

What Past Research Tells Us About How to Prepare for the 2030 U.S. Census Count of Young Children

By

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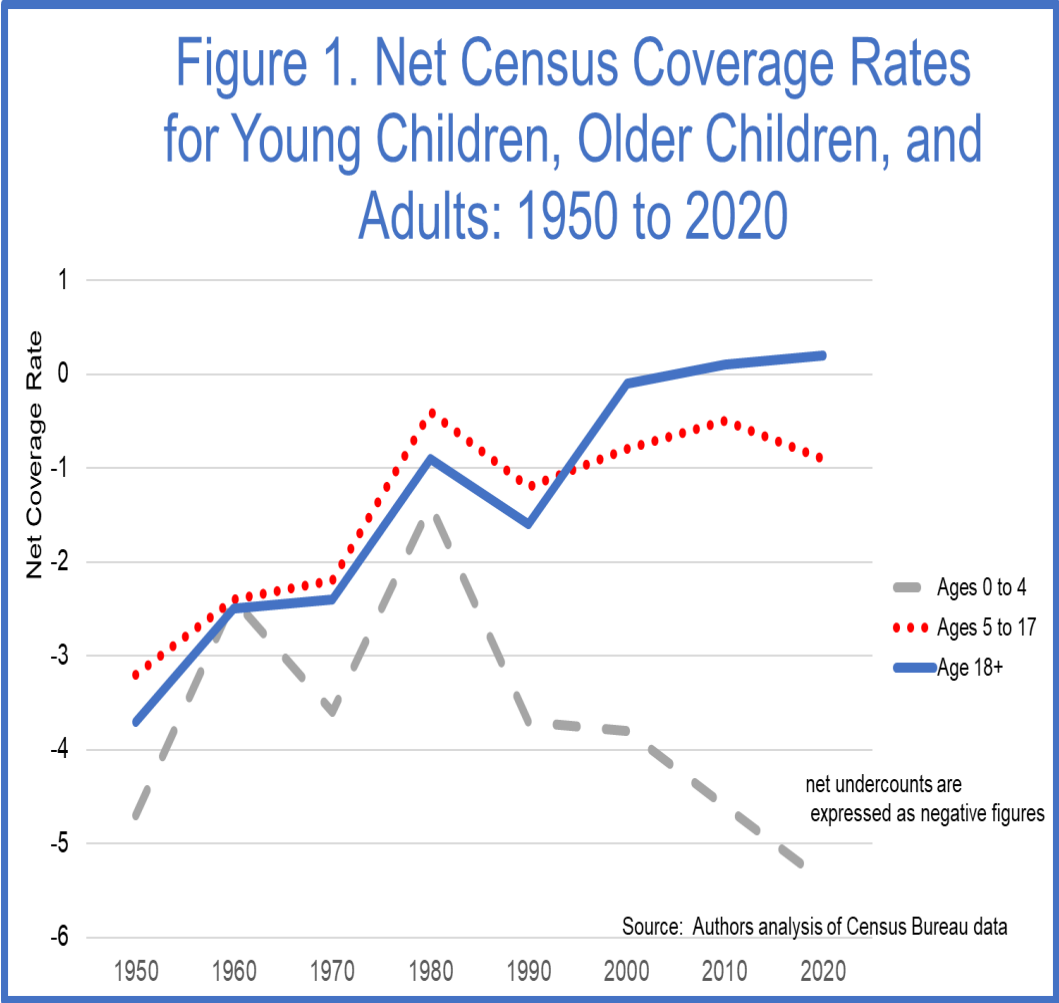
This paper draws on key trends and patterns from past research on the undercount of young children in the U.S. census to help us prepare for the 2030 Census. A lot of statistical analysis has been accumulated in the past few decades, particularly the past decade, on the undercount of young children in the U.S. census (for example see West and Robinson, 1999; O'Hare, 1999; O'Hare, 2009; U.S. Census Bureau, 2014; O'Hare, 2015; O'Hare, 2017; King et al., 2018; O'Hare et al., 2019; U.S. Census Bureau, 2019; Griffin and O'Hare, 2020; Jensen and Johnson, 2021; Jensen, 2022; Johnson, 2022; O'Hare, 2023 a ,b, and c; O'Hare, 2024; U.S. Census Bureau, 2024). Collectively, this stream of research tells a pretty clear and alarming story regarding the undercount of young children in the U.S. census. The net undercount of young children is high, and it has been increasing steadily.

It may seem early in the 2030 Census cycle for a paper like this, but one of the lessons we learned in the 2020 Census cycle is the importance of focusing on key issues early in the census planning cycle. If key issues don't get on the radar of the Census Bureau leadership early in the planning cycle, they can easily be overlooked.

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Figure 1 shows the census coverage rates for young children (ages 0 to 4), school-age children (ages 5 to 17), and adults (ages 18 or older) for each census from 1950 to 2020.³



³ Coverage refers to net undercounts and net overcounts. Net undercounts and overcounts are based on a balance between people missed in the census and people counted more than once or included in the Census inappropriately. Net undercounts are not the same as the number or rate of people missed in the Census.

After the 1980 Census, the coverage of young children plunged from an undercount of 1.4 percent in 1980 to an undercount of 5.4 percent in 2020. This 40-year trend is strikingly clear. If the net undercount of young children increases as much between 2020 and 2030 as it did between 2010 and 2020, it will be over 6 percent in the 2030 Census. Taking a longer view, young children are the only group I know of that had worse coverage in the 2020 Census than they had in the 1950 Census.

