

# The Impact of Poverty and Race on Long-Term Academic and Career Outcomes in Maryland Students

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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).
- Recent data from the National Center for Children in Poverty (NCCP) indicate that about 15 million children—21% of all children—in the United States live in families with incomes below the federal poverty threshold (Jiang, Granja, & Koball, 2017).
- In the United States, racial/ethnic minority status is intertwined with poverty: a disproportionately high number of racial/ethnic minorities live in poverty (Reardon, 2016).
- Higher poverty schools often have limited or no access to quality educational resources, fewer qualified teachers, more overcrowded classrooms, and poorer facilities (Morgan, 2012).
- This study used administrative data to examine the relation between student-level poverty (eligibility for free and reduced meals-FARMS) and race and school-level poverty and the school's racial/ethnic composition on students' long-term educational and career 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 ( $M = 0.37$ ,  $SD = 0.22$ ).

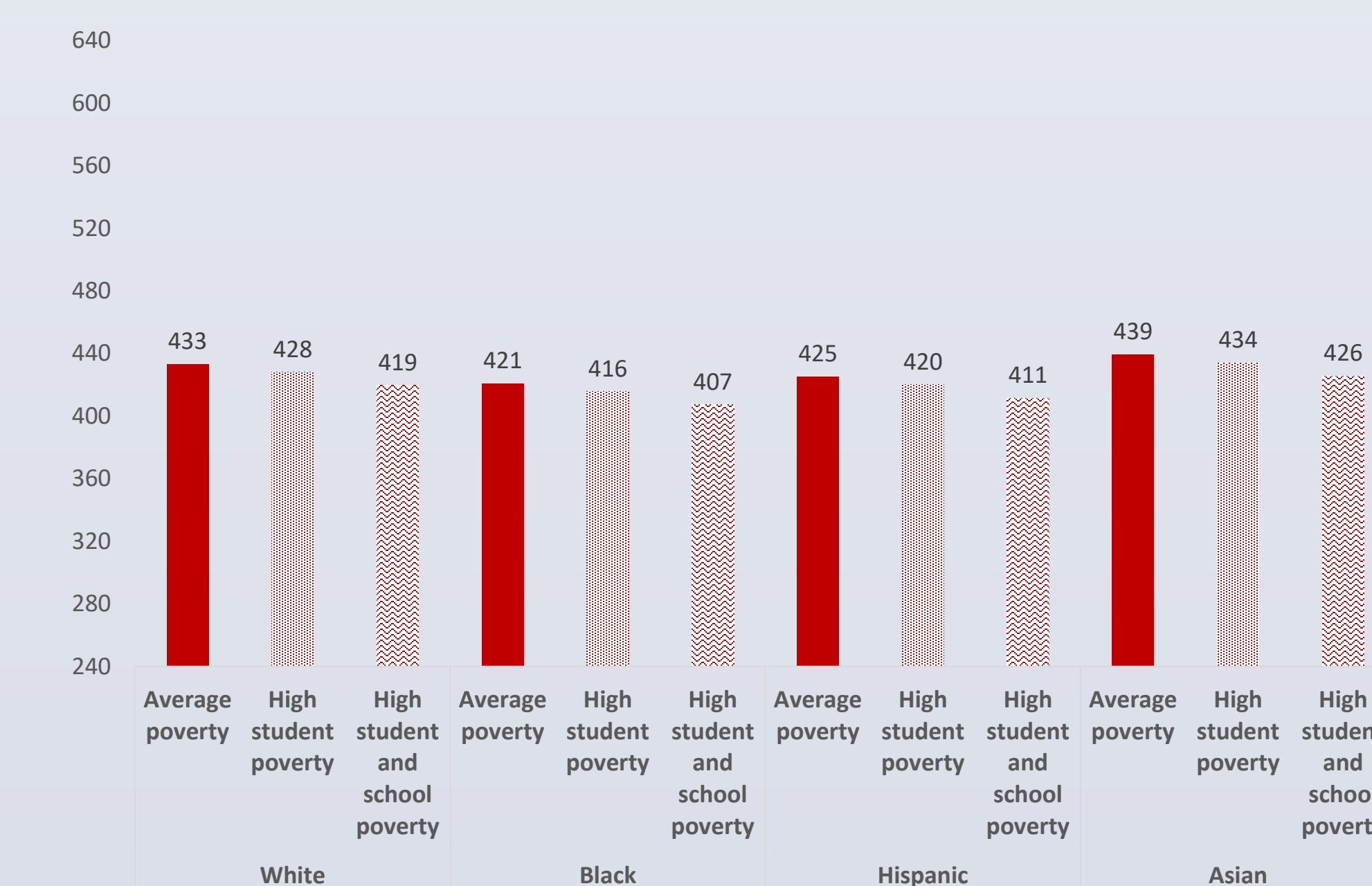
## Analytic Approach

- 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.
- Each model included independent variables for student and school poverty, student race/ethnicity, and school racial/ethnic composition. Poverty variables were standardized ( $M = 0$ ,  $SD = 1$ ).

## Results: Predicted Academic Outcomes

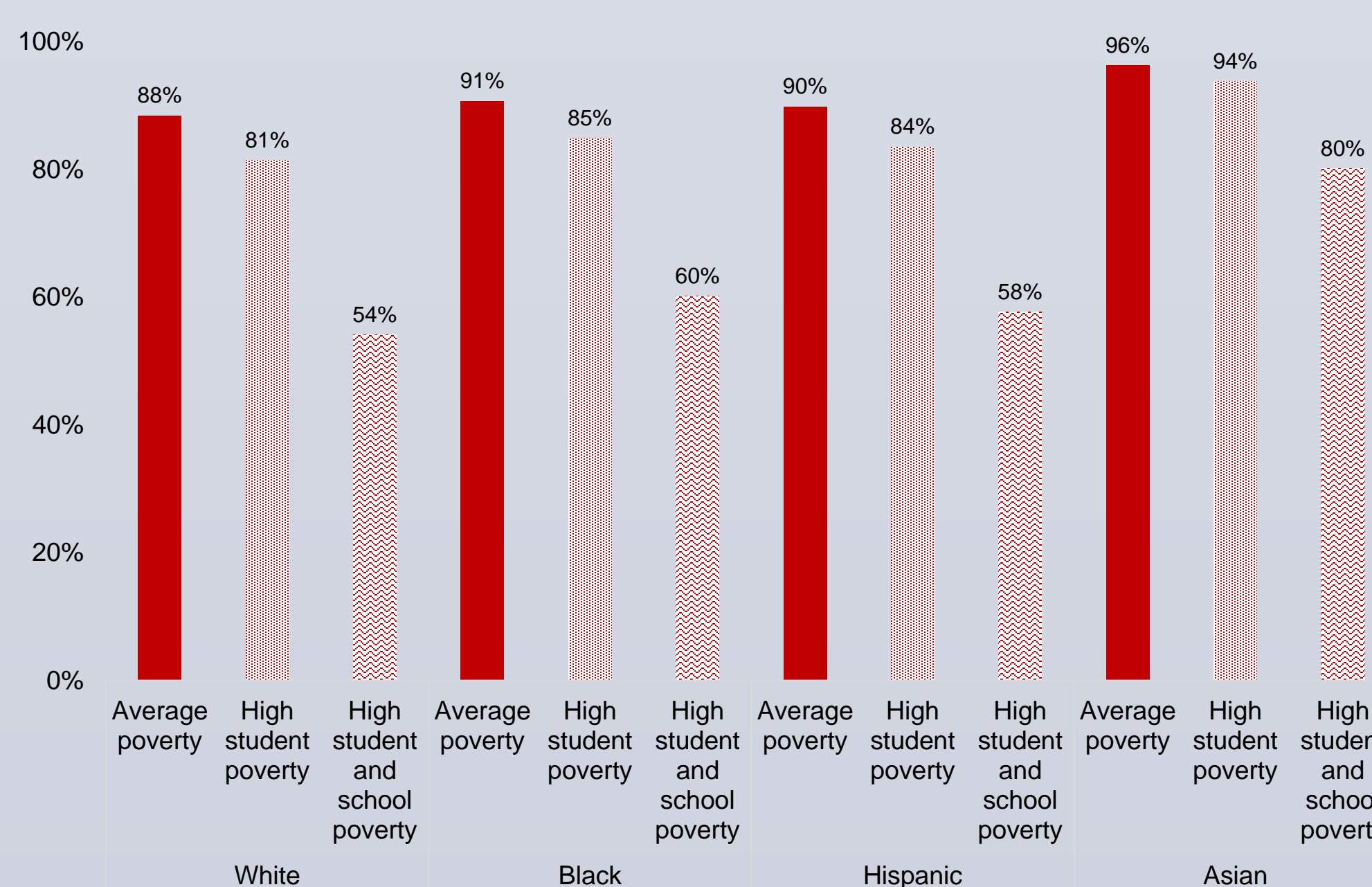
- Students who experienced poverty for longer periods of time had worse educational outcomes.
- School concentration of poverty, regardless of individual experience, usually predicted worse educational outcomes.

