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Jerome Graham

Michigan State University

Aanchal Gidra

Michigan State University

School Climate scholarship often fails to explore the perspectives of elementary-school students. To fill this gap, we use survey-data from Georgia to examine racial disparities in elementaryschool students' school climate perceptions, how they vary over time, and the factors that associate with them. We find that Black and "Other Race" students report worse school climate perceptions than their White peers, that these disparities have worsened with time, and remain present among students attending the same school. Further, bullying and disciplinary incidents predict worse climate perceptions, while increases in teaching experience improve them. These results suggest that efforts to improve school climate should center elementary-schools students, and that racial disparities, bullying, teaching experience, and discipline should be considered in these efforts.

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**Not Too Young to Notice: The Early Emergence of Racial Disparities in Elementary
Students' School Climate Perceptions**

Jerome Graham¹

Aanchal Gidra²

College of Education

Michigan State University

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¹ Corresponding author. 620 Farm Lane, East Lansing, Michigan, United States of America 48824. Email address: jgraham@msu.edu

Jerome Graham is an Assistant Professor of K-12 Educational Administration at Michigan State University. His research evaluates the implementation and effects of educational policies and practices that have the potential to make schools more humanizing for Black children. Jerome's work explores the question, **"How would schooling look differently if it were structured in a way that equitably facilitated the social and emotional learning (SEL) and wellbeing of all—and especially Black—students?"** He anchors this work through interdisciplinary, mixed-method scholarship that highlights three areas that would look radically different if policies and practices nurtured students' wellbeing: school climate, school discipline, and mental health. His research draws attention to these areas by: (1) problematizing, analyzing, and documenting the disparities that often make school a 'site of suffering' for Black students and (2) investigating the implementation and effects of policies and practices offering alternatives to current schooling approaches that would center, improve, and affirm wellbeing.

²Aanchal Gidra is a Ph.D. candidate in Education Policy at Michigan State University. Her research focuses on school climate, discipline, and the impacts of ecological disruption on teaching and learning across the United States and South Asia.

Abstract

School Climate scholarship often fails to explore the perspectives of elementary-school students. To fill this gap, we use survey-data from Georgia to examine racial disparities in elementary-school students' school climate perceptions, how they vary over time, and the factors that associate with them. We find that Black and "Other Race" students report worse school climate perceptions than their White peers, that these disparities have worsened with time, and remain present among students attending the same school. Further, bullying and disciplinary incidents predict worse climate perceptions, while increases in teaching experience improve them. These results suggest that efforts to improve school climate should center elementary-schools students, and that racial disparities, bullying, teaching experience, and discipline should be considered in these efforts.

Key words: School Climate, Racial School Climate Gap, Students' Perceptions, Equity, and Educational Disparities

Introduction

School climate, a multidimensional construct assessing students', educators', and parents' perceptions of the "quality and character of school life" (Espelage & Hong, 2019; Thapa et al., 2013), is associated with student outcomes, including school discipline (Rodriguez et al., 2024; Welsh et al., 2024), chronic absenteeism (Graham et al., 2026; Hamlin, 2021), and academic achievement (Berkowitz et al., 2017). As school climate has increasingly been positioned as both an accountability indicator and a lever for school improvement in the Every Student Succeeds Act (ESSA) era (Darling-Hammond et al., 2016; Jordan & Hamilton, 2020; Temkin & Harper, 2017), understanding whose experiences are reflected in aggregate measures of climate has taken on heightened importance.

At the same time, a substantial body of research documents how racialized schooling policies, practices, and interactions shape students' perceived and actual school experiences (Golden et al., 2025; Griffin et al., 2017), such that students of color often experience schooling differently than their White peers (Duncan & Murnane, 2011; Smolkowski et al., 2016). These differences are reflected in well-documented disparities in disciplinary, academic, and socioemotional outcomes (Bottiani et al., 2017; Welsh & Little, 2018), contributing to the "racial school climate gap," or systematic disparities in students' school climate perceptions by race (Voight et al., 2015; Graham, 2022). Because school climate is measured through surveys that gauge perceptions, documenting racial disparities in those perceptions is consequential, as students' understanding of safety, belonging, and fairness are influenced by discriminatory school experiences (Byrd, 2015; Byrd & Carter Andrews, 2016). As states increasingly incorporate school climate measures into ESSA accountability systems and use them to guide

resource allocation and improvement planning, attention to racial disparities in these perceptions should inform how those measures are interpreted and applied.

While researchers increasingly document the benefits of positive school climate and its growing prominence within accountability systems, it is unlikely to function as an equity-oriented school improvement lever without attention to whether racial disparities in climate perceptions exist, when they begin, and how they evolve. Existing evidence documents such disparities, though it draws overwhelmingly from middle- and high-school samples (Bottiani et al., 2016; Konold et al., 2017; Voight et al., 2015). Elementary-school students' voices are rarely centered, as climate at this level is often assessed through adult-reported surveys (Wang & Degol, 2016), with few exceptions like California's CORE's survey of school climate (Hough et al., 2017), and an elementary student survey administered by Griffith (2000) in the 1990s. This sidelining of student voice is consequential given evidence that younger students can reliably report on their school experiences (Koth et al., 2008; La Salle et al., 2016). As a result, we know little about whether racial climate disparities emerge during elementary-school, intensify over time, or primarily reflect student sorting patterns.

Evidence from other domains suggests that schooling disparities appear as early as pre- and elementary-school (Gilliam et al., 2016; Fryer & Levitt, 2004), raising the possibility that school climate disparities may also take shape during these formative years. If so, efforts to improve school climate as a strategy for advancing equity and school improvement may need to begin earlier than is often assumed. To contribute to the limited knowledge base in this area, this study examines school climate perceptions among 3rd–5th grade students in Georgia, exploring both their magnitudes and correlates. Specifically, we address the following questions:

1. To what extent do racial disparities exist in elementary-school students' school climate perceptions, and how have they varied over time?
2. To what extent do school climate perceptions differ by race when adjusting for district-, school-, and school-by-grade-level factors?
3. In what ways do individual- and school-factors relate to school climate perceptions and the magnitude of racial disparities therein?

To answer these questions, we leverage a 7-year panel of school climate data from 3rd-5th grade students in Georgia. In doing so, we investigate whether racial differences in climate perceptions are mostly driven by differential sorting patterns across contexts or whether they persist even among students in the same ones. To the extent that differences persist over time and within-schools, our findings show that the disparities we observe are not solely attributable to school sorting and may reflect objective and racialized differences in students' lived experiences.

Literature Review

Racial Differences in Students' School climate perceptions

Research consistently demonstrates that students' school climate perceptions are associated with a range of academic, behavioral, and socioemotional outcomes (Cohen et al., 2009; Gage et al., 2016; McCoy et al., 2013). School climate is typically conceptualized as a multidimensional construct encompassing perceptions of safety, relationships with adults and peers, fairness, and support (Aldridge et al., 2018; Thapa et al., 2013). Despite broad agreement on the importance of these domains, empirical evidence regarding racial differences in students' climate perceptions is inconsistent. Several cross-sectional studies report weak or nonsignificant racial differences after accounting for individual- and school-level characteristics. Early analyses of middle- and high-school samples found limited evidence of racial climate disparities

(Kuperminc et al., 1997; Way et al., 2007), a pattern echoed in later studies reporting null race effects (Bradshaw et al., 2009). Using nationally representative data, Fan et al. (2011) similarly find that mobility, socioeconomic status, and problem behaviors explain substantially more variation in perceptions of order, safety, fairness, and teacher–student relationships than race, which was not a significant predictor.

