Unequally Safe:

The Race Gap in School Safety

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ABSTRACT

Inequality in educational outcomes is a frequent topic of policy debate. This paper investigates one potential source of educational inequality – school safety. With panel survey data of middle school students, this paper estimates racial gaps in student feelings of safety in the classroom, in the hallways, and outside the school building, and how frequently students miss school due to safety concerns. The results identify gaps in feelings of safety between black students, Hispanic students, and their white and Asian peers, even within the same schools and homerooms. Multilevel modeling and decomposition analyses are used to identify key contextual characteristics of schools – school disorder, discipline and security policies, and racial and ethnic tension – that relate to racial and ethnic inequality in feelings of safety.

Key words: school safety; social disorder; educational outcomes; racial disparities

INTRODUCTION

Racial and ethnic inequality in educational outcomes is a frequent topic of research and policy debate in the United States. Many researchers have identified school and neighborhood factors that contribute to racial and ethnic disparities in academic performance, yet the large persistent gaps between black, Hispanic, Asian, and white students have yet to be fully explained. This paper investigates a source of inequality that may precede academic achievement – school safety – which remains relatively unexplored in the empirical literature on educational inequality. In contrast to inherited ability and home environment, two important factors in determining student achievement that are generally outside the scope of education policy, school safety exists within the public sphere where policymakers and educators can affect real changes.

Feeling unsafe at school may affect children academically by causing stress or triggering depressive symptoms, hindering concentration in class, and potentially leading to behavior that is disruptive to other students. At the extreme, feeling unsafe may prevent students from coming to school at all. National survey data indicates that a larger percentage of black and Hispanic students fear attack or harm at school compared to white students.[i] If black and Hispanic students feel less safe at school than their white and Asian peers, safety may be an important factor explaining differences in academic and other life outcomes. Prior research has identified the importance of school context for achievement – for instance, school composition affects racial achievement gaps between black and white students at both ends of the achievement spectrum (Hanushek and Rivkin 2009). Understanding how school contexts contribute to racial and ethnic differences in safety can directly inform public policies aimed at ameliorating sources of social inequality.

This paper investigates the racial and ethnic differences in feelings of safety at school and the school-level factors that generate these differences. Focusing on a sample of New York

City middle school students, the paper seeks to answer three questions. Are there racial/ethnic gaps in feelings of safety among New York City middle school students? Which school contextual factors influence individual feelings of safety? Which school contextual factors influence racial and ethnic gaps in safety among students in the same schools?

I begin with a discussion of the existing empirical evidence of the individual and school-based determinants of feelings of safety at school. In the second section, I describe the student-level survey and administrative data used in this analysis. The third section presents the research design I use to first estimate racial and ethnic gaps in school safety, then to identify the school factors that contribute to feelings of safety, and finally to model the school factors that explain racial gaps in safety within schools. The final sections summarize the results and discuss policy implications.

RELEVANT LITERATURE

Studies have documented that racial and ethnic inequality in school and neighborhood quality, and individual student characteristics such as family poverty, contribute to gaps in academic outcomes along racial and ethnic lines. Yet the existing literature has been unable to fully explain differences in academic performance, even controlling for these factors. One factor that remains relatively unexplored in the literature is inequality in feelings of safety at school, and the school factors that may generate disparate feelings of safety among students of different racial and ethnic identities. That child and youth development and outcomes are influenced by multiple contexts – family, peers, schools, neighborhoods, social structures, and culture – has been well explored by theory (i.e. Brofenbrenner 1997) and supported by empirical work (i.e. Goldsmith 2009; Leventhal and Brooks-Gunn 2002). Research on neighborhood violence finds detrimental effects for student achievement (Harding 2009; Sharkey 2010), however we know less about the mechanisms through which exposure to violence impacts

students. Neighborhood violence may manifest in poor academic performance in part, through feelings of safety at school. Below, I summarize the existing evidence of the individual and school-level factors that affect school safety. The contribution of this paper is the exploration of how students of different racial and ethnic backgrounds experience the school environment differently, with implications for safety.

The existing evidence of racial disparities in school safety is inconsistent and sensitive to specification, sample, and modeling. Alvarez and Bachman (1997) find that black students are more likely to be afraid going to and from school, but others find inconsistent results or only differences for black male students (May and Dunaway 2000; Schreck and Miller 2003). The results for Hispanics are fewer, but more consistent – Hispanic students are more likely than whites to fear assault at school (Alvarez and Bachman 1997; Schreck and Miller 2003). Still, several studies find no racial or ethnic differences in feelings of safety after controlling for contextual variables (Bachman, Randolph, and Brown 2010; Hong and Eamon 2011; Welsh 2001).

Prior personal or peer victimization is the most consistent predictor of feeling unsafe at school across racial and ethnic groups, sexes, countries, and studies (Akiba 2008; Alvarez and Bachman 2007; Schreck and Miller 2003; Bachman et al. 2010). The literature on bullying has identified negative consequences for elementary school students who are bullied, and also for students who bully others (Arseneault et al. 2006). Similarly, older youth involved in deviant behavior are more likely to be victimized (Schreck et al. 2004; Peguero, Popp and Koo 2011). While black students self-report higher levels of misbehavior and victimization at school than white students, the research on Hispanic students is mixed, with some studies finding no difference between whites and Hispanics, and other finding that Hispanics report lower school-based victimization than whites (Stewart 2003, Peguero and Shekarkhar 2011; Peguero et al. 2011; Welsh 2000; Welsh, Greene, and Jenkins 1999).

The research considering different effects by sex is also mixed, with some studies suggesting that females are more likely to fear victimization (Alvarez and Bachman 1997; Schreck and Miller 2003) and other studies suggesting that male students are more prone to feeling unsafe (Akiba 2008; Hong and Eamon 2011; May and Dunaway 2000; Sacco and Nakhaie 2007; Welsh 2001). The causes of fear may be different for boys and girls (Astor et al. 2002; Swartz et al. 2011), potentially because boys are more likely to be involved in delinquent and disorderly behavior, gangs, or fighting (Akiba 2008; Hong and Eamon 2011).

School context also shapes how safe students feel and potentially moderates the effect of individual perceptions of risk (Swartz et al. 2011). Three broad contextual factors emerge in the existing literature about racial and ethnic differences in feelings of safety at school: school disorder, school discipline, and racial/ethnic diversity or conflict.

