USDA
United States Department of Agriculture

Reaching Those in Need:
Estimates of State Supplemental Nutrition Assistance Program Participation Rates in 2020

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 2022, the program served 41 million people in an average month, providing over $114 billion in benefits annually.

The SNAP participation rate is the percentage of eligible people in the United States who actually participate in the program. State SNAP participation rate estimates can be used to assess recent program performance and focus efforts to improve access. 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 fiscal year 2020. Because the COVID-19 public health emergency affected the quality of the data used to estimate the SNAP participation rates starting in March 2020, the fiscal year 2020 participation rates were estimated for the pre-pandemic period of October 2019 through February 2020. Because of the smaller sample size for fiscal year 2020, this research brief does not include estimates of State SNAP participation rates for people in households with earnings, as prior research briefs in this series did.

Participation rates in fiscal year 2020

An estimated 78 percent of eligible people received SNAP benefits in fiscal year 2020. However, participation rates varied widely from State to State. In 23 States and the District of Columbia, the rates were statistically significantly higher than the national rate, and in 15 States, the rates were significantly lower.

Participation rates also varied among the regions. The Mid-Atlantic Region had the highest participation rate. Its 87 percent rate was significantly higher than the rates for the other regions except the Midwest and Northeast Regions. The Western Region's participation rate of 73 percent was lower than the other regions, but it was not significantly lower than the Southeastern and Southwestern Regions. (See the last page for a map showing regional boundaries.)

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 2020, New Mexico, Rhode Island, Oregon, Illinois, and Pennsylvania were very likely at the top, with higher rates than all other States. In contrast, Wyoming likely had a lower rate than other 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 suggest that some States have been consistently in the top or bottom of the distribution of rates in recent years.

By Karen Cunnyngham • Mathematica • August 2023

How many people were eligible in 2020? 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

Eligible People (Thousands)	State	Lower Bound of Confidence Interval	Participation Rate	Upper Bound of Confidence Interval
403	New Mexico*	93	100	100
119	Rhode Island*	93	100	100
503	Oregon*	94	100	100
1,465	Illinois*	94	100	100
1,520	Pennsylvania*	94	100	100
628	Massachusetts*	93	100	100
57	Vermont*	90	96	100
697	Washington*	88	94	100
284	West Virginia*	87	94	100
110	District of Columbia*	85	93	100
549	Wisconsin*	86	92	98
138	Maine*	84	90	96
331	Connecticut*	83	89	94
105	Delaware*	82	87	92
289	Iowa*	80	85	91
1,179	Michigan*	80	85	90
623	Maryland*	79	85	90
764	Missouri*	79	84	90
636	Oklahoma*	79	84	89
976	Tennessee*	79	84	89
396	Nevada*	78	84	89
931	Louisiana*	79	83	88
166	Hawaii*	78	83	89
2,727	New York*	78	82	85
90	Alaska	74	81	88
1,511	Ohio	77	81	86
825	Alabama	75	81	87
95	South Dakota	73	80	87
167	Idaho	74	79	85
111	Montana	73	79	85
79	New Hampshire	73	79	85
181	Nebraska	73	78	83
861	Virginia	71	77	82
510	Colorado	70	76	82
454	Minnesota	70	76	81
899	Arizona*	70	74	79
214	Utah	69	74	80
1,449	North Carolina*	69	74	78
720	Indiana*	69	73	78
3,263	Florida*	69	73	77
830	New Jersey*	67	72	77
1,709	Georgia*	67	72	76
273	Kansas*	64	70	75
780	South Carolina*	65	69	73
4,161	Texas*	66	69	72
5,403	California*	63	66	69
57	North Dakota*	60	66	71
705	Kentucky*	60	65	70
515	Arkansas*	58	62	67
675	Mississippi*	57	62	66
50	Wyoming*	44	49	55
4,334	Mid-Atlantic Region	84	87	90
6,167	Midwest Region	84	86	89
4,080	Northeast Region	83	86	89
2,041	Mountain Plains Region	75	78	81
7,760	Southwest Region	72	74	76
10,383	Southeast Region	71	73	75
7,421	Western Region	70	73	75
42,186	United States	77	78	79

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 78 percent in 2020, the true rate might have been higher or lower. However, the chances are 90 in 100 that the true rate was between 73 and 83 percent.

