

## Reaching Those in Need:

# ESTIMATES OF STATE SUPPLEMENTAL NUTRITION ASSISTANCE PROGRAM PARTICIPATION RATES IN 2019



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 2021, the program served over 41 million people in an average month at a total annual cost of over \$108 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. Vigil (2022) 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 2019. These estimates can be used to assess recent program performance and focus efforts to improve access.

### Participation rates in fiscal year 2019

An estimated 82 percent of eligible people received SNAP benefits in fiscal year 2019. However, participation rates varied widely from State to State. In 21 States and the District of Columbia, the rates were—statistically—significantly higher than the national rate, and in 14 States, the rates were significantly lower.

Participation rates also varied among the regions. The Northeast Region had the highest participation rate. Its 92 percent rate was significantly higher than the rates for the other regions except the Midwest and Mid-Atlantic Regions. The Southwestern Region’s participation rate of 77 percent was lower than the other regions, but it was not significantly lower than the Southeastern and Western Regions. (See the last page for a map showing regional boundaries.)

An estimated 72 percent of eligible working poor people participated in SNAP in fiscal year 2019. As with participation rates for all eligible people, rates for working poor people varied widely across States. In 17 States, SNAP participation rates for working poor people were significantly higher than the national rate for working poor people, and in 13 States and the District of Columbia they were significantly lower.

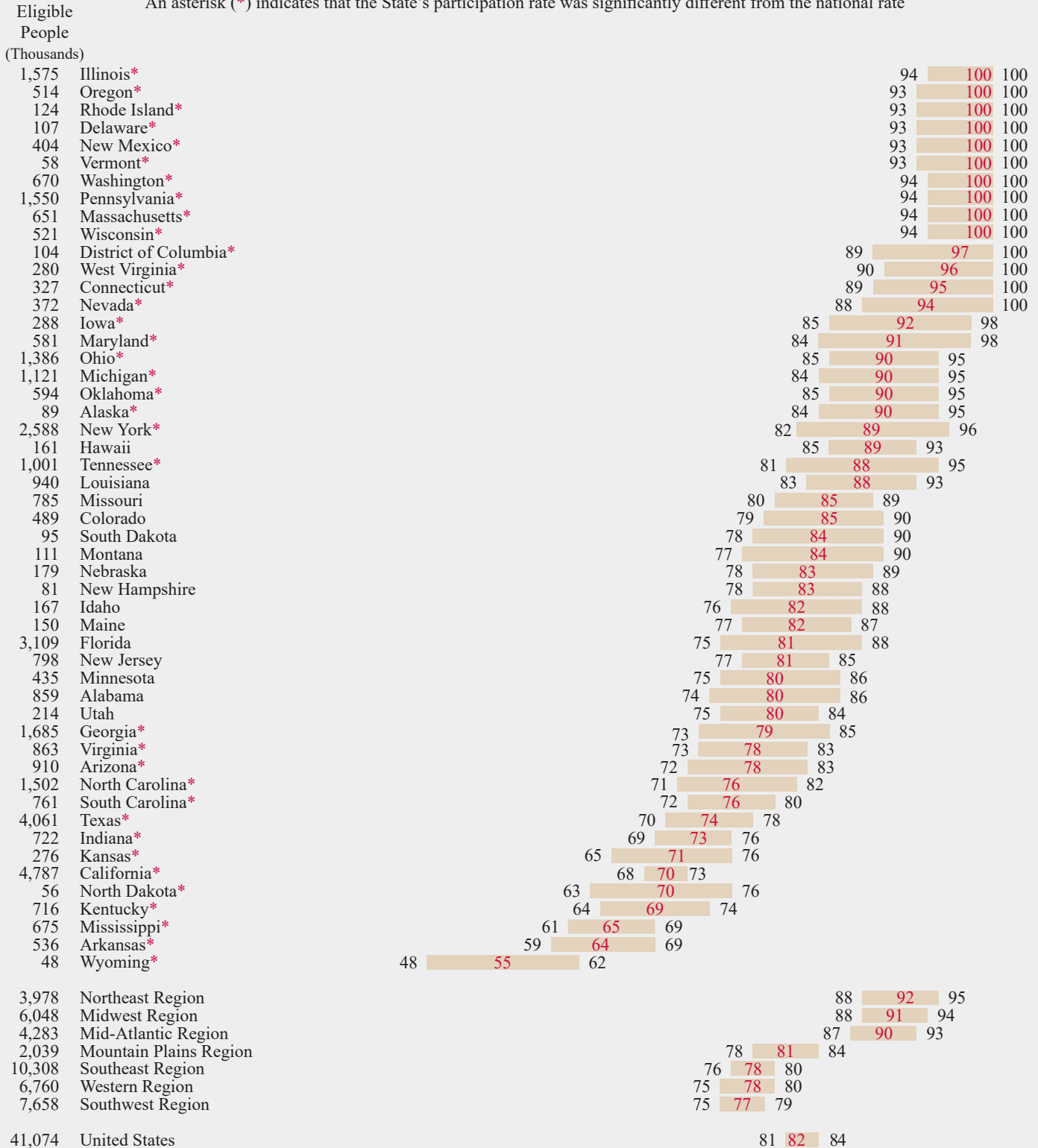
In fiscal year 2019, the national SNAP participation rate for working poor people was significantly lower than the national rate for all eligible people. In 36 States and the District of Columbia, the participation rate for working poor people was likewise significantly lower than the rate for all eligible people. In 13 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 10 percentage point difference between 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 2019? What percentage participated?

