Racial Equity and Academic Enrichment in Urban Charter and Traditional Public Schools

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1 Abstract

There are significant and legitimate concerns regarding racial equity within the United States public education system, especially for urban communities. In recent decades, public charter schools have often been celebrated as the solution for struggling urban education systems, emphasizing local decision-making, community control, and reduced bureaucracy. That being said, there are concerns surrounding equity and accountability of charter schools, leading to calls for a moratorium on new charter schools from the National Association for the Advancement of Colored People (NAACP) and Black Lives Matter (BLM). Our research measures the internal equity of charter and traditional public schools in urban settings by analyzing the relationship between enrollment in Advanced Placement (AP) classes and school-wide racial demographics. In urban charter schools, we find that there was a statistically significant negative relationship between the proportion of the student body that was white and the proportion of students of color that were enrolled in at least one AP course. In urban traditional public schools, we find a slightly positive relationship between the proportion of the student body that was white and the proportion of students of color that were enrolled in at least one AP course. This indicates that urban charter schools with larger white populations may be less equitable in the provision of academic enrichment to students of color than their traditional public counterparts. In urban schools with a small white population, however, a higher proportion of students of color were enrolled in at least one AP course at charter schools than traditional public. Therefore, school-level racial demographics appear to predict the internal equity of education enrichment programs in urban charter and traditional public schools.

2 Introduction and Context

The United States public education system is characterized by a large racial achievement gap and notable disparities between urban and suburban school districts [4]. Many have argued that charter schools, publicly funded schools that

are run by community members or charter management organizations rather traditional school districts, may be a solution for improving educational opportunities, especially in urban settings [2]. Studies have produced mixed results as to whether students perform better in charter schools than traditional public schools [5], and it is important to note that there is a significant amount of diversity across charter schools in terms of pedagogical approaches, management strategies, and academic opportunities.

Our study sought to fill a gap in the body of research surrounding racial equity in the American public education system and the conversation around charter and traditional public schools. Southworth and Mickelson (2007) found evidence that the racial composition of Charlotte-Mecklenburg schools affected the track placement of students of various demographics, indicating that in more racially imbalanced schools, students of color were disproportionately likely to be placed in lower academic tracks [7]. Roch and Ertas (2012) noted the frequency of inequitable and "entrepreneurial" recruitment practices in charter schools run by for-profit educational management organizations. Their study found that this subset of charter schools may enroll higher proportions of students of color, but typically avoided recruiting populations that may be more costly to the school, such as students who were economically disadvantaged, English language learners, and students with disabilities [2]. Additional research on the discipline practices in charter schools, especially those with "zero tolerance" discipline policies, raises further questions regarding internal racial equity. Losen, Keith, Hodson, and Martinez (2016) found that in more than 500 charter schools nationwide, black students received out-of-school suspensions at a rate more than 10 percentage points higher than their white peers . The study also found that the overall suspension rate for charter schools was 16% higher than the overall suspension rate for non-charters [1].

While there is a large body of research surrounding educational outcomes for students in traditional public and charter schools and a growing body of literature regarding the equity of charter school enrollment and discipline procedures, we found a gap in the research surrounding internal academic equity. Therefore, in our study, we analyzed enrollment in upper-level courses among students of color in charter and traditional public schools based on school-level racial demographics.

3 Hypotheses

Based on the existing research surrounding potentially inequitable practices within urban charter schools and general concerns surrounding reduced external accountability measures, we predicted that students of color may receive more equitable opportunities in traditional public schools than charter schools.

4 Data and Methods

Our sample included 1,070 urban high schools (726 traditional public and 344 charter) from 16 states. We used the Urban Institute's data explorer tool [6] to access data from the National Center for Education Statistics' Common Core of Data (NCES CCD) and the United States Department of Education's Civil Rights Data Collection (CRDC). In order for a school to be included in our sample set, they must be located in a large city (as defined by the CCD) and be located in states that use the same model for funding charter and traditional public schools. Through this selection process, we hoped to compare how charter and traditional public schools compare to each other in fundamentally similar contexts. Thus, our selection process removed potential mitigating factors, such as large disparities in per pupil funding through state funding models and the many differences between urban, suburban, and rural school settings.

