

Census 2020—Counting Under Adversity

PRELIMINARY ASSESSMENT OF ASPECTS OF CENSUS QUALITY VIA DEMOGRAPHIC ANALYSIS

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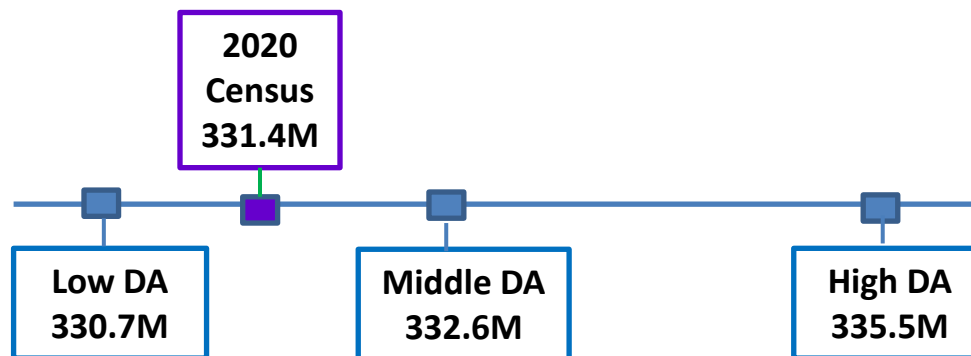
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2020 > Perfect Storm > Quality??

- 2020 Census confronted COVID-19 pandemic, natural disasters, attempted politicization
- Great credit due Census Bureau for completing the census and taking the time to fix anomalies in the data
- Yet, quality concerns remain—net undercount?
- Won't know until Post-Enumeration Survey (PES) and full Demographic Analysis (DA) completed
- Meanwhile, straws in the wind—top-line DA result and an analysis of census tract self-response rates
- Bottom line—Apparently higher Black net undercount rates