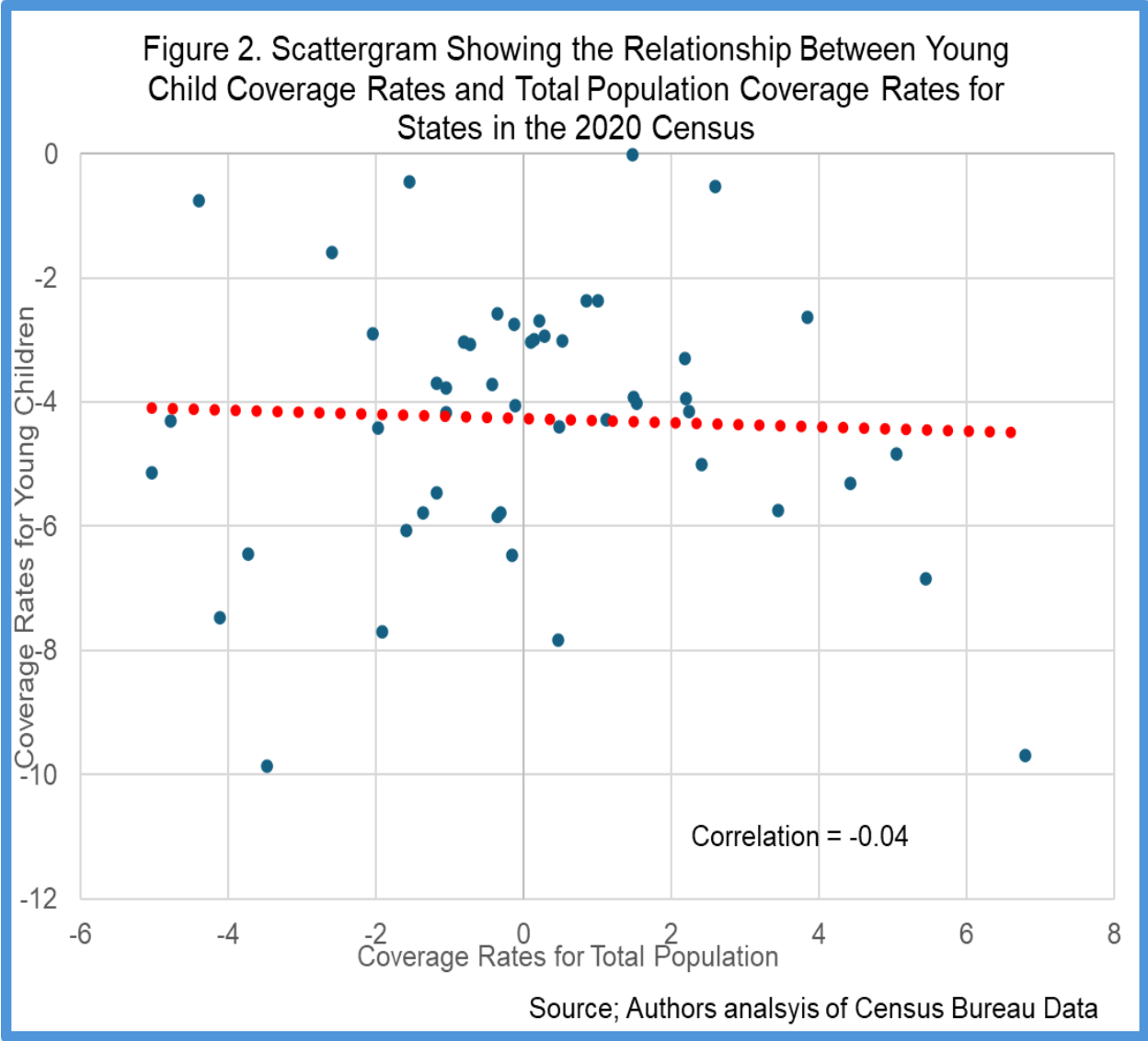
No other demographic group has experienced the deterioration of census quality that young children have experienced since 1980. That makes young children a special population in terms of planning for the 2030 Census.

It is also important to note that while the coverage of young children deteriorated since 1980, the census coverage of older children and adults did not. The coverage of adults continued to improve to the point that their coverage error was near zero in the 2020 Census. The coverage of children ages 5 to 17 remained pretty stable after 1980.

Figure 2 shows the relationship across states between the coverage of the total population and the state-level coverage for young children in the 2020 Census. Figure 2 shows there is almost no statistical relationship (the correlation is -0.04 which is not statistically significant) between the accuracy of the census count of the total population and the accuracy of the census count of young children across the states.

Just to give a couple of examples, the total population in Hawaii had a net overcount of 6.8 percent in the 2020 Census while young children had a net

undercount rate of 8.6 percent. Delaware had a net overcount of 5.5 percent for the total population but a net undercount of 6.1 percent for young children.



The trends over the past 40 years and the lack of a relationship between total population coverage and young child coverage in states, show that improvement in the

quality of census counts for the total population is unlikely to lead to improvement in the count of young children. There was significant improvement in the total population coverage over the past 40 years and it did not lead to improvement in the count of young children. In other words, typically there is no association between the accuracy of the data for the total population and the accuracy of data for young children.

