Reaching Those in Need:

ESTIMATES OF STATE SUPPLEMENTAL NUTRITION ASSISTANCE PROGRAM PARTICIPATION RATES IN 2015

The Supplemental Nutrition Assistance Program (SNAP) is a central component of U.S. policy to alleviate hunger and poverty. The program's main purpose is "to permit low-income households to obtain a more nutritious diet… by increasing their purchasing power" (Food and Nutrition Act of 2008). SNAP is the largest of the domestic food and nutrition assistance programs administered by the U.S. Department of Agriculture's Food and Nutrition Service. During fiscal year 2017, the program served 42 million people in an average month at a total annual cost of $64 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 2016, 44 percent of all SNAP participants lived in households that had earned income. That was up from 30 percent of all participants in 1996, the year in which 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 U. S. who actually participate in the program. Farson Gray and Cunnyngham (2017) examined national SNAP participation rates and rates for socioeconomic and demographic subgroups of people. This document presents estimates of State SNAP participation rates for all eligible people and working poor people for fiscal year 2015. These estimates can be used to assess recent program performance and focus efforts to improve access.
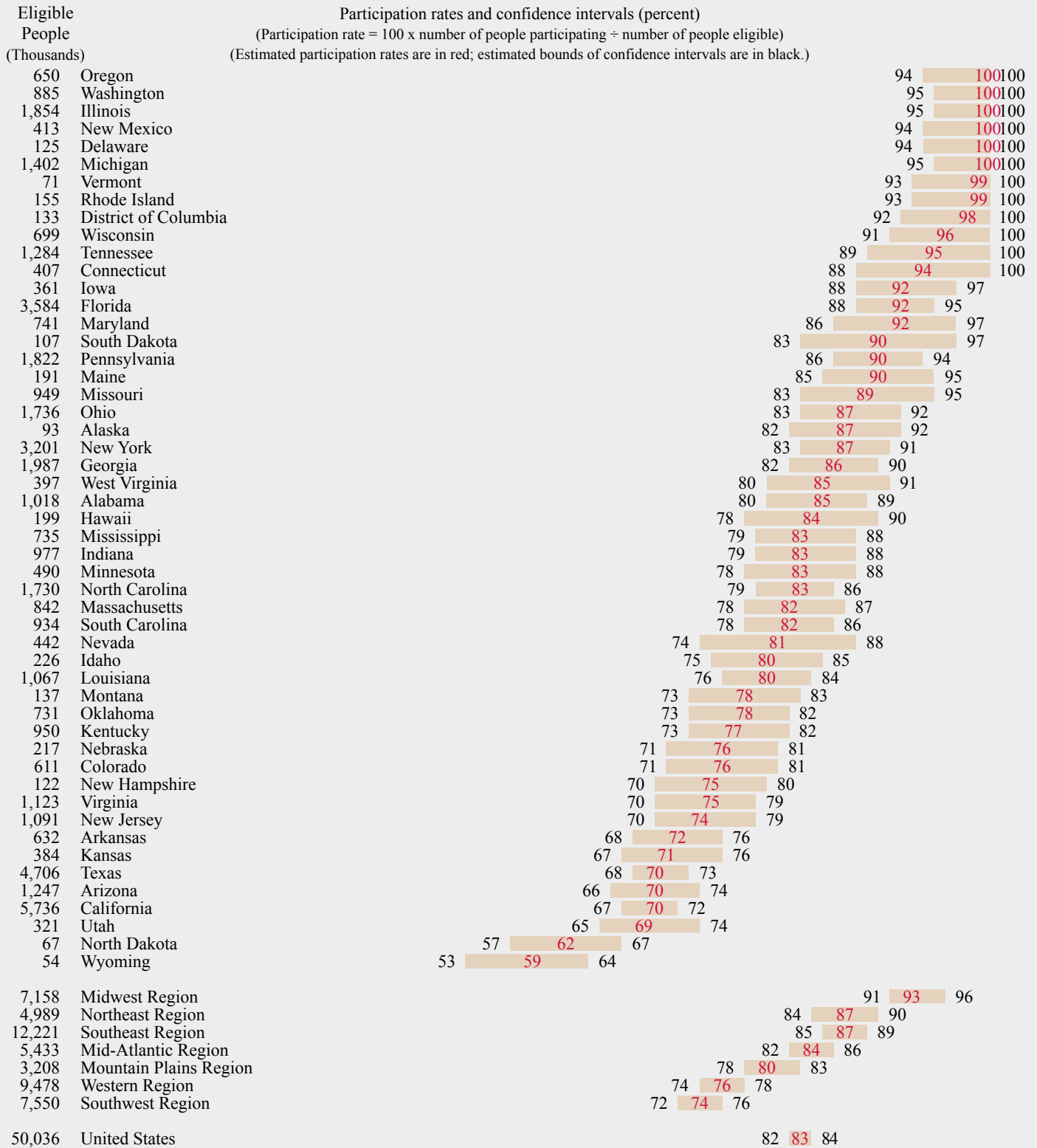
Participation rates in fiscal year 2015

