Research Article

The Influence of the Student Mobility Rate on the Graduation Rate in the State of New Jersey

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Abstract

This study examined the influence of the student mobility rate on the high school graduation rate of schools in the state of New Jersey. Variables found to have an influence on the graduation rate in the extant literature were evaluated and reported. The analysis included multiple and hierarchical regression models for school variables (i.e., teacher mobility and school size) and student variables (i.e., percentage of limited English proficient students, special education students, low socioeconomic status, and minority students). All data explored in this study pertained to 316 public comprehensive high schools in New Jersey during the 2010-2011 academic school year, which was the first year of a cohort graduating under the new compact formula. The results of the study revealed that the student mobility rate does influence the graduation rate.

Key Words

student mobility, graduation rate, low socioeconomic status

Introduction

The No Child Left Behind Act of 2001 (NCLB) requires schools to meet certain accountability measures in order to achieve Adequate Yearly Progress (AYP) and this includes the use of the graduation rate for secondary public schools (NCLB, SEC. 1001).

In 2012, the United States Department of Education (USDOE) provided each State Education Agency (SEA) with the ability to request for itself or its Local Education Agencies (LEA) flexibility in following the mandates of NCLB.

Each state-developed plan must use the four-year adjusted cohort graduation rate as the accountability measure for improving educational achievement for all students and subgroups (USDOE, 2012). The waiver also requires SEAs to focus on high schools with a consistently low graduation rate.

In addition, states and school districts are required to report on state and local report cards the four-year adjusted cohort rate, including the graduation rate of the subgroups (USDOE, 2012). The reauthorization of the Elementary and Secondary Education Act, the Every Student Succeeds Act (ESSA) of 2015 which replaces NCLB maintains the graduation rate as an accountability measure.

During a time with strong federal and state demands for accountability, mobility has become a challenge many U.S. schools now face. Even with new accountability measures and the many amendments to the accountability requirements, no provisions were made or guidance provided to address mobility as a factor that influences the graduation rate that remains administratively mutable.

Problem, Purpose and Research Questions

The importance of educating students to high school graduation takes on an important role in the political and policy making arenas because of the accountability measures that are now in place. Because NCLB required all states to implement a single accountability system, New Jersey concurred by utilizing the provision indicated in NCLB to calculate AYP for its schools.

In addition, New Jersey has asked for a waiver to the AYP requirement since the "approved flexibility request created differentiated categories of schools, identified as Priority, Focus, and Reward schools" (NJDOE, 2012a, p.1). The criteria used to place schools in the designated categories include "subgroup academic performance, measures of student growth, and graduation rate" (NJDOE, 2012a, p.1).

Education bureaucrats at the New Jersey Department of Education adopted the federal formula for calculating graduation rates at New Jersey high schools beginning with the 2011 high school graduating class.

Utilizing NJ SMART, the warehouse New Jersey uses to store student data, state education officials calculate the adjusted cohort graduation rate for New Jersey's public schools, publish this rate on the New Jersey School Report Card, and include this data in the AYP calculation of the school.

This new formula, the adjusted cohort graduation rate, "divides the number of 4-year graduates by the number of first-time ninth graders who entered the cohort four years earlier" (NJDOE, 2012b).

The new Performance Report resulting from New Jersey's approval for ESEA flexibility utilizes the adjusted cohort graduation rate. In this report, a table presents the graduation rate for the school and for each subgroup in the school with comparisons to peer schools and the state average.

The formula, however, does not take into account student mobility and the potential influence of student mobility on a high school's graduation rate. While school personnel have no control over student mobility, it is one of those factors that can affect a school's graduation rate. No research exists on the influence of student mobility on the New Jersey graduation rates as calculated by the adjusted cohort graduation formula.

The purpose of this non-experimental, correlational, quantitative study was to explain the influence of student mobility on the calculated graduation rate of schools in the state of New Jersey. This study explained the amount of variance in the graduation rates of New Jersey public high schools accounted for by student mobility percentages at individual high schools and created research based evidence that will assist all in public education with policy creation pertaining to mobile students and graduation rates as accountability measures.

Research Questions

I guided this study with the overarching research question: What is the influence of the student mobility rate on the graduation rate of New Jersey's high schools? I also considered these subsidiary questions:

1. How is the influence of the student mobility rate on the graduation rate influenced by the controlled student characteristic variables of socioeconomic status, ethnicity, percentage of special education students, and percentage of limited English proficient students?

2. How is the influence of the student mobility rate on the graduation rate influenced by the controlled school characteristic variables of school size and teacher mobility?

3. How is the influence of the student mobility rate on the graduation rate influenced when controlling for both student and school characteristics?

Conceptual Framework

In a school district in Northeastern Pennsylvania, Mulroy (2008) examined the influence of school related factors such as school size on students possessing risk factors such as poverty, special education, and English language learners.

One conclusion of the study showed that the school size was not a factor based on the participants in the study. Dalton (2013) studied the relationship of mobile students in high poverty schools and student achievement.

The findings of the study showed "no significant difference between mobile and nonmobile students, mobile and nonmobile African American, Hispanic, and White students" (Dalton, 2013, p. 92).

This study extended Mulroy's and Dalton's works through an explanation of the influence of the student mobility rate on the graduation rate in the state of New Jersey controlling for independent variables identified in the literature to influence high school

graduation such as the socioeconomic status of students, percentage of special education students, percentage of English language learners, size of the school, and ethnicity of the students. Both of these studies contain similar variables with a different focus. This study combined Mulroy's and Dalton's studies with a specific focus on mobility and the graduation rate.

