

SNAP Receipt in SIPP: Using Administrative Records to Evaluate Data Quality*

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Abstract

The Survey of Income and Program Participation (SIPP) asks about Supplemental Nutrition Assistance Program (SNAP) receipt at the monthly level in an event history calendar. Historically, SIPP has captured higher rates of annual SNAP receipt among households than other surveys such as the Current Population Survey Annual Social and Economic Supplement (CPS ASEC) or the American Community Survey (ACS). However, SIPP estimates still fall below aggregate estimates from administrative sources. Prior research matching the CPS ASEC and ACS to state-level SNAP records found 40-60 percent of survey respondents and 18-37 percent of households did not report receipt found in administrative records. Little work has linked recent SIPP data to state SNAP records. We link administrative records from select states to SIPP for 2013 to 2019. We evaluate annual receipt, comparing administrative records to survey reports, and discuss how results compare to other surveys. We also leverage the unique monthly data available in both SIPP and administrative records to assess accuracy of the monthly SIPP reports in multiple ways. Our results provide a descriptive overview of the accuracy of annual and monthly SNAP data in SIPP, which may inform data collection or editing strategies for SNAP as well as other data collected in a similar manner. These findings lay a foundation for future work to examine these topics in more detail.

* This paper is released to inform interested parties of ongoing research and to encourage discussion of work in progress. All views and any errors are solely those of the authors and do not reflect those of the U.S. Census Bureau. The Census Bureau has reviewed this data product to ensure appropriate access, use, and disclosure avoidance protection of the confidential source data used to produce this product (Data Management System (DMS) number: P-7503064, Disclosure Review Board (DRB) approval number: CBDRB-FY22-SEHSD003-056). A version of this paper was presented at the 2022 Federal Committee on Statistical Methodology (FCSM) Research and Policy Conference. For further information on the source of the data and accuracy of the estimates, including standard errors and confidence intervals, please refer the SIPP source and accuracy statements: <https://www.census.gov/programs-surveys/sipp/tech-documentation/source-accuracy-statements.html>. For information on non-response bias, please refer to the nonresponse bias reports: <https://www.census.gov/programs-surveys/sipp/tech-documentation/nonresponse-reports.html>.

Introduction and Background

Policymakers, program administrators, and researchers rely on survey data to evaluate the efficacy of social welfare programs in the United States. While administrative records may provide accurate information about the number of people receiving assistance and how much benefits are worth, they provide limited detail about the people receiving the benefits and how program receipt affects their lives. More detailed information about the demographic characteristics and economic circumstances of recipients can be attained with survey data. A long-standing area of concern, however, is how accurately survey respondents report receipt of program benefits, with most prior research suggesting it is underreported in surveys (Meyer, Mok, and Sullivan 2009).

The Supplemental Nutrition Assistance Program (SNAP, formerly known as food stamps) is the largest nutrition assistance program in the United States and provides low-income households with monthly benefits to purchase food. SNAP benefit amounts depend on recipients' incomes and household sizes, though the benefit is available for all who meet eligibility requirements. Prior to the COVID-19 pandemic, SNAP provided benefits to more than 35 million low-income Americans each month.¹

Because SNAP is a critical component of the United States' social safety net, many surveys, including the Survey of Income and Program Participation (SIPP), gather information about SNAP benefits from respondents. Historically, aggregate estimates from SIPP have produced higher rates of annual SNAP receipt among households and individuals than other sources such as the Current Population Survey Annual Social and Economic Supplement (CPS ASEC) (Meyer et al. 2009). However, SIPP estimates have generally still fallen short of administrative benchmarks. This underestimation of SNAP receipt is persistent across survey data sources and can have important influences on other estimates such as the Supplemental Poverty Measure (Fox et al. 2017; Shantz and Fox 2018; Stevens, Fox, and Heggeness 2018).

Understanding the quality of survey reports is critical for researchers and policymakers who rely on these data to draw conclusions and make decisions. However, the accuracy of aggregate estimates says little about the accuracy of individual responses. Underestimates of totals indicate that some respondents are not reporting SNAP benefits, but are those who do report their benefits reporting them correctly? The quality of individual responses is important for capturing the experiences of SNAP recipients and estimating relationships between SNAP receipt and other topics of interest.

