



## Ohio Poverty Measure

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## 1 Executive Summary

The Ohio Poverty Measure is a localized indicator specifically tailored to estimate the extent of poverty in the state of Ohio. Using this measure, we find that in 2021, 8.7% of Ohioans lived in poverty. This is lower than the 12.1% poverty rate estimated in the Official Poverty Measure and higher than the 8.1% poverty rate estimated in the Supplemental Poverty Measure, the two main poverty measures calculated by the United States Census Bureau.

We also find that Black residents are over 75% more likely to have income below the poverty line relative to White residents, with 14% of Black Ohioans living in poverty in 2021 compared to 8% of white Ohioans. This disparity is even larger for Hispanic residents of Ohio, who are 90% more likely than White Ohioans to experience poverty.

Additionally, we find stark geographic disparities in poverty rates. Ohio residents living in urban core neighborhoods and rural Appalachian communities experience poverty at much higher rates than those across the state as a whole. Ohio residents living in suburbs surrounding Ohio's largest cities experience poverty at much lower rates than residents across the state as a whole.

## 2 Introduction

In the United States, the standard measure of poverty is the Census Bureau's Official Poverty Measure. Calculated since the 1960s, the Official Poverty Measure was designed as a way for the federal government to measure poverty during the Great Society.

The Official Poverty Measure was initially designed on the assumption that the average family spent about a third of their income on food.<sup>1</sup> This means that multiplying a low-income food plan by three would result in an income threshold that represented an average family having enough resources to provide for basic needs. With the falling price of food and the rising costs of healthcare and rent over time, the measure has drifted from an accurate definition of household needs over the past sixty years of its

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1. Gordon M Fisher, "The development and history of the US poverty thresholds—A brief overview," *GSS/SSS Newsletter*, 1997, 6–7.

use.

In the 1990s, the National Academy of Arts and Sciences put forth a proposal to measure poverty in a new way, using a new bundle of goods that better reflected modern spending needs and adjusting for public benefits and geographic differences in cost of living.<sup>2</sup> Starting in 2010, the Census Bureau has calculated the Supplemental Poverty Measure, a new measure of poverty based on these recommendations.<sup>3</sup>

A key difference between the Supplemental Poverty Measure and the Official Poverty Measure is that the Supplemental Poverty Measure takes non-income resources such as public benefits into account when determining whether or not people are in poverty. The Supplemental Poverty Measure also roots its thresholds in average consumer spending and makes geographic adjustments for cost of living, two improvements compared to the calculation of the Official Poverty Measure.

The Ohio Poverty Measure is the most accurate measure of poverty in the state, based on the general outline in the 1995 National Academy Report. It uses methodology inspired by the California Poverty Measure, New York City Poverty Measure, Oregon Poverty Measure, and Wisconsin Poverty Measure, which all were based on the 1995 study by the National Academies of Sciences.<sup>4,5,6,7,8</sup> The Ohio Poverty Measure was first calculated by Scioto Analysis in 2021, using data from 2018. This report constitutes the first comprehensive update of that data, giving estimates of poverty from 2021.<sup>9</sup>

The Ohio Poverty Measure is a quasi-relative poverty measure that uses 2021 American Community Survey 5-year data to estimate the percentage of the population

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2. Constance Forbes Citro, Robert T Michael, et al., “Measuring poverty: A new approach,” 1995,

3. Kathleen Short and Trudi Renwick, “Supplemental poverty measure: Preliminary estimates for 2008,” in *32nd annual research conference of the Association for Public Policy Analysis and Management Boston, MA* (2010).

4. Sarah Bohn, Caroline Danielson, and Patricia Malagon, *Poverty in California* (Public Policy Institute of California, 2021).

5. Jihyun Shin, John Krampner, and Anne Hill, *The New York City Government Poverty Measure, 2020* (NYC Office for Economic Opportunity, 2022).

6. David Rothwell, Leanne Giordono, and Bruce Webber, *The Oregon Poverty Measure* (Oregon State University, 2020).

7. Timothy Smeeding and Katherine Thornton, *The Oregon Poverty Measure* (Institute for Research on Poverty University of Wisconsin–Madison, 2018).