Theoretical Framework

The literature presents many reasons why students do not complete high school, and the theories surrounding students dropping out of school encompasses various factors. Rumberger (2011) identifies two perspectives – an individual perspective and an institutional perspective.

The individual perspective draws on the theory of how not being engaged either socially or academically can affect student's achievement in high school. Finn (1989) suggests that disengagement or lack of participation in the school related activities may impede the student's ability to connect or identify with the school.

Lack of engagement could be the result of instability resulting from student mobility. If a student is always changing schools, he/she may have a more difficult time connecting with the school at large.

Abraham Maslow's theory about hierarchy of needs identifies the needs that motivate human behavior. The *Physiological Needs* include the basic needs for physical survival. This includes food, shelter, sleep, and air. *Safety Needs* are associated with feeling secure. "Children need a predictable world and prefer consistency, fairness and a certain amount of routine. When these elements are absent, he/she becomes anxious and insecure" (Goble, 1970, p. 54).

Humans desire to be loved and have loving relationships with people; this includes trusting people. Maslow refers to this need as the *Belongingness and Love Needs*. The *Esteem Needs* include a desire for confidence and recognition, acceptance, attention and appreciation from others. *The Self-Actualization Needs* include the psychological need for growth, development and utilization of potential (Goble, 1970).

Mobile students' needs are compromised and as a result, their achievement in school which determines graduation is affected. Maslow's needs are affected by poverty which cause health related issues and affect home, family and community life (Rebell & Wolff, 2008).

Rumberger (2008) argues that it is more of a challenge to reduce the dropout rate in urban schools with a high poverty rate. At the same time, Swanson (2004) found that low socioeconomic disadvantaged districts have low graduation rates.

James Coleman's theory of social capital is yet another theory which impacts the mobile student and student achievement. Social capital makes it possible to obtain or achieve that which the absence of social capital would not (Coleman, 1988). Ream (2003) defines social capital as "relationship networks from which an individual is potentially able to derive various types of support via social exchange" (p. 238).

According to Coleman (1988), "social relations can constitute useful capital resources for individuals" (p. S102). For example,

Coleman (1988) describes the hypothetical of two people doing favors for one another and building trust with the expectation of reciprocation. Mobile students and their families are unable to build this trusting relationship due to constant movement.

Social capital exists outside the home, within the school and community, and amongst parents, students and school personnel (Coleman, 1988; Ream, 2003). Coleman (1988) discusses intergenerational closure as social capital since it provides parents with social capital in child rearing.

This is due to the connections made by parents of different children. These parents become friends as their children are friends resulting in a constant monitoring in the raising of the children in school and community matters (Coleman, 1988). Again, this relationship is nonexistent for the mobile child.

Mobile students loose social capital with each move, and they are unable to develop, build upon, and maintain a networking system of relationships (Coleman, 1988; Ream, 2003). The inability to build upon social capital strains students' efforts to build relationships and friendships within the school (Ream, 2003). One effect for a child without social capital is not completing high school. (Coleman 1988).

Methodology

According to Gay, Mills, and Airasian (2012), "Correlational research involves collecting data to determine whether, and to what degree, a relationship exists between two or more quantifiable variables" (p. 204).

I used a correlational design to conduct this quantitative, cross-sectional, explanatory study to investigate the relationships, if any, that exist between mobility, student and school characteristic variables, and the graduation rate and/or to make predictions. Scores for all variables were obtained for each school in the study, and these scores were correlated with the results, a correlation coefficient, indicating the degree of the relationship (Gay et al., 2012).

I used multiple regression models so that I could determine which student variable (mobility, percentage of special education students, percentage of limited English proficient students, and socioeconomic status) and which school variable (school size and teacher mobility) had a statistically significant relationship to the graduation rate.

In addition, because variance is only accounted for once, predictor variables should be highly correlated to the criterion variable and not highly correlated amongst themselves, as they will be explaining the same variance and only one will have a significant contribution (Hinkle, Wiersma, and Jurs, 2003).

In this study, I examined the amount of variance in the criterion variable graduation rate that can be explained by the school related and student related predictor variables.

The final sample for this study consisted of 316 public comprehensive high schools in the state of New Jersey. New Jersey has 21 counties, and within these counties are 590 operational public school districts consisting of elementary and middle schools, comprehensive high schools, magnet schools, vocational schools, charter schools, and special education schools (NJDOE, 2010a).

The grade composition of the 590 operational school districts varies, with some consisting of Grades PK-12 and others separated into elementary K-6 or K-8 districts and high school districts. Many of these school districts are regional school districts in that the

student population comes from various sending districts.

The size and grade composition for the high schools vary in that some high schools consist of Grades 6-12, 7-12, 8-12, or 9-12, and the size of these high schools varies with a range from just under 200 students to over 3,000.

For the purposes of this study, magnet schools, vocational schools, charter schools, and special education schools were not included. Schools that were included in the sample met the following criteria:

1. housed only Grades 9 through 12;
2. were considered local public schools and were not part of a sending/receiving relationship with another school district;
3. did not have entrance criteria or discriminate based on standardized achievement scores, special education status, or English language learner status.

Those schools listed as a ninth grade school or schools consisting of Grades 10-12 were excluded in order to keep consistency in the sample.

This study utilized comprehensive public high schools in New Jersey representing all socioeconomic levels and sizes. Vocational schools, charter schools, special education schools, alternative schools, and schools without data for each variable were excluded from the study.

Of the 485 public high schools in New Jersey, 316 provide education to students in Grades 9-12 and have data for each variable in the study.