2020 Total Population Looks Low



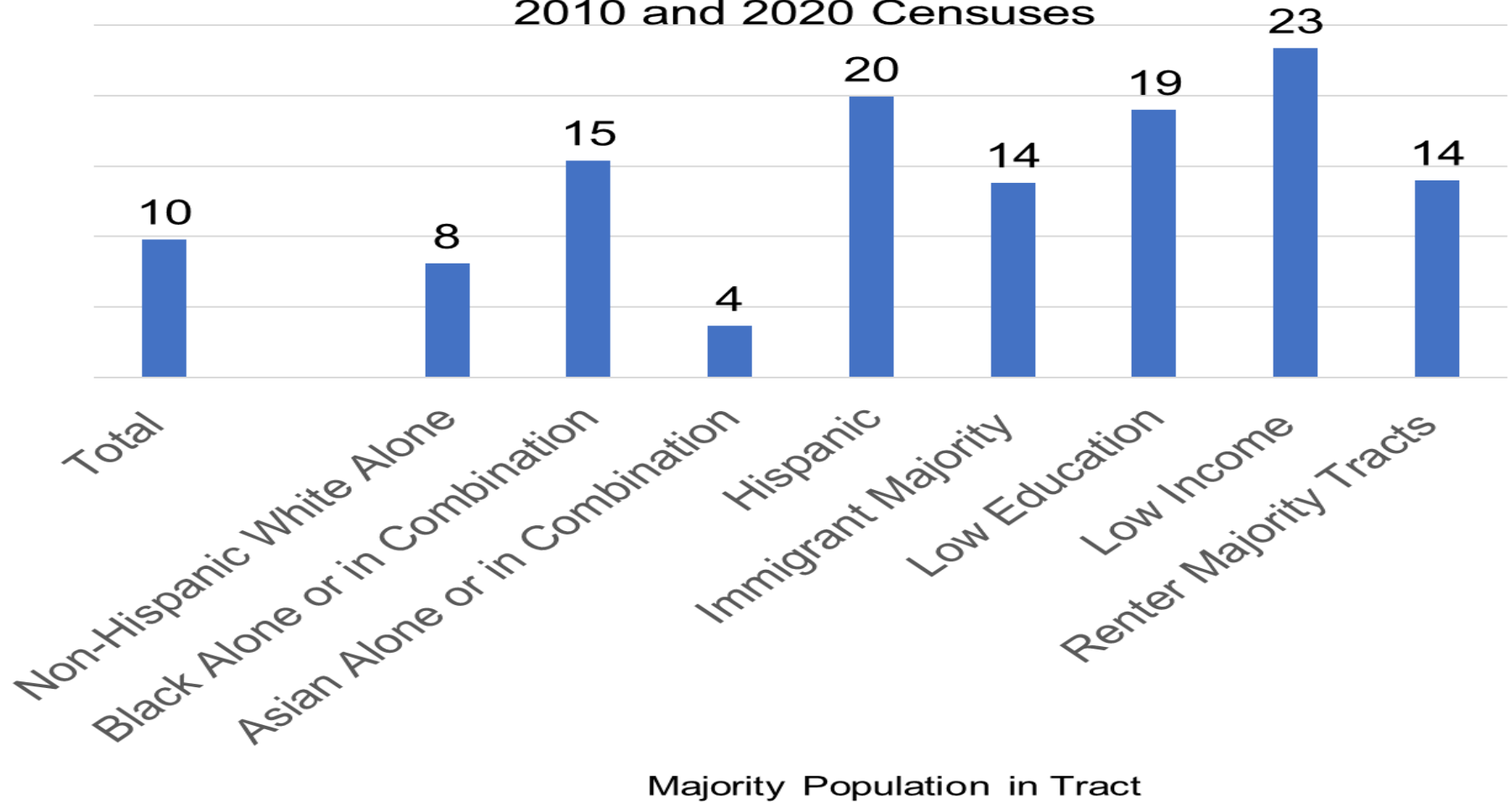
The 2020 Census total population count falls toward the low end of the DA estimates—the **Low DA series** suggests an overcount (**0.21**) and the **Middle DA series** an undercount (**-0.36**)

- For 2010, the **Middle DA series** indicated a slight overcount (**0.13**)

Note: DA estimates for April 1, 2020, released December 15, 2020, [National Demographic Analysis Tables: 2020 \(census.gov\)](https://www.census.gov/demographics/tables/2020/)

2020-2010 Self-Response Rates—Census Tracts

Percent of Tracts Where the Self-Response Rate Decreased by 10 Percentage Points or More Between 2010 and 2020 Censuses



Note: Denominator = all addresses, including occupied, vacant, and nonresidential
Source: O'Hare (2021)

Demographic Analysis (DA)—Methods

- Based on decades of analysis of censuses/admin records
- 2020 Census DA estimates—
 - ✓ For people born in 1945 or later, develop best estimates by age, sex, and race, by—
 - Adding births
 - Subtracting deaths
 - Adding estimates of net international migration (based on various sources, including ACS)
 - ✓ For people 75+, use Medicare enrollment (adjusted for people not covered; birth records have gaps for older people)
- DA estimates are [largely] *independent* of the census

Demographic Analysis (DA)—Availability

- Availability of DA estimates
 - ✓ National level (estimates of interstate migration not accurate enough for subnational estimates)
 - ✓ Single years of age
 - ✓ Sex
 - ✓ Black/non-Black (separate estimates for Black alone and Black alone or in combination) (birth/death record identification for other races/ethnicities not complete enough to support estimates)
 - ✓ In 2020, experimental DA estimates for Hispanics ages 0-29 (ages 0-19 in 2010)
- Range of DA estimates (begun in 2010 to reflect uncertainty, particularly for international migration)

Estimating Net Undercount for Black Alone/and in Combination— Problem of “Some Other Race Alone”

Population Group	2020 Census	2010 Census
Total	100.0%	100.0%
Black Alone	12.4	12.6
Black Alone or in Combination	14.2	13.6
Some Other Race Alone	8.4	6.2

