2020 Census State Level Accuracy

By

Dr. William P. O'Hare

This short paper focuses on states ranked by net coverage and omission rates in the 2020 Census. The last section offers some ideas for further analysis which would take advantage of state variation in census accuracy measures.

In the release from the Census Bureau on May 19, 2022, the Bureau noted that six states had statistically significant net undercounts and eight states had statistically significant net overcounts in the 2020 Census (U.S. Census Bureau 2022b). This is a sharp contrast to the 2010 Census when no state had a statistically significant net overcount or net undercount (U.S. Census Bureau, 2012, Table 5). The fact that accuracy differences among states are more pronounced in 2020 compared to 2010 census is consistent with the fact that net coverage errors for Non-Hispanic White Alone, Blacks, Hispanics, Asians, and American Indians/Alaskan Natives living on Indian Reservations were larger in 2020 than in 2010 (U. S. Census Bureau 2022a Table 4). Net undercount rates for the Blacks, Hispanics, and American Indians/Alaskan Natives living in Indian reservations increased from 2010 to 2020 and the net overcount rates of Non-Hispanic White Alone and Asians increased between 2010 and 2020. Across groups and across states, differences in Census accuracy were more pronounced in 2020 than in 2010.

Net undercounts and overcounts are important measures of census accuracy, but they are not they only measures of census accuracy that are informative. Omissions rates for states were also released on May 19th. For more information on the

distinction between net coverage rates and omissions rates see O'Hare (2019a and 2020b). For many stakeholders, it is the people missed in the census that is the key element of quality. Most of the work by stakeholder groups in promoting the 2020 Census were efforts to make sure people were not missed in the Census.

Moreover, net coverage is a balance between people missed and people counted twice or counted erroneously. If there were a lot of people missed and also lot of people counted twice, the net coverage error would appear low eventhough there are many errors.

Omissions are defined by the Census Bureau (2022b, page 3) as, "Omissions are people who should have been correctly counted in the census but were not." However, this definition is not as straightforward as it may seem. The U.S. Census Bureau (2022c) describes two groups of people who are considered omissions.

"• People who were not included in the census count.
 • People who were included in the census count but do not meet the definition of a correct enumeration (e.g., people in "population count only" households are omissions even though they were included in the census count)."

In other words, some of the people in the omissions category were included in the Census count.

Whether people were missed entirely or did not include any personal demographic information, people in the omitted category reflect a problem with census data collection. The higher the number of omissions in a state, the larger this problem is.

Ranking states on net coverage and omissions may seem inappropriate because small differences are probably meaningless. However, this is a common way to present state data and arraying the data this way might help someone spot a pattern that would be more difficult to spot otherwise.

States Ranked on Net Coverage

Table 1 shows states ranked on their net coverage rates in the 2020 census. Net coverage rates vary from a 5.04 percent net undercount in Arkansas to a 6.79 percent net overcount in Hawaii. It is notable that four of the five states with the highest net undercount rates (Arkansas, Tennessee, Louisiana, and Florida) are located in the South.

FINAL

Table 1. States Ranked by 2020 Census Net Coverage Rate			
Rank	State	2020 PES Census Population* (in 1,000s)	Net Coveage Rate	Net Coverage Population Size (in 1000s)
1	Arkansas	2,929	-5.04	-148
2	Tennessee	6,754	-4.78	-323
3	Montana	1,055	-4.39	-46
4	Louisiana	4,534	-3.73	-169
5	Florida	21,070	-3.48	-733
6	Wyoming	564	-2.60	-15
7	Iowa	3,092	-2.04	-63
8	Illinois	12,540	-1.97	-247
9	Texas	28,540	-1.92	-548
10	North Carolina	10,150	-1.59	-161
11	Idaho	1,789	-1.55	-28
12	South Carolina	4,980	-1.36	-68
13	Kentucky	4,381	-1.18	-52
14	Maryland	6,052	-1.17	-71
15	Missouri	5,986	-1.05	-63
16	Alabama	4,896	-1.05	-51
17	Kansas	2,851	-0.81	-23
18	Nebraska	1,912	-0.73	-14
19	South Dakota	855	-0.42	-4
20	Virginia	8,395	-0.35	-29
21	North Dakota	753	-0.35	-3
22	Arizona	6,991	-0.16	-11
23	Connecticut	3,498	-0.13	-5
24	New Jersey	9,109	-0.12	-11
25	New Mexico	2,075	0.10	2
26	Michigan	9,856	0.14	14
27	Indiana	6,607	0.21	14
28	Washington	7,545	0.29	22
29	Georgia	10,460	0.31	32
30	California	38,620	0.47	182
31	Pennsylvania	12,600	0.48	60
32	New Hampshire	1,335	0.53	7
33	Wisconsin	5,742	0.85	49
34	Oregon	4,140	1.00	41
35	Alaska	700	1.12	8
36	Vermont	618	1.48	9
37	Ohio	11,500	1.49	171
38	West Virginia	1,742	1.53	27
39	Colorado	5,647	2.19	124
40	Maine	1,326	2.20	29
41	Massachusetts	6,784	2.24	152
42	Oklahoma	3,842	2.41	93
43	Utah	3,216	2.59	83
44	New York	19,590	3.44	674
45	Minnesota	5,568	3.84	214
46	Mississippi	2,868	4.11	118
47	Nevada	3,068	4.42	136
48	Rhode Island	1,052	5.05	53
49	Delaware	967	5.45	53
50	Hawaii	1,415	6.79	96
	Total	322,559	-0.24	-774