An estimated 83 percent of eligible people received SNAP benefits in fiscal year 2015. Participation rates varied widely from State to State, however. In 20 States and the District of Columbia, the rates were significantly higher (in a statistical sense) than the national rate, and in 17 States, the rates were significantly lower.

Among the regions, the Midwest Region had the highest participation rate. Its 93 percent rate was significantly higher than the rates for all of the other regions. The Southwest Region's participation rate of 74 percent was significantly lower than the rates for all of the other regions. (See the last page for a map that shows regional boundaries.)

An estimated 72 percent of eligible working poor people participated in SNAP in fiscal year 2015. As with participation rates for all eligible people, rates for working poor people varied widely across States. In 19 States, SNAP participation rates for the working poor were significantly higher than the national rate for the working poor, and in 13 States and the District of Columbia they were significantly lower.

In fiscal year 2015, the national SNAP participation rate for working poor people was significantly lower than the national rate for all eligible people. In 37 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 8 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 11 percentage point difference between the national rates. In no State was the rate for working poor people higher than the rate for all eligible people.
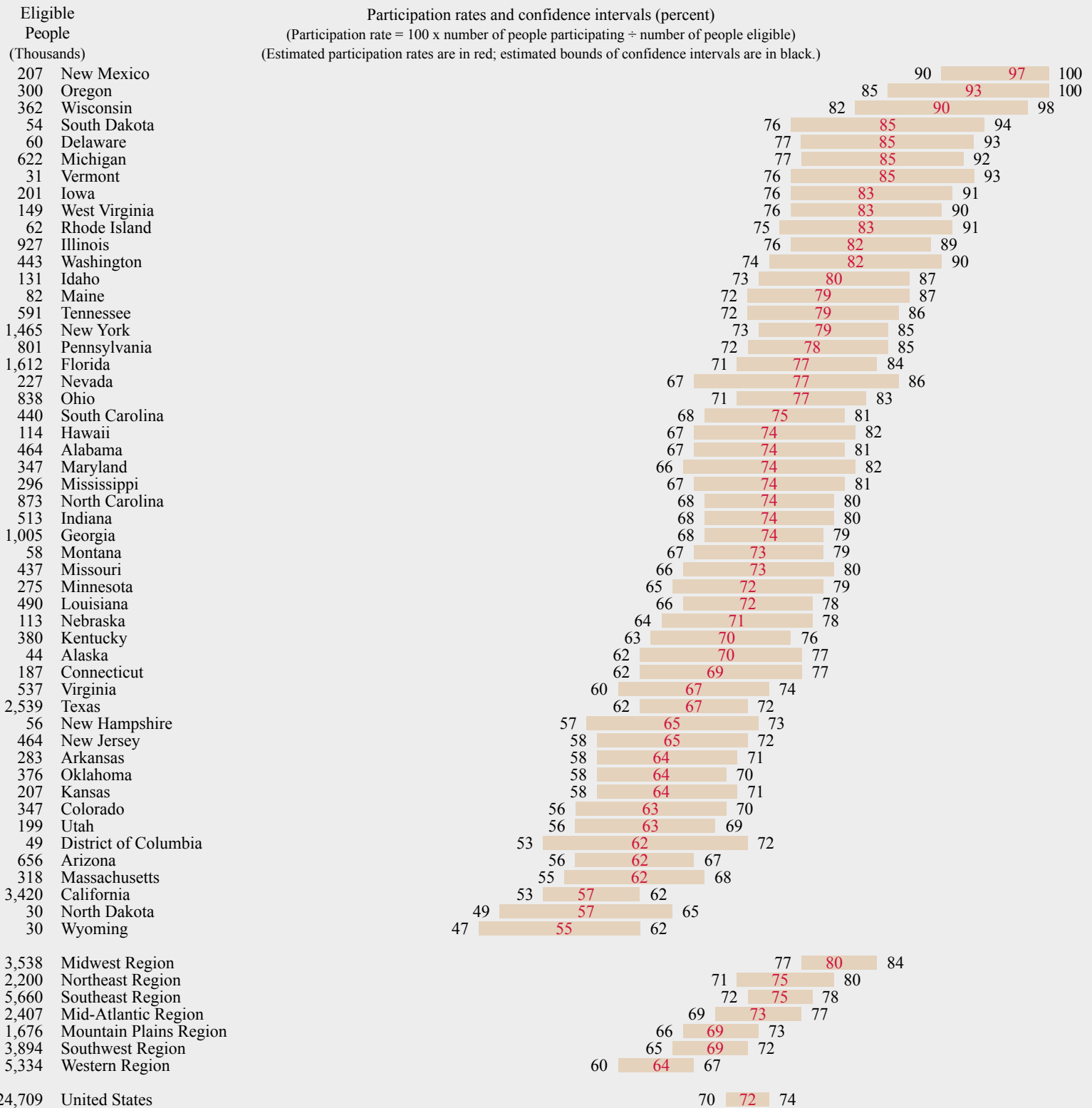
How many were eligible in 2015? What percentage participated?