First, research has identified school disorder as an important factor in generating worry and fear among students. Serious delinquent and criminal behavior on campus such as gang activity, weapons, and crime are associated with greater fear among students (Alvarez and Bachman 1997; Hong and Eamon 2011; Schrek and Miller 2003). Less serious disorder in the classroom, including student disobedience, disengagement, and noise, is also related to greater student fear and less safety (Akiba 2008; Mijanovich and Weitzman 2003). In fact, these less serious incivilities are stronger predictors of feelings of safety than violent crimes or personal experiences of crime (Mayer 2010; Skiba et al. 2006). School contexts may not affect all students in a school the same way. For instance, in one study, lower levels of school disorder are associated with greater student attachment and commitment for students of all races and ethnicities; however the relationship between these social control factors and disorder is weaker for black students (Peguero et al. 2011). Given the greater likelihood of minority students, particularly black students, to report involvement in deviant behaviors at school and to be victimized at school, higher levels of school disorder might have a greater effect on how safe black students feel at school, compared to white, Asian, and Hispanic students.

The impact of policy responses to school disorder and violence on student feelings of safety is less clear. Several studies find that security measures such as metal detectors increase fear among students, while other measures (security guards, surveillance cameras) have inconsistent effects (Bachman et al. 2010; Gastic 2010; Mayer and Leone 1999; Schreck and Miller 2003). Greater surveillance may result in the escalation of low-level deviant behavior from school sanctioning to arrest. For instance, the presence of police officers in schools increases the number of arrests for disorderly conduct (Theriot 2009). Still, theory could suggest the reverse relationship – if successfully implemented, school security efforts may make students feel safer by reducing the number of weapons or illegal substances brought into the school. To this end, Bhatt and Davis (2012) find that random weapons searches in schools and classrooms reduce fighting and drugs and increase attendance. This reduction in disorder may lead students to feel safer.

However, school disciplinary measures may affect the feelings of safety of minority students differently. Research has documented racial disparities in the use of school discipline, with higher rates of office referral, suspension, and expulsion for black students (Skiba et al. 2002). If minority students feel that disciplinary measures are enforced in a discriminatory fashion, they may feel less safe at school. Research has found that enforcement of school rules is related to increased safety (Akiba 2008; Hong and Eamon 2011; Skiba et al. 2004), and students who perceive their school to be both strict and fair are much more likely to feel safe (Arum 2003). Existing literature suggests that racial differences exist in perceptions of disciplinary fairness with real implications for achievement (Kupchik and Ellis 2008; Arum 2003). One study finds that greater principal-reported rule enforcement at school decreases the level of fear for white students, but does not affect black students (Bachman et al. 2010). Other research highlights large gaps in performance between black and white students in high schools where the disciplinary scheme is viewed as unfair and lenient, in contrast to no racial

differences in performance in schools where discipline is perceived as strict and fair (Arum 2003).

Finally, student relationships with peers and teachers can foster feelings of safety in school (Booren, Handy and Power 2010; Hong and Eamon 2011; Payne, Gottfredson, and Gottfredson 2003; Sacco and Nakhaie 2007; Skiba et al. 2004; Welsh 2001). Greater diversity within schools and classrooms is associated with less school-based victimization; therefore diversity may also be related to feelings of safety. Students in schools with more same race/ethnicity peers experience less personal victimization, and classroom diversity is associated with lower reported peer victimization and greater safety at school (Felix and You 2011; Juvonen, Nishina, and Graham 2006). Further, in the Juvonen et al. study (2006), ethnic diversity explains more than half of the between-classroom variance in feelings of safety, and the authors propose that the results arise from "balanced power relations" among ethnic groups in a diverse school setting. Conversely, if student relationships are strained by conflict between different racial or ethnic groups, students may feel less safe at school. One way that racial tension in school may shape feelings of safety is by increasing school-based crime. Prior research has found racial inequality and tension to be positively correlated with school crime after controlling for school climate and demographic characteristics (Eitle and Eitle 2004; Maume et al. 2010).

The existing research on school safety is limited by reliance on small survey samples that either lack specific details about school environments or rely on self-reported school conditions (Alvarez and Bachman 1997; Bachman et al. 2010; Booren et al. 2010; Hong and Eamon 2011; Mijanovich and Weitzman 2003; Swartz et al. 2011; Welsh 2001). National surveys have the advantage of large sample sizes, but usually do not have enough observations in individual schools to consider within-school differences in safety (Alvarez and Bachman 1997; Bachman et al. 2010; Hong and Eamon 2011; Sacco and Nakhaie 2007). More localized studies have the power to conduct multi-level analyses of students within schools but

rely on a small number of schools (Welsh 2001). Finally, most of the studies are cross-sectional and do not allow for longitudinal analyses of feelings of safety or changes in contexts over time (Akiba 2008; Astor et al. 2002; May and Dunaway 2000; Welsh 2001). Still, the existing literature suggests that school contexts may be critical in explaining disparities in safety, particularly if students of different racial or ethnic backgrounds respond differentially to school environments and policies.

DATA

The New York City Department of Education (DOE) conducts annual student, parent, and teacher surveys about student engagement, school environment, and safety and respect in schools. This paper utilizes three years of student-level survey data from over 80 percent of the district's middle school students. The analysis focuses on four measures of reported feelings of safety across different contexts at school: feelings of safety in the classroom, in the hallways, and outside the school building, and the frequency with which students stay home because of feeling unsafe at school (see Table 1). Each four-response scaled item is re-coded as a binary variable taking the value of one if the student feels unsafe in the given context, because whether a student feels safe or unsafe is more salient for this analysis than the marginal difference between students who "disagree" or "strongly disagree." A face validity test of the survey measures indicates that students in the most violent schools, as measured by the number of incidents reported through the Violent and Disruptive Incident Report (VADIR), report higher levels of disorder and lower feelings of safety.[ii] Student responses to the question about staying home because of feeling unsafe at school are highly correlated with actual absences.[iii] The student survey data from the 2006-07, 2007-08, and 2008-09 school years are matched to individual student academic records from the DOE. The analysis is restricted to middle school students (grades 6, 7, and 8) because survey response rates at elementary and middle schools are higher on average than response rates at high schools, the share of students feeling unsafe

peaks in the 7th and 8th grades, and the transition to high school might represent a change in

feelings of safety at school and is a topic that warrants its own investigation.

Table 1: Survey Items

Categories	Survey Items

Safety	• How often are the following things true about you or your school?
	(Never, Some of the time, Most of the Time, All of the time)
	  - I stay home because I don't feel safe at school.
	
	• How much do you agree/disagree with the following…
	(Strongly agree, Agree, Disagree, or Strongly disagree)
	  - I am safe in my classes.
	  - I am safe in the hallways, bathrooms, and locker rooms.
	  - I am safe on school property outside my school building.

Disorder	• How often are the following things true about you or your school?
	  - Students threaten or bully other students at school.
	    Students get into physical fights at my school.
	  - Students use alcohol or illegal drugs while at school.
	  - There is gang activity at my school.