Prior research comparing survey reports to administrative records of SNAP receipt has predominately relied on the CPS ASEC or the American Community Survey (ACS). While these surveys provide larger samples than SIPP, both measure SNAP receipt at the annual level and collect limited information about benefit receipt compared to SIPP. Research matching the CPS ASEC to state-level SNAP records has found that roughly 40 to 50 percent of survey respondents do not report receipt found in administrative records (Fox et al. 2017; Shantz and Fox 2018; Stevens et al. 2018). SIPP's smaller sample limits certain subgroup estimates (e.g., state-level estimates), but it allows for richer data to be collected from each respondent. Work on the 2008 SIPP panel finds relatively accurate reporting at the aggregate annual level for individuals (Colby, Debora, and Heggeness 2016) but underreporting of SNAP at the household level (Celhay, Meyer, and Mittag 2022). This previous work linking SIPP to administrative records

¹ More details available at <<https://fns-prod.azureedge.us/sites/default/files/resource-files/34SNAPmonthly-6.pdf>>.

suggests SIPP respondents report SNAP receipt more accurately than in other surveys. Changes in how SIPP is collected raise questions about whether previously observed patterns hold in the most recently available SIPP data.

In this paper, we build on this prior work by linking the most recently available state administrative SNAP records (12 states) to the most recently available SIPP data covering calendar years 2013 to 2019. We evaluate annual receipt, comparing administrative records to survey reports and discuss how results compare to other surveys like CPS ASEC. We also leverage the unique monthly-level data available in both SIPP and administrative records to assess accuracy of the monthly SIPP reports in multiple ways. We find annual reports of SNAP in SIPP are more accurate than similar annual reports from other surveys, but that the accuracy of monthly reports depend on the number of months respondents received SNAP during the year. Our results provide a descriptive overview of the accuracy of annual and monthly SNAP data in SIPP at the individual level, which may help inform data collection or editing strategies for SNAP and other topics collected in a similar manner. These findings also lay a foundation for future work to examine these topics in more detail.

Data and Methods

Data Sources

This analysis relies on both survey data and administrative records. Data from the 2014 to 2020 SIPP files are used to provide estimates for calendar years 2013 to 2019. SIPP is a nationally representative, longitudinal survey administered by the Census Bureau that collects information on the dynamics of employment, income, household composition, and eligibility for and participation in government assistance programs. It is a leading source of information on topics such as economic well-being, family dynamics, education, wealth and assets, health insurance, child care, and food security. Monthly data allow for measurement of changes in household and family composition, program participation, and economic circumstances over time.

Since the 2014 SIPP, information about SNAP has been collected in an event history calendar (EHC). The EHC was introduced to aid respondent recall with the shift to a longer reference period (Moore 2012). Beginning in 2014, the reference period covers the prior calendar year; earlier SIPP panels used a reference period of the prior four months. Respondents are asked, “Are you currently receiving Food Stamp or SNAP benefits?” If they say no to this question, they are then asked, “Did you receive Food Stamps or SNAP benefits at any time since January of [prior year]?”² Respondents who report currently receiving SNAP or receiving SNAP at some point since January of the prior year are asked to provide information about who else in the household was covered by the benefit, start and end months of SNAP receipt, reasons receipt began and ended, and monthly benefit amounts. Data editing resolves any inconsistencies between reports within a household, and each person in the household is assigned an indicator for SNAP receipt for every month of the reference year (monthly receipt) and an indicator for SNAP receipt at any point during the reference year (annual receipt).

The U.S. Department of Agriculture’s Food and Nutrition Service (FNS) publishes monthly data showing how many people receive benefits and how much those benefits are worth in aggregate. However,

² The exact question wording depends on whether respondents are reporting about themselves or another household member and whether they are being interviewed for the first time or were interviewed in prior waves.

administrative records identifying individuals who receive SNAP benefits are maintained by each state. We pool records from 12 states that had available administrative records, covering more states and years than previous work linking survey data to SNAP administrative records.³

Though not all states had shared data with the Census Bureau for every year in the analysis, most available states, shown in Table 1, had data covering all years between 2013 and 2019. Data were not available for Connecticut in 2019, Maryland from 2017 to 2019, or North Dakota in 2013. We benchmarked the administrative records by calculating the number of persons receiving SNAP in each month for each year data were available from each state, then comparing that number to the state total reported by FNS. In some instances, data were provided but were not included in the analysis because the estimates derived from the administrative records did not align with reported FNS values.⁴

The state administrative records contain monthly receipt information for all individuals receiving SNAP. Details also exist at the SNAP benefit unit level, though we focus on the individual level in this paper. One challenge of working with state-level administrative data is the variation in data files received from states. We used a program developed by other Census Bureau researchers that extracts and harmonizes the SNAP data from each available state, maximizing comparability.