In contrast, other studies document persistent racial disparities in climate perceptions. Using Maryland survey data, Bottiani et al. (2016) find that Black students report significantly lower perceptions of teacher support than White students, even after accounting for socioeconomic background. Voight et al. (2015), analyzing within-school variation in California middle-schools, show that Black and Hispanic students report less favorable perceptions of safety and connectedness than White students, and that the magnitude of these disparities varies across schools. Extending this work, Graham (2022) documents persistent within-school Black–White and “Other” race–White disparities across Georgia middle- and high-schools, particularly in perceptions of adult and peer support.

These divergent findings may reflect variability in how school climate is operationalized, the populations studied, and analytic approaches used. Disparities appear more consistently in relational and support-oriented constructs than in composite measures (Bottiani et al., 2016). Most existing analyses are cross-sectional, limiting insight into whether disparities are stable or vary across times, and few studies offer insights into climate disparities since the COVID-19 pandemic (Choi et al., 2016; Graham et al., 2026). Third, studies differ on which subgroups they include in their analyses, meaning gaps may emerge for some minoritized groups and not others, highlighting the need to further disaggregate groups like “students of color.” Finally, few studies distinguish between between-school and within-school disparities, which is necessary to

understand whether differences in climate perceptions reflect sorting patterns across schools or differential experiences within them.

Mechanisms Shaping Racialized School Climate Perceptions

Several mechanisms suggest that racial differences in school climate perceptions reflect racialized treatment within schools rather than differential engagement with climate surveys (Schenke et al., 2018; Schweig & Martínez, 2021). Teaching experience reflects one mechanism, as Welsh and colleagues (2024) found that greater teaching experience predicted more positive climate perceptions among middle- and high-school students in New York City. Moore et al. (2023) reported a parallel pattern in elementary-schools, where a higher share of teachers with three or more years of experience corresponded with stronger perceptions of school community and safety. Experienced teachers may shape these perceptions by establishing predictable routines, recognizing student needs, and building relationships that support belonging and safety (Kraft & Papay, 2014). If experienced teachers are better positioned to create stable and responsive classroom conditions, then the distribution of teaching experience shapes which students encounter those conditions. Given that students of color are more likely to be taught by novice educators (Clotfelter et al., 2005; Goldhaber et al., 2015; Graham & Flamini, 2023), the inequitable distribution of teaching experience may explain racial school climate gaps.

School discipline—one of the most consistently documented domains of racial inequality in schooling (Skiba et al., 2011)—might similarly be linked to school climate because it is central to perceptions of fairness, safety, and adult support. Black students are disproportionately referred for discipline and subjected to exclusionary sanctions, and these patterns appear as early as elementary-school (Smolkowski et al., 2016). Bottiani and colleagues (2017) find that Black students in Maryland high-schools with larger Black-White suspension gaps reported lower

perceptions of school equity and belonging, and Welsh et al. (2024) show that students' climate perceptions are worse in schools with higher suspension rates and racial discipline disparities. Disciplinary contexts may therefore signal to students whether schools are fair and supportive, making discipline a plausible mechanism through which climate disparities emerge.

Peer victimization introduces a third pathway, one where racialized race-based bullying originates with other students and the school's response determines its effects on climate. Students who are bullied report weaker school connectedness, teacher support, and rule clarity (Aldridge et al., 2018; Espelage & Hong, 2019). The types and degrees to which students are bullied nonetheless vary dramatically. A substantial share of bullying students of color receive is bias-based, targeting race, ethnicity, citizenship, language, or religion, and it carries distinct consequences (Huang & Cornell, 2019; Sapouna et al., 2023; Xu et al., 2020). Fu and colleagues (2023) found that students reporting race-based victimization showed greater adjustment difficulties than students who experienced general victimization, and that school equity buffered these effects unevenly, mattering more for Asian and Latinx victims and more at the school-level for Black victims.

Methods and Sample

We contribute to this literature by examining racial disparities in climate perceptions among elementary-school students in Georgia to provide evidence on the emergence and persistence of racial climate gaps and the contextual factors associated with their magnitude. To offer these contributions, we use a 7-year panel of data for 3rd through 5th grade students who took the Georgia Elementary-school Climate Survey (GESCS) from 2016–17 through 2023–24 (2020–2021 data was not collected due to the Covid-19 pandemic). Over this panel, roughly 1.7 million surveys were completed, with an average number of respondents of 265,570 students

before pre-COVID and 174,513 since. The Georgia Department of Education (GaDOE) administers the surveys, making it available to all public-school students via an electronic link (White et al., 2014). Surveys are completed anonymously using school-designated computers or electronic devices during school hours. Due to the anonymous nature of the data, a formal institutional review board approval was not required and access to these data was obtained via a request to GaDOE.

Table 1 provides a descriptive lens on elementary-students in Georgia. Black and White students are overrepresented among survey takers, each comprising roughly 38% of enrollment in surveyed schools but 42% of respondents pre-pandemic. Black overrepresentation persists post-pandemic (39% enrolled, 43% respondents), while White overrepresentation narrows to roughly one percentage-point (PP). Hispanic and Asian students are underrepresented in both periods, especially post-pandemic. Average response rates are 70% pre-pandemic but fall to 60% after. Surveyed and non-surveyed schools are comparable in racial composition, economic disadvantage, and average teacher experience, but surveyed schools enroll higher shares of ESOL students and lower shares of gifted students and students with disabilities. Finally, surveyed schools report considerably fewer students with disciplinary incidents in both periods.

Measures

School Climate and Peer Victimization. Students completed 15-items on the GESCS, 11 assessing school climate perceptions and 4 assessing the frequency of peer victimization. We used an exploratory factor analysis (EFA) with oblique rotation to test the factor structure of the GESCS. We split the 2016-17 administration of the survey at the school-level into calibration (627 schools, $N = 147,211$) and held-out validation (628 schools, $N = 141,109$) samples. The EFA returned 3 factors with eigenvalues greater than 1, which we conceptualized as two climate

dimensions—Adult and Institutional Support (7-items; hereafter Support) and Peer and Behavioral Climate (3-items; hereafter Peer Climate)—and Victimization Experiences (4-items). See Appendix A1 for the Inter-item Covariance and Appendix A2 for the factor loadings. One item, “I do well in school,” was dropped because it loaded poorly. Categorical omega was .729 for the Support construct, .678 for the Peer Climate composite, and .833 for Victimization experiences. We treat victimization as a separate construct than climate, given its items assess direct experiences of bullying. Further, the bullying items differ from the climate ones in valence, referent, and response scale (5 vs. 4 options). Thus, we do not use it as a dependent variable in our analyses but include it as a control.

