

Reaching Those in Need:

ESTIMATES OF STATE SUPPLEMENTAL NUTRITION ASSISTANCE PROGRAM PARTICIPATION RATES IN 2018



The Supplemental Nutrition Assistance Program (SNAP) provides nutrition assistance to eligible, low-income individuals and households in need. SNAP is the largest of the domestic nutrition assistance programs administered by the Food and Nutrition Service (FNS) of the U.S. Department of Agriculture (USDA). During fiscal year 2020, the program served nearly 44 million people in an average month at a total annual cost of nearly \$85 billion in benefits.

SNAP provides an important support for “working poor” people—people who are eligible for SNAP benefits and live in households in which someone earns income from a job. In fiscal year 2019, 42 percent of all SNAP participants lived in households with earned income. That was up from 30 percent in 1996, when passage of the Personal Responsibility and Work Opportunity Reconciliation Act placed more emphasis on work for public assistance recipients.

The SNAP participation rate is the percentage of eligible people in the United States who actually participate in the program. Lauffer and Vigil (2021) examined national SNAP participation rates and rates for socioeconomic and demographic subgroups of people. This research brief presents estimates of State SNAP participation rates for

all eligible people and working poor people for fiscal year 2018. These estimates can be used to assess recent program performance and focus efforts to improve access.

Participation rates in fiscal year 2018

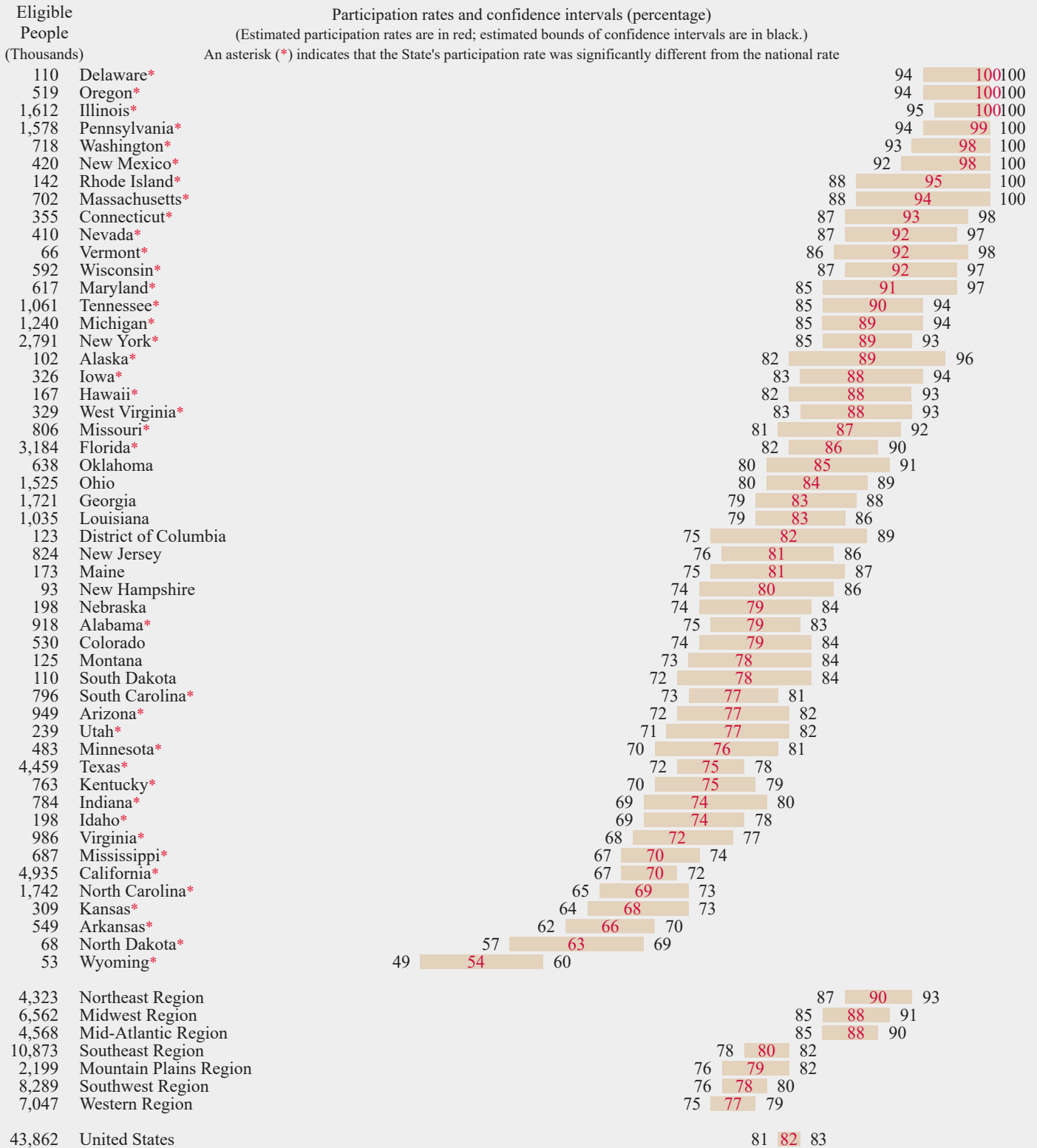
An estimated 82 percent of eligible people received SNAP benefits in fiscal year 2018. Participation rates varied widely from State to State, however. In 22 States, rates were significantly higher (in a statistical sense) than the national rate, and in 17 States, rates were significantly lower.