Data Linkage, Sample Restrictions, and Analysis Plan

After the administrative records were benchmarked and harmonized, we restricted these data to cases that had a matching Protected Identifier Key (PIK) to a respondent in SIPP. The PIK is assigned by the Census Bureau with the Person Identification Validation System (PVS), which takes information from the Social Security Administration on births, citizenship, and deaths, as well as other government records to assign a PIK based on a probabilistic match given available demographic information (Wagner and Layne 2014).

We made several data restrictions in both SIPP and the administrative records to facilitate data linkage and analysis. First, we removed a small share of cases in SIPP for which PIK or survey ID variables provided conflicting information (e.g., multiple PIKs were assigned to a single survey ID or multiple survey IDs were assigned a single PIK) and cases where no PIK was available.⁵ Once SIPP data were linked to administrative records, we removed SIPP records in states and years for which no administrative records were provided to the Census Bureau (approximately 83 percent of SIPP person-month cases) and any records in which the state that supplied an administrative record did not match a

³ Administrative records come from several states that have an existing agreement with the Census Bureau to allow usage of reciprocity data to improve Census Bureau estimates.

⁴ In Connecticut, administrative records provided to the Census Bureau captured less than one percent of FNS totals by the end of 2018. This appears to be due to a change in their reporting system in 2016. Though differences between the two sources did not emerge immediately upon the introduction of the new reporting system, we only include Connecticut data from before the reporting system change (2013-2015). Administrative records for Michigan from 2013-2016 and Wyoming from 2013-2019 were provided to the Census Bureau but differ from FNS totals by at least 10 percent in nearly all available months and we exclude all available years for both states. Over half the monthly totals from administrative records for North Dakota in 2019 differ from FNS totals by at least 10 percent and are therefore excluded. Additionally, administrative records for Oregon from 2018-2019 were provided to the Census Bureau, but we were unsuccessful in harmonizing these data with other state-year combinations and excluded them from the analyses.

⁵ The PIK rate in the SIPP data used here is 92%.

respondent's reported state of residence in SIPP (less than 1 percent of the remaining SIPP person-month cases). Finally, we restricted the data to only those who were observed for all 12 months of a year in SIPP and who *reported* their SNAP status for all 12 months. This removed cases observed for only part of the survey year (including infants born midyear) and any cases with imputed SNAP status at any point during the year. These final two restrictions further limited the remaining person month cases by about 7 percent.

For the 2014 SIPP panel and beyond, respondents can be interviewed up to four different times, meaning some respondents from the 2014 panel contribute as many as 48 months of data to our sample. Due to ongoing data collection and editing, members of the 2018 panel can contribute a maximum of 36 months. Further, sample restrictions for the analysis mean that every person will contribute at least 12 months to the analysis. Once all restrictions and linkages have been made, our analytic sample includes 26,500 persons, 54,500 person-years, and 654,000 person-months.⁶

In the results presented below, we provide a descriptive accounting of survey reports of SNAP receipt compared to administrative records. We compare aggregate estimates from both data sources as well as the concurrence of individual responses between the two data sources at the annual and monthly levels. All SIPP cases analyzed here have either a "yes" or "no" value for SNAP receipt at both the monthly and annual levels. The administrative records only contain information about those *receiving* SNAP in each month. We assign "no" values for SNAP administrative records in states and years that administrative records are available but in which a SIPP case was not matched to an administrative record. We then create annual administrative record receipt values from monthly values for each case. This results in annual and monthly "yes" or "no" SNAP receipt values for each case from both SIPP and the administrative records.

Given the limited number of states represented in the administrative records and additional sample restrictions made (e.g., excluding imputed SNAP receipt), it is challenging to make inferences to any larger population. Because of this, the analyses do not use survey weights or other adjustments. Instead, our results speak to the accuracy of SIPP survey respondents who were assigned a PIK and who reported their SNAP receipt in the specific years and states for which administrative records are available.^{7,8} Future work will explore the feasibility of incorporating weights into the analysis.

Results

Annual Receipt

⁶ All numbers presented in the text and tables are rounded to levels specified by the Census Bureau for disclosure avoidance.