Eligible People (Thousands)

Participation rates and confidence intervals (percent)
(Participation rate = 100 x number of people participating ÷ number of people eligible)
(Estimated participation rates are in red; estimated bounds of confidence intervals are in black.)

Eligible People (Thousands)	State	Lower	Estimate	Upper
650	Oregon	94	100	100
885	Washington	95	100	100
1,854	Illinois	95	100	100
413	New Mexico	94	100	100
125	Delaware	94	100	100
1,402	Michigan	95	100	100
71	Vermont	93	99	100
155	Rhode Island	93	99	100
133	District of Columbia	92	98	100
699	Wisconsin	91	96	100
1,284	Tennessee	89	95	100
407	Connecticut	88	94	100
361	Iowa	88	92	97
3,584	Florida	88	92	95
741	Maryland	86	92	97
107	South Dakota	83	90	97
1,822	Pennsylvania	86	90	94
191	Maine	85	90	95
949	Missouri	83	89	95
1,736	Ohio	83	87	92
93	Alaska	82	87	92
3,201	New York	83	87	91
1,987	Georgia	82	86	90
397	West Virginia	80	85	91
1,018	Alabama	80	85	89
199	Hawaii	78	84	90
735	Mississippi	79	83	88
977	Indiana	79	83	88
490	Minnesota	78	83	88
1,730	North Carolina	79	83	86
842	Massachusetts	78	82	87
934	South Carolina	78	82	86
442	Nevada	74	81	88
226	Idaho	75	80	85
1,067	Louisiana	76	80	84
137	Montana	73	78	83
731	Oklahoma	73	78	82
950	Kentucky	73	77	82
217	Nebraska	71	76	81
611	Colorado	71	76	81
122	New Hampshire	70	75	80
1,123	Virginia	70	75	79
1,091	New Jersey	70	74	79
632	Arkansas	68	72	76
384	Kansas	67	71	76
4,706	Texas	68	70	73
1,247	Arizona	66	70	74
5,736	California	67	70	72
321	Utah	65	69	74
67	North Dakota	57	62	67
54	Wyoming	53	59	64
7,158	Midwest Region	91	93	96
4,989	Northeast Region	84	87	90
12,221	Southeast Region	85	87	89
5,433	Mid-Atlantic Region	82	84	86
3,208	Mountain Plains Region	78	80	83
9,478	Western Region	74	76	78
7,550	Southwest Region	72	74	76
50,036	United States	82	83	84

A confidence interval expresses our uncertainty 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 Mississippi's participation rate was 83 percent in 2015, the true rate may have been higher or lower. However, the chances are 90 in 100 that the true rate was between 79 and 88 percent.

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

How many working poor people were eligible in 2015? What percentage participated?

Eligible People (Thousands)	State	Participation rates and confidence intervals (percent)

(Participation rate = 100 x number of people participating ÷ number of people eligible)

