SCHOOL MOBILITY AND STUDENTS' ACADEMIC AND BEHAVIORAL OUTCOMES

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Abstract: The study examined estimated effects of school mobility on students' academic and behaviouiral outcomes. Based on data for 2,560 public schools from the School Survey on Crime and Safety (SSOCS) 2007–2008, the findings indicate that high schools, urban schools, and schools serving a total student population of more than 50 percent minority students tend to have more school mobility than their counterparts. After controlling for safety initiatives, violence, and school background characteristics, school mobility is negatively associated with principals' perceptions of students' levels of aspiration and school achievement but positively associated with principals' perceptions of students' insubordination. The study offers policy implications for school administrators.

Keywords: School mobility; Academic achievement; Problem behavior

Introduction

Changing schools is a challenge for students as they adjust to new learning environment with different teachers, peers and curricula. In the United States, more than 37 million cases of residential mobility were reported during the 2008-2009 school year (Ihrke, Faber, & Koerber, 2011), and such residential change impacts school mobility as well. On average, about 70 students at elementary, middle, and high school levels transferred to or from a public school during the 2007-2008 school year (Tonsager, Neiman, Hryczaniuk, & Guan, 2010).

Except for cases of school transfers for better educational purposes that occur in privileged families (Xu, Hannaway, & D'Souza, 2009), school mobility primarily occurs due to family matters, disciplinary concerns, or school closures, which may have multiple negative effects (Been, Ellen, Schwartz, Stiefel,

& Weinstein, 2011; de la Torre & Gwynne, 2009a; Robers, Zhang, & Truman, 2012; Tonsager et al., 2010; Weber, 2005). For example, school mobility may decrease achievement (Burkam, Lee, & Dwyer, 2009; Gruman, Harachi, Abbott, Catalano, & Fleming, 2008; Reynolds, Chen, & Herbers, 2009), increase the risk of dropping out of school (Gasper, DeLuca, & Estacion, 2012; South, Haynie, & Bose, 2007; U.S. Government Accountability Office, 2010), and cause students' problem behaviors (Ellickson & McGuigan, 2000; Engec, 2006; Gasper, DeLuca, & Estacion, 2009).

It is not surprising that when a student changes schools, the student may struggle to adjust to the new school environment, catch up on schoolwork, and build new social relationships. Yet this is an issue not only for the individual student, but also for the teaching and administrative staff. Schools having more transient students tend to have more disruption and difficulties in classroom activities and even experience a negative influence on teacher morale (Rumberger, Larson, Ream, & Palardy, 1999). Furthermore, school mobility negatively influences both mobile and permanent resident students by increasing the risk of school dropout (South et al., 2007).

Although previous studies have documented well the negative effects of school mobility on achievement and students' problem behaviors, there is still a need for additional information. This study attempts to fill the research gap in several ways. First, the current study examines the effects of school mobility at school level focusing on students' aspiration, achievement, and insubordination, accounting for multiple potential determinants of students' outcomes. None of the previous studies controlled for schools' safety efforts when estimating the effects of school mobility on students' problem behaviors. Second, violence was measured in a comprehensive manner by assessing it at multiple sites, such as schools, areas around the schools, and student residences. Third, previous studies focused on students' violent behaviors (e.g., fighting or weapon use), yet paid relatively little attention to the effect of school mobility on students' insubordination (e.g., intimidation and verbal abuse of a teacher), which is a more frequent and serious problem in U.S. public schools than in other countries (Miller, Sen, Malley, & Burns, 2009). This study may provide new insight into the relationship between school mobility and insubordination.

This study attempts to better estimate the effect of school mobility on students' outcomes, after controlling for multiple school factors.

Literature Review

School Mobility: Prevalence and Patterns

School change is a common and frequent event among American students (de la Torre & Gwynne, 2009b; Ihrke et al., 2011). A national report, based on two nationally representative data sets, indicated that about 13 percent of students in kindergarten through 8th grade changed schools more than four times, and most of them were from poor families and were African American. In addition, more than 10 percent of the students between kindergarten and 8th grade left the school; those schools primarily served disadvantaged students, such as students with disabilities, Limited English Proficiency (LEP) students, and those from low-income families (U.S. Government Accountability Office, 2010). Another national study showed that about 36 percent of students changed schools at least once between kindergarten and third grade, and that about 18 percent of students in these grades changed school for family reasons. Furthermore, only 45 percent of Black students had been enrolled in the same school since kindergarten, compared to 60 percent of White and Asian students (Burkam et al., 2009). In addition to students' personal reasons, current education policy contributes to school changes. More than 75 percent of public schools have a policy that allows schools to transfer students to specialized schools for disciplinary purposes (Tonsager et al., 2010). During the 2009–2010 school year, 86,760 students from all public elementary, middle, and high schools were transferred to specialized schools due to serious problem behaviors, including drug- and/or weapon-related offenses (Robers et al., 2012).