Participation rates also varied among the regions. The Northeast Region had the highest rate, 90 percent, which was significantly higher than the rates for other regions except the Midwest and Mid-Atlantic Regions. The Western Region’s participation rate of 77 percent was significantly lower than the rates for other regions except the Mountain Plains and Southwestern Regions. (See the last page for a map showing regional boundaries.)

An estimated 74 percent of eligible working poor people participated in SNAP in fiscal year 2018. As with participation rates for all eligible people, rates for working poor people varied widely across States. In 13 States, SNAP participation rates for working poor people were significantly higher than the national rate, and in 10 States and the District of Columbia they were significantly lower.

In fiscal year 2018, the national SNAP participation rate for working poor people was significantly lower than the national rate for all eligible people. In 27 States and the District of Columbia, the participation rate for working poor people was likewise significantly lower than the rate for all eligible people. In 7 of these States and the District of Columbia, the difference between the rates for working poor people and all eligible people was significantly greater than the 8 percentage point difference found in the national rates. In no State was the rate for working poor people significantly higher than the rate for all eligible people.

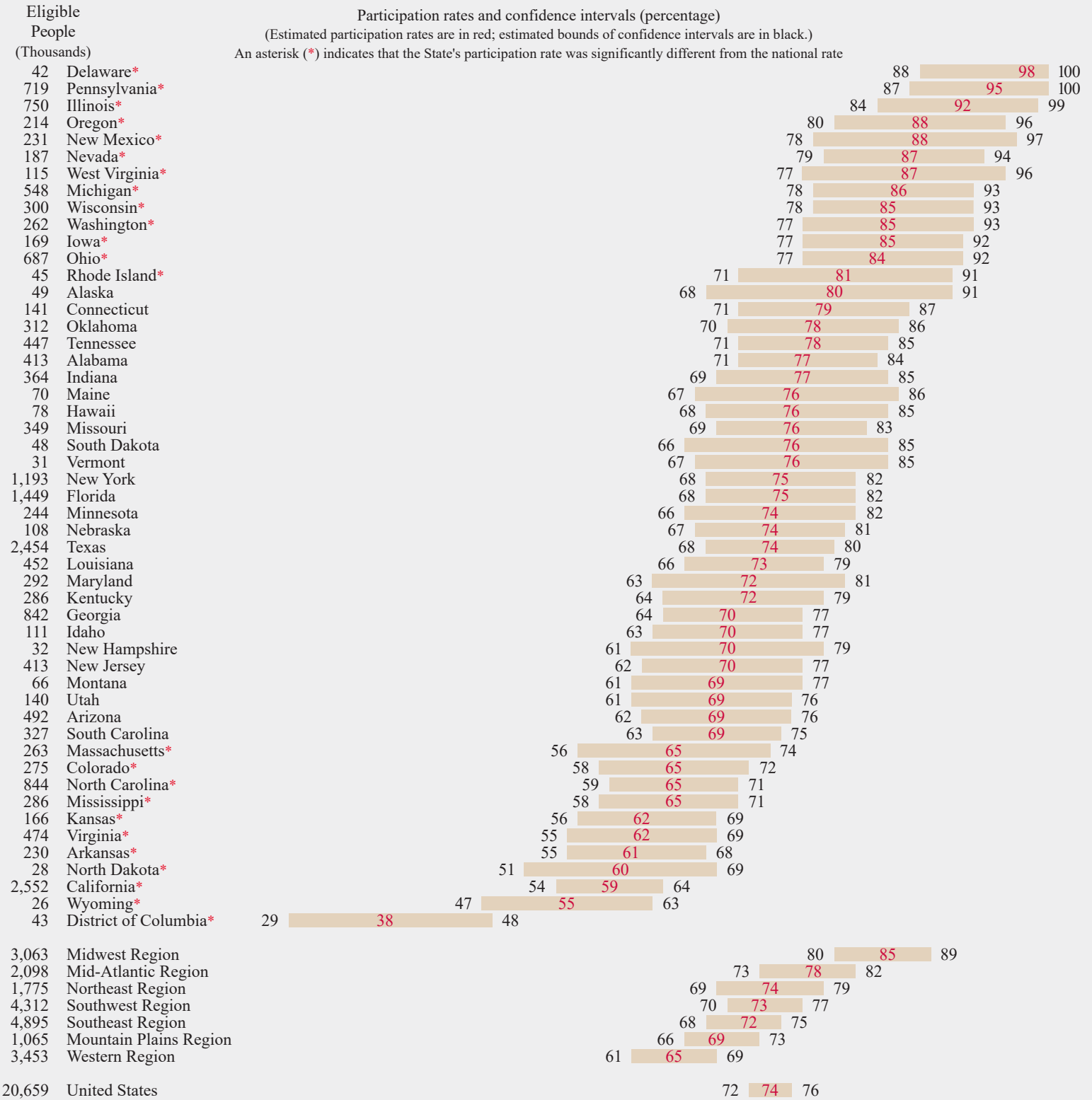
How many people were eligible in 2018? What percentage participated?