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

Eligible People (Thousands)	State/Region	Lower	Estimate	Upper
207	New Mexico	90	97	100
300	Oregon	85	93	100
362	Wisconsin	82	90	98
54	South Dakota	76	85	94
60	Delaware	77	85	93
622	Michigan	77	85	92
31	Vermont	76	85	93
201	Iowa	76	83	91
149	West Virginia	76	83	90
62	Rhode Island	75	83	91
927	Illinois	76	82	89
443	Washington	74	82	90
131	Idaho	73	80	87
82	Maine	72	79	87
591	Tennessee	72	79	86
1,465	New York	73	79	85
801	Pennsylvania	72	78	85
1,612	Florida	71	77	84
227	Nevada	67	77	86
838	Ohio	71	77	83
440	South Carolina	68	75	81
114	Hawaii	67	74	82
464	Alabama	67	74	81
347	Maryland	66	74	82
296	Mississippi	67	74	81
873	North Carolina	68	74	80
513	Indiana	68	74	80
1,005	Georgia	68	74	79
58	Montana	67	73	79
437	Missouri	66	73	80
275	Minnesota	65	72	79
490	Louisiana	66	72	78
113	Nebraska	64	71	78
380	Kentucky	63	70	76
44	Alaska	62	70	77
187	Connecticut	62	69	77
537	Virginia	60	67	74
2,539	Texas	62	67	72
56	New Hampshire	57	65	73
464	New Jersey	58	65	72
283	Arkansas	58	64	71
376	Oklahoma	58	64	70
207	Kansas	58	64	71
347	Colorado	56	63	70
199	Utah	56	63	69
49	District of Columbia	53	62	72
656	Arizona	56	62	67
318	Massachusetts	55	62	68
3,420	California	53	57	62
30	North Dakota	49	57	65
30	Wyoming	47	55	62
3,538	Midwest Region	77	80	84
2,200	Northeast Region	71	75	80
5,660	Southeast Region	72	75	78
2,407	Mid-Atlantic Region	69	73	77
1,676	Mountain Plains Region	66	69	73
3,894	Southwest Region	65	69	72
5,334	Western Region	60	64	67
24,709	United States	70	72	74

A confidence interval expresses our uncertainty 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 Alabama's working poor participation rate was 74 percent in 2015, the true rate may have been higher or lower. However, the chances are 90 in 100 that the true rate was between 67 and 81 percent.

See 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 2015, Oregon was very likely at the top, with a higher rate for all eligible people than all other States. In contrast, Wyoming and North Dakota likely had lower rates 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 2015, New Mexico, Oregon, and Wisconsin were very likely at the top, with higher rates for the working poor than most States. In contrast, Wyoming, North Dakota, and California likely had lower rates than most States.

How a State compares with other States may fluctuate over time due to both statistical variability in estimated rates and true changes in rates. The statistical variability is sufficiently great that a large change in a State's rate from the prior year should be interpreted cautiously, as should differences between the rates of that State and other States. It may 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 2013 to 2015, the District of Columbia, Delaware, Illinois, Michigan, Oregon, Rhode Island, Vermont, Washington, and Wisconsin had significantly higher participation rates for all eligible people than two-thirds of the States. Iowa and Tennessee had significantly higher rates than half of the States. Colorado, Kansas, Nebraska, Oklahoma, and Virginia had significantly lower rates than half of the States in all three years, while Arkansas, Arizona, California, New Jersey, North Dakota, Texas, Utah, 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 be ranked near the top or bottom, respectively, of the distribution of rates for working poor people. However, rankings of States by participation rates for working poor people and all eligible people are not always similar. Four States (Idaho, Montana, South Dakota, and Wisconsin) 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, 4 States—Connecticut, Illinois, Massachusetts, and Washington—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 et al. forthcoming). 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. Farson Gray and Cunnyngham (2017) present details on the estimation methods used to derive the direct sample estimates.

Estimates of participation rates (percent)

	All eligible people			Working poor		
	2013	2014	2015	2013	2014	2015
Alabama	87	85	85	77	70	74
Alaska	83	85	87	69	72	70
Arizona	76	68	70	67	56	62
Arkansas	76	73	72	69	61	64
California	68	67	70	54	52	57
Colorado	81	77	76	75	69	63
Connecticut	89	92	94	72	72	69
Delaware	99	100	100	89	86	85
District of Columbia	98	95	98	67	53	62
Florida	92	90	92	76	73	77
Georgia	93	87	86	80	73	74
Hawaii	75	84	84	64	73	74
Idaho	90	84	80	86	82	80
Illinois	100	100	100	83	83	82
Indiana	90	88	83	86	82	74
Iowa	95	96	92	93	90	83
Kansas	81	77	71	78	72	64
Kentucky	87	84	77	75	71	70
Louisiana	88	76	80	79	66	72
Maine	100	100	90	97	87	79
Maryland	91	93	92	73	75	74
Massachusetts	86	84	82	65	63	62
Michigan	100	100	100	100	93	85
Minnesota	87	88	83	79	81	72
Mississippi	84	82	83	75	68	74
Missouri	94	88	89	81	72	73
Montana	84	79	78	82	77	73
Nebraska	80	78	76	77	77	71
Nevada	64	65	81	54	59	77
New Hampshire	83	81	75	75	73	65
New Jersey	75	73	74	65	65	65
New Mexico	92	90	100	87	83	97
New York	87	86	87	76	77	79
North Carolina	82	80	83	75	68	74
North Dakota	69	63	62	70	64	57
Ohio	93	88	87	86	79	77
Oklahoma	79	78	78	67	59	64
Oregon	100	100	100	100	98	93
Pennsylvania	90	88	90	81	79	78
Rhode Island	96	96	99	78	81	83
South Carolina	85	78	82	81	69	75
South Dakota	88	93	90	94	94	85
Tennessee	100	100	95	82	82	79
Texas	76	73	70	66	66	67
Utah	76	72	69	70	67	63
Vermont	100	100	99	99	94	85
Virginia	80	78	75	74	70	67
Washington	100	100	100	89	86	82
West Virginia	78	80	85	72	72	83
Wisconsin	100	100	96	98	99	90
Wyoming	57	60	59	55	60	55
Mid-Atlantic Region	85	84	84	74	72	73
Midwest Region	96	95	93	89	85	80
Mountain Plains Region	86	82	80	79	74	69
Northeast Region	88	87	87	75	75	75
Southeast Region	90	87	87	77	72	75
Southwest Region	79	75	74	69	66	69
Western Region	75	73	76	62	59	64
United States	85	83	83	74	70	72

