the virtue of being produced in a timely manner and appears to track reasonably well the State participation rates reported in Cunnyngham et al. (2011).

Taeuber et al. (2005) use SNAP administrative records and the 2001 ACS (Supplemental Survey (SS01)) to estimate a SNAP participation rate for a single State (Maryland). They use administrative records to obtain a count of SNAP participants and the ACS to simulate the number of eligible households. Their approach to estimating eligibility is more straightforward than that of Cunnyngham et al. (2011) and Leftin et al. (2011). In particular, they do not attempt to simulate monthly income and implement a simplified "resource and vehicle test"' that excludes from eligibility households that owned two or more vehicles.

Two studies have developed local measures of SNAP access. Fellowes and Berube (2005) estimate participation rates for select major metropolitan areas and counties. For this finer level of geographical detail, the authors rely on the 2000 Decennial Census Public Use Microsample (PUMS) to obtain counts of estimated eligible households for their denominator. The Food Research and Action Center (2011) also derives a local measure of SNAP access. Their focus is on access in large cities, estimating eligibility by calculating the number of people with annual incomes below 130 percent of the Federal poverty level. Their measure is thus an indicator of access among a low-income population similar to the PAI (USDA, 2011a).

To attain a measure of program access that is both timely and accurate, our approach to estimating eligibility seeks to strike a balance between the more rigorous approaches of Cunnyngham et al. (2011), Leftin et al. (2011), and Peterson at al. (2010) and the more pragmatic approaches of Taeuber et al. (2005), Fellowes and Berube (2005), the Food Research and Action Center (2011), and USDA (2011a). This report does not aim to produce State-level estimates of participation rates directly comparable to those produced in other FNS reports, which attempt to simulate all aspects of SNAP eligibility guidelines, including the monthly accounting period. However, we do go further in applying SNAP eligibility rules than the PAI (USDA, 2011a).

A few key differences between this and previous studies are worth noting. By merging the two data sources, we are necessarily restricting the universe of Texas SNAP recipients in the administrative records to the Texas subsample in the ACS. As a result, we use sample weights to obtain an *estimate* of the number of SNAP participants in Texas, which is subject to sampling error.[8] This estimate of the number of SNAP participants is therefore less precise than the participant count obtained directly from the universe of participants. The linked data do, however, allow us to estimate access rates for more detailed demographic and geographic subsamples. The results provide a better understanding of the factors associated with a household's decision to participate, or not participate, in SNAP.

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[8]The estimates are also subject to measurement error to the extent that we have records not assigned a Protected Identification Key (PIK) by Census. But otherwise, this approach greatly reduces measurement error in SNAP receipt by linking to administrative records of participation. We also use the ACS replicate weights to estimate standard errors.

Linking the ACS and Administrative Records To Estimate SNAP Access

To construct the sample for this study, we merged SNAP administrative records for calendar years 2008 and 2009 to the Texas subsample of the 1-year 2009 ACS.[9] The Texas subsample of the ACS comprises all individuals residing in Texas at the time of the ACS interview. We omitted individuals who were matched to the Texas SNAP administrative records but were interviewed for the ACS outside of Texas.[10] Our study therefore examines SNAP access among "current" Texas residents.[11] Individuals living in group quarters were also excluded. Our final unweighted matched sample was made up of 286,236 individuals. Full documentation on the ACS sample design is available at the U.S. Census Bureau (2009).[12]

We merge individual records from the two data sources using a Protected Identification Key (PIK). PIKs are internal Census Bureau identifiers based in part on a person's Social Security number (SSN). PIKs allow researchers to match an individual's records across data sources without compromising a respondent's personally identifiable information, such as SSNs. The Census Bureau assigns PIKs to individual records in demographic surveys and in administrative records using the agency's Person Identification Validation System (PVS).[13] This system uses information in the source file (e.g., Social Security numbers, addresses, names, and dates of birth) to search for the person's corresponding record in the Numerical Identification File maintained by the Social Security Administration.

Assigning PIKs to SNAP administrative records is facilitated by the fact that SNAP applicants must provide a SSN to the local SNAP office. The ACS, by contrast, does not collect the SSNs of respondents so assigning a PIK must rely on probabilistic matches based on names and addresses. As a result, a larger proportion of individuals in the administrative records were assigned a PIK than in the ACS (see the Appendix for more information regarding the rate at which individuals received PIKs in the two data sources).

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[9]Income questions in the ACS refer to the 12 months prior to the survey interview, and ACS interviews throughout the calendar year. To determine whether the individual participated in SNAP over that same period, it was necessary to merge 2 calendar years of administrative records (2008 and 2009) to the 1-year 2009 ACS. This means that for nearly the entire 2009 sample, the ACS reference period for income includes at least part of the calendar year 2008 (e.g., for those interviewed in January 2009, the reference will include all of calendar year 2008).

[10]This would occur if in the 12 months prior to his or her ACS interview an individual had received SNAP benefits in Texas but had since moved out of the State. These movers account for 4.5 percent of all ACS-interviewed individuals who were matched in the Texas data. Although we obtained matches to the Texas SNAP administrative records for some of these "movers" (i.e., those who lived in Texas at some point during the SNAP reference period but not at the time of the ACS interview), we did not include them in the sample because we were not able to adequately account for all eligible "movers" as well.

[11]Because interviews in the ACS are fairly evenly distributed throughout the calendar year, the sample of "current" residents is representative of a State's population for that year.

[12]See the Appendix for more description of the Texas administrative data and the implications of the use of PIKs for our ACS and linked ACS-Texas samples.

[13]An analysis of the PVS by the National Opinion Research Center (NORC) revealed that Texas had the seventh lowest share of respondents assigned a PIK among all States in the 2009 ACS (NORC, 2011). The NORC study also revealed that respondents who could not be validated in the 2009 ACS were more likely to be noncitizens, of Hispanic origin, and to reside in households where English was not the primary language. These factors likely account for Texas' poor validation rate.

We matched the ACS to the Texas administrative files at the individual level, but estimated eligibility at the household or, more precisely, the SNAP unit level (which we define in detail below).[14] Consistent with USDA reports such as Cunnyngham et al. (2011) and USDA (2011a), we also estimated access rates at the individual level. However, we adopt the rule that if *any* member of an ACS SNAP unit is matched to the SNAP administrative records, we assign eligibility *and* receipt to every member of that ACS SNAP unit provided individual are not disqualified on the basis of citizenship status, etc. This approach increases the probability of finding a match in the administrative records because an indirect match can occur even if some members of the SNAP unit were not assigned a PIK in the ACS. Defining a match at the SNAP unit level yields a higher match rate relative to matching individual records. However, this approach means that larger SNAP units in the ACS are more likely to be matched to the administrative records than smaller SNAP units.

We keep non-PIK'ed individuals who are assigned to an ACS SNAP unit containing at least one other unit member with a valid PIK in the ACS. If no member of a SNAP unit has a valid PIK, and therefore the entire unit is unmatchable, then each record belonging to that SNAP household is dropped from our sample. Overall, we lose about 6.5 percent of our sample by dropping these non-PIK'ed observations. Since the probability that a record receives a PIK is nonrandom, we model the probability that an individual is a member of a unit in which at least one member received a PIK and adjust the person weight by the inverse of the predicted probability of having a PIK in the ACS (see appendix table B2).

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[14]In this report, we use the terms "SNAP unit" and "unit" interchangeably. The "unit" is defined according to SNAP rules of what constitutes a household unit for eligibility purposes, but not all units are in SNAP.

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Estimating SNAP Eligibility

A SNAP *unit* is defined as a group of individuals who live together and who customarily purchase food and prepare meals together. The household identified in the ACS does not necessarily correspond well to this definition. Large households, especially ones with unrelated individuals and related subfamilies—such as a sister and her children—may have multiple SNAP units living in one ACS household. We consequently do not strictly rely on the ACS definition of a household.

Instead, we group individuals in units that reflect more closely the definition of a SNAP unit, adhering as closely as possible to the mandatory rules for unit formation specified in the Federal regulations. In particular, we attempt to ensure that spouses (and partners, although they are not explicitly included in the Federal guidelines) are kept in the same SNAP unit. Children under the age of 22 must remain in the same unit as their parents. If no parent is present in the household, however, individuals who are under the age of 22, but at least 18 years old, can form their own SNAP unit. Other children under the age of 18 who do not have a parent in the household are assigned to a SNAP unit with another adult relative (over 18 years of age).[15] We retain the ACS classification of subfamilies as separate units as long as doing so does not violate one of the rules for unit formation, such as when the oldest member in a subfamily is under 22 years old and their parent is also present in the household.

One of the Federal guidelines for SNAP unit formation that is difficult to observe using the ACS is whether individuals in a household purchase and prepare food together. Indeed, this guideline is likely difficult to verify even for a SNAP caseworker. As a result, we apply only the mandatory rules for unit formation based on family relationships and age, and assume that, subject to the mandatory rules mentioned above, households will form the smallest units possible. The most significant consequence of this approach is that adult children (where adult is defined as age 22 or over if a parent is present; otherwise 18 or over) form their own SNAP unit, together with their spouse or children, separate from any parents present in the household. Similarly, adult siblings of the ACS household head form their own units, with spouses and children, to the extent that we are able to infer these relationships.[16]

Such an approach is justified for two reasons. First, because the poverty thresholds used to determine eligibility reflect economies of scale in the household (e.g., two adults who each fall below the poverty threshold individually might exceed the threshold if they were to pool their incomes in a two-person unit), we assume adults maximize their chances of qualifying for SNAP by forming the smallest units allowable. This approach implicitly assumes that whether they actually purchase and prepare food together cannot be verified. Second, administrative data on SNAP participants suggests that this type of behavior occurs. Keeping households and subfamilies, as defined in the ACS, relatively intact results in a much lower proportion of one-person units than is found in the SNAP administrative data.

Finally, because the SNAP units that we construct differ in some cases from the ACS household, we also designate a SNAP unit "reference person" who may differ from the household reference person in the ACS. When the ACS reference person is present in the SNAP unit, that person is designated

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[15]We also attempt to identify the likely children of individuals who are not the ACS household head.

[16]Unlike the Current Population Survey, the ACS does not explicitly identify household interrelationships, which are apparent only to the extent that they can be inferred from members' relationship to the head.

as the SNAP unit reference person. For SNAP units that are formed from a larger ACS household but do not contain the reference person from the ACS household, we select a reference person for that SNAP unit based on an algorithm that takes into account the individual's age and relationship to the ACS household reference person, with the restriction that the SNAP unit reference person must be 18 or older.[17]

Immigrants

There are many special SNAP eligibility rules that apply to noncitizens who are authorized to be in the country depending on whether they are refugees, how long they have been in the country, their age, and other factors. However, the ACS does not allow us to identify whether an individual is authorized to reside in the country legally. We can, however, use other characteristics that are likely to indicate that they are legal residents. Among noncitizens who are potentially eligible for SNAP, we can identify the following groups (USDA, 2011b): (1) individuals who have been in the country for more than 5 years; (2) individuals who are less than 18 years old regardless of date of entry; (3) individuals who are receiving disability benefits (SSI receipt is the proxy), regardless of date of entry; (4) elderly individuals born in or before 1931 who arrived before 1996 (for SNAP eligibility, individuals are defined as elderly starting at age 60); (5) individuals who have a military connection (either served in the military or had a parent or spouse who served); and (6) refugees and "special immigrants" if their ancestry and year of entry is likely to make them eligible.

For any noncitizens not covered under the potential eligibility criteria above, we use an estimate from Passel and Cohn (2010) to determine the share that would likely be unauthorized. Passel and Cohn estimate that 1.6 million unauthorized migrants resided in Texas in 2009, which equates to 59 percent of the noncitizen population. However, the share of noncitizens who did not fall into one of the potential eligibility categories above was 16 percent of all noncitizens in the sample. Since 16 percent is much less than 59 percent, we estimate that all of the remaining 16 percent of individual noncitizens were unauthorized. This may mean that we are underestimating unauthorized noncitizens, but they are also less likely to have received a PIK, so they are probably less represented in the data overall.