A confidence interval expresses our level of certainty about the true value of a participation rate. Each interval displayed here is a 90 percent confidence interval. One interpretation of such an interval is that there is a 90 percent chance that the true participation rate falls within the estimated bounds. For example, although our best estimate is that New Jersey's participation rate was 81 percent in 2018, the true rate might have been higher or lower. However, the chances are 90 in 100 that the true rate was between 76 and 86 percent.

See the Estimation method section for information on participation rates of 100 percent.

How many working poor people were eligible in 2018? What percentage participated?



A confidence interval expresses our level of certainty about the true value of a participation rate. Each interval displayed here is a 90 percent confidence interval. One interpretation of such an interval is that there is a 90 percent chance that the true participation rate falls within the estimated bounds. For example, although our best estimate is that Missouri's working poor participation rate was 76 percent in 2018, the true rate might have been higher or lower. However, the chances are 90 in 100 that the true rate was between 69 and 83 percent.

See the Estimation method section for information on participation rates of 100 percent.

State comparisons

The estimated SNAP participation rates presented here are based on fairly small samples of households in each State. Although there is substantial uncertainty associated with the estimates for some States and with comparisons of estimates from different States, the estimates show whether a State's participation rate for all eligible people was probably at the top, at the bottom, or in the middle of the distribution. In fiscal year 2018, Delaware, Oregon, and Illinois were very likely at the top, with higher rates for all eligible people than all other States. In contrast, Wyoming likely had a lower rate than other States.

Similarly, it is possible to determine that some States were probably at the top, at the bottom, or in the middle of the distribution of rates for working poor people. In fiscal year 2018, Delaware, Pennsylvania, and Illinois were very likely at the top, with higher rates for working poor people than most States. In contrast, the District of Columbia likely had a lower rate than most States.

How a State compares with other States can fluctuate over time due to both statistical variability in estimated rates and true changes in rates. The statistical variability is great enough that a large change in a State's rate from the year before should be interpreted cautiously, as should differences between the rates of that State and other States. It might be incorrect to conclude that program performance in the State has improved or deteriorated dramatically. Despite this uncertainty, the estimated participation rates for all eligible people and working poor people suggest that some States have been fairly consistently in the top or bottom of the distribution of rates in recent years. In all 3 years from 2016 to 2018, Delaware, Illinois, Oregon, Pennsylvania, Rhode Island, and Washington had significantly higher participation rates for all eligible people than two-thirds of the States. Connecticut, Michigan, New Mexico, Nevada, New York, Tennessee, Vermont, and Wisconsin had significantly higher rates than half of the States. Arizona, Idaho, Indiana, Kentucky, Minnesota, Mississippi, Texas, Utah, and Virginia had significantly lower rates than half of the States in all three years, whereas Arkansas, California, Kansas, North Dakota, and Wyoming had significantly lower rates than two-thirds of the States.