There is substantial uncertainty associated with most of these estimates. Confidence intervals that measure the uncertainty in the estimates for 2013 and 2014 are presented in Cunnyngham et al. (forthcoming). These confidence intervals are generally about as wide as the confidence intervals that are presented in this document for the 2015 estimates.

See Estimation method section for information on participation rates of 100 percent.
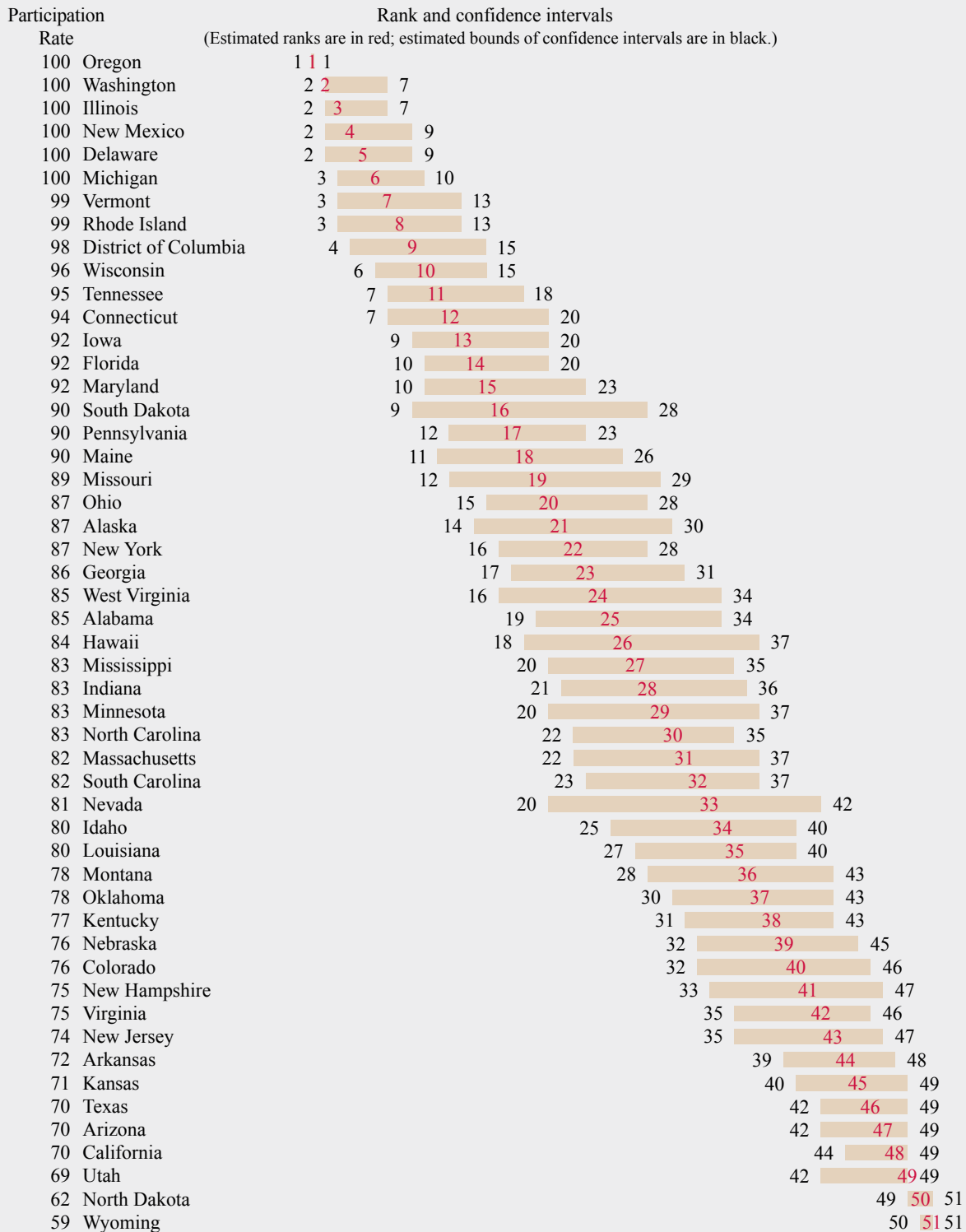
The regression predictions of participation rates drew on data from the American Community Survey, individual tax returns, population estimates, and administrative records, and were based on indicators of socioeconomic conditions, such as the percentage of the total State population receiving SNAP benefits. Because of differences between the years being estimated, the regression model differs slightly from the one developed for Cunnyngham (2016). 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 et al. forthcoming). Estimates for fiscal years 2013 and 2014 differ from estimates presented in Cunnyngham (2017) because of differences in the 3 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 asset tests or in which all members receive cash public assistance. People eligible solely through State categorical eligibility policies are not included in the estimates presented here. 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 money 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 is participating 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. See Cunnyngham et al. (forthcoming) for details on how we made the adjustments.

