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What is child opportunity?

Our terms, defined

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Quality schools, parks and playgrounds, clean air, access to healthy food, health care and safe housing—these are some of the conditions and resources children need to grow up healthy and become successful adults. Many children in the U.S. live in neighborhoods that provide access to these conditions—neighborhoods we describe as “high opportunity.” But many live in “low opportunity” neighborhoods with few or none of these conditions. Black, Hispanic and Native American children are especially likely to live in very low-opportunity neighborhoods.

The Child Opportunity Index (COI) is a tool that describes and quantifies the neighborhood conditions U.S. children experience today, ranking them from lowest to highest opportunity. See below for short definitions of the main Child Opportunity Index measures. More complete definitions are provided below, or see the COI Technical Document (<https://www.diversitydatakids.org/research-library/coi-30-technical-documentation>) for a detailed explanation of our methodology.

Child Opportunity Index: An index of neighborhood resources and conditions that help children develop in a healthy way. It combines data from 44 neighborhood-level indicators (<https://www.diversitydatakids.org/research-library/child-opportunity-index-30-indicators>) into a single composite measure.

Main features of the Child Opportunity Index 3.0:

- Single, consistent metric of contemporary child neighborhood opportunity.
- Comprehensive: Provides data for nearly all U.S. neighborhoods (about 73,000 census tracts).
- Multidimensional: Includes 44 indicators across three domains (education, health and environment, social and economic) and 14 subdomains.
- Longitudinal: Available for all U.S. neighborhoods from 2012 to 2021, allowing comparisons over time
- Reflects the legacy of structural racism: A multi-dimensional composite index like the COI is well-suited to measure the effects of structural racism, which has resulted in the hoarding of opportunity in affluent, White communities and the concentration of disadvantage in many Black, Hispanic and Native American communities. The COI omits a measure of racial/ethnic composition in order to separate the structural features of a neighborhood from who lives there and allows us to quantify racial/ethnic inequities in access to neighborhood opportunity.

Child Opportunity Score: A single metric (from 1 to 100) that ranks all 73,000 neighborhoods in the U.S. according to the opportunities they provide for children. Child Opportunity Scores are also available for the 100 largest metros to assess their overall level of opportunity, and by race and ethnicity to show how opportunity differs for children of different groups.

Child Opportunity Gap: The difference in neighborhood conditions (in Child Opportunity Score) between very high-opportunity neighborhoods and very low-opportunity neighborhoods in any given metro area or between the 100 largest metro areas combined.

Opportunity hoarding: We describe metro areas as “opportunity hoarding” when their Child Opportunity Gap is wider than average. In these areas, very low-opportunity neighborhoods have much worse conditions than very-high opportunity ones.

Opportunity sharing: We describe metro areas as “opportunity sharing” when the Child Opportunity Gap is narrower than average. In these areas, the difference in conditions between very low-opportunity and very high-opportunity neighborhoods is less stark—although often still substantial.

Racial and Ethnic Opportunity Gap: The difference in neighborhood opportunity experienced by the typical child of a given racial/ethnic group and that experienced by the typical child of another racial/ethnic group—measured by the difference in Child Opportunity Scores between the two racial/ethnic groups. We often discuss gaps in terms of the White-Black opportunity gap and the White-Hispanic opportunity gap (<https://www.diversitydatakids.org/research-library/data-visualization/racialethnic-inequity-100-largest-metro-areas>) because White children tend to live in much higher opportunity neighborhoods than Black and Hispanic children.

Child Opportunity Index 3.0

The Child Opportunity Index (COI) is an index of neighborhood features that help children thrive. COI 3.0 combines data from 44 neighborhood-level indicators (<https://www.diversitydatakids.org/research-library/child-opportunity-index-30-indicators>) into a single composite measure that is available for nearly all U.S. neighborhoods (about 73,000 census tracts) for every year from 2012 through 2021.

The 44 indicators are grouped into 14 subdomains that relate to three overall domains: education, health and environment, and social and economic. Indicators in the education domain reflect access to early childhood education, quality of elementary schools, post-secondary educational opportunities and neighborhood resources related to educational achievement. The health and environment domain contains indicators measuring exposure to pollution, healthy environments such as green space, and safety-related and health-related resources. The social and economic domain contains indicators measuring employment opportunities, economic resources, socio-economic inequities, housing quality and wealth and social resources. All indicators are constructed at the census block level for 2010 and 2020 census geographies and published at the census tract level for 2010 census tracts.

To combine the 44 indicators into an index, we transform each indicator to z-scores, a common statistical procedure that puts indicators measured on different scales (e.g., counts, percentages, dollars) onto a common scale that is comparable across indicators, neighborhoods and over time. We then take a weighted average of the indicator z-scores within a subdomain to obtain a subdomain composite z-score. To construct a domain-specific composite z-score, we take weighted averages of the subdomain composite z-scores within a given domain. To construct an overall index composite z-score, we take a weighted average of all 14 subdomain composite z-scores. The weights used to combine indicators into subdomain scores, and subdomain scores into domain and overall index scores, are calculated to reflect how strongly each indicator or score predicts two measures of intergenerational mobility and two measures of adult health. Please see our technical document (<https://www.diversitydatakids.org/research-library/coi-30-technical-documentation>) for further details.

Based on the domain scores and the overall score, we create two neighborhood level measures that allow us to compare opportunity across neighborhoods and over time in an intuitive way: Child Opportunity Scores and Child Opportunity Levels.