⁷ Many analyses using survey data linked to administrative records adjust for non-random linking of survey data to administrative records (due to the inability to accurately assign a PIK) using inverse probability weights (IPW). Discussions of the non-random nature of who is successfully assigned a PIK are available elsewhere (Colby et al. 2016, NORC 2011). We choose not to use IPW to adjust for this in our analysis primarily due to additional non-representativeness of our analytic sample. Even with survey weights and IPW adjustments, our sample would be restricted in the universe it was meant to represent. Interpretation of all results should keep this in mind.

⁸ The estimates are unweighted and therefore cannot be generalized to the population. No statistical inferences are being made, so comparative statements in this report are not supported by statistical testing. The results presented are only applicable to the described cohort of SIPP survey respondents.

To begin, we examine annual receipt details from the linked data separately for SIPP and administrative records (Table 2). In the linked SIPP, 14.4% of observed person-years included SNAP receipt at some point during the year compared to 18.6% in the linked administrative records. Full-year receipt was more commonly observed in the SIPP data than the administrative records. Conversely, partial-year receipt and split-receipt (i.e., SNAP was received in at least two distinct periods during the year with at least one month of non-receipt in between) was more common in the administrative records than in SIPP. Though these results do not compare individual data matches between SIPP and the administrative records, they do illustrate some key differences between the two datasets. As expected, SIPP underestimates SNAP at the annual level. However, it also appears to overestimate the number of months the benefit was received for the full year and miss cases in which the benefit was received for only part of the year, or both.

Table 2 also provides detail on how the linked SIPP data compares to the full SIPP data. The linked SIPP data have a slightly higher proportion of respondents reporting SNAP receipt for 12 months in a year compared to the full SIPP data and a slightly lower proportion reporting SNAP receipt for only part of the year. But overall, the patterns in the linked SIPP data are similar to those in the complete SIPP sample.

Next, we move beyond aggregate comparisons and focus on concurrence between SIPP reports and administrative records for individuals at the annual level (Table 3). Among those receiving SNAP at some point during the year according to administrative records, 75% reported SNAP receipt at some point during the year in SIPP. This number is higher than comparable numbers reported for CPS ASEC (Fox et al. 2017; Shantz and Fox 2018; Stevens et al. 2018) but lower than numbers from the 2008 SIPP Panel (Colby et al. 2016).⁹ This difference from prior work linking administrative records to SIPP may come from several sources including the redesign in data collection beginning with the 2014 SIPP panel, the difference in administrative records used between the two analyses, and declining survey response rates. Among those not receiving SNAP according to administrative records, 99% reported no SNAP receipt in SIPP, indicating that false positive reports (reporting SNAP when it was not actually received) are far less common than false negative reports (not reporting SNAP when it was received).

Table 4 provides basic sociodemographic information for each of the outcomes presented in Table 3. Compared to those with true positive reports, those with false negative reports are more likely to be younger adults (ages 18-34), less likely to have household income below 100% of the official poverty threshold, and more likely to have household income at 200% of the official poverty threshold or higher. This may reflect recipients who are relatively better off financially and only received SNAP for a short duration during the year not reporting a short receipt spell at all. SNAP may be less salient in the lives of these people (especially if it was only received for a short period), or they may feel more stigma reporting receipt of government assistance. The false positive reports appear to be concentrated among those below 200% of the official poverty threshold. These respondents are potentially eligible for SNAP, perhaps suggesting they received the benefit at some point, but that receipt did not align with the year they reported it. Alternatively, it may reflect program confusion (reporting SNAP when they received some other nutrition assistance) or potential inaccuracies in the matching between SIPP and administrative records.

⁹ Some prior work linking ACS or SIPP to administrative records has been done at the household level, making comparisons with our individual-level analysis difficult.

Monthly Receipt

As mentioned earlier, SIPP has the unique benefit of collecting details about SNAP receipt at the monthly level compared to other common data sources such as ACS and CPS ASEC, which only collect receipt at the annual level.¹⁰ Table 5 presents monthly receipt concurrence for individuals between SIPP and administrative records. Among those who received SNAP in a given month according to administrative records, SIPP correctly measured 77% of that receipt. This true positive rate is slightly higher than the equivalent number at the annual level. Like the annual level, false positives at the monthly level are rarer than false negatives.