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

In all three years from 2018 to 2020, Illinois, New Mexico, Oregon, Pennsylvania, Rhode Island, and Washington had significantly higher participation rates for all eligible people than two-thirds of the States. Connecticut, Delaware, Massachusetts, Vermont, and Wisconsin had significantly higher rates than half of the States. Indiana, Kentucky, North Carolina, Texas, and Utah had significantly lower rates than half of the States in all three years, whereas Arkansas, California, Kansas, Mississippi, North Dakota, and Wyoming had significantly lower rates than two-thirds of the States.

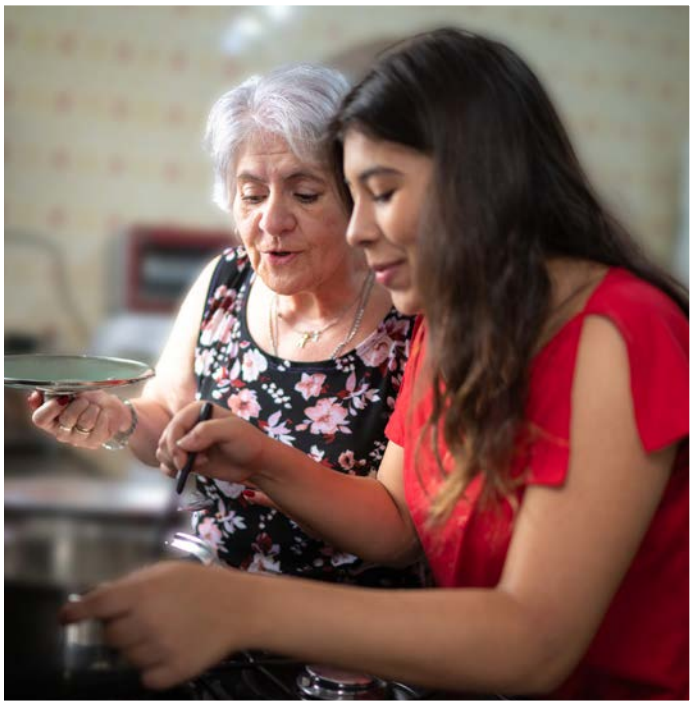
Estimation method

We derived the estimates presented here using shrinkage estimation methods developed to improve precision when sample sizes are small (Cunnyngham 2023). The shrinkage estimator averages direct sample estimates of participation rates with predictions from a regression model, using data for all the States, all three years, and both all eligible people and people in households with earnings 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 the methods we used to derive the direct sample estimates.

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 (2022). The regression model developed for this year's report was chosen for its strong predictive ability for all three 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 2023). Estimates for fiscal years 2018 and 2019 differ from estimates presented in Cunnyngham (2022) because of differences in the three fiscal years being jointly estimated and the regression model.



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.

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 (2023) provides details on how we made the adjustments.

Estimates of participation rates (percent)			
State	**2018**	**2019**	**2020**
Significantly higher rate than half of the other States			
Connecticut	90	97	89
Delaware	100	100	87
Illinois	100	100	100
Massachusetts	94	100	100
New Mexico	96	100	100
Oregon	100	100	100
Pennsylvania	100	100	100
Rhode Island	97	100	100
Vermont	91	100	96
Washington	98	100	94
Wisconsin	90	94	92
Alabama	80	81	81
Alaska	88	89	81
Arizona	78	78	74
Colorado	80	83	76
District of Columbia	84	97	93
Florida	84	79	73
Georgia	84	78	72
Hawaii	88	89	83
Idaho	73	78	79
Iowa	90	88	85
Louisiana	84	85	83
Maine	88	89	90
Maryland	90	88	85
Michigan	88	86	85
Minnesota	76	82	76
Missouri	86	84	84
Montana	78	79	79
Nebraska	77	80	78
Nevada	89	91	84
New Hampshire	82	83	79
New Jersey	81	79	72
New York	86	87	82
Ohio	83	86	81
Oklahoma	86	89	84
South Carolina	79	74	69
South Dakota	76	79	80
Tennessee	89	84	84
Virginia	76	76	77
West Virginia	88	95	94
Significantly lower rate than half of the other States			
Arkansas	67	64	62
California	70	70	66
Indiana	75	71	73
Kansas	71	69	70
Kentucky	77	69	65
Mississippi	70	64	62
North Carolina	72	77	74
North Dakota	63	71	66
Texas	75	73	69
Utah	76	76	74
Wyoming	53	54	49

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 program were not eligible to receive SNAP benefits at the same time (Vigil 2022). The Food Distribution Program on Indian Reservations served about 83,000 people in pre-pandemic fiscal year 2020, 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.