### Participation rates and confidence intervals (percentage)

(Estimated participation rates are in red; estimated bounds of confidence intervals are in black.)

An asterisk (\*) indicates that the State's participation rate was significantly different from the national rate



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 Nebraska's participation rate was 83 percent in 2019, the true rate might have been higher or lower. However, the chances are 90 in 100 that the true rate was between 78 and 88 percent.

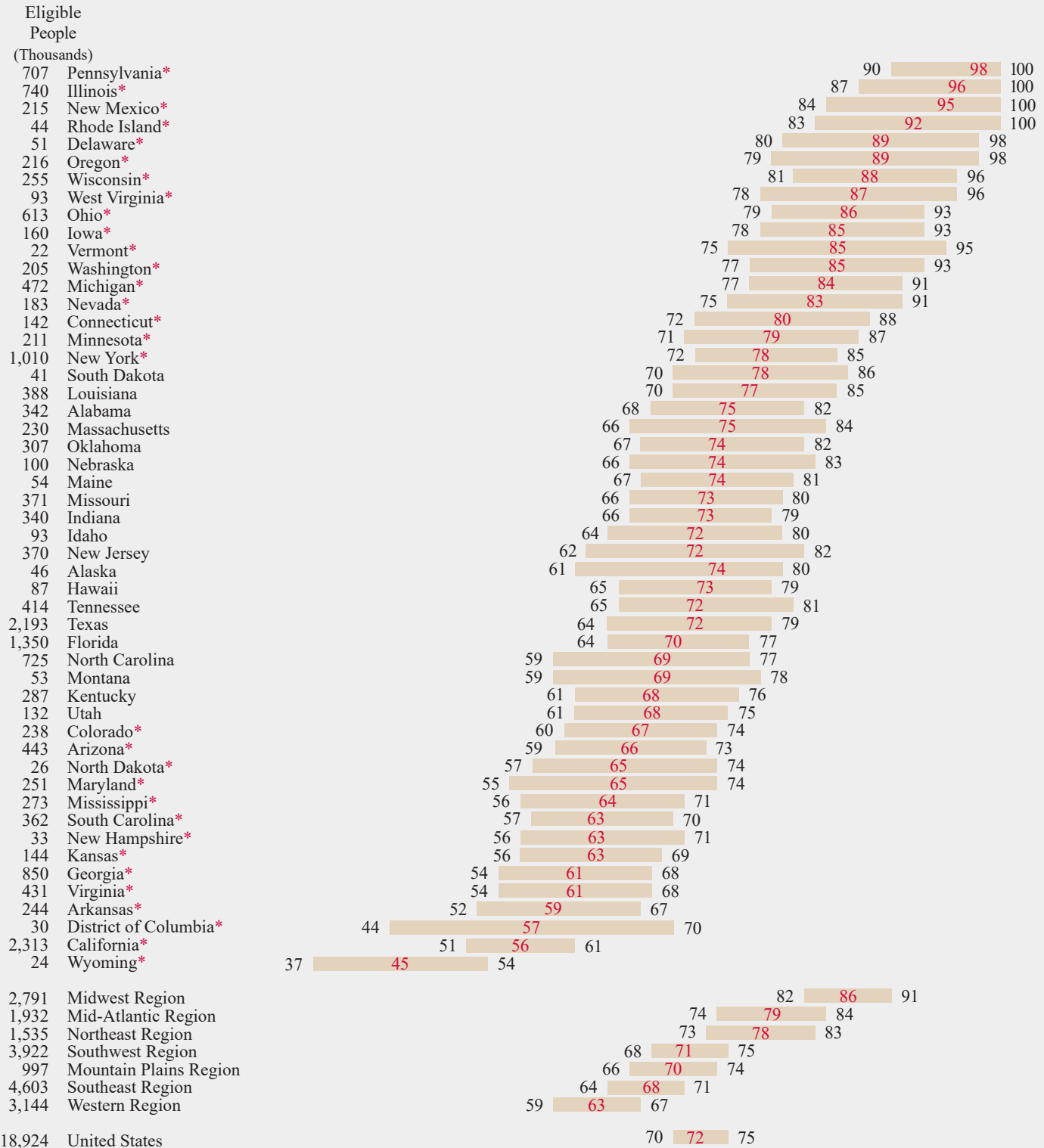
See the Estimation method section for information on participation rates of 100 percent.

## How many working poor people were eligible in 2019? What percentage participated?

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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 2019, Illinois, Oregon, and Rhode Island 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 2019, Pennsylvania, Illinois, and New Mexico were very likely at the top, with higher rates for working poor people than most States. In contrast, Wyoming, California, and 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 2017 to 2019, Delaware, Illinois, New Mexico, Oregon, Pennsylvania, and Washington had significantly higher participation rates for all eligible people than two-thirds of the States. Connecticut, Iowa, Massachusetts, Michigan, Nevada, Rhode Island, Vermont, and Wisconsin had significantly higher rates than half of the States. Indiana, Mississippi, North Carolina, Texas, 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. Five States—Alabama, Indiana, Michigan, 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, 3 States—Colorado, 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 (Cunnyngham 2022). 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. Vigil (2022) describes details of the methods used to derive the direct sample estimates.

The regression predictions of participation rates drew on data from the American Community Survey, individual