Confirmatory Factor Analysis

To further confirm the factor structure of the GESCS, we next performed a confirmatory factor analysis (CFA) on the validation sample. In the validation subsample, the independent-clusters CFA fit adequately, $\chi^2(73) = 10,559.51$, CFI = .945, RMSEA = .032, SRMR = .030 and an exploratory structural equation model with target rotation improved fit further, $\chi^2(51) = 4,715.68$, CFI = .976, RMSEA = .025, SRMR = .013, with factor correlations of .611 (Support–Peer), $-.376$ (Support–Bullying), and $-.354$ (Peer–Bullying). Given that some of the items on the GESCS could plausibly reflect more than one aspect of school climate, we also estimated a three-factor target- exploratory structural equation model (ESEM), which permits secondary loadings while targeting them toward zero (Asparouhov & Muthén, 2009; Marsh et al., 2014). The target-ESEM fit the held-out data more closely, $\chi^2(51) = 4,715.68$, CFI = .976, TLI = .957, RMSEA = .025, and SRMR = .013, and returned factor correlations of .611, $-.376$, and $-.354$. For every indicator, the largest standardized pattern coefficient was on its hypothesized factor. Target loadings ranged from .44 to .84, whereas cross-loadings ranged from $-.18$ to .22, as shown

in Appendix A1. The target-ESEM fit the held-out data more closely while reproducing the hypothesized item-factor pattern, and was retained as the primary measurement model.

Since school climate is a school-level property that emerges from shared perceptions (Konold & Cornell, 2015; Marsh et al., 2012; Wallace et al., 2016), we additionally examined the structure with a two-level model separating within- from between-school variation (Muthén, 1994; Stapleton et al., 2016). We therefore estimated a two-level factor model in the validation sample, which yielded modest item intra-class correlations ranging from .019 to .107. The three-factor structure was reproduced at the within-school level, and at the between level separating Support from Peer fit better than combining them (between-level SRMR = .068 vs. .085; final model CFI = .956, RMSEA = .026, within-level SRMR = .032). Between-school factor correlations were .796, $-.732$, and $-.835$, far stronger than their student-level counterparts. The dimensions are thus well differentiated among students within a school but largely collinear across schools. This pattern supports defining and comparing the constructs at the student level.

Measurement Invariance

Given that we attempt to explore whether and to what extent racial disparities exist in students' perceptions of school climate, and how any such disparities have changed with time, it is important that we establish measurement invariance, that is, evidence that the retained dimensions are measured comparably across groups. Therefore, we assess measurement invariance of the three-factor target-ESEM across seven administrations, five racial/ethnic groups, and jointly across 28 race-by-administration cells. Cross-loadings were freely estimated and targeted toward zero. For each comparison, we estimated a configural model, imposing the common three-factor structure while allowing measurement parameters to differ across groups, and a scalar model, constraining factor loadings and ordinal thresholds to equality. Because the

items are ordinal, thresholds rather than intercepts are the relevant location parameters (Millsap & Yun-Tein, 2004; Wu & Estabrook, 2016), and invariance was therefore evaluated by comparing the configural model directly with a model constraining both loadings and thresholds.

Because weighted least squares mean- and variance-adjusted fit indices need not change monotonically as constraints are added, we did not interpret improvement in an individual index as evidence that the constrained model fit better, and we base our conclusions on the small magnitude of change rather than its direction. We therefore conclude that approximate scalar invariance was supported, rather than that exact scalar invariance was established. This pattern held across the seven administrations and across the five pooled racial/ethnic groups.

Establishing invariance separately across administrations and across racial groups does not, however, ensure comparability of racial groups within and across administrations, which is what our analyses of racial disparities over time require. As such, also explore invariance by race within each administration. Asian/Pacific Islander students were excluded from the joint model because of sparse coverage in 2021–22 and 2022–23, including one response category with no observations. While these results offer promise evidence, invariance of loadings and thresholds does not rule out reference bias, which can operate through differences in students' implicit standards of comparison even when item functioning is comparable. We note this as a limitation on the interpretation of group differences.

Race. Students self-report their race on the GESCS and we use those responses to construct binary variables for race. The GESCS included race options of Black, Hispanic, White, Asian, and “Other” until 2017-2018, but expanded its categorization to include Native American, Mixed Race, and “I prefer not to answer” from 2018-19 onward. To make the panel comparable

across years, we recode the three new categories as “Other” race for our primary analyses¹. The response rate of students by race for each school-year is shown in Appendix A3.

School Characteristics. We complement the GESCS with data from GaDOE, which allows us to explore whether and how several school contextual characteristics relate to school climate disparities. We extract demographic information from GaDOE, including percentages of Black, Hispanic and low-income students, students with disabilities, and English language learners. We include data on school discipline because of evidence accentuating that students of color are disproportionately subjected to exclusionary discipline (Dhaliwal et al., 2024; Graham et al., 2025; Wang et al., 2023) and its effects on climate (Rodriguez et al., 2024; Welsh et al., 2025). We cull data on the share of Black and Hispanic teachers considering research documenting the positive effect these educators have on climate perceptions (Cohen et al., 2009). Given the evidence on the inequitable sorting of educators across schools (Goldhaber et al., 2015), we include data on the share of new teachers, average teacher experience, student-teacher ratios, and student-counsellor ratios. Finally, we include NCES indicators for geographic locale.

Empirical Strategy

Research question (RQ) 1 examines racial disparities in school climate perceptions among elementary-school students and how they have varied over time. To address this question, it is important that we establish measurement invariance, that is, evidence that the retained dimensions are measured comparably across groups. Reference bias, cultural bias, and response shift each threaten stable comparisons across race and time (Van de Schoot et al., 2015; Widaman et al., 2010). Therefore, before our analysis of RQ1, we begin by assessing invariance in the retained 14-item, three-factor target-ESEM across seven administrations, five race groups, and jointly across 28 race-by-administration cells. Cross-loadings were freely estimated and

targeted toward zero. These analyses assess invariance across administrations rather than individual-level longitudinal invariance because we only have access to repeated cross-sectional administrations rather than repeated observations of the same students.

Next, we plot the means of the school climate scales by race and year, providing a graphical analysis of how trends vary over time. Then, to understand the magnitude and significance of climate disparities and their variation over time, we measure gaps for Black, Hispanic, Asian and “Other” race students compared to White students for 2016-17 (baseline). Next, we interact each binary race variable with each year, leaving out White students and the baseline year, which captures changes in school climate disparities compared to 2016-17. Importantly, because the GESCS is administered anonymously, these estimates only compare successive cohorts of students rather than the same students over time and do not describe individual-level change. We use ordinary least squares (OLS) models for this analysis as expressed Equation 1:

$$Climate_{it} = \beta_0 + \beta_1 Race_{ig} + \beta_2 Year_t + \beta_3 Race_{ig} * Year_t + r_{it} \quad (1)$$

, where $Climate_{it}$ captures, the school climate perceptions for student i in year t for the Support and Peer Climate subscales. $Race_{ig}$ represents a set of racial group indicators for Black, Hispanic, Asian, and “Other” race students. β_2 indicates the year in which the school climate gap is observed, with the baseline year omitted. The main effect of $Race_{ig}$ captures the racial school climate gap between the focal group and White students in the baseline year, and the interaction term $\beta_3 (Race_{ig} \times Year_t)$ shows how these gap change in subsequent years relative to that baseline. All models include robust standard errors clustered at the school-level.

