

ADDRESSING A

Multi-Billion Dollar CHALLENGE

Advancing Knowledge of How High-Quality School
Environments Can Positively Affect Educational Outcomes

FINAL REPORT | DECEMBER 2023

APPENDICES

Study Replication Resources

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APPENDIX H

Community Profiles

One of the novel approaches taken by this study was to use aggregated neighborhood-level data to paint a picture of the geographic neighborhood surrounding each school in the study's sample to explore if there were patterns in the relationship between a school's modernization status and characteristics of the neighborhood where it is located. This information may be useful for informing efforts to maximize the benefit of school modernization initiatives by facilitating integration of the school into the surrounding community as an asset and resource.

There might be variation in the available data for any given school district and its associated neighborhoods, but the research team recommends the following approach.

Step 1: Identify each school's census tract

Once the schools are selected for the study's sample, determine which census tract each school is located within.

- Census tract identifiers for specific addresses can be found at <https://geocoding.geo.census.gov/geocoder/geographies/address?form>
- Geocodes for schools are available through the National Center for Education Statistics (NCES) at <https://nces.ed.gov/programs/edge/Geographic/SchoolLocations>

Step 2: Determine available metrics

Identify relevant available measures to incorporate into a school's community profile. For reference, the data sources and measures incorporated into this study are listed below. Additional or alternative metrics may be identified for each location and study.

(A) Census data, available at <https://data.census.gov/>

For this study, the research team looked at census tracts to understand the demographic and socioeconomic characteristics of the neighborhood surrounding each school in the study's sample. In some cases, a school's student and/or staff populations were similar to the surrounding neighborhood in terms of socio-demographic characteristics, but not in others.

To understand the socioeconomic characteristics of the neighborhoods, consider:

- % Residents living in poverty
- % Median household income
- % Residents unemployed
- % Residents age 25+ with a high school diploma or higher education
- % Residents age 25+ with a bachelor's degree or higher education

To understand the community population's demographic composition, consider:

- % Non-Latinx Caucasian residents
- % Non-Latinx Black residents
- % Non-Latinx Asian residents
- % Latinx residents
- % Foreign-born residents
- % Residents aged <18 years
- Total population

To understand neighborhood residential stability, consider:

- % Residents living in the same residence for the past five years
- % Owner-occupied housing

(B) Child Opportunity Index (COI)

The COI is a combined index developed by researchers at Brandeis University and the Kirwan Institute for the Study of Race and Ethnicity at The Ohio State University to measure the quality of resources and conditions across multiple domains that are important for child health and development. The index combines data from 29 different indicators in three broad domains: education, health and environment, and social and economic. The indicators are combined into a single, composite measure that ranges from 1 to 100 (where a higher number equates to greater opportunity). The research team can use the nationally normed score, which compares each census tract to the national average. Index values, as well as detailed documentation, are available at <http://diversitydatakids.org/child-opportunity-index>.

Additional measures developed and made available by Drexel University's Urban Health Collaborative (UHC) were used in this study. The UHC's mission is to improve health in cities by increasing scientific knowledge and public awareness of urban health challenges and opportunities, and by identifying and promoting actions and policies that improve population health and reduce health inequities. It conducts research, disseminates evidence, and builds capacity by partnering and exchanging information with the community, decision-makers, and other academic institutions. The UHC maintains an extensive repository of community-level measures, which can be found at <https://drexel.edu/uhc/resources/data/>.

(C) Gentrification

Gentrification in the community surrounding a school can have large impacts on a school's enrollment, student composition, and available resources. Conversely, the schools located in a community may also factor into gentrification processes.

For this study, the research team used a gentrification measure developed by Drexel University's UHC, where census information is calculated using a two-step process. First, census tracts are classified as "eligible" or "ineligible" for gentrification at baseline. Tracts are ineligible if they are either sparsely populated (less than 50 people) or are already wealthy (in their city's top quartile for median household income). Eligible tracts are then classified as "gentrified" or "not gentrified" during the ten years following baseline. To qualify as gentrified, a census tract must experience an increase in the proportion of residents with a college education that was above the city's median increase, in addition to a similarly elevated increase in gross rent or median home value compared to the city's. Documentation is available at <https://drexel.edu/uhc/resources/briefs/Measure-of-Gentrification-for-Use-in-Longitudinal-Public-Health-Studies-in-the-US/>.

(D) Retail Food Environment

Schools can play an important role in food access through school-sponsored meal programs and/or community food distribution programs. Understanding food availability in the neighborhood surrounding a school can provide insight on assets the community brings and needs that the school may help to address.

For this study, the research team used two measures of census tract-level retail food availability developed by Drexel University's UHC, using purchased data from the National Establishment Time Series (NETS) database, which can be found at https://papers.ssrn.com/sol3/papers.cfm?abstract_id=1022962. Information about the measures available at UHC can be found at <https://drexel.edu/uhc/resources/data>.

- Density per square kilometer of unhealthy food retail locations (includes convenience stores, small grocery stores/bodegas, fast food, bakeries, coffee shops, and pizza shops)
- Density per square kilometer of healthy food retail locations (includes supermarkets and produce stores)

(E) Green Space

Green space can promote health and healthy behaviors like exercise and socializing. The research team used a census tract-level measure of the absence of green space developed by Drexel University's UHC, using publicly available data from the 2011 National Land Cover Database (NLCD). The NLCD, developed by the United States Geological Survey (USGS) in association with the Multi-Resolution Land Characteristics (MRLC) Consortium, is the definitive Landsat-based, 30-meter resolution, land cover database for the United States. The NLCD uses a classification of twenty values of land space modified from the Anderson Land Cover Classification System. Thirteen categories are classified as "green space." To create a percentage of green space, the 2011 green space area values are divided by the GIS-derived 2010 census tract total land area. More information about the NLCD is available at <https://www.usgs.gov/centers/eros/science/national-land-cover-database>.

CONTACT US

We welcome further inquiry about the study and how to apply the findings to the modernization of schools.



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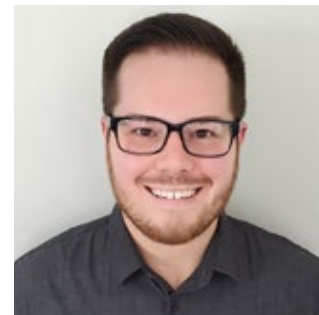
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