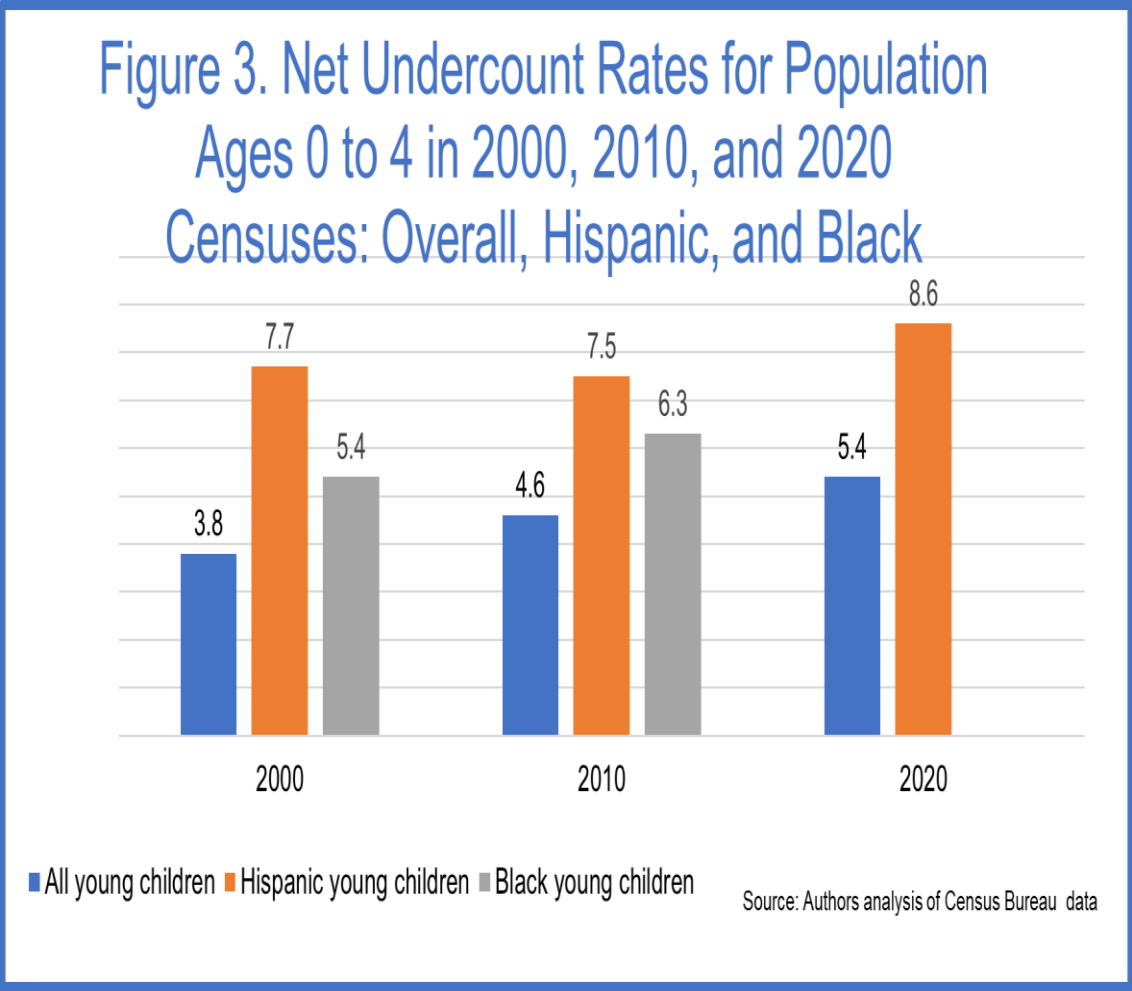
Given this disconnect between the accuracy of census data for the total population and the accuracy of census data for young children, it is critical to focus on young children separately from the total population and older children in the 2030 Census.

Data by Race and Hispanic Origin

A great deal of analysis over several decades indicates the Black and Hispanic populations have high net undercounts in the U.S. census. This is particularly true for young children. Data from the past three U.S. censuses indicates Black and Hispanic young children have much higher net undercount rates than the overall young child population.

Figure 3 shows net coverage rates for the total young child population, the Hispanic young children population, and the Black young child population in the 2000 and 2010 Censuses and for total young child population and Hispanic young child population in the 2020 Census. The net undercount rate for Black young children for 2020 cannot be calculated until the Census Bureau releases the modified race file for the 2020 Census.

For 2000, 2010, and 2020 the net undercount of Hispanic young children was much higher than the rate for all children. Moreover, the net undercount of Hispanic young children increased from 7.5 percent in 2010 to 8.6 percent in 2020.⁴



⁴ The 7.5 percent rate for young Hispanic children in the 2010 Census shown here is the official rate. Post-2010 research suggests that the rate may actually be lower (Jensen 2018).

The net undercount rate for Black young children in 2000 was about 50 percent higher than the rate for all children and in the 2010 Census and in the 2010 Census the rate for Black Alone or in Combination young children was 6.3 percent which is about 50 percent higher than the rate for all children (4.6 percent).

It seems very likely that the net undercount rate for Black alone or in combination young children in 2020 will be higher than it was in 2010 because the net undercount rate for the total Black population (based on the PES data) increased between 2010 and 2020.

There is also evidence that Asian young children had a high net undercount in the 2020 Census even though the total Asian population experienced a net overcount (Asian Americans Advancing Justice, 2023).