Disciplinary Environment	• How much do you agree/disagree with the following…
	  - Discipline in my school is fair.
	  - The presence and actions of School Safety Agents help to promote a safe and respectful learning environment.

Racial Tension	• How often are the following things true about you or your school? - There is conflict in my school based on race, culture, religion, sexual orientation, gender or disabilities.

I explore three school contextual factors that might contribute to gaps in feelings of

safety, as suggested by the existing literature. These factors are operationalized using

aggregated student survey data, as well as administrative records. To reduce bias in the

estimates caused by endogeneity among an individual's responses to multiple survey questions,

all of the school context measures based on survey data are constructed as aggregates of the

responses of each student's school peers, excluding the student's own response.

First, social disorder, including bullying, physical fighting, and gang activity, and the

suspension rate within the school may differentially affect feelings of safety. I include two

measures of social disorder. The first is a measure of peer perceptions of social disorder in the

school, calculated as the share school peers who report that bullying, physical fighting, and

gang activity are all problems in their school. The second measure is the suspension rate based on administrative reports of suspensions.

Second, school discipline and security policies such as the presence of safety officers and peer perceptions of disciplinary fairness may differentially affect student feelings of safety. I include two measures of the disciplinary environment. The first is a measure of peer perceptions of disciplinary fairness in the school. The second is a measure of the share of peers who report that school-based police officers do *not* promote a "safe and respectful" learning environment.

Finally, student feelings of safety may vary by the degree to which the student's identity differs from that of the student body, and peer perceptions of racial tension at school may differ by student race/ethnicity. The first is a measure of the share of same race or ethnicity peers in the school, and the second is the share of peers who report racial tension in the school.

Descriptive Statistics

Overall, black and Hispanic students comprise the vast majority of the students in New York City public schools. Across schools, the median share of the student body that is black is 30 percent, and the median share Hispanic is 38 percent, while the median share Asian and white is 3 percent and 1 percent, respectively (Figure 1). Over 20 percent of the middle schools in the sample have no white students enrolled. However, many schools remain racially segregated, with half of the middle schools having a population that is over two-thirds black or two-thirds Hispanic.

Figure 1: Racial and Ethnic Composition of Middle Schools (2009)
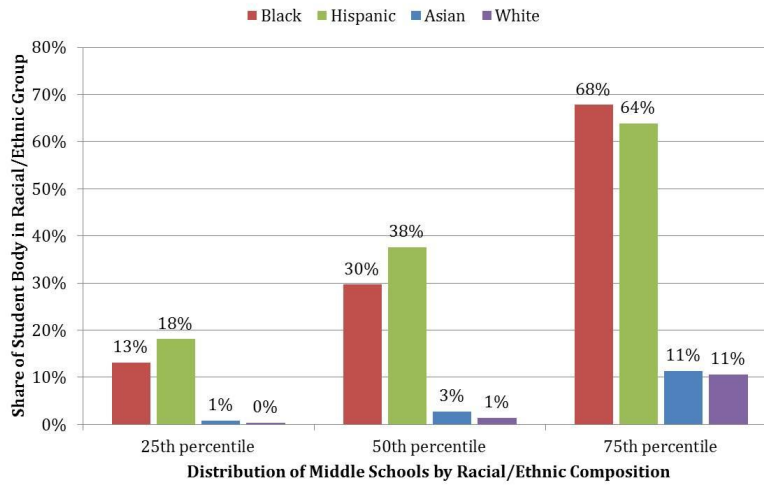
A larger share of black students feels unsafe in every context compared students of other groups – 42 percent of black students feel unsafe outside the school building, compared to just over 30 percent of white and Asian students and 35 percent of Hispanic students (Figure 2).

Figure 2: Share of Middle School Respondents Feeling Unsafe by Race (2007-2009)
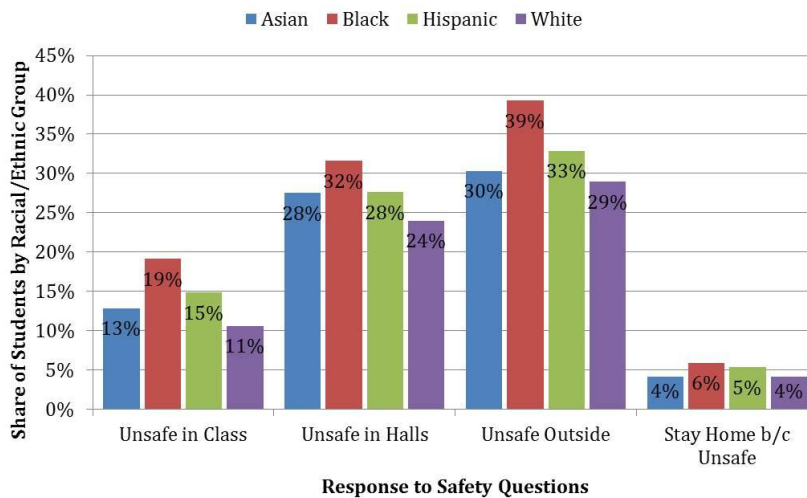
The explanation for these differences could be that black and Hispanic students simply attend worse schools. The average black or Hispanic student is exposed to a school with a

majority of poor students, higher suspension rates, higher school-based violent incident rates, and fewer experienced teachers, compared to Asian and white students (Table 1). Further, a larger share of black and Hispanic students have educational needs – over 70 percent qualify for free or reduced price lunch and over 13 percent are over age for grade – compared to white and Asian students.

Table 2: Descriptive Statistics by Race/Ethnicity (2007-2009)

Variables	All Students	Asian Students	Black Students	Hispanic Students	White Students
Observations					
Share Feeling Unsafe:					
In class	16%	14%	20%	16%	11%
In hallways, etc.	30%	29%	33%	29%	26%
Outside school	36%	32%	42%	35%	31%
Stay home because feel unsafe	5%	4%	6%	5%	4%
Average Student Characteristics					
Female	51%	48%	53%	51%	49%
Home Lang not English	60%	80%	33%	76%	54%
Free/Reduced Lunch	66%	63%	70%	76%	36%
Special Education	7%	3%	7%	8%	7%
Over Age for Grade	11%	6%	13%	14%	4%
Average School Characteristics					
Enrollment	930	1,151	774	893	1,109
Elementary Grades	22%	15%	25%	23%	16%
% Female	49%	49%	50%	49%	49%
% Same Race	51%	34%	58%	57%	43%
% Poor	65%	58%	69%	73%	45%
% Teachers at School > 2yrs	65%	72%	61%	62%	73%
% Master's Degree	82%	86%	80%	80%	88%
% Highly Qualified	92%	94%	90%	92%	93%
# Suspensions	98.0	107.0	87.6	98.7	107.7
Suspension Rate (per 100 students)	11.2	9.3	12.4	11.6	9.8
# Violent/Disruptive Incidents	84.0	89.0	76.1	84.6	91.5
Incident Rate (per 100 students)	9.0	7.6	9.7	9.4	8.1
% Schools with School Safety Agents	93%	95%	91%	92%	95%
Mean % Peer Negative Safety Agents	19%	18%	22%	18%	18%
Mean % Peer Racial Tension	20%	20%	20%	20%	19%
Mean % Peer Discipline Unfair	33%	30%	36%	32%	30%
Mean % Peer Social Disorder	9%	8%	11%	9%	7%

