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

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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.

Keywords: student mobility, graduation rate, low socioeconomic status

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I can do all things through Christ who strengthens me.

– Philippians 4:13

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Dedication

This work is dedicated to my family, friends, cohort, students, pastors, and church family. I so appreciate and love all of you.

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Blessed are the poor, for theirs is the kingdom of heaven.

– Luke 6:20

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CHAPTER I

INTRODUCTION

Background

The No Child Left Behind Act of 2001 (NCLB), the most recent update to the Elementary and Secondary Education Act of 1965 (ESEA), required schools to meet certain accountability measures in order to achieve Adequate Yearly Progress (AYP). Amongst the provisions mandated for schools to make AYP is the inclusion of a graduation rate for secondary public schools. The law itself requires all states to define AYP in a way that "applies the same high standards of academic achievement to all public elementary school and secondary school students in the State" and "includes graduation rates for public secondary school students." (NCLB, SEC. 1001) It further defines the graduation rate as "the percentage of students who graduate from secondary school with a regular diploma in the standard number of years" (SEC 111 (b) (2) (c) (vi).

In order to strengthen and improve public high school accountability within Title I regulations, 34 CFR part 200 of the NCLB Sec. 200. 19 was amended on October 29, 2008, to enact a precise and consistent measure for calculating the high school graduation rate. The U.S. Department of Education reported that "NCLB allowed states to mask schools with low graduation rates by lacking a requirement for how graduation rate had to be calculated" (United States Department of Education [USDOE] 2012). State Education Agencies (SEAs) and Local Education Agencies (LEAs) are now required to report the four-year adjusted cohort graduation rate by student subgroups on the SEA and LEA report cards and use this information in making AYP determinations for schools, LEAs, and the State. "Previously, schools were not responsible, under federal law, for the

graduation rates of students of color, English language learners, low-income students and students with disabilities" (Alliance for Education, 2013, p. 7).

In 2012, the United States Department of Education (USDOE) provided each SEA with the ability to request for itself or its LEAs flexibility in following the mandates of NCLB. In order for an SEA to receive a waiver, it must submit a plan to address four principles, one of which focuses on state-developed differentiated recognition, accountability, and support measures which, amongst other requirements, require all SEAs to be accountable for the graduation rate for all students and subgroups (USDOE, 2012). 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).

States receiving the flexibility waiver have incorporated the four-year adjusted cohort graduation rate into the recognition, accountability, and support systems and have identified Title I schools that have a graduation rate below 60%. Furthermore, these states have "used graduation rate targets, including for subgroups, to drive incentives and supports in all other Title I schools" (USDOE, 2012, p. 1). The waiver also requires SEAs to focus on high schools with a consistently low graduation rate. In addition, each state and school district is required to report on state and local report cards the four-year adjusted cohort rate, including the graduation rate of the subgroups (USDOE, 2012).

New Jersey is one of 45 states to submit a request for ESEA flexibility and is one of the 34 states to receive approval. As part of the waiver request, New Jersey plans to implement changes to address the three principles outlined in the waiver application: College and Career-Ready Expectations for All Students; State-Developed Differentiated

Recognition, Accountability and Support; and Supporting Effective Instruction and Leadership (New Jersey Department of Education, 2012). New Jersey's waiver plan includes information as required within the application with some modification. For example, all schools with a graduation rate below 75% as opposed to 60% are identified as either Priority or Focus schools. Schools with the lowest achievement and graduation rates are identified as Priority schools (NJDOE, 2012).

Prior to submitting the request for flexibility, New Jersey utilized two accountability systems. It utilized the NCLB measures to hold schools and districts accountable for student performance by focusing on the results of the New Jersey Assessment of Skills and Knowledge and the High School Proficiency Assessment. New Jersey's Quality Single Accountability Continuum (QSAC) served as another accountability measure where student performance was only one of the five components. As indicated in the approved request for flexibility, "New Jersey is building a unified accountability system that will streamline QSAC and modify NCLB…to report on metrics that truly reflect schools' and districts' success" (NJDOE, 2012b). The Performance Report, New Jersey's new accountability system, is designed to give a report on school performance and "indicate how each school is contributing to the State's ultimate goal: preparing all students for success in college and career" (NJDOE, 2012b). Amongst the various data points reported on the Performance Report is the high school graduation rate. The tables used to report the graduation rate for the school presents the rate for each subgroup in the school with comparisons to peer schools and the state average (NJDOE, 2012b).

During a time with strong federal and state demands for accountability, mobility has become a challenge many U.S. schools now face. Even with these new requirements and the many amendments, no provisions were made or guidance provided to address mobility as a factor that influences the graduation rate but remains administratively mutable. According to Titus (2007), high student mobility is associated with low test scores and lower academic achievement; and even though these challenges exist, "many schools have not yet implemented procedures to minimize the adverse effects of student mobility" (Wasserman, 2001, p. 90). Research conducted by Rumberger and Larson (1998) suggests that Black and Hispanic students change schools more so than Asian and White students and students from a high socioeconomic status. Swanson (2004) found that American Indian, Hispanic, and Black students do not graduate from high school at the same rate as White students and that low socioeconomic disadvantaged districts have low graduation rates.

Mobility has been an issue studied by researchers for many years. Greene and Daughtry (1961) studied factors associated with mobility and found that "population mobility is increasingly becoming a significant behavioral characteristic in modern life" (p. 36). Bollenbacher (1962) studied Grade 6 students to identify the effect of mobility on achievement. Students identified the number of schools they attended from first to sixth-grade. The data revealed that 33% of the students moved more than once and attended three or more schools. The intelligence tests of these students indicate that they were less capable than those who were not as mobile. In their study of high school Black males, Stroup and Robins (1972) identified student mobility as one of the predictors in elementary school of future high school dropouts.

Statement of the Problem

The importance of educating students to high school graduation takes on an important role in political and policymaking arenas because of the accountability measures that are now in place. NCLB required all states to implement a single accountability system. As a result, New Jersey utilizes 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 bureaucrats calculate the adjusted cohort graduation rate for New Jersey's public schools, publishes this rate on the New Jersey School Report Card, and includes this data in the calculation of the Adequate Yearly Progress (AYP) of each 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). This formula is still used with the new Performance Report resulting from New Jersey's approval for ESEA flexibility. 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. This formula, however, does not take into account student mobility and the potential influence of student mobility

on a high school's graduation rate. Student mobility is one of those factors that affect school's graduation rate, yet school personnel have no control over it. No research exists on the influence of student mobility on the New Jersey graduation rates as calculated by the adjusted cohort graduation formula.

Purpose of the Study

My purpose for 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

My aim was to explain the influence of the student mobility rate on the graduation rate of high schools in the state of New Jersey. The overarching research question that was answered is as follows: What is the influence of the student mobility rate on the graduation rate of New Jersey's high schools?

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?

Hypotheses

Null Hypothesis 1: No statistically significant relationship exists between the graduation rate and the student mobility rate as reported on the New Jersey School Report Card and Performance Report for New Jersey's public comprehensive high schools.

Null Hypothesis 2: The percentage of student mobility in a high school does not account for a statistically significant amount of variance in New Jersey public high school graduation rates.

Design and Methodology

This quantitative, correlational, explanatory study utilized annually published data from the NJDOE's website representing the 2010-2011 school year and published during the 2011-2012 school year. This type of design was appropriate since I examined how a number of variables were related to a major complex variable and to what degree this relationship existed (Gay, Mills, & Airasian, 2012). This design allowed the researcher to predict the influence of the variables on the major complex variable.

The sample for this study consisted of 316 public high schools excluding magnet schools, vocational schools, charter schools, and special education schools. All data representing each of the 316 schools were utilized in a multiple regression analysis and a hierarchical regression analysis using either the "simultaneous" or "entry" method.

Independent/Predictor Variables

Research has discussed the specific predictor variables that could be influential. These include those considered student characteristic variables and school characteristic variables. Student characteristic variables are those factors that schools cannot control. This included the socioeconomic status as indicated by the percentage of students receiving free and reduced-price lunch and the ethnicity of the student, the percentage of students within the school who are labeled special education or limited English proficient, and the percentage of those students who are mobile. School characteristics are those factors which schools and districts can control, and this includes the size of the school and teacher mobility. Teacher mobility is a somewhat opaque variable, though, due to the fact that the teacher mobility rate pertains to the entire school and is not connected to a specific group of students or individual students.

Dependent/Outcome Variable

The graduation rate is an accountability measure that determines the status of the school. It is also used to determine if a school is a Priority School or a Focus School. If a school has a graduation rate 75%, it is labeled a Priority School or a Focus School. Schools with the lowest achievement and graduation rates are labeled Focus Schools (NJDOE, 2012).

Conceptual Framework

Mulroy (2008) examined school related factors that influenced students with risk factors associated with dropping out of school in a school district in northeastern Pennsylvania. These risks included poverty, special education and English language learners, and school size; however, one conclusion of the study showed that the large size

of the school was not a factor, based on the participants in the study. Dalton (2003) 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 non-mobile students, mobile and non-mobile 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.

Significance of the Study

NCLB states that the purpose of the law is "to ensure that all children have a fair, equal, and significant opportunity to obtain a high quality education" and that this can be accomplished by "ensuring that high-quality academic assessments, accountability systems…meet the educational needs of low-achieving children in our Nation's highest-poverty schools... and [by] improving and strengthening accountability" (NCLB, SEC 1001).

New Jersey's ESEA Flexibility Request highlights the goal of the NJDOE, which is "to ensure that all children, regardless of life circumstances, graduate from high school ready for college and career" (NJDOE, 2012b, p. 15). The accountability measure through which New Jersey has selected to report this information is Performance Reports,

which include achievement and graduation data reported by subgroups and compared to the state average and peer schools.

Is the accountability system for gauging how well high schools are producing graduates sufficient and efficient? Although the new federal definition of a graduate and the adjusted cohort graduation rate will provide a consistent means for reporting graduation rates across the United States and provide data to ascertain areas needing improvement, it does not take into account those students who are forced to change schools repeatedly due to the family moving from one residence to another.

The results from this study provide policy makers, schools, and district administrators with information on the possible influence student mobility has on the graduation rate and what resources and programs may be needed to address this uncontrollable factor. This study will add to the body of research by addressing the correlation between student mobility and the graduation rate with regards to its effects on a school's graduation rate. Further, this study will either support or challenge the current means of reporting the graduation rate and add to the body of literature and research by highlighting how factors not accounted for, such as student mobility, factor into the graduation rate calculation.

Many studies on or related to mobility and the graduation rate use data from longitudinal studies, large city school districts, or urban school districts. The data for this study pertain to the entire state and include high schools from every county, making it a statewide study. In addition, many studies use simple Pearson correlations to explain the relationship between the variables. Although this study reports the Pearson correlation, it also utilizes hierarchical regressions to identify the influence of the variables.

Current literature is clear and consistent about the causes and effects of mobility (Rumberger, 1987, 2003; South, Haynie, Bose, 2005; Titus, 2007). The literature also presents the effects of mobility on academic achievement with the primary focus on mobility and academic achievement in elementary schools (Heinlein & Shinn, 2000; Ingersoll, Scamman, & Eckerling, 1989; Swanson & Schneider, 1999; Temple & Reynolds, 1999; Wright, 1999). Missing from the literature are studies that focus on the uncontrollable factors that influence graduation rates.

Limitations

Because this study is a correlational design, the results explain the relationship between the percentage of student mobility in a high school and the school's graduation rate. Hence, the correlation design cannot be used to draw conclusions about the cause-effect relationship between the two variables or the impact of one variable upon another. "To infer cause and effect, it is necessary to conduct a controlled experiment involving an experimenter-manipulated independent variable in which subjects are randomly assigned to experimental conditions" (Salkind, 2010, p. 264). Two variables with a high correlation do not suggest that one caused the other, but it does allow for a possible prediction of outcomes (Gay, Mills, & Airasian, 2012). According to Gay et al. (2012), "Rarely are two variables perfectly uncorrelated, but many are sufficiently related to permit useful predictions" (p. 205).

This study is considered nonexperimental, cross-sectional research. According to Belli (2009), nonexperimental research is not as certain as experimental since the element of random assignment is omitted. Furthermore, the data used in the study come from one point in time, a single year, and thus are not longitudinal.

Delimitations

The data used in this study were retrieved from the 2011 NJDOE School Report Card for all public high schools within the state. The graduation rate and the student mobility rate drawn from the NJDOE School Report Card are the primary data sources. All data pertain to the 2010-2011 and 2011-2012 school years.

Although student mobility can occur at any time during a student's educational years, this study pertains only to the student mobility rate as reported by high schools in New Jersey. Because of this, the research in this study does not identify mobility issues that occur in the earlier grades.

This study is limited to New Jersey. The type of high school used in the research is another boundary of the study. Only data from public, comprehensive high schools were included. Other high schools such as charter, alternative, private, parochial, faith-based, and vocational are not represented in the data.

Dependent/Outcome Variable

The reporting of the graduation rate became a requirement as one of the accountability measures of NCLB in order to achieve AYP (NCLB, SEC. 1001). Currently, states receiving the flexibility waiver must incorporate the four-year adjusted cohort graduation rate into the recognition, accountability, and support systems and identify Title I schools that have a graduation rate below 60% (USDOE, 2012). In addition, states must incorporate the graduation rate targets, including those for subgroups (USDOE, 2012). Thus, the dependent variable in this study was the graduation rate.

Independent/Predictor Variables

Student mobility is defined as "students moving from one school to another for reasons other than being promoted to the next school level" (Rumberger, 2002, p. 1). In this study, mobility is not the moving from one school to an in or out of district school or any type of school change based on district personnel decisions. In addition, the mobility rate does not account for the possible lapse of attendance in school which may occur with mobile students.

The NJDOE reports on the New Jersey School Report Card various indicators as information about schools and districts. The independent variables in this study were mobility rate, school size, socioeconomic status, limited English proficient, special education, and ethnicity. The school report card data for these predictor variables are described as follows:

- Mobility Rate – The percentage of students who enter and leave during the school year
- School Size – Enrollment by grade data for Grades 9-12
- Socioeconomic Status – Free and reduced-price lunch data and district factor group information
- Limited English Proficient (LEP) - Data of the percentage of LEP students
- Special Education – Data of the percentage of students with disabilities
- Ethnicity – The percentage of Hispanic and Black students
- Teacher Mobility – The percentage of teachers who enter and leave during the school year

Definition of Terms

Accountability: NCLB guidelines require each state to devise and implement a plan to identify how and when adequate yearly progress will be met.

Achievement Gap: The difference in performance levels between low-income and minority students as measured against their peers.

Adequate Yearly Progress (AYP): Measures the progress of public schools based on academic standards.

Adjusted Cohort Graduation Rates: As defined in 34 C.F.R. §200.19(b)(1)(i)-(iv), the four-year adjusted cohort graduation rate is the number of students who graduate in four years with a regular high school diploma divided by the number of students who form the adjusted cohort for the graduating class.

District Factor Group (DFG): The system the state of New Jersey uses to identify the socioeconomic status of schools and school districts. The factor groups range from A, which has the lowest socioeconomic status, to J, which is considered a wealthy district.

High School: For the purpose of this study, high school refers to public high schools and does not include private or charter schools.

New Jersey Performance Report: An enhanced revision to the school report card with attention on college and career readiness data.

New Jersey Report Card: A report containing a plethora of data and various pieces of information produced annually by the NJDOE for New Jersey schools.

Socioeconomic Status: The economic status of a school or district based on the income of the residents of that community.

Student Mobility: The percentage of students who enter and leave a school during the school year.

Organization of the Study

Chapter I of the study presents a brief history of the government's role in American education and an overview of the problems associated with the graduation rate and its relationship to the student mobility rate. Chapter II presents a review of the literature pertaining to graduation rates and student mobility. Chapter III explains the design methods and procedures for this study. Data were collected from the NJ School Report Card. Chapter IV illuminates the data and statistical findings of the two variables. Chapter V shows the statistical summary and the implication for educational policies and practice. The conclusion of the study is based on the research question: What is the strength and direction of the relationship between the student mobility rate and the graduation rate percentages as reported on the New Jersey School Report Card?

CHAPTER II

REVIEW OF THE LITERATURE

Introduction

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. The review of literature is comprised of the following sections: Graduation Rate vs. Dropout Rate, Student Mobility, Causes of Student Mobility, Effects of Student Mobility, Characteristics of Mobile Students, Mobility and Academic Achievement, Student Mobility and School Dropout/Graduation, Size of the School, Students with Disabilities, English Language Learners, Socioeconomic Status, Minority Students and School Completion, Teacher Mobility, and Theoretical Framework.

