

# Disentangling Student and School Poverty: Examining Long-Term Educational and Career Outcomes in Maryland

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## Introduction

- Growing up in poverty has been linked to a number of negative developmental outcomes, and children who are exposed to persistent poverty have more detrimental outcomes than children exposed to transitory poverty (McLoyd, 1998).
- Studies on the developmental effects of poverty typically rely on survey measures, which may suffer from small sample sizes, nonresponse bias, and attrition (Micheltore & Dynarksi, 2017).
- Leveraging statewide administrative data can help to fill these gaps, but these datasets typically contain a single crude indicator of poverty—eligibility for free and reduced price meals—which presents a number of unique measurement challenges: it is a categorical indicator, from a single point in time, and the Community Eligibility Provision (CEP) allows free meals for entire schools regardless of students' actual household income.
- This study used administrative data for the population of Maryland public school students to determine the duration of poverty for each student, aggregate this measure to the school level, and disentangle the roles of student and school poverty in long-term college and workforce outcomes.

## Method

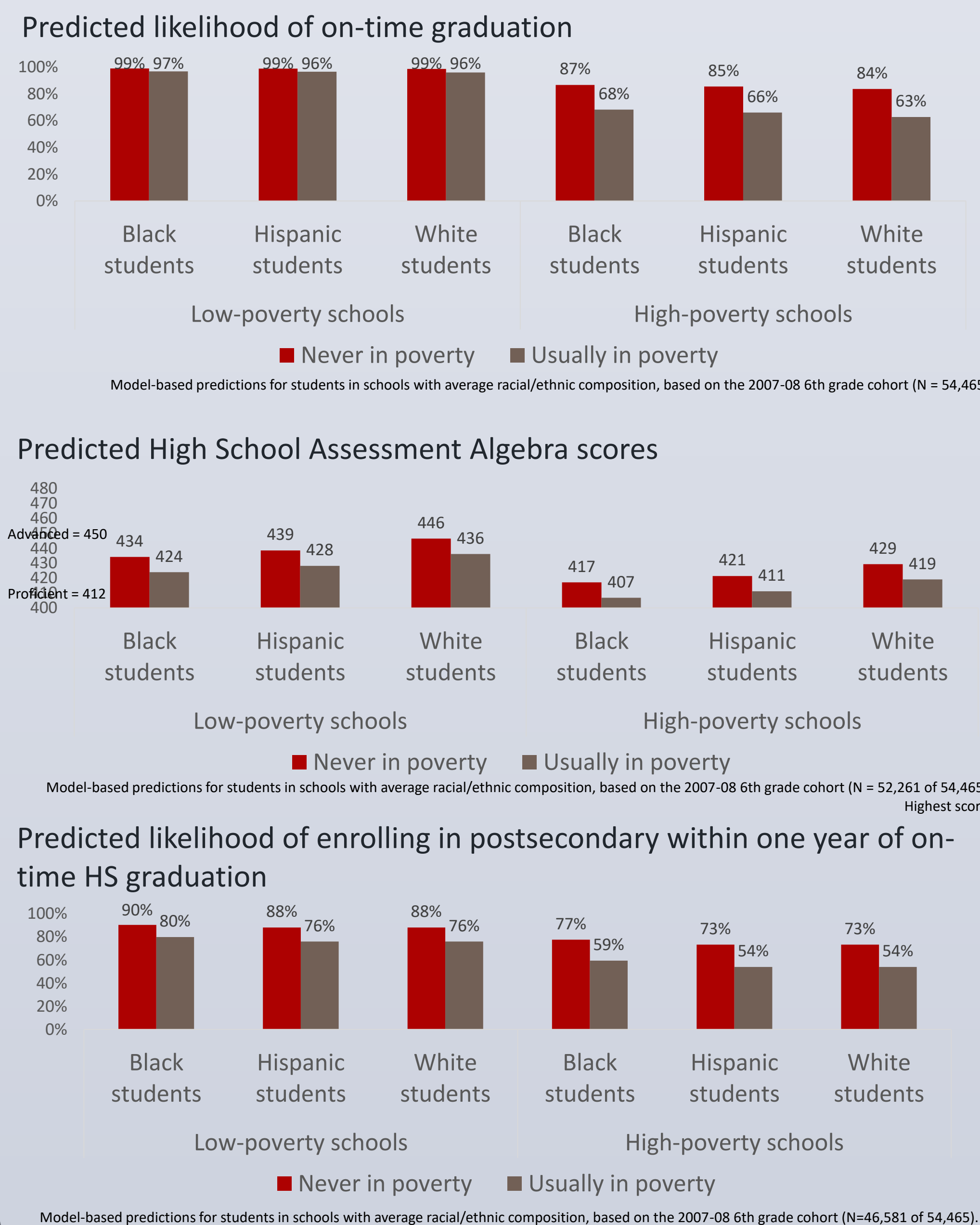
- Data were from the Maryland Longitudinal Data System (MLDS), Maryland's statewide repository for individual-level education and workforce data that are longitudinally linked across three state agencies.
- The cohort of Maryland public school students who were in 6<sup>th</sup> grade ( $N = 63,427$ ) in 2007-08 was used for this study. Ninety-one percent of the original students in the cohort were also identified in the 9-12<sup>th</sup> grade, indicating good retention in the population over time.
- The analytic sample, consisting of cohort members with race, ethnicity, and gender data who did not transfer out of Maryland public schools ( $N = 54,465$ ), was predominantly white (45%; 35% Black; 10% Hispanic of any race; 5% Asian; 4% other).
- Students were nested within 466 public schools in 6<sup>th</sup> grade in 2007-08 and 257 public schools in 12<sup>th</sup> grade in 2013-14.
- Student poverty duration was calculated as the proportion of time from 6<sup>th</sup> to 12<sup>th</sup> grade the student was eligible for FARMS ( $M = 0.36$ ,  $SD = 0.42$ ).
- School poverty was calculated as the mean poverty duration of all students in the school ( $M = 0.37$ ,  $SD = 0.22$ ).