Understanding monthly concurrence numbers can be misleading, though, if we do not account for how long somebody was receiving the benefit. For instance, if we limit the analysis to just those who received SNAP for all 12 months of a year, we find that the true positive rate increases to 85% (results not shown in tables). But if we examine only those who received SNAP for less than 12 months of the year, we find the true positive rate drops to 58%. This offers additional evidence that partial-year receipt is the least likely to be accurately captured in SIPP.

Beyond concurrence between data sources at the monthly level, we also examine whether the number of total months of SNAP receipt reported in SIPP matched administrative records, underestimated administrative records, or overestimated administrative records. It is possible that respondents are reporting the correct total number of months, but incorrectly reporting individual months. Table 6 presents these numbers separately by the number of months SNAP was received during the year according to administrative records. The results show that SIPP accurately measures respondents who did not receive SNAP at any point during the year, a finding consistent with the low false positive reports in Tables 3 and 5. Additionally, for respondents with 12 months of SNAP receipt in administrative records, SIPP captures over 80% of these cases accurately. However, for those who received SNAP for just part of the year, SIPP is more likely to underestimate than overestimate the total months received during the year. The only exception to this is for those who received SNAP for 10 or 11 months, which were each more likely to be overestimated in SIPP. Like many of the preceding results, these numbers highlight challenges of accurately capturing partial-year receipt.

Finally, Table 7 provides detail about those with different durations of SNAP receipt according to the administrative records. Compared to full-year cases, individuals with partial-year cases are more likely to be younger adults (ages 18-34), non-Hispanic White, and have household incomes above 200% of the official poverty threshold. Additionally, individuals with partial-year receipt are very unlikely to have their SNAP receipt patterns across the year perfectly captured in SIPP. Unsurprisingly, these results are consistent with the results observed for cases with false negative SNAP reports at the annual level.

Conclusion and Next Steps

Reports of SNAP participation in SIPP differ from administrative records of SNAP participation at both the annual and monthly levels. At the annual level, SIPP correctly measures a higher proportion of individual-level SNAP receipt than other survey data sources, even though SIPP still underestimates the overall receipt of SNAP relative to FNS aggregate statistics. Though not a focus of this paper, this may be

¹⁰ CPS ASEC does collect information about the number of months SNAP was received, but not the specific months of receipt.

due to differences in the way the questions are asked between the surveys, including SIPP's use of an event history calendar, or the longitudinal nature of the survey in which repeated interviews may be beneficial in terms of engaging respondents and developing rapport with the interviewer.

At the monthly level, results are more nuanced and cannot be compared to other surveys since SIPP is unique in its collection of that high-frequency receipt information. Individual-level monthly comparisons between SIPP reports and administrative records have a slightly higher true positive rate than annual level measures. However, this is mostly driven by respondents who received SNAP for an entire year and correctly reported that full-year receipt. The accuracy of responses among those who received SNAP for only part of the year is lower.

Despite the challenges of measuring partial-year receipt, those who do not receive SNAP or receive SNAP for the entire year represent the vast majority of cases and are quite accurately measured. This finding may help target potential changes to measurement or data editing to focus on partial-year SNAP receipt to improve overall measurement of SNAP receipt. For instance, an additional follow-up question for those who say they did not receive SNAP at any point during the reference year may be particularly useful, especially for those who already indicated potential SNAP eligibility based on income. Alternatively, expansion of administrative records usage in the data editing and imputation processes may also be beneficial in both increasing accuracy of partial year reports and reducing respondent burden.

Though we only examine SNAP here, it is possible that measurement of other similar social safety net programs such as Temporary Assistance for Needy Families (TANF) and the Special Supplemental Nutrition Program for Women, Infants, and Children (WIC) face similar challenges that could be resolved with similar solutions. Other content domains in SIPP collected in the event history calendar (including jobs, education, and health insurance) may face fewer challenges since they are less transitory in nature than social welfare programs. Regardless, the findings presented above lay a foundation for future research related to measurement challenges and potential data collection or data editing solutions.

This paper represents an important step in understanding the accuracy of SNAP reporting, particularly at the monthly level, but many additional avenues for future research remain. Here, we focused on individual-level annual and monthly responses, but administrative records also provide information on the benefit unit, including members of the unit and amounts received each month. Comparing SIPP benefit units to administrative record benefit units may provide additional insight into types of mismatches between survey reports and administrative records (e.g., parents reported their children as benefit recipients, but forgot to report themselves as being covered by the benefit). Comparing survey-reported benefit amounts to administrative records may also reveal important patterns. If benefit amounts are misreported, it may distort our understanding of the effect of SNAP on certain outcomes or measures, especially for users who are most interested in month-level variation. Prior work using CPS ASEC has found that underreports of receipt can be offset by overreports of amounts when considering annual or average monthly benefit totals (Shantz and Fox 2018). Whether similar patterns exist in SIPP should be explored, though the way monthly data are collected in SIPP may reduce the likelihood of such offsetting reports of receipt and benefit amount.