Data analysis

I used simultaneous multiple regression and hierarchical linear regression to perform the analyses. I checked the data to ensure they met the assumptions for conducting simultaneous and hierarchical linear regression.

The relationships between predictor and dependent variables were linear, as demonstrated by scatterplots; and the residuals were distributed normally and not related to the predictor variables.

Because there are more than two predictor variables to correlate, I ran a Pearson correlation. The simple regression showed the impact of X on Y, its significance, if the relationship is positive or negative, and the percentage of variance in the dependent variable that is explained by the independent variable.

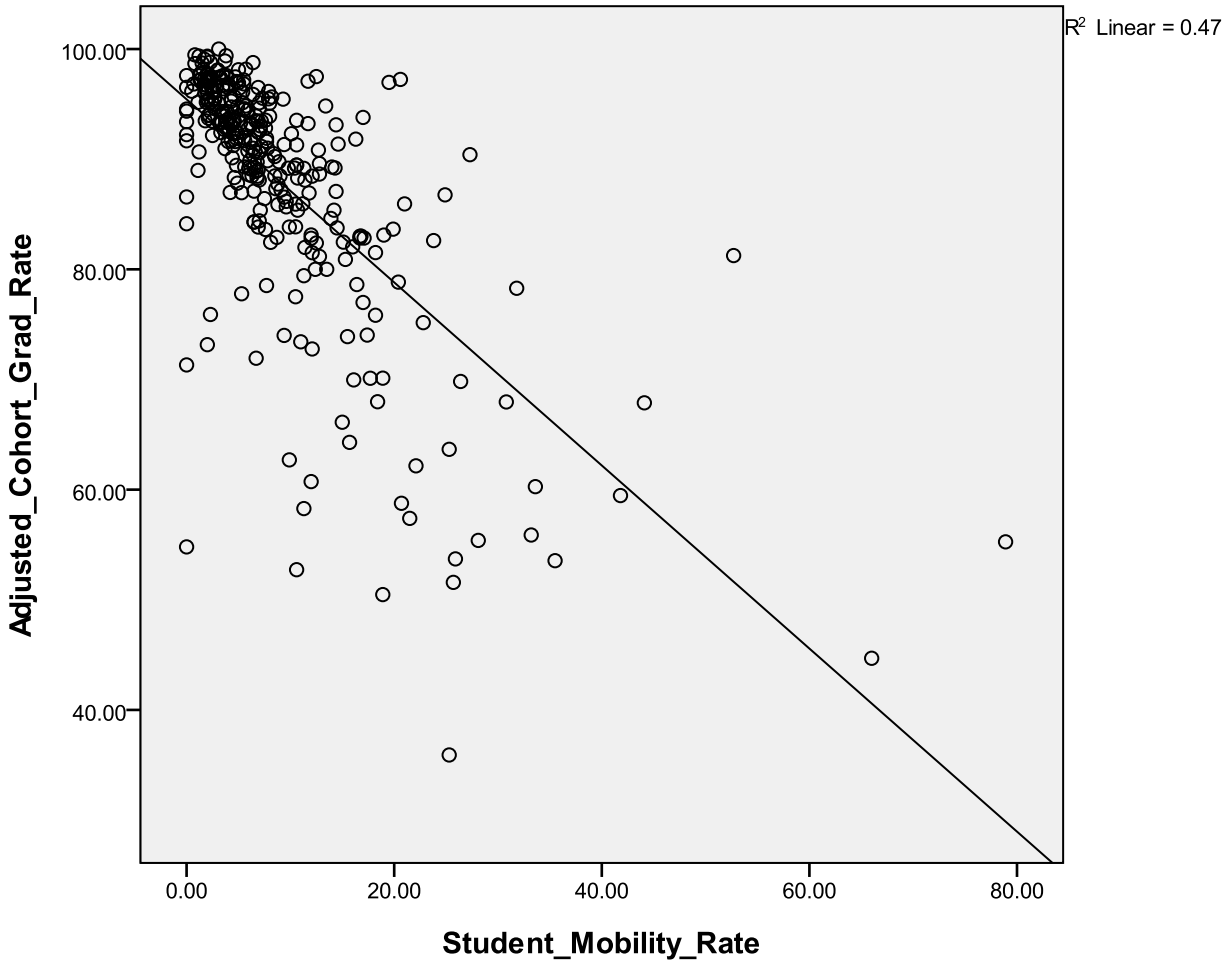
The next set of statistics that I ran was a series of multiple regression equations. I used multiple regression equations in order to take advantage of the predictive power of multiple predictor variables and controlled for student characteristics (socioeconomic status, percentage of special education students, and percentage of limited English proficient students).

Each of these models provided data as to how much of the variance in the graduation rate could be explained by student mobility. The statistical significance of the regression equation revealed whether the equation was statistically significant (p value $\leq .005$).