We chose to use enrollment in at least one Advanced Placement (AP) course as our measure of academic enrichment. While there certainly are many other components of academic enrichment and educational opportunities, AP enrollment is a meaningful predictor. AP course content is standardized across the United States and is explicitly designed to be taught at a collegiate level [3]. In practice, the educational environment and content of an AP course may differ between schools and classrooms, but the level of standardization is significantly higher than other enrichment programs. By measuring enrollment in at least one AP course, we are able to measure access to educational enrichment opportunities, rather than focusing on exams scores and other measures of achievement. Our study focused on data from the year 2015. For complete access to the data set used for this study, refer to the Supplementary Materials section.

After downloading and cleaning large data sets from the CCD and CRDC, we used R to analyze the information [9] [6]. We utilized R's built-in modeling functions and the ggplot2 package's visualization functions to identify relationships and draw conclusions found in our data [8]. For purposes of determining statistical significance, we assigned an α value of 0.025. For more detail surrounding the download, data cleaning, modeling, and visualizations, refer to the Supplementary Materials section.

5 Findings

Based on our modeling, we were able to identify a statistically significant negative relationship between increased proportions of white students in urban charter schools and the proportion of students of color enrolled in AP programs. In traditional public schools, there was a statistically significant positive relationship between the school-wide proportion of white students and the proportion of students of color enrolled in AP programs.

For each of the following models, the independent variable was the proportion of the student body that was white. The dependent variable is the proportion of a specific target racial group that was enrolled in at least one AP

course. The dependent variable for the models include the proportion of all students of color, all Black students, and all Hispanic students that were enrolled in at least one AP, broken down by charter and traditional public schools.

5.1 AP Enrollment - Students of Color

Traditional Public Schools: Our model of student body proportion white vs. the proportion of students of color enrolled in at least on AP course in traditional public schools revealed a coefficient of 0.087663 with a standard error of ± 0.0289, R^2 value of 0.0149, and p-value of 0.002517 (Figure 1). In other words, there is a 8.8% increase in the proportion of students of color enrolled in at least one AP course in traditional public schools with the highest proportion of white students compared to those with the lowest proportion of white students. In our model, 1.49% of the variation in student of color AP enrollment can be explained by differences in school-level racial compositions. We are 99.75% certain that this relationship is not due to chance.

Charter Schools: Our model of student body proportion white vs. the proportion of students of color enrolled in at least on AP course in charter schools revealed a coefficient of -0.17417 with a standard error of ± 0.0677, R^2 value of 0.04026, and p-value of 0.01095 (Figure 1). In other words, there is a 17% decrease in the proportion of students of color enrolled in at least one AP course in charter schools with the highest proportion of white students compared to those with the lowest proportion of white students. In our model, 4.026% of the variation in student of color AP enrollment can be explained by differences in school-level racial compositions. We are 98.905% certain that this relationship is not due to chance.

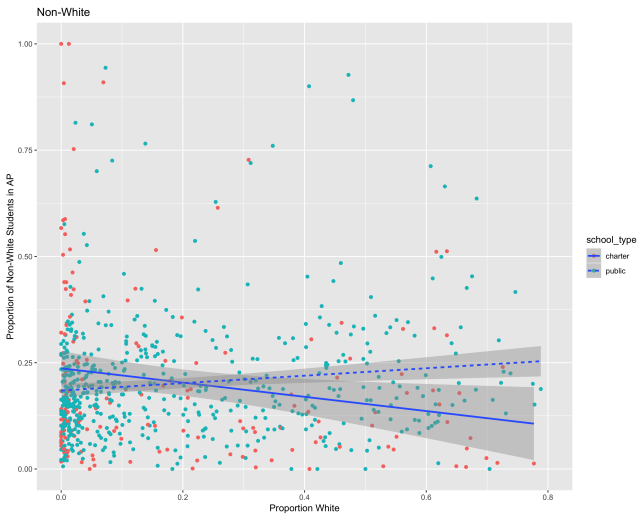

Figure 1: Non-White Participation in Advance Placement by School Proportion White

5.2 AP Enrollment - Black Students

Traditional Public Schools: Our model of student body proportion white vs. the proportion of Black students enrolled in at least on AP course in traditional public schools revealed a coefficient of 0.026323 with a standard error of ± 0.0346, R^2 value of 0.001068, and p-value of 0.4472 (Figure 2). This relationship is not statistically significant, and shows that school-level demographics in traditional public schools do not appear to predict the proportion of Black students who will be enrolled in at least one AP course. The relationship is very weak and does not appear to be predictive.