Black and Hispanic young children are at greater risk of being missed in the census. Reducing the undercount of young children in the 2030 Census will require substantial improvements in the counting of young children of color.

Subnational Data

The most important data from the decennial census is subnational data such as figures for states, counties, school districts, cities, villages, and census blocks. Subnational data is used in many important applications such as political re-apportionment and redistricting, distribution of federal and state funds, and civil rights enforcement. Differential net undercounts across states, counties, school districts, and other political units highlight a big problem in terms of census fairness and equity.

State Child Coverage Changes 2010 to 2020

The undercount of young children is pervasive across the states. Table 1 shows every state had a net undercount of young children in the 2020 Census.

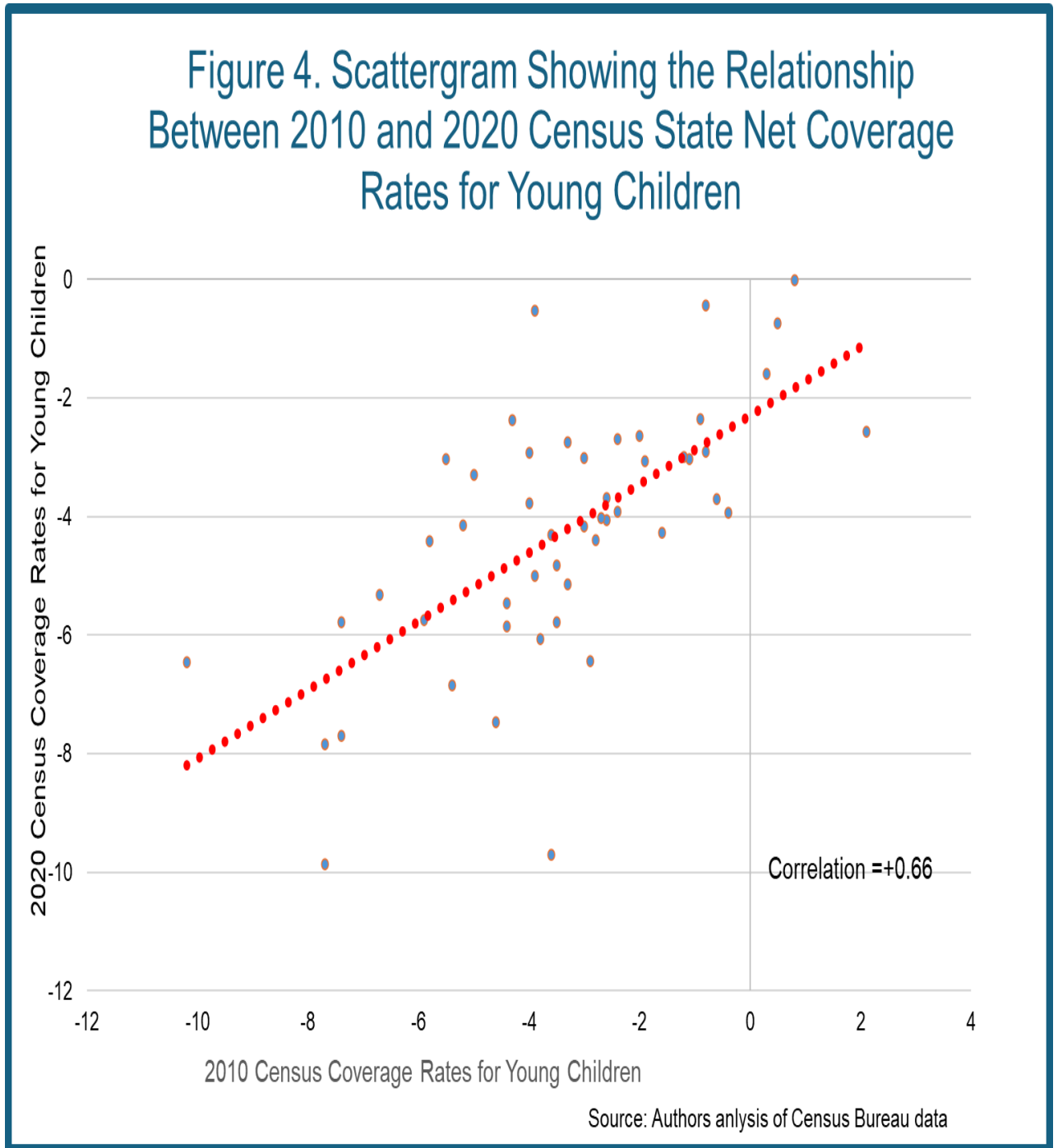
Table 1. States Ranked by Net Coverage Rates for Young Children in the 2020 Census Based on The Census Bureau's Experimental DA Estimates		
Rank*	State	Net Undercount Rate
1	Florida	-9.9
2	Hawaii	-9.7
3	California	-7.8
4	Texas	-7.7
5	Mississippi	-7.5
6	Delaware	-6.8
7	Arizona	-6.5
8	Louisiana	-6.4
9	North Carolina	-6.1
10	Virginia	-5.8
11	Georgia	-5.8
12	South Carolina	-5.8
13	New York	-5.7
14	Maryland	-5.5
15	Nevada	-5.3
16	Arkansas	-5.1
17	Oklahoma	-5.0
18	Rhode Island	-4.8
19	Illinois	-4.4
20	Pennsylvania	-4.4
21	Tennessee	-4.3
22	Alaska	-4.3
23	Missouri	-4.2
24	Massachusetts	-4.2
25	New Jersey	-4.1
26	West Virginia	-4.0
27	Maine	-3.9
28	Ohio	-3.9
29	Alabama	-3.8
30	South Dakota	-3.7
31	Kentucky	-3.7
32	Colorado	-3.3
33	Nebraska	-3.1
34	New Mexico	-3.0
35	Kansas	-3.0
36	New Hampshire	-3.0
37	Michigan	-3.0
38	Washington	-2.9
39	Iowa	-2.9
40	Connecticut	-2.7
41	Indiana	-2.7
42	Minnesota	-2.6
43	North Dakota	-2.6
44	Oregon	-2.4
45	Wisconsin	-2.4
46	Wyoming	-1.6
47	Montana	-0.7
48	Utah	-0.5
49	Idaho	-0.4
50	Vermont***	0.0