The Standardized Coefficient was examined to determine the direction (positive or negative) and possible influence student

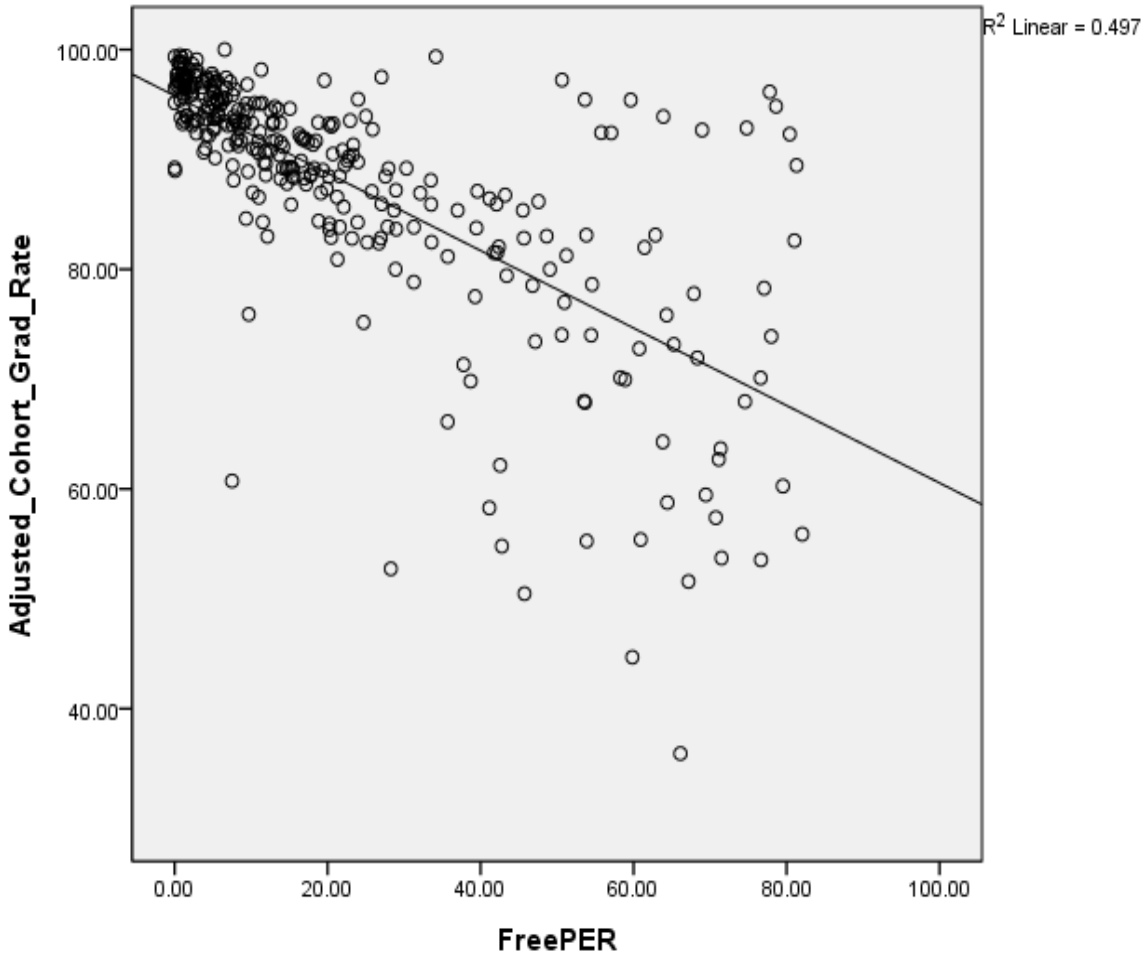
mobility may have on the graduation rate. All of the scatterplots had linear regression showing a negative correlation except the scatterplot of the graduation rate and students with disabilities, which shows the points not fitting well, $r^2 = .002$ (see Figures 1 to 3).

Figure 1. Graduation rate and student mobility scatterplot.



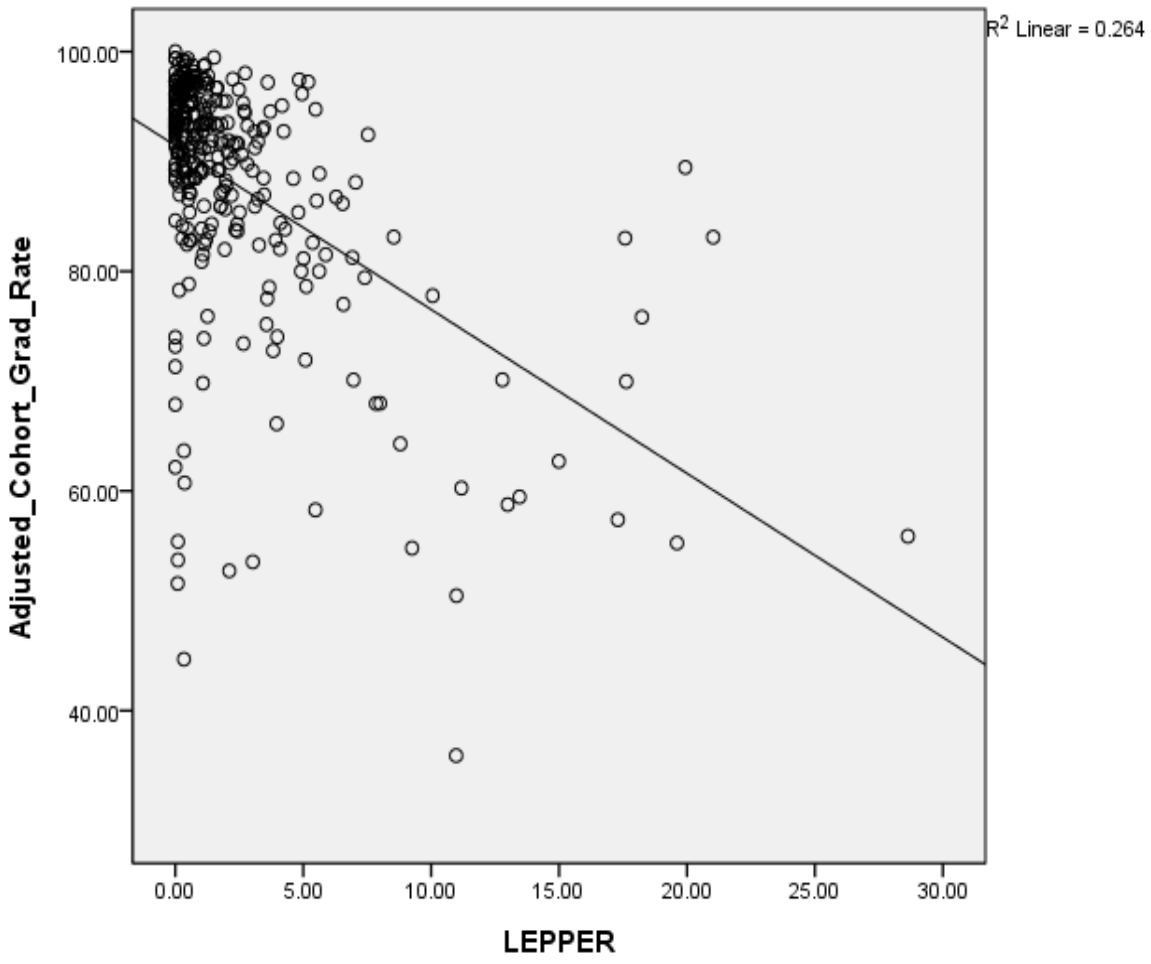
The scatterplot in Figure 1 shows the relationship between the two variables. The figure has an R^2 of .47, which indicates that 47% of the variance of the graduation rate was explained by student mobility.