Predicted High School Assessment Algebra scores



Model-based predictions for students in schools with average racial/ethnic composition, based on the 2007-08 6th grade cohort ( $N = 52,261$  of 54,465). Highest score.

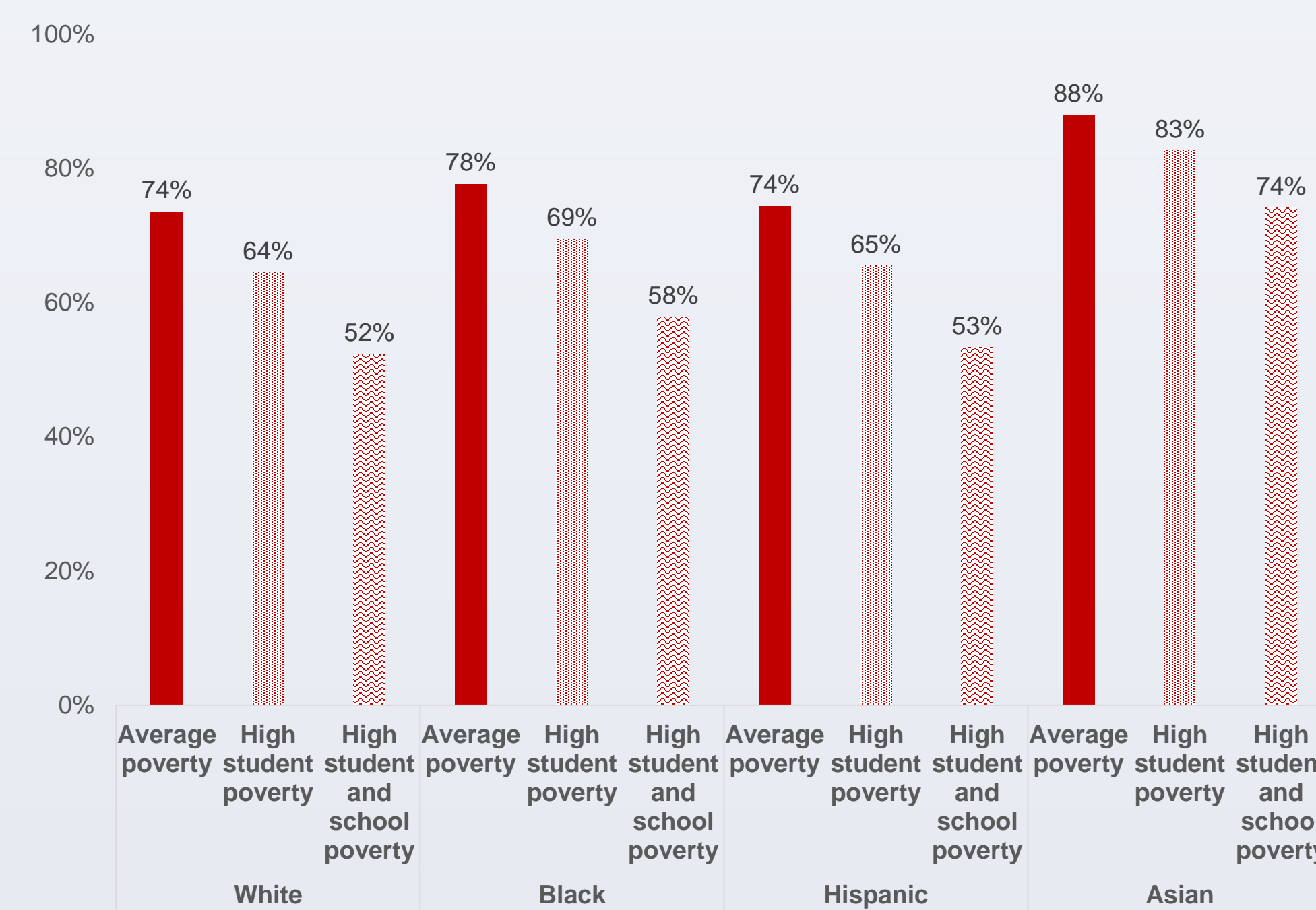
Predicted likelihood of on-time graduation