8. Citro, Michael, et al., “Measuring poverty: A new approach.”

9. Scioto Analysis, “The Ohio Poverty Measure Model,” 2021, <https://static1.squarespace.com/static/5bdb6f642714e55b84ebe507/t/613785e7573d0042b25716f0/1631028711275/Ohio+Poverty+Measure+2018+Findings+Brief.pdf>.

with income significantly below average spending levels. The final measure estimates the impacts of government assistance, the tax system, and expenses based on geographic cost-of-living differences. Including governmental assistance, federal taxation, and cost-of-living adjustments and basing it on the American Community Survey makes the Ohio Poverty Measure more precise than both the Official Poverty Measure and the Supplemental Poverty Measure.

	Official Poverty Measure	Supplemental Poverty Measure	Ohio Poverty Measure
Measurement Units	Families (individuals related by birth, marriage, or adoption) or unrelated individuals.	Resource units (official family definition plus any coresident unrelated children, foster children, and unmarried partners and their relatives) or unrelated individuals (who are not otherwise included in the family definition).	Resource units (official family definition plus any coresident unrelated children, foster children, and unmarried partners and their relatives) or unrelated individuals (who are not otherwise included in the family definition).
Poverty Threshold	Three times the cost of a minimum food diet in 1963, adjusted for inflation.	Based on recent expenditures for food, clothing, shelter, utilities, telephone, and internet.	Based on recent expenditures for food, clothing, telephone, and internet. Intrastate geographic adjustments for shelter and utility expenditures.

### 3 Methods

The Ohio Poverty Measure is a microsimulation model of poverty in Ohio. We used data from The American Community Survey and the Current Population Survey to analyze poverty at a higher resolution than other methods.<sup>10,11</sup> These datasets allow us to look at individual records and precisely estimate who is experiencing poverty. Below is an outline of the steps we took to determine poverty status.

1. Determine which individuals are part of the same “**poverty unit.**” A poverty unit is defined as a group of individuals who share resources.

10. Steven Ruggles, Sarah Flood, Matthew Sobek, Daniel Backman, Annie Chen, Grace Cooper, Stephanie Richards, Renae Rogers, and Megan Schouweiler. IPUMS USA: Version 14.0. Minneapolis, MN: IPUMS, 2023. <https://doi.org/10.18128/D010.V14.0>

11. Sarah Flood, Miriam King, Renae Rodgers, Steven Ruggles, J. Robert Warren, Daniel Backman, Annie Chen, Grace Cooper, Stephanie Richards, Megan Schouweiler, and Michael Westberry. IPUMS CPS: Version 11.0 [dataset]. Minneapolis, MN: IPUMS, 2023. <https://doi.org/10.18128/D030.V11.0>

2. **Determine the poverty threshold** for each poverty unit. A poverty threshold is the total amount of income the poverty unit would need to have within the unit to cover expenses for individuals within it. Poverty thresholds are determined based on the number of people in the poverty unit, whether individuals within it own or rent their housing, and the cost of living in the location of the poverty unit.
3. **Calculate the total income** of the poverty unit. This is the sum of all resources available to the poverty unit. It includes wage income, any benefits the poverty unit might receive, and counts medical expenses and taxes as reductions of resources.

To determine which individuals are part of the same poverty unit, we begin by identifying related individuals who are part of the same household according to the American Community Survey. Then, we assume that certain non-related groups are part of the same poverty unit. An example of this would be unmarried partners and their children. Any remaining individuals are put into their own poverty units.

We determine a poverty unit's poverty threshold by first identifying whether or not the members of the poverty unit own their home outright, have a mortgage on their home, or rent their home. This is because the Supplemental Poverty Measure has different thresholds for poverty units based on their housing status, and we apply geographic adjustments to the corresponding Supplemental Poverty Measure threshold.<sup>12</sup>

We then determine which Public Use Microdata Area members of the poverty unit live in. Public Use Microdata Areas are a geographic designation produced by the Census Bureau that group together populations of roughly 100,000 people. As a result, some highly-populated counties may contain several Public Use Microdata Areas while a single Public Use Microdata Area may comprise multiple counties in rural parts of the country. Within each Public Use Microdata Area, we compare the median rent to Ohio's median rent, and adjust the Shelter and Utilities component of the Supplemental Poverty Measure poverty threshold according to this ratio.