## Estimates of participation rates (percent)

	All eligible people			Working poor		
	2017	2018	2019	2017	2018	2019
Alabama	80	78	80	79	77	75
Alaska	73	86	89	72	79	72
Arizona	78	77	76	74	70	66
Arkansas	68	66	64	64	63	59
California	71	70	70	57	59	56
Colorado	77	80	84	63	66	67
Connecticut	90	92	95	84	79	80
Delaware	100	100	100	95	99	89
District of Columbia	90	84	97	43	39	57
Florida	86	84	81	79	75	70
Georgia	86	84	78	74	70	61
Hawaii	78	85	88	71	74	72
Idaho	76	73	82	75	71	73
Illinois	99	100	100	90	92	96
Indiana	73	75	73	75	78	73
Iowa	89	88	92	91	86	85
Kansas	66	70	71	61	65	63
Kentucky	77	77	69	71	76	68
Louisiana	86	84	85	75	73	77
Maine	83	80	81	82	78	74
Maryland	86	89	91	71	69	65
Massachusetts	91	97	100	64	69	75
Michigan	89	89	90	87	86	84
Minnesota	76	76	80	75	75	79
Mississippi	74	71	65	64	66	64
Missouri	84	85	85	77	75	74
Montana	82	79	83	74	71	69
Nebraska	78	80	83	72	75	74
Nevada	90	91	94	88	84	83
New Hampshire	75	80	82	66	69	63
New Jersey	79	81	80	71	72	72
New Mexico	96	98	100	86	89	95
New York	86	87	89	73	74	78
North Carolina	71	69	76	65	66	69
North Dakota	61	64	70	49	62	65
Ohio	82	85	90	86	84	86
Oklahoma	85	86	90	77	77	74
Oregon	100	100	100	97	90	89
Pennsylvania	94	98	100	91	94	98
Rhode Island	99	93	100	86	80	92
South Carolina	79	78	74	74	70	63
South Dakota	76	79	84	71	78	78
Tennessee	92	91	88	80	79	71
Texas	74	75	73	67	72	70
Utah	74	79	79	66	72	68
Vermont	96	93	100	82	77	85
Virginia	74	73	78	65	61	61
Washington	95	100	100	81	85	85
West Virginia	87	89	96	86	89	87
Wisconsin	93	93	100	84	85	88
Wyoming	49	56	55	45	57	45
Mid-Atlantic Region	85	87	90	77	77	79
Midwest Region	87	88	91	85	85	86
Mountain Plains Region	77	79	81	69	70	70
Northeast Region	87	89	92	73	74	78
Southeast Region	82	80	78	74	72	68
Southwest Region	78	78	77	70	73	71
Western Region	78	77	78	64	65	63
United States	82	82	82	73	74	72

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

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 (2021). 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 2022). Estimates for fiscal years 2017 and 2018 differ from estimates presented in Cunnyngham (2021) 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 (2022) 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