The purpose for the review was to identify studies that attempted to determine the significance of the school variables of teacher mobility and school size and student variables of English language learner, students with disabilities, socioeconomic status and minority students. The desire was to inform government officials, education leaders, researchers, and policy makers of the influence mobility has on the graduation rate, a rate used to determine success or failure for many high schools.

Literature Search Procedures

In order to thoroughly attend to the topics included in this study, searches were conducted to identify rich, relevant literature on each variable. The literature reviewed for this study came from a variety of texts, government reports, and academic articles obtained from EBSCOhost, ERIC, JSTOR, Sage, the Census Bureau, the United States Department of Education (USDOE) website, and the New Jersey Department of

Education's (NJDOE) website. From the NJDOE website, New Jersey Report Card data were examined to review the variables that were used in this study. Other data from the NJDOE website included the adjusted cohort graduation rates, the mobility rate, school size, percentage of special education students, percentage of LEP students, teacher mobility rate, and data on free and reduced-price lunch. General intent-based searches were also conducted, utilizing Google Scholar.

A review of the actual NCLB law provided the purpose of the law and requirements of reporting the graduation rates and dropout rates. In addition, a review of the NCLB Flexibility Waiver guidelines from the USDOE website and New Jersey's application for a waiver provided current information New Jersey used in applying for the waiver and the accountability measure the graduation rate holds for each school.

Keywords used in the study included graduation rate, dropout rate, academic achievement, mobility rate, socioeconomic status, special education students, limited English proficient students, Black and Hispanic students, school size, NCLB, and teacher mobility.

Inclusion and Exclusion Criteria for Literature Review

Studies that met the following criteria were included in this review:

1. Involved public schools in the United States
2. Included a sample that consisted of grades K-12 in a variety of combinations
3. Used experimental, quasi-experimental, correlational, and meta-analysis designs
4. Peer-reviewed dissertations

5. Used quantitative methodology. Only one study used qualitative methodology and was included in order to add to the theoretical base
6. Published within the last 30 years unless considered seminal work that provided the beginning of later developments
7. Literature from government reports
8. Federal and state legislation as background and contextual information
9. Provided descriptive information that added clarity to the topic

An Overview of the History of Government in Education

There is historical precedence for a federal agency, in this case the Department of Education, to set policies that influence education in local municipalities. Despite the fact that education is not mentioned in the United States Constitution, the federal government has passed various legislative mandates; created programs, agencies, and reports; conducted studies; and voted on budgets, all for the sake of improving and enhancing education for America's children and ensuring equal access to educational programs. I have presented just a few examples from the last 100 years as context for understanding the DOE's role in standardizing the calculations for the graduation rate.

The National Advisory Committee on Education, established in 1929, released a report two years later that addressed issues facing the federal government. The report presented a clear position on state and local control of education, how the government was interfering with state and local districts because of the stipulations placed on federal grants, and a recommendation to create a Department of Education (Judd, 1932). This recommendation was not realized until 1979.

The National School Lunch Act (NSLA) was adopted in 1946. It was considered as a significant piece of legislation that brought about "fuller federal participation in primary and secondary education" (Carleton, 2002, p. 87). NSLA ensured that all students were able to receive nutritious lunch since "educationally, it was assumed that well-fed and nourished children learned better in school" (p. 88).

During the presidency of Lyndon Johnson, his administration focused on and declared war on poverty. The Economic Opportunity Act (EOA) of 1964 was a part of Johnson's program to eliminate poverty, with education being one of the most important ways to do this. At the core of the EOA was educational spending, which allowed for the creation of the Head Start program and the Job Corps training programs. One of the largest education bills, the Elementary and Secondary Education Act of 1965 (ESEA) extended funding to 90% of all U.S. schools in order to enhance education for the most economically disadvantaged students (Carleton, 2002).

> In recognition of the special educational needs of low-income families and the impact that concentrations of low-income families have on the ability of local educational agencies to support adequate educational programs, the Congress hereby declares it to be the policy of the United States to provide financial assistance… to local educational agencies serving areas with concentrations of children from low-income families to expand and improve their educational programs by various means (including preschool programs) which contribute to meeting the special educational needs of educationally deprived children (Section 201, Elementary and Secondary School Act, 1965).

Incorporated as part of the ESEA, the Bilingual Education Act (1968) was the first piece of legislation to focus on language and culture by assisting limited English speaking children. Programs were created to provide direct instruction to bilingual students and to train teachers who instruct these students. Also, funds were appropriated to meet the goals of this act.

The day-to-day operation of all public schools changed with P.L. 94-142, the Education for all Handicapped Children Act of 1975. This piece of legislation was enacted so that all children, even those with disabilities or handicaps, would receive free and appropriate public education in the least restrictive environment (Carleton, 2002).

In 1979 Congress passed the Department of Education Organization Act (DEO) to establish the Department of Education (DOE) as an executive department in the federal government. Specifically, Section 101 presents findings to justify the "presence" of the federal government in education. One of the ten findings states that "there is a continuing need to ensure equal access for all Americans to educational opportunities of high quality, and such educational opportunities should not be denied because of race, creed, color, national origin, or sex" (Section 101). Section 103 indicates the reason to create the Department was "to protect the rights of state and local governments and public and private educational institutions" (Section 103a).

Standards, assessments, and accountability measure became the focus for American schools with the Improving America's Schools Act of 1994 (IASA). This act reauthorized the Elementary and Secondary Education Act of 1965 and required states to adopt content standards, created assessments aligned to the standards in three different

grade spans, and instituted an accountability system that would "identify school that were not helping all students perform as expected on those assessments" (Jorgensen, 2003, p. 4).

The most recent update to the Elementary and Secondary Education Act of 1965 (ESEA), The No Child Left Behind Act of 2001 (NCLB), was created to enhance student achievement through even stronger accountability measures. One of the accountability measures for high schools is the reporting of a graduation rate for all students (NCLB SEC. 1001). Most recently, the federal government has allowed states to submit a request for a waiver from NCLB. One provision of the ESEA flexibility waiver required states to adopt the adjusted cohort graduation rate as the method to calculate the graduation rates for each school and focus on those schools with consistently low graduation rates.

Existing Reviews on the Influence of Mobility on High School Graduation

Specific studies on the influence of mobility on the high school graduation rate do not exist. When searching for literature on this topic, I found studies that examined the following:

- The impact of mobility on achievement
- Mobility and post-secondary or college completion
- Factors that contribute to graduation
- The influence of high stakes testing on the graduation rate

However, the majority of the research related to mobility and the graduation rate are studies on the relationship of mobility and high school dropout.

Existing Significance of Mobility on Graduation

No specific studies exist on the influence of mobility on the graduation rate; however, studies do exist on the influence of mobility on students dropping out of school. Studies show that students who frequently change schools did not receive a regular high school diploma (Astone & McLanahan, 1994; Rumberger & Larson, 1998). Gasper, DeLuca, and Estacion (2012) conducted a study which showed that the dropout rate for students who remained in the same high school had a dropout rate of 8.1% versus those who changed high schools two times at 19.1%, three times at 25.9% and six or more times at 100%.

Focus of the Review

The use of the dropout rate served as the measure of high school completion for many years until NCLB provided specific language regarding the way to report this information. Because no specifics on how to calculate the graduation rate were spelled out in the NCLB legislation, different states calculated the graduation rate differently (Alliance for Excellent Education, 2013). The ESEA waiver brought consistency to the calculation of the graduation rate. One difference in this review is the need to explain the difference in the graduation rate and the dropout rate.

In order to demonstrate the connection between mobility and the graduation rate since there are no existing empirical studies, a complete description of studies for each variable have been included in the literature review. Furthermore, studies in mobility and academic achievement are included, using academic achievement as a close connection to graduation.

Although there is an abundance of research on mobility and academic achievement, few researchers examine data on mobility and academic achievement as it connects to graduation rates. In addition, there is a great deal of research on student mobility. No study has examined the influence of the mobility rate on the graduation rate even though research shows that students who are highly mobile are characterized as having low socioeconomic status and being an immigrant, Black, or Hispanic student.

Limitations of the Review

The limitations of this study are centered on the sparse amount of research on mobility, academic achievement, and high school students. The vast majority of the research focuses on elementary students and how mobility affects them academically and socially.

Review of Literature Topics

Graduation Rate versus Dropout Rate

For many years, the measurement of high school completion at the state, local, and national levels has been done through the calculation of a dropout rate with Graduate Equivalency Diploma (GED) recipients not being considered dropouts (Warren & Helpern-Manners, 2009). The passing of No Child Left Behind (NCLB) became the catalyst for removing GED recipients from the count and moving to calculating the number of students who receive a diploma as outlined by states' policies and standards (Heckman & LaFontaine, 2010). This change in the graduation rate calculation brought about a change in the definition of a dropout as one who quits school before earning a high school diploma, thus defining a graduate as one who remains in school and earns a

high school diploma (Rumberger & Palardy, 2005). The Common Core of Data (CCD) has been reporting the dropout and graduation rates for years and defines a dropout as

> A student who was enrolled in school at some time during the previous school year; was not enrolled at the beginning of the current school year; has not graduated from high school or completed a state- or district-approved educational program; and does not meet any of the following exclusionary conditions: has transferred to another public school district, private school, or state- or district-approved educational program; is temporarily absent due to suspension or school-approved illness; or has died. (USDOE, 2013 p. A-3)

The CCD's definition of the dropout rate is "the percentage of students enrolled in any of Grades 9 through 12 at the beginning of a school year who are dropouts as of the beginning of the subsequent school year" (Stillwell & Sable, 2013). Similarly, New Jersey defines a dropout as a student who "has terminated his or her education before graduation or when a district cannot verify that the student is pursuing an education toward a regular diploma in another educational location" (NJDOE, 2012b). This is a student who "left school to get a GED, has not shown up for ten consecutive days and/or his or her whereabouts are unknown, and is purported to be homeschooled but produced no documentation" (NJDOE, 2012b). New Jersey's definition of the dropout rate is "the percentage of students who are classified as a dropout" (NJDOE, 2012b). Conversely, according to the CCD, a graduate is one who has received a regular high school diploma.

For years, many authors discussed the need for a common means of calculating the graduation rate. Some reports state that there is no clear direction or consistent measure for obtaining a graduation rate because of the different means of collecting data

and the different types of data collection. As a result, different methodology can produce different results (Warren & Halpern-Manners, 2009). Heckman and LaFontaine (2010) state "depending on the data sources, definition, and methods used, the U.S. graduation rate is claimed to be anywhere from 66% to 88%" (p. 244). Heckman and LaFontaine (2010) reviewed two data sources, Current Population Survey (CPS) and Common Core of Data (CCD) to examine if graduation rates are as low as reported in previous studies and found that the "high school graduation rate is neither as low as some claim nor as high as many believe" (p.260). Using the same definition and methodology to calculate the graduation rate, all of the data sources agree (Heckman & LaFontaine, 2010).

The topic of calculating the graduation rate became the theme of many debates once NCLB incorporated the graduation rate as an indicator in determining AYP. Even though NCLB's intention was to obtain the rate of students who graduated from high school, the USDOE approved many state-created calculation rates, even those not accounting for NCLB's definition of graduation rates resulting in a disparity in the calculation of the state graduation rate (Alliance for Excellent Education, 2013). Thus, the literature focused on the graduation calculation debate.

In 2005, the National Governors Association (NGA) developed a method that states would use for calculating the graduation rate. This method, also referred to as the Compact Formula, required states to commit to the formula and create an accurate means for collecting graduation data (NJDOE, 2012a). The NGA felt the need to adopt consistent measures of obtaining and calculating comparable data since states employed various policies in accounting for students. These policies ranged from paper records to computerized student information systems. Some states simply removed missing students

from the role as if they were never a part of the school system. Some dropout rates were reported from those who left school during senior year, leaving out those who may have dropped out before Grade 12. The four-year adjusted cohort model was used to determine the AYP of a school. The NCLB regulation also required states to include student demographics in the report (Lloyd, 2012). Furthermore, this model has become the preeminent factor required in each state's ESEA Flexibility Request as of October 2008 (NJDOE, 2012b).

Student Mobility

Historically, Americans have been moving since the Great Migration and Great Depression. According to the U.S. Census report for 2010, 35.4% of those surveyed moved during the five-year period of 2005-2010 (Ihrke & Faber, 2012). Families move for positive reasons such as the desire to live closer to extended family members or to pursue advancement in employment. This type of residential move results in a "purposeful, proactive school change" (p. 240), which Ream (2003) describes as strategic mobility. Moves for other reasons such as home foreclosure, housing needs, divorce, and lack of employment are described in Ream's (2003) definition of reactive mobility and in Swanson and Schneider's (1999) definition of residential mobility, all of which can result in negatively impacting the child.

The data show that minorities and low socioeconomic families have a high mobility rate, and these families tend to move the most within a small area (Schafft & Prins, 2009). The demographic breakdown of the U.S. Census data shows that 42.9% of African Americans and 43.1% of Hispanics indicated a move, and 28.7% and 31.0%, respectively, shared that the move was within the same county. Those who were below

100% of poverty had a moving rate of 52.5%, with 33.8% within the same county (Ihrke & Faber, 2012).

While there are many types of mobility which researchers have included in their studies (strategic mobility, reactive mobility, residential mobility, and school mobility), the literature is clear about the definition of student mobility as it pertains to schools. Rumberger (2002) presents a universal definition by defining student mobility as "students moving from one school to another for reasons other than being promoted to the next school level" (p. 1). This definition will be the prevailing definition of this study.

Causes of Student Mobility

One cause of student mobility is residential changes, which can result in students changing schools within a district or move from one district to another. Some students move from one address to another during the school year within a school district, resulting in the student transferring from one school within the district to another – intra-district transfer. Others move to another city or state, requiring a change in school districts (Rumberger, 2003; Ingersoll, Scamman, & Eckerling, 1989).

Change in family dynamics is another cause of student mobility. Some students are forced to move because of family situations such as employment changes, divorce, natural disasters, becoming homeless, or being placed in foster care. Other students are mobile because they are a child of migrant workers or a child of a parent serving in the military. Families of single parents also have a high residential move rate. In all cases, children are required to move as their parents move (Rumberger, 2003; Titus, 2007).

Education researchers, policy makers, and practitioners have not placed a focus on student mobility. Essentially, it is viewed as something that just happens in our society; families relocate, and residential and school changes often accompany one another and account for 70% of all school changes (Rumberger & Larson, 1998; Rumberger, 2003). School administrators do not have control over student mobility because the causes of student mobility are not related to schooling. Based on his study, Rumberger (2003) reported that "58% of the parent-reported school changes were due to moving" (p. 12). The causes are symptomatic of larger societal issues.

Another cause of student mobility relates to the student who may struggle with academics or behaviors. This student may change schools hoping to start over with a clean slate (Swanson & Schneider, 1999).

Effects of Student Mobility on Children

According to Rumberger (2003), student mobility affects students psychologically, socially, and academically as seen in behavior problems, lack of social participation, and lower academic achievement. Utilizing data from the 1988 National Health Interview Survey on Child Health (NHIS-CH), Simpson and Fowler (1994) conducted a study that examined the relationship of mobility to emotional/behavioral adjustment. After analyzing the data of 10,362 students in Grades 1 through 12, the researchers found that with high mobility comes the risk of emotional/behavioral problems (Simpson & Fowler, 1994). Psychological effects can be attributed to students feeling as if they have lost friends and a familiarity with the school environment (Simpson & Fowler, 1994). Socially, lack of peer social networks leads to students not getting involved in the school extracurricular activities or clubs, lack of engagement or

withdrawal from school, and/or becoming a loner (South, Haynie, & Bose, 2005; Rumberger, 1987). South, Haynie, and Bose's (2005) study of students in 134 high schools (N = 90,118) with a sample of 8,516 classified as movers and stayers found that the movers' extracurricular activity participation was minimal. Rhodes (2008) conducted a qualitative study of mobile students to present their perspective of moving from one school to another. She found social concerns as the number one focus of mobile students. All of the participants in the study "identified the need to develop friendships and workable peer relationships as their first priority" (Rhodes, 2008, p.123); the loss of long-term friendship was another concern. These social and emotional concerns amounted to 38% of the data. From her research, Rhodes (2008) suggests that students need to feel as if they are a part of the community.