Figure 2. Graduation rate and free lunch scatterplot.



The scatterplot in Figure 2 shows the relationship between the graduation rate and the percentage of students receiving free lunch which is used to present the socioeconomic status of the school. The figure has an R^2 of .497 which indicates that 50% of the variance of the graduation rate was explained by the percentage of students receiving free lunch.

Figure 3. Graduation rate and limited English proficient students.



The Figure 3 scatterplot shows the relationship between the graduation rate and the percentage of limited English proficient students in the school. The figure has an R^2 of .264 which indicates that 26% of the variance of the graduation rate was explained by the percentage of LEP students.

A correlation coefficient matrix was analyzed to identify the relationship between the variables (see Table 1). The values of the correlation coefficients are between -1 and +1, which indicates a perfectly correlated negative or positive relationship.

The Pearson receiving free lunch and the dependent variable graduation rate (r = -.705), which is statistically significant (p < .000), and the predictor variable student mobility rate and the graduation rate (r = -.686), which is statistically significant (p < .000). There is a negative moderate relationship between the predictor variable percentage of Black students and the dependent variable graduation rate (r = -.598), which is statistically significant (p < .000).

The Correlation Table (see Table 1) shows that there is a strong negative relationship between the predictor variable students

Table 1

Correlation Table

Correlations

		Adjusted_ Cohort_Grad_ Rate	Student_ Mobility_Rate	Teacher_ Mobility	BlackPER	HispPER	FreePER	LEPPER	DISABPER	ReducedPER
Pearson Correlation	Adjusted_Cohort_Grad_ Rate	1.000	-.686	-.222	-.598	-.495	-.705	-.514	-.042	-.372
	Student_Mobility_Rate	-.686	1.000	.105	.510	.346	.604	.452	.149	.249
	Teacher_Mobility	-.222	.105	1.000	.135	.180	.193	.097	-.036	.226
	BlackPER	-.598	.510	.135	1.000	.168	.667	.199	.054	.310
	HispPER	-.495	.346	.180	.168	1.000	.729	.678	-.119	.522
	FreePER	-.705	.604	.193	.667	.729	1.000	.572	.007	.546
	LEPPER	-.514	.452	.097	.199	.678	.572	1.000	-.052	.190
	DISABPER	-.042	.149	-.036	.054	-.119	.007	-.052	1.000	-.009
	ReducedPER	-.372	.249	.226	.310	.522	.546	.190	-.009	1.000
Sig. (1-tailed)	Adjusted_Cohort_Grad_ Rate	.	.000	.000	.000	.000	.000	.000	.227	.000
	Student_Mobility_Rate	.000	.	.031	.000	.000	.000	.000	.004	.000
	Teacher_Mobility	.000	.031	.	.008	.001	.000	.043	.260	.000
	BlackPER	.000	.000	.008	.	.001	.000	.000	.168	.000
	HispPER	.000	.000	.001	.001	.	.000	.000	.017	.000
	FreePER	.000	.000	.000	.000	.000	.	.000	.448	.000
	LEPPER	.000	.000	.043	.000	.000	.000	.	.180	.000
	DISABPER	.227	.004	.260	.168	.017	.448	.180	.	.437
	ReducedPER	.000	.000	.000	.000	.000	.000	.000	.437	.
N	Adjusted_Cohort_Grad_ Rate	316	316	316	316	316	316	316	316	316
	Student_Mobility_Rate	316	316	316	316	316	316	316	316	316
	Teacher_Mobility	316	316	316	316	316	316	316	316	316
	BlackPER	316	316	316	316	316	316	316	316	316
	HispPER	316	316	316	316	316	316	316	316	316
	FreePER	316	316	316	316	316	316	316	316	316
	LEPPER	316	316	316	316	316	316	316	316	316
	DISABPER	316	316	316	316	316	316	316	316	316
	ReducedPER	316	316	316	316	316	316	316	316	316

The table also shows a strong relationship between the percentage of students receiving free lunch and student mobility (r = .604), the percentage of students receiving free lunch and the percentage of Black students (r = .667), the percentage of students receiving free lunch and the percentage of Hispanic students (r = .729), the percentage of students receiving free lunch and the percentage of limited English proficient students (r = .572) and the percentage of limited English proficient students and the percentage of Hispanic students (r = .678).