How did your State rank in 2015?

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

Rate	State	Lower	Rank	Upper
100	Oregon	1	1	1
100	Washington	2	2	7
100	Illinois	2	3	7
100	New Mexico	2	4	9
100	Delaware	2	5	9
100	Michigan	3	6	10
99	Vermont	3	7	13
99	Rhode Island	3	8	13
98	District of Columbia	4	9	15
96	Wisconsin	6	10	15
95	Tennessee	7	11	18
94	Connecticut	7	12	20
92	Iowa	9	13	20
92	Florida	10	14	20
92	Maryland	10	15	23
90	South Dakota	9	16	28
90	Pennsylvania	12	17	23
90	Maine	11	18	26
89	Missouri	12	19	29
87	Ohio	15	20	28
87	Alaska	14	21	30
87	New York	16	22	28
86	Georgia	17	23	31
85	West Virginia	16	24	34
85	Alabama	19	25	34
84	Hawaii	18	26	37
83	Mississippi	20	27	35
83	Indiana	21	28	36
83	Minnesota	20	29	37
83	North Carolina	22	30	35
82	Massachusetts	22	31	37
82	South Carolina	23	32	37
81	Nevada	20	33	42
80	Idaho	25	34	40
80	Louisiana	27	35	40
78	Montana	28	36	43
78	Oklahoma	30	37	43
77	Kentucky	31	38	43
76	Nebraska	32	39	45
76	Colorado	32	40	46
75	New Hampshire	33	41	47
75	Virginia	35	42	46
74	New Jersey	35	43	47
72	Arkansas	39	44	48
71	Kansas	40	45	49
70	Texas	42	46	49
70	Arizona	42	47	49
70	California	44	48	49
69	Utah	42	49	49
62	North Dakota	49	50	51
59	Wyoming	50	51	51

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 Hawaii had the 26th highest participation rate in 2015, the true rank may have been higher or lower. However, the chances are 90 in 100 that the true rank was between 18 and 37 among all of the States. To determine how Hawaii or your State compares with any other State, see the chart on page 7.