Characteristics of Mobile Students

Research shows that mobile students are Black and Hispanic students with a low socioeconomic status (Ingersoll, Scamman, & Eckerling, 1989; Kerbow. 1996). These students live in urban areas or the inner city. Because the areas are so densely populated, as the family moves from one apartment to another, for example, change in schools follows. Conversely, the opposite is the result of a similar situation happening in suburban areas, where a move may not necessitate a change in schools (Temple & Reynolds, 2000; U.S. GOA, 1994). In a 1994 survey, 30% of third graders whose family income was below $10,000 changed schools more than three times as compared to families with an income above $25,000 whose mobility rate was 10% (U.S. GAO, 1994).

Children of migrant farm workers make up one percent of migratory children. More than half of these children reside in California, Texas, and Florida; and "more than

three-fifths of migratory worker households are living below the poverty line" (Titus, 2007, p. 85). Approximately 40% of migrant children have changed schools more than three times (U.S. GAO, 1994).

Kerbow (1996) examined the mobility patterns of a group of sixth grade students in Chicago Public Schools during 1994 and found that 36% of the students changed schools at least one time during the two-year period. In addition, 13% of the students changed schools three times, and 5% changed four or more times. School changes were mostly within the school system, since 87% of the students changed from one school in Chicago to another (Kerbow, 1996).

Influence of Mobility on the School

Teachers in schools with a mobile population of students stress that the constant movement of the mobile student requires them to spend more time on tasks not related to instruction, leaving very little to no time for the teacher to identify gaps in curriculum knowledge (U. S. GAO, 1994). These students may miss the teaching of key concepts and skills that will be needed later in their educational careers (Kerbow, 1996). Furthermore, curriculum pacing differs between schools with high mobility and low mobility. Kerbow (1996) found gaps that began by second grade and continued to widen by the fourth grade, with the mobile student lagging behind the non-mobile student thereafter.

Student Mobility and Academic Achievement

The effects of mobility on academic achievement are evident nationwide. According to the United States General Accounting Office (U.S. GAO), of all mobile third graders, 41% are below grade level in reading, 33% are below grade level in math,

and are more likely to repeat a grade in addition to having health and nutrition problems (U.S. GAO, 1994).

Since the early 1960s, researchers have conducted studies to evaluate the impact student mobility has on student achievement. Earlier studies report that there is no relationship between mobility and academic achievement. Bollenbacher (1962) conducted a study of 5,578 sixth grade students to identify the effects of mobility on achievement as measured by the Standford Intermediate Reading and Arithmetic Tests and Lorge-Thorndike Verbal I.Q.'s. Students identified the number of schools they had attended from first to sixth grade and their scores were added to the information already acquired. The data revealed that 33% of the students moved more than once and attended three or more schools. Bollenbacher (1962) found that "achievement in reading and arithmetic as measured by standardized tests was not affected by the mobility of this sixth-grade group" (p. 360). Because various discussions with teachers presented the idea that mobile students were negatively affected academically, Morris, Pestaner, and Nelson (1967) conducted a study to investigate the accuracy of their statements. The study used data from the California Achievement Test (CAT) for a homogeneous sample of fifth grade students (n = 410) in Alameda County, California, in which the Caucasian component of the sample was considered sufficient for the desired analysis" (Morris et al., 1967, p. 75). The results of the study found that mobility does not negatively affect mathematic achievement of all students and reading achievement of students with high socioeconomic status (Morris et al., 1967).

More recent studies present the opposite findings. Ingersoll, Scamman, and Eckerling (1989) identified three types of mobility: moving within the geographic

confines of the school district, moving to another area and school system and then back to the original school system, and students moving into the school district for the first time. Utilizing these different types of mobile students and the data from the Denver Public School System in Colorado of 41,735 students in Grades 1-12 and the results of Iowa Tests of Basic Skills and Tests of Academic Progress, they conducted a study on the impact of student mobility on the achievement of students across grades levels. Results show that geographic mobility negatively affects student achievement, and these results are especially prevalent when allowing for factors such as socioeconomic status (Ingersoll, Scamman, & Eckerling, 1989). Furthermore, when analyzing data not controlling for background student characteristics, studies show that mobile students as a whole had lower academic achievement than students who were not mobile (Rumberger, 2003).

The effects of mobility on academic achievement of high school students show negative results. Swanson and Schneider (1999) utilized information from the National Education Longitudinal Study of 1988-1994 (NELS:88-94) student questionnaires and reported in their study of residential and educational mobility that students who change schools in the later period of their high school careers have lower gains in mathematics achievement than those who were stable. Students who change schools find themselves adjusting to the curriculum of the new school or having to deal with not being placed in the proper classes needed for high school graduation (Rumberger, 2003).

Many studies have been conducted examining the effects of mobility on academic achievement in the elementary grades and have found a negative association with reading and math scores (Wright, 1999; Temple & Reynolds, 1999; Heinlein & Shinn, 2000). In

some cases, two or more moves prior to the third grade resulted in students scoring lower than peers and below grade level (Heinlein & Shinn, 2000). Temple and Reynolds (2000) utilized data from the Chicago Longitudinal Study of 1,539 students in Grades K-7 in order to examine the effects of mobility on math and reading achievement. The sample size consisted of 1,087 Black students. Temple and Reynolds (1999) found that "the number of school moves between kindergarten and Grade 7 is negatively associated with achievement in math and reading at the end of Grade 7" (p. 372). However, if students are moving from a school in an inner-city, low-income neighborhood to a school with a selective process for admission, they tend to score higher on their assessments (Temple & Reynolds, 2000). Mantzicopoulos and Knutson (2000) conducted a longitudinal investigation of elementary students who attended a Head Start center in a Midwestern suburban community in an attempt to closely examine mobility of low-income students. The correlation patterns revealed that frequent school moves had a significant association with reading and math scores, and children from more stable environments early in their education presented higher scores on the reading and mathematics assessments (Mantzicopoulos & Knutson, 2000).

Mobility rates in urban areas are higher than in non-urban communities. The research indicates that academic achievement for these mobile minority students is negatively affected. Voight, Shinn, and Nation (2012) conducted a study in a large urban district to explore mobility effects on academic achievement. The data used came from a large urban school district in Tennessee of 11 middle schools with 8,337 students in Grades 5-8. In order to model the longitudinal effects of mobility on academic achievement, the researchers used latent growth-curve modeling (LGM). The study

showed that low socioeconomic students were likely to move as opposed to high socioeconomic students, and a greater portion of these movers received free and reduced-price lunch. During the eight years of the study, "there were 99 instances of extreme mobility (three or more moves during the year); only three of these cases were students who were not eligible for FRPL" (Voight, et al., 2012, p. 387). The statistical models of the study found that students who were mobile during Grades K-2 scored lower in math and reading in third grade, beginning an achievement gap that followed the students into high school (Voight, et al., 2012).

The effects of mobility during the elementary grades affecting the academic achievement of students during high school presents similar results to the studies related to elementary achievement. Gruman et al. (2008) conducted a study to further understand if mobility during a child's elementary years contributes to the academic outcomes during the adolescent years, stating that the purpose was "to explore how mobility during the elementary school years might undermine or erode the skills and attitudes that typically lead to successful school outcomes" (p. 1836). One correlation identified a positive connection between mobility and low socioeconomic status, and the findings indicated that changing schools during the earlier years was a predictor of the lack of academic performance in the later years (Gruman et al., 2008).

Mobility can occur at many points during a school year and from one year to another. Engec (2006) studied public school students in grades K-12 in Louisiana and identified two types of mobility: students changing schools during the school year and students changing schools from one school year to the next. The results of this study

found that the more a student transferred during the school year, the lower the student scored on the state assessment (Engec, 2006).

Meta-analysis

Mehana and Reynolds (2004) conducted a meta-analysis of the effects of mobility and academic achievement for children in Grades K-6. "Twenty-six studies and 19 studies were used to compute effect sizes for reading and math achievement, respectively" (Mehana & Reynolds, 2004, p. 100). After conducting a bivariate regression, Mehana and Reynolds (2004) found that minority status and mobility were significantly associated with reading and math achievement, as both were associated with a decrease in average reading and math effect size. When using a multiple regression model, Mehana and Reynolds (2004) found that "reading and math effect sizes were associated with a decrease of 0.12 as frequency of mobility increased" (p. 106). They identified three reasons why mobility is associated with academic achievement. First, instruction is disrupted. Students have to adjust to new schools, teachers, curriculum, and expectations. Second, school changes can affect relationships with peers and teachers. Finally, possible economic hardships sometimes cause residential instability. Studies show that "children from low-income families, children who are ethnic minorities, and children who move during the early years of school are more likely to be negatively affected by mobility" (Mehana & Reynolds, 2004, p. 96). After conducting the meta-analysis, Mehana and Reynolds (2004) found that "the relationship between mobility and reading achievement was significant regardless of the number of predictors used" (p. 111) and that "school mobility increases the risk of lower levels of reading and math achievement during the elementary grades" (p. 113).

Synthesis

Even though earlier studies suggest that mobility has no effect on student achievement, current research presents the opposite. Researchers have identified the different ways in which a student can be classified as mobile with the prevailing description including the changing of schools during the school year or at the beginning of the school year, either within the same geographic location or outside of the area (Engec, 2006; Ingersoll, Scamman, & Eckerling, 1989). Many studies show that changing schools has a negative effect on academic achievement (Engec, 2006; Heinlein & Shinn, 2000; Ingersoll, Scamman, & Eckerling, 1989; Mantzicopoulos & Knutson, 2000). In addition, mobility in the early years negatively affected the academic achievement in the later years (Gruman et al., 2008). This effect appears to be most detrimental to minority students and students from urban areas and low-income families (Heinlein & Shinn, 2000; Temple & Reynolds, 2000; Wright, 1999).

Student Mobility and School Dropout/Graduation

Most empirical research on student mobility provides descriptive statistics on mobile students or a comparison of academic achievement between mobile and non-mobile students. Four major studies investigate the relationship between student mobility and school dropout. Each of these studies utilized data from different sources in examining the mobility and school dropout connection.

Rumberger and Larson (1998) questioned the incidences of mobility among high school students and considered other factors such as demographics and social class groups while determining if mobility reduced the odds of graduating. Utilizing a theoretical and empirical research method, they created a conceptual framework that

identified school mobility as an influence on academic achievement because "students who are educationally stable remain enrolled until completing high school" (Rumberger & Larson, 1998, p.11). Rumberger and Larson (1998) utilized data from the National Educational Longitudinal Survey of 1988 (NELS:88) with follow up data from 1992 and 1994, a sample size of 11,671 respondents, and primary variables of mobility and high school completion. The descriptive results of the study found the two variables closely related and that high school students were very mobile since "more than one-quarter of high school students made nonpromotional school changes in the four-year period" (Rumberger &Larson, 1998, p. 19). The study also found both Black and Hispanic students more likely to change schools, with Hispanic students being more likely to drop out of school. While their research supports previous studies that the possibility of graduating from high school is reduced with student mobility, this study "was unable to demonstrate that there is a casual connection between mobility and high school completion" (Rumberger & Larson, 1998, p. 31).

Looking at events and circumstances that influence high school graduation, Haveman, Wolf, and Spaulding (1991) studied selected individuals who were age four or younger in 1968 and still in the survey sample from the 1987 tape (Wave 20) of the University of Michigan's Panel Study of Income Dynamics (PSID) (N=1,258). Haveman, et al. (1991) used probit equations of estimated determinants of educational attainment and time-related determinants of educational attainment along with predicted values of graduating from high school to explore the effect of family and economic circumstances on high school graduation. In predicting the probability of graduating from high school, Haveman, Wolf, and Spaulding (1991) found that three moves during ages four to seven

and the adolescent years reduce the probability of graduating from high school; and students from low socioeconomic status, specifically poor families, decreases the probability of graduating from high school.

In examining the effects of residential mobility on students dropping out of school, Swanson and Schneider (1999) analyzed data from NELS:88-94, where a group of students were surveyed in 1988, again in 1990, and then again in 1992. Of the 25,000 surveyed, the sample size was 16,489. They utilized case weights provided by NELS:88-94 in order to obtain results representative of a sample of students and "ordinary least-squares (OLS) regression to model gains in achievement as a difference in test scores between two points in time" (Swanson & Schneider, 1999, p. 58). Their findings show that mobility was associated with students dropping out of school, especially if the number of school changes prior to Grade 8 was great.

Utilizing data from the National Longitudinal Study of Adolescent Health, which is a study of teens, their parents, and schools, South, Haynie, and Bose (2005) conducted a study to determine reasons why mobile students drop out of school at a higher rate that non-mobile students. The sample contained 8,516 students in 134 high schools. Using multivariate regression models and controlling for background characteristics, South et al. (2005) found an increase in the rate that mobile students dropped out of school as compared to non-mobile students due to the mobile students' weak academic performance and limited established relationships with peers and the school community (South et al., 2005).

Gasper, DeLuca, and Estacion (2012) conducted an investigation on whether students switching high schools leads to dropping out. In their study, Gasper et al. (2012)

utilized data from the National Longitudinal Survey of Youth 1997 (NLSY97) of youths ages 12-16 and matched mobile and non-mobile youths with similar characteristics. The NLSY97 sample contains a cross sectional sample of 6,748 students and an oversample of 2,236 Black and Hispanic students. Using propensity score matching, Gasper et al. (2012) found that "just under 30% of high school students have attended more than one high school and are more likely to drop out" (p. 512). The students most likely to change schools are lower income and high residentially mobile students (Gasper, DeLuca, & Estacion, 2012).

Synthesis

Student mobility is closely associated with increased probability of dropping out of school (Gasper, DeLuca, & Estacion, 2012; Haveman, Wolf, & Spaulding, 1991; Rumberger & Larson, 1998; South, Haynie, & Bose, 2005). Studies show that ethnic minorities and students from low-income families are highly mobile, and the increased risk of dropping out of school is even greater (Gasper, DeLuca, & Estacion, 2012; Haveman, Wolf, & Spaulding, 1991). This increase in the probability of dropping out stems from academic and social ramifications linked to frequent school changes (South, Haynie, & Bose, 2005).

Size of the School

Many initiatives related to the size of high schools have been promoted for the past two decades under the guise that smaller high schools would improve academic achievement. Small Learning Communities and Schools within Schools are just two initiatives that many larger high schools investigated in their quest to improve academically.

The size of schools has been studied and cited as having an effect on student outcomes. Using data from the California Department of Education, Gardner et al. (2000) examined 67 high schools with an enrollment over 2000 and 60 high schools with an enrollment between 200-600 students. The study revealed that while academic achievement as measured by SAT data was higher in the large high schools, the dropout rate was higher than that of the small high schools (Gardner et al., 2000).

The size of the school is often associated with student outcomes. Werblow and Duesbery (2009) analyzed data from a sample of 16,081 students representing 752 schools from the Educational Longitudinal Study of 2002 in order to answer the question "Is smaller school size associated with reduced high school dropout rate?" (p. 16). To account for "the complex nested structure of individual student-level data with higher level school data" (p. 16), Werblow and Duesbery (2009) used hierarchical linear modeling. They found that as the size of the school increased, the percentage of students dropping out of school also increased. The researchers suggest that "a powerful linear relationship with school size was observed where increase in school size can be attributed to an average of 12% dropout rate" (Werblow & Duesbery, 2009, p. 12) resulting in a conclusion that the larger high schools are associated with a higher dropout rate.

Fitzgerald et al. (2012) also studied the graduation rates as compared to the size of the school by examining White, Black, and Hispanic students in small, medium, and large high schools. Small high schools had an enrollment of 327 students or less. Medium size schools consisted of 328-1337 students, and large high schools were over 1337. Participants for the study were students from Texas high schools and the data collected from the schools were completion rates and ethnicity. The number of schools in the study

for 2008-2009 consisted of 64 small schools, 170 medium schools, and 293 large schools; for 2009-2010, 111 small schools, 198 medium schools, and 297 large schools; and for the 2010-2011 school year, there were 71 small schools, 172 medium schools, and 306 large schools. The results of the study from an analysis of nonparametric analysis of variance found no difference in the graduation rate for all three ethnic groups in small and medium high schools the first two years of the study, and a higher completion rate for Whites in the third year. However, "White students had a statistically significant higher completion rate than did both Hispanic and African American students in large schools" (p. 7).

Using data from NELS:88, Lee and Smith (1997) examined the size of a high school and its effect on academic achievement of 9,912 students. Using the 2-level hierarchical linear model, they found increased academic achievement gains for students attending schools that have an enrollment from 600-900. This is definitely the case for disadvantaged students as "the optimal school size is quite similar in both low and high SES schools" (Lee & Smith, 1997, p. 214).

School size and social capital have been connected in that the size of the high school is connected to the amount of social capital available to the students. Smaller schools can offer more intimate friendships with peers and relationships with teachers with parents knowing parents, while larger schools can offer more resources and programs (Carolan, 2012).