## How did your State rank in 2019?

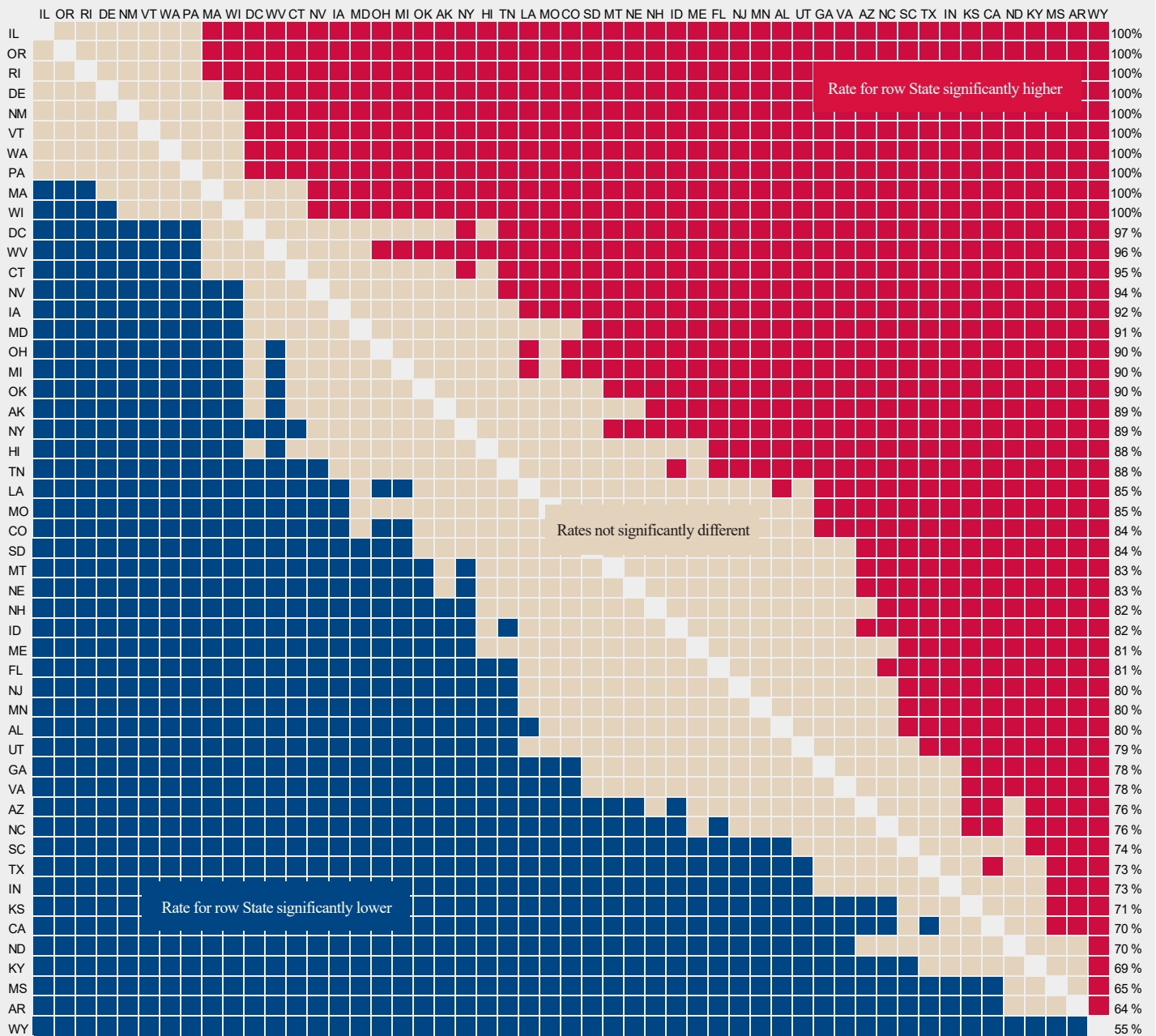
### Rank and confidence intervals

(Estimated ranks are in red; estimated bounds of confidence intervals are in black.)



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 Colorado had the 26th highest participation rate in 2019, the true rank might have been higher or lower. However, the chances are 90 in 100 that the true rank was between 19 and 37 among all of the States. To determine how Colorado or your State compares with any other State, see the chart on page 7.