We may also wish to consider if the longitudinal nature of SIPP is beneficial in more accurately capturing SNAP receipt than other surveys. Respondents who give at least two years of interviews may be more likely to provide accurate reports, while those who attrite from the survey are perhaps less likely to

recall or share information. Understanding whether and how reports differ across the lifecycle of a survey panel may reveal additional opportunities for improving data collection and editing.

Future work might also extend the comparisons between survey data and administrative records to imputed information, especially given rising levels of unit and item non-response in surveys (Groves 2006; Meyer et al. 2015), and more thoroughly explore predictors or correlates of misreporting. This information, especially combined with the increased use of administrative records in the data editing and imputation process, could improve data quality of social safety net imputation (Rothbaum, Fox, and Shantz 2021). Finally, results from SNAP should be compared to similar programs such as TANF and WIC as administrative records become increasingly available. Commonalities and differences between survey reports of different social safety net programs may help pinpoint measurement challenges and point to improvements for measuring these constructs and others.

References

- Celhay, Pablo A., Bruce D. Meyer, and Nikolas Mittag. 2022. "What Leads to Measurement Errors? Evidence from Reports of Program Participation in Three Surveys." NBER Working Paper No. 29652.
- Colby, Sandy, Jose DeBora, and Misty L. Heggeness. 2016. "How Well Do Individuals Report Supplemental Nutrition Assistance Program (SNAP) Take Up in Household Surveys?" Social, Economic, and Housing Statistics Division (SEHSD) Working Paper No. 2017-03. U.S. Census Bureau: Suitland, MD.
- Fox, Liana E., Misty L. Heggeness, Jose Pacas, and Kathryn Stevens. 2017. "Precision in Measurement: Using Supplemental Nutritional Assistance Program (SNAP) Administrative Records to Evaluate Poverty Measurement." Social, Economic, and Housing Statistics Division (SEHSD) Working Paper No. 2017-49. U.S. Census Bureau: Suitland, MD.
- Meyer, Bruce D., Wallace K.C. Mok, and James X. Sullivan. 2009. "The Under-Reporting of Transfers in Household Surveys: Its Nature and Consequences." NBER Working Paper No. 15181.
- Meyer, Bruce D., Wallace K.C. Mok, and James X. Sullivan. 2015. "Household Surveys in Crisis." *Journal of Economic Perspectives* 29(4): 199-226.
- Groves, Robert M. 2006. "Nonresponse Rates and Nonresponse Bias in Household Surveys." *Public Opinion Quarterly* 70(5): 646-675
- Moore, Jeffrey. 2012. "Analysis of Recorded Interviews in the 2010 SIPP-EHC Field Test: Executive Summary." Social, Economic, and Housing Statistics Division (SEHSD) Working Paper No. 2012-17. U.S. Census Bureau: Suitland, MD.
- NORC. 2011. "Assessment of the U.S. Census Bureau's Person Identification Validation System." NORC at the University of Chicago: Bethesda, MD.
- Rothbaum, Jonathan, Liana Fox, Kathryn Shantz. 2021. "Fixing Errors in a SNAP: Addressing SNAP Underreporting to Evaluate Poverty." *AEA Papers and Proceedings*, 112:330-34.
- Shantz, Kathryn, and Liana E. Fox. 2018. "Precision in Measurement: Using State-Level Supplemental Nutrition Assistance Program and Temporary Assistance for Needy Families Administrative Records and the Transfer Income Model (TRIM3) to Evaluate Poverty Measurement." Social, Economic, and Housing Statistics Division (SEHSD) Working Paper No. 2018-30. U.S. Census Bureau: Suitland, MD.
- Stevens, Kathryn, Liana E. Fox, and Misty L. Heggeness. 2018. "Precision in Measurement: Using State-Level SNAP Administrative Records and the Transfer Income Model (TRIM3) to Evaluate Poverty Measurement." Social, Economic, and Housing Statistics Division (SEHSD) Working Paper No. 2018-15. U.S. Census Bureau: Suitland, MD.
- Wagner, Debra, and Mary Layne. 2014. The Person Identification Validation System: Applying the Center for Administrative Records and Research and Applications' Record Linkage Software. Center for Administrative Records Research and Applications Report Series No. 2014-01. U.S. Census Bureau: Suitland, MD.