A State ranked near the top or bottom of the distribution of SNAP participation rates for all eligible people is



likely to rank near the top or bottom, respectively, of the distribution of rates for working poor people. However, the rankings of States by participation rates for working poor people and all eligible people are not always similar. Three States—Indiana, Minnesota, and Ohio—are ranked significantly higher for all three fiscal years when ranked by their participation rate for working poor people than when ranked by their rate for all eligible people. In contrast, 2 States—Maryland and Massachusetts—and the District of Columbia are ranked significantly lower for all 3 fiscal years when ranked by their participation rate for working poor people than when ranked by their rate for all eligible people.

Estimation method

We derived the estimates presented here using shrinkage estimation methods developed to improve precision when sample sizes are small (Cunningham 2021). The shrinkage estimator averaged direct sample estimates of participation rates with predictions from a regression model, using data for all the States, all three years, and both groups (all eligible people and working poor people) to derive each estimate.

We obtained the direct sample estimates by applying SNAP eligibility rules to households in the Current Population Survey Annual Social and Economic Supplement to estimate numbers of eligible people and by using SNAP administrative data to estimate numbers of participating people. Lauffer and Vigil (2021) describes details of the methods used to derive the direct sample estimates, including minor changes from the previous methodology.

Estimates of participation rates (percent)

	All eligible people			Working poor		
	2016	2017	2018	2016	2017	2018
Alabama	82	80	79	78	80	77
Alaska	70	77	89	64	68	80
Arizona	73	77	77	64	73	69
Arkansas	72	68	66	68	66	61
California	72	71	70	64	57	59
Colorado	78	75	79	68	62	65
Connecticut	92	90	93	78	83	79
Delaware	100	98	100	88	94	98
District of Columbia	92	90	82	60	43	38
Florida	90	86	86	76	80	75
Georgia	84	84	83	72	72	70
Hawaii	80	79	88	71	71	76
Idaho	77	75	74	72	75	70
Illinois	100	100	100	86	89	92
Indiana	76	73	74	78	75	77
Iowa	88	90	88	84	90	85
Kansas	71	66	68	66	61	62
Kentucky	74	75	75	69	70	72
Louisiana	82	86	83	74	74	73
Maine	85	84	81	81	84	76
Maryland	89	87	91	73	71	72
Massachusetts	92	88	94	67	63	65
Michigan	91	89	89	86	87	86
Minnesota	77	75	76	78	75	74
Mississippi	76	74	70	70	65	65
Missouri	87	85	87	76	77	76
Montana	76	81	78	69	74	69
Nebraska	78	78	79	76	72	74
Nevada	89	91	92	83	87	87
New Hampshire	82	74	80	71	67	70
New Jersey	82	79	81	70	69	70
New Mexico	93	97	98	83	86	88
New York	89	88	89	77	75	75
North Carolina	84	74	69	78	67	65
North Dakota	66	63	63	67	51	60
Ohio	84	83	84	84	86	84
Oklahoma	80	83	85	71	76	78
Oregon	100	100	100	91	96	88
Pennsylvania	95	94	99	89	93	95
Rhode Island	100	100	95	89	89	81
South Carolina	80	79	77	73	75	69
South Dakota	72	76	78	73	71	76
Tennessee	91	91	90	78	80	78
Texas	72	75	75	72	66	74
Utah	74	72	77	69	62	69
Vermont	90	94	92	80	83	76
Virginia	73	73	72	68	65	62
Washington	98	93	98	87	82	85
West Virginia	87	85	88	83	90	87
Wisconsin	92	90	92	85	84	85
Wyoming	53	49	54	54	45	55
Mid-Atlantic Region	87	85	88	77	78	78
Midwest Region	89	87	88	84	85	85
Mountain Plains Region	79	77	79	71	68	69
Northeast Region	90	88	90	76	75	74
Southeast Region	85	82	80	75	75	72
Southwest Region	75	78	78	71	69	73
Western Region	78	77	77	69	64	65
United States	83	82	82	75	73	74

There is substantial uncertainty associated with most of these estimates. Cunnyngham (2021) presented confidence intervals that measure the uncertainty in the estimates for 2016 and 2017. These confidence intervals are generally about as wide as the confidence intervals presented here for the 2018 estimates.