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12. Bureau of Labor Statistics, "2021-2020 Supplemental Poverty Measure Thresholds Based on Consumer Expenditure Survey Data," 2023, [https://www.bls.gov/pir/spm/spm\\_chart2\\_2021data.htm](https://www.bls.gov/pir/spm/spm_chart2_2021data.htm).

We assume that this is the poverty threshold for an individual adult living in that particular Public Use Microdata Area. To adjust for the number of people within a poverty unit, we use the Census Bureau’s equivalence adjustment of income.<sup>13</sup>

Finally, to determine poverty status for each unit, we calculate their adjusted income. This is their total poverty unit income plus any additions they might receive such as public benefits, minus any unavoidable expenses such as taxes or medical expenses.

## 4 Results

Compared to poverty data reported by the Census Bureau, our model estimates that poverty in Ohio is slightly higher than what is reported by the SPM, though it is still significantly lower than the official poverty rate.<sup>14</sup> Our estimate for poverty is within the Census Bureau’s margin of error for its Supplemental Poverty Measure rate (0.8%).

Official Poverty Measure	Supplemental Poverty Measure	Ohio Poverty Measure
12.3%	8.1%	8.7%

Poverty in Ohio is concentrated in urban core Public Use Microdata Areas and in its Appalachian counties. The highest poverty rate Public Use Microdata Area is in East Toledo, where over 15% of the population experiences poverty. The lowest poverty regions are in suburban counties around Ohio’s largest cities. In particular, the suburbs of Cincinnati, Cleveland, and Columbus have some of the lowest poverty rates in the state. The single lowest poverty rate Public Use Microdata Area in Ohio is in the suburbs south of Cleveland where the City of Strongsville is located.

One notable geographic distinction in Ohio is the difference in poverty in the rural counties in Northwest Ohio compared to the rural counties in Southeast Ohio. Northwest Ohio is home to some of the lowest poverty rates in the state according to the Ohio Poverty Measure, with the Public Use Microdata Area comprising Auglaize, Mercer, and Van Wert counties boasting the second-lowest poverty rate of any Public Use Microdata Area in the state.

13. Census Bureau, “Equivalence Adjustment of Income,” 2021, <https://www.census.gov/topics/income-poverty/income-inequality/about/metrics/equivalence.html>.

14. John Creamer et al., “Poverty in the United States: 2021,” *US Census Bureau*, 2022,

This is in stark contrast to the high levels of poverty we observe in Southeast Ohio. The Appalachian counties bordering West Virginia have many of the highest poverty rates outside the urban city centers.