- Cannot compare census counts shown above for Black people with DA estimates without first allocating ***Some Other Race Alone*** to race groups
- Census produces “Modified Race” file—based on race of person with same Hispanic origin as the person reporting Some Other Race Alone
- Population Estimates also need Modified Race for Whites, Blacks, Asians, AIAN, and NHOPI (not needed for Hispanics)
- Modified Race not yet available

2020—Simulation Method for “Modified Race” [necessary to compare census to DA]

Black Alone, All Ages

- 2010 Modified estimate = 103.4% of 2010 Census
- Some Other Race Alone increased by 35% from 2010 to 2020
- $3.4\% * 1.35 = 4.6\%$; Citro rounded up (to be generous) to a factor of 5%
- Therefore, 2020 Modified estimate = 2020 Census count * 1.05

Black Alone or in Combination, All Ages

- 2010 Modified estimate = 102.9% of 2010 Census
- Some Other Race Alone (as above) increased by 35% from 2010 to 2020
- $2.9\% * 1.35 = 3.9\%$; Citro rounded up (to be generous) to a factor of 5%
- Therefore, 2020 Modified estimate = 2020 Census count * 1.05

Black Alone, Under Age 18

- 2010 Modified estimate = 104.4% of 2010 Census
- Some Other Race Alone, Under Age 18, increased by 25% from 2010 to 2020
- $4.4\% * 1.25 = 5.5\%$; Citro rounded up to a factor of 6%
- Therefore, 2020 Modified estimate = 2020 Census count * 1.06

Black Alone or in Combination, Under Age 18—Same factor (1.06) as for Black Alone

2020 Data Quality—Black Alone and in Combination *Simulated* Estimates of Net Undercount

Population Group	2020 Census	2020 Census Modified	2020 DA (Low-Mid-High)	Estimated Net Undercount	
				2020 (Low-Mid-High) [net undercount in red]	2010
Total	331.4	331.4	330.7- 332.6- 335.5	0.22%- 0.35%- 1.21%	0.13%
Black Alone	41.1	43.2	44.6 – 45.5 – 46.5	3.24%- 5.20%- 7.25%	2.30%
Black Alone or in Combination	46.9	49.3	49.1 – 50.3 – 51.5	0.28%- 2.05%- 4.36%	1.10%
Some Other Race Alone	27.9	N.A.	N.A.	N.A.	N.A.

Numbers in millions (net undercount estimates based on unrounded data); 2010 net undercount estimates based on middle DA series; 2020 Census Modified estimates *simulated* by C.F. Citro as shown on previous slide

2020 Data Quality—Children Under Age 18

Simulated Estimates of Net Undercount

Population Group <18	2020 Census	2020 Census Modified	2020 DA (Low-Mid-High)	<u>Estimated Net Undercount</u>	
				2020 (Low-Mid-High)	2010 [net undercount in red]
Total	73.1	73.1	74.4 – 74.7 – 74.8	1.77%- 2.08%- 2.28%	1.68%
Black Alone	10.2	10.8	11.1 – 11.4 – 11.8	2.74%- 5.77%- 8.64%	0.63%
Black Alone or in Combination	12.8	13.6	13.7 – 14.2 – 14.7	0.50%- 4.18%- 7.60%	1.50%
Some Other Race Alone	8.0	N.A.	N.A.	N.A.	N.A.
Hispanic	18.8	N.A.	18.0 – 19.6 – 20.8	4.12%- 4.09%- 9.52%	2.08%

Numbers in millions (net undercount estimates based on unrounded data); 2010 net undercount estimates based on middle DA series; 2020 Census Modified estimates for under age 18 *simulated* by C.F. Citro as shown on earlier slide

—CAUTION—

**Estimates based on assumption
that 2010 Modified Race
conversion is good proxy for 2020**

Research Note with explanation and sources for Total
Population and Population Ages 0-17 available separately