See the Estimation method section for information on participation rates of 100 percent.

The regression predictions of participation rates drew on data from the American Community Survey, individual tax returns, population estimates, and administrative records, and were based on indicators of socioeconomic conditions, such as the percentage of the State population receiving SNAP benefits. Because of differences between the years being estimated, the regression model differs slightly from the one developed for Cunnyngham (2020). The regression model developed for this year's report was chosen for its strong predictive ability for all 3 years and its consistency with the model developed for the prior report.

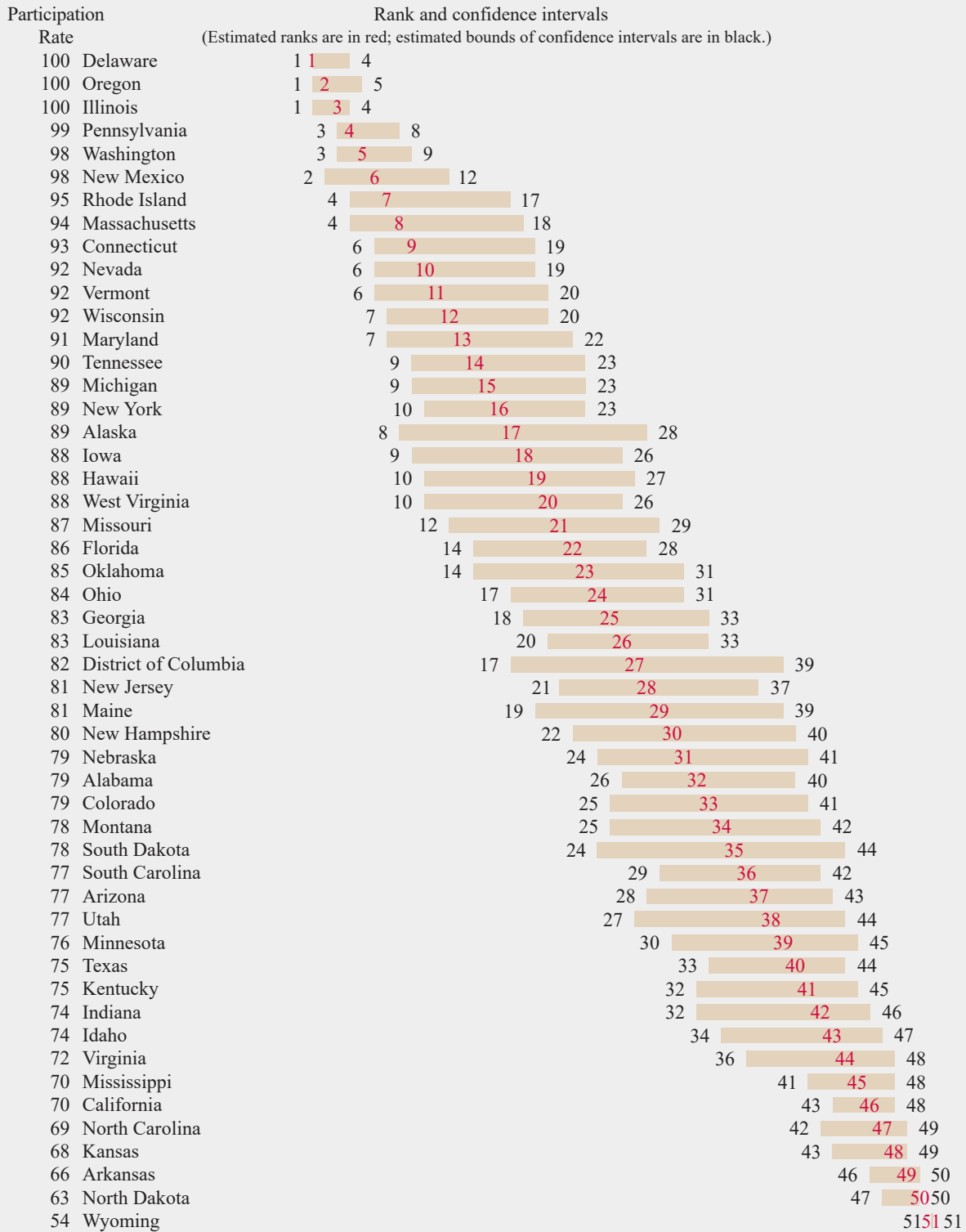
The shrinkage estimates presented here are substantially more precise than the direct sample estimates (Cunnyngham 2021). Estimates for fiscal years 2016 and 2017 differ from estimates presented in Cunnyngham (2020) because of differences in the 3 fiscal years being jointly estimated, the regression model, and the methodology used to derive the direct sample estimates.