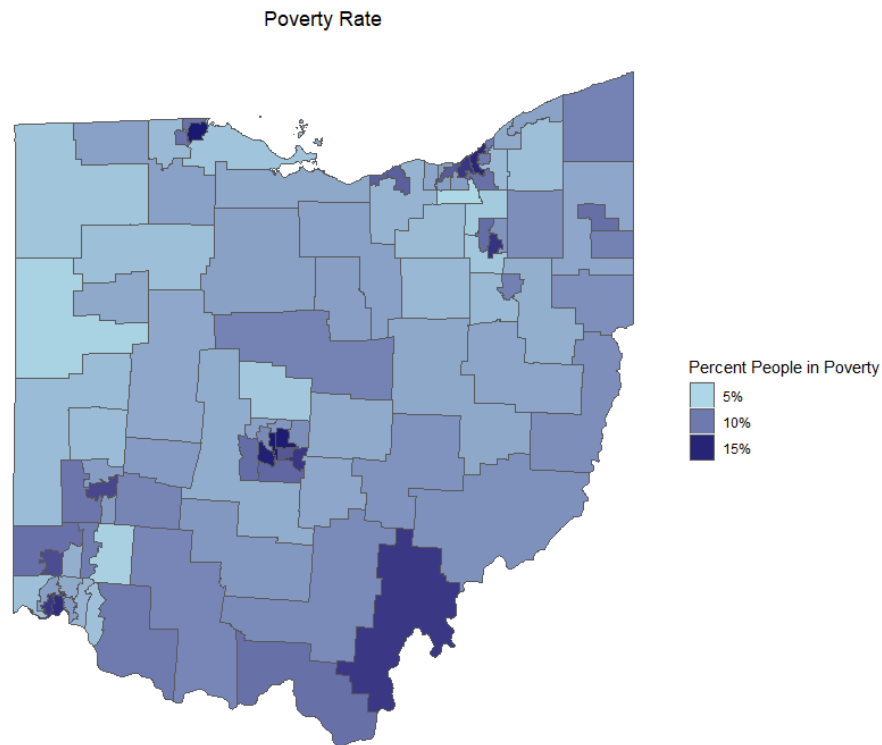


Figure 1: Poverty rates by Public Use Microdata Area

Tables 1 and 2 show the five lowest and highest poverty rate Public Use Microdata areas in Ohio.

Area	Poverty Rate
Cuyahoga County (South)	5.0%
Auglaize, Mercer, and Van Wert Counties	5.2%
Warren County (East)	5.4%
Summit County (North and Northwest)	5.7%
Delaware County	5.8%

Table 1: Lowest poverty rate Public Use Microdata Areas



Area	Poverty Rate
Toledo City (East)	15.7%
Columbus City (Central)	15.6%
Columbus City (Northeast)	15.5%
Columbus City (West)	15.2%
Cleveland City (East)	14.8%

Table 2: Highest poverty rate Public Use Microdata Areas

In Figure 2, we see a more detailed look at how Ohioans fall along the income spectrum. We see that as a percentage of their poverty thresholds, the majority of Ohioans do not have adjusted income exceeding 200% of their poverty unit’s threshold, a typical designation for “low-income” or “near poverty”.

Ohio Poverty Measure poverty thresholds can grow large as poverty units grow in size. In our dataset, the largest poverty unit has 16 people in it, meaning that their unique poverty threshold is very high. Although those individuals would likely be classified as high-income, because they have such large consumption requirements they still do not exceed 200% of their poverty threshold.

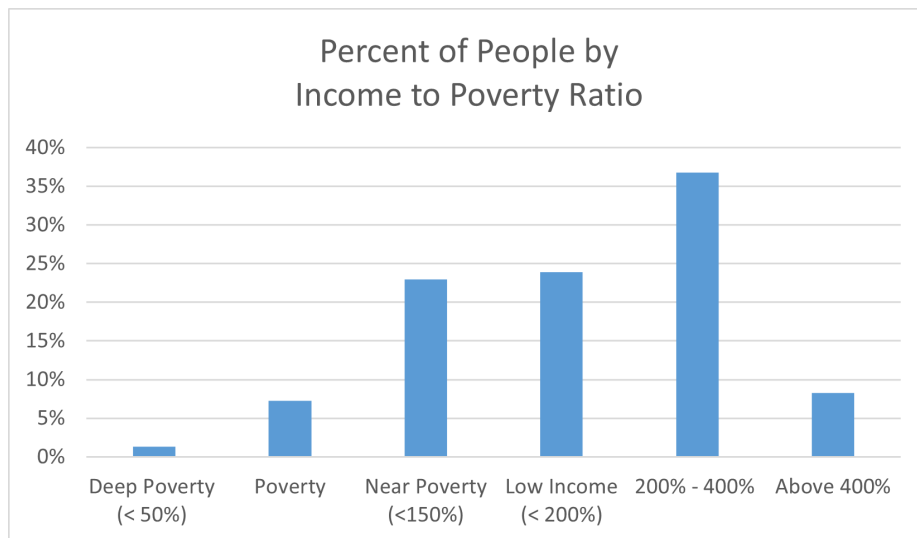


Figure 2: The majority of Ohioans do not have income exceeding 200% of their poverty threshold

When looking at how Ohio Poverty Measure rates vary by age group, we notice that child poverty is slightly higher than both working-age and senior adult poverty. This is despite the fact that during 2021, the federal Child Tax Credit was expanded

as a result of the American Rescue Plan act.<sup>15</sup> Since the expiration of the Child Tax Credit expansion in 2022, child poverty has doubled, making this disparity even more dramatic.<sup>16</sup>