Region	2018	2019	2020
Mid-Atlantic Region	89	89	87
Midwest Region	88	88	86
Mountain Plains Region	79	80	78
Northeast Region	88	90	86
Southeast Region	81	77	73
Southwest Region	78	77	74
Western Region	77	77	73
United States	**82**	**81**	**78**

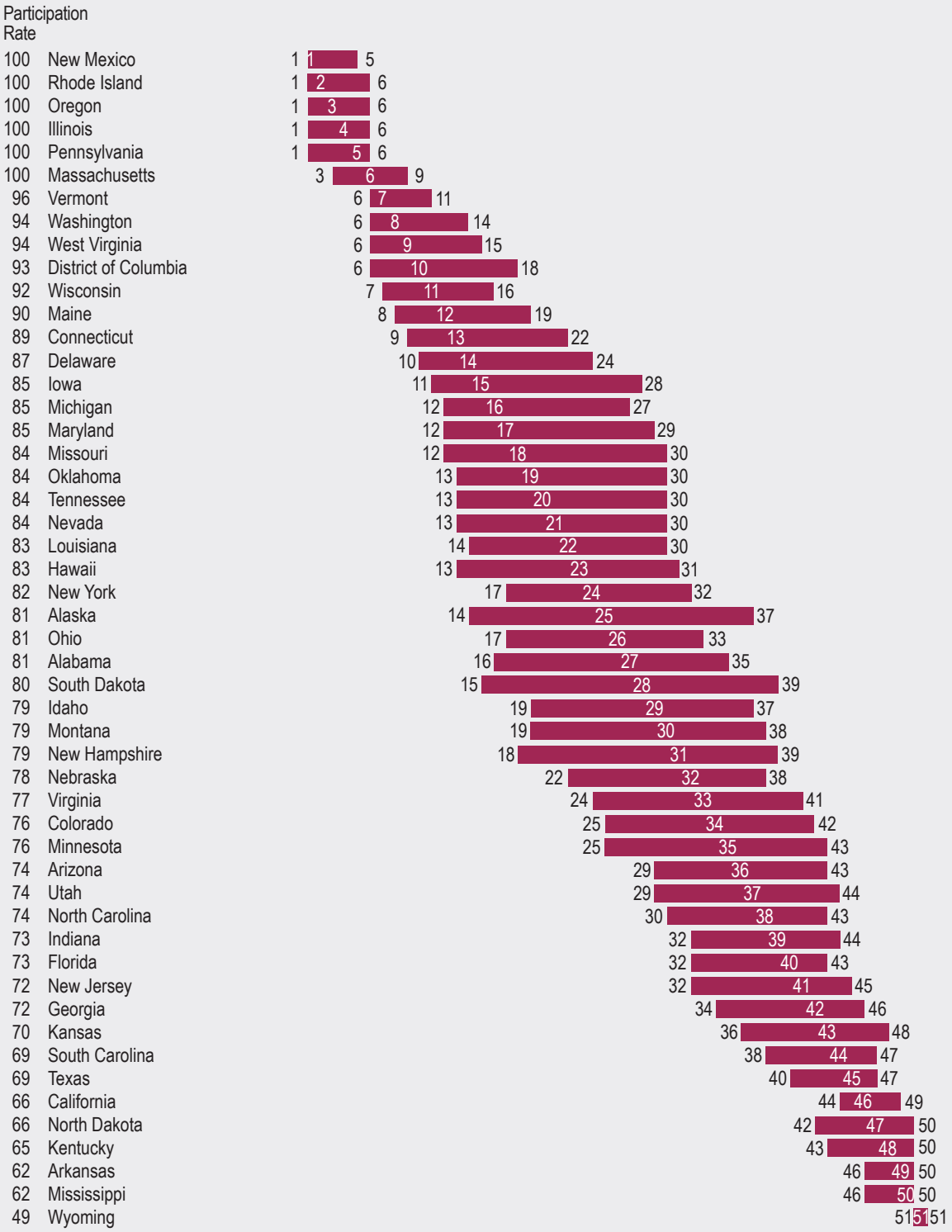
There is substantial uncertainty associated with most of these estimates. Cunnyngham (2023) presents confidence intervals for the 2018 and 2019 estimates. These confidence intervals are generally about as wide as the confidence intervals presented here for the 2020 estimates.

