

Child Care Desert Project

Methodology

Defining Child Care Deserts

The Center for American Progress (CAP) defines a childcare desert as “any census tract with more than 50 children under age 5 that contains either no child care providers or so few options that there are more than three times as many children as regulated childcare slots.” While this project is inspired by CAP’s definition, we modified it to fit the context of Tennessee’s child care landscape.

CAP’s original rationale for excluding census tracts with fewer than 50 children came from data showing that the average childcare center has the capacity for about 50 children. The goal was to examine census tracts with enough children to support at least one child care center, ensuring they wouldn’t label areas as deserts without sufficient demand. Given the existence of several smaller family child care options in Tennessee with a capacity of significantly fewer than 50 children, we opted to use a threshold of 10 children per census tract, as this smaller number still indicates enough demand to support a small family child care provider.

Additionally, the CAP definition focuses exclusively on children under age five (0–4); however, we have included children under age six (0–5) in two of the visualizations to align with data from the American Community Survey, which tracks data for children under age six with all available parents in the workforce. With these changes in mind, three child care desert visualizations were created using the following populations:

1. Census tracts with more than 10 children under age five.
2. Census tracts with more than 10 children under age six.
3. Census tracts with more than 10 children under age six with all parents in the workforce.

Child Care Definition

For this project, “child care capacity” includes Family Child Care Homes, Group Child Care Homes, Child Care Centers, Drop-in Child Care Centers, Department of Education-regulated voluntary pre-kindergarten (VPK) and Head Start classrooms, along with Exempt child care providers. Providers that offer only after-school care and providers that exclusively serve children over the age of six were excluded, as we were primarily focused on the supply of child care for children under school age (ages 5 or 6).

Data Collection

Publicly available datasets were downloaded from the sources listed in Table 1, capturing child population data, regulated child care capacity, and parental workforce information across Tennessee census tracts.

Table 1: Data Sources Used in Child Care Desert Analysis

Data Year	Data	Data Source	Data Link
2022	Child Population by Age and Census Tract	American Community Survey/ACS 5-Year Estimates: Table B09001 - Population Under 18 Years by Age	https://data.census.gov/table/ACSDT5Y2022.B09001?q=b09001&g=040XX00US47,47\$1400000&moe=false
2022	Total Population by Census Tract	American Community Survey/ACS 5-Year Estimates: Table B01003 - Total Population	https://data.census.gov/table/ACSDT5Y2022.B01003?q=Population%20Total&g=040XX00US47\$1400000
2024	Regulated Child Care Capacity	TN Dept of Human Services	https://www.tn.gov/humanservices/for-families/child-care-services/find-child-care.html
2022	Children Under 6 with All Parents in Workforce by Census Tract	American Community Survey/ACS 5-Year Estimates: Table B23008 - Age of Own Children Under 18 Years in Families and Subfamilies by Living Arrangements by Employment Status of Parents	https://data.census.gov/table/ACSDT5Y2022.B23008?q=B23008:%20Age%20of%20Own%20Children%20Under%2018%20Years%20in%20Families%20and%20Subfamilies%20by%20Living%20Arrangements%20by%20Employment%20Status%20of%20Parents&g=040XX00US47\$1400000&moe=true

Data Processing

Mapping Regulated Child Care Capacity

Geocoding software was used to map each regulated child care provider to a census tract by address, which was then used to determine each census tract's regulated child care capacity.

Filtering Regulated Child Care Capacity

The regulated capacity data was filtered to exclude after-school programs and providers exclusively serving populations aged 7 and older.

Population Filtering

Census tracts were filtered according to specific criteria for each population, excluding those with fewer than 10 children in each respective group and those with fewer than five individuals in the total population.

Child Care Capacity Ratio Calculation

Child-to-slot ratios were calculated for each population by census tract, and tracts with fewer than one regulated slot per three children were flagged as child care deserts.

Limitations and Caveats

Child Care Desert Definition Adjustments

The analysis expands the Center for American Progress's definition of child care deserts, which focuses on children under age five, by exploring additional populations to broaden insights into child care access.

Data Limitations

Child care capacity data only reflect regulated capacity and do not include informal care options such as family, friend, and neighbor care. Regulated capacity does not necessarily reflect actual availability.

Population data reflect five-year estimates and may not reflect the current population of each census tract.