Disadvantaged students change schools more frequently than do non-disadvantaged students. Recent studies indicate that African American students changed schools more frequently than any other racial groups (Burkam et al., 2009; de la Torre & Gwynne, 2009a; Gasper at al., 2009). In Massachusetts, more than 101,000 students changed schools at least once during the 2008–2009 school year; 53.1 percent of the mobile students were from low-income families, 24.1 percent were students with disabilities, and 16 percent were LEP students (O'Donnell & Gazos, 2010). In addition, the negative effect of school mobility on math performance

is more critical among students with free or reduced-price lunch statuses, among LEP students, and among African American and Hispanic students (Xu et al., 2009).

School Mobility and Student Academic Outcomes

A number of studies on school mobility focused on how it impacts school performance and found fairly consistent associations. School mobility was revealed as a predictor of low academic achievement, low classroom participation (Gruman et al., 2008), high retention (Burkam et al., 2009), and risk of dropout (Gasper et al., 2012; South et al., 2007; U.S. Government Accountability Office, 2010).

A study based on nationally representative data found that changing schools during kindergarten negatively impacted reading achievement and grade promotion. About 12 percent of kindergartners who changed school were retained, compared to 4 percent of their counterparts after controlling for student and family factors (Burkam et al., 2009). A longitudinal study from 1,003 students from 2nd through 5th grades showed that the number of school changes is negatively correlated with language arts, math, and reading performance as measured by teachers' ratings on a five-point scale. In addition, school changes negatively influence classroom participation; such negative effects become more critical when students change schools multiple times (Gruman et al., 2008).

Researchers examined how school changes impact students' educational benefits as measured by number of instructional days. According to a meta-analysis based on 16 studies that controlled for previous achievement, an additional move may delay performance in reading and mathematics by about a month (Reynolds et al., 2009). Similarly, analysis of panel data from more than 61,300 students in grades 3 to 8 showed that different types of school changes consistently caused a decline in academic growth during the year a student changed schools, which accounted for 6 percent of anticipated annual growth or 10 days' instructional time (Grigg, 2012). Such a delay in learning is more critical among disadvantaged students. Data from more than 1,000 African American students in poverty in Chicago public schools showed that a majority of students (73%) transferred schools at least once by 7th grade, and frequently-mobile students lagged in reading and mathematics by about one year at the end of 7th grade, compared with non-mobile students (Temple & Reynolds, 1999). Furthermore, literature showed that when schools have increased numbers of mobile students, there may be an increased possibility of dropping out of school among both mobile and non-mobile students (Gasper et al., 2012; South et al., 2007).

School Mobility and Students' Problem Behaviors

Research has demonstrated that student mobility negatively influences students' behaviors. Engec (2006) analyzed data from Louisiana public schools during the 1998–1999 school year and showed higher suspension rates among students who changed schools within the academic year than among students who did not. In particular, the in-school suspension rate (14.65%) and out-of-school suspension rate (23.14%) were highest among students who changed schools more than four times, compared with those who did not (their rates were 7.27% and 9.49%, respectively). Similarly, more delinquent behaviors (e.g., theft and vandalism) and substance use were found among mobile adolescents than non-mobile adolescents (Gasper at al., 2009).

Such negative effects of mobility on students' behaviors were further demonstrated by accounting for a number of control variables and also by using a longitudinal data set. A study demonstrated that school mobility negatively influenced students' attitudes toward school and students' behaviors in the classroom and/or interaction with peers, after controlling for multiple risk factors. Gruman et al. (2008) conducted growth curve analyses using data from 1,003 students in 10 public schools and showed that students who experienced school changes were more likely to develop antisocial behaviors (e.g., talk back to adults or be otherwise disrespectful), less likely to get involved with others, and more likely to avoid classmates (Gruman et al., 2008). A longitudinal study in California and Oregon also supported the association between school mobility and students' behaviors. Ellickson & McGuigan (2000), examining data of more than 4,300 adolescents from 1985 to 1990, found predictors and patterns of violence in terms of gender, forms, and levels of violence. Regarding school mobility, boys who changed elementary schools multiple times were more likely to get involved in relational violence (e.g., hitting and threatening to hit) than those who did not (Ellickson & McGuigan, 2000). One of the most vulnerable groups in terms of school mobility consists of students from military families. A survey from