Both forms of adult poverty are quite low, with slightly higher rates of senior poverty compared to working-age adult poverty. These results reflect what we see in the national Supplemental Poverty Measure.<sup>17</sup>

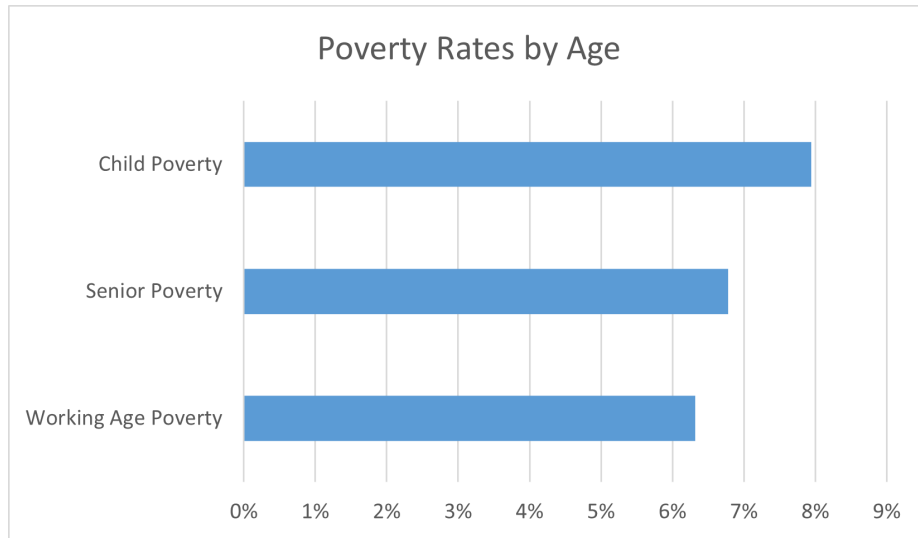


Figure 3: Child poverty is higher than adult poverty in Ohio

Below we see the racial breakdown of poverty in Ohio. White Ohioans experience poverty at a rate slightly below the statewide Ohio Poverty Measure rate, while all other racial groups experience poverty at a higher rate. Hispanic-non-white Ohioans experience poverty at rates almost double the rate white Ohioans do.

15. Anastasia Koutavas et al., “What Would 2022 Child Poverty Rates Have Looked Like if an Expanded Child Tax Credit Had Still Been in Place?,” *Poverty and Social Policy Brief* 7, no. 3 (2023).

16. Emily A Shrider and John Creamer, “Poverty in the United States: 2022,” *US Census Bureau*, 2023,

17. Creamer et al., “Poverty in the United States: 2021.”

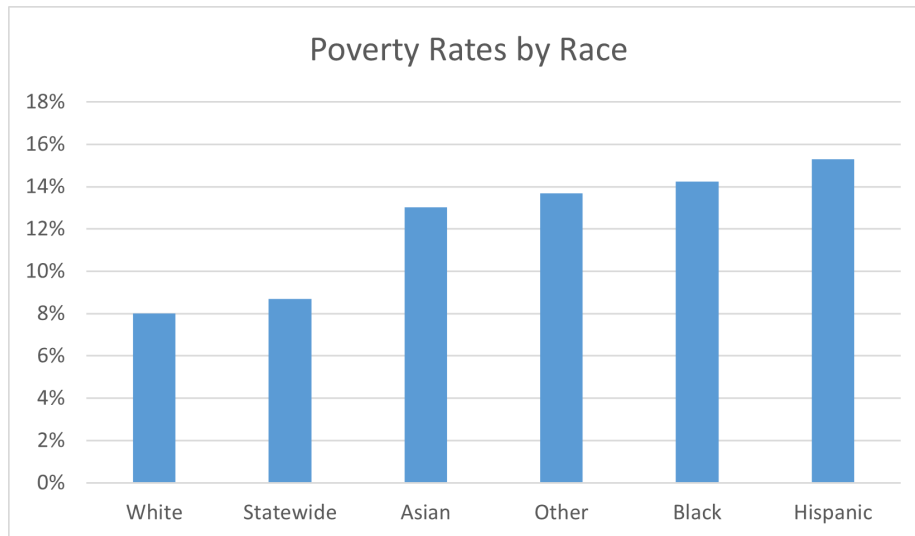


Figure 4: Non-white Ohioans experience poverty at significantly higher rates

In Figure 5, we show the percentage of Ohioans that are lifted out of poverty by different public benefit programs. To calculate this, we test how many people in our data would be below their poverty thresholds if we removed those benefits. This constitutes a static analysis of the impact of public programs on poverty.