RQ2 examines whether school climate disparities primarily reflect differences in the schools and districts students attend, rather than differences in students' experiences within the

same educational contexts. Given that racial segregation in Georgia remains high, any gaps documented in RQ1 may reflect the fact that students of color and White students systematically attend different schools, pointing away from the idea that objective differences in treatment form disparate perceptions. To assess this possibility, we estimate several fixed-effects models that progressively restrict comparisons to students within the same district, school, and same school and grade. Although these models cannot directly identify the mechanisms that shape students' climate perceptions, they allow us to assess how much of the racial climate gap remains after accounting for students' proximity to one another. The model is specified as:

$$Climate_{iqst} = \beta_0 + \beta_1 Black_i + \beta_2 Hispanic_i + \beta_3 Asian_i + \beta_4 Other_i + \lambda_t + \alpha_\ell + \varepsilon_{iqst} \quad (2)$$

, where $Climate_{iqst}$ represents either of the standardized climate subscales for student i in grade q , school s , and year t . The term λ_t represents year fixed-effects. The fixed-effect term α_ℓ varies across model specifications. We first estimate a district fixed-effects model $\alpha_\ell = \alpha_d$, which compares students of different races across schools within the same district while absorbing time-invariant district characteristics, such as policies, administrative capacity, and demographic composition. Next, because meaningful segregation may still occur across-schools within-districts, we estimate a school fixed-effects model $\alpha_\ell = \alpha_s$, restricting comparisons to students attending the same school. Finally, to assess whether racial school climate gaps persist among students in the same grade within the same school, we estimate a school-by-grade fixed-effects model $\alpha_\ell = \alpha_{sq}$.

Finally, RQ3 examines how individual- and school-level factors associate with racial disparities in school climate perceptions and whether such disparities attenuate with the inclusion of contextual covariates. To address this question, we fit OLS models that progressively introduce covariates to assess how racial climate gaps change across specifications. All models

include year fixed-effects and robust standard errors clustered at the school-level. All continuous variables are standardized ($M = 0$, $SD = 1$). The full model is specified as follows:

$$Climate_{ist} = \beta_0 + \beta_1 Black_i + \beta_2 Hispanic_i + \beta_3 Asian_i + \beta_4 Other_i + \beta_5 IndCov_i + \beta_6 SchCov_{st} + \lambda_t + \varepsilon_{ist}$$

(3)

, where terms mostly mirror Equation 2. In addition to the binary race variables, we add a vector of individual-level covariates, $IndCov_{ist}$, including student i 's gender, grade, and bullying subscale score. Further, we add a vector of school-level covariates, $SchCov_{st}$, including the share of Black, Hispanic, and economically disadvantaged students; the percentage of students with disciplinary incidents; and teacher- and staff-level characteristics such as the share of Black and Hispanic teachers, the share of novice teachers, average years of teacher experience, student–teacher ratio, and student–counselor ratio. Finally, we include indicators for geographic locale, omitting suburban schools. We also fit the fully specified model for each race group to explore how the individual- and school-level factors predict climate perceptions by race.

To test the sensitivity of our results, we conduct several robustness checks. First, we replicate all analyses after constructing and applying post-stratification weights. Specifically, we compared the racial composition of grade 3–5 survey respondents in each school-year to the corresponding composition of grade 3–5 enrollment records, then combined this adjustment with an inverse school-year response-rate weight. Further, we estimate multilevel models, beginning with an unconditional model to assess how much variation in climate perceptions is attributable to differences between schools. We report intraclass correlation coefficients (ICC) of .067 and .11 for Factors 1 and 2, indicating that schools account for between 7-11% of the variation in students' climate perceptions. Although this ICC is modest, since students are nested within schools, we estimate multilevel models using the full specification as a robustness check. We

also fit models with school and year fixed-effects, comparing students within the same school while accounting for statewide changes across administrations (See Appendix A4).

Limitations

Several limitations warrant attention. The GESCS is administered anonymously, so responses cannot be linked across years or matched to administrative records. Our analyses therefore describe repeated cross-sections, and observed changes over time partly reflect shifts in who is responding. Further, race is self-reported on the GESCS, introducing error that may be nonrandom, and the "Other" category aggregates Native American and multiracial students whose experiences likely differ. The survey also captures a limited set of climate dimensions, with the three-item Peer Climate scale especially constrained, and it does not measure perceptions of racial fairness or adult intervention in peer conflict. Even so, the disparities we document draw on a large sample of responses on a sample of students rarely centered in the racial school climate disparities literature.

Findings

We begin with our measurement invariance analyses, as observed differences on our climate constructs might reflect differential engagement with the survey items. Our difference tests rejected exact scalar equality in every analysis, which may not be surprising given our very large sample size, but the practical change in approximate fit statistics was negligible. Approximate scalar invariance held across each administration and race, and in the joint race-by-administration model (CFI .980 to .975, RMSEA .024 to .018, SRMR .014 to .021). The joint model provides the most directly relevant test, and it indicated approximate scalar invariance for Black, Hispanic, White, and "Other" race students across each administration, with CFI moving from .980 to .975, RMSEA from .024 to .018, and SRMR from .014 to .021 under the scalar

constraints. Temporal invariance for these students was assessed separately across the five adequately represented administrations, with the same result. Full results appear in Appendix A5.

Having established invariance, which indicates that the observed differences are unlikely to stem from differential response patterns across groups, we examine whether and to what extent racial disparities exist in students' school climate perceptions. As shown in Figure 1, White and Asian students consistently report more favorable perceptions than Black, Hispanic, and "Other" race students on both dimensions. Across groups, average perceptions declined between 2016-17 and 2017-18, improved through 2019-20, and then fell through 2022-23. Although most groups rebounded in 2023-24, Black students do not, continuing to decline on Support and remaining well below their pre-pandemic levels on both dimensions.

Appendix Table A6 quantifies these statewide-gaps and how they shift over time. In 2016-17, Black students reported perceptions of Support .247 SDs lower than White students and perceptions of Peer Climate .475 SDs lower ($p < .01$), the largest gaps across groups and dimensions. The Black Support gap is significantly larger than baseline in every subsequent year, growing by .024 SDs in 2018 ($p < .10$), .048 SDs in 2019 ($p < .01$), and .116 SDs by 2024 ($p < .01$). Hispanic students, whose baseline gaps were not distinguishable from zero, show significant widening beginning in 2019 on both Support ($-.095$) and Peer Climate ($-.082$, $p < .01$), with comparable or larger differences every year thereafter. For "Other" race students, baseline gaps were significant on both dimensions ($-.204$ and $-.162$, $p < .01$), though the Support gap exceeded baseline only in 2019 and 2020. Asian students have higher average scores on Peer Climate at baseline, and while the gap is 2019-20 is significantly smaller, it is comparable in all other years observed. Appendix A7 shows the Support gap for all students of color are significantly larger post-COVID. The Hispanic-White Peer Climate disparity is

significantly larger after the pandemic. The Black gap in Peer Climate, by contrast, is both the largest disparity in the data and the most stable, differing from baseline only in 2019 and showing no significant change in the pre- and post-COVID comparison, which suggests a durable feature of these students' experiences rather than a recent development.