How did your State compare with other States in 2015 for all eligibles?
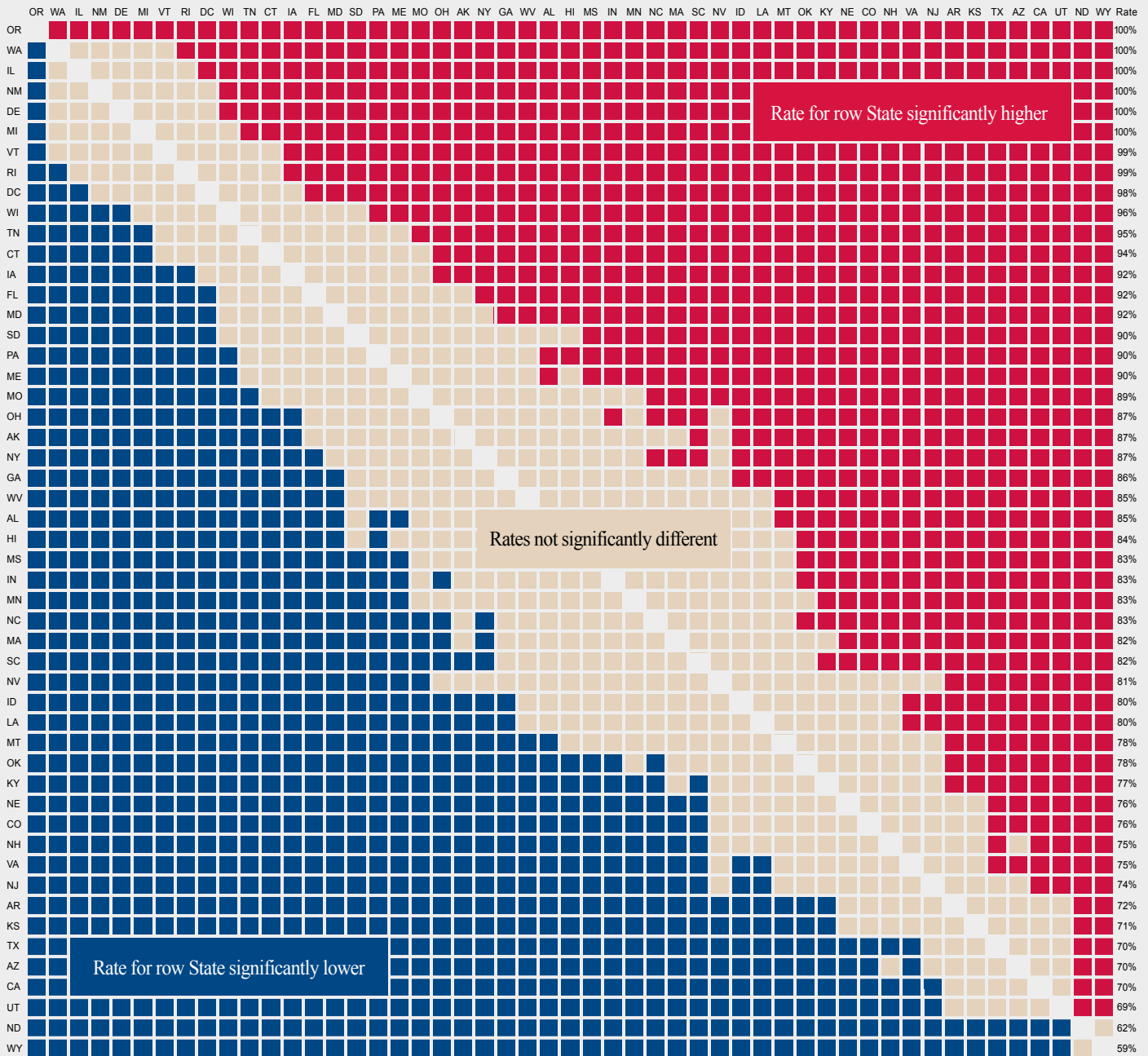
Whether one State has a significantly higher participation rate than another State can be determined from this figure by finding the row for the first State at the left of the figure and the column for the second State at the top of the figure. If the box where the row and column intersect is red, there 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 Hawaii, the State in the middle of the distribution, as an example, we see that it had a significantly lower participation rate than 16 States (Oregon, Washington, Illinois, New Mexico, Delaware, Michigan, Vermont, Rhode Island, the District of Columbia, Wisconsin, Tennessee, Connecticut, Iowa, Florida, Maryland, and Pennsylvania) and a significantly higher rate than 15 States (Wyoming, North Dakota, Utah, California, Arizona, Texas, Kansas, Arkansas, New Jersey, Virginia, New Hampshire, Colorado, Nebraska, Kentucky, and Oklahoma). Its rate was neither significantly higher nor significantly lower than the rates for the other 20 States, suggesting that Hawaii is probably in the broad center of the distribution, unlike, for example, Oregon 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 Estimation method section for information on participation rates of 100 percent.
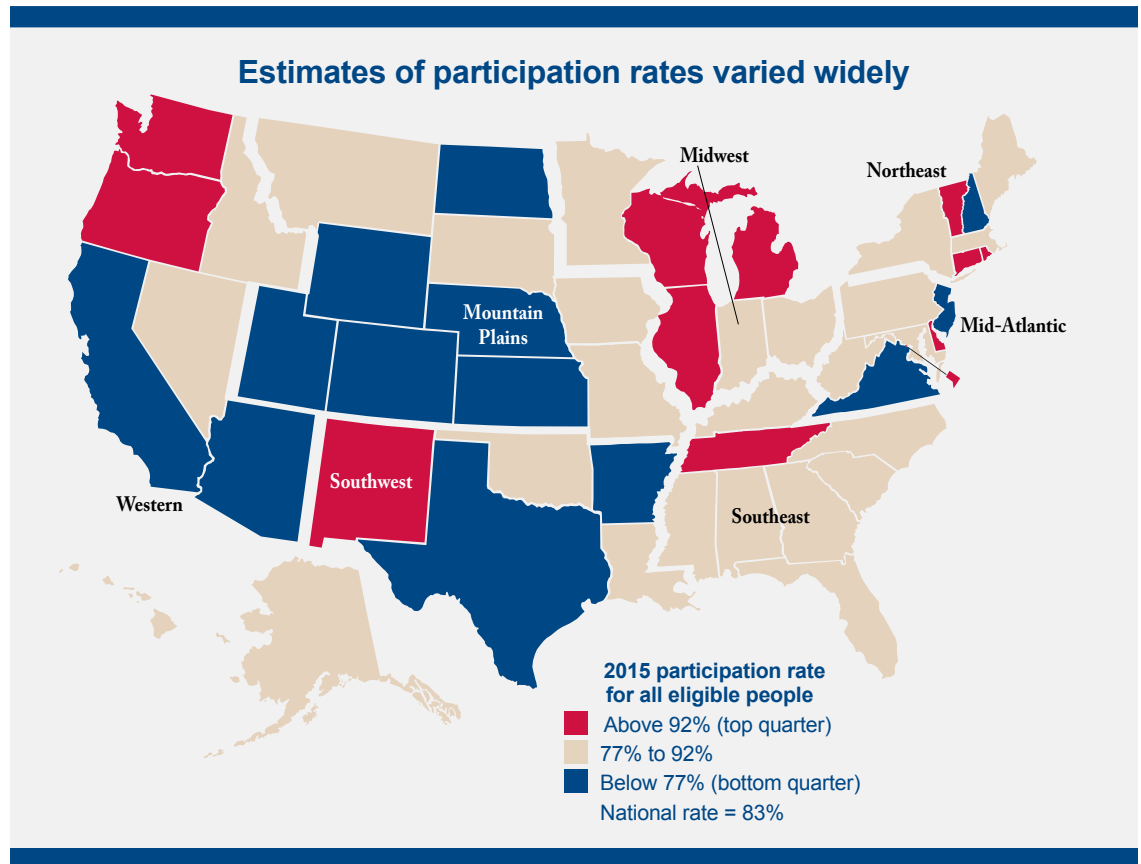
Because the Current Population Survey does not collect data on participation in the Food Distribution Program on Indian Reservations, we did not adjust the estimates presented here to reflect the fact that participants in that program were not eligible to receive SNAP benefits at the same time (Farson Gray and Cunnyngham 2017). The Food Distribution Program on Indian Reservations served about 89,000 people in fiscal year 2015, 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 are not eligible to receive SNAP benefits because they receive 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