* Ranks are based on unrounded data

** Source: U.S. Census Bureau (2024) Release Date: April 11, 2024

*** when the rate for Vermont is shown to two decimal places it indicates a slight (0.02 percent) undercount. Meaning all states had a net undercount of young children in the 2020 Census.

Figure 4 shows the relationship between young child coverage in the 2010 Census and the 2020 Census.



Analysis of data from 2010 and 2020 shows the results of the last census are likely to be a good predictor of the results of the next census in terms of the coverage of young children. Figure 4 shows that there is a high positive correlation across states between the coverage rate of young children in the 2010 and 2020 Censuses (the correlation is +0.66 which is statistically significant). This means states that had a relatively high net undercount of young children in the 2010 Census were likely to have a relatively high net young child undercount rates in the 2020 Census. This strongly suggests that the states that had higher net undercount rates of young children in the 2020 Census are likely to have higher rates in the 2030 Census. This information should help us focus attention on states at highest risk of large young child undercounts in the 2030 Census.

County-Level Young Child Coverage Rates

The undercount of young children at the county level is not universal but it is widespread. Young child net undercounts in counties were more widespread in 2020 than in 2010. In 2010, 52 percent of counties had a net undercount for young children, but the 2020 Census found 69 percent of counties with a net undercount of young children. This indicates many counties worsened in census coverage of young children between 2010 and 2020 (O'Hare, 2023c). A recent Census Bureau (2024) analysis found 84 percent of larger counties had a net undercount of young children.

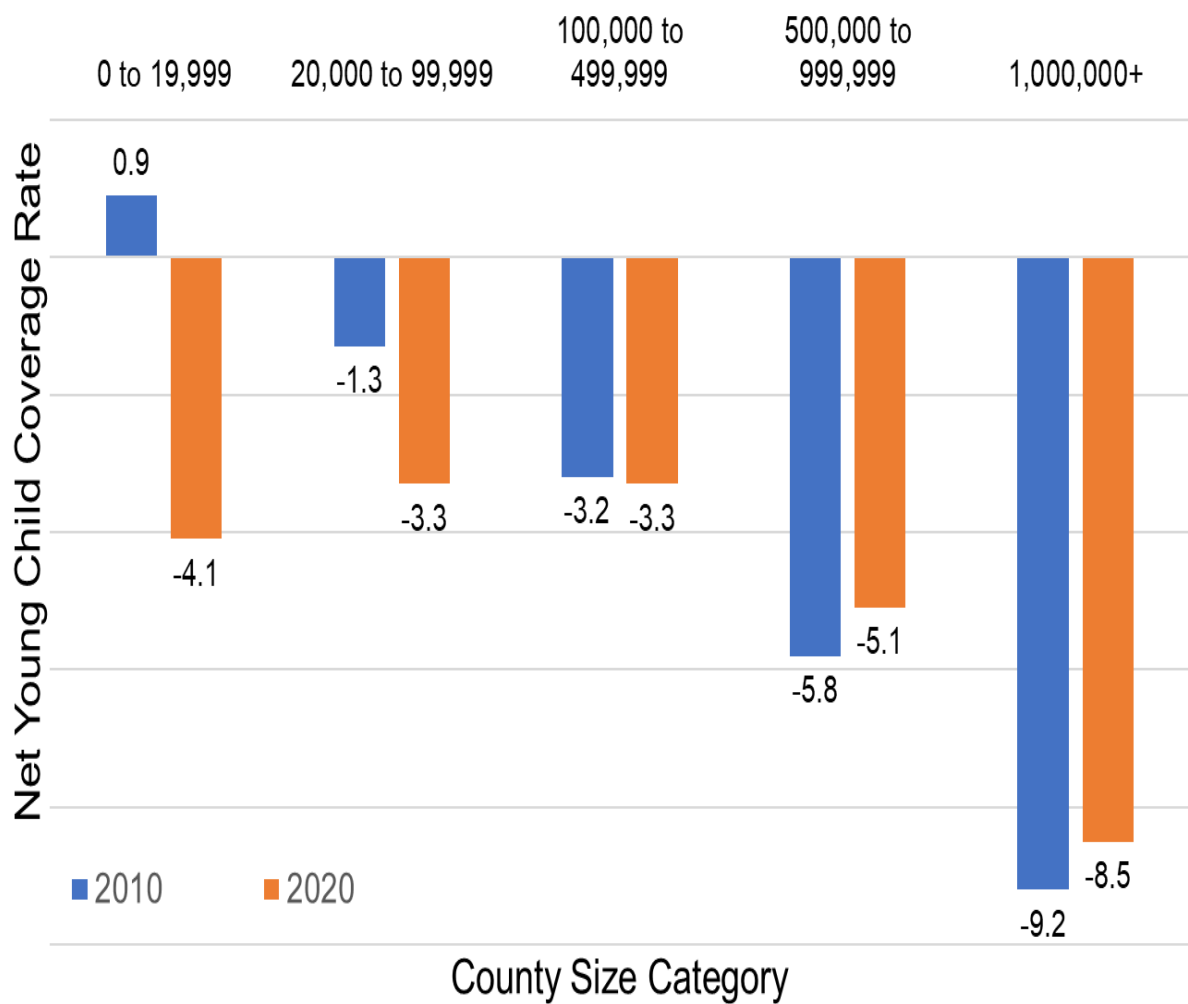
The story regarding changes of young child undercount rates in counties between 2010 and 2020 is mixed. The largest counties had the highest net young child undercount rates in 2010 and 2020, but smaller counties appear to be an emerging