Overall, students are fairly evenly distributed across schools with differing levels of violence, measured by the New York State Violent and Disruptive Incident Report (VADIR). Schools with moderate rates of violent incidents have fairly equal shares of black, Hispanic, Asian, and white students. Yet, a larger share of black and Hispanic students attend the schools with the highest violent incident rates (the top 5th percentile), compared to Asian and white students. While the distribution of students by race and ethnicity across levels of reported school safety reveals similar overall patterns, the differences at the ends of the distribution are more pronounced.

Still, is race and ethnicity the most salient lens through which to analyze school safety? Feelings of safety also vary by sex, with boys feeling less safe in all three school contexts than girls, although the differences are less pronounced than the racial/ethnic differences. There are also differences in feelings of safety by poverty status, operationalized by whether a student qualifies for free or reduced price lunch, compared to students who do not qualify for a lunch subsidy and pay full price. A larger share of poor students feels unsafe in all contexts compared to non-poor students, but the safety gaps are not as large as those by race and ethnicity.

RESEARCH DESIGN

To estimate racial and ethnic gaps in feelings of safety, I conduct three empirical tests. First, I determine the size and direction of the gaps. Next, I identify the school-level factors associated with individual feelings of safety. Finally, I test whether these factors explain school-level racial and ethnic gaps in safety. The baseline linear probability model examines whether safety varies by student race/ethnicity. In equation 1,

(1) $Prob(Unsafe_{its} = 1) = \beta_0 + \beta_1 Black_{it} + \beta_2 Hispanic_{it} + \beta_3 Asian_{it} + \gamma Student_{it} +$

$+ \delta School_{ts} + Grade_i + Year_t + \varepsilon_{its}$

Unsafe$_{its}$ represents one of the four dichotomous dependent variables – unsafe in class, unsafe in the halls, locker rooms, and bathrooms, unsafe outside school on school grounds, and whether the student stays home because he/she feels unsafe "most" or "all" of the time, *Student*$_{it}$, is a vector of student characteristics including sex, home language, poverty status (operationalized by free or reduced price lunch eligibility), special education status, and whether the student is over age for grade, and *School*$_{ts}$, is a vector of school characteristics including time-varying characteristics of the student body (poverty, sex, racial/ethnic composition), teachers (share with a master's degree, who are highly qualified, and who have been at the school for at least two years), and total enrollment. All models include grade and year controls, and the tables report clustered standard errors.

Racial differences in safety may be generated by systematic exposure to more dangerous schools. Comparing students to peers who attend the same schools controls for between-school variation in exposure to different school environments. School fixed effects are added to the baseline model in equation 1 to control for time-invariant characteristics of schools. Still, students may experience very different environments *within* the same school if they are tracked into different classrooms. To further strengthen the estimates of the race gap, homeroom fixed effects are added to compare feelings of safety among students assigned to the same homeroom and who therefore experience the same classroom environment at least once a day.

The second step in the analysis is to identify school-level factors that contribute to racial and ethnic differences in safety. To start, I use a student fixed effects estimator to investigate school-level determinants of individual feelings of safety, controlling for time invariant student characteristics. For each safety measure, a variant of equation 2 is estimated,

(2) $Prob(Unsafe_{its} = 1) = \beta_0 + \beta_1 Disorder_{its} + \beta_2 Discipline_{its} + \beta_3 Tension_{its} + \delta School_{ts} + Grade_i + Year_t + SchoolFE_s + StudentFE_s + \varepsilon_{its}.$

In equation 2, *Disorder*$_{its}$, includes the two measures of social disorder – peer perceptions of social disorder and the number of suspensions. Next, *Discipline*$_{its}$, comprises two measures: peer perceptions of disciplinary fairness and negative peer perceptions of school-based police officers. Finally, *Tension*$_{its}$, includes the share of same race or ethnicity peers and peer perceptions of racial tension. The models also include school, grade, and year fixed effects, and time-varying school-level demographic and quality controls.

Once the salient contextual factors contributing to student safety are identified, I estimate a model of the contribution of these factors to differences in safety among students of different racial and ethnic groups using a two-level approach. I first estimate regression-adjusted means for each safety measure. The first order student-level model (equation 3),

(3) $Prob(Unsafe_{igts} = 1) = \delta School_s * Year_t * Grade_g * RaceFE_{tgs} + \varepsilon_{igts}$,

estimates school-year-grade average effects for each racial and ethnic group. Then I calculate the difference in safety between black students and white and Asian students, Hispanic students and white and Asian students, and the gap between black and Hispanic students. The second-order model in equation 4,

(4) $(Unsafe_{tgs,White} - Unsafe_{tgs,Minority}) = \beta_0 + \beta_1 Disorder_{tgs} + \beta_2 Discipline_{tgs} + \beta_3 Tension_{tgs} + \delta School_{ts} + \varepsilon_{ts}$,

identifies the contribution of school disorder, disciplinary fairness, and racial tension to the safety gap between students of different race/ethnicities in the same school, year, and grade, controlling for school demographics, teacher characteristics, and enrollment.

RESULTS

By most measures, black and Hispanic middle school students in New York City report feeling less safe than their white and Asian peers, even within the same schools and

homerooms. Multiple school contextual factors contribute to these racial and ethnic gaps in safety.

Estimating the Race Gap in Safety

I estimate differences in feelings of safety across schools, within schools, and within homerooms. The within-school and within-homeroom models rely on sufficient racial and ethnic diversity in the school and homeroom. The majority of schools and homerooms in New York City have students from three or more racial or ethnic groups. Because they represent a smaller share of the overall student population, a larger share of Asian and white students are in homerooms with all groups, than black or Hispanic students. The share of students who feel unsafe in different contexts does not appear to vary systematically across types of homeroom racial and ethnic composition (Table 3). To ensure large enough sample sizes, the sample is limited to students in schools with 10 or more survey respondents, and homerooms with 4 or more respondents and at least two racial/ethnic groups. The results of linear probability models for each of the four safety measures are presented in Tables 4 and 5. Logistic regression and conditional maximum likelihood estimation for the fixed effects models revealed substantively similar results. Due to the relatively small population of white and Asian students in the public schools, all models pool responses from white and Asian students in the reference category.