## How did your State compare with other States in 2019 for all eligible people?

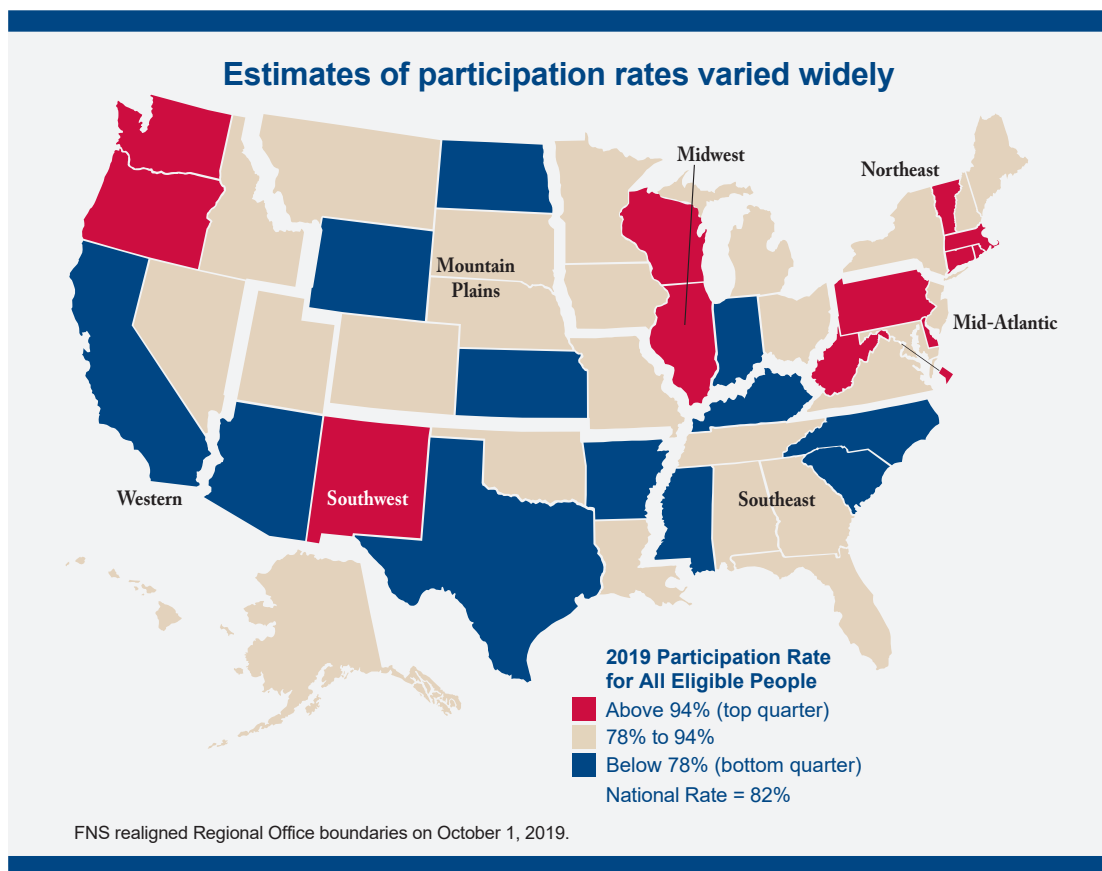


This figure can be used to determine whether one State has a significantly higher participation rate than another by finding the row for the first State at the left of the figure and the column for the second State at the top of the figure. If the box where the row and column intersect is red, there 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 Colorado, the State in the middle of the distribution, as an example, we see that it had a significantly lower participation rate than the District of Columbia and 16 States (Illinois, Oregon, Rhode Island, Delaware, New Mexico, Vermont, Washington, Pennsylvania, Massachusetts, Wisconsin, West Virginia, Connecticut, Nevada, Iowa, Ohio, and Michigan) and a significantly higher rate than 14 States (Wyoming, Arkansas, Mississippi, Kentucky, North Dakota, California, Kansas, Indiana, Texas, South Carolina, North Carolina, Arizona, Virginia, and Georgia). Its rate was neither significantly higher nor significantly lower than the rates for the other 19 States. This suggests that Colorado is probably in the broad center of the distribution, unlike, for example, Illinois 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 3 percentage points.

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that program were not eligible to receive SNAP benefits at the same time (Vigil 2022). The Food Distribution Program on Indian Reservations served about 84,000 people in fiscal year 2019, 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 before June 1, 2019, Supplemental Security Income recipients in California were not eligible to receive SNAP benefits because they received cash instead.



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 2017 to Fiscal Year 2019 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, November 2022. Available at <https://www.mathematica.org/publications/empirical-bayes-shrinkage-estimates-of-state-snap-participation-rates-in-fiscal-year-2019>.

Cunningham, Karen. “Reaching Those in Need: Estimates of State Supplemental Nutrition Assistance Program Participation Rates in 2018.” Final report submitted to the U.S. Department of Agriculture, Food and Nutrition Service. Washington, DC: Mathematica, May 2021.

Vigil, Alma. “Trends in Supplemental Nutrition Assistance Program Participation Rates: Fiscal Year 2016 to Fiscal Year 2019.” Final report submitted to the U.S. Department of Agriculture, Food and Nutrition Service. Washington, DC: Mathematica, March 2022.