Charter Schools: Our model of student body proportion white vs. the proportion of Black students enrolled in at least on AP course in charter schools revealed a coefficient of -0.16026 with a standard error of ± 0.0724, R^2 value of 0.02426, and p-value of 0.02826 (Figure 2). This relationship fails our test for statistical significance my a margin of 0.00326, but is still worth noting. The model predicts a 16% decrease in the proportion of Black students enrolled in at least one AP course in charter schools with the highest proportion of white students compared to those with the lowest proportion of white students.

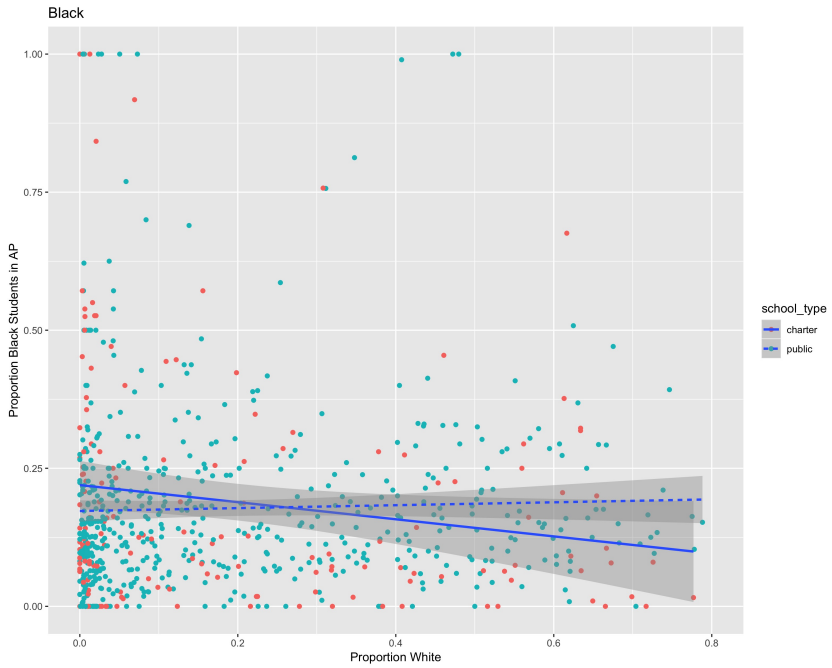

Figure 2: Black Participation in Advance Placement by School Proportion White

5.3 AP Enrollment - Hispanic Students

Traditional Public Schools: Our model of student body proportion white vs. the proportion of Hispanic students enrolled in at least on AP course in traditional public schools revealed a coefficient of 0.040377 with a standard error of ± 0.0316, R^2 value of 0.001185, and p-value of 0.2014 (Figure 3). This relationship is not statistically significant, and shows that school-level demographics in traditional public schools do not appear to predict the proportion of Black students who will be enrolled in at least one AP course. The relationship is weak and does not appear to be predictive.

Charter Schools: Our model of student body proportion white vs. the proportion of Hispanic students enrolled in at least on AP course in charter schools revealed a coefficient of -0.14265 with a standard error of ± 0.0734, R^2 value of 0.01751, and p-value of 0.05368 (Figure 2). This relationship fails our test for statistical significance my a margin of 0.02826, but is still worth noting. The model predicts a 14% decrease in the proportion of Hispanic students enrolled in at least one AP course in charter schools with the highest proportion of white students compared to those with the lowest proportion of white students.