Note DC not included as a state

Source: U.S. Census Bureau 2022 Census Coverage Estimates for People in the United States by State and Census Operations: PES20-G-02, Table 4

* Does not include remote Alaska or Groups Quarters population.

4

Figure 1 shows that as a region, the South experienced an increase in its net undercount rate between 2010 and 2020. The net coverage rate in the South increased from -0.5 percent in 2010 to -1.9 percent in 2020. Earlier research (O'Hare 2017 and 2019) covered many census issues in the South, particularly the rural South. Figure 1 also reflects much larger regional differences in 2020 than in 2010. The widening gap between regions in 2020 is consistent with the widening gap between groups and states.

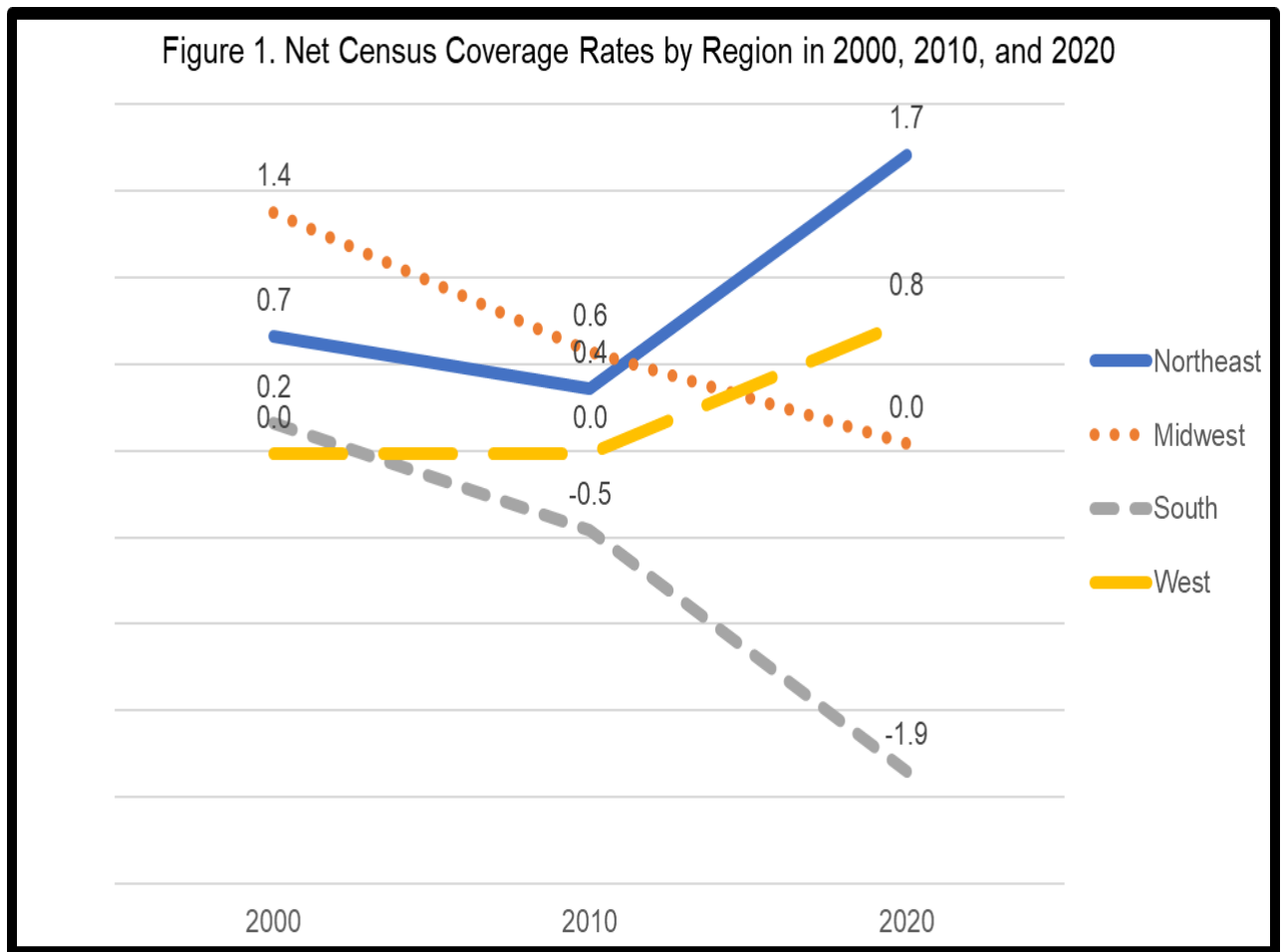Figure 1. Net Census Coverage Rates by Region in 2000, 2010, and 2020