These estimates of noncitizen eligibility do not greatly affect the overall share of SNAP-eligible persons in the population because the number of noncitizens is small relative to the whole population. However, we try to apply as many criteria as possible from the available data in the hope of improving the estimates of SNAP access for authorized noncitizens and for counties or congressional districts that have high shares of noncitizens.

College and Graduate School Students

Able-bodied students between ages 18 and 49 who attend college or graduate school are eligible for SNAP benefits under certain situations.[18] We were able to model the following situations that would allow them to apply: (1) if the student has a child less than 6 years old, (2) if the student works more than 20 hours per week, or (3) if the student is a single parent to any child or children between ages 6 and 12. We are not able to know for sure if all individuals are single parents to children of the relevant age range, but we estimate these SNAP-eligible students based on relationship variables in the ACS and SNAP unit composition.

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[17]In the ACS, the household reference person can be as young as 15 years old.

[18]For the full set of conditions that allow college or graduate students to be eligible for SNAP, see http://www.fns.usda.gov/snap/applicant_recipients/students.htm.

SNAP Unit Income

We calculate SNAP unit income as the sum of personal income received by each unit member, including any income from earnings, public assistance, SSI, or retirement income. In addition, we include in the total income for the SNAP unit a prorated share of the income of SNAP unit members who are themselves ineligible due to being unauthorized by our estimate. The prorating involves dividing the income of ineligible individuals equally among all household members and deducting from total income a share for each ineligible individual.[19]

To estimate eligibility, we apply the USDA FNS monthly income guidelines for fiscal years 2008 and 2009.[20] These are the income levels below which a SNAP unit would be eligible (see more explanation of eligibility criteria below). Since ACS respondents are surveyed in different months of the calendar year 2009, their reference periods for SNAP eligibility in the past year differ across the sample by month interviewed. For each SNAP unit, we calculate their income guideline as a weighted average of relevant income guidelines, where the weights are determined by the number of months in each fiscal year spanned by the unit's ACS reference period.

SNAP eligibility is determined on a monthly basis, but income in the ACS is measured annually. Other studies that estimate SNAP eligibility with this limitation model monthly income using aggregate employment data from the Bureau of Labor Statistics (BLS) together with microdata from the Survey of Income and Program Participation (SIPP) (Leftin et al., 2011, Cunnyngham et al., 2011). Because the results of this and future reports are to be made available in a short timeframe, we have opted to rely on a single data source and therefore cannot simulate monthly income.

Other analysts have addressed this issue by raising the gross and net income guidelines by a relevant multiplier in order to account for the tendency of monthly income to be more volatile than annual income (Marks et al., 2011). Two National Research Council reports have noted the possibility of using the ratio of average monthly poverty to annual poverty as a way to estimate income eligibility for the National School Lunch Program when annual income data are the only type available (National Research Council, 2010). We have chosen not to raise the thresholds by the ratio of average monthly poverty to annual poverty. Without prior work to guide us on the relationship between monthly and annual SNAP income eligibility, any multiplier that we would adopt would necessarily be somewhat arbitrary. As a result, we use the ACS annual income and express it as a ratio to the annual poverty thresholds.

Modeling Eligibility

The test of eligibility is based on Federal rules in which most SNAP units must pass two income tests, one that applies to their gross income (gross income test) and one that applies to their gross income net of several deductions (net income test). [21] However, if all adult members of a SNAP unit

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[19]For example, to calculate the prorated income for a household with two adult earners who are ineligible noncitizens and two children who are citizens, the incomes of the adult earners would be divided into four equal shares, one share for each member of the household. Total income would be calculated by deducting two of the four shares from the household's total income. In this example, the children's SNAP unit income would be the sum of their two shares from each of the parent's earnings.

[20]The FNS income guidelines are akin to, but not the same as, the poverty thresholds produced by the U.S. Census Bureau. For FNS guidelines, see http://www.fns.usda.gov/snap/government/FY09_Income_Standards.htm.

[21]For Federal eligibility requirements, see http://www.fns.usda.gov/snap/applicant_recipients/eligibility.htm

are on TANF, the unit members are eligible for SNAP (it is only reported for adults in the ACS). To measure TANF receipt, we rely on the ACS variable for general cash assistance, which is most likely TANF but may also include general assistance from the State.[22]

We also treat units in which all adult members report SSI receipt as SNAP-eligible. We use SSI receipt as a proxy for receipt of a set of specific disability benefits that confer eligibility, but which are not available in ACS. This measure of SNAP eligibility is conservative because many individuals with a disability do not receive SSI but do receive other disability-based benefits. Moreover, as with reported SNAP receipt, SSI and TANF are known to be underreported in the ACS.

All other SNAP units must pass the net income test, and all non-elderly, non-disabled SNAP units must pass both the net and gross income tests. We do not exclude from eligibility non-elderly, able-bodied adults without dependents (commonly referred to as ABAWDS) because on April 1, 2009, the American Recovery and Reinvestment Act (ARRA, or the "Stimulus Act'") temporarily allowed States to suspend the time limits for SNAP that applied to this group. Moreover, we do not attempt to impose possible time limits for respondents whose ACS reference period includes the pre-ARRA period.

The gross income test requires that monthly gross income be no greater than 130 percent of the Federal poverty guideline while the net income test requires that monthly income, after allowable deductions, be no greater than 100 percent of the Federal poverty guideline. We estimate most of the required deductions used to arrive at the FNS definition of net income: the standard deduction, the earned income deduction, and the excess shelter cost deduction. For the earned income deduction, we deduct 20 percent of earned income, including prorated earned income for ineligible individuals. For households that do not contain elderly or disabled members, shelter costs in excess of half of adjusted income (subject to a limit of $459 in 2009) are deducted from gross income.[23] Households with an elderly or disabled member are not subject to this shelter cap. Shelter costs include rent or mortgage payments, condominium fees, property taxes, property insurance, and utilities. The shelter costs are prorated to exclude the shares that would be paid by SNAP-ineligible household members.

We are not able to estimate several deductions from gross income that are allowed under the program due to lack of data in the ACS. One is the dependent care deduction, which allows house-holds to deduct out-of-pocket costs for the care of a child or other dependent in order for house-hold members to work, seek work, or attend school. Households are allowed to deduct the medical expenses of elderly members over $35 (per month). Another deduction from gross income that we are not able to consider is legally obligated child support payments made to or for a non-household member. Nationally, in 2009, 3.9 percent of participating SNAP households claimed a dependent care deduction, 3.7 percent claimed a medical expense deduction, and 1.8 percent claimed a child support deduction (Leftin et al., 2010). Although we do not have these numbers for Texas residents, the national figures provide a rough idea of the share of Texas households that may have used these deductions.

We do not incorporate estimates of asset holdings into the eligibility estimates. ACS provides data on the number of vehicles in a household, but it does not have information on which household members use the cars or the value of the cars. Texas' SNAP vehicle policy is to exempt a $15,000

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[22]Texas does not have a general assistance program, so, for this case, the ACS variable for general assistance represents TANF alone.

[23]This is the limit on the excess shelter cost deduction that applies in 48 States, including Texas.

fair market value from one vehicle and then follow Federal rules for counting remaining vehicles. We follow the steps of other analysts and use the number of vehicles as a rough proxy for assets (Peterson et al., 2010; Taeuber et al., 2005). In particular, SNAP units with two or more vehicles are not eligible in our model.

Results

We present results on SNAP access rates for demographic, unit composition, economic, and geographic characteristics.[24] For each characteristic, we report the access rate and the proportion of eligible individuals within each category (the associated standard errors are reported in parentheses). This allows us to compare the access rates while also accounting for the relative importance of the given subgroup in the SNAP-eligible population. Below, we highlight some of the significant differences in access rates within each category (at the 10-percent level of significance) and identify possible target groups for outreach efforts.

The statewide access rate among all individuals in Texas was 62.8 percent in 2009 (table 1). By race, individuals who identified as Black or African American alone had the highest access rate at 71.3 percent. Biracial or multiracial individuals had nearly as high an access rate (70 percent). Individuals who identified as White alone had an access rate just below the State average (61.5), while only about one in three eligible individuals who identified as Asian alone participated in the program, by far the lowest access rate among the racial groups. About two-thirds of individuals of Hispanic origin participated, a rate that was about 8 percentage points higher than for individuals of non-Hispanic origin (58.2 percent). Significantly more individuals of Hispanic origin than of non-Hispanic origin were eligible for SNAP (54.5 percent vs. 45.5 percent).

More than three-quarters (76.5 percent) of eligible children in Texas participated in the program. As in previous research, children (age 0-17) were more likely to participate in SNAP than adults. Among adults, individuals between the ages of 30 and 39 were more likely to participate than older adults (age 40 or over) and younger adults (age 18 to 29). Nearly two-thirds (63.3 percent) of eligible adults in their thirties participated in the program. By contrast, only about two in five (43.2 percent) eligible adults age 60 or older participated in the program. These participation patterns by age are consistent with findings on participation rates nationally. At 40 percent, children also accounted for the largest proportion, by age, of eligible individuals in Texas.

The access rate among individuals in SNAP units in which the most educated member had completed some college (but did not earn a 4-year degree) was nearly 2 percentage points higher than in units where the most educated member did not finish high school (65.4 vs. 63.6 percent). Individuals in units in which the most educated member did not finish high school, held only a high school diploma, or had attained some college each accounted for approximately 30 percent of the eligible population. The access rate was significantly lower (41.5 percent) for individuals in units in which the most educated member held at least a bachelor's degree. However, individuals from these units only made up about 8 percent of the SNAP-eligible population in Texas.

Individuals from small (1 to 2 member) and medium (3 to 4 members) sized units accounted for fairly equal proportions of the eligible population in Texas (37.3 and 35.2 percent, respectively), while individuals from large units (5 or more members) accounted for just over one-quarter of the eligible population (27.5 percent). Those from medium and large units, however, were significantly more likely to participate. The access rate of individuals from large and medium units was 79.3 and 72.8 percent, respectively; from small units, the rate was only 41.2 percent (table 1).

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[24]In this report, we include the results based on the *standard* definition of eligibility and using Texas administrative data for identifying SNAP participants. Results using the *expanded* definition of eligibility, and results using survey reports of participation.

Table 1

Texas SNAP access rates by demographic characteristics, 2008-09

	Access rate		Percent eligible	
	Estimate	SE	Estimate	SE
Texas	62.8	(0.36)	100.0	
Race				
White alone	61.5	(0.41)	65.3	(0.37)
Black or African American alone	71.3	(0.70)	16.9	(0.23)
American Indian or Alaska Native alone	60.5	(3.97)	0.7	(0.06)
Asian alone	31.9	(2.34)	2.6	(0.09)
Some other race alone	63.3	(1.18)	12.2	(0.28)
Two or more races	70.0	(1.85)	2.3	(0.10)
Hispanic origin				
Hispanic origin	66.6	(0.54)	54.5	(0.32)
Non-Hispanic origin	58.2	(0.47)	45.5	(0.32)
Age				
0 to 17	76.5	(0.48)	39.7	(0.19)
18 to 29	56.4	(0.62)	19.4	(0.17)
30 to 39	63.3	(0.81)	13.1	(0.13)
40 to 49	55.0	(0.61)	9.6	(0.13)
50 to 59	46.8	(0.89)	7.3	(0.12)
60 to 69	43.2	(0.85)	5.1	(0.10)
70+	39.4	(0.81)	5.8	(0.08)
Highest educational attainment of SNAP unit member				
Some high school	63.6	(0.71)	30.9	(0.36)
High shool diploma	65.2	(0.68)	31.1	(0.36)
Some college	65.4	(0.61)	29.8	(0.37)
College degree	41.5	(1.28)	8.2	(0.21)
SNAP unit size				
Small (1 to 2 members)	41.2	(0.42)	37.3	(0.35)
Medium (3 to 4 members)	72.8	(0.59)	35.2	(0.45)
Large (5 or more members)	79.3	(0.83)	27.5	(0.44)

Notes: Estimates are based on authors' calculations using the 2009 ACS and Texas SNAP administrative records. Standard errors (SE), displayed in parentheses, were calculated using the method of successive differences and 80 replicate weights.