Synthesis

Size plays a part in the resources schools can make available to the student. Larger school may be able to offer more in the way of programs, but the dropout rate of

these schools are higher (Gardner et al., 2000; Werblow & Duesbery, 2009). Graduation rates are no different for White, Black, and Hispanic students in small and medium schools; however, Black and Hispanic students did not have as high of a completion rate as White students, suggesting that small schools increase academic achievement for all students, especially those who are economically disadvantaged (Fitzgerald, 2012; Lee & Smith, 1997).

Students with Disabilities

Special education students are susceptible to dropping out of school and "students with learning disabilities or emotional or behavioral disorders are consistently found to have the highest dropout incidences among special education students and students in general" (Reschly & Christenson, 2006, p. 277). Smith et al. (2012) compared the graduation rates of students with disabilities to those without disabilities utilizing data from a NCES report in addition to data from the Individuals with Disabilities Education Act database, offering a database of sample sizes of 185,180 and 632,633, respectively. They found that the overall rate of students with disabilities graduating is higher than the rate for those dropping out. However, those without disabilities have a higher graduation rate than those with disabilities (Smith et al., 2012).

Kortering and Braziel (1999) studied special education youth who dropped out of school in a rural southeastern state in a district whose dropout rate is amongst that state's highest. In addition, 55 % of the students either completed high school or received a GED. The student responders (n=31) of the study provided their thoughts as to what changes in the school would have helped them to avoid dropping out of school. One of

their responses related to "the need to change one's attitude or effort" (Kortering & Braziel, 1999, p. 81).

English Language Learners

Another subgroup with a high dropout rate is English Language Learners (ELL), as many of these students reside in a home environment where English is not spoken. Studies have shown that these students drop out of school at a higher rate than students who are from an English background (Steinberg et al., 1984). Mayer (2004) examined the difference in the dropout rates of Mexican students in cities with 50% or more Hispanic residents with the utilization of data from the California Basic Educational Data System. The sample size was 1,228; and in cities with 50% or more Hispanics, the sample size was 3,795. The data came from the California Basic Educational Data System, which is where data collected by schools annually is stored. Their findings suggest that "there is a significant relationship between dropout rates of Mexican origin students in a city with less than 50% Hispanic population, and a city with more than 50% Hispanic population (Mayer, 2004, p. 19) and that "attitude and perceptions of the community influence the students' decision to drop out of school or continue and graduate" (p. 21).

Socioeconomic Status, Minority Students, and School Completion

The 2010 U.S. Census Bureau report shows that students 100% below the poverty rate moved 52.5% of the time, indicating that students with a low socioeconomic status have a high mobility rate (Ihrke & Faber, 2012). Most of the research related to students dropping out of school and socioeconomic status (SES) includes information on the ethnic makeup of the low SES population. A USDOE report, *The Condition of Education*, presents data that demonstrates the effect of socioeconomic status on

dropping out of school. Based on the Current Population Survey (CPS), the status dropout rate (students who are not in school and have not earned a high school diploma or GED) is reported as follows: 7% for 2011; 13% for low-income families; 9% for middle income families; and 5% for middle-high income families. The dropout rate gap between high-income and low-income families is 11%. When it comes to race, the dropout rate amongst Whites is 5%, Blacks 7%, and Hispanics 14%, with the gap between Hispanics and Whites being 9%. The average freshman graduation rate for 2009-2010 is 78.2%, indicating that 3.1 million public high school students graduated on time with a diploma. This rate for Whites is 83%, Blacks 66%, and Hispanics 71% (USDOE, 2013). The NCES event dropout rate, the estimated percentage of students who left school without earning a high school diploma or GED, is as follows: White, 2.2%; Black, 4.5%; Hispanic, 6.0%; low income, 8.8%; middle income, 3.5%; and high income, 0.9%.

School completion is significantly affected by socioeconomic status. Boggess (1998) utilized a logistic regression model to examine the relationship between economic status and high school completion. The sample for the study consisted of 1,985 respondents (N=3,635). The data used in this study came from the Panel Study of Income Dynamics (PSID). The study found a connection between students from low-income families and dropping out of school (Boggess, 1998).

Using propensity score matching and sensitivity analysis, Harding (2003) studied the effects of low SES neighborhoods in relation to dropping out of high school. The study used data from the Panel Study of Income Dynamics (PSID), which is “the most commonly used longitudinal data set for investigating neighborhood effects” (Harding,

2003, p. 680). In addition, the study contains an oversample of families with a low socioeconomic status to ensure a sizeable group of respondents. Harding's (2003) analysis found that "high-poverty neighborhoods almost double the odds of high school dropout among non-blacks" (p. 701). In comparing Blacks living in high poverty neighborhoods with those in low poverty neighborhoods, the dropout rate for those living in low poverty neighborhoods dropped while the opposite was true for those living in high poverty neighborhoods (Harding, 2003). In analyzing the PSID, Harding (2003) shared that the dropout rate for both Blacks and Whites in high poverty neighborhoods is double the rate in moderate poverty neighborhoods.

Crowder and South (2003) used data from the PSID and decennial census data to focus on how neighborhood characteristics may influence students to drop out of school. In their study, they used three measures of socioeconomic status, income-to-need ratio, parental education, and home ownership. The sample for the study included 6,762 Black and White individuals who were between the ages of 14 and 19 between 1968 and 1993. Using logistic regression models, Crowder and South (2003) found that adolescents from higher-income families were less likely to drop out of school and that "the socioeconomic quality of the neighborhoods has a relatively large and statistically significant effect on the risk of dropping out of school for Black adolescents" (p. 680). The likelihood of adolescents in low SES neighborhoods dropping out of school has "increased substantially among Black adolescents" (Crowder & South, 2003, p. 693). A possible reason for this is that the gap between low SES urban neighborhoods and the middle class has grown, making the urban areas more isolated from resources found in middle class neighborhoods (Crowder & South, 2003).

Using data from *High School and Beyond* (HS&B), a national longitudinal study, Fernandez et al. (1989) focused on the extent of the dropout problem amongst Hispanic students as compared to non-White and Black students. Based on percentages using sample design weights, the dropout rate for Hispanic students is higher than the rate for non-Hispanic whites. The logistic regression analysis shows that students from families with a high socioeconomic status are less likely to drop out of school than those from a low socioeconomic status.

Utilizing data from NELS:88 (N=9,578) to examine high school completion of Hispanic students, Lutz (2007) found that high levels of Hispanic students not completing high school can be explained by a low socioeconomic status of the family, and this is especially true for Mexican families. Using logistic regression models, Lutz (2007) found that low socioeconomic status is the primary factor for Hispanic students not competing high school. Lutz (2007) states the importance of addressing the socioeconomic status for Mexicans because as compared to non-Hispanic Whites with the same socioeconomic status, the high school completion rate is similar.

Socioeconomic status is another variable that can explain the difference in educational attainment of Black students. Storer et al. (2012) used data from the U.S. Census Bureau (2010) and the National Center for Education Statistics (NCES) of 10,335 school districts to conduct a secondary analysis of the data to examine how race and class interact with high school completion. Considered exploratory, this study utilized the cross-sectional study design and the analytic techniques of ordinary least squares regression and geographically weighted regression. The results show a "positive relationship between the socioeconomic status of a school district…and aggregate level

of educational attainment in that school district" (Storer et al., 2012, p. 36). In predominately Black school districts, SES status plays a role in determining the educational attainment of students.

Synthesis

Specific subgroups of students tend to have higher dropout rates than others. Studies that have examined this topic and the graduation rate of students in the specified subgroups indicate that students with disabilities, English language learners, students with low socioeconomic status, and Black and Hispanic students all tend to have low graduation rates, especially if compared to students with the opposite characteristics (Boggess, 1998; Kotering & Braziel, 1999; Reschly & Christenson, 2006; Smith et al., 2012; Steinberg et al., 1984). Within specific subgroups, students with learning disabilities and behavioral disorders and Mexican students appear to have a higher level of school dropout (Lutz, 2007; Reschly & Christenson, 2006). Students who live in poverty have a high dropout rate (Crowder & South, 2003; Harding, 2003).

Teacher Mobility

High teacher mobility brings concerns for the quality of the educational programs of the school. The instability caused by high teacher mobility rates can lead to problems for the school in sustaining the desired effect of educational initiatives. In addition, teacher mobility affects the school as an organization by creating a situation which negatively affects student achievement since the school may encounter difficulty in improving student learning (Guin, 2004; Ingersoll, 2001).

Mobility is prevalent in those beginning their teaching careers. According to the USDOE (2010), 13.7% of the teachers with one to three years of experience moved and

9.1% left the profession totally in 2008-2009. Scafidi, Sjoquist, and Stinebrickner (2007) found that teachers who began their teaching careers in low performing schools, schools with a low socioeconomic status, or schools with a high proportion of minority student had a higher probability of changing schools.

Guin (2004) conducted a study to examine "how turnover impacts the organizational capacity of schools that face high rates of teacher turnover every year" (p. 2). The data for the study came from a statewide database. A purposive sample of 15 schools from a large urban district was chosen with five schools agreeing to participate in the study. Using a Pearson correlation (n=324), Guin (2004) found that the results of the study show a "positive correlation between teacher turnover rates and the percentage of minority students within a school" (p. 7). Also there was a significant negative correlation between academic achievement and teacher turnover. School climate and teacher turnover also had a negative correlation. Based on interviews of teachers, Guin (2004) found the following:

1. Teacher turnover caused disruptions in the instructional program.
2. Consistent professional development was nonexistent due to schools receiving new teachers annually. This hampered the ability to receive targeted professional development.
3. Teacher turnover impacts the instructional program, which takes away the possibility to have consistency
4. A curriculum planning and implementing process has to be completed each year as teachers find difficulty in collaborating with new co-workers.

A similar study was conducted by Ingersoll (2001), who used data from the National Center for Education Statistics (NCES), School and Staffing Survey (SASS), and Teacher Follow up Survey (TFS) to investigate factors such as organization characteristics and conditions of schools as possibilities of high teacher mobility. The sample consisted of 6,733 elementary and secondary teachers from the 1991-1992 TFS with a data-weighted analysis. The data analysis of the magnitude of teacher mobility was separated into three stages: teacher and school characteristics, organizational conditions, and reasons teachers give for leaving. Utilizing multiple regression analysis, the results of the study showed that teachers are leaving their jobs for reasons other than retirement and "teachers in high-poverty schools have higher rates of turnover than do those in more affluent public schools" (Ingersoll, 2001, p. 519).

Studies show that schools with certain characteristics tend to have higher teacher mobility rates than others, and teachers with distinguished credentials tend not to teach in these schools. It is more common for teachers, especially highly qualified teachers, who work in low performing schools or schools with a majority of minority students, to either transfer to another school or quit (Boyd et al., 2005; Guin 2004; Ingersoll, 2001). National Board Certified Teachers (NCBTs) tend to teach in high performing schools with low poverty and few if any minority students (Goldhaber, Choi, & Cramer, 2007).

Scafidi, Sjoquist, and Stinebrickner (2007) examined teacher mobility as related to race and poverty by utilizing data from the administrative records of the Georgia Professional Standards Commission (GAPSC), free and reduced-price lunch data from the Georgia Department of Education, and data from the Georgia Department of Labor on teacher wages. The sample contained 11.070 elementary teachers in Georgia. Scafidi et

al. (2007) used univariate tabulations and linear probability models to examine the data, which suggests that "teachers who serve higher proportions of minority students are more likely to leave their first teaching job by moving to new schools within their districts, moving to new districts, and by taking jobs outside of the public education sector" (p. 157). While teachers in schools with a higher minority student population often left those schools, Scafidi et al.'s (2007) models show that one standard deviation increase of Black students within a school "increases the probability that a teacher will exit a particular school in a particular year by more than 20%" (p. 147). Thus, there is a concern for students in low achieving, high minority schools in that they may receive a lower quality education than other students (Scafidi et al., 2005).

High teacher mobility has been connected to low student achievement. Ronfeldt, Loeb, and Wyckoff (2013) searched to answer the question if such a relationship exists and why it may exist by utilizing data from the New York City Department of Education and the New York State Education Department. The regression models show that "the estimated coefficients were negative and significant for test scores in ELA and math" (Ronfeldt et al., 2013, p.18), which indicates that students do not perform well academically with high teacher turnover. "Student math scores were 8.2% to 10.2% of the standard deviation lower in years when there was 100% turnover as compared to years when there was no turnover at all" (Ronfeldt et al., 2013, p.18). This negative effect of teacher mobility on student achievement was more pronounced in school with low achieving and Black students. "These results suggest that teachers who migrated from other schools were, on average, less effective and that this accounted for some of the harmful effects of teacher turnover on student achievement" (Ronfeldt et al., 2013, p. 28).

Theoretical Framework

The literature presents many reasons why students do not complete school, and the theories surrounding students dropping out of school encompass various factors. Rumberger (2011) identifies two perspectives–an individual perspective and an institutional perspective. The individual perspective draws on the theory that not being engaged either socially or academically affects students' achievement in high school. Finn (1989) suggests that disengagement or lack of participation in 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 or she may have a more difficult time connecting with the school at large.

The institution perspective focuses on the students' community–their home and school. These two places within the students' community ultimately connect to their socioeconomic status. Studies have found that the lower the socioeconomic status the more likely a student is to drop out of school (Rumberger, 2011).

Classical theorists whose work connects to the graduation rate and student mobility are Carl Rogers and Abraham Maslow. Rogers believes that the way a person views or perceives reality is what is most important (Thorne, 2003). Therefore, in order to understand this person and his or her behavior is to understand the world as he or she perceives it (Thorne, 2003). The perception of the world according to mobile students is different from the student who is not mobile.

Connecting to Rumberger's (2011) individual perspective, Roger's theory indicates that humans need to be consistently viewed in a positive manner in order to feel

good about themselves. "The painful and bewildering quest for positive regard, where so little is to be found, results in a human being who is crippled by a sense of personal worthlessness" (Thorne, 2003, p. 30).

Abraham Maslow's theory 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 or 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 often compromised and, as a result, their achievement in school, which determines graduation, is affected. Maslow's needs are affected by poverty, which causes health related issues and affects 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 each other 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 through their children. These parents become friends as their children are friends, resulting in a constant monitoring in the rearing of the children in school and community matters (Coleman, 1988). Again, this relationship is nonexistent for the mobile child.

Mobile students lose 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 not to have social capital is not completing high school. (Coleman, 1988).

Synthesis

Even with the numerous studies that are in existence on student mobility and achievement, student mobility in connection to the required graduation rate has not received much attention by policymakers and school officials. Studies show that student

mobility negatively affects student achievement, which ultimately leads to students dropping out of school (Haveman, 1991; Ingersoll, Scamman & Eckerling,1989; Rumberger, 1987; Rumberger & Larson, 1988; South, Haynie, & Bose, 2005). Further, highly mobile students often come from low-income families, and studies have shown the challenges in reducing the dropout rate and that low-socioeconomic status has been negatively associated with the lack of high school completion (Boggess, 1988; Crowder & Smith, 2003; Hardy, 2003; Rumberger, 2008). With these studies, there is a need to identify how student mobility affects the graduation rate that is now an accountability measure. In addition, all of the studies related to mobility and academic achievement utilize student and school data, and studies connecting mobility to dropping out of school utilize data from longitudinal survey studies.

Conclusion

The federal government's role in education has evolved from education not being a federal responsibility to various legislative mandates and accountability measures. Different government reports acknowledge the student characteristics which account for the low graduation rates, and the research supports the government reports. However, schools are still being held accountable for these factors which they cannot control. Most of the research focuses on mobility and academic achievement, especially as it relates to elementary schools. This study will add empirical evidence to the limited literature regarding the influence of mobility on the graduation rate during a time of highly publicized accountability mandates. This study could greatly benefit government officials, school leaders, educators, and education researchers in identifying the impact mobility has on the graduation rate. This study will add to the limited empirical evidence

in the literature that supports the negative implications mobility has on students' successful ability to complete high school.

CHAPTER III

METHODOLOGY

Introduction

My purpose for this quantitative study was to investigate the influence of various factors not accounted for in the data but that factor into the graduation rate calculation in New Jersey's comprehensive public high schools. By focusing on the unaccounted for variable of student mobility and controlling for student characteristic variables and school characteristic variables, this study hoped to provide data that will draw attention to and assist policy makers, schools, and school districts in placing attention on the need to provide resources and programs to schools and school districts in an effort to assist mobile students. The literature contains reasons why students do not complete high school. This study connected some of these reasons to the graduation rate and added researched results to show the need to address this issue.