Table 3: Share of Students that Feels Unsafe by Homeroom Racial/Ethnic Mix

Homeroom Mix	Unsafe in Class	Unsafe in Halls	Unsafe Outside	Stay Home
One Group	17%	31%	37%	6%
2 Groups	19%	31%	38%	6%
3 Groups	16%	30%	36%	5%
All Groups	14%	28%	33%	4%
Total	16%	30%	36%	5%

Classroom Safety

Student-level regression models reveal significant racial and ethnic gaps in feelings of safety in the classroom between black, Hispanic, and Asian and white students (Table 4). In each table, specification 1 is the unadjusted relationship between student race or ethnicity and feelings of safety. Specification 2 adds student-level characteristics. Specifications 3 and 4 display within-school estimates, with the addition of school characteristics in the latter. Specifications 5 and 6 include homeroom fixed effects. Across schools (column 2), black students have a 0.073 greater probability of feeling unsafe compared to white and Asian students, while Hispanic students having a 0.037 greater probability of feeling unsafe. On average, poor students and students in special education feel less safe. In the classroom (and across all models and contexts), female students have a lower probability of feeling unsafe than male students.

Racial gaps in classroom safety exist between students who share the same schools. Within the same schools (column 4), the gaps in the probability of feeling unsafe for black and Hispanic students are smaller, but significant. The addition of school-level covariates to the school fixed effect model does not affect the estimates on the race/ethnicity variables.

If tracking of students into racially segregated classrooms is driving differences in feelings of safety, a homeroom fixed effect specification should not show significant results. Yet black students have a higher probability of feeling unsafe in class compared to whites and Asians who share the same homeroom (columns 5 and 6). Overall, there are significant differences in feelings of safety in the classroom between black students compared to white and Asian students that do not appear to be the result of sorting into schools or tracking into homerooms.

Table 4: OLS Regression Results: Unsafe in Class

VARIABLES	Across School Gap		Within School Gap		Within Homeroom Gap	
	(1)	(2)	(3)	(4)	(5)	(6)
Black	0.0782***	0.0725***	0.0239***	0.0238***	0.0131***	0.0131***
	(0.00590)	(0.00578)	(0.00266)	(0.00266)	(0.00206)	(0.00206)
Hispanic	0.0371***	0.0334***	0.00782***	0.00788***	-0.000204	-0.000236
	(0.00504)	(0.00477)	(0.00231)	(0.00231)	(0.00166)	(0.00166)
Female		-0.0287***	-0.0262***	-0.0262***	-0.0240***	-0.0240***
		(0.00195)	(0.00196)	(0.00196)	(0.00126)	(0.00126)
Free/Reduced Lunch		0.0215***	0.00753***	0.00722***	0.00170	0.00198
		(0.00455)	(0.00205)	(0.00204)	(0.00181)	(0.00181)
Lang. other than English		-0.00613	-0.00800***	-0.00819***	-0.00713***	-0.00699***
		(0.00375)	(0.00202)	(0.00202)	(0.00167)	(0.00167)
Special Education		0.0177***	0.0185***	0.0186***	0.0150***	0.0149***
		(0.00322)	(0.00290)	(0.00290)	(0.00264)	(0.00264)
Over Age for Grade		0.0145***	-0.00327	-0.00320	-0.0103***	-0.0103***
		(0.00270)	(0.00223)	(0.00223)	(0.00214)	(0.00214)
% Poor				-0.000736***		-0.000457
				(0.000279)		(0.000294)
% Female				-0.000243		-0.000486
				(0.000956)		(0.00107)
Total Enrolled				5.26e-05**		3.13e-05
				(2.48e-05)		(2.61e-05)
% Teachers > 2 years				-0.000299*		6.10e-05
				(0.000172)		(0.000214)
% Masters				0.000147		-0.000426
				(0.000341)		(0.000417)
% Highly Qualified				-0.000325		-0.00114***
				(0.000274)		(0.000261)
Constant	0.122***	0.0998***	0.132***	0.181***	0.174***	0.335***
	(0.00542)	(0.00560)	(0.00317)	(0.0649)	(0.0109)	(0.0715)
Observations	424,484	424,484	424,484	424,484	424,484	424,484
R-squared	0.007	0.013	0.045	0.045	0.103	0.104
School FEs	NO	NO	YES	YES	NO	NO
Class FE	NO	NO	NO	NO	YES	YES
Clusters	553	553	553	553	13,839	13,839

(All models include grade and year controls) Robust standard errors in parentheses. *** p<0.01, ** p<0.05, * p<0.1

Safety in the Hallways

The results differ for feelings of safety in the hallways, locker rooms, and bathrooms in a school (Table 5). The table presents three specifications for each safety measure – (1) the unadjusted across school gap, (2) the within-school gap (with school covariates), and (3) the within-homeroom gap (with school covariates). Across schools, black and Hispanic students have greater probability of feeling unsafe in these areas than white students (column 1). Within schools the patterns change: black students are *less* likely to feel unsafe in the hallways than white and Asian students, and there is no significant difference in feelings of safety between Hispanic students and white or Asian students once time-invariant characteristics of the schools are included (column 2). Comparing students within the same homeroom, black and Hispanic students also have lower probabilities of feeling unsafe in the halls and locker rooms compared to white and Asian students (column 3).

It appears that the within-school models obscure variation among students' feelings of safety in the halls, particularly for Hispanic students. Further, there appear to be systematic differences in how safe students feel in the hallways compared to how they feel in the classroom by racial/ethnic group. This could be due to differences in the type or degree of adult supervision in classrooms compared to the halls. For instance, police officers stationed in schools are more likely to patrol the hallways than inside classrooms during instruction, but there is more constant adult supervision within classrooms.