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

How did your State rank in 2020

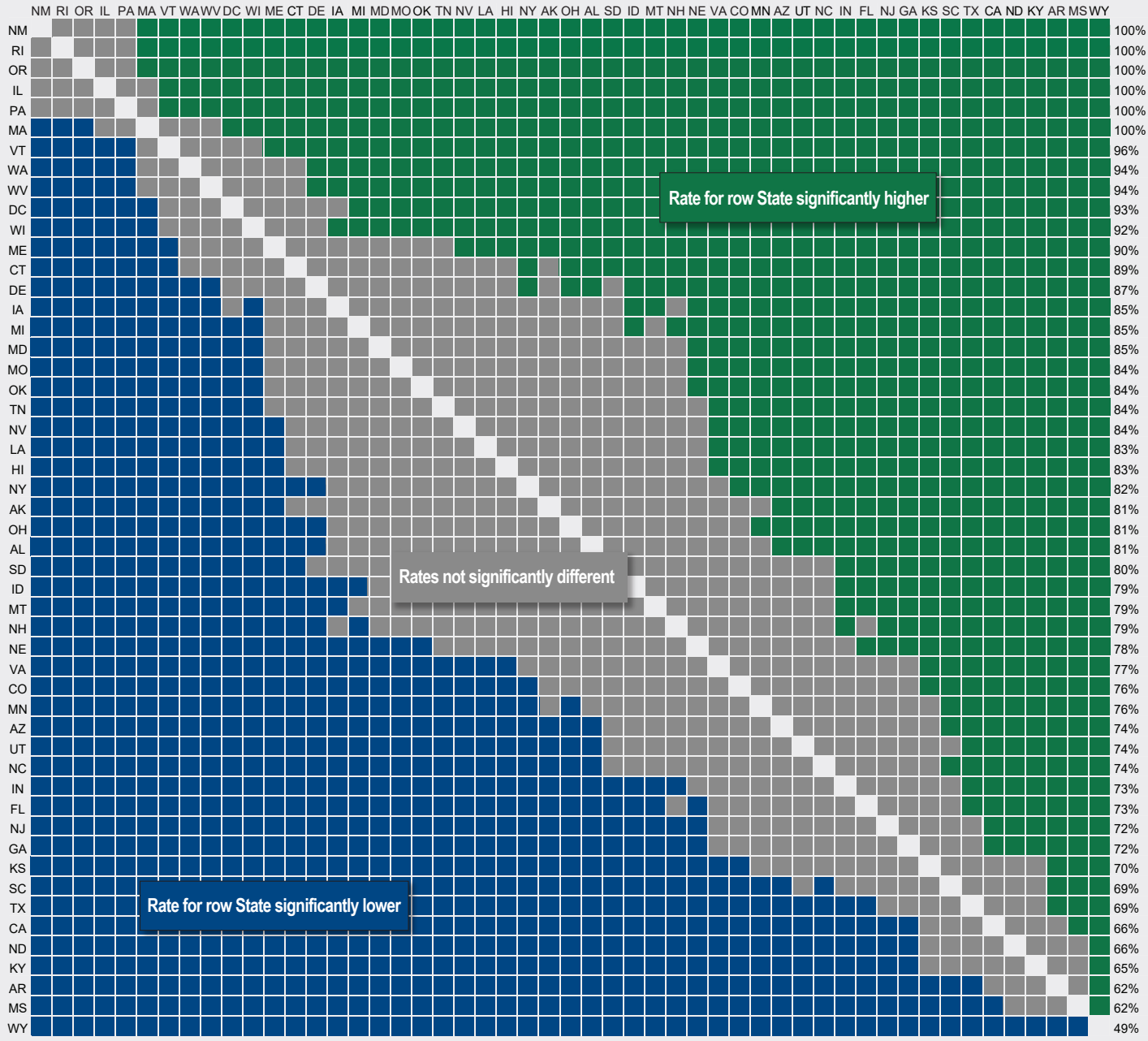
Rank and confidence intervals

(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 Ohio had the 26th highest participation rate in 2020, the true rank might have been higher or lower. However, the chances are 90 in 100 that the true rank was between 17 and 33 among all of the States. To determine how Ohio or your State compares with any other State, see the chart on page 6.

How did your State compare with other States in 2020 for all eligible people?