Model-based predictions for students in schools with average racial/ethnic composition, based on the 2007-08 6th grade cohort ( $N = 54,465$ ).

## Results: Predicted Academic Outcomes (cont'd)

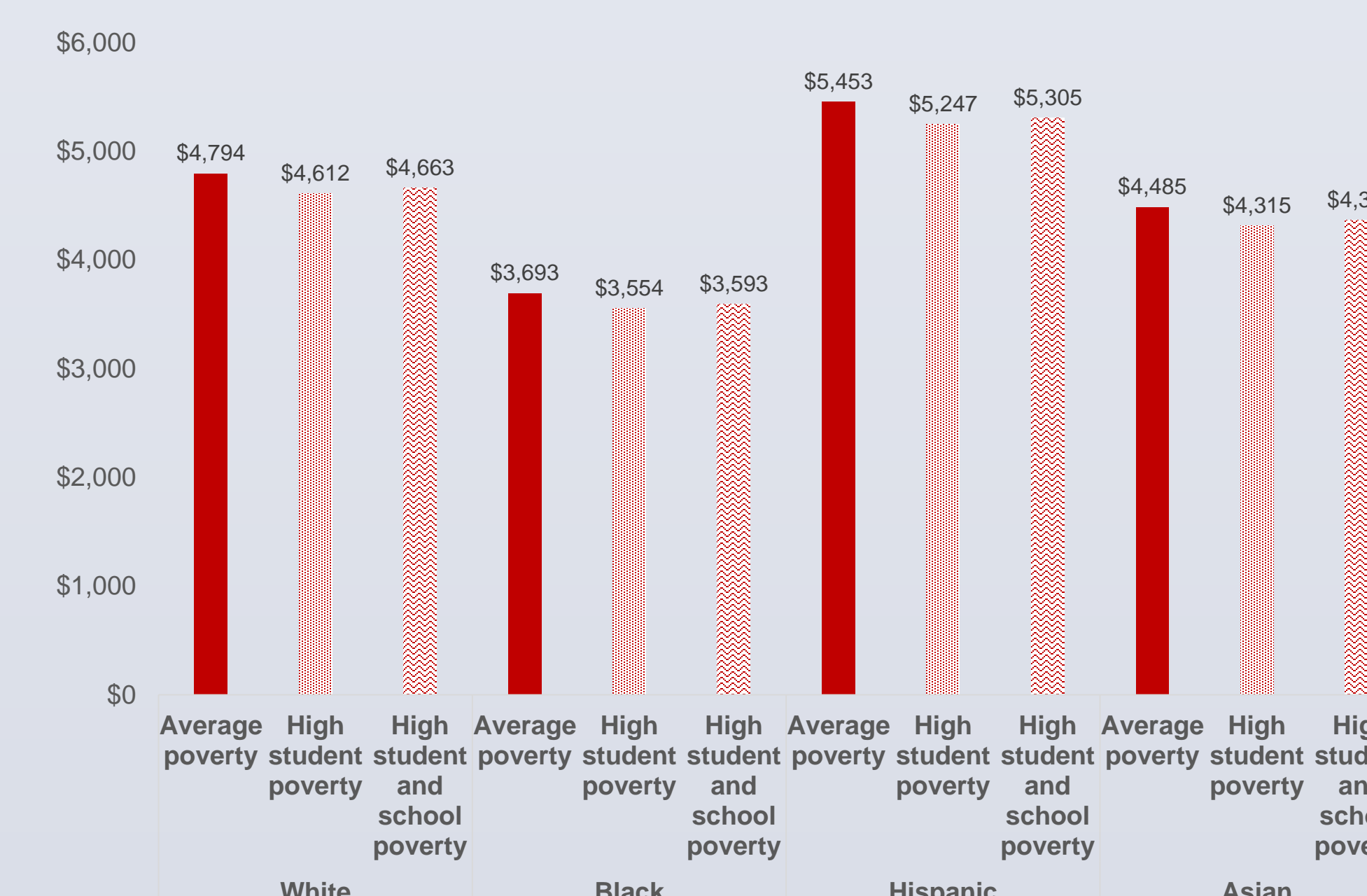
Predicted likelihood of enrolling in postsecondary within one year of on-time HS graduation



Model-based predictions for students in schools with average racial/ethnic composition, based on the 2007-08 6th grade cohort ( $N = 46,581$  of 54,465).

## Results: Predicted Workforce Outcomes

Predicted total wages in 1<sup>st</sup> 4 quarters after HS (not enrolled in college)



Model-based predictions for students in schools with average racial/ethnic composition, based on the 2007-08 6th grade cohort ( $N = 8,693$  of 54,465).

Predicted total wages in 1<sup>st</sup> 4 quarters after HS (enrolled in college)



Model-based predictions for students in schools with average racial/ethnic composition, based on the 2007-08 6th grade cohort ( $N = 23,005$  of 54,465).

## Summary of Results

- Both student and school-level poverty were related to long-term academic outcomes, even after controlling for individual student race and school racial/ethnic composition.
- School concentration of poverty, regardless of individual poverty experience and race, usually predicted worse educational outcomes.
- Racial and ethnic gaps in standardized test scores persisted regardless of student and school-level poverty.
- Racial and ethnic gaps in high school graduation and postsecondary enrollment disappeared or reversed when controlling for student and school-level poverty and school's racial/ethnic composition.
- Poverty was related to lower annual wages for students not enrolled in college and higher annual wages for those enrolled in college.

## Policy Implications

- Implementation of additional programs and policies for students living in poverty and schools with high concentrations of poverty.
- Focus on strengths within high-poverty schools to better support students.
- Establish partnerships within the surrounding community to increase academic and/or career success.

## Future Research

- Examine the protective role of additional student and school level characteristics.
- Include elementary levels to assess effects of poverty during the entire K-12 experience.
- Examine additional college and career outcomes (e.g. college persistence and degree attainment, workforce trajectories).
- Compare measures of poverty (FARMS vs census data).

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