The largest benefit lifting Ohioans out of poverty is Social Security. This is an expected result, given that in the Census Bureau’s 2021 Poverty in the United States report, Social Security was by far the largest anti-poverty program in the country.<sup>18</sup> In our dataset, we find that over 2% of Ohioans do not experience poverty as a result of social security.

The majority of these benefits are concentrated among the senior population in Ohio. If we isolate the impact of social security to just those in our sample that are over the age of 65, we find that 16.6% of seniors are lifted out of poverty just by Social Security. If we instead use the Official Poverty Measure, we find that almost 29% of seniors are lifted out of poverty as a result of Social Security.<sup>19</sup>

The Supplemental Nutrition Assistance Program (SNAP), formerly known as food stamps, has an effect that is almost as large as Social Security. While SNAP is one of the largest anti-poverty programs in the country, its impact is usually estimated to be

18. Ibid.

19. Kathleen Romig, *Social Security lifts more people above the poverty line than any other program* (JSTOR, 2022).

smaller than it is in our dataset.<sup>20</sup> One explanation for this rise in impact may be the effect of emergency SNAP allotments that were approved during the pandemic. Ohio saw a significant increase in the per-person average monthly SNAP benefit during 2021. In December 2020, the average monthly issuance per-person was only \$187.<sup>21</sup> This rose to as much as \$245 per-person in October of 2021.<sup>22</sup>

Housing assistance and free breakfast and lunch are also effective at lifting families out of poverty, though the impact of these programs is not as large as Social Security and SNAP. In the case of housing assistance, this is largely due to the fact that fewer people receive housing assistance compared to SNAP benefits or Social Security, despite the fact that housing benefits are quite valuable to those that receive them. For free breakfast/lunch, we find that many Ohioans qualify for these benefits, but the monetary impact for each benefit is small.

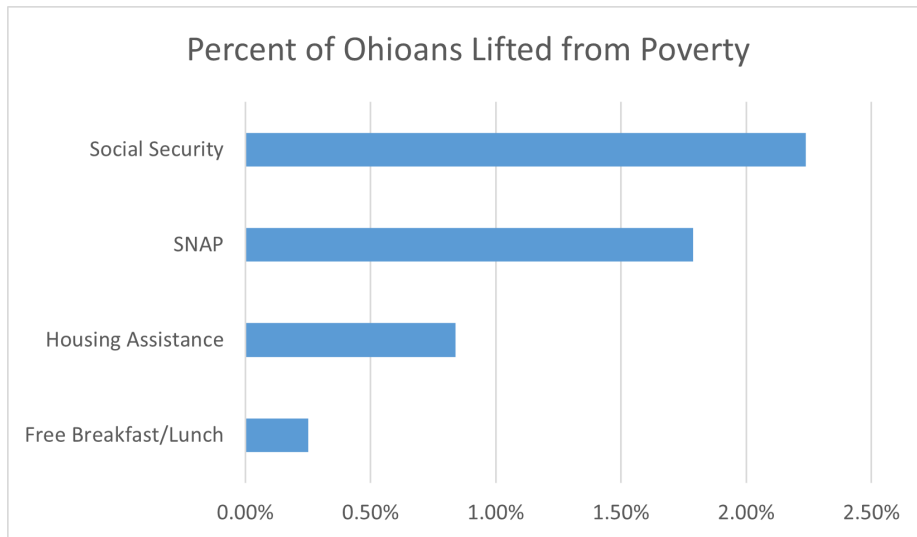


Figure 5: Social Security is the largest safety net program in Ohio

20. Creamer et al., “Poverty in the United States: 2021.”

21. Ohio Department of Job and Family Services, “Public Assistance Monthly Statistics (PAMS),” 2023, <https://jfs.ohio.gov/cash-food-and-refugee-assistance/pams/pams>.

22. Ibid.