RQ2 examines whether these racial differences persist after accounting for district-, school-, and school-grade-level factors, which is important to consider because observed climate disparities might reflect differential student sorting patterns across school and district contexts. Table 2 presents statewide estimates pooled across districts and years. Consistent with Figure 1, Black students report substantially worse perceptions on both dimensions, with a considerably larger gap for Peer Climate ($-.488$) than Support ($-.296$, $p < .01$). "Other" race students also report significantly lower perceptions on both dimensions ($-.232$ and $-.184$, $p < .01$), as do Hispanic students, though more modestly ($-.095$, $p < .01$, and $-.037$, $p < .05$). When restricting comparisons to students in the same district, the gaps narrow but remain statistically significant for Black ($-.217$ and $-.425$) and "Other" race students ($-.151$ and $-.167$, $p < .01$), while the Hispanic-White differences are no longer significant. Asian students report more favorable perceptions of Support than their same-district White peers ($.082$, $p < .05$).

Table 2 also shows that roughly half of the statewide Black-White gap is absorbed, though substantial disparities remain in Support and Peer Climate ($-.126$ and $-.238$, $p < .01$), and the pattern for "Other" race students is comparable ($-.111$ and $-.122$, $p < .01$). The Hispanic coefficients become positive and significant on both dimensions ($.042$ and $.044$, $p < .01$), indicating that within the same school, Hispanic students report more favorable perceptions than their White peers. Asian students report more favorable perceptions of Support ($.048$) but less favorable perceptions of Peer Climate ($-.034$, $p < .05$). When including school and grade fixed-

effects, these estimates largely remain. The Black-White gaps are essentially unchanged, while the gaps for "Other" race students grow. The positive Hispanic-White differences also grow (.062 on both dimensions, $p < .01$), as do the Asian-White differences on Support (.055, $p < .01$), while the negative difference on Peer Climate persists ($-.031$, $p < .05$).

RQ3 assesses how climate perceptions and racial disparities therein are associated with individual- and school-level factors. When including individual-level factors, the Black-White gap narrows on both dimensions, from $-.296$ to $-.245$ on Support and from $-.488$ to $-.427$ on Peer Climate, though it remains statistically significant ($p < .01$). The gaps for Hispanic and "Other" race students instead grow slightly, indicating that these individual characteristics do not account for their baseline differences. Bullying is the strongest individual-level correlate, associated with less favorable perceptions on both dimensions ($-.295$ and $-.317$, $p < .01$). Grade level operates similarly across dimensions, with fourth and fifth graders reporting less favorable perceptions than third graders. Gender diverges sharply, as female students report considerably more favorable perceptions of Support (.204, $p < .01$) but not Peer Climate.

Teacher experience is associated with more favorable perceptions on both dimensions (.018 and .025), while the share of students with disciplinary incidents is associated with less favorable perceptions ($-.028$ and $-.041$, $p < .01$). Both associations are larger for Peer Climate, suggesting that disciplinary conditions and the stability experienced teachers provide predict how students read their peer environment at least as much as their relationships with adults. Students in schools serving higher shares of Black and Hispanic students report less favorable perceptions on both dimensions, potentially reflecting the conditions students encounter in these schools, a finding consistent with the unequal distribution of experienced teachers and exclusionary discipline documented above. Attending an urban or rural school, and higher direct certification

shares are each associated with more favorable perceptions of Support (.062, .042, and .078, $p < .01$) but not Peer Climate. These results are qualitatively similar when survey weights are applied (see Appendix Table A8), with the exception that the positive within-school Hispanic–White difference on Peer Climate is attenuated (.024, $p < .05$). Further, these patterns are generally consistent across alternative specifications, including school-year fixed-effects models and multilevel models that account for the nested data structure (see Appendix A4).

Table 4 shows heterogeneous associations by race. Bullying remains the most consistent correlate across groups and dimensions, with a one SD increase associated with reductions of .241 to .325 SDs on Support and .248 to .351 SDs on Peer Climate ($p < .01$). The association is weakest for Black students on both dimensions and strongest for White students on Peer Climate, indicating that bullying accounts for less of the variation in Black students' perceptions than in their White peers'. Perceptions decline at higher grade levels for every group, though most steeply among Black students. Female students report more favorable perceptions of Support in every group (.160 to .249, $p < .01$), but on Peer Climate, the association is positive only for White students (.052) and reverses for Black and Hispanic students (–.051 and –.029, $p < .01$).

Most school-level characteristics show limited or inconsistent associations once school-year fixed-effects are applied. Teacher experience is positively associated with perceptions among Black students on both dimensions (.027 and .023, $p < .01$) and among White students on Support (.014, $p < .10$). The share of students with disciplinary incidents is associated with less favorable perceptions for Black, Hispanic, and "Other" race students on both dimensions. Higher shares of Black teachers are associated with more favorable perceptions among "Other" race students on both dimensions (.163 and .154, $p < .01$), and higher Black enrollment shares are associated with less favorable perceptions of Peer Climate among Black and White students

($-.112$ and $-.179$, $p < .05$ and $p < .01$), with no significant associations on the adult dimension for any group. Results are substantively unchanged when survey weights are applied (see Appendix A9), though the association between disciplinary incidence and White students' perceptions of Support reaches significance ($-.024$, $p < .05$) while remaining smaller in magnitude than the corresponding estimates for Black and Hispanic students.

Finally, to test whether bullying, teacher experience, and disciplinary incidence are differentially associated with climate perceptions by race, we estimate interactions between each and student race (see Appendix A10). The negative association between bullying and climate perceptions is significantly weaker for Black students on both dimensions ($.080$ and $.108$, $p < .01$) and modestly weaker for "Other" race students on Peer Climate ($.048$, $p < .01$). Disciplinary incidents, by contrast, is more strongly associated with less favorable perceptions for Black, Hispanic, and "Other" race students than for their White peers on both dimensions, with interaction terms of $.010$ to $.051$ ($p < .10$ to $p < .01$). Teacher experience shows the reverse pattern for Hispanic and Asian students, for whom the positive association is attenuated relative to White students on Support ($-.024$ and $-.061$, $p < .05$ and $p < .01$). The margins plots for these interactions are presented in Appendix Figures A2 and A3.

Discussion

The study examines the extent of, trends in, and correlates of racial school climate disparities among 3rd through 5th grade students in Georgia. Consistent with prior research in secondary settings (Graham, 2022; Voight et al., 2015), we find that Black and "Other" race students consistently report significantly less favorable school climate perceptions than White students, and that these disparities widen over time. Hispanic students tend to have more comparable climate perceptions as their White peers on average, though their perceptions tend to

become more favorable among those students with whom they share the same district and school. Asian students' perceptions are largely comparable to or slightly better than those of White students. Extending prior scholarship that has largely focused on secondary grades (Bottiani et al., 2016; Konold et al., 2017), our findings suggest that racial climate disparities are already present in elementary-school and, for some groups, intensify across cohorts and time.