Research Design

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).

Sometimes considered as descriptive research, correlational research describes existing conditions that are found between two variables (Gay et al., 2012). Correlational design examines a number of variables that can be related to a major, complex variable; and in this case, that major, complex variable is the graduation rate. This type of design is appropriate for this study because the study contains a number of variables, and those variables that are found not to be highly related to the complex variable can be dropped from the study while the variables that are highly related can be examined further to identify the nature of the relationship (Gay et al., 2012). A correlational design will not determine or imply if one variable caused the other, but it will allow prediction with those variables that are highly correlated having more accurate predictions (Gay et al., 2012).

In a multiple linear regression, the value of the criterion variable is predicted by multiple predictor variables (Hinkle et al., 2003). The correlation of two variables can lead the researcher in making predictions, and this can be done by estimating the value of the criterion variable (Y) based on what is known about the value of the predictor variable (X) (Hinkle, Wiersma, & Jurs, 2003; Witte & Witte, 2010). It is important in multiple linear regressions to select predictor variables that are going to be effective and highly correlated with the criterion variable (Hinkle et al., 2003). 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 et al., 2003). In this study, I explained the amount of variance in the criterion variable graduation rate that can be explained by the school related and student related predictor variables.

Research Questions

1. What is the influence of the student mobility rate on the graduation rate of New Jersey's high schools?
2. What is the influence of the student mobility rate on the graduation rate when controlling for student characteristic variables of socioeconomic status, ethnicity, percentage of special education students, and percentage of limited English proficient students?
3. What is the influence of the student mobility rate on the graduation rate when controlling for school characteristic variables of school size and teacher mobility?
4. What is the influence of the student mobility rate on the graduation rate when controlling for significant student and school characteristic variables.

Sample Population/Data Source

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, 2010c). 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.

Table 1

Size of High Schools

Public comprehensive high schools	**316**
High schools in a regional district	79
Enrollment over 1000	181
Enrollment over 1500	78
Enrollment 1000-1499	103
Enrollment 600-999	82
Enrollment less than 600	52

Instruments

My goal for this research was to explain the influence of student mobility on the calculated graduation rate of schools in the state of New Jersey. The graduation rate as reported by NJDOE came from the federal guidelines which specifically describe how states must count graduates. According to the No Child Left Behind High School Graduation Rate Non-Regulatory Guidance (USDOE, 2008, p.2-3), the graduation rate is as follows:

> As defined in 34 C.F.R. §200.19(b)(1)(i)-(iv), the four-year adjusted cohort graduation rate (hereafter referred to as "the four-year graduation rate") is the number of students who graduate in four years with a regular high school diploma divided by the number of students who form the adjusted cohort for the graduating class. From the beginning of 9th grade, students who are entering that grade for the first time form a cohort that is subsequently "adjusted" by adding any students who transfer into the cohort later during the 9th grade and the next three years and subtracting any students who transfer out, immigrate to another country, or die during that same period.

This description of the graduation rate resulted from years of criticism expressing the need to have a consistent method and definition of calculating the graduation rate across the United States because the different data collection methods resulted in different results from state to state (Warren & Halpern-Manners, 2009).

Using the required method of calculation, the NJDOE has implemented the NJ Standards Measurement and Resource for Teaching (NJ SMART) which is a warehouse for student data using student identification (SID) numbers. By utilizing the SID number, all students in the state are accounted for in New Jersey's public schools, and the adjusted

cohort graduation rate is calculated from this database to provide the graduation rate for each school and district (NJDOE, 2010f). This rate is then reported on the school report card and performance reports. As described in the New Jersey School Report Card, the student mobility rate is calculated from the sum of students who enter and leave a school after the October 15 enrollment count divided by the total enrollment of that school (NJDOE, 2010b).

Data Collection

All states and school districts that receive Title I funds must annually produce a report card that includes all of the required NCLB information, and make this report card available to the public (USDOE, 2003). The data used in this study came from the NJDOE data file produced for the NJDOE report card as published annually on the NJDOE's website. The data for each variable were downloaded from the NJDOE website and matched by county, district, and school code, and entered into an excel spreadsheet. This resulted in a data sheet that contained the school data for each variable in the study. Because the graduation rate reporting requirements require states to use the adjusted cohort graduation rate beginning with students who entered high school in September 2007 and graduated in 2011, data from the 2011 report will be used for all variables. In order to identify a district's socioeconomic status, the NJDOE utilizes District Factor Groups (DFGs). This categorization method is based on census data and is placed in a statistical model. The lowest socioeconomic status is classified as a DFG A with the highest classified as DFG J (see Table 2) (NJDOE, 2010e). The NJDOE report on DFGs and the percentage of students receiving free or reduced-price lunch will provide information to identify the socioeconomic status of the school and school district.

The data for this study came from the New Jersey Department of Education's website http://www.state.nj.us/education/reportcard/2011/index.html. The Excel version of the 2011 New Jersey School Report Card was downloaded and saved in a data file. County, district, and school codes were merged with school names followed by various sorting options to remove data for all elementary, middle, vocational, alternative, and charter schools as well as high schools that did not consist of Grades 9-12. Another sorting process was conducted to identify schools without portions of the data, and these schools were also removed. Each row was carefully reviewed to ensure that all data were matched correctly to the school.

Table 2

District Factor Groups

DFG	Number of Schools	DFG	Number of Schools
A	49	FG	44
B	33	GH	51
CD	30	I	48
DE	50	J	11

Data Sampling Method

The state of New Jersey has 590 operational school districts and 485 high schools. These high schools range from a low socioeconomic student population to a high socioeconomic student population. Some schools are small with a total enrollment just under 200, and others are large with an enrollment over 3,000 students. 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. Only schools that could be described as a typical comprehensive high school were included.

The high schools excluded from this study are districts or part of school districts that are specialized in some way. For example, vocational schools are public high schools, but they teach students a specific trade or vocation rather than a comprehensive curriculum. Some vocational schools such as the Monmouth County Vocational School District and Cape May County Vocational High School provide specialized academic instruction and have entrance requirements. In many cases these selective high schools do not enroll comparable percentages of students with disabilities, ELL students, or those eligible for free lunch. In some ways it is legalized perversion of the public system that keeps those who need the most from accessing quality opportunities. Although charter schools are public schools available to all students, the enrollment of students varies and is based on available space. This limited space requires some schools to conduct lotteries for admission. In addition, charter schools are not connected to a school district. They operate "independent of the local school district's board of education" (NJDOE, 2010d). Some students require special educational services beyond that which a school district is able to provide. These students are placed in schools outside of the local school district into one that can provide an appropriate education to meet the child's special needs. Alternative schools also provide students with a comprehensive education, but the delivery of instruction is done so "in a non-traditional learning environment that is distinct and separate from the existing general or special education program" (NJDOE, 2010a). The program of instruction in an alternative school is focused on the individual needs of the student who has been deemed at-risk (NJDOE, 2010a).

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. Of the 316 high schools, 79 high schools are in regional school districts. These districts receive students from different school districts of a particular area. For example, the Monmouth Regional High School District is comprised of one school for Grades 9-12, and it receives students from the Tinton Falls School District and the Eatontown School District, both of which are K-8 school districts for the cities of Tinton Falls and Eatontown. The Freehold Regional High School District is a high school district comprised of six high schools that receive students from nine different cities. In both of the above-mentioned school districts, all students entering high school are new to the district. However, the Toms River Regional School District services Grades K-12 and includes 12 elementary schools, three middle schools, and three high schools. Students attending this district come from neighboring cities. In this regional district, student can receive an education from K-12 in the same fashion as students in non-regional school districts.

Studies on academic achievement and school size found a correlation between the two. While certain achievement data such as SAT scores may be higher in larger schools, researchers found a correlation between larger schools and increased dropout rates and the opposite with smaller schools (Gardner, et al., 2000; Lee & Smith, 1997; Werblow & Duesbery, 2009). Thus, the enrollment size for this study includes schools with more than 150 students and as high as 3,373 students.

The sample size met the requirements as defined by Field (2009), who referenced Green (1991), for determining the minimum acceptable sample size:

> . . . if you want to test the model overall, then he [Green] recommends a minimum sample size of 50 + *8k*, where *k* is the number of predictors. So, with five predictors, you'd need a sample size of 50 + 40 = 90. If you want to test the individual predictors then he suggests a minimum sample size of 104 + *k*, so again taking the example of 5 predictors you'd need a sample size of 104 + 5 = 109 (Field, 2009, p. 222).

I included up to five predictors in a model. Hence, at a minimum, I needed 50 + 8(5) = 90, or a total of 90 cases. The sample size (n=316) provided enough power to identify an effect size of at least .50 at the 95% confidence interval and to also generalize results to the remaining districts in the state.

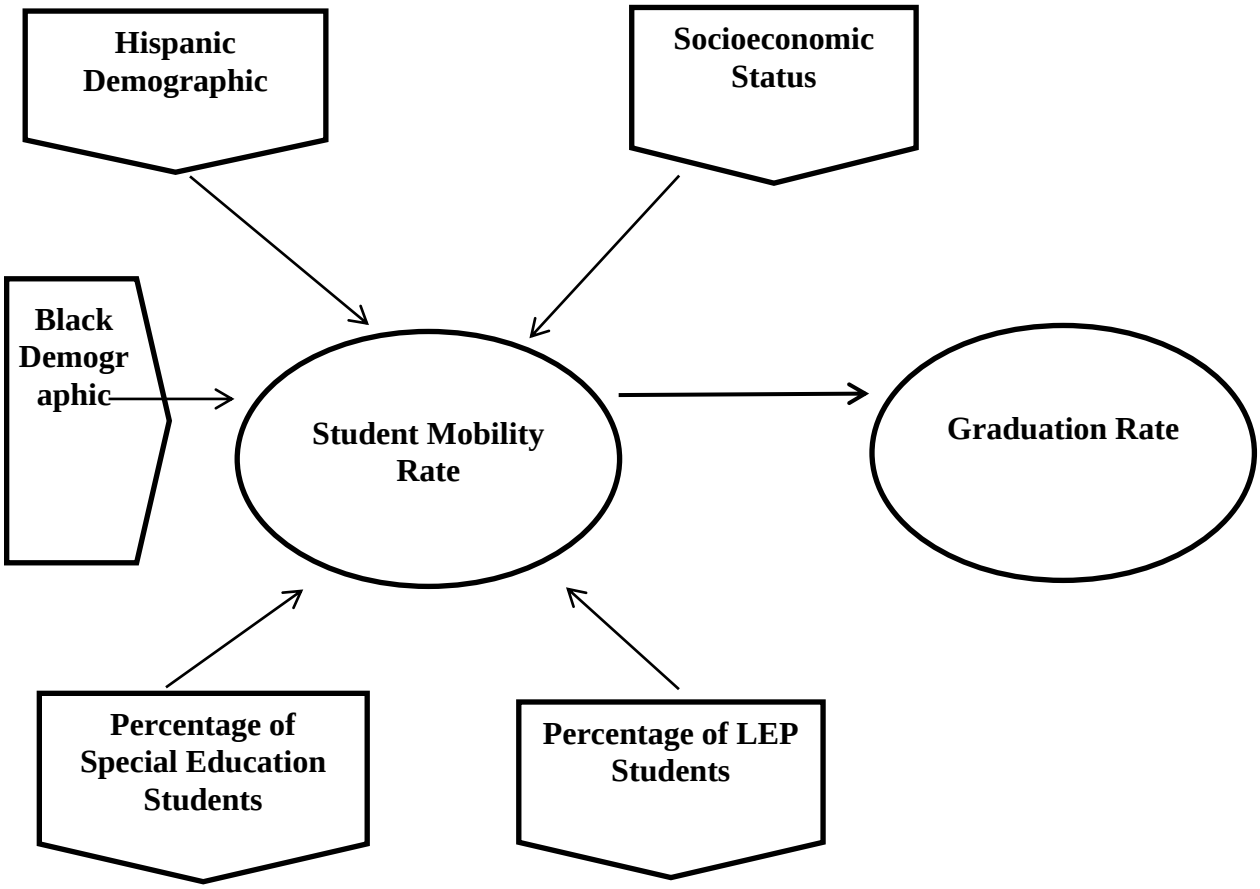
Analysis Construct

Figures 1-3 provide a visual diagram that will guide the data analysis of the study. The last construct (Figure 4) will be based on the outcome of the previous data analysis, as it will test only the significant characteristic variables from the previous models.

Visual construct of independent and dependent variables for each model based on the research questions.

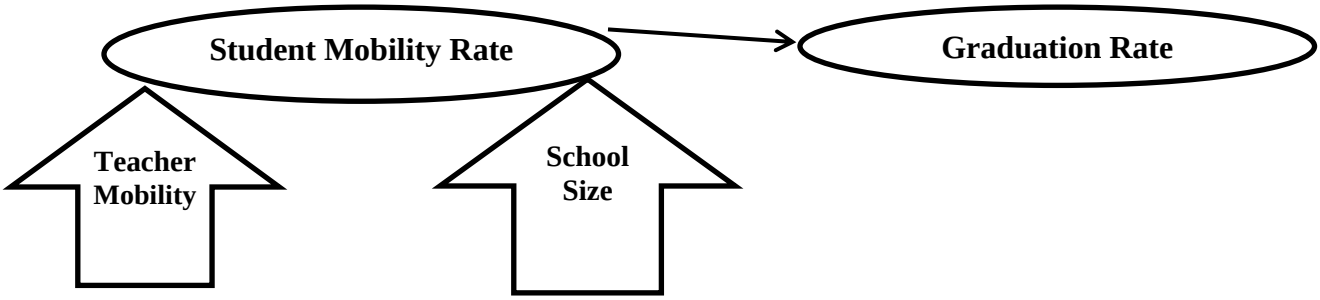
The influence of the student mobility rate on the graduation rate of New Jersey's high schools

Figure 1. Independent and Dependent Variables



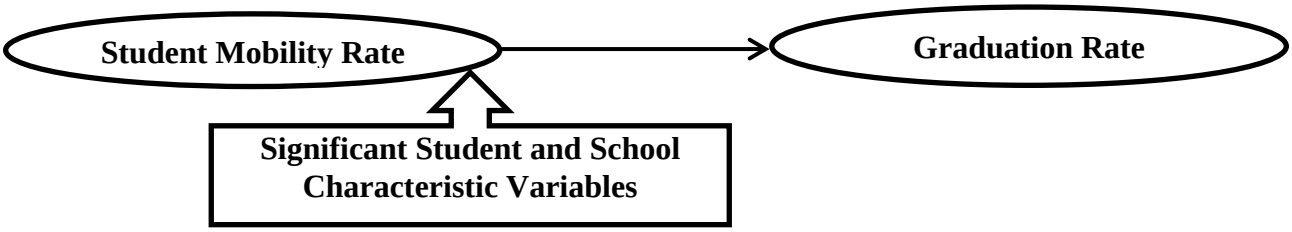
The influence of the student mobility rate on the graduation rate influenced by the controlled student characteristic variables of socioeconomic status, ethnicity (Black and Hispanic), percentage of special education students, and percentage of limited English proficient students

Figure 2. Controlled Student Characteristic Variables



The influence of the student mobility rate on the graduation rate influenced by the controlled school characteristic variables of school size and teacher mobility

Figure 3. Controlled School Characteristic Variables



The influence of the student mobility rate on the graduation rate when controlling for significant student and school characteristic variables

Figure 4. Controlled Significant Student and School Characteristics

Table 3

Description of the Variables Used in the Study from the 2011 NJDOE Data Set

Variable	Definition	Level of Measurement	Status
Graduation Rate	The percentage of student graduating from high school with a diploma based on the adjusted cohort graduation rate.	Ordinal	Criterion Variable Dependent Variable
Mobility Rate	For the state of New Jersey, the mobility rate is the percentage of students who entered or left a school during the school year.	Ordinal	Predictor Variable Independent Variable
Percentage of Special Education Students	The percentage of Special Education students is derived from the number of special education students divided by the enrollment of the school.	Ordinal	Control Variable
Percentage of Limited English Proficient Students	The percentage of Limited English Proficient Students is derived from the number of LEP students divided by the enrollment of the school.	Ordinal	Control Variable
Demographic Black	The number of Black students in the school.	Ordinal	Control Variable
Demographic Hispanic	The number of Hispanic students in the school.	Ordinal	Control Variable
Socioeconomic	The Socioeconomic	Ordinal	Control Variable

Status	status of the school is based on the DFG and number of free and reduced-price lunch students in the school.		
School Size	School size is based on the enrollment of the school.	Ordinal	Control Variable

Data Analysis

I used simultaneous multiple regression and hierarchical linear regression to perform the analyses. "Multiple regression attempts to predict a normal dependent variable from a combination of several normally distributed and/or dichotomous independent/predictor variables" (Morgan et al., 2013, p. 163). 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.