Source: ERS tabulations of the 2009 American Community Survey (ACS) and 2008-09 Supplemental Nutrition Assistance Program (SNAP) administrative records.

Consistent with previous findings in the literature, individuals in units with children were more likely to participate in SNAP than were individuals in childless units (table 2, fig. 1). This finding alone, however, masks heterogeneity within these unit types. Among units with children, individuals from female-headed units and from multiple-adult units (not headed by a married or cohabiting couple) participated at the highest rates (79.4 and 82.1 percent, respectively). However, individuals in female-headed units with children accounted for nearly 23 percent of eligible individuals in Texas, whereas those in multiple-adult units with children accounted for about 4

Table 2

Texas SNAP access rates by individual and SNAP unit characteristics, 2008-09

	Access rate		Percent eligible	
	Estimate	SE	Estimate	SE
SNAP unit type				
Couple with children	72.0	(0.69)	38.5	(0.40)
Couple without children	44.5	(0.90)	7.8	(0.19)
Female head with children	79.4	(0.63)	22.7	(0.35)
Female head without children	37.2	(0.72)	12.5	(0.17)
Male head with children	72.8	(1.93)	3.2	(0.13)
Male head without children	27.2	(0.79)	10.4	(0.19)
Multiple adults with children	82.1	(1.97)	3.9	(0.18)
Multiple adults without children	58.8	(3.76)	1.0	(0.06)
Children in SNAP unit				
Children under age 6 only	74.2	(1.10)	15.3	(0.30)
Children age 6-17 only	70.4	(0.73)	25.4	(0.35)
Children under age 6 and over	79.8	(0.87)	27.6	(0.39)
No children	36.4	(0.38)	31.7	(0.29)
Citizenship status				
U.S. citizen	65.2	(0.34)	83.9	(0.20)
Non-citizen	50.0	(0.88)	16.1	(0.20)
Military veterans or active duty				
No unit members	63.4	(0.37)	93.7	(0.16)
At least one unit member	54.3	(1.42)	6.3	(0.16)
School enrollment status				
Not enrolled	63.8	(0.36)	93.7	(0.12)
Currently enrolled	47.7	(1.08)	6.3	(0.12)
Language and linguistic isolation				
English only	61.5	(0.48)	43.9	(0.32)
Spanish not isolated	70.3	(0.66)	35.3	(0.41)
Spanish isolated	57.3	(1.03)	16.0	(0.32)
Other not isolated	36.6	(1.98)	3.2	(0.14)
Other isolated	40.8	(3.70)	1.5	(0.10)

Notes: Estimates are based on authors' calculations using the 2009 ACS and Texas SNAP administrative records. Standard errors (SE), displayed in parentheses, were calculated using the method of successive differences and 80 replicate weights.

Source: ERS tabulations of the 2009 American Community Survey (ACS) and 2008-09 Supplemental Nutrition Assistance Program (SNAP) administrative records.

percent of eligible individuals.[25] Male-headed units with children participated at a lower rate (72.8 percent) and made up a small proportion of the eligible population (3.2 percent). Individuals in units consisting of couples (either married or cohabiting with a partner) with children accounted for the largest proportion of the eligible population. About two in five eligible individuals in Texas (38.5 percent) lived in this type of unit in 2009, and 72 percent of the individuals in these units participated in the program.

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[25]Some (married or cohabiting) couples may be mischaracterized as "multiple adult" units. These are likely to be "other relatives" or nonrelatives of the ACS reference person, for whom we were not able to identify a partner or spouse match based on the information provided in the ACS.

Figure 1

SNAP access rates by household composition in Texas, 2009
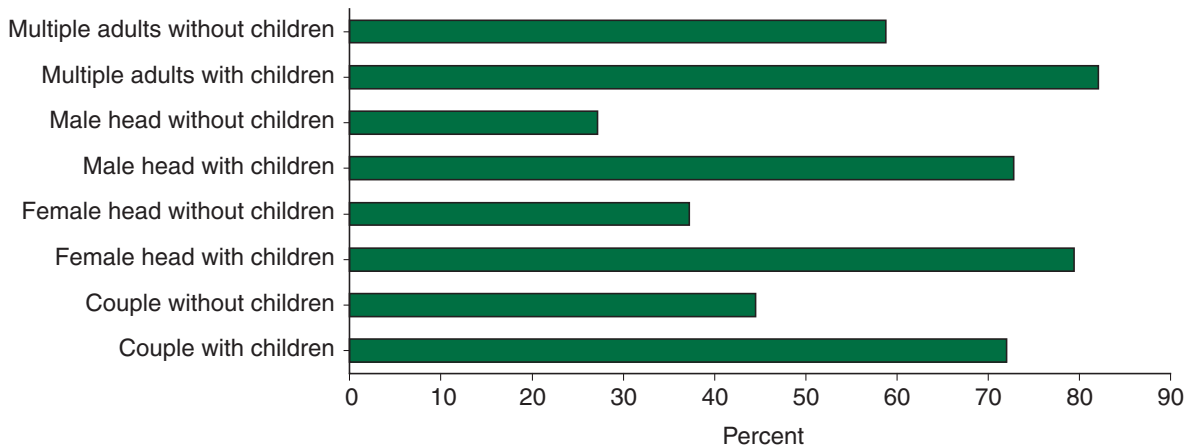
Percent

SNAP = Supplemental Nutrition Assistance Program.
Note: An access rate is the percent of SNAP participants among individuals estimated to be eligible for SNAP receipt.
Source: Authors' calculations using 2009 ACS and Texas SNAP administrative data for 2008-09.

In each type of unit, access rates were significantly lower when no children were present. Overall, individuals in units with children were about twice as likely as individuals in childless units to participate in SNAP (75.1 percent vs. 36.4 percent). Childless units still accounted for nearly one-third (31.7 percent) of the eligible population. Individuals in units with only very young children (under age 6) were more likely to participate than those in units with only older children (ages 6 to 17). Individuals in units with both older and younger children, however, had the highest access rate, at nearly 80 percent (table 2).

About one-sixth of SNAP-eligible individuals in Texas belonged to a unit with at least one noncitizen member (16.1 percent). Not surprisingly, individuals in these units had lower access rates than those in units made up entirely of U.S. citizens (50 percent vs. 65.2 percent).

Individuals living in linguistically isolated, non-English speaking units had lower access rates than individuals in units that were not linguistically isolated (fig. 2). The U.S. Census Bureau defines a linguistically isolated household as one in which no member age 14 or older speaks only English or one in which no member speaks English "very well."[26] Spanish-speaking, isolated individuals had an access rate of 57.3 percent, lower than that of Spanish-speaking, non-isolated individuals (70.3 percent). Individuals in isolated, Spanish-speaking units made up 16 percent of eligible individuals in 2009, while individuals in non-isolated, Spanish-speaking units accounted for more than one-third of all eligible individuals in Texas (35.3 percent). Hence, more than half of SNAP-eligible individuals in Texas lived in Spanish-speaking units in 2009, whether isolated or non-isolated.

Among single-adult SNAP units, individuals in female-headed units had a much higher access rate: 64.4 percent compared to 38 percent for male-headed units (table 3). Female-headed units accounted for 72 percent of the eligible single-adult population. This difference in access rates between male- and female-headed single-adult units is, as table 2 also reveals, largely driven by their different propensities to have children in the unit. Conditional on children in the unit, the difference in access rates between male- and female-headed single-adult units narrowed to 72 and

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[26]Linguistic isolation is a household-level variable in the ACS so that if a household is categorized as linguistically isolated, all individuals in that household are considered linguistically isolated.

Figure 2

SNAP access rates by household language and linguistic isolation in Texas, 2009
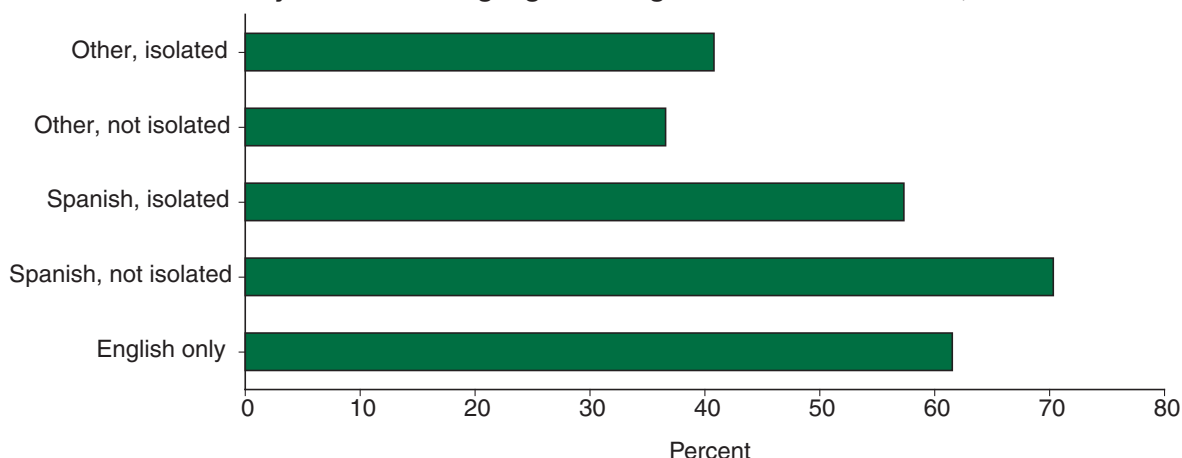
SNAP = Supplemental Nutrition Assistance Program.
Note: Note: An access rate is the percent of SNAP participants among individuals estimated to be eligible for SNAP receipt.
Source: Authors' calculations using 2009 ACS and Texas SNAP administrative data for 2008-09.

79 percent, respectively. However, male-headed single-adult units made up only 4.8 percent of the eligible population in units with children.

Among eligible multiple-adult units, three-quarters of eligible individuals lived in married couple units. However, these individuals had lower access to SNAP than those in other multiple-adult units.[27] When looking just at units with children, individuals in multiple-adult nonmarried units were again more likely to participate (81.7 percent) than individuals in multiple-adult married units (70.2 percent). And individuals in multiple-adult married units with children made up nearly half (47 percent) of the SNAP-eligible population in units with children in Texas in 2009.

Among units with an elderly member (age 60 or older), access rates differed according to whether the elderly lived alone in the household, with other elderly individuals, or with other non-elderly individuals (fig. 3). In this case, we are measuring the participation rates of individuals in SNAP units with an elderly individual according to the presence of other elderly or non-elderly members in the ACS household and who may belong to a different SNAP unit. The rationale here is not to determine whether elderly individuals are alone in a SNAP unit, since many can form units separate from other household members, but whether they are on their own in the residence. Elderly individuals who lived alone or with other elderly individuals had very low access rates (35.9 and 33.7 percent, respectively). Access rates were much higher in elderly units if at least one non-elderly individual was living in the household (53.5 percent). Elderly individuals who lived alone made up 28.1 percent of all eligible individuals in units in which at least one elderly person resided. Because these are, by definition, single-person units while the others contain multiple individuals, units in which an elderly person lives alone account for a much larger proportion of all elderly units.