Tables

	2013	2014	2015	2016	2017	2018	2019
Connecticut	●	●	●	○	○	○	--
Hawaii	●	●	●	●	●	●	●
Idaho	●	●	●	●	●	●	●
Indiana	●	●	●	●	●	●	●
Maryland	●	●	●	●	--	--	--
Michigan	○	○	○	○	--	--	--
Mississippi	●	●	●	●	●	●	●
Nevada	●	●	●	●	●	●	●
New York	●	●	●	●	●	●	●
North Dakota	--	●	●	●	●	●	○
Oregon	●	●	●	●	●	○	○
Tennessee	●	●	●	●	●	●	●
Utah	●	●	●	●	●	●	●
Wyoming	○	○	○	○	○	○	○

Notes: A closed circle (●) indicates that data were provided and used; an open circle (○) indicates data were provided but not used in this analysis; "--" indicates data were not provided to the Census Bureau for that particular year-state combination.

Table 2. Annual Receipt Detail by Data Source

	Linked Data		Full SIPP
	SIPP	Administrative Records	
SNAP receipt at some point during year	0.144	0.186	0.131
SNAP receipt in all 12 months	0.116	0.105	0.102
Partial year SNAP receipt	0.028	0.080	0.029
Split receipt during year	0.001	0.026	0.001
SNAP receipt not reported during year	0.856	0.815	0.869
Person-years	54,500	54,500	353,000

Sources: U.S. Census Bureau, Survey of Income and Program Participation (SIPP), Survey Years 2014-2020, and state SNAP administrative records, 2013-2019. The linked SIPP and administrative records cover Connecticut, Hawaii, Idaho, Indiana, Maryland, Mississippi, Nevada, New York, North Dakota, Oregon, Tennessee, and Utah.

Notes: All estimates are unweighted. The “Full SIPP” column restricts SIPP data to cases with reported (non-imputed) SNAP and 12 months of observation. We assign “no” values for SNAP administrative records in states and years that administrative records are available but in which a SIPP case was not matched to an administrative record.

Table 3. Annual Concurrence of SNAP Receipt, SIPP Reports Versus Administrative Records

Administrative Records	SIPP		Total
	No SNAP Receipt	SNAP Receipt	
No SNAP Receipt	0.99	0.01	1.00
	0.95	0.04	0.81
SNAP Receipt	0.26	0.75	1.00
	0.06	0.96	0.19
Total	0.86	0.14	1.00
	1.00	1.00	1.00

Sources: U.S. Census Bureau, Survey of Income and Program Participation (SIPP), Survey Years 2014-2020, and state SNAP administrative records, 2013-2019. The linked SIPP and administrative records cover Connecticut, Hawaii, Idaho, Indiana, Maryland, Mississippi, Nevada, New York, North Dakota, Oregon, Tennessee, and Utah.

Notes: All estimates are unweighted. The first row displays row percentage; the second row displays column percentage. N=54,500.

Table 4. Sociodemographic Characteristics by Annual Receipt Concurrence

	Annual Receipt Concurrence (SIPP vs. Administrative Records)				Overall
	True Negative	False Positive	False Negative	True Positive	
Age					
0-4	0.04	0.07	0.10	0.09	0.05
5-17	0.14	0.16	0.32	0.29	0.17
18-34	0.18	0.30	0.27	0.19	0.19
35-64	0.42	0.33	0.25	0.31	0.39
65 or over	0.22	0.10	0.06	0.13	0.20
Sex					
Female	0.51	0.54	0.53	0.59	0.52
Male	0.49	0.42	0.48	0.41	0.48
Race					
Non-Hispanic White	0.73	0.35	0.45	0.48	0.68
Non-Hispanic Black	0.11	0.21	0.27	0.28	0.14
Other	0.16	0.40	0.28	0.24	0.18
Percentage of Official Poverty Threshold					
0-99	0.06	0.35	0.23	0.48	0.13
100-199	0.15	0.32	0.39	0.35	0.19
200-299	0.19	0.13	0.20	0.09	0.17
300-399	0.16	0.12	0.08	0.04	0.14
400-499	0.44	0.04	0.09	0.03	0.36
Person-months	44,000	350	2,600	7,500	54,500

Sources: U.S. Census Bureau, Survey of Income and Program Participation (SIPP), Survey Years 2014-2020, and state SNAP administrative records, 2013-2019. The linked SIPP and administrative records cover Connecticut, Hawaii, Idaho, Indiana, Maryland, Mississippi, Nevada, New York, North Dakota, Oregon, Tennessee, and Utah.