problem as the net coverage rate for young children deteriorated in nearly two-thirds of smaller counties between 2010 and 2020 (O'Hare, 2023c).

Figure 5 shows the aggregate census coverage rate for young children in the 2010 and 2020 Censuses for various sized counties based on total population. Figure 5 shows larger counties (particularly those over one million people) had the highest net undercount rates for young children in both 2010 and 2020. Every one of the counties with one million or more people had a net young child undercount in the 2020 Census.

Although the aggregate coverage rate for young children in the largest counties (1 million or more people) decreased from 9.2 percent in 2010 to 8.5 percent in 2020, the young child coverage rate for these large counties is still well above rates for other sized counties. It would be useful to know which counties improved and why.

Figure 5. Net Coverage Rates of Young Children in the 2010 and 2020 Censuses by County Total Population Size



Source: Authors analysis of Census Bureau data

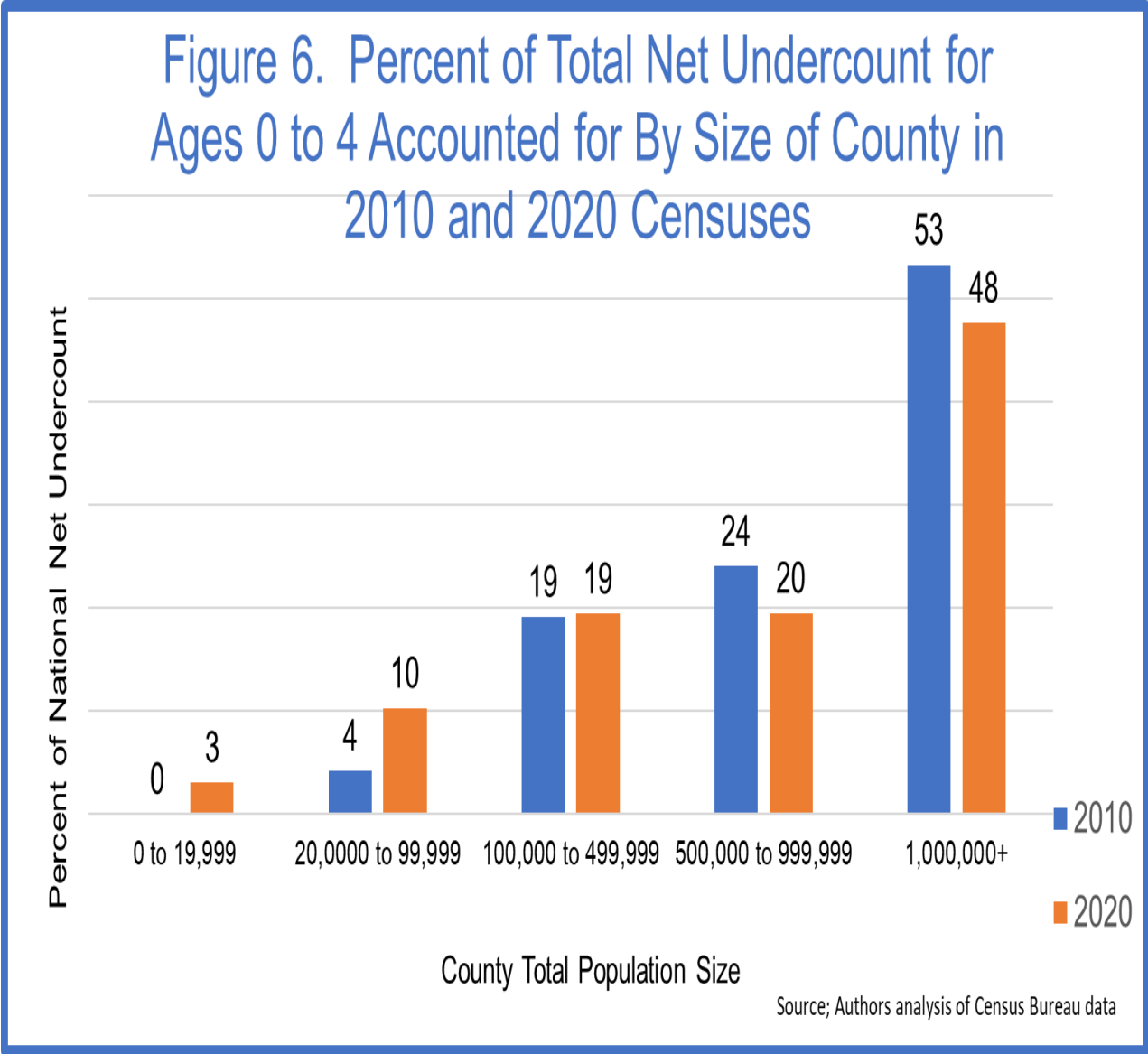
On the other hand, the biggest changes between 2010 and 2020 are at the other end of the size spectrum. For counties in the smallest category (less than 20,000 total population) the coverage of young children went from a net overcount of 0.9 percent in 2010 to a net undercount of 4.1 percent in 2020. Figure 5 shows that even in the second smallest size category (counties between 20,000 and 99,999 total population) the net undercount for young children increased substantially between 2010 and 2020 (from 1.3 percent to 3.3 percent).