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[27]Married households are defined here as those in which the reference person is married. The ACS only provides information on household members' relationship to the reference person. In cases where the SNAP reference person differs from the ACS household reference person (i.e., because the latter is not present in the SNAP household), we have attempted to infer a marital relationship. For example, if a SNAP household contains the child of the ACS reference person as well as the son/daughter-in-law of the ACS reference person, we assume that this is a married couple even though the relationship between these two household members is not directly established in the ACS. Similarly, if two parents, or parents-in-law, are present, we assume they are a couple. Last, if the SNAP household reference person is a sibling, and an adult "other relative" (the ACS does not directly identify brother/sister-in-laws) of the opposite sex is present, they are also considered to be a couple.

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Table 3

Texas SNAP access rates by household composition, 2008-09

	Access rate		Percent eligible	
	Estimate	SE	Estimate	SE
Single-adult units				
Male adult	38.0	(0.84)	28.0	(0.39)
Female adult	64.4	(0.52)	72.0	(0.39)
Multiple-adult units				
Married couple	65.4	(0.61)	75.7	(0.55)
Other multiple-adult unit	77.5	(0.99)	24.3	(0.55)
Units with children				
Single male adult	72.2	(1.96)	4.8	(0.20)
Single female adult	79.3	(0.63)	33.3	(0.49)
Multiple adults married	70.2	(0.75)	46.9	(0.53)
Multiple adults other	81.7	(1.17)	15.0	(0.43)
Elderly individuals in unit				
Living alone	35.9	(1.05)	28.1	(0.54)
Living with only other elderly	33.7	(1.35)	20.8	(0.59)
Living with at least one non-elderly	53.5	(1.05)	51.1	(0.75)
Disabled non-elderly in unit				
Living alone	50.6	(1.75)	8.4	(0.35)
Not living alone	67.7	(0.90)	91.6	(0.35)
ABAWD units				
Single-person unit	25.9	(0.75)	72.3	(0.96)
Multi-person unit	49.9	(1.69)	27.7	(0.96)
Units with citizen children and noncitizen adults				
All other units	61.1	(0.34)	75.6	(0.35)
Citizen child with noncitizen adult	68.2	(0.93)	24.4	(0.35)

Notes: Estimates are based on authors' calculations using the 2009 American Community Survey and Texas SNAP administrative records. Standard errors (se), displayed in parentheses, were calculated using the method of successive differences and 80 replicate weights. ABAWD = Able-Bodied Adults Without Dependents.

* This variable uses the original ACS household description to determine if an elderly person was living alone or with other individuals, even if he or she is in different units for SNAP eligibility consideration.

Source: ERS tabulations of the 2009 American Community Survey (ACS) and 2008-09 Supplemental Nutrition Assistance Program (SNAP) administrative records.

There is a similar disparity in SNAP access among non-elderly, disabled individuals depending on whether they were living alone. The access rate for individuals in non-elderly, disabled households was higher if other people were in the household (67.7 percent vs. 50.6 percent if living alone).

As expected, access rates were low among individuals in units without children and with at least one nondisabled member age 18-49, especially if they were living alone (25.9 percent). This group roughly corresponds to the definition of ABAWDs, who face restrictions on the total number of months that they can receive SNAP. (Those restrictions were relaxed in April 2009 when ARRA took effect, but States were not required to locate those ABAWDS previously denied eligibility and inform them of ARRA eligibility restoration.)

Figure 3

SNAP access rates of households with elderly individuals in Texas, 2009
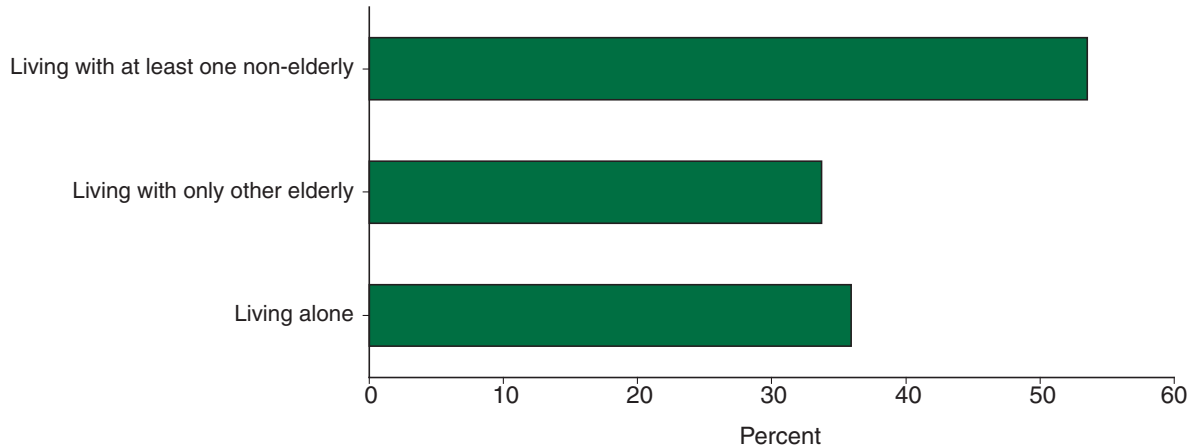
SNAP = Supplemental Nutrition Assistance Program.
Note: Note: An access rate is the percent of SNAP participants among individuals estimated to be eligible for SNAP receipt.
Source: Authors' calculations using 2009 ACS and Texas SNAP administrative data for 2008-09.

Individuals in units that included at least one noncitizen adult and one citizen child participated at a slightly higher rate (68.2 percent) than other units (61.1 percent). Individuals in units with citizen children and noncitizen parents accounted for about a quarter of the eligible population in Texas in 2009 (table 3).

Individuals in units with stronger labor force attachment had better access to SNAP than individuals in units with little to no labor force attachment (table 4). This is evident in the results that look at differences in the work experience of the unit's primary worker (the member who had the most work experience) and in the summary of overall SNAP unit employment status. Fifty-two percent of eligible individuals lived in SNAP units in which the primary worker worked all of the year. Nearly 68 percent of individuals in these units participated in SNAP. Individuals in units whose primary worker had weaker attachment to the labor market—working only either most or some of the year, or last working more than 1 year ago—were less likely to participate in SNAP, especially if participation in the labor market was more than 5 years ago (52.2 percent). Individuals in these units made up 18 percent of the eligible population in Texas in 2009.

The "unit employment status" variable presents additional information about the recent labor force attachment of the SNAP unit as a whole. It measures whether (1) anyone was employed and how much of the year they worked; (2) all members were either unemployed or not in the labor force; or 3) *no* member was in the labor force, of which a large share of units include elderly individuals. Access rates of units with an unemployed person (65 percent) differed markedly from those in which no unit members were in the labor force (54 percent), probably due to the fact that the latter category includes elderly individuals, while the unemployed category is likely to include working-age adults in need of work. Those units that had someone employed for all, most, or some of the year had access rates that ranged between 60.2 and 67.4 percent.[28] Interestingly, the individuals in units in which at least one person was employed all year made up more than half of eligible individuals in

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[28]The percentage eligible for those in households in which "at least one person was employed and worked all year" differs from the percent eligible for those in households in which the primary worker "works year round" by whether the worker was employed or not at the time of the interview.

Table 4

Texas SNAP access rates by economic characteristics, 2008-09

	Access rate		Percent eligible	
	Estimate	SE	Estimate	SE
Work experience of primary worker				
Worked year round	67.7	(0.60)	51.9	(0.33)
Worked most of year	61.8	(1.04)	12.6	(0.27)
Worked some of year	60.3	(1.05)	10.7	(0.21)
Last worked 1-5 years ago	59.5	(1.18)	6.9	(0.18)
Last worked over 5 years ago	52.2	(0.68)	18.0	(0.24)
SNAP unit employment status				
At least 1 employed worked all year	67.4	(0.59)	51.2	(0.34)
At least 1 employed worked most of year	60.6	(1.27)	9.1	(0.23)
At least 1 employed worked some of year	60.2	(1.54)	5.6	(0.16)
All either unemployed or not in labor force	64.7	(1.27)	8.5	(0.21)
All not in labor force	54.3	(0.56)	25.6	(0.30)
Health insurance				
Private health coverage	53.8	(0.70)	17.5	(0.26)
Public health coverage	71.0	(0.41)	46.7	(0.26)
No coverage	56.5	(0.63)	35.8	(0.27)
Public assistance				
Received none	61.6	(0.37)	93.7	(0.20)
Received some	80.7	(1.23)	6.3	(0.20)
Supplemental Social Income				
Received none	63.1	(0.38)	92.7	(0.15)
Received some	58.8	(1.01)	7.3	(0.15)
Social Security				
Received none	63.9	(0.40)	86.4	(0.21)
Received some	55.5	(0.76)	13.6	(0.21)
Self-employment income				
Received none	62.5	(0.38)	91.0	(0.24)
Received some	66.2	(1.26)	9.0	(0.24)
Salary/wage income				
Received none	55.5	(0.67)	30.3	(0.33)
Received some	66.0	(0.47)	69.7	(0.33)

Notes: Estimates are based on authors' calculations using the 2009 ACS and Texas SNAP administrative records. Standard errors (se), displayed in parentheses, were calculated using the method of successive differences and 80 replicate weights.
Source: ERS tabulations of the 2009 American Community Survey (ACS) and 2008-09 Supplemental Nutrition Assistance Program (SNAP) administrative records.

Texas (51.2 percent). The second largest group was individuals in units in which all members were out of the labor force, accounting for about a quarter (25.6 percent) of eligible individuals.

In previous research, units with stronger labor force attachment have been found to have lower SNAP participation rates than those with weaker attachment. One reason our results may differ is that we have not separated out elderly individuals or units that are predominantly composed of elderly members. These units tend to have weak attachment to the labor force and low participation rates. We

have also included matched individuals in our sample who were not determined to be eligible by our model. Methodological differences also explain the somewhat divergent results. In particular, we are summarizing labor force attachment over the entire 12-month ACS reference period, rather than in any particular month. For individuals with short spells in the program, they would be more likely to participate in those months in which they were out of work or between jobs.

Individuals who lacked private health insurance coverage (either no coverage or coverage by public health insurance) made up 82.5 percent of the eligible population in 2009 (table 4). Individuals with public health insurance coverage had a higher access rate (71 percent) than those with either private coverage (54 percent) or no coverage (56.5 percent).

Receipt of TANF (Temporary Assistance for Needy Families) by all adult members in the unit confers to the entire unit categorical SNAP eligibility. Despite this, individuals in units with any member receiving public assistance accounted for only about 6 percent of the SNAP-eligible population.[29] In most every case, recipients of public assistance also qualify for SNAP benefits, even if they do not meet the Federal rules for eligibility. The low proportion of public assistance recipients among SNAP-eligible units is the result of both low participation in cash assistance programs and under-reporting of such cash assistance in the ACS. As expected, this group had a high SNAP access rate of 81 percent (table 4). Their relatively high access rate may also be due to a common application form and caseworkers making these individuals aware of their SNAP eligibility when they apply for public assistance or TANF.

Individuals in units with some SSI receipt accounted for 7.3 percent of the eligible population and had an access rate of 59 percent. The access rate for SSI recipients is affected by a program called Texas' SSI Combined Application Project in which SSI recipients who are not receiving SNAP are identified electronically through Social Security Administration assistance and encouraged to apply via a simplified SNAP application.

Access rates were lower in units in which a member received some Social Security income. This is perhaps not surprising since Social Security receipt is not based on need. Social Security benefits serve three different groups of people: retirees, work disabled, and survivors of workers. Most Social Security beneficiaries are retired. As a result, most Social Security recipients are older adults who were shown to have the lowest SNAP access rate of all age groups.

Access rates in units with some earnings were just over two-thirds, regardless of whether those earnings came from self-employment income or from wages. The access rate for individuals in wage-earning units was 66 percent, and this group made up 70 percent of the eligible population (table 4).