## Analytic approach

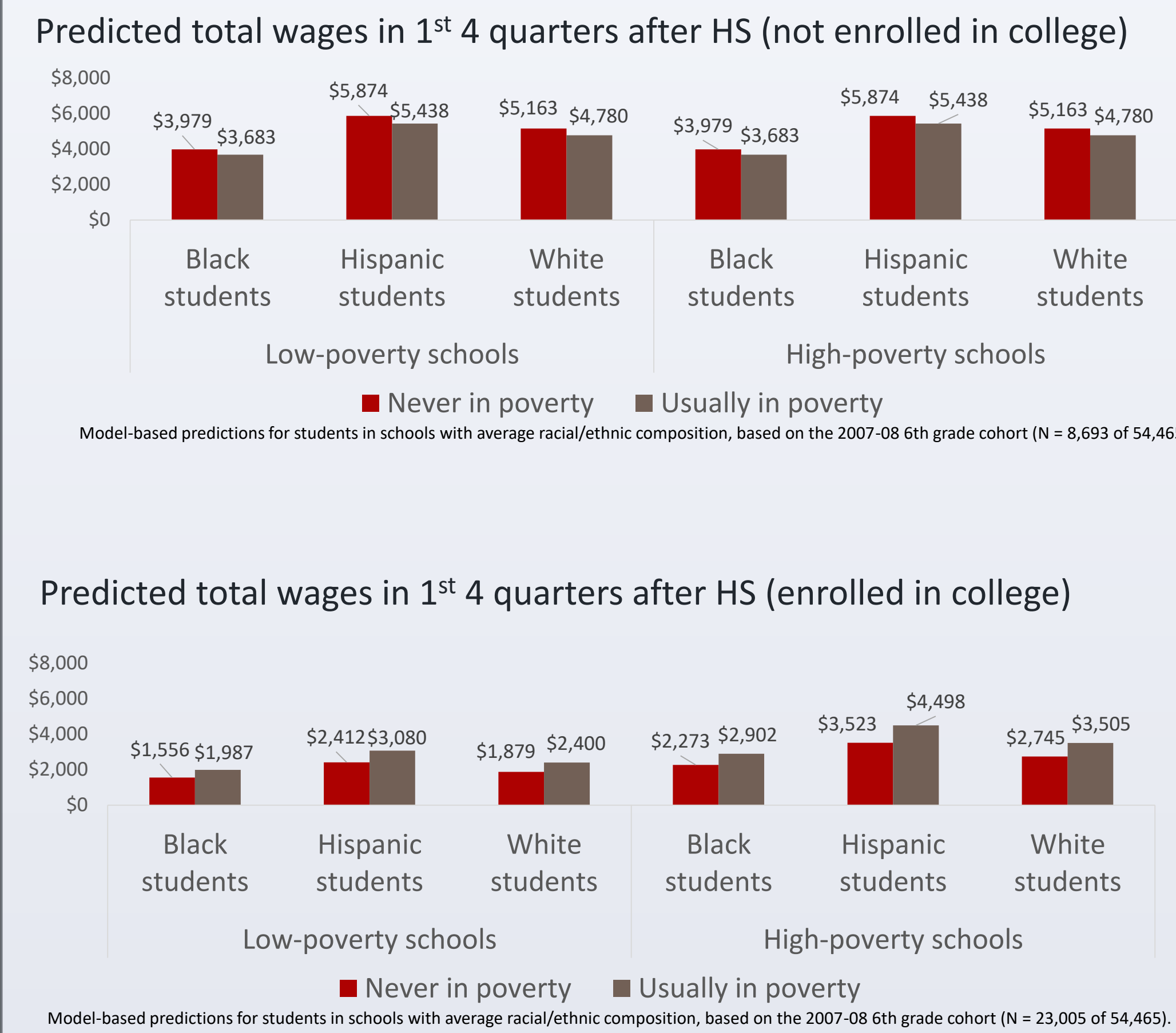
- In order to estimate the relations between student and school poverty and long-term outcomes, while accounting for the interdependence of outcomes for students attending the same schools, the study used multiple membership multilevel modeling.
- The first series of models treated student and school poverty as continuous variables having a linear relationship with outcomes. Each model included independent variables for student and school poverty, student race/ethnicity, and school racial/ethnic composition. Poverty variables were standardized ( $M = 0$ ,  $SD = 1$ ).
- In the second series of models school poverty was dummy coded to allow a non-linear relationship of school poverty to outcomes and to test for significant differences among school poverty levels. These models were run for each student poverty group separately.

## Results: Linear models

- Students who experienced poverty for longer periods of time had worse educational outcomes.
- School concentration of poverty, regardless of individual experience, usually predicted worse educational outcomes.