I began by running the descriptive statistics for all criterion and predictor variables. This analysis provided the main features of the data, including the minimum and maximum values for each variable as well as the mean and standard deviation.

After running the descriptive statistics, I ran scatterplots. Scatterplots show the dot cluster of the two variables. By viewing the slope of the dot cluster, I was able to determine if there was a positive or negative relationship. Little or no relationship exists in a scatterplot that does not present an apparent slope (Witte & Witte, 2010). Scatterplots are helpful in checking the linear relationship of each pair of variables (Morgan et al., 2013).

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 (see Table 4 and Table 5). A multiple regression equation can provide a more accurate prediction of the criterion variable than a simple regression because of the predictive power of the multiple predictor variables (Hinkle, Wiersma, & Jurs, 2003; Witte & Witte, 2010). I used multiple regression equations in order to take advantage of the predictive power of multiple predictor variables.

I ran a multiple regression in which I controlled for student characteristics (socioeconomic status, percentage of special education students, and percentage of limited English proficient students) and then another model that includes mobility and school size. 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

Table 4

Multiple Regression

Variables Entered/Removed[a]

Model	Variables Entered	Variables Removed	Method
1	Mobility		Enter

a. All requested variables entered
b. Dependent Variable: Graduation Rate

Table 5

Multiple Regression

Variables Entered/Removed[a]

Model	Variables Entered	Variables Removed	Method
1	Mobility		Enter

a. School Size
b. Dependent Variable: Graduation Rate

Hierarchical Regression adds variables to the regression model in a sequential manner and in stages. It explains the amount of variance accounted for by each successful variable added to the model. The first model was a simple regression in a hierarchical equation that provided two models, one with mobility and the other with the other variables in order to determine the relationship between mobility predicting the graduation rate. The first table presents the variables that were entered (see Table 6).

Table 6

Hierarchical Regression Model

Variables Entered/Removed[a]

Model	Variables Entered	Variables Removed	Method
1	Mobility		Enter
2	Socioeconomic Status		Entered
3	Percentage of Limited English Proficient Students		Entered
4	Percentage of Special Education Students		Entered

a. Dependent Variable: Graduation Rate

Then, I ran a hierarchical regression of mobility, teacher mobility, and school size only to determine the contributions each of them made to explain the graduation rate and the significance of this contribution (see Table 7). I examined R^2 change to see if R^2 change was significant.

Table 7

Hierarchical Regression

Variables Entered/Removed[a]

Model	Variables Entered	Variables Removed	Method
1	Mobility		Enter
2	Teacher Mobility		Enter
3	School Size		Enter

a. Dependent Variable: Graduation Rate

Chapter IV

ANALYSIS OF THE DATA

Introduction

My purpose for 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. The data analyzed included the student mobility data with controlled student characteristic variables of free and reduced-price lunch, race as indicated by the percentage of Black and Hispanic students, percentage of special education students, and the percentage of limited English proficient students and school characteristic variables of teacher mobility and school size. This study strived to provide research-based evidence related to one factor not controllable by schools, student mobility, and its effect on an accountability measure, graduation rate. Since the graduation rate is an accountability measure for all public high schools, educational bureaucrats must consider factors that schools cannot control but may affect the graduation rate. The state of New Jersey has 590 operational school districts and 485 high schools. The sample consisted of 316 New Jersey high schools that contain Grades 9-12. I designed this study to provide research-based evidence to assist policy makers and education leaders in creating policies and programs to address this uncontrollable variable that affects the graduation rate.

Predictor Variables

Results from previous research suggest variables that influence graduation rates and student mobility. These predictor variables have been included in the analysis. Variables and names are presented in Table 8.

Table 8

Abbreviated Variable Names

Variable	Label	Description
Graduation Rate	Adjusted_Cohort_Grad_Rate	The percentage of students who have graduated from high school using the adjusted cohort graduation rate.
Student Mobility	Student_Mobility_Rate	The percentage of students who have changed schools during the course of the school year.
Teacher Mobility	Teacher_Mobility	The percentage of teachers who change schools during the school year.
Black Students	BlackPER	The percentage of Black students in the high school.
Hispanic Students	HispPER	The percentage of Hispanic students in the high school.
Students Receiving Free Lunch	FreePER	The percentage of students receiving free lunch. Used to indicate the socioeconomic status portion of the study.
Students Receiving Reduced-price Lunch	ReducedPER	The percentage of students receiving reduced-price lunch.
Limited English Proficient Students	LEPPER	The percentage of limited English proficient students within the school.
Special Education Students	DISABPER	The percentage of special education students within the school.

Descriptive Statistics

One of the requirements of NCLB is for all states to report school accountability data via a school report card. The information found on this report card for every school is available through public domain access on the NJDOE website and can be downloaded

into a Microsoft Excel format. Data for each variable were obtained from the NJDOE website. Table 9 provides a descriptive statistic profile for the variables.

Table 9

Descriptive Statistics on the Variables Used in the Study

Descriptive Statistics

	N	Minimum	Maximum	Mean	Std. Deviation
Adjusted_Cohort_Grad_ Rate	316	35.91	100.00	88.0267	11.16382
Student_Mobility_Rate	316	.00	78.90	8.9139	9.21386
Teacher_Mobility	316	.00	45.50	4.2902	5.36392
BlackPER	316	.35	98.32	16.2983	21.55311
HispPER	316	1.49	95.72	17.9014	19.57185
FreePER	316	.00	82.05	22.0519	22.32986
ReducedPER	316	.00	44.30	5.0750	4.51449
LEPPER	316	.00	28.63	2.2900	3.84576
DISABPER	316	.00	83.40	15.2772	7.05290
Total_Enroll	316	118.50	3373.00	1173.4446	597.94045
Valid N (listwise)	316				

The total sample mean provides an overall view of the data. Of the 316 schools in the study, the average school size was approximately 1173 students. The average percentage of Black and Hispanic students was 16% and 18% with maximums of 98% and 96%, respectively. The average percentage of students receiving free lunch was 22%, yet the maximum was 82% and the minimum was zero. The average percentage for special education students was 15%, while the percentage of limited English proficient students was 2%. While the average student mobility rate was 9% and teacher mobility was 4%, the maximum student mobility rate was 79% and the maximum teacher mobility rate was 45.5% with a minimum of zero.

Research Questions

The overarching research question that was answered is as follows: What is the influence of the student mobility rate on the graduation rate of New Jersey's high schools?

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 student and school characteristics?

Hypotheses

Null Hypothesis 1: No statistically significant relationship exists between the graduation rate and the student mobility rate as reported on the New Jersey School Report Card and Performance Report for New Jersey's public comprehensive high schools.

Null Hypothesis 2: The percentage of student mobility in a high school does not account for a statistically significant amount of variance in New Jersey public high school graduation rates.

Results

First, I created scatterplots to determine if scores for each school variable were related to one another. The linear regression lines show if the correlation between the two variables is positive or negative. "The pattern indicates the strength and direction of the

association between the two variables" (Morgan et al., 2013, p. 154). 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 5 to 8).

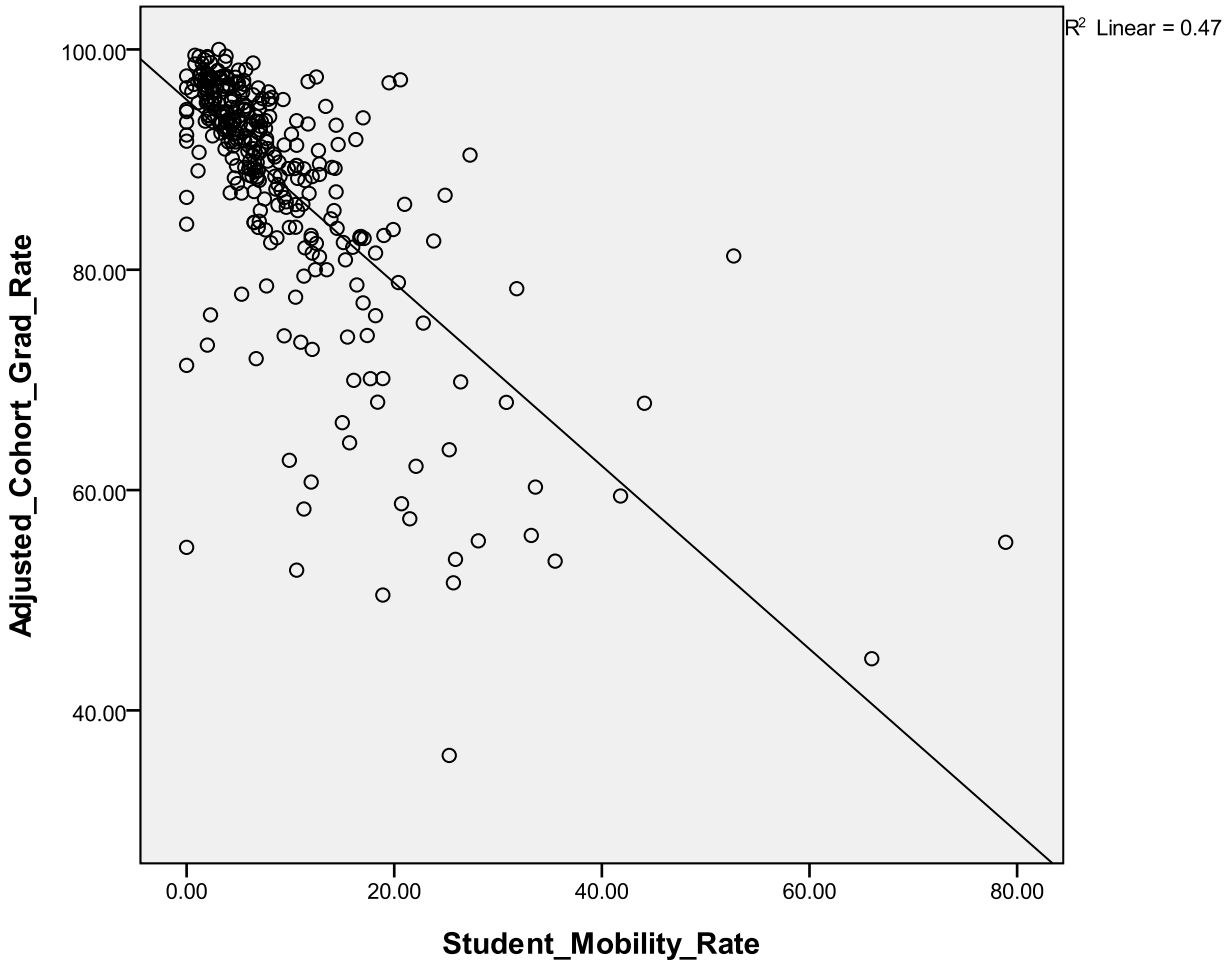


Figure 5. Graduation Rate and Student Mobility Scatterplot

This scatterplot 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.

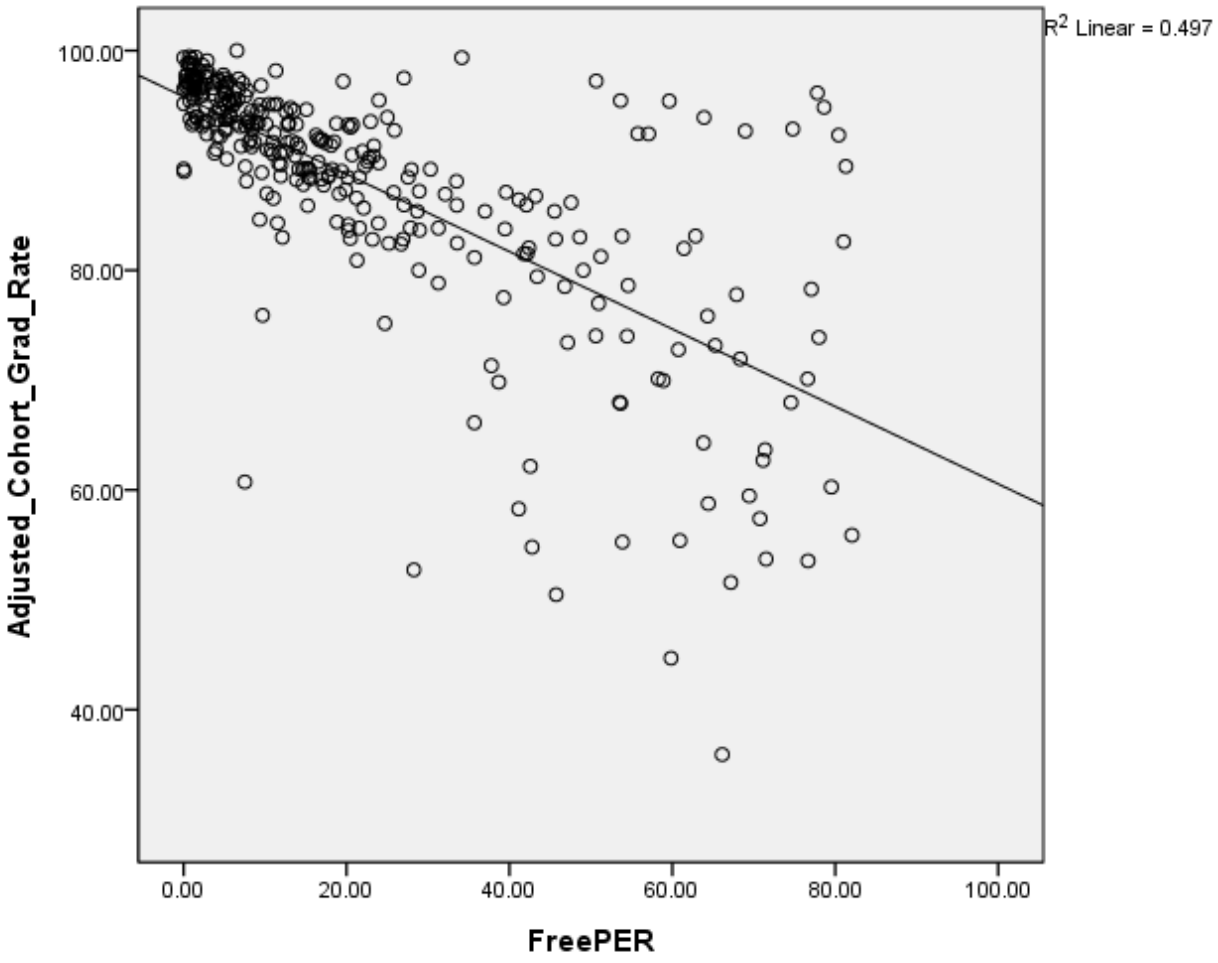


Figure 6. Graduation Rate and Free Lunch Scatterplot

This scatterplot 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.