Table 5: OLS Regression Results: Unsafe by Context

VARIABLES	Unsafe in Hallways, Locker Rooms, and Bathrooms.			Unsafe Outside on School Grounds			Stay at Home because Unsafe at School		
	Across School Gap	Within School Gap	Within Homeroom Gap	Across School Gap	Within School Gap	Within Homeroom Gap	Across School Gap	Within School Gap	Within Homeroom Gap
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
Black	0.0593***	-0.00772**	-0.00749***	0.0994***	0.0127***	0.0136***	0.0172***	0.00806***	0.00568***
	(0.0105)	(0.0038)	(0.0026)	(0.0094)	(0.0039)	(0.0027)	(0.0017)	(0.0014)	(0.0012)
Hispanic	0.0243**	-0.00479	-0.00466**	0.0396***	0.00886***	0.0104***	0.0125***	0.00384***	0.00165*
	(0.0096)	(0.0030)	(0.0021)	(0.0082)	(0.0031)	(0.0023)	(0.0015)	(0.0011)	(0.0010)
Constant	0.271***	0.300***	0.359***	0.312***	0.327***	0.435***	0.0392***	0.120***	0.143***
	(0.0109)	(0.0959)	(0.0906)	(0.0090)	(0.0981)	(0.0944)	(0.0014)	(0.0311)	(0.0347)
Observations	424,949	424,949	424,949	423,368	423,368	423,368	425,140	425,140	425,140
R-squared	0.003	0.068	0.122	0.007	0.057	0.109	0.001	0.016	0.062
School FEs	NO	YES	NO	NO	YES	NO	NO	YES	NO
Homeroom FE	NO	NO	YES	NO	NO	YES	NO	NO	YES
Clusters	553	553	13,839	553	553	13,839	553	553	13,839

(All models include grade*year controls)

Robust standard errors in parentheses. *** p<0.01, ** p<0.05, * p<0.1

Columns 2 and 3 include student characteristics (female, free/reduced lunch, home language other than English, special education, and over age for grade), and school characteristics (% poor, % female, total enrollment, % teachers at the school for more than 2 years, % masters degrees, % highly qualified teachers).

Safety Outside School

Across all models, black and Hispanic students are more likely to feel unsafe outside of school compared to whites and Asians, by a consistent margin. When compared to their homeroom peers (column 6), the difference in feelings of safety outside the school for both black and Hispanic students is slightly larger than the within school estimates (column 5). Considering only school-level differences in safety outside will underestimate the race gap in safety found within homerooms. Compared to the previous finding, where black and Hispanic students felt safer in the hallways, this result suggests that the hallways represent a safer environment for black and Hispanic students than the classroom or the grounds outside the school (or a relatively less safe environment for Asian and white students). For black students, the size of the safety gap outside is similar to the gap in classroom safety. While there was no significant difference in classroom safety between Hispanic and white/Asian students, there is a large, significant difference in reported safety outside. Taken together, these results indicate that school safety varies across locations and contexts within schools, with different implications for students by racial and ethnic group.

Staying Home because Unsafe at School

At the extreme, students who feel unsafe at school may attend school less often. The final three columns of Table 5 present the results for students who report staying at home because of safety concerns. Across all models, black and Hispanic students are significantly more likely to stay home from school, compared to white and Asian students. Within the same homerooms, black students have a 0.006 greater probability of staying home compared to white and Asian students, while Hispanic students have a 0.002 greater probability of staying home (column 9). Differences in the probability that students stay home because they feel unsafe is a critical area for school policy – if racial/ethnic differences in attendance occur as a result of safety, there may be ramifications for learning and achievement.

Identifying School Factors that influence Safety

Next, I investigate the contribution of school context to these differences in feelings of safety, including school social disorder, school discipline, and racial tension. Table 6 presents a model of the relationship between these factors and individual feelings of safety using a student fixed effects estimator. The results show that social disorder has the largest effect on the probability that an individual student feels unsafe in class, in the hallways, and outside the school. Specifically, an increase in the share of a student's peers that identify bulling, fighting, and gangs to be a problem results in a greater probability that the student feels unsafe in these contexts. The influence of disorder on student safety is largest in the hallways, locker rooms, and bathrooms – areas where there may be less adult oversight (column 2). Other significant predictors of safety in the classroom and hallways are racial tension, disciplinary unfairness, and negative perceptions of school-based police officers. The share of same race peers in the school does not appear to affect individual safety in any context. Increases in the suspension rate are related to a greater probability that students feel unsafe in the hallways. Peer perception of discipline as unfair has a larger effect on individual feelings of safety outside the school than inside (column 3).

The story is different when considering the factors related to students staying home from school (column 4). In this context, racial tension is the strongest predictor of an individual student staying home. Consistent with the previous findings, disorder is related to a greater probability that a student will stay home. However, as the share of peers who have negative perceptions of police officers in the schools increases, the probability that a student will stay home decreases, suggesting a reverse relationship between this element of school discipline and attendance. Overall, the school factors presented in the hypotheses – social disorder, discipline, and racial tension – are consistently related to lower reported safety among students, and these effects vary by safety measure.

Table 6: School Factors Explaining Individual Feelings of Safety, by Context

VARIABLES	(1) DV: Unsafe in the Classroom	(2) DV: Unsafe in Hallways, etc.	(3) DV: Unsafe outside School	(4) DV: Stay Home b/c Unsafe
School Disorder				
Peer Social Disorder	0.348***	0.678***	0.466***	0.0820***
	(0.0455)	(0.0523)	(0.0553)	(0.0284)
Suspension Rate	0.000273	0.00065***	0.000402*	-6.70e-05
	(0.0002)	(0.0002)	(0.0002)	(0.0001)
School Discipline				
Peer Negative Safety Agents	0.0928***	0.223***	0.145***	-0.0268*
	(0.0222)	(0.0264)	(0.0285)	(0.0137)
Peer Discipline Unfair	0.120***	0.102***	0.280***	0.0333*
	(0.0297)	(0.0350)	(0.0383)	(0.0186)
Diversity/Tension				
Share Same Race Students	0.00018	-0.00018	-3.46e-05	-5.89e-06
	(0.0002)	(0.0003)	(0.0003)	(0.0001)
Peer Racial Tension	0.180***	0.191***	0.243***	0.141***
	(0.0382)	(0.0447)	(0.0479)	(0.0241)
Constant	0.0578	0.0409	0.0938	0.0437
	(0.0513)	(0.0588)	(0.0642)	(0.0340)
Observations	424,484	424,949	423,368	425,140
Schools	553	553	553	553
R-squared	0.732	0.750	0.742	0.686
Student FEs	YES	YES	YES	YES

Robust standard errors in parentheses
*** p<0.01, ** p<0.05, * p<0.1
All models include school characteristics (% poor, % female, total enrollment, % teachers at the school for more than 2 years, % masters degrees, % highly qualified teachers).