179 parents with adolescents (at approximately the 10th grade level) from military families showed that about 29 percent of the parents reported their children had difficulty adjusting to new school environments and about 24 percent of the parents reported psychological evaluation of their children. In addition, 42 percent of the adolescents who relocated five or six times were reported as having school problems (Weber, 2005). In a similar way, adolescents who experienced residential change were more involved in violence (e.g., fights and weapon use) than those who did not (Haynie & South, 2005), and residential mobility was significantly associated with drug use, teenage pregnancy, and depression (Jelleyman & Spencer, 2008).

Current Study

Analyzing the School Survey on Crime and Safety (SSOCS) 2007–2008 data, our study sought to estimate the effects of school mobility on students' academic and behavioral outcomes. Few studies are currently available estimating the effects on both outcomes. School change is challenging because students need to adjust to new environments that impact their lives in multiple ways, including social, emotional, and cognitive aspects (Gasper et al., 2009). Considering the multiple effects of school mobility, this study examined how school mobility was associated with students' aspiration, achievement, and behavior. More important, because very few studies have considered crime prevention efforts initiated by schools, and because various safety initiatives may mediate the negative effects of school mobility, the study included four types of crime prevention programs to avoid bias in estimating the effect of school mobility. Equally important, actual incidents involving violence rather than perceived levels of violence and crime, both in school areas and student residences, were included in the regression models. By doing so, potential determinants of students' outcomes were held constant in estimating the effects of school mobility. Finally, the frequency of school mobility differs by school level (de la Torre & Gwynne, 2009a; Gasper et al., 2009), and the effects of school mobility on students also differ by age (Heinlein & Shinn, 2000). Thus, school level was included as a control variable.

Specific research questions in the study are as follows. First, to what extent do schools experience student mobility and how does school mobility vary according to school characteristics? Second, how are school mobility and school disorder correlated with each other? Third, how is school mobility associated with principals' perceptions of students' academic and behavioral outcomes (e.g., aspiration, achievement, and insubordination) after controlling for school characteristics?

Method

Data

For the data for this study, the SSOCS 2007–2008 was used. SSOCS is unique as one of the most extensive data sets about school crime prevention policies, security and discipline policies, and student problem behaviors in U. S. public schools. In 1999, the SSOCS survey was established by the National Center for Education Statistics (NCES), and beginning with the SSOCS 1999–2000, the data set has been collected every two years. The NCES developed the 2007–2008 SSOCS survey on behalf of the U.S. Department of Education, and the U.S. Census Bureau conducted the survey. Between February 25 and June 17, 2008, questionnaire packages were mailed to sampled public schools, and a total of 2,560 usable questionnaires were collected, with a weighted response rate of 77.2 (Ruddy, Neiman, Hryczaniuk, Thomas, & Parmer, 2010). The SSOCS created the public-use data to ensure confidentiality by collapsing demographic information, and the SSOCS 2007–2008 data are the latest to have been released to the public as of March 2014. The present study analyzed the 2007–2008 public-use data to answer the research questions.

Variables

The study included three dependent variables: student aspiration, academic achievement, and student insubordination. Principals' perceptions of students' aspiration were assessed using principals' estimated percentage of students likely to go to college after high school. School achievement originally was estimated based on the percentage of students who were *below* the 15th percentile on standardized tests. For the analysis, this variable was modified (i.e., 100% minus the original percent value) indicating percentage of students who were *above* the 15th percentile on standardized tests. Insubordination was measured by the total number of disciplinary actions taken for student insubordination. SSOCS defines insubordination as "a deliberate and inexcusable defiance of or refusal to obey a school rule, authority,

or a reasonable order" and such behaviors may include disobedience of school authority, not attending assigned detention, and physical intimidation or verbal abuse of school staff.

School mobility, the primary independent variable in the current study, was measured as a total number of students who transferred to the school during the 2007–2008 school year, without considering grade promotion. Total number of students transferred to a school (i.e., including for disciplinary purposes) was used based on principals' reports.