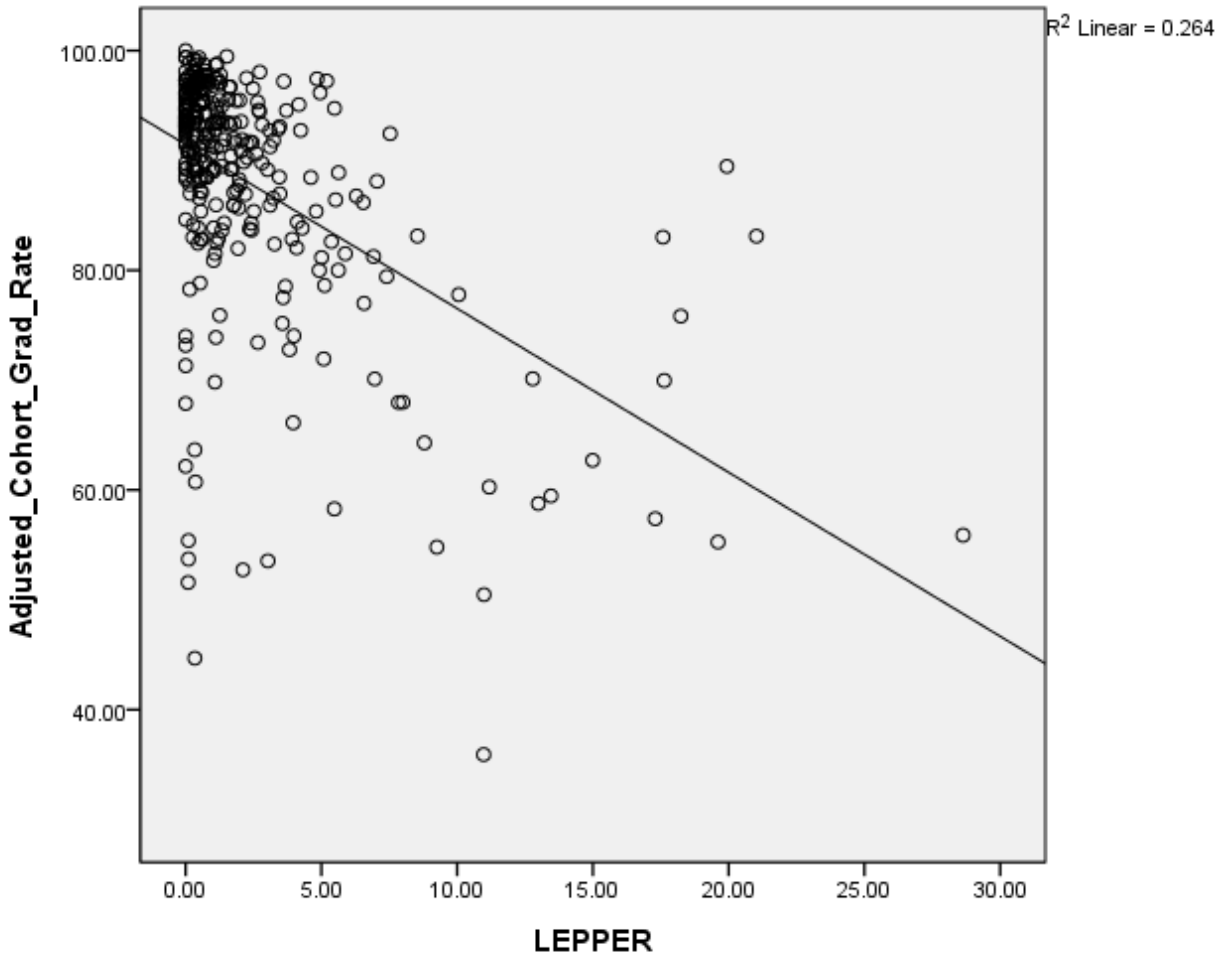


Figure 7. Graduation Rate and Limited English Proficient Students

This 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.

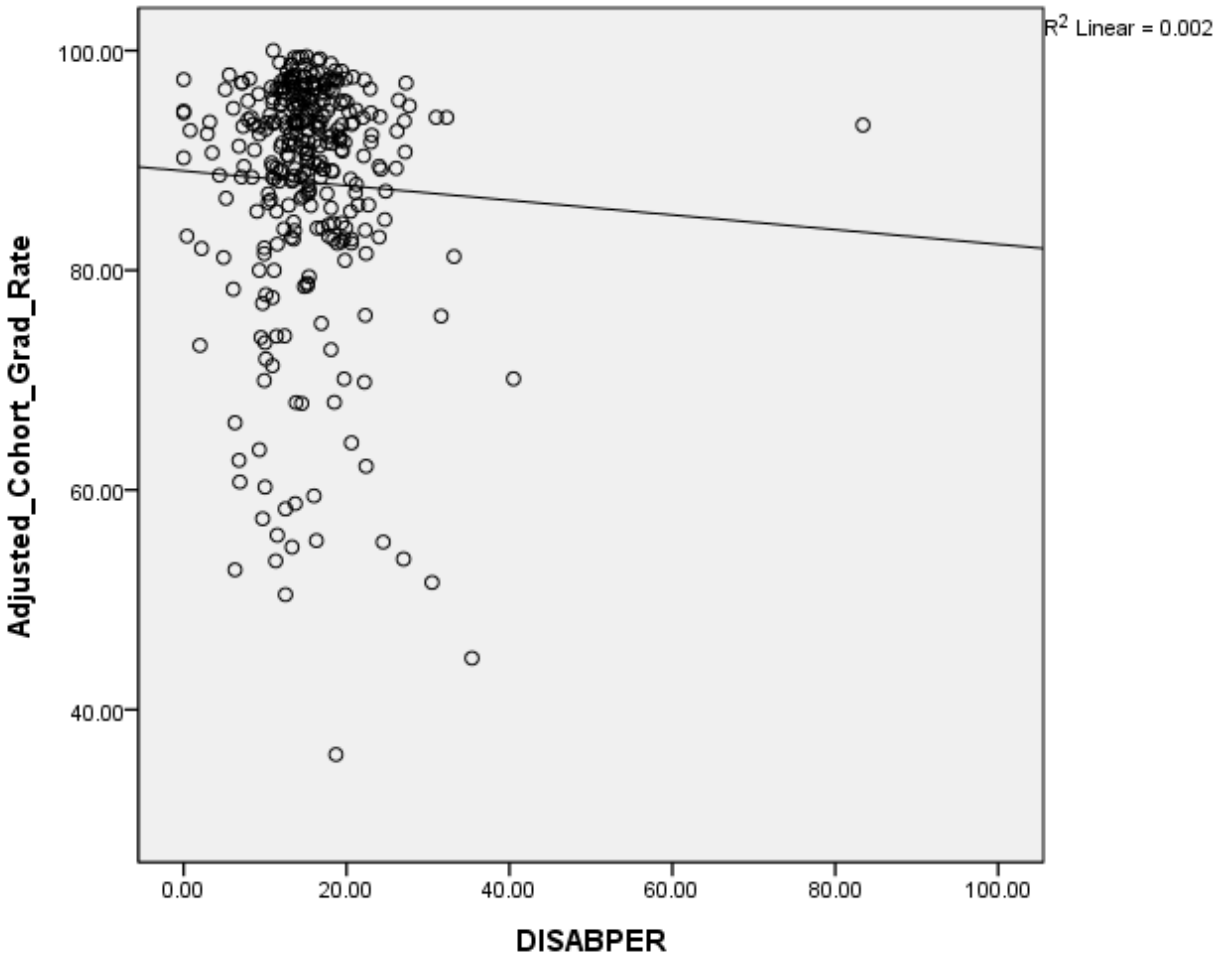


Figure 8. Graduation Rate and Students with Disabilities

This scatterplot shows the relationship between the graduation rate and the percentage of special education students. The figure has an R^2 of .002, which indicates that .2% of the variance of the graduation rate was explained by the percentage of special education students.

A correlation coefficient matrix was analyzed to identify the relationship between the variables (see Table 10). The values of the correlation coefficients are between -1 and

+1, which indicates a perfectly correlated negative or positive relationship. The Pearson Correlation table shows that there is a strong negative relationship between the predictor variable students 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).

Table 10

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).

Multiple Regression

Multiple regression assists the researcher in making predications using several independent/predictor variables where correlations do not (Morgan et al., 2013). Using the Enter or simultaneous regression method, the model summary table 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 (see Tables 11 and 12).

Table 11

Variables Entered/Removed

Variables Entered/Removed[b]

Model	Variables Entered	Variables Removed	Method
1	ReducedPER, DISABPER, LEPPER, Teacher_ Mobility, BlackPER, Student_ Mobility_Rate, HispPER, FreePER[a]	.	Enter

a. All requested variables entered.

b. Dependent Variable: Adjusted_Cohort_Grad_Rate

Table 12

Model Summary for all variables

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	.805[a]	.648	.638	6.71264	.648	70.533	8	307	.000

a. Predictors: (Constant), ReducedPER, DISABPER, LEPPER, Teacher_Mobility, BlackPER, Student_Mobility_Rate, HispPER, FreePER

The ANOVA table (see Table 13) shows that F = 70.53 and is statistically significant, $p < .000$. This indicates that the predictor variables significantly combine to predict the graduation rate. The combination of variables to predict the graduation rate from 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 was statistically significant, $F(8, 307) = 70.53$, $p < .000$

Table 13

ANOVA Table of the Variables

ANOVA[b]

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	25425.437	8	3178.180	70.533	.000[a]
	Residual	13833.262	307	45.059		
	Total	39258.699	315			

a. Predictors: (Constant), ReducedPER, DISABPER, LEPPER, Teacher_Mobility, BlackPER, Student_Mobility_Rate, HispPER, FreePER

b. Dependent Variable: Adjusted_Cohort_Grad_Rate

The combination of variables was statistically significant, $F(8, 307) = 70.53$, $p < .000$. The beta coefficients are presented in Table 14. Note that student mobility rate, teacher mobility, Black students, and limited English proficient students influenced the graduation rate when all variables were included. In this model, Hispanic students, students receiving free lunch, students receiving reduced-price lunch and students with disabilities are not significant. Because the literature suggests a correlation between student mobility rate and Hispanic students and students whose families are classified with low socioeconomic status, a closer look at the significance level of the variables was warranted. An analysis of the variance inflation factor (VIF) is one way to determine if the variables are highly correlated. "The variance-inflation factor is a useful diagnostic because it indicates directly the harm inflicted by collinearity" (Fox & Monette, 1992, p. 178). Multicollinearity exists when independent variables are highly correlated (Morrow-Howell, 1994). The data in Table X (Coefficient Tables) show the VIF scores for race (Black and Hispanic) are 3.016 and 4.771 and socioeconomic status (Free Lunch) is 6.908, all well over 2, which indicated that a multicollinearity issue exists.

Table 14

Coefficient Table with VIF Scores

Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.	Correlations			Collinearity Statistics	
		B	Std. Error	Beta			Zero-order	Partial	Part	Tolerance	VIF
1	(Constant)	98.691	1.074		91.881	.000					
	Student_Mobility_Rate	-.440	.055	-.363	-7.930	.000	-.686	-.412	-.269	.547	1.827
	Teacher_Mobility	-.176	.073	-.085	-2.416	.016	-.222	-.137	-.082	.938	1.066
	BlackPER	-.147	.030	-.284	-4.820	.000	-.598	-.265	-.163	.332	3.016
	HispPER	-.075	.042	-.131	-1.775	.077	-.495	-.101	-.060	.210	4.771
	FreePER	-.044	.045	-.087	-.977	.329	-.705	-.056	-.033	.145	6.908
	LEPPER	-.407	.149	-.140	-2.739	.007	-.514	-.154	-.093	.438	2.281
	DISABPER	.002	.055	.002	.044	.965	-.042	.002	.001	.935	1.069
	ReducedPER	-.078	.109	-.032	-.717	.474	-.372	-.041	-.024	.587	1.704

a. Dependent Variable: Adjusted_Cohort_Grad_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 (see Tables 15 through 17). The elimination of the two variables did not drastically reduce the strength of the model, as the variance went from 65% to 62%.

Table 15

Model Summary without Black and Hispanic Students

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	.787[a]	.620	.612	6.94953	.620	83.980	6	309	.000

a. Predictors: (Constant), LEPPER, DISABPER, Teacher_Mobility, ReducedPER, Student_Mobility_Rate, FreePER

Table 16

ANOVA Table without Black and Hispanic Students

ANOVA[b]

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	24335.258	6	4055.876	83.980	.000[a]
	Residual	14923.441	309	48.296		
	Total	39258.699	315			

a. Predictors: (Constant), LEPPER, DISABPER, Teacher_Mobility, ReducedPER, Student_Mobility_Rate, FreePER

b. Dependent Variable: Adjusted_Cohort_Grad_Rate

The beta coefficients are presented in Table 17 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.

Table 17

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 Pearson correlation coefficient (r) is used to determine the linear relationship that exists between two variables (Hinkle, Wiersman, & Jurs, 2003). The Pearson (r) was analyzed in those models that were significant and the linear relationship was reported and interpreted as follows (Hinkle, Wiersman, & Jurs, 2003):

.9 to 1	very high positive or negative correlation
.7 to .9	high positive or negative correlation
.5 to .7	moderate positive or negative correlation

.3 to .5 low positive or negative correlation

.0 to .3 little if any correlation

As displayed in Table 18, variables were entered into the hierarchical regression model in order of their strength, using the Enter method in the following order: Model 1, student mobility; Model 2, student mobility and free lunch; Model 3, student mobility, free lunch, and LEP; Model 4, student mobility, free lunch, percentage of limited English proficient students, and teacher mobility.

Table 18

Variables Entered/Removed

Variables Entered/Removed[b]

Model	Variables Entered	Variables Removed	Method
1	Student_ Mobility_Rate[a]	.	Enter
2	FreePER[a]	.	Enter
3	LEPPER[a]	.	Enter
4	Teacher_ Mobility[a]	.	Enter

a. All requested variables entered.

b. Dependent Variable: Adjusted_Cohort_Grad_Rate

In Model 1 (see Table 19), 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 4 to Model 4 was statistically significant $F(1,311) = 7.14$, $p < .008$.

Table 19

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

The ANOVA table confirmed the results were statistically significant (see Table 20). The independent variables entered in the four models predicted the variance in predicting the graduation rate and were statistically significant (Model 1: F=278.936,

df=1, 314, p<.000; Model 2: F=238.227, df=2, 313, p<.000; Model 3: F=162.944, df=3,312, p=<.000; Model 4: F=126.401, df=4,311, p<.000).

Table 20

Hierarchical Regression ANOVA Table

ANOVA[e]

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	18468.527	1	18468.527	278.936	.000[a]
	Residual	20790.172	314	66.211		
	Total	39258.699	315			
2	Regression	23693.550	2	11846.775	238.227	.000[b]
	Residual	15565.149	313	49.729		
	Total	39258.699	315			
3	Regression	23963.717	3	7987.906	162.944	.000[c]
	Residual	15294.982	312	49.022		
	Total	39258.699	315			
4	Regression	24307.182	4	6076.795	126.401	.000[d]
	Residual	14951.517	311	48.076		
	Total	39258.699	315			

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

e. Dependent Variable: Adjusted_Cohort_Grad_Rate

An analysis of the strength of each predictor variable was provided in the coefficients table (see Table 21). In Model 1, the predictor variable student mobility was statistically significant, p<.000 with t= -.16.701 and a B= -.686. This negative beta indicates that student mobility has a negative influence on the graduation rate. As student mobility increases, high school graduation rate decreases. As an independent variable, student mobility is a predictor of the graduation rate because the beta is close to 1; and

the closer the beta is to 1, the stronger the predictive power. In Model 2, FreePER was added to the model, and the strength of the variable student mobility decreased (-.686 vs. -.409). This means that the variable FreePER has a significant effect on the strength of student mobility. In Model 2, FreePER became a stronger predictor. Student mobility continued to be a statistically significant variable (B= -.409, t= -9.164 p= .000) and FreePER was also a statistically significant predictor of the graduation rate (B= -.458, t= 10.250, p= .000).

In Model 3, the addition of LEPPER created a slight change in the student mobility rate. Student mobility continued to be a strong predictor of the graduation rate, and the beta decreased from Model 2 to Model 3 from -.409 to -.392. The beta for FreePER reduced from -.458 to -.410 and LEPPER minimally contributed to the graduation rate with a beta of -.104.

The addition of teacher mobility in Model 4 affected student mobility and FreePER, bringing the student mobility beta up to -.394 and FreePER down to -.389. The variable teacher mobility is a weak predictor (B=-.095, t=-2.673, p<.008).

Table 21

Coefficient Table of Hierarchical Regression

Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	95.434	.637		149.728	.000
	Student_Mobility_Rate	-.831	.050	-.686	-16.701	.000
2	(Constant)	97.495	.588		165.861	.000
	Student_Mobility_Rate	-.496	.054	-.409	-9.164	.000
	FreePER	-.229	.022	-.458	-10.250	.000
3	(Constant)	97.458	.584		166.932	.000
	Student_Mobility_Rate	-.475	.054	-.392	-8.724	.000
	FreePER	-.205	.024	-.410	-8.380	.000
	LEPPER	-.298	.127	-.102	-2.348	.020
4	(Constant)	98.113	.628		156.258	.000
	Student_Mobility_Rate	-.477	.054	-.394	-8.841	.000
	FreePER	-.195	.024	-.389	-7.946	.000
	LEPPER	-.303	.126	-.104	-2.410	.017
	Teacher_Mobility	-.198	.074	-.095	-2.673	.008

a. Dependent Variable: Adjusted_Cohort_Grad_Rate

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) (see Table 22); therefore, the size of the school does not influence the graduation rate in New Jersey public schools

Table 22

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. In the next chapter I present conclusions from this study and the larger literature base. I also provide recommendations for practice and policy.

