User Guide to Model Estimates of Poverty in Schools

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The share of students eligible for free and reduced-price lunch (FRPL) via meal applications is often used as a proxy for the share of students from low-income households at a school. But the recent adoption of universal meal programs, such as the Community Eligibility Provision, make it more difficult to consistently measure student poverty within and across states.[1]

Model Estimates of Poverty in Schools

The Urban Institute's Model Estimates of Poverty in Schools (MEPS) is a school-level measure of the share of students living in poverty that is comparable across states and time. The MEPS measure reflects, as closely as possible, the students who attend each school (i.e., the measure is distinct from a neighborhood measure). The scale of the poverty measure aligns with the district-level estimates from the US Census Bureau's Small Area Income and Poverty Estimates (SAIPE), capturing students with family incomes up to 100 percent of the federal poverty level. In contrast, FRPL identifies students with family incomes up to 185 percent of the federal poverty level, and direct certification generally identifies students with family incomes up to 130 percent of the federal poverty level.

We use the federal poverty level threshold because SAIPE provides robust single-year estimates of district-level poverty for all school-age children.[2] Further, research indicates that students living in deep or persistent poverty fare worse academically than their higher-income peers.[3] A consistent measure that focuses on students in severe economic need can help policymakers understand variations of need within their community.

To construct this measure, we estimate the district-level relationship between the share of students with family incomes up to 100 percent of the federal poverty level and the share of students eligible for free lunch or directly certified for free meals (i.e., the share of students from households earning up to 130 percent of the federal poverty level). We then take the parameters estimated at the geographic district level and apply them to the school-level data to predict school-level poverty measures.

This model-based approach requires district-level student poverty rates (via SAIPE), as well as district- and school-level shares of free lunch or direct certification students (available at the school level via the Common Core of Data). The model also accommodates other regressors at higher levels of aggregation, such as neighborhood-, district-, or state-level characteristics, which may affect the estimated relationship between free lunch/direct certification and student poverty rates. School-level regressors are aggregated to the district level for the original estimation and disaggregated to the school level to predict school-level MEPS. (See the technical report for more detail.)

Available Data

The original MEPS data are the direct predictions from our model. Most users will likely use these measures, as they best account for the measurement of poverty in most geographic districts (i.e., those with populations up to 50,000).

The modified MEPS data are school-level measures from our model that are adjusted to more closely reflect SAIPE measures of district-level poverty. This procedure better accounts for potential bias in our model (particularly for schools with high shares of Black students) but reduces reliability in geographic districts with modest or low populations. Users who want to compare the poverty rates of schools in geographic districts with large populations (e.g., the 100 largest school districts by enrollment) should use this measure.

For both measures, we include enrollment-weighted national percentiles for each school year from 2013–14 through 2018–19, as well as the original MEPS standard errors. All these data are available via the Urban Institute's Education Data Portal.

MEPS Uses and Misuses

MEPS values are a statistical estimate of poverty and are best suited for use in education research. MEPS is intended to help policymakers and researchers understand the variation in needs across schools within and across state lines and over time. The measure is also constructed for researchers wishing to conduct cross-state or cross-time analyses. MEPS is not appropriate for allocating resources within a state or district. When allocating school resources or identifying schools in need of supports for students from low-income households, policymakers should use measures that are generated from information provided by, or linked to, enrolled students and their families. These measures could include direct certification counts, the number of students who are in foster care or experiencing homelessness, or neighborhood socioeconomic status characteristics linked to student addresses.

Because the version of MEPS depends on the context of the research and comparisons, we make both the original and modified MEPS values available. We highlight that SAIPE values for areas with a small population have a wider margin of error. For example, geographic districts with less than 2,500 people have a SAIPE value with an approximate 90 percent confidence interval of +/-110 percent. In contrast, a similar confidence interval for districts with at least 65,000 people is +/-25 percent.

Thus, modified MEPS values, which hew closely to the SAIPE value, are more appropriate for analyses that look only at schools within geographic school districts that have a large enrollment. Enrollment-weighted percentiles would be useful to researchers trying to understand the distribution of school poverty nationwide while accounting for school enrollment sizes.

Notes

[1] Kristin Blagg, Macy Rainer, Erica Greenberg, and Emily Gutierrez, "Measuring Student Poverty: Dishing Up Alternatives to Free and Reduced-Price Lunch," Urban Institute, October 20, 2021; Kristin Blagg, "Which Students Count as Low Income? New National Data Shine Light on Proxy for Poverty," *Urban Wire* (blog), Urban Institute, January 25, 2019; and Emily Gutierrez, "The States That Need It Most Might Not Enroll in Statewide Free Meals" (Washington, DC: Urban Institute, 2021).

[2] "Small Area Income and Poverty Estimates (SAIPE) Program," US Census Bureau, accessed May 19, 2022.

[3] Katherine Michelmore and Susan Dynarski, "The Gap withing the Gap: Using Longitudinal Data to Understand Income Differences in Educational Outcomes," *AREA Open* 3, no. 1 (January–March 2017): 1–18.