Rural residents had slightly higher access to SNAP than did their urban counterparts (65.3 percent versus 62.3 percent). However, 84 percent of all eligible individuals in Texas were urban residents (table 5).

Similarly, access rates by the metropolitan status of current residence do not exhibit large differences. Access rates were lower in the central city of a metropolitan statistical area (MSA)[30] than in the remainder of the MSA or outside the MSA (61.3 percent relative to 63.4 percent and 67.6 percent,

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[29]As previously mentioned, the ACS does not distinguish between TANF and other forms of cash public assistance. All are subsumed under one "public assistance" category.

[30]A metropolitan statistical area refers to a densely populated geographic region with close economic ties. Specific delineations are defined by the U.S. Office of Management and Budget.

Table 5

Texas SNAP access rates by geography, 2008-09

	Access rate		Percent eligible	
	Estimate	SE	Estimate	SE
Metro status of current residence				
Central city of MSA	61.3	(0.54)	53.6	(0.28)
Remainder of MSA	63.4	(0.64)	33.2	(0.25)
Outside of MSA	67.6	(0.93)	13.1	(0.17)
Area of residence				
Rural	65.3	(0.83)	16.3	(0.26)
Urban	62.3	(0.38)	83.7	(0.26)
Residence 12 months ago				
In Texas	63.3	(0.35)	97.3	(0.13)
In other State	39.3	(3.05)	1.9	(0.11)
Outside U.S.	20.9	(3.26)	0.8	(0.06)
Congressional district				
1	66.0	(1.64)	2.9	(0.10)
2	65.6	(2.06)	2.5	(0.10)
3	41.0	(2.44)	2.3	(0.12)
4	66.6	(1.81)	2.9	(0.10)
5	63.4	(2.19)	2.6	(0.12)
6	59.9	(2.02)	2.9	(0.12)
7	36.8	(3.48)	1.5	(0.08)
8	64.8	(2.27)	2.7	(0.11)
9	58.4	(2.08)	3.8	(0.15)
10	55.9	(2.33)	2.7	(0.12)
11	64.9	(1.79)	2.7	(0.09)
12	58.6	(2.31)	2.7	(0.10)
13	59.7	(2.23)	2.3	(0.08)
14	64.5	(2.02)	2.5	(0.09)
15	76.9	(1.35)	5.4	(0.15)
16	70.6	(1.41)	4.2	(0.13)
17	61.4	(1.96)	2.9	(0.09)
18	57.5	(1.89)	4.4	(0.18)
19	64.3	(1.83)	2.7	(0.08)
20	66.4	(1.76)	3.8	(0.13)
21	56.3	(2.51)	2.0	(0.11)
22	57.2	(2.85)	2.3	(0.11)
23	70.5	(1.75)	3.8	(0.14)
24	52.0	(3.03)	2.2	(0.13)
25	61.9	(2.21)	3.2	(0.11)
26	58.1	(2.49)	2.7	(0.12)
27	71.7	(1.66)	4.5	(0.11)
28	75.7	(1.47)	5.5	(0.14)
29	58.5	(2.60)	3.6	(0.16)
30	64.4	(1.94)	4.5	(0.15)
31	56.4	(2.33)	2.8	(0.11)
32	48.9	(3.05)	2.8	(0.14)

Notes: Estimates are based on authors' calculations using the 2009 American Community Survey and Texas SNAP administrative records. Standard errors (se), in parentheses, were calculated using the method of successive differences and 80 replicate weights. MSA = Metro Statistical Area, as defined by the U.S. Office of Management and Budget.

Source: ERS tabulations of the American Community Survey (ACS) and 2008-09 Supplemental Nutrition Assistance Program (SNAP) administrative records.

respectively). Most SNAP-eligible individuals lived in an MSA, with over half of them residing in central cities (54 percent).

Nearly all individuals in our sample remained in Texas for the 12-month reference period covered by the ACS. However, access rates were much lower among the small fraction that moved to Texas from another State or country during that period. It may be that, following a long-distance move, eligible individuals do not get around to applying for SNAP benefits right away.

The congressional districts in the urban areas of Dallas (the 3rd and 32nd Districts) and Houston (the 7th) exhibited the lowest access rates (though they are not significantly different from each other). The three congressional districts that make up the southern portion of the State (the 15th, 27th, and 28th) had the highest access rates, at roughly three-quarters or more each (fig. 4, table 5).

Figure 4

SNAP access rates in Texas by congressional district, 2008-09

SNAP access by Texas Congressional Districts, 2008-09

- 36.8% - 55.8%
- 55.9% - 59.8%
- 59.9% - 70.4%
- 70.5% - 76.9%

SNAP = Supplemental Nutrition Assistance Program.
Note: Note: An access rate is the percent of SNAP participants among individuals estimated to be eligible for SNAP receipt.
Source: Authors' calculations using 2009 ACS and Texas SNAP administrative data for 2008-09.

County-Level Access Rates

Table 6 shows access rates for the 25 largest Texas counties (out of 254). The results, even for this subsample of Texas counties, illustrate the uneven nature of SNAP access across the State. While some counties exhibit access rates well below the State average of about 63 percent, others have access rates of more than 75 percent. Program administrators might take note of counties on either end of the distribution of county access rates. For example, Denton is the only county of the 25 largest with an estimated access rate below 50 percent. At the other end of the distribution, Hidalgo, Jefferson, and Webb Counties had access rates of nearly 80 percent in 2009.

The ACS sample for Texas is also large enough to allow us to estimate access rates by various demographic characteristics within seven of the largest counties (table 7). This additional level of granularity provides program administrators with the most nuanced picture yet of SNAP access in their State. It permits them to identify both where and for whom barriers to program access are most acute.

Table 6

Texas SNAP access rates by select county, 2008-09

	Access rate		Percent eligible	
	Estimate	SE	Estimate	SE
Texas	62.8	(0.36)	100.0	--
County	66.0	(1.64)	2.9	(0.10)
Bell	54.7	(3.63)	1.5	(0.09)
Bexar	64.2	(1.29)	9.3	(0.23)
Brazoria	62.5	(3.49)	1.0	(0.09)
Brazos	55.9	(3.49)	1.0	(0.06)
Cameron	74.5	(1.99)	4.1	(0.12)
Dallas	57.3	(1.48)	14.7	(0.30)
Denton	45.7	(4.03)	1.8	(0.11)
Ector	70.3	(3.51)	0.9	(0.06)
El Paso	71.0	(1.30)	6.0	(0.18)
Fort Bend	50.8	(3.53)	1.6	(0.10)
Galveston	64.7	(3.01)	1.3	(0.08)
Grayson	74.3	(3.40)	0.6	(0.05)
Harris	55.1	(0.96)	21.4	(0.36)
Hidalgo	78.2	(1.33)	7.8	(0.19)
Jefferson	75.8	(2.59)	1.6	(0.09)
Lubbock	63.7	(3.01)	1.6	(0.07)
McLennan	64.4	(3.25)	1.5	(0.07)
Montgomery	57.3	(3.96)	1.7	(0.10)
Nueces	66.4	(2.90)	2.2	(0.11)
Potter	65.2	(4.21)	0.8	(0.07)
Smith	65.3	(3.96)	0.9	(0.08)
Tarrant	58.9	(1.42)	8.1	(0.22)
Travis	60.2	(2.14)	5.0	(0.15)
Webb	76.0	(2.27)	2.4	(0.09)
Williamson	60.3	(4.49)	1.3	(0.10)

Notes: Estimates are based on authors' calculations using the 2009 ACS and Texas SNAP administrative records. Standard errors (se), in parentheses, were calculated using the method of successive differences and 80 replicate weights.
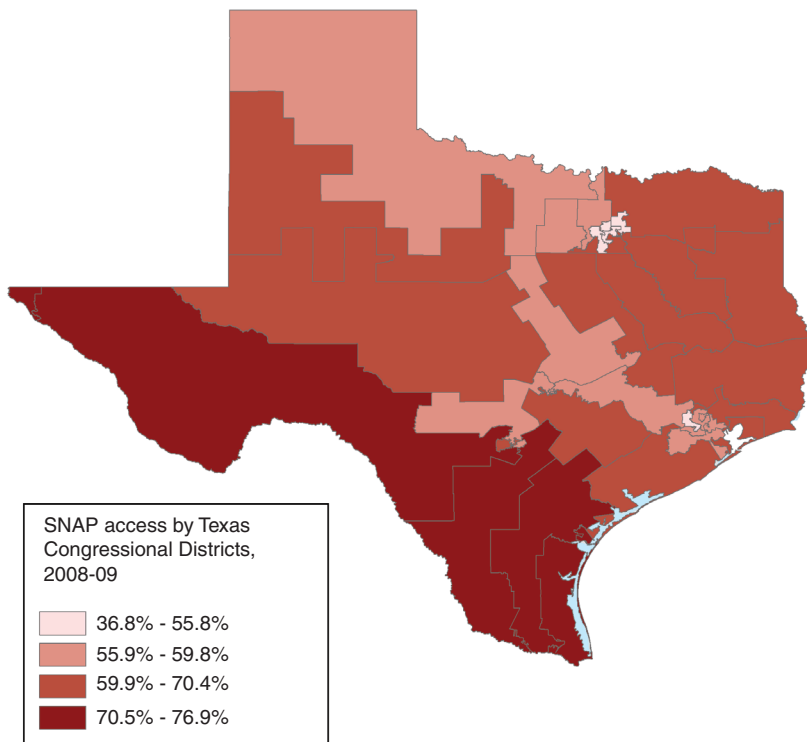
Source: ERS tabulations of the 2009 American Community Survey (ACS) and 2008-09 Supplemental Nutrition Assistance Program (SNAP) administrative records.

Table 7

Texas SNAP access rates by select county and demographic characteristics, 2008-09

	Access rate							
	Bexar	Dallas	El Paso	Harris	Hidalgo	Tarrant	Travis	Other
Race								
White alone	63.3	53.2	71.2	50.9	78.1	55.8	51.3	63.1
Black or African American alone	74.4	70.5	66.1	68.2	-	72.0	76.8	72.8
American Indian or Alaska Native alone	65.8	59.8	79.0	71.3	75.3	24.6	71.6	54.8
Asian alone	44.7	29.2	3.1	31.5	28.1	36.4	13.5	35.6
Some other race alone	62.5	51.0	73.7	50.5	79.6	55.2	77.0	70.1
Two or more races	65.8	62.1	75.7	71.3	72.4	69.2	72.5	71.5
Hispanic origin								
Hispanic origin	66.9	56.9	72.7	54.7	79.8	56.3	70.8	70.2
Non-Hispanic origin	56.7	57.6	52.8	55.7	37.4	60.8	47.8	59.9
Age								
0 to 17	81.3	69.4	84.8	67.2	87.8	71.8	76.9	79.2
18 to 29	54.6	50.5	65.9	46.8	75.3	53.5	51.4	59.2
30 to 39	67.4	53.9	71.5	54.4	81.9	57.4	55.9	67.7
40 to 49	54.1	49.6	68.5	46.0	70.4	47.7	52.9	57.4
50 to 59	43.8	45.9	51.2	44.5	53.5	43.5	36.2	47.9
60 to 69	45.4	39.4	51.3	35.2	59.2	30.5	33.8	45.1
70+	34.3	35.7	48.8	39.2	56.2	32.9	40.7	38.1
Highest education of unit members								
Some high school	62.6	54.3	72.4	55.7	79.6	56.2	67.8	66.7
High school diploma	69.2	61.6	70.7	57.7	78.7	66.1	65.6	65.7
Some college	66.2	64.1	73.2	58.7	78.5	60.9	65.4	66.0
College degree	37.5	34.5	57.9	34.4	65.2	38.3	27.3	45.9
Unit size								
Small (1 to 2 members)	40.2	37.0	47.6	36.4	51.8	37.4	33.6	43.2
Medium (3 to 4 members)	75.1	64.5	80.4	60.4	84.9	69.5	77.1	76.7
Large (5 or more)	87.2	73.0	89.2	70.8	91.0	70.5	73.9	81.9
Military veterans or active duty								
No household members	65.0	57.7	72.7	55.3	78.8	58.6	60.6	65.3
At least one household member	54.4	47.0	46.3	51.1	52.3	63.1	52.2	55.7
Language and linguistic isolation								
English only	61.4	62.0	58.3	59.3	58.5	62.1	55.4	62.4
Spanish not isolated	69.2	61.1	76.2	60.5	79.3	61.5	74.8	73.1
Spanish isolated	46.6	49.4	66.5	45.6	80.0	50.0	64.7	60.0
Other not isolated	48.6	27.6	24.2	37.1	48.9	46.0	26.9	37.0
Other isolated	77.1	37.9	-	36.3	9.7	63.4	14.3	39.2

Notes: Estimates are based on authors' calculations using the 2009 American Community Survey and Texas SNAP administrative records. Standard errors (se) are available upon request.