The regression method model summary showed that the multiple correlation coefficient (R) was .805 and the Adjusted R^2 was .638 for the complete model. Approximately 64% of the variance in the graduation rate can be predicted from the combination of percentage of limited English proficient students, Black students, Hispanic students, students receiving free lunch, students receiving reduced-price lunch, the teacher mobility rate and the student mobility rate.

According to Morrow-Howell (1994), one way to deal with multicollinearity is to eliminate redundant variables or one of the highly correlated variables. Therefore, I ran the data eliminating the Black and Hispanic variable because in the United States, race is related moderately with poverty. In this sample, the correlation coefficients indicated relationships between .6 and .7 for poverty and race–Black and Hispanic.

In this simultaneous multiple regression model, the combination of variables was statistically significant, $F(6, 309) = 83.98$, $p < .000$.

The R Square is .620, which indicates that 62% of the variance in the graduation rate can be predicted from the percentage of limited English proficient students, students receiving free lunch, students receiving reduced-price lunch, the teacher mobility rate, and the student mobility rate. The elimination of the two variables did not drastically reduce the strength of the model, as the variance went from 65% to 62%.

In Table 2, the beta coefficients are presented and all variables are significant with the exception of the percentage of special education students and the percentage of students receiving reduced-price lunch.

The strongest variables were student mobility, -.399, and the percentage of free lunch, -.368. The others significantly influenced the graduation rate when all variables are included. The Adjusted R^2 was .612. This indicates that 61% of the variance in the graduation rate was explained by the model.

The standardized residuals suggested that the residuals in the initial simultaneous regression model were normally distributed. Analysis of the standardized residuals demonstrated acceptable values of around 2.0, as verified through the Durbin-Watson test. (See Table 2)

Table 2

Coefficient Table

Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.	Collinearity Statistics	
		B	Std. Error	Beta			Tolerance	VIF
1	(Constant)	98.051	1.083		90.563	.000		
	Teacher_Mobility	-.190	.075	-.091	-2.524	.012	.941	1.063
	Student_Mobility_Rate	-.484	.055	-.399	-8.738	.000	.590	1.696
	DISABPER	.017	.057	.011	.297	.767	.956	1.046
	FreePER	-.184	.029	-.368	-6.439	.000	.376	2.657
	ReducedPER	-.075	.107	-.030	-.701	.484	.659	1.518
	LEPPER	-.313	.128	-.108	-2.444	.015	.631	1.584

a. Dependent Variable: Adjusted_Cohort_Grad_Rate

Hierarchical Regression

Whereas the multiple regression model measured the influence of the predictor variables on the graduation rate together, the hierarchical regression model measured the influence of the predictor variables on the graduation rate separately.

The models were evaluated at the .05 level of significance, which is most common in social science research for significance with the alpha set at .05, the significance threshold used in social science research ($p<.05$). The Model of best fit included the variables student mobility, free lunch, percentage of limited English proficient students, and teacher mobility.

In Model 1, Table 3, the predictor variable was student mobility and R Squared was .470, which indicated that 47% of the variance of the graduation rate in the model was explained by student mobility. In Model 2, the percentage of students receiving free lunch was added to student mobility and R Squared was .604, which indicated that 60% of the variance of the graduation rate was explained by the percentage of students receiving free lunch and student mobility. The R Squared change from Model 1 to Model 2 was .133, which shows that 13% of the variance was now added by the percentage of students receiving free lunch. This R Squared Change was statistically significant $F(1, 313) = 105.07$, $p < .000$.

The third model added the percentage of limited English proficient students, and R Squared was .610, indicating that 61% of the variance in the graduation rate can be explained by adding percentage of limited English proficient students. The R Squared change from Model 2 to Model 3 was .007, which shows that .7% of the variance was now added by the teacher mobility rate.

The R Squared change from Model 2 to Model 3 was statistically significant $F(1,312) = 5.51$, $p < .020$. The final model added the teacher mobility, and R Squared was .619, indicating that 62% of the variance in the graduation rate can be explained by adding

limited English proficient students. The R Squared change from Model 3 to Model 4 was statistically significant F(1,311) = 7.14, p < .008. (See Table 3)

Table 3

Model Summary Hierarchical Regression

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Change Statistics				
					R Square Change	F Change	df1	df2	Sig. F Change
1	.686[a]	.470	.469	8.13700	.470	278.936	1	314	.000
2	.777[b]	.604	.601	7.05187	.133	105.070	1	313	.000
3	.781[c]	.610	.607	7.00160	.007	5.511	1	312	.020
4	.787[d]	.619	.614	6.93366	.009	7.144	1	311	.008

a. Predictors: (Constant), Student_Mobility_Rate

b. Predictors: (Constant), Student_Mobility_Rate, FreePER

c. Predictors: (Constant), Student_Mobility_Rate, FreePER, LEPPER

d. Predictors: (Constant), Student_Mobility_Rate, FreePER, LEPPER, Teacher_Mobility

Research Questions and Answers

Research Question 1: How is the influence of the student mobility rate on the graduation rate influenced by the controlled student characteristic variables of socioeconomic status, ethnicity, percentage of special education students, and percentage of limited English proficient students?

The VIF scores for BlackPER, HispPER, and FreePER were 3.016, 4.771, and 6.908, all of which were well over 2. This indicated that multicollinearity existed among those variables.