Table 2 shows states ranked on the estimated number of people undercounted or overcounted in the 2020 Census. The states vary from a 733,000-person undercount in Florida to a 674,000-person overcount in New York. Seven states (Florida, Texas, Tennessee, Illinois, Louisiana, North Carolina ,and Arkansas) each had net undercounts of 100,000 people or more in the 2020 Census.

Rank	State	2020 PES Census Population* (in 1,000s)	Net Coverage Rate	Net Coverage Population Size (in 1000s)
		Table 2. States Ranked by 2020 Census Net Coverage Population		
1	Florida	21,070	-3.48	-733
2	Texas	28,540	-1.92	-548
3	Tennessee	6,754	-4.78	-323
4	Illinois	12,540	-1.97	-247
5	Louisiana	4,534	-3.73	-169
6	North Carolina	10,150	-1.59	-161
7	Arkansas	2,929	-5.04	-148
8	Maryland	6,052	-1.17	-71
9	South Carolina	4,980	-1.36	-68
10	Iowa	3,092	-2.04	-63
11	Missouri	5,986	-1.05	-63
12	Kentucky	4,381	-1.18	-52
13	Alabama	4,896	-1.05	-51
14	Montana	1,055	-4.39	-46
15	Virginia	8,395	-0.35	-29
16	Idaho	1,789	-1.55	-28
17	Kansas	2,851	-0.81	-23
18	Wyoming	564	-2.60	-15
19	Nebraska	1,912	-0.73	-14
20	Arizona	6,991	-0.16	-11
21	New Jersey	9,109	-0.12	-11
22	Connecticut	3,498	-0.13	-5
23	South Dakota	855	-0.42	-4
24	North Dakota	753	-0.35	-3
25	New Mexico	2,075	0.10	2
26	New Hampshire	1,335	0.53	7
27	Alaska	700	1.12	8
28	Vermont	618	1.48	9
29	Michigan	9,856	0.14	14
30	Indiana	6,607	0.21	14
31	Washington	7,545	0.29	22
32	West Virginia	1,742	1.53	27
33	Maine	1,326	2.20	29
34	Georgia	10,460	0.31	32
35	Oregon	4,140	1.00	41
36	Wisconsin	5,742	0.85	49
37	Delaware	967	5.45	53
38	Rhode Island	1,052	5.05	53
39	Pennsylvania	12,600	0.48	60
40	Utah	3,216	2.59	83
41	Oklahoma	3,842	2.41	93
42	Hawaii	1,415	6.79	96
43	Mississippi	2,868	4.11	118
44	Colorado	5,647	2.19	124
45	Nevada	3,068	4.42	136
46	Massachusetts	6,784	2.24	152
47	Ohio	11,500	1.49	171
48	California	38,620	0.47	182
49	Minnesota	5,568	3.84	214
50	New York	19,590	3.44	674
	Total	322,559	-0.24	-774
Note DC not included as a state				
Source: U.S. Census Bureau 2022 Census Coverage Estimates for				
* Does not include remote Alaska, Groups Quarters.				