Decomposing the Race Gap in Safety

The question remains whether factors such as social disorder, the disciplinary environment, and racial tension contribute to school-wide gaps in safety. Tables 7-9 present the relationship between school contextual factors and the regression-adjusted racial gaps in safety measures. In the second-order models, few of the factors identified earlier are salient predictors of the school-level gap in safety between black and white/Asian students, and Hispanic and white/Asian students. The largest contributing factor to the black-white/Asian gaps in safety in the classroom and hallways is the suspension rate (Table 7). In the classroom, a higher

suspension rate is associated with black students feeling less safe than white/Asian students. The interpretation is different for safety in the hallways. Recall that black students are *less* likely to feel unsafe in the hallways than their white or Asian peers. Therefore, a higher suspension rate is associated with white and Asian students feeling less safe in the hallways than black students by a larger margin. Outside the school, racial tension results in a larger gap in safety between black and white/Asian students (with black students feeling less safe). Finally, disciplinary unfairness is related to a larger gap in the share of students who stay home.

Table 7: Second Order OLS Regression, Predictors of Black-White/Asian Safety Gaps

Black-White/Asian Gap	(1) Classroom Safety Gap	(2) Hallway Safety Gap	(3) Outside Safety Gap	(4) Stay Home Safety Gap
School Disorder				
Peer Social Disorder	-0.0228	-0.131	-0.117	0.0163
	(0.106)	(0.118)	(0.118)	(0.0577)
Suspension Rate	0.000915*	0.00141**	0.00049	0.00035
	(0.00048)	(0.0005)	(0.0006)	(0.0003)
School Discipline				
Peer Negative Agents	-0.00405	-0.00424	-0.0290	-0.0189
	(0.0355)	(0.0440)	(0.0480)	(0.0201)
Peer Discipline Unfair	0.00271	-0.0119	-0.0551	0.0849***
	(0.0497)	(0.0580)	(0.0644)	(0.0266)
Diversity/Tension				
% Black	7.86e-05	-0.000111	-0.000384	-0.00015
	(0.00025)	(0.000293)	(0.0003)	(0.00014)
% White	0.00031	7.26e-05	-0.000408	3.64e-05
	(0.00035)	(0.00042)	(0.00047)	(0.00022)
% Asian	-0.00014	-0.00011	-0.000945**	-0.00019
	(0.00029)	(0.00035)	(0.00040)	(0.00017)
Peer Racial Tension	-0.0699	0.0962	0.189**	-0.0603
	(0.0685)	(0.0772)	(0.0831)	(0.0394)
Constant	-0.102	-0.0341	0.174*	-0.0648
	(0.0773)	(0.0889)	(0.0986)	(0.0410)
Observations	3,137	3,141	3,140	3,132
R-squared	0.003	0.007	0.007	0.007

Robust standard errors in parentheses
*** p<0.01, ** p<0.05, * p<0.1
All models include school characteristics (% poor, % female, total enrollment, % teachers at the school for more than 2 years, % masters degrees, % highly qualified teachers).

The model of the Hispanic-white/Asian gap shows that none of the school contextual factors are significant predicators of the classroom safety gap (Table 8). Suspension rates and racial tension contribute to gap in safety in the hallways. Again, white and Asian students report feeling less safe in the hallways than Hispanic students by a significant margin, therefore the interpretation of this finding is that higher suspension rates and racial tension make this gap larger.

Table 8: Second Order OLS Regression, Predictors of Hispanic-White/Asian Safety Gaps

	(1) Classroom Safety Gap	(2) Hallway Safety Gap	(3) Outside Safety Gap	(4) Stay Home Safety Gap
School Disorder				
Peer Social Disorder	0.0211	-0.163	-0.150	-0.0603
	(0.107)	(0.122)	(0.121)	(0.0602)
Suspension Rate	0.000688	0.000985*	0.000414	0.000399
	(0.00048)	(0.00055)	(0.00059)	(0.0003)
School Discipline				
Peer Negative Agents	-0.0351	-0.0318	-0.0679	-0.0159
	(0.0341)	(0.0421)	(0.0461)	(0.0193)
Peer Discipline Unfair	0.0216	0.00496	0.0240	0.0498**
	(0.0464)	(0.0543)	(0.0613)	(0.0253)
Diversity/Tension				
% Hispanic	0.000196	0.000317	0.000288	0.000235
	(0.00026)	(0.00031)	(0.00032)	(0.00015)
% White	-9.09e-05	4.65e-05	-0.000148	-0.000225*
	(0.00027)	(0.00031)	(0.00033)	(0.00013)
% Asian	-0.000223	-8.63e-05	-0.000641*	-9.61e-05
	(0.00028)	(0.00031)	(0.00034)	(0.00012)
Peer Racial Tension	-0.0226	0.146*	0.178**	-0.0211
	(0.0675)	(0.0781)	(0.0854)	(0.0362)
Constant	-0.00533	0.0214	0.276***	-0.0146
	(0.0749)	(0.0887)	(0.0952)	(0.0413)
Observations	3,183	3,184	3,186	3,178
R-squared	0.003	0.007	0.006	0.006

Robust standard errors in parentheses
*** p<0.01, ** p<0.05, * p<0.1
All models include school characteristics (% poor, % female, total enrollment, % teachers at the school for more than 2 years, % masters degrees, % highly qualified teachers).

Outside school, racial tension is the only contextual factor related to the gap in safety, with Hispanic students feeling significantly less safe than white/Asian students. Consistent with the findings from the black-white/Asian gap, disciplinary unfairness results in a larger gap in the share of students who stay home.

Since black and Hispanic students represent the majority of students, I examine the contextual factors that contribute to safety gaps between these groups (Table 9).

Table 9: Second Order OLS Regression, Predictors of Hispanic-Black School Level Safety Gaps

	(1) Classroom Safety Gap	(2) Hallway Safety Gap	(3) Outside Safety Gap	(4) Stay Home Safety Gap
School Disorder				
Peer Social Disorder	-0.0758	0.0737	0.0633	0.0931***
	(0.0543)	(0.0832)	(0.0897)	(0.0349)
Suspension Rate	0.000301	0.000259	0.000219	-7.92e-05
	(0.00025)	(0.00028)	(0.00032)	(0.00018)
School Discipline				
Peer Negative Agents	0.0246	0.0209	0.0133	0.00184
	(0.0220)	(0.0271)	(0.0315)	(0.0124)
Peer Discipline Unfair	0.0182	0.0327	-0.00766	0.0150
	(0.0323)	(0.0373)	(0.0420)	(0.0167)
Diversity/Tension				
% Black	-0.000269*	-0.000197	-0.000289	-0.000192**
	(0.0002)	(0.0002)	(0.0002)	(9.79e-05)
% Hispanic	-0.000500**	-0.000196	-0.000123	-0.000221*
	(0.0002)	(0.0002)	(0.0003)	(0.0001)
Peer Racial Tension	-0.0424	-0.0785	-0.00291	-0.0467**
	(0.0432)	(0.0518)	(0.0584)	(0.0236)
Constant	-0.0469	-0.0283	-0.0852	-0.0257
	(0.0448)	(0.0511)	(0.0587)	(0.0283)
Observations	3,785	3,783	3,785	3,785
R-squared	0.007	0.003	0.002	0.006

Robust standard errors in parentheses
*** p<0.01, ** p<0.05, * p<0.1
All models include school characteristics (% poor, % female, total enrollment, % teachers at the school for more than 2 years, % masters degrees, % highly qualified teachers).