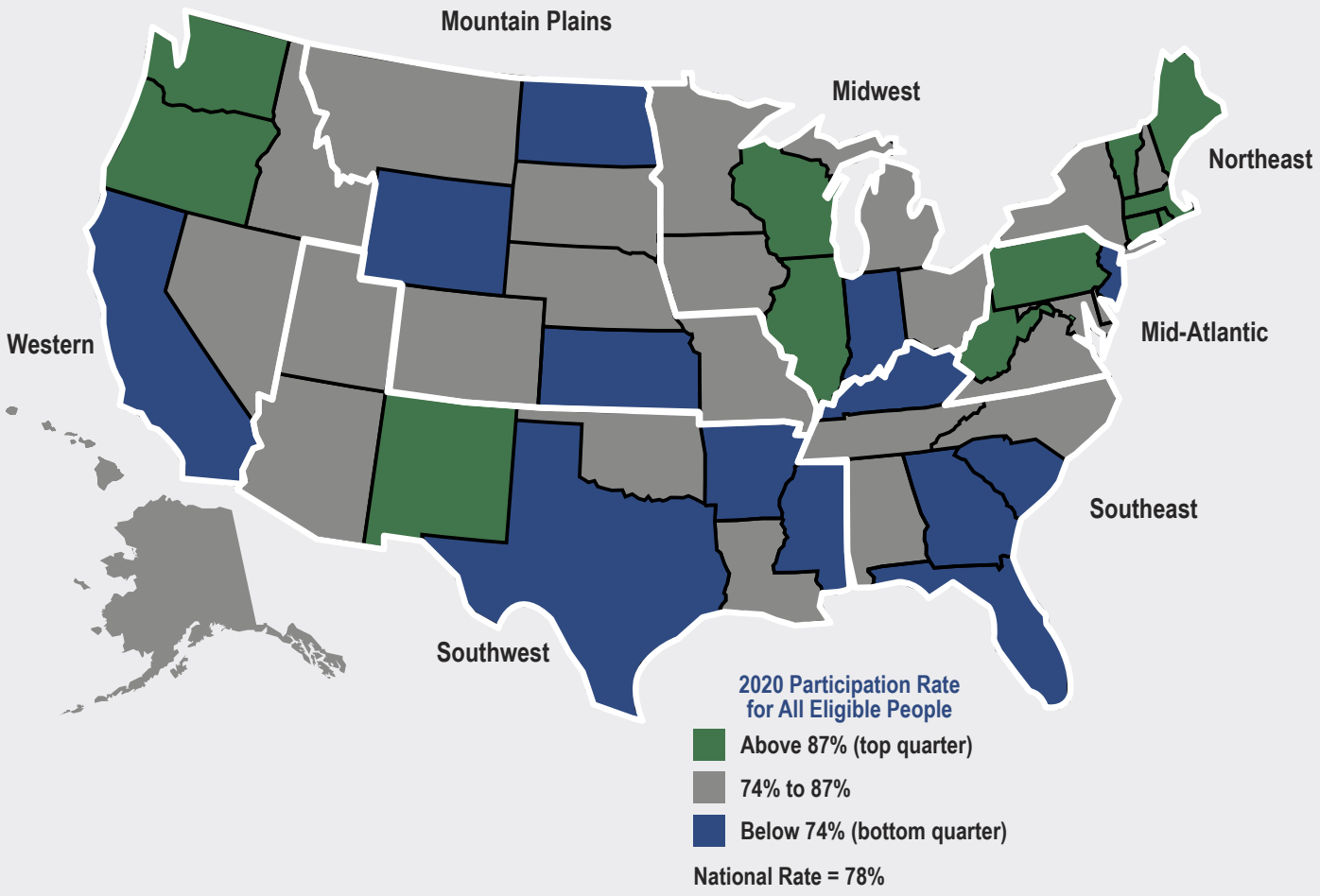


This figure can be used to determine whether there is a statistically significant difference between two States' participation rates. Find the row for the first State of interest at the left of the figure and the column for the second State of interest at the top of the figure. If the box where the row and column intersect is green or blue, there is at least a 90 percent chance that one of the States has a higher true participation rate than the other. A green box indicates the first State (the row State) likely has the higher participation rate while a blue box indicates the second State (the column State) likely has the higher rate. If the box is gray, there is less than a 90 percent chance but more than a 10 percent chance that one State has a higher true rate than the other; thus, we conclude that neither estimated rate is significantly higher.

Taking Ohio, 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 13 States (New Mexico, Rhode Island, Oregon, Illinois, Pennsylvania, Massachusetts, Vermont, Washington, West Virginia, Wisconsin, Maine, Connecticut, and Delaware) and a significantly higher rate than 17 States (Wyoming, Mississippi, Arkansas, Kentucky, North Dakota, California, Texas, South Carolina, Kansas, Georgia, New Jersey, Florida, Indiana, North Carolina, Utah, Arizona, and Minnesota). Its rate was neither significantly higher nor significantly lower than the rates for the other 19 States. This suggests that Ohio is probably in the broad center of the distribution, unlike, for example, New Mexico 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.

Estimates of participation rates varied widely



References

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