A number of items from the SSOCS data are employed in the study. For the second research question, school disorder was assessed using eight items of school disorder (i.e., student racial/ethnic tensions, bullying, sexual harassment, verbal abuse of teacher, classroom disorder, acts of disrespect toward teachers, and gang and cult activities). Principals were asked, "To the best of your knowledge, how often do the following types of problems occur at your school?" and responded on a five point scale, where 1 = happens daily, 2 = happens at least once a week, 3 = happens at least once a month, 4 = happens occasionally, and 5 = never happens. Reverse-recoded variables of each item were used for the correlational analyses.

A total of 14 variables related to principals' perceptions of students' academic and behavioral outcomes were included in the multivariate regression models. School characteristics included minority students, LEP students, students with disabilities, attendance, and parental involvement. Proportions of minority students were assessed using a four point scale, where 1 = less than 5 percent, 2 = 5 percent to less than 20 percent, 3 = 20 percent to less than 50 percent, and 4 = 50 percent or more. Populations of LEP students were measured as a percentage based on principals' reports. "Students with disabilities" refers to individual students who need special education and/or related services for any disabilities under the Individuals with Disabilities Education Act (IDEA). In the study, percentage of students with disabilities was used. Average daily attendance as a percentage was used for the attendance variable. Parental involvement was measured as the percentage of parents involved in school activities (e.g., parent-teacher conferences) using a four point scale, where 1 = 0 percent to 25 percent, 2 = 26 percent to 50 percent, 3 = 51 percent to 75 percent, 4 = 76 percent to 100 percent, and 5 = school does not offer. In the analysis, response 5 (*school does not offer*) was excluded (Cronbach's alpha = .80).

Safety initiatives included community involvement in crime prevention, principals' challenges to policies on school safety, teacher training for crime prevention, and student crime prevention programs. Community involvement was assessed with six items indicating the number of various community groups (e.g., law enforcement agencies and mental health agencies) promoting school safety (Cronbach's alpha = .74). Principals' challenges to policies on school safety were measured with 13 items (e.g., lack of parental and teacher support, teachers' fears of student retaliation, and lack of funds). Principals were asked, "To what extent did the following limit your school's efforts to reduce or prevent crime?" and responded using a three point scale, where 1 = limit in major way, 2 = limit in minor way, and 3 = does not limit. A dummy variable was created indicating "limit in major way," and the mean of the 13 items was used in the analyses (Cronbach's alpha = .87). Teacher training for crime prevention was assessed with 6 items (e.g., classroom management and positive behavioral intervention strategies), and the number of training programs was used in the analyses (Cronbach's alpha = .74). Student-oriented prevention was assessed with eight items (e.g., counseling, psychological, or therapeutic activity), and the number of crime prevention services for students was used (Cronbach's alpha = .61).

Level of violence was included as a potential determinant of student insubordination. It was assessed by number of incidents of student violence, crime level in school area, and crime level in student residence. Incidents of student violence were measured as total number of incidents based on principals' reports. The level of crime in school area was assessed as 1 = high level of crime, 2 = moderate level of crime, and 3 = low level of crime, and a dummy variable indicating high level of crime was created. The level of crime where students live was assessed as 1 = high level of crime, 2 = moderate level of crime, 3 = low level of crime, and 4 = students come from areas with very different levels of crime. Excluding response 4 (*students come from areas with very different levels of crime*), a dummy variable, indicating high level of crime, was created. Finally, school size referred to the number of enrolled students and was measured where 1 = less than 300, 2 = 300 to 499, 3 = 500 to 999, and 4 = greater than 1,000. School level and location were created as dummy variables indicating secondary school and urban location, respectively.

Data Analyses

Descriptive statistics and correlational and multiple multivariate regression analyses were employed to answer the research questions of the study. Three variables—mobility, violent incident, and insubordination—had a positively skewed distribution. Considering homoscedastic error assumptions, each of the variables was transformed using base 10 logarithms. As school mobility was measured as numbers rather than rates, school size was included as a control variable in the regression models. In addition to reducing sampling errors and potential biases (Ruddy et al., 2010), weighted data were used by applying the FINALWGT variable that was provided by the SSOCS data set.

Results

Descriptive statistics indicate that U.S. public schools had a total of 181,945 transferred students during the 2007–2008 school year (see Appendix A). Figure 1 presents different patterns of school mobility by school characteristics including minority composition, school level, and school location. School mobility is more frequent in high schools, urban schools, and schools where minority students make up more than 50 percent of the student population. High schools in particular constitute more than half of all school mobility cases (50.75%), and schools serving more than 50 percent minority students make up nearly 45 percent of all school mobility cases (44.95%). Urban schools constitute about 40 percent of all such cases (37.97%).