The estimates for all eligible people include people in households that pass all applicable Federal SNAP income and resource tests or in which all members receive cash public assistance. The estimates presented here do not include people eligible solely through State categorical eligibility policies. The estimates for eligible working poor people include people who are eligible for SNAP as defined above and live in a household in which a member earns income from a job.

Estimated participation rates of 100 percent are the result of differences between the data used to estimate the number of eligible people and the data used to estimate the number of participants; they should not be interpreted to mean that every eligible person participated in SNAP. Using different data sources to estimate rate denominators and numerators can result in a preliminary estimate of eligible people in a particular State that is lower than the corresponding estimate of participants, leading to a participation rate that exceeds 100 percent. We capped participation rates at 100 percent by adjusting estimates of eligible people so no State had fewer eligible people than participants. Cunnyngham (May 2021) provides details on how we made the adjustments.

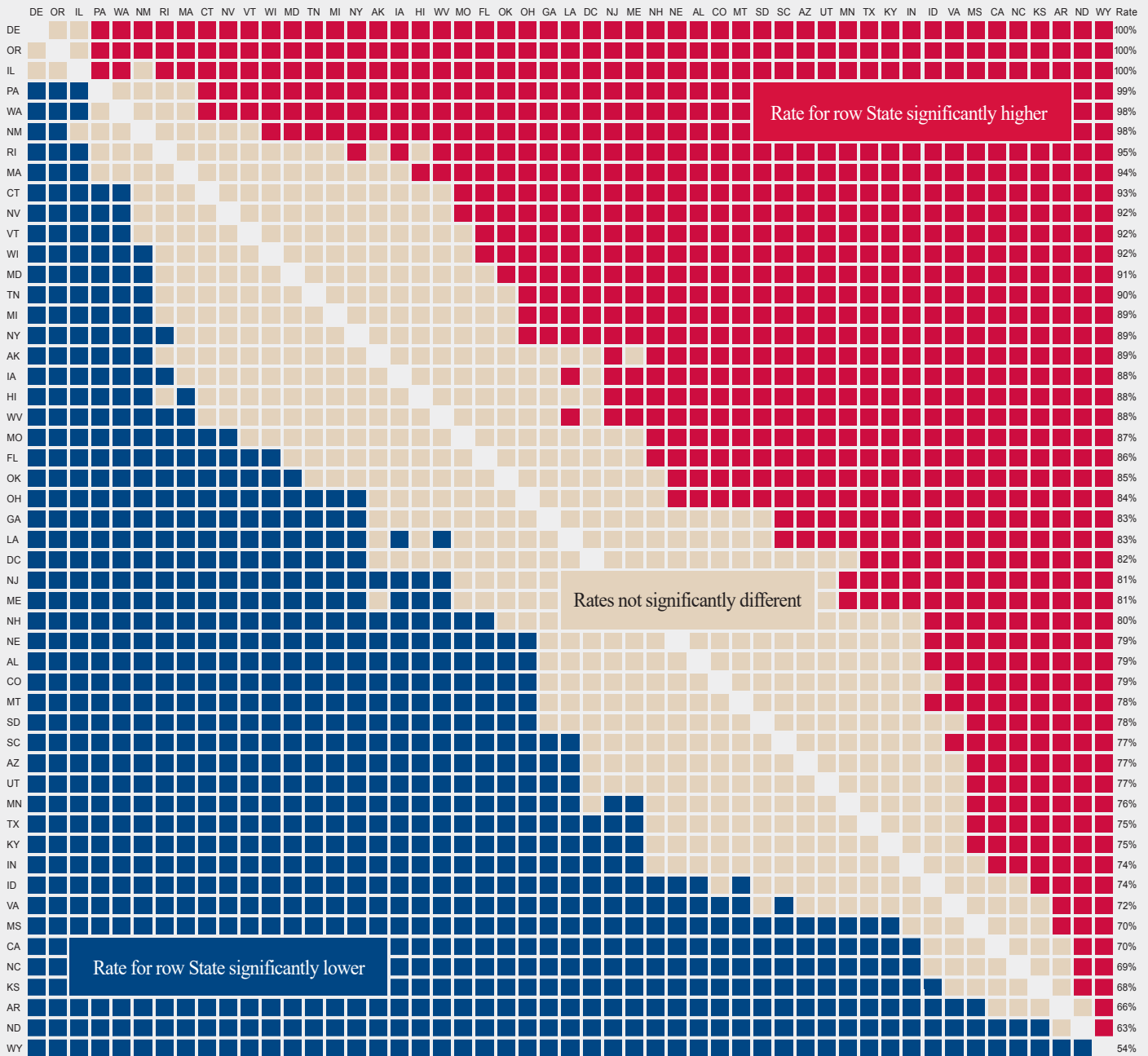
Because the Current Population Survey does not collect data on participation in the Food Distribution Program on Indian Reservations, we did not adjust the estimates presented here to reflect the fact that participants in that