Cunnyngham, Karen. "Empirical Bayes Shrinkage Estimates of State Supplemental Nutrition Assistance Program Participation Rates in Fiscal Year 2013 to Fiscal Year 2015 for All Eligible People and the Working Poor."

[1]About 1.3 million Supplemental Security Income recipients in California receive a small food assistance benefit through the State supplement. In the absence of the State rule excluding these people from receiving SNAP benefits, about 700,000 more California residents would be eligible for SNAP.

Estimates of participation rates varied widely

2015 participation rate for all eligible people
- Above 92% (top quarter)
- 77% to 92%
- Below 77% (bottom quarter)
National rate = 83%

Final report submitted to the U.S. Department of Agriculture, Food and Nutrition Service. Washington, DC: Mathematica Policy Research, January 2018. Available at https://www.mathematica-mpr.com/our-publications-and-findings/publications/empirical-bayes-shrinkage-estimates-of-state-snap-participation-rates-in-fiscal-year-2013-to-2015

Cunnyngham, Karen. "Reaching Those in Need: State Supplemental Nutrition Assistance Program Participation Rates in 2014." Final report submitted to the U.S. Department of Agriculture, Food and Nutrition Service. Washington, DC: Mathematica Policy Research, January 2017.

Farson Gray, Kelsey, and Karen Cunnyngham. "Trends in Supplemental Nutrition Assistance Program Participation Rates: Fiscal Year 2010 to Fiscal Year 2015." Final report submitted to the U.S. Department of Agriculture, Food and Nutrition Service. Washington, DC: Mathematica Policy Research, June 2017.