Importantly, racial school climate gaps for Black and "Other" race students persist when analyses are restricted to within-district, within-school, and within school-grade comparisons. This pattern aligns with prior within-school evidence in secondary contexts (Graham, 2022; Voight et al., 2015) and narrows the extent to which disparities can be attributed solely to racial sorting across schools. Further, when paired with broader research documenting racialized patterns in discipline (Welsh & Little, 2018), teacher characteristics (Cherng, 2017; Graham & Flamini, 2023; Papageorge et al., 2020), and school interactions (Griffin et al., 2017), our results provide suggestive evidence that disparate trends we observed are not likely explained by subjective differences in survey responses. These findings suggest that disparities in perceived school climate may reflect differential experiences within schools, rather than sorting between them.

For Hispanic students, the pattern is more nuanced and contributes to the mixed evidence in the literature (Konold et al., 2017; Voight et al., 2015). When analyses are restricted to within-district models, disparities attenuate, and in within-school and within-grade models, coefficients become positive. These results suggest that between-district and between-school compositional differences may account for a portion of observed disparities in pooled models. That said, more work is needed to further nuance these findings in light of persistent evidence of racialized schooling and societal experiences that likely detrimentally affect Hispanic students' climate

experiences such as racial incantations in schools (Horton, 2021) and radicalized immigration enforcement (Dee & Murphy, 2020; Kirksey & Sattin-Bajaj, 2026).

These patterns take on added significance alongside what is known about racial climate disparities at later grade levels. Graham (2022), using middle- and high-schools data from Georgia, reports a Black-White climate gap of .271 SDs statewide that narrows to .045 SDs within schools, while Voight and colleagues (2015), studying California middle-schools, report statewide gaps of .077 to .202 SDs varying dimensions of climate. While the differing instruments only allow approximate comparisons, the disparities we observe among third through fifth graders exceed these estimates at every level of comparison. This provides suggestive evidence that the racial school climate gap is larger among elementary-school aged children. The temporal findings compounds this evidence. Where the Georgia secondary gap widened by .037 and .054 SDs relative to baseline before attenuating, the elementary gap in Support widened significantly in every administration we observe. The racial climate gap does not appear to emerge as students enter secondary schooling but is present in the elementary grades and is worsening with time.

Implications and Directions for Future Research

This work has several implications. School climate is measured through student-reported perceptions, which makes distinguishing between perceived and objective conditions important to consider. While perceptions are not equivalent to observable treatment, they are likely highly correlated with it. A substantial body of research demonstrates that students' perceived safety, belonging, and fairness shape engagement, attendance, and academic outcomes (Berkowitz et al., 2017; Cohen et al., 2009). Moreover, perceptions often reflect patterned experiences embedded in institutional contexts. Thus, while our analyses cannot adjudicate specific mechanisms,

persistent within-school disparities in perceptions are difficult to dismiss as merely subjective differences detached from structural realities. Further, the developmental timing of these disparities is particularly noteworthy. Elementary-school represents a formative period in which students construct foundational beliefs about belonging, institutional trust, and academic competence. Research documenting early-emerging racial disparities in discipline and achievement (Fryer & Levitt, 2004; Gilliam et al., 2016) raises the possibility that school climate disparities may operate alongside and reinforce these patterns. The presence and widening of racial climate gaps in elementary grades suggest that inequitable experiences may accumulate earlier in students' schooling trajectories than often assumed, and points to the need for interventions that target climate disparities during primary schooling.

These findings carry important implications for policy, particularly considering the ESSA, under which many states incorporate school climate indicators into accountability systems (Darling-Hammond et al., 2016; Jordan & Hamilton, 2020). If climate measures are reported and acted upon in aggregate form without attention to subgroup disparities, they may obscure meaningful inequities within schools. Our results suggest that equity-centered implementation of ESSA requires not just the disaggregation of climate data but also deliberate attention to persistent racial gaps, especially in elementary settings where disparities are often overlooked. Investments in teacher quality and retention, reductions in exclusionary discipline, and targeted anti-bullying initiatives may represent promising avenues for strengthening climate perceptions in ways that are responsive to subgroup differences.

Future research should continue to examine the mechanisms linking institutional practices to racial disparities in perceived school climate. While the present study leverages longitudinal student-level data and within-school comparisons, qualitative and mixed-methods

approaches may further illuminate how students interpret and experience climate in their daily interactions. Advancing school climate as an equity lever for improvement will require not only measuring aggregate perceptions but also interrogating whose experiences are reflected—and whose are marginalized—within those measures.

End notes

¹ We fully acknowledge that using an “Other” category is problematic and does not fully capture the schooling experiences of non-Black-, White-, Asian-, and Hispanic students. In doing so, we do not intend to erase students’ voices and recognize the limited references policymakers can make from this categorization. At the same time, using these additional categories would impede us from using the longer panel and from meaningfully determining whether disparities in elementary-schooling experiences for students are changing with time. Further, we find that Black, Hispanic, White, and Asian students make up 96 percent of the student-body composition in Georgia, leaving few students identifying in other student groups. Accordingly, changes in disparities over time might primarily be an artifact of small changes in enrollment for those groups.

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Tables and Figures

Table 1. Descriptive Statistics- Sample for schools surveyed and not surveyed and survey sample

Variables	Pre-Pandemic				Post-Pandemic			
	Not Surveyed		Surveyed		Not Surveyed		Surveyed	
	Mean	SD	Mean	SD	Mean	SD	Mean	SD
<u>School Sample</u>								
% Black	39.71	0.25	38.42	0.25	39.35	0.55	38.97	1.54
% Hispanic	12.64	0.74	15.57	0.10	15.88	1.33	15.91	1.27
% White	41.36	0.80	37.86	0.60	37.84	1.38	37.71	2.22
% Asian	2.83	0.11	4.10	0.22	4.38	1.26	4.34	2.25
% Other	3.34	0.20	3.95	0.13	4.55	0.66	5.12	0.69
% ED	64.75	0.52	65.45	0.91	61.46	8.09	62.94	6.99
% SWD	13.83	0.23	11.51	0.18	14.31	0.55	12.20	0.47
% ESOL	2.69	0.36	9.00	0.72	6.85	2.71	10.50	1.99
% Gifted	12.85	0.29	8.45	0.21	12.52	0.72	10.07	1.39
Student-Teacher Ratio	18.80	0.87	16.07	0.21	16.77	0.82	14.98	0.33
Student-Counsellor Ratio	454.74	8.72	596.12	8.89	424.77	20.08	536.24	25.33
Average Experience of Teachers	13.40	0.15	13.30	0.09	13.48	0.53	13.47	0.26
% Students with incidents	19.43	0.55	7.21	0.13	16.01	1.76	6.98	1.21
<u>Survey Sample</u>								
% Black			42.07	0.75			43.11	2.82
% Hispanic			8.84	0.57			7.35	1.40
% White			42.60	3.22			38.83	3.06
% Asian			1.69	0.12			1.36	1.32
% Other			4.80	4.54			9.36	3.13
Female			0.50	0.00			0.51	0.00
Survey Response			69.50	5.60			59.53	3.46
<i>N (Students)</i>			1,015,187				397,482	

Note. The descriptive statistics represent means and standard deviations school-level (both surveyed and not surveyed schools) and survey level variables for all elementary-schools in Georgia during academic years before 2020 (pre-pandemic) and after 2020 (post-pandemic). We combined multiracial students and Native students into the 'Other' group for the survey sample.