How did your State rank in 2018?



A confidence interval expresses our uncertainty about the true value of a State's rank. Each interval displayed here is a 90 percent confidence interval. One interpretation of such an interval is that there is a 90 percent chance that the true rank falls within the estimated bounds. For example, although our best estimate is that Louisiana had the 26th highest participation rate in 2018, the true rank might have been higher or lower. However, the chances are 90 in 100 that the true rank was between 20 and 33 among all of the States. To determine how Louisiana or your State compares with any other State, see the chart on page 7.

How did your State compare with other States in 2018 for all eligible people?



This figure can be used to determine whether one State has a significantly higher participation rate than another by finding the row for the first State at the left of the figure and the column for the second State at the top of the figure. If the box where the row and column intersect is red, there is at least a 90 percent chance that the first State (the row State) has a higher true participation rate. If the box is blue, there is at least a 90 percent chance that the second State (the column State) has a higher true participation rate. Equivalently, there is less than a 10 percent chance that the first State has a higher rate. If the box is tan, there is more than a 10 percent chance but less than a 90 percent chance that the first State has a higher rate; thus, we conclude that neither estimated rate is significantly higher.

Taking Louisiana, the State in the middle of the distribution, as an example, we see that it had a significantly lower participation rate than 18 States (Delaware, Oregon, Illinois, Pennsylvania, Washington, New Mexico, Rhode Island, Massachusetts, Connecticut, Nevada, Vermont, Wisconsin, Maryland, Tennessee, Michigan, New York, Iowa, and West Virginia) and a significantly higher rate than 16 States (Wyoming, North Dakota, Arkansas, Kansas, North Carolina, California, Mississippi, Virginia, Idaho, Indiana, Kentucky, Texas, Minnesota, Utah, Arizona, and South Carolina). Its rate was neither significantly higher nor significantly lower than the rates for the other 15 States or the District of Columbia. This suggests that Louisiana is probably in the broad center of the distribution, unlike, for example, Delaware and Wyoming, which were surely at or near the top and bottom of the distribution, respectively. Although we use the statistical definition of *significance* here, most of the significant differences were at least 10 percentage points, a difference that seems important as well as significant, and each was at least 4 percentage points.