Figure 1. School Mobility by School Characteristics
(percentage of schools having transferred students)
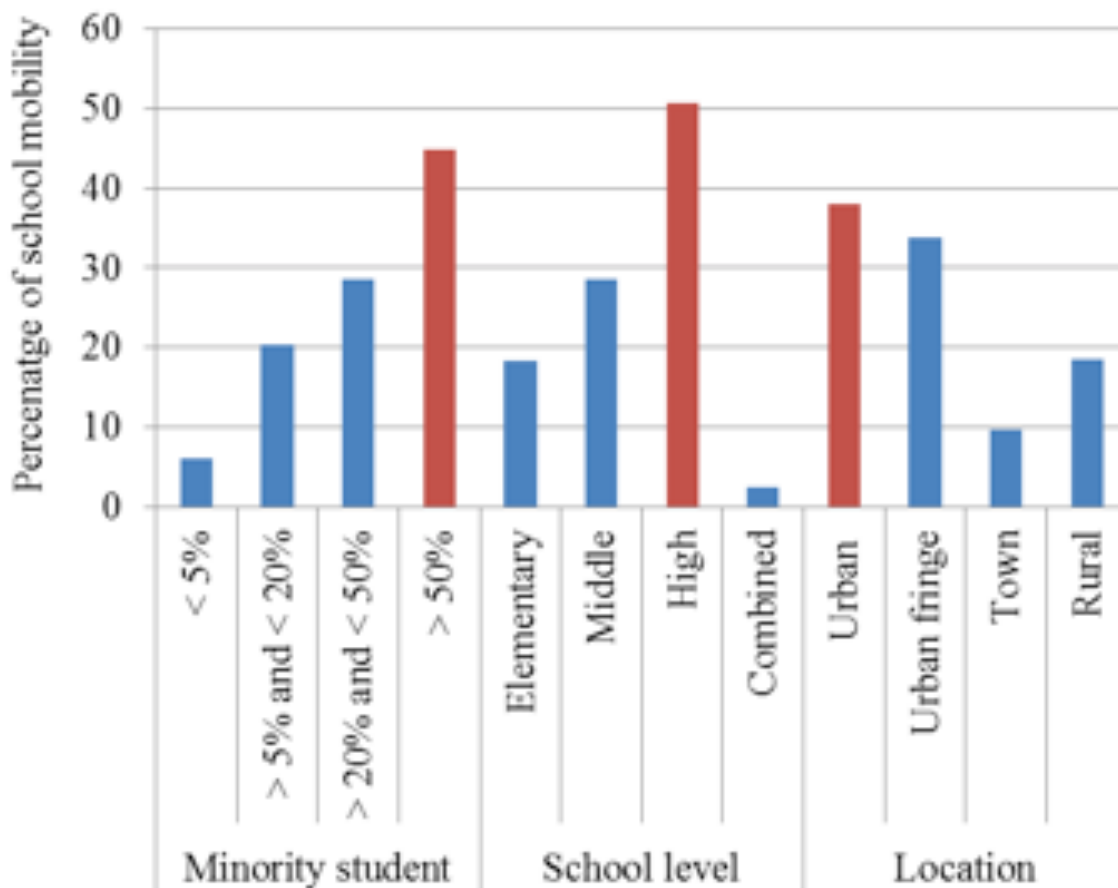
Table 1. Correlations between School Mobility and School Disorder

	Mobility	1	2	3	4	5	6	7
1. Racial tension	.112**							
2. Bullying	.049*	.479**						
3. Sexual harass-ment	.104**	.529**	.507**					
4. Verbal abuse of teacher	.213**	.343**	.345**	.397**				
5. Classroom dis-order	.117**	.297**	.319**	.329**	.538**			
6. Disrespect act for teacher	.156**	.321**	.338**	.344**	.646**	.449**		
7. Gang	.277**	.379**	.276**	.341**	.442**	.366**	.374**	
8. Cult activities	.102**	.167**	.125**	.158**	.193**	.218**	.145**	.330**

*Note*s: *N* =2,560 schools; each of the seven items of school disorder was assessed by a 5-point scale from *never happens* to *happens daily.* *p < .05. **p < .01. ***p < .001

Correlations between school mobility and school disorder are shown in Table 1. All eight items of school disorder as measured by principals' perceptions have significant correlations with school mobility ($p < .01$). That is, principals at schools with more transferred students tended to report more frequent school disorder problems such as bullying, racial tension, disrespect toward teachers, and verbal abuse of teachers. However, the correlation strengths are fairly weak (correlation coefficients range from .049 to .277).