States Ranked on Omissions

       Table 3 shows states ranked on their omissions rate in the 2020 census. Omission rates vary from a low of 0.7 percent in Delaware to a high of 11.1 percent in Montana. Four states (Montana, Louisiana, Tennessee, and Arkansas) have omissions rates over 10 percent. Like net undercount rates, a lot of states in the deep South had relatively high omissions rates. Five of the six states (Louisiana, Tennessee, Arkansas, Mississippi, and Florida) with the highest omissions rates are in the South.

Table 3. States Ranked by 2020 Census Omissions Rates			
Rank	State	2020 Census PESPopulation * (in 1,000s)	Omissions Rate	Estimated Number of People omittee (in 1000s)
1	Delaware	967	0.7	7
2	Nevada	3,068	0.9	28
3	Minnesota	5,568	1.8	100
4	Rhode Island	1,052	2.3	24
5	Utah	3,216	2.8	90
6	Oklahoma	3,842	3.1	119
7	Maine	1,326	3.4	45
8	Hawaii	1,415	3.5	50
9	Ohio	11,500	3.7	426
10	Oregon	4,140	4.1	170
11	West Virginia	1,742	4.3	75
12	Colorado	5,647	4.4	248
13	Pennsylvania	12,600	4.4	554
14	New Hampshire	1,335	4.5	60
15	Wisconsin	5,742	4.6	264
16	Washington	7,545	4.8	362
17	Indiana	6,607	4.9	324
18	Massachusetts	6,784	4.9	332
19	Michigan	9,856	5.0	493
20	California	38,620	5.3	2,047
21	South Dakota	855	5.4	46
22	Georgia	10,460	5.5	575
23	Virginia	8,395	5.5	462
24	Idaho	1,789	5.6	100
25	Arizona	6,991	5.7	398
26	Kansas	2,851	5.7	163
27	North Dakota	753	5.7	43
28	Alaska	700	5.8	41
29	Nebraska	1,912	5.8	111
30	Vermont	618	5.8	36
31	New York	19,590	5.9	1,156
32	Missouri	5,986	6.1	365
33	Iowa	3,092	6.5	201
34	Alabama	4,896	6.6	323
35	Kentucky	4,381	6.6	289
36	Maryland	6,052	6.6	399
37	South Carolina	4,980	6.6	329
38	New Jersey	9,109	6.8	619
39	North Carolina	10,150	7.0	711
40	Connecticut	3,498	7.2	252
41	New Mexico	2,075	7.3	151
42	Texas	28,540	7.6	2,169
43	Wyoming	564	7.6	43
44	Illinois	12,540	7.8	978
45	Florida	21,070	9.2	1,938
46	Mississippi	2,868	9.9	284
47	Arkansas	2,929	10.1	296
48	Tennessee	6,754	10.1	682
49	Louisiana	4,534	10.4	472
50	Montana	1,055	11.1	117
	Total	322,559	5.8	18,708
Note DC not include as a state			
Source: U.S. Census Bureau 2022 Census Coverage Estimates for People in the United States by State and Census Operations: PES20-G-02, Table 4			
* Does not include remote Alaska, Groups Quarters.			

Table 4 shows states ranked on the estimated number of omissions in the 2020 Census. The states vary from a low of 7,000 people in Delaware to a high of 2,169,000 in Texas. Four States (Texas, California, Florida, and New York) each had more than 1 million omissions in the 2020 Census. Collectively, these four states account 7.3 million omissions which is about 38 percent of all omission in the 2020 Census.