CHAPTER V

CONCLUSIONS AND RECOMMENDATIONS

Introduction

New Jersey's public high schools continue to be driven by federal and state legislation with strong accountability measures, with the reporting of the graduation rate with sanctions for schools not producing graduates being one of such measures. 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 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. Additionally, this study examined the influence of student mobility on the graduation rate when controlled by the student characteristic variables of socioeconomic status, ethnicity, percentage of special education students, and percentage of limited English proficient students and the school characteristic variables of school size and teacher mobility. The strength and direction of the relationships between variables and the graduation rate was explored. The following overarching research question guided this study: What is the influence of the student mobility rate on the graduation rate of New Jersey's high schools?

The results of the study revealed the influence that factors uncontrollable by school personnel, such as mobility, have on the graduation rate of a school and school district. Therefore, I discuss the influence mobility has on the graduation rate, followed by my recommendations for policy, planning, and future research.

Mobility

Conclusions

Mobility is defined as "students moving from one school to another for reasons other than being promoted to the next school level" (Rumberger, 2002, p. 1). Researchers have proven that mobility negatively affects student achievement (Engec, 2006; Heinlein & Shinn, 2000; Ingersoll, Scamman, & Eckerling, 1989; Mantzicopoulos & Knutson, 2000). In addition, mobility in the early years negatively affects the academic achievement in the later years (Gruman et al., 2008). This effect appears to be most detrimental to minority students and students from urban areas and low-income families (Heinlein & Shinn, 2000; Temple & Reynolds, 2000; Wright, 1999). Even though no study has examined the direct connection of student mobility to graduation, researchers have studied and proven that student mobility is closely associated with increased probability of dropping out of school (Gaspar, DeLuca, & Estacion, 2012; Haveman, Wolf, & Spaulding, 1991; Rumberger & Larson, 1998; South, Haynie, & Bose, 2005). Additional studies show that ethnic minorities and students from low-income families are highly mobile and the increased risk of dropping out of school is even greater (Gaspar, DeLuca, & Estacion, 2012; Haveman, Wolf, & Spaulding, 1991).

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 leaning, 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, 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, 2010g). 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, 2010g). 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 23).

Table 23

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

Recommendations for Policy and Practice

Educational leaders must create programs to assist mobile students and their families at the school and district level. Research shows that mobile students need assistance academically, socially, and behaviorally. From a social capital perspective, mobile students lose social capital with each move, and they are unable to develop, build upon, and maintain a networking system of relationships (Coleman, 1988; Ream, 2003). Being able to build upon social capital, developing friends, parents connecting to the friends of their children, parents having a knowledge and relationship of school personnel and services, and parents developing trust of school personnel would assist the student in achieving success academically, socially, and behaviorally. Programs that target these areas would positively assist both the mobile student and the school.

Fiel, Haskin, and Turley (2012) conducted a study that examined a social capital intervention program that had a goal of reducing school mobility. This eight-week after-school program brought families and school personnel together to build communication and strengthen social aspects with all participants. The sample schools were predominately Hispanic schools. The results found that mobility was not affected. The

one exception was that mobility of Black students between first and third grade was reduced by 29%.

Students who move from one school to another during a school year do not create or obtain teacher-student bonds and academic support. One way to help students with this social aspect of school is to help them feel welcome. Districts with highly mobile schools should create similar routines so students can move from one school to another and feel comfortable with the routines. Students need consistency and routine to protect against the student feeling anxious and insecure (Goble, 1970).

The McKinney-Vento Homeless Assistance Act was adopted in 1988 and was reauthorized as part of NCLB in 2002 along with the Education of Homeless Children and Youths program. This program directs federal funds to schools so that "each child of a homeless individual and each homeless youth has equal access to the same free appropriate public education, including a public preschool education, as provided to other children and youths" (42 U.S.C. 11431(1)). The act permits students to stay in the same school while homeless or choose to attend a school in the area where the homeless student is living. Money granted from this program can only be used for activities and services for homeless children and professional development and awareness of the education needs of homeless children. Students cannot be segregated from other children or placed in a separate program because the student's status is homeless. Currently, the N.J.A.C. 6A:17, as required by the federal regulation under Title VII-B of the McKinney-Vento Homeless Assistance Act, contains the provisions required in educating homeless students. These provisions extend from transportation to available resources districts are

entitled to receive. Lawmakers should develop policies similar to these pieces of legislation to provide resources to assist mobile students and their schools.

Lawmakers must address accountability policies that determine the publicly reported status of a school and district since they are unable to control student mobility. Some type of provision should be created that allows districts to report to the state the number or percentage of mobile students but not to have the test scores or graduation status of these students count against the school and district.

State lawmakers should continue to collect and report mobility data and consider a mechanism for included mobility data that encompasses a student's entire academic career. Currently, New Jersey reports the mobility rate for a school, but how would this translate should the rate be reported district-wide or K-12 despite the district configuration. In addition, state lawmakers should consider taking the mobility rate into consideration with the accountability measures that are in place. Educational administrators and teachers cannot control the movement of a family.

Mobility and Poverty

Conclusions

While the graduation rate is influenced by student mobility, studies indicate that most mobile students are those who are living in poverty or below the poverty level (Rumberger, 2008). Research shows that mobile students are Black and Hispanic students with a low socioeconomic status (Ingersoll, Scamman, & Eckerling, 1989; Kerbow. 1996). Schafft (2006) conducted interviews of 22 participants selected for a study on mobility and poverty. The sole criterion was students qualifying for free or reduced-price lunch. Within this study, Schafft (2006) found that 21 of 22 families moved 109 times

during a five-year period. Furthermore, in the United States, race is moderately related with poverty. According to the US Census data, 15.9% of American families and 10.8% of families in New Jersey have income below the poverty level. The numbers increase to 21.8% for American children and 11.4% for New Jersey children living below poverty. When looking at poverty levels based on demographic data, Whites in America and New Jersey are below the overall rate, while Blacks and Hispanics almost triple the rate (see Table 24).

Table 24

Census and State Data Reports on the Poverty Rate and Below-Poverty Rate Based on Demographics

	American Families Living in Poverty	**New Jersey Families Living Below Poverty Levels**
Total	15.9%	10.8%
Non-Hispanic Whites	9.7%	6.6%
Blacks	27.2%	18.8%
Hispanics	25.6%	20.4%

Students who are living at or below the poverty level usually reside in large urban areas. It is within these areas that a great deal of conversation takes places regarding these schools being held accountable for academic achievement, dropout rates, and graduation rates. What can a school do if it has a highly mobile, transient population living in poverty?

Families living on or below the poverty level are more concerned with life. On a daily basis, their focus is on surviving. Surviving includes making sure that the family is safe and has food and shelter. On many occasions, this may require the family to change

residence resulting in a change of schools. Essentially, the family's basic needs are affected by poverty, which in turn compromises health related issues, home and family life, and the community (Rebell & Wolff, 2008).

While New Jersey has 11.4% of children living in poverty, many cities in New Jersey have poverty levels that are much higher. Table 25 is a listing of cities with children living in poverty levels three times that of the state.

Table 25

Cities with the Highest Levels of Children Living in Poverty Three Times the State Level

City in New Jersey	
Camden, Camden County, New Jersey	50.3%
Asbury Park, Monmouth County, New Jersey	44.9%
Salem, Salem County, New Jersey	43.4%
Penns Grove, Salem County, New Jersey	41.2%
Paterson, Passaic County, New Jersey	39.0%
Atlantic City, Atlantic County, New Jersey	36.6%
Trenton, Mercer County, New Jersey	36.3%
Egg Harbor, Atlantic County, New Jersey	36.2%
Lakewood Township, Ocean County, New Jersey	36.0%
Passaic, Passaic County, New Jersey	35.9%
Woodbine, Cape May County, New Jersey	35.8%
Bridgeton, Cumberland County, New Jersey	35.4%
Millville, Cumberland County, New Jersey	35.2%
Newark, Essex County, New Jersey	34.9%
South Toms River, Ocean County, New Jersey	33.6%
East Orange, Essex County, New Jersey	32.5%

(NJDOL, 2012)

In addition, there are cities whose child poverty levels are two times that of the state level (see Table 26). Many of the schools in these cities have low graduation rates and high mobility rates. Because of their academic performance and graduation rate, though, they are categorized as Priority Schools and Focus Schools and must adhere to the sanctions as required by legislation. This is out-of-school factor cannot be controlled by school leaders yet they are being held accountable for the students' performance.

Table 26

Cities with the Highest Levels of Children Living in Poverty Two Times the State Level

City in New Jersey	
Wrightstown, Burlington County, New Jersey	31.6%
Beverly, Burlington County, New Jersey	31.6%
Phillipsburg, Warren County, New Jersey	31.1%
Highlands, Monmouth County, New Jersey	30.3%
Flemington, Hunterdon County, New Jersey	30.0%
Union City, Hudson County, New Jersey	29.4%
Perth Amboy, Middlesex County, New Jersey	28.8%
Guttenberg, Hudson County, New Jersey	28.7%
Jersey City, Hudson County, New Jersey	28.1%
Long Branch, Monmouth County, New Jersey	26.7%
Victory Gardens, Morris County, New Jersey	26.6%
Red Bank, Monmouth County, New Jersey	26.5%
Hi-Nella, Camden County, New Jersey	26.0%
Somers Point, Atlantic County, New Jersey	25.6%
New Brunswick, Middlesex County, New Jersey	25.4%
Wildwood, Cape May County, New Jersey	25.4%
Pleasantville, Atlantic County, New Jersey	24.7%
Orange, Essex County, New Jersey	24.6%
Irvington, Essex County, New Jersey	24.4%
Cumberland County, New Jersey	23.9%
Merchantville, Camden County, New Jersey	23.7%
Buena Vista, Atlantic County, New Jersey	23.7%
West New York, Hudson County, New Jersey	23.6%
Elizabeth, Union County, New Jersey	23.5%
Plainfield, Union County, New Jersey	23.5%

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 27).

Table 27

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

(NJDOL, 2012)

Recommendations for Policy and Practice

In order to assist families living in poverty, lawmakers need to address the areas that are most concerning, such as housing. More low-income housing is needed for families living in poverty. Lawmakers could also consider expanding homeownership for low-income families and making homeownership in the state more affordable. Many homeowners are more stable than renters. Special programs to help more families become homeowners would help in creating stability for otherwise mobile students.

Lawmakers should consider ways to break up the poverty that exists in New Jersey's large urban centers. One way to do this would be to provide and advertise housing opportunities outside of the inner cities. In this instance, families would be able to use the Section 8 certificate to rent apartments in the suburban areas. A proven example of this type of program that exposed low socioeconomic students to those living in low poverty settings exists in Montgomery County, Maryland. While this county is revered as the wealthiest in Maryland, it also contains schools that serve students living in and below poverty. This county has an inclusionary zoning program where real estate developers are mandated to provide a portion of the homes built to be rented or sold at a price at which low-income families would be able to buy or rent in affluent areas, thereby allowing families to send their children to school with children who are not living in poverty (Schwartz, 2011). Schwartz (2011) examined data of 850 students over six years to identify the results of students living in public housing and students living in low poverty neighborhoods and found that "children in public housing who attended the

school district's most-advantaged schools far outperformed in math and reading those children in public housing who attended the districts least-advantaged elementary schools" (p. 44). Children with a low socioeconomic status, living in low poverty neighborhoods, attending affluent schools experienced home stability and an increase in academic achievement (Schwartz, 2011).

The Gautreaux Housing Program in Chicago is another program that allowed low-income Black residents in Chicago's public housing to use their Section 8 housing certificate and move to an apartment in the suburbs or one within the city (Rosenbaum & DeLuca, 2008). A study of these families some 15 years later found that 66% remained in the suburbs (Rosenbaum & DeLuca, 2008). After analyzing interviews with the mothers who moved to the suburbs, Rosenbaum and DeLuca (2008) found that they had a "new sense of efficacy and control over their lives" (p. 657).

A similar program with regard to providing low-income housing has been and is being debated currently in New Jersey. The Mount Laurel decision originated with the NAACP's complaint about the land use regulations in Mount Laurel, saying that it excluded low and moderate income families since the new homes were geared toward upper and middle income families and the poor Blacks were facing their homes being condemned (O'Dea, 2013). The New Jersey Supreme Court responded with a definition outlining the responsibility neighborhoods have in providing affordable housing (O'Dea, 2013). The Fair Housing Act of 1985 resulted in the state creating the Council on Affordable Housing (COAH), which was responsible for created housing quotas (O'Dea, 2013). With the efforts to abolish COAH and take the funding meant for building affordable housing and use it in the state's budget, the court has recently ordered the

governor “to write new rules by February 26 for the Council on Affordable Housing” (Rizzo, 2013, p. 3) which has not met since 2010.

New Jersey needs to focus on the municipalities with high poverty levels and assist the schools in these areas with increasing continuity in education for these mobile students living in poverty. This may require investigating measures that would allow a student whose family has moved into the zone of another school within the district during a school year to remain in the initial school.

Lawmakers should combine the efforts of the agencies that work with families living in poverty to educate them on the importance of school attendance and continuity of education for their children and what families can do to move out of their current income status. If a family is receiving public assistance, for example, include a requirement that they must attend some sort of educational advancement session in order to help them move out of their current living status. This could include enrolling in a vocational school to obtain a license in a field or attending a junior college.

Mobility and Limited English Proficient Students

Conclusions

The population of immigrants in the United States has doubles since 1980 and many are undereducated and living in poverty (Hoynes, Page, & Stevens, 2006). One occupation these immigrants hold is that of a migrant worker. The United States government reports that approximately 40% of migrant children have changed schools more than three times (U.S. GAO, 1994). In addition, this immigrant population, whether migrant workers or not, have limited English speaking skills. Studies have shown that these students drop out of school at a higher rate than students who are from

an English-speaking background (Steinberg et al., 1984). The results of this study indicate that the limited English proficient student's variable is negatively correlated to the graduation rate and increases the negative relationship between mobility and the graduation rate. Many schools have created programs to address the deficiencies in English language learning, and some have created programs to assist migrant children; however, what programs are in place to address the mobile issue of LEP students whose families are not migrant workers?

Recommendations for Policy and Practice

Policy makers need to create measures that assist schools with high limited English proficient students instead of holding them to the same accountability measures as others. Students whose first language is not English may need longer than a year or two to be able to perform at the same level as students whose first language is English. The country of origin and the education the student received in that country dictates how long it may take to become proficient in English.

Schools need assistance with educating the entire family of LEP students in English. When students return home from school, they need to continue using the language; however, this is difficult if no one in the home speaks English. State officials should provide resources to the school so that programs can be extended to LEP families.

Size of the School and Mobility

Conclusions

The size of a school plays a part in the resources schools can make available to students. Larger school can offer more in the way of programs, but in some cases the dropout rate of these schools is higher (Gardner et al., 2000; Werblow & Duesbery,

2009). Smaller schools can offer more intimate friendships with peers and relationships with teachers, but many resources offered in larger schools are often missing (Carolan, 2012). When it comes to student mobility, the social resources of a smaller school can assist the student in an easier acclimation to the school.

The size of a school as a variable in this study was not statistically significant but warrants discussion because of the possibilities that exist in assisting mobile students. Socially, smaller schools prevent mobile students from getting lost in the student body. The smaller nature gives mobile students the opportunity to build relationships with teachers and other students. While larger schools may offer more clubs, activities, and courses, mobile students are in need of far less. The small nature may provide teachers in small schools with the opportunity to assist mobile students academically to help in preventing the gaps in knowledge.

Recommendations for Policy and Practice

School districts need to pay attention to the size of their schools and ascertain the benefits of increasing or decreasing size. If a district has large schools and a mobile population, it should consider creating smaller schools to be able to better assist mobile students. In addition, smaller schools have been cited as having a better graduation rate.

Recommendations for Future Research

This research adds to the extant literature on the influence of student mobility on the graduation rate. However, one study cannot provide all the answers related to student mobility and the graduation rate. In addition, this study focused on public high schools in one state. In order to add more to the literature, it is important to conduct future research on the following topics:

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.
6. Conduct a study of the school with the highest and lowest mobility rate and compare the curriculum requirements–actual and real.
7. Conduct a study of the school with the highest and lowest poverty rate and compare the curriculum requirements–actual and real.

New Jersey's present governor's education reform agenda is "improving public schools by rewarding effective, high-quality teachers and demanding accountability in the classroom" (NJDOE). How can an effective, high-quality teacher ever be rewarded if he or she is being held accountable for something the school or district cannot control? Neither children nor parents can control their socioeconomic status or their mobility. The information gleaned from this study should aid school administrators, policy makers, and other education stakeholders in focusing on out of school factors that matter. To quote President Barack Obama, "If we want America to lead in the 21st century, nothing is

more important than giving everyone the best education possible–from the day they start preschool to the day they start their career.”

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