Table 2 presents the findings on associations between school mobility and students' academic and behavioral outcomes, after controlling for 14 school factors. The first column of Table 2 indicates the effect of school mobility on students' academic aspirations. As shown, a negative association between school mobility and aspiration is observed after accounting for all school factors (p < .001). Schools with more transferred students tend to have fewer students who aspire to go to college after high school. Schools with more mobility account for about 29 percent of the variance in the percentage of students who are likely to go to college after graduating from high school.

Similarly, in the second column of Table 2, a negative association between school mobility and academic achievement is found ($p <. 001$). Schools with more mobility tend to have fewer students who score above the 15th percentile on standardized tests, after controlling for school factors. That is, when schools have the same conditions, such as student population characteristics, parental involvement, attendance rate, and level of violence, schools with more mobility are less likely to have students who score above the 15th percentile on standardized tests. Schools with more mobility account for about 25 percent of the variance in the percentage of students who score above the 15th percentile on standardized tests.

Finally, the third column of Table 2 shows a positive relationship between school mobility and student insubordination. Holding all school characteristics constant, schools with more mobility tend to have more frequent insubordination incidents ($p < 001$). Schools with more mobility account for about 33 percent of the variance in the number of disciplinary actions for student insubordination.

Table 2. Multivariate Regression Models for School Mobility and Student Outcomes

	Aspiration	Achievement	Insubordination
	B (SE)	B (SE)	B (SE)
Mobility	-8.866*** (.000)	-2.917*** (.152)	.174*** (.008)
School characteristics			
Minority student	-2.737*** (.122)	-1.426*** (.073)	.053*** (.004)
LEP student	-.181*** (.006)	-.111*** (.004)	-.001*** (.000)
Students with disabilities	-.325*** (.013)	-.176*** (.008)	.006*** (.000)
Attendance	.069*** (.013)	.065*** (.008)	.001* (.000)
Parental involvement	9.067*** (.159)	.981*** (.095)	-.070*** (.005)
Safety initiatives			
Community involvement	-.131* (.051)	-.052 (.030)	.022*** (.002)
Principals' challenges	-.519*** (.028)	-.371*** (.016)	.016*** (.001)
Teacher trainings	-.723** (.063)	.498*** (.038)	.004* (.002)
Student-oriented prevention	1.083*** (.075)	.585*** (.045)	-.018*** (.002)
Level of violence			
Violent incident	-6.087***(.216)	-3.143*** (.129)	.400** (.007)
Crime in school area	-2.797*** (.571)	-6.779*** (.342)	-.069*** (.016)
Crime in student residence	-1.797** (.521)	-6.618*** (.312)	.179*** (.015)
Control variables			
School size	5.290*** (.129)	1.507*** (.077)	-.017*** (.004)
School level (Secondary)	8.223*** (231)	-1.494*** (.138)	.353*** (.007)
Location (Urban)	9.092*** (.233)	-.277* (.139)	.015* (.007)
Adjusted R Square	.29	.25	.33

*Note*s: $N = 2,560$ schools; *$p < .05$. **$p < .01$. ***$p < .001$

Looking at school factors in multivariate regression models, three variables (i.e., parental involvement, principals' challenges to policies on school safety, and student-oriented crime prevention programs) appear to be statistically significant indicators of the desired student outcomes. Those variables are positively associated with aspiration and academic achievement and negatively associated with insubordination ($p < .001$). It is not surprising to observe positive effects of parental involvement on

students' outcomes, as have been well demonstrated in the literature. It is interesting that schools offering multiple crime prevention programs for students tend to see improvements to both behavioral and academic outcomes. It might be that students increase school bonding by engaging in multiple programs, and this type of bonding may positively affect students' school performances. The relationship between principals' challenges to policies on school safety and the desired outcomes for students is observed as expected. When school principals perceive major limits to promoting school safety, those schools tend to have fewer students with academic aspirations and fewer students who are above 15th percentile on standardized tests, as well as more insubordination incidents.