Table 2. School Climate Disparities by State, District, School and School by Grade Level

Variables	Adult and Institutional Support				Peer and Behavioral Climate			
	State	District FE	School FE	School-Grade FE	State	District FE	School FE	School-Grade FE
Black	-0.296*** (0.012)	-0.217*** (0.010)	-0.126*** (0.006)	-0.124*** (0.006)	-0.488*** (0.013)	-0.425*** (0.012)	-0.238*** (0.006)	-0.236*** (0.006)
Hispanic	-0.095*** (0.016)	0.002 (0.015)	0.042*** (0.009)	0.062*** (0.009)	-0.037** (0.018)	-0.021 (0.019)	0.044*** (0.008)	0.062*** (0.008)
Asian	-0.016 (0.044)	0.082** (0.035)	0.048** (0.019)	0.055*** (0.019)	0.051 (0.040)	0.041 (0.032)	-0.034** (0.014)	-0.031** (0.014)
Other	-0.232*** (0.014)	-0.151*** (0.011)	-0.111*** (0.008)	-0.151*** (0.008)	-0.184*** (0.014)	-0.167*** (0.012)	-0.122*** (0.008)	-0.158*** (0.008)
2018	-0.045*** (0.007)	-0.044*** (0.007)	-0.046*** (0.007)	-0.043*** (0.007)	0.009 (0.008)	0.009 (0.008)	0.008 (0.008)	0.011 (0.008)
2019	-0.002 (0.009)	-0.007 (0.009)	-0.013 (0.009)	-0.003 (0.009)	0.044*** (0.010)	0.042*** (0.010)	0.036*** (0.010)	0.046*** (0.010)
2020	0.036*** (0.010)	0.030*** (0.010)	0.023** (0.010)	0.032*** (0.010)	0.070*** (0.012)	0.067*** (0.012)	0.060*** (0.011)	0.069*** (0.011)
2022	-0.030*** (0.011)	-0.043*** (0.011)	-0.053*** (0.011)	-0.047*** (0.011)	0.011 (0.012)	0.017 (0.012)	0.005 (0.012)	0.011 (0.012)
2023	-0.098*** (0.013)	-0.125*** (0.012)	-0.136*** (0.012)	-0.127*** (0.012)	-0.077*** (0.013)	-0.072*** (0.012)	-0.090*** (0.012)	-0.083*** (0.012)
2024	-0.118*** (0.010)	-0.124*** (0.010)	-0.132*** (0.010)	-0.122*** (0.010)	-0.039*** (0.011)	-0.047*** (0.011)	-0.058*** (0.011)	-0.050*** (0.011)
Observations	1,412,669	1,412,669	1,412,669	1,412,669	1,412,669	1,412,669	1,412,669	1,412,669

Note. This table shows the differences in the two factors of school climate perceptions among elementary-school students in Georgia at different levels- the state, district, school and school-grade. This is done by using appropriate fixed levels. Robust standard errors at the school-level are in parentheses. Year 2017 refers to academic year 2016-2017, other years follow the same pattern. For example, the year 2024 refers to the academic year 2023-2024.

*** p<0.01, ** p<0.05, * p<0.10

Table 3. Racial School Climate Gaps after Accounting for Individual and School-level Characteristics

Variables	Adult and Institutional Support			Peer and Behavioral Climate		
Black	-0.296*** (0.012)	-0.245*** (0.010)	-0.143*** (0.007)	-0.488*** (0.013)	-0.427*** (0.011)	-0.236*** (0.007)
Hispanic	-0.095*** (0.016)	-0.110*** (0.014)	0.015 (0.011)	-0.037** (0.018)	-0.047*** (0.016)	0.043*** (0.011)
Asian	-0.016 (0.044)	-0.036 (0.035)	0.043 (0.035)	0.051 (0.040)	0.029 (0.030)	0.002 (0.026)
Other Race	-0.232*** (0.014)	-0.242*** (0.012)	-0.173*** (0.010)	-0.184*** (0.014)	-0.190*** (0.012)	-0.159*** (0.010)
Female		0.204*** (0.003)	0.204*** (0.003)		-0.002 (0.003)	-0.003 (0.003)
Bullying		-0.295*** (0.003)	-0.294*** (0.003)		-0.317*** (0.003)	-0.312*** (0.003)
Grade 4		-0.139*** (0.004)	-0.137*** (0.004)		-0.181*** (0.005)	-0.180*** (0.005)
Grade 5		-0.299*** (0.005)	-0.295*** (0.005)		-0.293*** (0.005)	-0.291*** (0.005)
Black- Enrollment %			-0.059*** (0.014)			-0.123*** (0.014)
Hispanic- Enrollment %			-0.036*** (0.007)			-0.027*** (0.007)
Black teacher %			-0.038*** (0.012)			0.025** (0.012)
Hispanic teacher %			-0.011** (0.005)			-0.010** (0.004)
New Teachers %			-0.009** (0.004)			0.000 (0.004)
Teacher Experience			0.018*** (0.006)			0.025*** (0.006)
Student-Teacher Ratio			-0.010 (0.083)			-0.079 (0.088)

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Urban School			0.062***			0.025
			(0.015)			(0.016)
Rural School			0.042***			-0.011
			(0.014)			(0.013)
Direct Certificate %			0.078***			0.008
			(0.009)			(0.010)
Student-Counsellor Ratio			-0.005			-0.004
			(0.004)			(0.005)
Students with incidents %			-0.028***			-0.041***
			(0.006)			(0.007)
Observations	1,412,669	1,412,117	1,383,937	1,412,669	1,412,117	1,383,937

Note. This table represents the racial school climate gaps using three OLS models that increasingly add controls. Standard errors are clustered at the school-level.