When this occurs, researchers can combine like variables or eliminate the redundant variables. Storer et al. (2012) utilized census data to study the role of race and socioeconomic status of students graduating or not graduating from high school. The results showed a relationship between the variables. The removal of BlackPer and HispPer reduced the VIF score and the model regained significance. The percentage of special education students is not significant. The R Squared was .610, indicating that 61% of the variance in the graduation rate is explained by student mobility, socioeconomic status, and limited English proficient students.

Therefore, results of this study indicate that mobility, along with socioeconomic status and limited English proficiency, are statistically significant predictors of the graduation rate in New Jersey public high schools.

Research Question 2: How is the influence of the student mobility rate on the graduation rate influenced by the controlled school characteristic variables of school size and teacher mobility?

The R Squared change tells the reader how much the variable contributes to the model. In the fourth hierarchical regression model, the R Squared change was .009 when adding the variable teacher mobility. This indicated that

only.9% of the variance in the graduation rate was explained by adding teacher mobility. Furthermore, the beta was -.095, confirming that it is not a strong predictor of the graduation rate because a beta closer to 1 has a stronger predictive power.

The summary for Model 2 including enrollment was not statistically significant (p=.305); therefore, the size of the school is does not influence the graduation rate in New Jersey public schools. (See Table 4)

Table 4

Hierarchical Regression Student Mobility and School Size

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Change Statistics				
					R Square Change	F Change	df1	df2	Sig. F Change
1	.686[a]	.470	.469	8.13700	.470	278.936	1	314	.000
2	.687[b]	.472	.469	8.13627	.002	1.056	1	313	.305

a. Predictors: (Constant), Student_Mobility_Rate

b. Predictors: (Constant), Student_Mobility_Rate, Total_Enroll

Research Question 3: How is the influence of the student mobility rate on the graduation rate influenced when controlling for both student and school characteristics?

When controlling for significant student and school characteristics, the model summary provides an R Squared of .614, which indicated that 61% of the variance in the graduation rate is explained by the significant student and school characteristics of student mobility, free lunch, limited English proficient, and teacher mobility.

Thus, the results of this study indicated that student mobility, socioeconomic status, limited English proficient, and teacher mobility are statistically significant predictors, accounting for 29% of the graduation rate in New Jersey public high schools.

The null hypotheses were rejected. Student mobility was a statistically significant (p=.000) predictor variable with a beta of -.686 and a t value of -.16.701. Student mobility is a strong predictor of the graduation because the beta (-.686) is close to 1 and the closer the beta is to 1, the stronger the predictive power. Student mobility's influence on the graduation rate is negative as indicated with the negative beta.

Summary

Student mobility and socioeconomic status accounted for the greatest amount of variance in the graduation rate – 60%. The results from this study suggest that factors school personnel cannot control play a part in determining the graduation rate of that school and school district.

Implications for Practice

New Jersey's public high schools continue to be driven by federal and state legislation with strong accountability measures that include

reporting the graduation rate and sanctions for schools not producing graduates. Under the current accountability mandate, schools with a graduation rate below 75% are identified as either a Priority or a Focus school, and those with the lowest achievement and graduation rates are identified as Priority schools (NJDOE, 2012b).

While this accountability measure is in place with schools being sanctioned for not meeting the graduation target rate, no empirical quantitative evidence exists on the relative influence variables that schools and districts cannot control, such as student mobility, have on the graduation rate.

The results of this study revealed that mobility was a statistically significant variable that negatively influenced the graduation rate. This means that schools with a high mobility rate tend to have lower graduation rates. The more mobile the community, the likelihood the graduation rate is low.

These results highlighting the negative relationship between student mobility and graduation rates is consistent with the literature when considering the studies of researchers on student mobility and the dropout rate, student achievement, and academic achievement.

The significance of this finding lies in the fact that school officials have absolutely no control on students being mobile, yet they are being held accountable for ensuring that all students graduate from high school and that the school reaches the acceptable graduation rate.

The reason graduation rates are affected by student mobility is that mobile students suffer from lower academic achievement. In some cases, this is due to mobile students not being properly assessed when they enter a new school, resulting in inappropriate classroom placement. In this instance, the mobile student may be in a class where the lesson is moving too fast or too slow. Inaccurate placement and constant movement and changing of schools could result in a mobile student missing portions of the curriculum.

Even with the gaps in curriculum and learning, mobile students are still required to take and pass state mandated assessments. In addition, curriculum delivery varies, as no two teachers teach in the exact same manner. Mobile students have to adjust to different teaching styles more often than non-mobile peers.

The constant changing of schools creates social issues for mobile students. While humans have a basic desire to be loved and have loving relationships with people, including trusting people (Goble, 1970), each move requires mobile students to create new friendships and build trusting relationships with peers and school personnel.

Students' social interaction can be strained since peer groups are already established. These students have to learn with each move which person in the school provides what type of service. Each change in schools makes it difficult for the mobile student to connect with the school community, resulting in the mobile student not being actively engaged in the school. This effect of student mobility ultimately affects students academically.

High student mobility adversely affects the academic achievement of non-mobile students and the school as a whole. In some cases, the pacing of the curriculum becomes problematic. Teachers in schools with high mobility rates often find themselves adjusting or restarting curricular topics to address the gaps in the mobile students' learning experiences. They stress that the constant

movement of the mobile student requires them to spend more time on tasks not related to instruction.

As a result, teachers are left with very little to no time to identify gaps in curriculum knowledge (U.S. GAO, 1994). New students added to classrooms during the year require shifts in lesson planning. This shift and slower pace ultimately affects the academic achievement of all students.