Source: ERS tabulations of the 2009 American Community Survey (ACS) and 2008-09 Supplemental Nutrition Assistance Program (SNAP) administrative records.

For example, Hidalgo and El Paso Counties both exhibited higher than average access rates (78.2 and 71.0 percent, respectively), and both had similarly low access rates among individuals in units that spoke only English (58.5 and 58.3 percent, respectively) and high rates among individuals in Spanish-speaking, non-linguistically isolated units (79.3 and 76.2 percent, respectively). Yet the gap between linguistically isolated and non-isolated units is different in the two counties (fig. 5). In Hidalgo County, where individuals in linguistically isolated Spanish-speaking units participate at a rate of 80 percent, there is no significant gap. In El Paso County, however, the gap is nearly 10 percentage points (and statistically significant). What factors might account for the apparent success of Hidalgo County in reaching *linguistically isolated* Spanish-speaking units in need relative to El Paso County?

Figure 5

SNAP access rates of Spanish-speaking isolated households in Texas by county, 2009
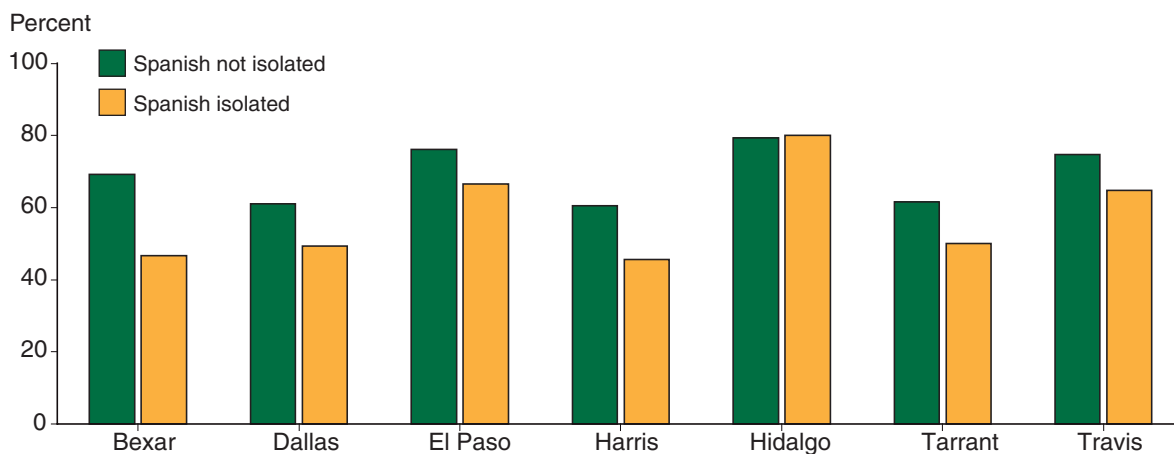
Percent

SNAP = Supplemental Nutrition Assistance Program.
Note: Note: An access rate is the percent of SNAP participants among individuals estimated to be eligible for SNAP receipt.
Source: Authors' calculations using 2009 ACS and Texas SNAP administrative data for 2008-09.

Conclusion

This report provides an indepth profile of SNAP access in Texas and demonstrates the power of linked SNAP administrative and American Community Survey data. Policymakers and program administrators want detailed information about how SNAP is serving the needs of families in their States and counties, and this linked microdata can provide it.

For many subpopulations in Texas in 2009, the report shows that patterns of SNAP access were similar to national estimates of participation for those subpopulations. However, by presenting a more disaggregated picture of SNAP access in the State, it also uncovers some new results. For example, the familiar gradient in age was evident in Texas: access rates declined with age, and access rates for the elderly (age 60 and over) were nearly 25 percentage points lower than for children (age 17 and under). Lower SNAP participation among the elderly has been well documented nationally. The more detailed tabulations in this study reveal that, in Texas, it was the elderly who live alone or only with other elderly individuals who had much lower SNAP access rates in 2009. The access rate of elderly individuals living with at least one other non-elderly individual actually corresponds to the statewide average for all individuals.

Similarly in line with national estimates, units with children had substantially higher SNAP access rates in Texas than units without children in 2009. Among units with children, couples had significantly lower access than female heads or even multiple-adult (non-couple) units, and they made up the largest eligible subgroup, by unit type, in the State. Conversely, among units without children, couples had a higher access rate than female- and male-headed units.

This report also highlights SNAP access among subpopulations not previously considered at either the State or national level. For example, our results indicate that a lack of facility with English may be an important barrier to SNAP access. With its large Hispanic population, this is a particular policy concern in Texas. The results here show a large difference in SNAP access according to the Census Bureau's classification of linguistic isolation among Spanish speakers, with "isolated" Spanish-speaking units exhibiting access rates 13 percentage points lower than "non-isolated" Spanish-speaking units. Differing rates of program access between these two groups were evident across counties as well.

Finally, this report provides results at a finer level of geographic detail than has previously been available. It reveals substantial variation in access rates across both congressional districts and counties in Texas. In addition, estimates of SNAP access for demographic subpopulations within counties can allow program officials to identify geographic differences in SNAP access among vulnerable demographic subpopulations.

Using Texas, this report presents a new approach to estimating SNAP access at the State and substate levels. By linking State SNAP administrative records and household survey data at the person level, we are able to characterize SNAP access for more detailed subpopulations and geographic areas than has been done previously. The linked microdata offer a great deal of flexibility in characterizing SNAP access, and the results presented in this report do not exhaust the possibilities.

An important application of the linked microdata that is not exploited in this report would be to use it in a model of the participation decision among eligible individuals in a multivariate setting. Because SNAP participation is more accurately identified in the linked data, the modeling approach

would better isolate the characteristics associated with nonparticipation among eligible individuals. Another potentially useful effort would be to analyze how households with episodic receipt differ from those with either longer term receipt or those with no receipt, based on the monthly SNAP receipt information in the Texas administrative data. Although in this report we have employed the standard definition of eligibility, future research on SNAP access could model as eligible those who appear to qualify for SNAP under broad-based categorical eligibility.

Estimates at this level of detail provide program officials and policymakers with a new tool to assess and improve program performance. As more State-level SNAP administrative records become available, detailed tabulations like these can be produced on an annual basis for other States, enabling States to monitor SNAP access for specific subpopulations and regions over time.

References

Bollinger, C.R., and M.H. David. 1997. "Modeling Discrete Choice with Response Error: Food Stamp Participation," *Journal of American Statistical Association* 92(439): 827-835.

Cody, S., L. Castner, J. Mabli, and J. Sykes. 2007. *Dynamics of Food Stamp Program Participation, 2001-2003.* USDA Food and Nutrition Service; Office of Research, Nutrition, and Analysis. http://www.mathematica-mpr.com/publications/PDFs/DynamicsFSP01-03.pdf

Cody, S., P. Gleason, B. Schechter, M. Satake, and J. Sykes. 2005. *Food Stamp Program entry and exit: An analysis of participation trends in the 1990s.* Washington, DC. http://mathematica-mpr.com/publications/pdfs/FSPentryexit.pdf

Cunnyngham, K.E., L.A. Castner, and A.L. Schirm. 2011. *Empirical Bayes Shrinkage Estimates of State Supplemental Nutrition Assistance Program Participation Rates in 2006-2008 for All Eligible People and the Working Poor.* Alexandria, VA.

Danielson, C., and J.A. Klerman. 2006. *Why Did the Food Stamp Caseload Decline (and Rise)? Effects of Policies and the Economy.* http://www.irp.wisc.edu/publications/dps/pdfs/dp131606.pdf

Dickert-Conlin, S., K. Fitzpatrick, and L. Tiehen. 2010. *The Downs and Ups of the SNAP Caseload: What Matters?*

Fellowes, M., and A. Berube. 2005. *Leaving Money (and Food) on the Table: Food Stamp Participation in Major Metropolitan Areas and Counties.* http://www.brookings.edu/~/media/research/files/reports/2005/5/childrenfamilies fellowes/20050517_foodstamp.pdf

Food Research and Action Center. 2011. *SNAP Access in Urban America: A City-by-City Snapshot.* http://frac.org/wp-content/uploads/2011/01/urbansnapreport_jan2011.pdf

Kornfeld, R. 2002. *Explaining Recent Trends in Food Stamp Program Caseloads: Final Report.* http://naldc.nal.usda.gov/download/48203/PDF

Leftin, J., E. Eslami, and M. Strayer. 2011. *Trends in Supplemental Nutrition Assistance Program Participation Rates: Fiscal Year 2002 to Fiscal Year 2009.* Alexandria, VA: http://www.fns.usda.gov/ora/MENU/Published/snap/FILES/Participation/Trends2002-09.pdf

Leftin, J., A. Gothro, and E. Eslami. 2010. *Characteristics of Supplemental Nutrition Assistance Program Households: Fiscal Year 2009.* Alexandria, VA. http://www.fns.usda.gov/ora/menu/Published/snap/FILES/Participation/2009Characteristics.pdf

Mabli, J., S. Tordella, L. Castner, T. Godfrey, and P. Foran. 2011. *Dynamics of Supplemental Nutrition Assistance Program Participation in the Mid-2000s.* Alexandria, VA. http://www.fns.usda.gov/ora/MENU/Published/snap/FILES/Participation/DynamicsMid2000.pdf

Marks, J.Y., J.B. Isaacs, T.M. Smeeding, and K.A. Thornton. 2011. *Wisconsin Poverty Report: Technical Appendix for 2009.* http://www.irp.wisc.edu/research/WisconsinPoverty/pdfs/WIPovTechnicalAppendix_Sept2010.pdf

Marquis, K.H., and J.C. Moore. 1990. "Measurement Errors in SIPP Program Reports." https://www.census.gov/srd/papers/pdf/rsm2010-01.pdf

Meyer, B.D., and R.M. Goerge. 2011. "Errors in Survey Reporting and Imputation and their Effects on Estimates of Food Stamp Program Participation." http://papers.ssrn.com/sol3/papers.cfm?abstract_id=1824261

National Opinion Research Center (NORC). 2011. *Assessment of the U.S. Census Bureau's Person Identification Validation System.* Vol. 20814. http://www.norc.org/PDFs/May 2011 Personal Validation and Entity Resolution Conference/PVS Assessment Report FINAL JULY 2011.pdf

National Research Council. 2010. *Developing and Evaluating Methods for Using American Community Survey Data to Support the School Meals Program: Interim Report.* A L. Schirm and N. J. Kirkendall, eds. Washington, DC: The National Academies Press. http://www.nap.edu/catalog.php?record_id=12917