However, some school factors consistently show negative effects on students' desired outcomes: proportions of minority students and students with disabilities, community involvement in school safety, violent incidents, and levels of crime in the student's residences. It is well known in the literature that the proportions of minority students and students with disabilities and school violence were significant and negative indicators of school success. Findings of interest are the negative effects of community involvement in school safety and level of crime in student residence on student outcomes. A possible explanation of the negative association between community involvement and student outcomes is that principals may want to reach out to the community because those schools may limit their effort to school safety. Yet even the active involvement of multiple community agencies may not improve academic achievement and problem behaviors. Given the data, frequency and extent of the community involvement are not known. Thus, the interpretation of the association is fairly limited and should be further examined. Finally, level of crime in students' residences indicates a strong, positive relationship with school mobility. It is generally known that crime negatively influences students' outcomes, yet students' insubordination seems to be specifically influenced by the crime level in students' residences (rather than by crime within the school or the school area).

Discussion

The study sought to examine estimated effects of school mobility on students' aspirations, achievements, and insubordination based on a nationally representative data set, SSOCS 2007–2008. The findings showed that school mobility is more prevalent in high schools, urban schools, and schools serving more minority students. Although principals' perceptions of school disorder were weakly correlated with school mobility in the correlational matrix, significant associations between school mobility and students' academic and behavioral outcomes were observed in the multiple regression models. Schools with more mobile students tended to have fewer students who pursued a college education after high school and fewer students who were above the 15th percentile on standardized tests. In addition, schools with more mobile students tended to have more frequent insubordination incidents, after controlling for school background characteristics. All the observed associations between school mobility and undesired student outcomes were consistent while holding all other school characteristics constant.

Significant positive association between proportion of minority students and insubordination is highly consistent with the literature. For example, African American students are more likely to be disciplined because of disobedience and disrespectful behaviors toward school staff (Raffaele Mendez & Knoff, 2003; Skiba, Michael, Nardo, & Peterson, 2002). Given these findings, school administrators should consider more effective discipline methods for ethnic minority students in a more culturally responsive manner. This is particularly important because insubordination is more preventable than serious violent incidents (Raffaele Mendez & Knoff, 2003).

Among multiple types of safety initiatives, student-oriented crime prevention programs are positively associated with desirable student outcomes. Schools with multiple student-oriented crime prevention programs are more likely to have students who go to college and who have higher achievement and fewer insubordination incidents. One possible explanation is that when schools support students with a variety of crime prevention programs, students may improve their behaviors and receive individual attention in the programs. Additionally, students may build positive relationships with the school staff through further interactions in the programs. Therefore, those schools with multiple student-oriented crime prevention programs may have

positive outcomes in both academic and behavioral aspects.

Policy Implications

Important findings of the study include that school mobility significantly influences students' aspirations, academic achievements, and behavioral outcomes, while holding school demographic characteristics, the level of school violence at schools and communities, and multiple safety initiatives constant. Based on the results, the following policy implications are offered.

First, school mobility has negative effects on students' academic aspirations. Out of three types of student outcomes, aspiration is most strongly and negatively associated with school mobility. Frequent school changes and lower aspiration can be explained by the multiple challenges that these students face. When students change schools, they encounter various challenges—particularly in building new social relationships. The literature revealed that poor peer relationships negatively influence participation in classroom activities and/or extracurricular activities (South et al., 2007). Lower levels of school engagement may lead students to lose interest in learning and may decrease academic aspirations. Even if mobile students build peer relationships, they are more likely than non-mobile students to have friends with lower achievements (South et al., 2007). This situation is another negative factor in decreasing mobile students' academic aspirations.

School administrators and teachers should understand the challenges that mobile students face at their new schools and actively help them engage in social activities in school. School administrators may consider establishing a student council to help mobile students learn about the new school and community. In addition, school administrators should encourage teachers to pay special attention to mobile students in the classroom and encourage students to be more active in learning activities. Building solid relationships with peers and teachers is one of the most critical factors to promote academic aspiration for mobile students (Gruman et al., 2008). Thus, school administrators may need to promote school activities in and outside the classroom so that mobile students can have opportunities to be socialized with new teachers and peers.