A study conducted in California showed that the test scores of non-mobile high school students were significantly lower in highly mobile high schools (Rumberger, Larson, Ream, and Palardy, 1999). Much of this is due to the slower pace of the curriculum and the increased socially related issues of the school as a whole.

The NJDOE has created Regional Achievement Centers (RACs) to assist struggling schools identified as Priority Schools and Focus Schools. The NJDOE believes "if interventions are implemented faithfully … each Priority and Focus School should achieve sustained, positive growth in student achievement that dramatically narrows the achievement gap and sets schools on a trajectory for preparing all students for college and career" (NJDOE, 2010b).

Part of the RACs' approach is to monitor student performance and progress in Priority Schools during six to eight week cycles and annual performance on state mandated assessments (NJDOE, 2010b). Currently, a number of high schools have been labeled as a Priority School or a Focus School because of their graduation rate. While these schools have graduation rates below 75%, their mobility rate is significant, as they only report mobility for the high school and not what may have happened prior in the elementary and middle schools (see Table 5).

Table 5

Priority Schools and Focus Schools Due to Graduation Rate

SCHOOL NAME	Adjusted Cohort Gradation Rate	Student Mobility Rate
Camden High School*	44.69	66
Salem High School	67.88	44.1
Asbury Park High School	59.46	41.8
T. Jefferson Arts Acad High School	53.55	35.5
Adm. W. F. Halsey Ldrshp High School	60.27	33.6
John E. Dwyer Tech Acad High School	55.88	33.2
Bridgeton High School	67.96	30.8
Lincoln High School*	55.39	28.1
Willingboro High School	69.82	26.4
West Side High School*	53.71	25.9
Henry Snyder High School*	51.58	25.7
Barringer High School*	35.91	25.3
Malcolm X Shabazz High School*	63.66	25.3
Paulsboro High School	62.16	22.1
New Brunswick High School	58.76	20.7
Irvington High School	50.47	18.9
Plainfield High School	70.12	18.9
Atlantic City High School	67.98	18.4
Lakewood High School*	70.11	17.7
Penns Grove High School	74.03	17.4

William L Dickinson High School	69.96	16.1
Pleasantville High School	64.29	15.7
Hillside High School	66.12	15
Memorial High School	72.77	12.1
Orange High School	58.28	11.3
Manchester Reg High School	73.42	11
Passaic High School	62.7	9.9
Liberty High School	74	9.4
Academy High School	71.93	6.7

*Sig Grant School

Poverty, mobility, and the graduation rate in New Jersey have a connection. The high schools labeled Priority Schools and Focus Schools because of the graduation rate have a high mobility and poverty rate or a high mobility or high poverty rate. For example, Passaic High School has a student mobility rate of 9.9%, while the poverty level in the city of Passaic is three times that of the state at 35.9%. Willingboro High School has a poverty rate relatively close to the state's rate at 14.5%. However, the mobility rate is 26.4%. Camden High School, Salem High School, and Asbury Park High School have the lowest graduation rate and the highest percentage of poverty at 50.3%, 43.4%, and 44.9%, respectively, representing close to five times the state's level (see Table 6).

Table 6

Priority Schools and Focus Schools with Poverty Levels

SCHOOL NAME	Adjusted Cohort Gradation Rate	Student Mobility Rate	Poverty Levels for the City
Camden High School*	44.69	66	50.3
Salem High School	67.88	44.1	43.4
Asbury Park High School	59.46	41.8	44.9
T. Jefferson Arts Acad High School	53.55	35.5	23.5
Adm. W. F. Halsey Ldrshp High School	60.27	33.6	23.5
John E. Dwyer Tech Acad High School	55.88	33.2	23.5
Bridgeton High School	67.96	30.8	35.4
Lincoln High School*	55.39	28.1	28.1
Willingboro High School	69.82	26.4	14.5
West Side High School*	53.71	25.9	34.9
Henry Snyder High School*	51.58	25.7	28.1
Barringer High School*	35.91	25.3	34.9
Malcolm X Shabazz High School*	63.66	25.3	34.9
Paulsboro High School	62.16	22.1	24.4
New Brunswick High School	58.76	20.7	25.4
Irvington High School	50.47	18.9	24.4
Plainfield High School	70.12	18.9	23.5
Atlantic City High School	67.98	18.4	36.6

Lakewood High School*	70.11	17.7	36.0
Penns Grove High School	74.03	17.4	41.2
William L Dickinson High School	69.96	16.1	28.1
Pleasantville High School	64.29	15.7	24.7
Hillside High School	66.12	15	15.7
Memorial High School	72.77	12.1	23.6
Orange High School	58.28	11.3	24.6
Manchester Reg High School	73.42	11	9.9
Passaic High School	62.7	9.9	35.9
Liberty High School	74	9.4	28.1
Academy High School	71.93	6.7	28.1

(NJDOE, 2012)

Recommendations for Future Research

I suggest the following for future research:

1. Recreate this study in other states and at the national level and compare the findings.
2. Conduct a study on the academic achievement of non-mobile students in highly mobile schools in New Jersey.
3. Design a study that closely examines the mobility of New Jersey students who have not graduated from high school.
4. Conduct a study that investigates the relationship between the mobility rate and students' performance on state-mandated tests.
5. Conduct a study on teacher and administrator perception of mobility and accountability.

Author's Note: This article is based on the conference presentation "The Influence of Student Mobility on High School Graduation: A Statewide Study," given at the annual meeting of the American Education Research Association, Chicago, IL, April 20, 2015.

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