*** p<0.01, ** p<0.05, * p<0.10

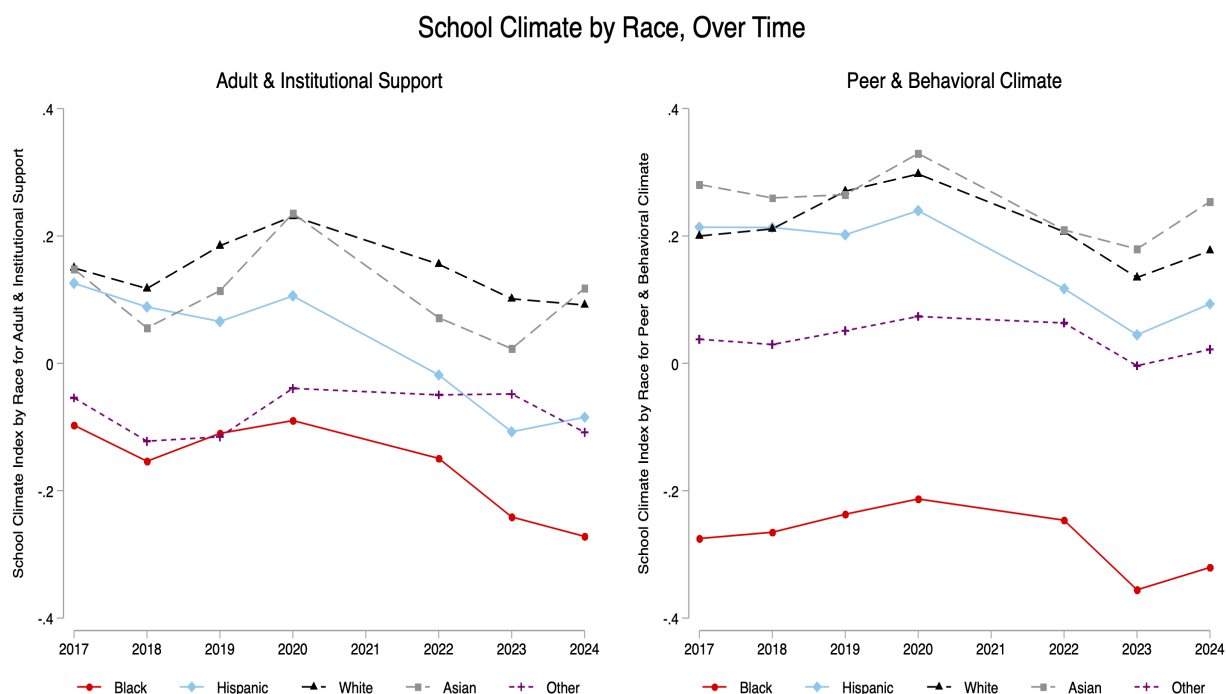
Table 4. Relationships between controls and school climate by race

VARIABLES	Adult and Institutional Support					Peer and Behavioral Climate				
	Black	Hispanic	White	Asian	Others	Black	Hispanic	White	Asian	Others
Female	0.160*** (0.004)	0.192*** (0.007)	0.249*** (0.003)	0.190*** (0.012)	0.229*** (0.008)	-0.051*** (0.004)	-0.029*** (0.007)	0.052*** (0.003)	-0.020 (0.012)	-0.002 (0.007)
Bullying	-0.241*** (0.003)	-0.325*** (0.005)	-0.314*** (0.003)	-0.322*** (0.014)	-0.299*** (0.005)	-0.248*** (0.003)	-0.320*** (0.006)	-0.351*** (0.003)	-0.330*** (0.011)	-0.295*** (0.005)
Grade 4	-0.193*** (0.005)	-0.057*** (0.012)	-0.094*** (0.004)	-0.084*** (0.019)	-0.105*** (0.009)	-0.235*** (0.006)	-0.115*** (0.013)	-0.144*** (0.006)	-0.081*** (0.020)	-0.136*** (0.010)
Grade 5	-0.378*** (0.007)	-0.159*** (0.012)	-0.226*** (0.005)	-0.173*** (0.020)	-0.269*** (0.015)	-0.350*** (0.007)	-0.199*** (0.012)	-0.251*** (0.006)	-0.133*** (0.017)	-0.235*** (0.013)
Black- Enrollment %	0.013 (0.053)	0.081 (0.128)	0.008 (0.048)	-0.024 (0.352)	0.117 (0.093)	-0.112** (0.049)	-0.106 (0.141)	-0.179*** (0.057)	-0.054 (0.290)	-0.016 (0.093)
Hispanic- Enrollment %	0.018 (0.047)	-0.029 (0.063)	-0.045 (0.037)	-0.148 (0.196)	-0.051 (0.065)	-0.057 (0.046)	0.006 (0.064)	-0.071** (0.035)	-0.047 (0.128)	-0.069 (0.058)
Black teacher %	0.030 (0.023)	0.048 (0.059)	0.024 (0.035)	0.033 (0.182)	0.163*** (0.055)	0.013 (0.027)	0.093 (0.063)	0.062* (0.036)	-0.042 (0.153)	0.154*** (0.051)
Hispanic teacher %	0.001 (0.009)	-0.003 (0.008)	0.011 (0.008)	-0.009 (0.031)	0.023* (0.012)	0.005 (0.009)	-0.004 (0.008)	0.005 (0.009)	0.001 (0.027)	0.019 (0.013)
New Teachers %	-0.006 (0.005)	0.004 (0.013)	0.006 (0.005)	0.010 (0.025)	-0.010 (0.011)	-0.005 (0.005)	0.014 (0.016)	-0.001 (0.005)	0.020 (0.020)	-0.011 (0.010)
Average Experience of teachers	0.027*** (0.007)	-0.004 (0.018)	0.014* (0.008)	0.010 (0.054)	0.019 (0.018)	0.023*** (0.007)	0.007 (0.025)	0.013 (0.009)	0.008 (0.050)	-0.005 (0.013)
Student-Teacher Ratio	0.078 (0.122)	-0.365 (0.228)	-0.137 (0.135)	0.354 (0.601)	-0.688** (0.318)	-0.205* (0.116)	-0.409* (0.244)	-0.322** (0.142)	-0.183 (0.722)	-0.450 (0.307)
Direct Certificate %	0.082*** (0.027)	0.035 (0.030)	-0.035* (0.020)	0.032 (0.072)	-0.020 (0.037)	0.088*** (0.030)	0.037 (0.038)	0.012 (0.021)	0.075 (0.061)	0.008 (0.030)
Student-Counsellor Ratio	0.001 (0.007)	0.000 (0.010)	-0.001 (0.006)	-0.003 (0.024)	0.002 (0.010)	0.000 (0.007)	0.012 (0.012)	0.001 (0.006)	-0.015 (0.023)	-0.002 (0.009)
Students with incidents %	-0.051*** (0.008)	-0.057*** (0.020)	-0.015 (0.010)	-0.231** (0.096)	-0.094*** (0.029)	-0.054*** (0.010)	-0.054** (0.021)	-0.009 (0.012)	-0.076 (0.087)	-0.087*** (0.025)
Observations	581,868	117,496	562,989	23,814	97,770	581,868	117,496	562,989	23,814	97,770

Note. This table presents associations between the different covariates used in the study and school climate perceptions disaggregated by race, using school-year fixed-effects. The “Other” race category is composed for Native American and mixed-race students. Standard errors are clustered at the school-level. Direct Certification is an automatic process to provide free and reduced-price meals to eligible children; it is a proxy measure of student poverty.

*** $p < 0.01$, ** $p < 0.05$, * $p < 0.10$

Figure 1. Racial disparities in school climate perceptions over time.



Note. Figure 1 plots students' reported school climate perception on Factors 1 and 2. The school climate scale is standardized (i.e., $M=0$, $SD=1$) for each year. Year corresponds to the Spring term (i.e., 2024= the 2023-24 school year). The figure shows the differences in school climate perceptions overtime for elementary-school students in Georgia, disaggregated by race.