Notes: All estimates are unweighted. Values may not sum as expected due to rounding.

Table 5. Monthly Concurrence of SNAP Receipt, SIPP Reports Versus Administrative Records

Administrative Records	SIPP		Total
	No SNAP Receipt	SNAP Receipt	
No SNAP Receipt	0.98	0.02	1.00
	0.96	0.10	0.85
SNAP Receipt	0.23	0.77	1.00
	0.04	0.90	0.15
Total	0.87	0.13	1.00
	1.00	1.00	1.00

Sources: U.S. Census Bureau, Survey of Income and Program Participation (SIPP), Survey Years 2014-2020, and state SNAP administrative records, 2013-2019. The linked SIPP and administrative records cover Connecticut, Hawaii, Idaho, Indiana, Maryland, Mississippi, Nevada, New York, North Dakota, Oregon, Tennessee, and Utah.

Notes: All estimates are unweighted. The first row displays row percentage; the second row displays column percentage. N=654,000.

Table 6. Total Months of SNAP Receipt During Year, SIPP Reports Versus Administrative Records

Total Months of Receipt in Administrative Records	Total Months of Receipt Reported in SIPP Compared to Administrative Records			N
	Match	Lower	Higher	
0	0.99	--	0.01	44,500
1	0.05	0.72	0.23	300
2	0.11	0.73	0.16	250
3	0.11	0.75	0.14	300
4	0.06	0.73	0.22	300
5	0.07	0.67	0.26	350
6	0.07	0.71	0.22	400
7	0.04	0.64	0.32	300
8	0.04	0.53	0.43	300
9	0.05	0.54	0.41	400
10	0.05	0.45	0.50	550
11	0.04	0.32	0.63	900
12	0.82	0.18	--	5,700
Overall	0.90	0.06	0.04	54,500

Sources: U.S. Census Bureau, Survey of Income and Program Participation (SIPP), Survey Years 2014-2020, and state SNAP administrative records, 2013-2019. The linked SIPP and administrative records cover Connecticut, Hawaii, Idaho, Indiana, Maryland, Mississippi, Nevada, New York, North Dakota, Oregon, Tennessee, and Utah.

Notes: All estimates are unweighted. Values may not sum as expected due to rounding.

Table 7. Respondent Profile by Administrative Record SNAP Receipt

	Administrative Record SNAP Receipt			Overall
	No SNAP During Year	Partial-Year SNAP	Full-Year SNAP	
Age				
0-4	0.04	0.10	0.08	0.05
5-17	0.14	0.28	0.30	0.17
18-34	0.18	0.27	0.16	0.19
35-64	0.41	0.28	0.30	0.39
65 or older	0.22	0.05	0.15	0.20
Sex				
Female	0.51	0.55	0.59	0.52
Male	0.49	0.44	0.42	0.48
Race				
Non-Hispanic White	0.73	0.52	0.44	0.68
Non-Hispanic Black	0.11	0.24	0.31	0.14
Other	0.16	0.24	0.26	0.18
Percentage of Official Poverty Threshold				
0-99	0.06	0.30	0.51	0.13
100-199	0.15	0.39	0.34	0.19
200-299	0.19	0.17	0.08	0.17
300-399	0.16	0.07	0.04	0.14
400-499	0.44	0.06	0.03	0.36
Number of Matched Months in SIPP				
0 months	0.01	0.00	0.14	0.02
1-11 months	0.00	0.95	0.04	0.08
12 months	0.99	0.04	0.83	0.90
Person-years	44,500	4,400	5,700	54,500

Sources: U.S. Census Bureau, Survey of Income and Program Participation (SIPP), Survey Years 2014-2020, and state SNAP administrative records, 2013-2019. The linked SIPP and administrative records cover Connecticut, Hawaii, Idaho, Indiana, Maryland, Mississippi, Nevada, New York, North Dakota, Oregon, Tennessee, and Utah.

Notes: All estimates are unweighted. Values may not sum as expected due to rounding.