Passel, J.S., and D. Cohn. 2010. *U.S. Unauthorized Immigration Flows Are Down Sharply Since Mid-Decade.* Pew Hispanic Center. Washington, DC. http://www.pewhispanic.org/2010/09/01/us-unauthorized-immigration-flows-are-down-sharply-since-mid-decade/

Peterson, A., B.E. Moulton, E.O. Smith, and C. Wilson. 2010. *Implementing Supplemental Nutrition Assistance Program in Puerto Rico: A Feasibility Study.* Alexandria, VA. http://www.fns.usda.gov/ora/MENU/Published/snap/FILES/ProgramDesign/PuertoRico.pdf

Taeuber, C.M., J. Staveley, and R. Larson. 2005. *Modeling Participation in the Maryland Food Stamp Program Using Census Data and Administrative Records.* Baltimore, MD. http://www.ubalt.edu/jfi/jfi/reports/Foodstampdenominatorpaper_final_Jun06l.pdf

Taeuber, C.M., D.M. Resnick, S.P. Love, J. Staveley, P. Wilde, and R. Larson. 2004. *Differences in Estimates of Food Stamp Program Participation Between Surveys and Administrative Records.* Baltimore, MD. http://cdm16352.contentdm.oclc.org/cdm/compoundobject/collection/p15224coll6/id/1438/rec/7

U.S. Census Bureau. 2009. "ACS 2009 1-year Accuracy of the Data (US)." http://www.census.gov/acs/www/Downloads/data_documentation/Accuracy/ACS_Accuracy_of_Data_2009.pdf

U.S. Department of Agriculture, Food and Nutrition Service. 2011a. C*alculating the SNAP Program Access Index: A Step-By-Step Guide 2010.* http://www.fns.usda.gov/ora/menu/Published/snap/FILES/Other/PAI2010.pdf

U.S. Department of Agriculture, Food and Nutrition Service. 2011b. *SNAP Guidance on Non-Citizen Eligibility.* http://www.fns.usda.gov/snap/government/pdf/Non-Citizen_Guidance_063011.pdf

Ziliak, J.P., C. Gundersen, and D.N. Figlio. 2003. "Food Stamp Caseloads over the Business Cycle," *Southern Economic Journal* 69(4): 903-19.

Appendix: Detailed Characteristics of the Administrative Data, the ACS Sample, and the Linked Data—PIK Rates and Comparability of Samples

A. Texas Administrative Data Description

The Texas administrative data that are used for analysis at Census include information on the sex, birth year, SNAP benefit amount, and household composition of individual SNAP participants by month from January 2008 through December 2009. Prior to using the data for analysis, Census attaches a Protected Identification Key or PIK from the personally identifiable information (PII) originally provided to Census, and the PII is removed from the data in that process.

Two variables on the "persons" file indicate an individual's case number ("caseid") and the client number ("clnum"). It is our understanding that an individual's client number followed the client if he or she changed households (or "caseids"), for the most part. This appears to be the case, though some individuals were apparently given new client numbers, perhaps when administrators could not locate their original ones.

PIKs, Case IDs, and Client Numbers

We merge person records from the two data sources using a Protected Identification Key (PIK). PIKs are internal Census Bureau identifiers based in part on a person's Social Security Number (SSN). PIKs allow researchers to match person records across data sources without compromising a respondent's personally identifiable information, such as SSNs. The Census Bureau assigns PIKs to person records in demographic surveys and in administrative records using the agency's Person Identification Validation System (PVS). This system uses information in the source file (e.g., Social Security numbers, addresses, names and dates of birth) to search for the person's corresponding record in the Numerical Identification File maintained by the Social Security Administration.

In a small number of administrative records, PIKs that Census assigned to the Texas data are associated with multiple client numbers ("clnum"). This, together with guidance provided to us by researchers familiar with these data, suggests that the same individual has been assigned different client numbers in the administrative records over time. The client number is supposed to follow an individual if he or she cycles in and out of the program, but it appears that is not always feasible. For other PIKs, the case ID ("caseid") differs from month to month, but the client number ("clnum") does not. This suggests that the same person is being successfully followed in the administrative data and that he or she has moved into different households.

In only 0.56 percent of unique PIKs, the client number changes for some months (26,915 out of 4,769,893 unique PIKs). And in only 10 percent of these PIKs (or 2,752 out of 26,915 PIKs) were other important characteristics such as sex or birth year found to be different. Thus, out of all PIKs (almost 5 million), only 2,752 appear to represent a different person, where half of the 2,752 are probably correct, and the other half are in error. In other words, since they are duplicates, one of the two observations is probably correct.

In order to match individuals in the American Community Survey (ACS), we need to treat the PIK as the best representative of unique individuals (as opposed to using the client number variable). In table A1, we compare the distributions of individuals across age, sex, and a few other variables using

the PIK'ed individuals by client number and individuals by the PIK, which essentially differs by 1,376 observations (half of the 2,752 described in the previous paragraph).

The Extent of Individuals Missing PIKs

Although we use the PIK as our ultimate identifier in order to match to individuals in the ACS, we need to use the client number as an identifier in order to assess the extent of missing PIKs. Thus, treating client number as the individual identifier, there are 4,849,914 unique individuals in the combined 2008-2009 data set. Of these, 83,624 individuals do not have a PIK, or 1.72 percent (table A1).[31]

There are 1,992,385 unique case units in the data. In less than 0.3 percent of case units (5,700) did no individual have a PIK. In only 1.8 percent of all case units did 1 person or more not have a PIK (37,049), and in the remaining 97.9 percent of case units, all individuals had a PIK (1,949,636).

Individual and SNAP Unit Characteristics by PIK Status in the Texas Data

Using the client line number as the individual identifier, individuals who were not PIK'ed were largely children (74.7 percent), and slightly more than half were males (52.7 percent) (table A1). Individuals with no PIK had a higher share of Hispanics (60.4 percent) compared to individuals who did have a PIK (51.7 percent), and individuals with no PIK had a lower share of Whites (14.0 percent) and Blacks (18.6 percent) compared to individuals with a PIK (24.3 percent and 21.2 percent, respectively). Individuals with no PIK had an average of 9.6 months in the program, while individuals with a PIK had an average of 11.7 months in the program. Average benefit amounts were higher for individuals without a PIK.

Among case units in which no one was PIK'ed, 86 percent were case units that had only one person (table A2). This is logical because there is only person to match in one-person case units. The larger the case unit, the lower the rate of no one in the unit being assigned a PIK.

B. Comparison of PIK'ed and Non-PIK'ed Samples in the ACS Data

The American Community Survey (ACS) is an annual survey that provides basic information about the U.S. population at small geographic levels. For survey evaluation purposes, the U.S. Census Bureau has assigned individuals in some of the ACS survey samples a Protected Identification Key or "PIK." The PIK allows analysts to link those individuals to other survey and administrative data.

This section describes the extent and characteristics of the 2009 ACS sample with and without PIKs. Out of the 306,081 individuals who lived in Texas while taking the ACS, 35,502 (or 11.6 percent) were not assigned a PIK.

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[31]Alternatively, we treated each separate combination of "caseid" and "clnum" as a unique individual. With that definition, the total number of individuals was 5,169,510. Of these, 85,623 individuals did not have a PIK, or 1.66 percent.

Table A1

Characteristics of individuals in the Texas administrative data, 2008-2009, by PIK status

Individuals with a PIK or not	Client Number as Identifier			PIK as ID
	PIK'ed	Not PIK'ed	All	All
	——————— *Percentage* ———————			
Sex				
Male	43.3	52.7	43.5	43.4
Female	56.7	47.3	56.5	56.7
Total	100	100	100	100
Age				
0-17	52.6	74.7	53.0	52.2
18-29	16.8	11.3	16.7	17.0
30-39	10.5	7.5	10.5	10.6
40-49	7.6	3.3	7.5	7.7
50-59	5.8	1.6	5.7	5.8
60-69	3.4	0.8	3.4	3.4
70+	3.3	0.8	3.2	3.3
Total	100	100	100	100
Race				
White	24.3	14.0	24.2	24.3
Black	21.2	18.6	21.1	21.1
Hispanic	51.7	60.4	51.9	51.8
American Indian or Alaskan Native	0.4	0.5	0.4	0.4
Asian or Pacific Islander	1.3	2.5	1.3	1.3
Omitted from record	1.1	4.1	1.2	1.1
Total	100	100	100	100
Case unit size				
1 person	15.2	5.8	15.0	14.9
2 persons	17.2	19.0	17.2	16.6
3 persons	22.1	24.5	22.1	21.9
4 persons	20.9	21.4	20.9	21.1
5 or more persons	24.7	29.4	24.8	25.5
Total	100	100	100	100
Length of time in SNAP (months)				
Mean	11.7	9.6	11.7	11.8
Median	12	8	11	12
Benefits ($)				
Mean	360	396	361	362
Median	343	367	344	345
Observations	4,766,290	83,624	4,849,914	4,769,893

Note: PIK = Protected Identification Key.

Source: ERS tabulations of Texas Supplemental Nutrition Assistance Program administrative records at the U.S. Bureau of the Census.

Table A2

Case unit characteristics in the Texas administrative data, 2008-2009, by PIK status

	All in unit PIK'ed	At least one in unit PIK'ed	No one in unit PIK'ed	All
Case unit size		*Percent*		
1 person	39.1	0.0	86.3	38.5
2 persons	21.0	23.4	9.5	21.0
3 persons	17.6	27.0	3.1	17.7
4 persons	12.3	22.4	0.8	12.4
5 or more persons	10.1	27.2	0.4	10.4
Total	100	100	100	100
Units with children				
No children	39.2	3.2	38.7	38.5
At least one child 0-17 years	60.9	96.8	61.3	61.5
Total	100	100	100	100
Units with elderly				
No elderly	84.2	96.2	89.5	84.4
At least one elderly person, 60+	15.8	3.8	10.5	15.6
Total	100	100	100	100
Observations	1,949,636	37,049	5,700	1,992,385

Note: PIK = Protected Identification Key.

Source: ERS tabulations of Texas Supplemental Nutrition Assistance Program administrative records at the U.S. Bureau of the Census.

Table B1 shows PIK rates by selected individual characteristics and table B2 shows results from a probit model of the probability of an individual getting a PIK based on individual and household composition factors.

Since SNAP program participation is at the SNAP unit level, we are able to assign participation to individuals who live in a household in which at least one person has a PIK and is linked to the Texas administrative data. We keep the non-PIK'ed individuals data in the ACS data for the calculation of SNAP units and eligibility, and then we drop individuals who do not have a PIK and do not live with anyone with a matching PIK.

Compared to PIK'ed individuals, those without a PIK in the ACS had a higher share of young people and a slightly lower share of Whites (table B3). Those individuals without a PIK had a much higher share of Hispanics (52.1 percent) than did individuals with a PIK (29.8 percent). Individuals without a PIK were more likely to be living in larger SNAP units: 24 percent of individuals without a PIK lived in SNAP units with 5 or more members, while 15.5 percent of individuals with a PIK lived in such units. Individuals without a PIK had a lower share of two-person SNAP units compared to individuals with a PIK (19 percent compared to 29.5 percent). In all of the other SNAP unit size categories, the two groups had similar shares.

Table B4 shows the results for characteristics of SNAP case units by whether all members had a PIK, at least one member had a PIK, or no member had a PIK. The last column shows the distribution of characteristics for all units.

Table B1

ACS Texas 2009 PIK rates by selected characteristics

Individual characteristics	Percent assigned a PIK
Male	88.30
Female	88.50
Has less than high school diploma	84.32
Has high school diploma	88.40
Has some college	92.23
Has college degree or post-grad	90.81
Age 0 to 15	85.33
Age 16 to 29	84.60
Age 30 to 39	85.47
Age 40 to 49	90.16
Age 50 to 59	92.34
Age 60 to 69	93.52
Age 70 and over	93.61
Non-citizen	58.54
Speaks only English at home	92.51
Speaks Spanish at home	81.11
English poor or none	64.20
White alone	89.51
Black alone	88.21
American Indian or Alaska Native alone	84.50
Asian alone	87.16
Other race alone	78.17
Two or more races	88.23
Hispanic	81.49
Non-Hispanic	91.77
Did not work	88.32
Worked all year full time	90.31
Out of the labor force	88.79
Unemployed	86.72
Self-reported disability	91.60
Urban	88.18
Rural	88.95
Observations	308,061

Note: PIK = Protected Identification Key.