The deterioration of census coverage of young children in the smallest counties between 2010 and 2020 suggests that we should be working to identify what factors led to worsening of young child undercount rates in these kinds of counties between 2010 and 2020 in preparation for 2030. If we can figure out what factors drove some small counties to experience worsening young child undercounts while other small counties improved, it would help us better prepare for the 2030 Census. I am not aware of any research that tries to explain why the young child undercount rate in small counties increased so much between 2010 and 2020.

Another way to look at the data by county size is shown in Figure 6. Figure 6 shows the share of the overall national undercount of young children that can be accounted for by counties in different county population size groups.

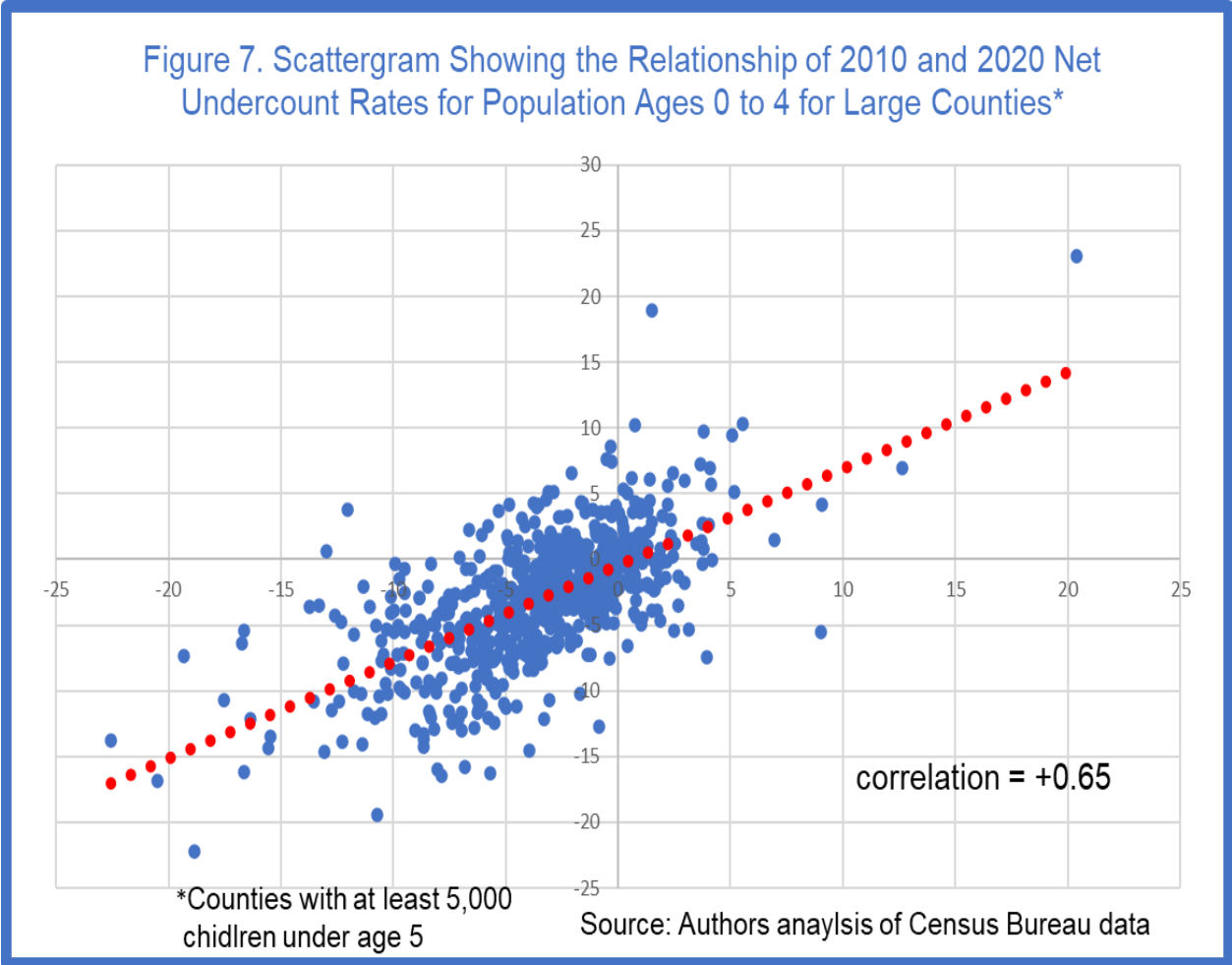
Figure 6 shows that about half of the national net undercount of young children in the 2010 and 2020 Censuses was in the counties with one million or more inhabitants. Combining the two largest groups together (all counties over a half million total population) account for about two-thirds to three-quarters of the undercount of young children. The fact that the largest counties accounted for a big share of the

young child undercount in 2010 and 2020 strongly suggests they will be the source of most of the undercount of young children in the 2030 Census.