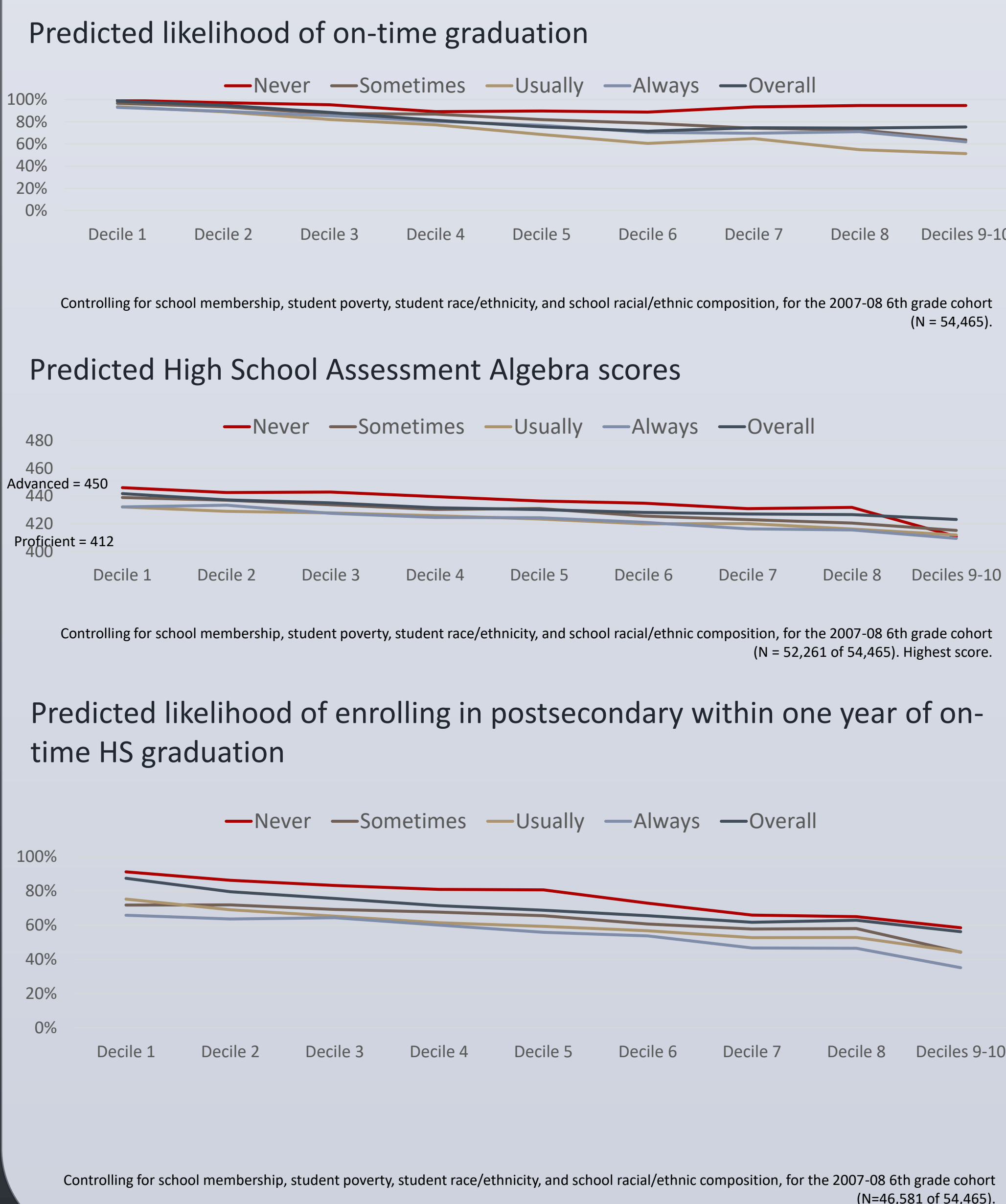


## Results: Linear models (continued)

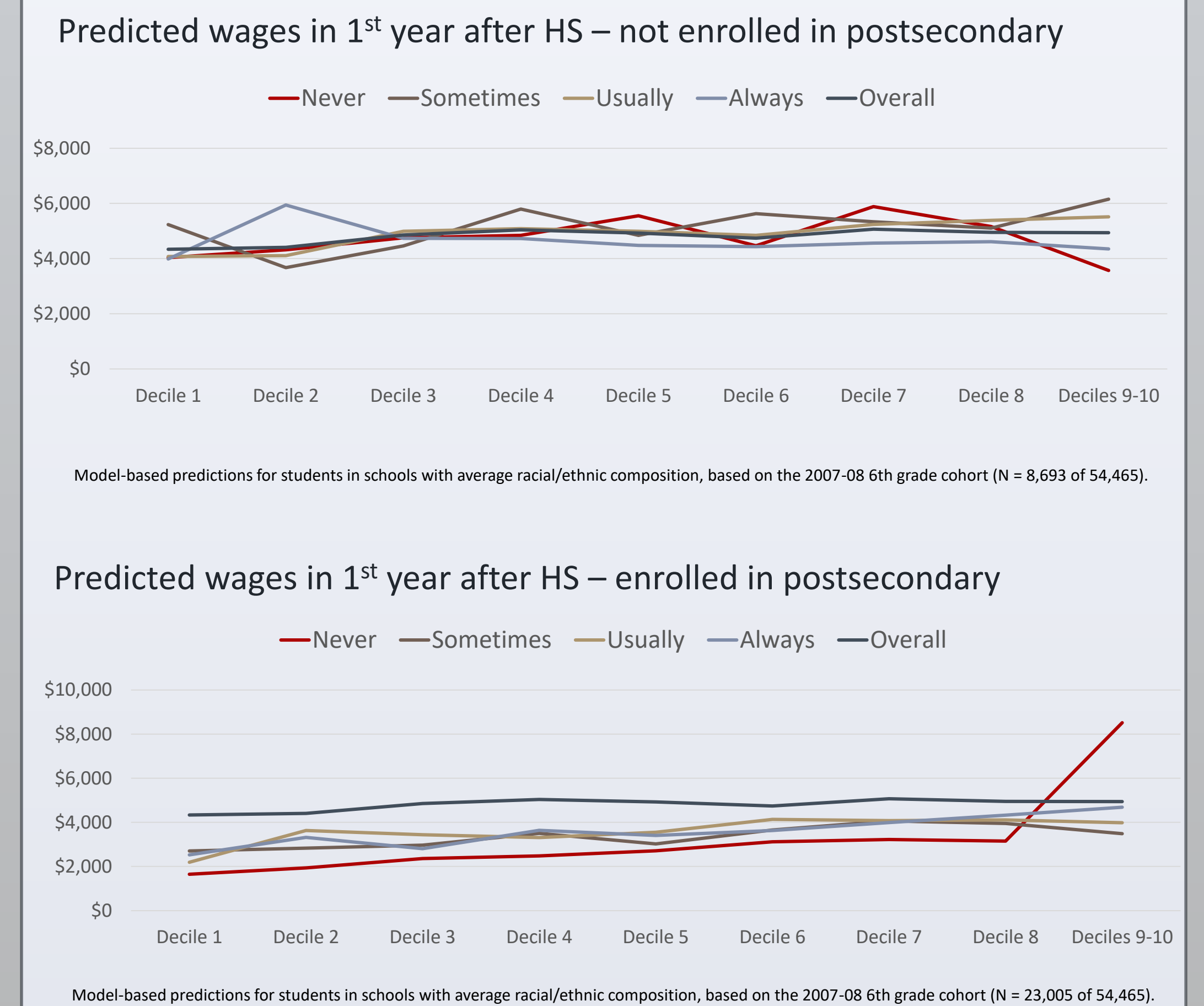


## Results: Threshold and poverty group models

- Students who were usually, but not always, in poverty, often experienced the worst outcomes.
- The steepest declines in on-time high school graduation occurred at Deciles 2-5 and for postsecondary enrollment at Deciles 2-4.
- Results fluctuated for HSA scores and wages.



## Results: Threshold and poverty group models (continued)



## Policy Implications

- Maryland's current funding formula for allocating funds to school systems includes an additional funding weight for each student who is eligible for FARMS.
- Currently under consideration is providing additional funding for schools with high concentrations of students living in poverty.
- The results of this study may indicate that the provision of additional resources could improve long-term educational and career outcomes.
- However, in this study, we did not isolate a causal mechanism for determining *how* concentrated poverty relates to long-term outcomes.
- Future research will focus on (1) identifying the mechanisms through which concentrated poverty relates to long-term outcomes; (2) comparing measurements of poverty in light of the decreasing validity and reliability of FARMS data; and (3) examining risk and protective effects to identify additional intervention strategies that may improve the long-term outcomes of students living in poverty in Maryland.

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