Second, schools serving more mobile students have lower levels of achievement. One possible explanation is that mobile students struggle to catch up on schoolwork because curricula and levels of diffi-

culty vary across states and districts under the decentralized U.S. school system. In order to promote the academic achievement of mobile students, schools should acquire their previous school records in a timely manner to help teachers prepare appropriate instructional materials for those students. School districts should provide further assistance and resources to the schools serving more mobile students because school staff and teachers have limited capacity to do more than their regular duty. By acquiring adequate resources in a timely manner, mobile students will be able to receive individual instruction and get on the right academic track. Lack of social capital is another negative factor for mobile students in improving school performance (Gasper et al., 2009; Pribesh & Downey, 1999). Social capital theory asserts that the social capital built by family and community is a critical element in the social and cognitive development of children. This can be seen in mobile students who may lag behind academically due to loose and/or weak connection with peers, teachers, and school staff at their new schools. School administrators should provide community resources to mobile students and parents to promote building social connections in the new environment. This will allow mobile students to benefit from social capital, which will help improve academic achievement.

Third, creating an orderly school is essential for school success (Cornell & Mayer, 2010), and school administrators should pay special attention to student insubordination issues. There are various causes of insubordination, and school mobility could be one of them. According to strain theory, social and psychological stress may lead students to get involved in problem behaviors. While trying to catch up on schoolwork and building social relationships in a new school, mobile students may struggle academically and feel stressed. In the case that mobile students fail to achieve desired goals, they may attempt to remove such goals by involving themselves in problem behaviors (Gasper et al., 2009). The association between school mobility and students' problem behavior is also explained by social networks of delinquent friends. A mobile student, as a new school member, can more easily build a social network with deviant peers (Haynie & South, 2005), and being a member of such a network may lead to involvement in deviant behaviors. School administrators and policy makers should consider the school mobility issue with a view to creating an orderly school and should be active in assisting mobile students. School mobility in particular is a common event for disadvan-

taged students who are poor and low achieving and/or who have behavioral problems. School administrators should be aware that teachers play important roles in this issue and should encourage teachers to support mobile students and to promote positive attitudes toward schools (Gruman et al., 2008). Findings regarding the association between safety initiatives and insubordination show that having multiple student-oriented crime prevention programs (e.g., counseling, psychological, or therapeutic activity) tends to reduce insubordination incidents. Therefore, school administrators and school districts should consider offering various student-oriented crime prevention programs. In addition, findings about the significant negative association between parental involvement and insubordination suggest that school administrators should consider promoting active parental involvement. When parents become well aware of school rules and discipline policies, they can help promote school order by educating their child at home.

Limitations of the Study

Methodological limitations for the study should be considered. First of all, the effect of school mobility was estimated without considering frequency, distance, and reasons for school change. A student may change school multiple times during the school year, and multiple changes might lead to more difficulties adjusting to school. The current study considered only the number of transferred students in schools. Additionally, school changes within the same district or in different school districts may have different effects on transferred students. More importantly, if transferred students already had lower academic abilities and/or transferred for disciplinary reasons, those students' negative outcomes may be not caused by the school change itself. The current study was not able to control for such factors because SSOCS is a cross-sectional data set, and no further information about the school changes was available in SSOCS. Another measurement limitation was that the crime prevention programs used in the study were assessed in terms of whether a school had such a program, yet there was little information about how often they implemented such programs or for how long. In addition, SSOCS public-use data does not contain students' lunch status. Due to the unavailability of that information, several variables (e.g., parental involvement and crime level of student residence) were substituted for school-level poverty. In future research, various ways of measuring school-level poverty, including lunch statuses, parental education levels, and income, would be beneficial. Finally, SSOCS relied on principals' reports and had limited information from other stakeholders. The effects of school mobility on students' outcomes may differ by parents' perceptions and/or attitudes (Norford & Medway, 2002; Weber, 2005); thus, including parents' perspectives might be useful for future studies.

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Appendix 1

Table A. School Mobility by School Characteristics

	N	Min	Max	Sum	M	SE
Mobility	2,560	0	2,301	181,945	71.0723	101.778
Minority student						
Less than 5 percent	353	0	333	10,915	30.9207	31.7987
5 percent to less than 20 percent	707	0	561	37,100	52.4752	59.4339
20 percent to less than 50 percent	656	0	1,438	52,150	79.497	102.118
50 percent or more	844	0	2,301	81,780	96.8957	135.18
School level						
Elementary	618	0	429	33,286	53.8608	58.6793
Middle	897	0	900	52,085	58.0658	67.6107
High	936	0	2,301	92,334	98.6474	141.435
Combined	109	0	340	4,240	38.8991	62.6961
School location						
Urban	679	0	2,301	69,085	101.745	143.333
Urban fringe	814	0	650	61,538	75.5995	87.0846
Town	390	0	258	17,649	45.2538	40.5854
Rural	677	0	1,438	33,673	49.7386	82.0304