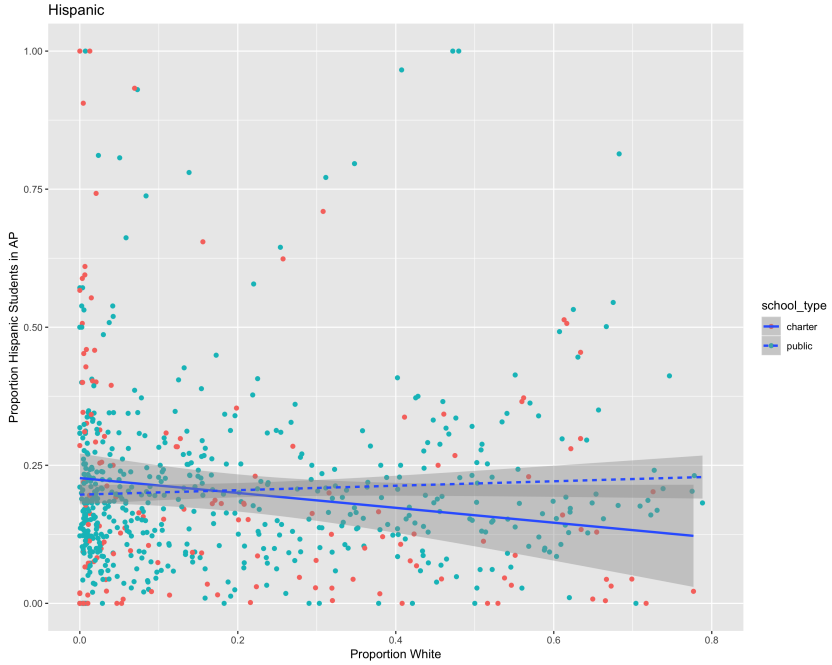

Figure 3: Hispanic Participation in Advance Placement by School Proportion White

6 Discussion

6.1 Implications

Essentially, our study found sufficient evidence to support the claim that there is a significant relationship between school-level racial demographics and opportunities for academic enrichment for students of color. Our hypothesis was that charter schools may be less internally equitable than their traditional public counterparts, given existing evidence of inequity in other areas. While we found that the proportion of the student body that was white had a negative impact on AP enrollment for students of color, it is clear that charter schools may provide better opportunities in specific schools with very low white populations. Therefore, while the spectrum of charter schools is technically less equitable, charter schools are not necessarily a worse option for students of color. This study does suggest that charter schools differ from each other more significantly than their public school counterparts. Ultimately, school-level racial demographics of traditional urban public schools are less predictive of educational opportunities than those of charters. This leads us to conclude that, in certain demographic conditions, charter schools may provide increased access to educational enrichment opportunities, but they may be less equitable overall.

In a practical sense, this is not a value judgement of the charter school model for public education in urban contexts. Our research indicates that in many cases, especially in contexts with small populations of white students, charter schools do enroll students of color in AP courses at a higher rate. That being said, the negative trend that we discovered speaks to a broader concern surrounding accountability in charter schools. In a publicly funded education system, school-level racial demographics should not predict academic opportunities as they appear to in this study. Thus, it is necessary to hold all charter schools, especially those with larger white populations, to a higher standard of accountability in terms of the services being provided to students of color. Charter schools may provide superior services in some contexts, but the general trend of inequity is deeply troubling and must be addressed.

6.2 Limitations

While our results were significant and meaningful, there are several limitations to our study. In terms of scope, this study only considers data from the year 2015 in select states. Additionally, because we chose to utilize AP enrollment as our measure for academic enrichment, this study is only applicable to high schools. In elementary and middle school contexts, these patterns may meaningfully differ. Furthermore, there are many other potential measures for enrichment, including International Baccalaureate programs, honors courses, and extracurricular activities, among others. As a result, our study does not provide a comprehensive perspective of academic enrichment and educational opportunities.

Due to our inability to access student-level data, our study lacks meaning-

ful controls. While we did make basic assumptions about similarities between schools and student populations in large urban areas, it would be helpful to control for socioeconomic status, English Language Learner status, and disability status, as these considerations may also affect AP enrollment.

6.3 Recommendations for Future Research

Finally, there are certainly many relevant connections to this study that may produce meaningful results as a part of the broader conversation surrounding racial equity and school models. Further analysis of AP data, such as scores, the number of AP courses individual students, and the AP subjects that students are enrolled in, would add greater depth to our findings and introduce more qualitative measures related to the quality of AP programs. Additionally, we recommend that future researchers examine relative prevalence and access to other forms of educational enrichment in urban settings. Finally, it would be meaningful to analyze the variation within charter schools, assessing the roles of charter networks and for-profit education management organizations to determine whether these factor shape internal racial equity.

References

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7 Supplementary Materials

All of the data and code used for this analysis can be found at the public GitHub repository: https://github.com/David-Godinez/racial-equity-academic-enrichment