Source: ERS tabulations using The American Community Survey at the U.S. Bureau of the Census.

Table B2

Probit model of the probability of being assigned a PIK for ACS 2009, Texas residents

Variable		PIK Probit Model	
		Coefficient	SE of Coef.
Unit type	Couple	0.191***	(0.019)
	Female head	0.170***	(0.015)
	Male head and multiple adult		
Children	Only children under 6	0.364***	(0.018)
	Only children age 6 to 17	0.343***	(0.013)
	Children under 6 and over 6	0.536***	(0.017)
Citizenship	Any noncitizen in unit	-0.437***	(0.015)
Elderly	Number of elderly in unit	0.303***	(0.019)
	Number of nonelderly adults in unit	0.151***	(0.014)
Disability	Unit member with self-reported disability	0.233***	(0.014)
Rural	Rural (not urban)	0.000824	(0.012)
Highest education	Has less than high school diploma	-0.0513**	(0.016)
	Has high school diploma	-0.114***	(0.013)
	Has some college		
	Has college degree	-0.0791***	(0.014)
Race	All members white only	0.0271	(0.023)
	All members Black only	-0.0110	(0.027)
	All members Amer. Indian or Alaskan Native only	-0.231***	(0.069)
	All members Asian only	-0.0239	(0.035)
	All members other race only	-0.107***	(0.027)
	At least some members 2 or more races		
Hispanic origin	All members of Hispanic origin	0.130***	(0.018)
	At least one member non-Hispanic		
Work experience	Primary worker worked all year	0.0427*	(0.018)
	Primary worker worked most of year	0.0698**	(0.022)
	Primary worker worked some of year	0.0844***	(0.024)
	Non one in unit worked during year		
Poverty status	Poverty index under 100	-0.162***	(0.016)
	Poverty index 100-129	-0.102***	(0.020)
	Poverty index 130-199	-0.101***	(0.016)
	Poverty index 200 +		
English language	All unit members speaks English at home	-0.0422*	(0.017)
	All unit members speak English poorly	-0.519***	(0.020)
Survey mode	Survey mode—by CAPI		
	Survey mode—by mail	0.872***	(0.012)
	Survey mode—by CATI	-0.253***	(0.011)
Constant		0.737***	(0.039)
Observations		305,799	

Note: z-statistics not shown, * p<0.05, ** p<0.01, and *** p<0.001. CAPI = Computer-assisted personal interviewing. CATI = Computer-assisted telephone interviewing. PIK = Protected Identification Key.

Source: ERS tabulations of The American Community Survey at the U.S. Bureau of the Census.

Table B3

Individual characteristics of Texas residents in the 2009 ACS by PIK'ed status

Individuals with a PIK or not	PIK'ed	Not PIK'ed	All
Sex			
Male	48.3	48.7	48.3
Female	51.7	51.3	51.7
Total	100	100	100
Age			
0-17	22.7	29.7	23.5
18-29	16.5	23.0	17.3
30-39	12.4	16.1	12.8
40-49	14.2	11.8	13.9
50-59	14.4	9.1	13.8
60-69	10.4	5.5	9.9
70+	9.4	4.9	8.9
Total	100	100	100
Race			
White	78.4	70.0	77.4
Black	9.8	10.1	9.9
American Indian or Alaskan Native	0.9	1.2	0.9
Asian	3.9	4.3	3.9
Native Hawaiian or Pacific Islander	0.1	0.1	0.1
Other race	6.9	14.3	7.7
Total	100	100	100
Hispanic			
Hispanic	29.8	52.1	32.4
Non-Hispanic	70.2	47.9	67.6
Total	100	100	100
SNAP unit size			
1 person	20.2	21.9	20.4
2 persons	29.5	19.4	28.3
3 persons	15.8	15.7	15.7
4 persons	19.0	19.4	19.0
5 or more persons	15.5	23.7	16.5
Total	100	100	100
Observations	4,766,290	83,624	4,849,914

Note: PIK = Protected Identification Key.

Source: ERS tabulations using the American Community Survey at the U.S. Bureau of the Census.

Table B4

Case unit characteristics of Texas residents in the 2009 ACS, by PIK status

	All in unit PIK'ed	At least one in unit PIK'ed	No one in unit PIK'ed	All
Case unit size				
1 person	44.5	0	66.5	42.9
2 persons	31.3	26.2	17.0	29.8
3 persons	10.4	23.4	6.5	11.0
4 persons	9.1	24.0	5.9	10.0
5 or more persons	4.8	26.4	4.1	6.4
Total	100	100	100	100
Units with children				
No children	74.0	21.7	81.3	70.6
At least one child 0-17 years	26.0	78.3	18.7	29.4
Total	100	100	100	100
Units with elderly				
No elderly	68.6	89.9	79.5	71.1
At least one elderly person, 60+	31.4	10.1	20.5	28.9
Total	100	100	100	100
Observations	123,020	11,039	11,677	145,736

Note: PIK = Protected Identification Key.

Source: ERS tabulations of Texas Supplemental Nutrition Assistance Program Administrative Records at the U.S. Bureau of the Census.

C. Linked Data—Comparability of Samples

In this section, we describe the comparability of the linked sample to the PIK'ed sample from the Texas SNAP administrative records. Not all of the individuals linked by PIK had participated in SNAP *before* the ACS interview date, and not all of them had participated within the previous 12 months. The total number of individuals who were matched and found to have participated within 12 months before the ACS interview was 33,209 individuals (table C1).

We assign SNAP participation to 10,070 additional individuals who were not linked by PIK but who lived in the same SNAP unit as at least one other linked individual who met the SNAP participation period criteria. That represents 23 percent of all of the individuals we estimate to have received SNAP benefits.

Table C1 shows characteristics of SNAP participants by match type—whether directly matched by their own PIK or indirectly matched by a PIK'ed SNAP unit member—in the unweighted linked data. Males were more highly represented among indirectly linked individuals, as were Hispanics. Individuals between age 30 and 49 were more highly represented among indirectly linked individuals than they were among directly linked ones. But, generally, the highest shares among both groups were of young people.

Table C2 shows the characteristics of SNAP participants in the weighted linked data compared to those in the PIK'ed Texas administrative data (using PIK as the individual identifier). The distributions for directly linked weighted and indirectly linked weighted individuals are also shown.

Table C1

Characteristics of Texas SNAP participants in linked data by match type

Individual characteristics	Directly linked to TX Admin data by own PIK	Indirectly linked to TX Admin data by other SNAP unit member PIK	Total SNAP participants
Sex			
Male	41.6	52.0	44.0
Female	58.4	48.0	56.0
Total	100	100	100
Age			
0-17	46.1	33.4	43.1
18-29	19.2	22.3	19.9
30-39	10.4	20.5	12.8
40-49	7.7	12.6	8.8
50-59	6.6	6.8	6.7
60-69	4.8	3.1	4.4
70+	5.3	1.3	4.4
Total	100	100	100
Race			
White	25.9	21.1	24.8
Black	19.1	14.4	18.0
Hispanic	52.8	62.7	55.1
Total	100	100	100
SNAP unit size			
1 person	15.8	-	12.1
2 persons	14.0	11.4	13.5
3 persons	18.1	19.8	18.5
4 persons	21.2	24.2	21.9
5 or more persons	30.9	44.7	34.1
Total	100	100	100
Observations	33,209	10,070	43,279

Note: PIK = Protected Identification Key. SNAP = Supplemental Nutrition Assistance Program.

Source: ERS tabulations using the American Community Survey at the U.S. Bureau of the Census.

Table C2

Characteristics of Texas SNAP participants in the linked data (weighted and unweighted) and in the Texas administrative data by PIK status

Individual characteristics	PIK'ed TX Admin with PIK as ID	Linked sample by PIK and SNAP participant	Linked sample, directly linked SNAP participant	Linked sample, indirectly linked SNAP participant
		——————— *Weighted* ———————		
Sex				
Male	43.4	44.5	41.9	52.4
Female	56.7	55.5	58.1	47.6
Total	100	100	100	100
Age				
0-17	52.2	44.7	48.0	34.5
18-29	17.0	21.1	20.3	23.8
30-39	10.6	13.2	10.3	22.2
40-49	7.7	8.4	7.3	11.7
50-59	5.8	5.4	5.6	4.9
60-69	3.4	3.5	3.9	2.1
70+	3.3	3.6	4.5	0.8
Total	100	100	100	100
Race				
White	24.3	21.1	22.4	17.3
Black	21.1	19.1	20.4	15.1
Hispanic	51.8	57.8	55.0	66.1
Total	100	100	100	100
Case unit size				
1 person	14.9	11.9	15.8	-
2 persons	16.6	12.6	13.1	11.0
3 persons	21.9	18.4	18.2	19.2
4 persons	21.1	22.4	21.5	24.9
5 or more persons	25.5	34.7	31.4	44.9
Total	100	100	100	100
Observations	4,769,893	4,469,342	3,362,490	1,106,852

Note: PIK = Protected Identification Key. SNAP = Supplemental Nutrition Assistance Program.

* These categories are not mutually exclusive. They are old definitions that we use here for comparison purposes across rows, but they should not be interpreted to sum to 100 within the column as the other variables do.

Source: ERS tabulations of Texas Supplemental Nutrition Assistance Program administrative records at the U.S. Bureau of the Census and the American Community Survey.

Compared to the samples of PIK'ed individuals in the Texas data, the weighted linked Texas-ACS samples have about the same share of males (43.3 and 44.5 percent, respectively) and a lower share of children, age 0 to 17 (44.7 percent), compared to the Texas administrative data (52.2 percent). The weighted linked data have similar shares of Whites and Blacks (differing from the Texas data by no more than 3 percentage points across each group) and a higher share of Hispanics (57.8 percent) compared to the share of Hispanics in the Texas data (51.8 percent). The weighted linked data have a lower share of individuals in case units with *fewer* than four members and a higher share of individuals in SNAP units of four or more.

Table C3 shows the distributions of the Texas administrative data and the weighted and unweighted linked data at the case unit level. The shares across both the weighted and unweighted linked data are similar to each other. The weighted linked data have a lower share of one-person units (33 percent), compared to 39 percent in the administrative data, and lower shares of two-member and three-member units. The weighted linked data have fewer units with children—58.7 percent, compared to 60.9 percent in the SNAP administrative data—and about the same share of units with at least one elderly member as do the administrative data.

Table C3

Case unit characteristics in the linked data and Texas administrative data, 2008-2009, by PIK status

	All in Unit PIK'ed TX Admin	Linked data, SNAP participants	Linked data, SNAP participants
		Unweighted	*Weighted*
Case unit size			
1 person	39.1	33.2	33.0
2 persons	21.0	18.4	17.4
3 persons	17.6	16.8	17.1
4 persons	12.3	15.0	15.5
5 or more persons	10.1	16.6	17.1
Total	100	100	100
Units with children			
No children	39.2	42.9	41.3
At least one child 0-17 years	60.9	57.1	58.7
Total	100	100	100
Units with elderly			
No elderly	84.2	79.7	83.1
At least one elderly person, 60+	15.8	20.3	16.9
Total	100	100	100
Observations	1,949,636	15,797	1,613,606

Note: PIK = Protected Identification Key.

Source: ERS tabulations of Texas Supplemental Nutrition Assistance Program administrative records at the U.S. Bureau of the Census.