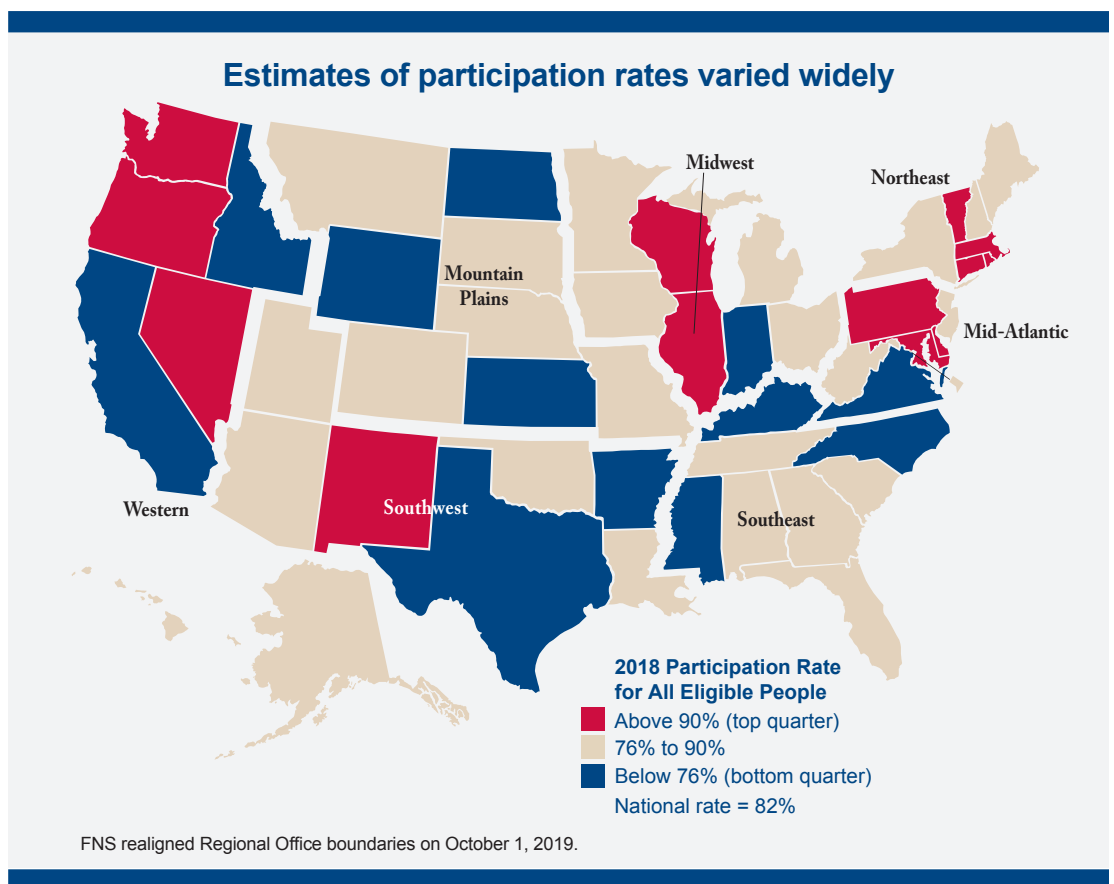
See the Estimation method section for information on participation rates of 100 percent.

program were not eligible to receive SNAP benefits at the same time (Laufer and Vigil 2021). The Food Distribution Program on Indian Reservations served about 87,000 people in fiscal year 2018, so the effects of such adjustments would be negligible in almost all States. Because the focus in this document is on participation among people who were eligible for SNAP, we adjusted the estimates of eligible people using available data to reflect the fact that Supplemental Security Income recipients in California were not eligible to receive SNAP benefits in 2018 because they received cash instead.¹ However, in some other contexts, it might be useful to consider participation rates among those eligible for SNAP benefits or a cash substitute.

References

Cunningham, Karen. “Empirical Bayes Shrinkage Estimates of State Supplemental Nutrition Assistance Program Participation Rates in Fiscal Year 2015 to Fiscal Year 2017 for All Eligible People and Working Poor People.” Final report submitted to the U.S. Department of Agriculture, Food and Nutrition Service. Washington, DC: Mathematica, May 2021. Available at <https://www.mathematica.org/our-publications-and-findings/publications/reaching-those-in-need-state-supplemental-nutrition-assistance-program-participation-rates-in-2018>.

¹In 2018, about 1.2 million Supplemental Security Income recipients in California received a small food assistance benefit through the State supplement. Without the State rule excluding these people from receiving SNAP benefits, fewer than 800,000 more California residents would have been eligible for SNAP in 2018.



Cunningham, Karen. “Reaching Those in Need: Estimates of State Supplemental Nutrition Assistance Program Participation Rates in 2017.” Final report submitted to the U.S. Department of Agriculture, Food and Nutrition Service. Washington, DC: Mathematica, August 2020.

Laufer, Sarah and Alma Vigil. “Trends in Supplemental Nutrition Assistance Program Participation Rates: Fiscal Year 2016 to Fiscal Year 2018.” Final report submitted to the U.S. Department of Agriculture, Food and Nutrition Service. Washington, DC: Mathematica, May 2021.