Across all the measures of safety presented in Tables 4 and 5, black students report feeling less safe than Hispanic students. At the school level, an increase in the share of black and Hispanic students is related to *smaller* gaps in safety in the classroom. This is consistent with the "balanced power" hypothesis put forth by Juvonen and colleages (2006). Several factors appear to contribute to differences in the share of students who stay home. Greater social disorder and student poverty increase the gap between black and Hispanic students, while the share of black students in the school and the share of students who report racial tension *decreases* the gap. None of the contextual factors appear to contribute to the gap in safety in the hallways or outside the school.

DISCUSSION

Overall, significant gaps in safety exist between black students and Hispanic students, and their white and Asian peers. Racial gaps in safety differ across locations within a school, indicating that students feel unsafe in different places. While individual feelings of safety are related to several school-level contextual factors including social disorder, police officers in school, disciplinary unfairness, and racial tension, only a few of these factors are salient predictors of within-school racial gaps in safety.

Although the magnitude and direction of the safety gaps vary by place, the largest gaps are between blacks and whites/Asians, with consistent gaps between Hispanics and whites/Asians. Social disorder, disciplinary unfairness, and racial tension are the primary school factors included in the models that influence individual feelings of safety in class, the hallways, and outside school, with suspension rates and negative perceptions of police playing smaller roles. Racial tension and social disorder are the most salient factors influencing students to stay home.

Decomposition of the safety gaps indicates that different school contextual variables affect gaps in safety in the classroom, hallways, and outside the school, and in gaps staying

home. In both the black-white/Asian and Hispanic-white/Asian decompositions, suspension rates are related to larger safety gaps in the hallways, racial tension is related to gaps in safety outside the school, and disciplinary unfairness is related to the gap in staying home. These results suggest that black and Hispanic students respond differently to school contexts in ways that are correlated with feeling unsafe, compared to white and Asian students who share the same schools. In contrast, the school contextual factor most predictive of gaps in safety between black and Hispanic students is the racial and ethnic composition of school peers, with greater shares of black or Hispanic peers decreasing the gaps in safety.

Strengths and Limitations

This analysis has several strengths and a few important limitations. The research is based on student-level survey data, merged with administrative educational records, providing a rich set of variables at the student and school level. The survey data covers almost the entire population of middle school students in a large public school system, and includes questions along multiple dimensions of student engagement, connectedness, safety and respect, and school environment. This detail allows for the identification of multiple mechanisms at the student and school level to explain racial and ethnic differences in safety. Although I do not make causal claims about the impact of school context on safety, the use of multiple outcome measures and a combination of survey data and administrative data makes for a strong identification of differences in safety within schools that have important policy implications.

Students who feel the least safe are likely to be the students that also attend school the least, making them less likely to fill out the survey when administered. If the survey respondents represented in this analysis feel safer, on average, than those who did not respond to the survey, the estimated gaps in safety may be underestimates. However, if white and Asian students are overrepresented among the non-respondents, the racial gaps in feelings of safety identified here could be overstated. Comparing respondents and non-respondents for the 2007

and 2008 survey years shows that if anything, black and Hispanic students are overrepresented in the non-respondent group, indicating that the estimates of gaps in feelings of safety are more likely to be biased downward.

This paper does not investigate neighborhood factors that influence safety. Recent research suggests that experiences at home and in neighborhoods affect student performance in school. Harding (2009) finds that neighborhood violence mediates the impact of concentrated disadvantage on high school graduation, Sharkey (2010) finds that exposure to homicides effects students' cognitive functioning, and work in progress by Sharkey and colleagues suggests that there are acute effects of exposure to violence on academic performance. Different home and neighborhood environments may be reflected in the measures of school safety used in this analysis, but I am unable to tease apart the exact source of student fear.

The wide variation in school and neighborhood contexts and in student characteristics allows for estimates based on data from New York City to translate to other large urban school systems. The school survey used in New York City shares many survey items with the student survey conducted in Chicago since the 1990s, making results using these data comparable. Further, the size and diversity of the New York City public school system enables the fine grained analysis of within-homeroom racial and ethnic variation that is critical to this analysis.

Policy Implications

These results further our understanding of how school environments affect students differently. The largest gaps in feelings of safety for black and Hispanic students are outside the school on school grounds. Black students also feel consistently less safe in the classroom compared to white and Asian classmates. However, in the hallways and bathrooms, black and Hispanic students feel systematically safer than white and Asian students. These differences, which persist even between students who share the same schools and homerooms, suggest that different approaches need to be taken to ensure that students feel safe in all contexts. This

research highlights areas that districts and schools can prioritize – such as safety within the classroom or outside the school – to ensure that all students have equal opportunities to learn.

The results suggest that there are specific, school-level practices and policies that could address the disparate impact of social disorder, police presence in schools, and school discipline on safety, particularly for minority students. Data detailing the prevalence and location of metal detectors and other security practices would be an improvement to the measures of school security and discipline used in this study. Hopefully, new disaggregated school arrest and suspension data reported to the New York City Council will allow for further investigation of school-based policies highlighted here as sources of racial disparities in school safety.

This research may also contribute to the debate about accountability in education. In New York City, the DOE considers student safety in school accountability measures. Safety ratings are used in the calculation of school report card grades and "safe environment" is a category of evaluation during site visits for the quality reviews of all city schools. This research suggests that safety should carry more weight in school report cards and should be evaluated specifically in the audit process. Additionally, racial and ethnic equality in outcomes other than test scores could be a standard to which schools are held accountable.

Policymakers have long been concerned with racial and ethnic gaps in achievement that portend disparities in future life outcomes including employment, earnings, marriage, criminal behavior, and health. Left unaddressed, the persistent racial gap in feelings of safety at school may undermine larger reform efforts targeted at closing these gaps. Creating schools where all students feel safe enough to learn is a critical first step in ensuring educational equality and access to opportunity for our nation's most at-risk students.

ENDNOTES

[i] U.S. Department of Justice, Bureau of Justice Statistics, School Crime Supplement (SCS) to the National Crime Victimization Survey, 1995–2007, table 17.1

[ii] Figure available upon request.

[iii] Among students who share the same homerooms, those who indicate that they feel unsafe enough to stay home miss 2.5 more days of school on average than students who do not. Table available upon request.

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