Child Opportunity Scores

Child Opportunity Scores can be used to compare neighborhood opportunity on a scale from 1 (lowest) to 100 (highest). To construct Child Opportunity Scores, we rank all neighborhoods nationally in terms of their overall COI z-scores and divide the neighborhoods into 100 rank-ordered groups. Each of these groups contains 1% of the child population and is assigned a Child Opportunity Score, from 1 to 100. The 1% of children living in the very lowest ranked neighborhoods (with a score of 1) face some of the worst neighborhood conditions in the U.S, while the 1% of children living in the highest opportunity neighborhoods (with a score of 100) experience some of the best. We use percentiles, weighted using the total number of children in a given tract, to exactly define the cut points dividing neighborhoods into groups that contain 1% of the child population each.

For some analyses, neighborhood-level Child Opportunity Scores are aggregated to reflect neighborhood opportunity experienced by the typical (median) child in a given metro area. We calculate aggregate opportunity scores for individual metros by taking the median value of scores across all tracts in the metro of interest, using the total number of children in each tract as weights.

In addition, we present aggregate racial/ethnic opportunity scores that reflect the neighborhood opportunity experienced by the typical child of each major racial/ethnic group in a given metro, using the total number of children of that racial/ethnic group in each tract as weights.

We also calculate aggregate Child Opportunity Scores for the 100 largest metros combined, by taking the median value of scores across all tracts in the 100 largest metros, using the total number of children in each tract as weights.

Child Opportunity Levels

Child Opportunity Levels are a simpler way of comparing neighborhood opportunity using just five categories. Child Opportunity Levels are constructed in much the same way as Child Opportunity Scores. We first rank neighborhoods and then divide them into rank-ordered categories. In this case, we divide neighborhoods into five groups, each containing exactly 20% of the child population. We label these groups as very low-, low-, moderate-, high- and very high-opportunity neighborhoods.

Both Child Opportunity Scores and Levels are relative measures of opportunity, i.e., the score or level assigned to a neighborhood depends on the set of neighborhoods to which it is being compared. For example, when we create a Child Opportunity Score or Level for a neighborhood based on its rank relative to all other neighborhoods in the U.S., we refer to that score or level as being “nationally-normed.” Nationally-normed Child Opportunity Levels are constructed by ranking all neighborhoods nationwide and dividing them into five groups, each containing 20% of the child population. In contrast, metro-normed Child Opportunity Levels are constructed by ranking all neighborhoods in a given metro area and dividing them into five groups, each containing 20% of the metro area’s child population. State-normed opportunity levels are constructed using the same approach using only neighborhoods within a given state.

Child Opportunity Gap

The Child Opportunity Gap measures the extent of inequity in neighborhood opportunity in a given area. We calculate the Child Opportunity Gap for each of the 100 largest metro areas by calculating the difference between median Opportunity Scores in very high- and very low-opportunity neighborhoods in the given area. The very low- and very high-opportunity neighborhoods are defined using metro-normed data; the median opportunity scores for each of those two groups are defined using nationally-normed data. The Child Opportunity Gap for a metro area is the difference between the median opportunity score of its very high-opportunity neighborhoods and the median score of its very low-opportunity neighborhoods. We calculate a similar measure for the 100 largest metro areas combined, using the nationally-normed Child Opportunity Levels to define the very low- and very high-opportunity scores.

Racial and ethnic opportunity gaps

Racial/ethnic opportunity gaps measure the extent to which the neighborhood opportunity of a typical child of a specified race/ethnicity differs from the neighborhood opportunity of a typical child of another race/ethnicity in the same metro area.

We usually discuss racial/ethnic opportunity gaps in terms of the White-Black and White-Hispanic gap. To calculate the White-Black gap, for example, we first calculate the opportunity score (nationally-normed) for the neighborhood of the typical (median) Black child in a given metro, weighting the score by the number of Black children in each neighborhood within the metro. We replicate this process to obtain the opportunity score for the neighborhood of the typical White child within the same metro. We then calculate the difference between the median opportunity score for White children and that of Black children. That difference is the White-Black opportunity gap.

We also present racial/ethnic opportunity gaps for the 100 largest metro areas (<https://www.diversitydatakids.org/research-library/data-visualization/child-opportunity-and-raciaethnic-inequity>) combined by comparing the weighted median opportunity scores of children of a specified race/ethnicity with the scores of White children living in the 100 largest metros as a whole.

Child Opportunity Index 2.0 vs. 3.0

We launched the Child Opportunity Index (COI) 3.0 in March 2024. We recommend that all new users and new projects use COI 3.0. Compared to COI 2.0, its predecessor published in 2020, COI 3.0 includes more indicators covering a broader range of neighborhood features and uses an improved methodology. Learn more about the differences between COI 3.0 and 2.0 (<https://www.diversitydatakids.org/research-library/whats-new-child-opportunity-index-30>).

Explore what we're learning (<https://www.diversitydatakids.org/neighborhoods>) from the Child Opportunity Index 3.0

Explore child opportunity in your metro area (<https://www.diversitydatakids.org/maps>)

Share your impact story (<https://www.diversitydatakids.org/submit-your-story>)

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Boston University School of Social Work:
Institute for Equity in Child Opportunity
& Healthy Development

PROJECT

diversitydatakids.org is a comprehensive research program to monitor the state of wellbeing, diversity, opportunity and equity of U.S. children.

AFFILIATION

diversitydatakids.org is based at the Institute for Equity in Child Opportunity & Healthy Development
(<https://www.bu.edu/ssw/research/centers/iecoh/>) at Boston University School of Social Work.

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