Table 4. States Ranked by 2020 Census Estimated Number of People Omitted			
Rank	State	2020 Census PES Population* (in 1,000s)	Omissions Rate	Estimated Number of People omitted (in 1000s)
1	Delaware	967	0.7	7
2	Rhode Island	1,052	2.3	24
3	Nevada	3,068	0.9	28
4	Vermont	618	5.8	36
5	Alaska	700	5.8	41
6	Wyoming	564	7.6	43
7	North Dakota	753	5.7	43
8	Maine	1,326	3.4	45
9	South Dakota	855	5.4	46
10	Hawaii	1,415	3.5	50
11	New Hampshire	1,335	4.5	60
12	West Virginia	1,742	4.3	75
13	Utah	3,216	2.8	90
14	Idaho	1,789	5.6	100
15	Minnesota	5,568	1.8	100
16	Nebraska	1,912	5.8	111
17	Montana	1,055	11.1	117
18	Oklahoma	3,842	3.1	119
19	New Mexico	2,075	7.3	151
20	Kansas	2,851	5.7	163
21	Oregon	4,140	4.1	170
22	Iowa	3,092	6.5	201
23	Colorado	5,647	4.4	248
24	Connecticut	3,498	7.2	252
25	Wisconsin	5,742	4.6	264
26	Mississippi	2,868	9.9	284
27	Kentucky	4,381	6.6	289
28	Arkansas	2,929	10.1	296
29	Alabama	4,896	6.6	323
30	Indiana	6,607	4.9	324
31	South Carolina	4,980	6.6	329
32	Massachusetts	6,784	4.9	332
33	Washington	7,545	4.8	362
34	Missouri	5,986	6.1	365
35	Arizona	6,991	5.7	398
36	Maryland	6,052	6.6	399
37	Ohio	11,500	3.7	426
38	Virginia	8,395	5.5	462
39	Louisiana	4,534	10.4	472
40	Michigan	9,856	5.0	493
41	Pennsylvania	12,600	4.4	554
42	Georgia	10,460	5.5	575
43	New Jersey	9,109	6.8	619
44	Tennessee	6,754	10.1	682
45	North Carolina	10,150	7.0	711
46	Illinois	12,540	7.8	978
47	New York	19,590	5.9	1,156
48	Florida	21,070	9.2	1,938
49	California	38,620	5.3	2,047
50	Texas	28,540	7.6	2,169
	Total	322,559	5.8	18,708
Note DC not include as a state				
Source: U.S. Census Bureau 2022 Census Coverage Estimates for				
* Does not include remote Alaska, Groups Quarters.				

11

Further Analysis

It is widely believed that the state figures shown here mask important differences among sub-state geographic units like cities and counties. That is why getting more information on sub-state measures would be helpful in understanding why census accuracy measures vary from place to place. The recent report from the National Academy of Sciences Panel (2022, page 9) on the 2020 Census also notes the need for substate data in order to better understand the results of the 2020 Census.

But it is not clear that such data will be made available. Consequently, it is important to gain as much information as we can from the state-to-state differences.

The availability of the state level measures of census accuracy shown here offer a chance to learn more about what might be driving differences in census accuracy. Research should be conducted to gain a better understanding of why some states had a relatively low or relatively high omissions rate and net coverage rate. Such an analysis would help us understand 2020 Census differences in accuracy and the results could be used to improve operations in the 2030 Census.

There are several types of state characteristics that should be examined including:

1. Race and ethnic composition
2. Self-response rates and other state-level operational metrics
3. The resources (money, Complete Count Committees, etc.) the state put into 2020 Census outreach and promotion
4. Major type of census operations used in the state to collect data

5. Internet accessibility in the state

Such analysis is not likely to be definitive in terms of what caused differential coverage and omissions rates in the 2020 Census but may be illuminating.

References

National Academies of Sciences, Engineering, and Medicine, 2022, Understanding the Quality of the 2020 Census: Interim Report Washington DC., The National Academy Press, https://nap.nationalacademies.org/read/26529/chapter/3#12

O'Hare, W. P. (2017). "2020 Census Faces Challenges in Rural America," Carsey School of Public Policy, University of New Hampshire, https://carsey.unh.edu/publication/2020-census

O'Hare W. P. (2019a) *Differential Undercounts in the U.S. Census: Who is Missing?* Springer publishers, available open access at

https://link.springer.com/book/10.1007/978-3-030-10973-8

O'Hare, W.P. (2019b). "Understanding Who Was Missed in the 2010 Census," Population Reference Bureau, Washington, DC. https://www.prb.org/understanding-who-was-missed-in-the-2010-census/

O'Hare, W.P. (2019c). "The Census Undercount of Young Children in the South," presentation at the Southern Demographic Association Conference, October New Orleans.

U.S. Census Bureau (2012) DSSD 2010 CENSUS COVERAGE MEASUREMENT MEMORANDUM SERIES #2010-G-04,

U.S. Census Bureau (2022a) National Census Coverage Estimates for People in the United States by Demographic Characteristics: 2020 Post-Enumeration Survey Estimate Report, PES-20-01 March

Source: U.S. Census Bureau (2022b) Census Coverage Estimates for People in the United States by State and Census Operations: PES20-G-02, May, Table 4

U.S. Census Bureau (2022c). Understanding the Count: A Discussion on the Latest 2020 Post-Enumeration Survey Results, U.S. Census Bureau, Understanding the Count: A Discussion on the Latest 2020 Post-Enumeration Survey Results (census.gov)