There is little statistical relationship between the census coverage of young children in 2010 compared to 2020 among all counties. This is probably due, at least in part, to a lot of random errors in many of the smallest counties.

However, the situation is different among large counties. Figure 7 shows the relationship between the coverage of young children in the 2010 Census and the 2020 Census for large counties (those with at least 5,000 young children). There is a relatively high positive correlation (+0.65 which is statistically significant). This means the large counties that had the highest net undercount of young children in the 2010 Census were likely to have the highest net young child undercount rates in the 2020 Census. This strongly suggests that the large counties that had higher net undercount rates of young children in the 2020 Census are likely to have the highest rates in the 2030 Census.



While the undercount of young children is growing, the *structure* of young child undercounts in the census appears to be quite stable over time. Young children continue to have higher net undercounts than other age groups, including older children. For states and large counties, the coverage in the last census is a good predictor of coverage in the next census. And children of color are persistently much more likely to be missed. This consistency can be used to help us better prepare for 2030, for example, by providing guidance on what locations are most at risk of young child undercounts in the 2030 Census.

However, it is important to note that knowing where the undercount of young children is likely to be the worst is not the same as knowing how to improve the count of young children. I am not aware of any statistical study that shows an approach that lowers the undercount of young children. Thus, the next stage of research must be to investigate what new and innovative strategies will improve the count of young children in the 2030 Census.

What Does This Mean for the 2030 Census?

Probably the most important point in this paper is made in Figure 1 which shows a steady increase in the undercount of young children since 1980. What we have been doing for the past forty years is not working. The Census Bureau needs to try new strategies specifically focused on counting young children. Unless we do something very different in the 2030 Census from what we have done in the past forty years, we should expect the coverage of young children to continue to deteriorate.

Nearly as important is Figure 2, which shows that there is almost no correlation between the undercount rates of young children and the coverages rates of the total population across states. General improvements in counting everyone are very unlikely to improve the coverage of young children. Over the past 40 years, the census accuracy of young children has been very different than that of adults and even different than older children. This is another reason young children deserve to be a separate focus in the census, not only separate from adults but separate from older children.

One can characterize the evidence on the undercount of young children in the U.S. census as follows:

- We have pretty good evidence about the characteristics of young children who are most likely to be undercounted in the census. Coverage differentials by age, race/ethnicity, and location are well documented.
- Evidence about why young children are missed in the census is beginning to emerge. Some evidence suggests that parents and caregivers choose to leave their young children off the census roster, or do not know if they should include them. Other evidence shows young children over-represented in the kinds of households that are hard-to-count.
- There is no solid statistical evidence about actions that could be taken to get a more accurate count of young children in the census.

This last bullet should be the focus for the Census Bureau efforts between now and 2030. It is critical to develop and test new approaches to reducing the undercount of young children soon so they can be incorporated into the 2030 Census plan. In

particular, the Bureau needs to identify and develop innovative approaches now so that they can include them in the 2026 Census Test. So far, the Bureau has discussed its plans for the 2026 Census Test in such general language that we cannot tell whether the current plans for the 2026 test census include innovative new strategies for counting young children.

The establishment of the Young Children Working Group within the Census Bureau in 2021 is a positive sign (Jensen 2022). And the fact that this team is a cross-directorate undertaking which includes representatives from many different Census Bureau units is encouraging.

Nonetheless child advocates are aware that the undercount of young children has been an issue for more than 40 years, but attention for this issue within the Census Bureau has only occurred in the past few years. There have been a number of incidents in the past which suggest some parts of the Census Bureau are not yet adequately focused on this issue.

Because new and innovative strategies are required, it is important to make sure everyone involved in 2030 Census planning is aware of the undercount of young children issue and of what we know so far, so all the relevant units can be actively engaged in identifying and testing new strategies. Lack of good communication across Census Bureau units led to missed opportunities in the past. In the context of the young child undercount, one Census Bureau report on the undercount of young children in 2010 (U.S. Census Bureau 2014, page 1) concluded, “The task force found that many of the managers working on the development of methods and the design of

experiments and evaluation in 2010 were largely unaware of this undercount problem and especially the degree to which the problem existed in 2000.”

We need substantial and innovative changes if we want to improve the coverage of young children in the 2030 Census and we need to test such changes soon in order to imbed them into the 2030 Census operations. Child advocates would be encouraged if the Census Bureau could indicate what they plan to do in 2030 that is different than what they have done for the past several censuses regarding the undercount of young children.

The bottom line is summed up well by a recent recommendation from the National Advisory Committee to the Census Bureau (2024)

“The recent U.S. Census Bureau’s release of state and county experimental estimates of undercounts and overcounts of young children is useful, but does not address the key question; what can be done to get a more complete count of young children in the 2030 Census? The current methods employed by the U.S. Census Bureau to identify and count young children have not worked. The problem is getting worse. The Census Bureau needs to test new methods, operations, and strategies to improve the undercount of young children. Such changes need to be well-tested before they are used in the 2030 Census.

11. Recommendation: the NAC Recommends that the U.S. Census Bureau report to the NAC and the public on what they plan to do differently in the 2030 Census to improve the count of young children and what research and testing will take place to inform operations,”

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