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The Influence of Superintendent Longevity and Continuity  
on Student Achievement and Faculty Mobility

Craig M. Hutcheson

Seton Hall University

Dissertation Committee

Michael Kuchar, Ph.D.

Christopher Tienken Ed.D.

G. Kennedy Greene, Ed.D.

Gerald Babo, Ed.D.

Submitted in Partial Fulfillment  
of the Requirements for the Degree  
Doctor of Education

Department of Education Leadership, Management, and Policy  
Seton Hall University

2020

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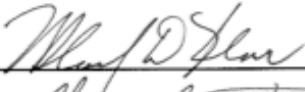

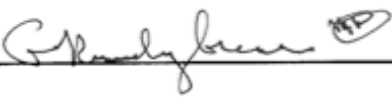
COLLEGE OF EDUCATION AND HUMAN SERVICES  
SETON HALL UNIVERSITY

APPROVAL FOR SUCCESSFUL DEFENSE

**Craig Hutcheson** has successfully defended and made the required modifications to the text of the doctoral dissertation for the Ed.D. during this **Spring Semester 2020**.

DISSERTATION COMMITTEE

(please sign and date beside your name)

Mentor: Dr. Michael Kuchar		<u>2/27/20</u> Date
Committee Member: Dr. Christopher Tienken		<u>2/27/20</u> Date
Committee Member: Dr. G. Kennedy Greene		<u>2/27/20</u> Date

The mentor and any other committee members who wish to review revisions will sign and date this document only when revisions have been completed. Please return this form to the Office of Graduate Studies, where it will be placed in the candidate's file and submit a copy with your final dissertation to be bound as page number two.

## **Acknowledgments**

The completion of the dissertation process would not be possible without the guidance, motivation, and academic assistance from many people who have contributed to this body of work.

First and foremost, I want to thank my mentor, Dr. Michael Kuchar, who was the consummate educator, motivating me to stop procrastinating and dedicate myself to the process of completing this dissertation. Dr. Kuchar, without your constant “kick in the pants” motivational talks, down-to-earth attitude and true dedication to me through this process, I would not be writing a dissertation acknowledgement at all. You have been a great role model and a better friend and I cannot ever express to you how much I appreciate you guiding me through this process. You’re the best!

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Thank you to Jami (aka—the redpengirl) for your editing and review process to make my final dissertation product truly final. It looks great!

## **Dedication**

This dissertation is dedicated to my wife, my mother, and father. I cannot imagine more loving and caring people to help me through this difficult and time-consuming process. I would have never achieved this amazing goal without your nonstop motivation.

Lisa, you have been a godsend to my life and I cannot imagine going through each day without your never-ending love and complete understanding of what it means not only to be a public school superintendent, but also to dedicate my off time to this project. Having your complete support allowed me to take time from “us” to dedicate to writing and researching and I thank and love you for this. I cannot wait to provide you with the same support, motivation, and love as you complete your dissertation research. Let’s go, future Dr.!

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## **Abstract**

In New Jersey public schools, one constant measure of academic success is defined by the outcomes on the Partnership for Assessment of Readiness for College and Careers (PARCC). The purpose of this research was to examine the impact of the relationship between the school district superintendent and resulting PARCC scores, while also examining the strength of the relationship between the superintendent and the teacher mobility rate of each school district.

The conceptual framework for this study was based on theories and research by the Mid-Continent Research for Education and Learning's (McREL) School District Leadership That Works; The Effects of Superintendent Leadership on Student Achievement, a working paper by Waters and Marzano (2006), and Fullan's (2006) Change Theory: A Force For School Improvement. This research study utilized publicly available data from multiple sources including the New Jersey Department of Education.

This study examined the strength of eight independent variables, two focus variables of superintendent experience in the school district and overall experience, and six control variables: teachers with advanced degrees, teacher attendance rate, students with free and reduced lunch, student chronic absenteeism, English language learners, and special education percentage in districts. The dependent variables in this research were 2017 PARCC scores for Grade 5 math and English Language Arts/Literacy, Algebra 1, Grade 10 English Language Arts/Literacy, and faculty mobility rate. Ten models were analyzed using SPSS V. 26 providing numerous statistical outputs including a correlational bivariate analysis and a simultaneous multiple regression analysis.

The results from this statistical analysis indicate four significant independent variables impacted the student academic outcomes of 2017 PARCC scores. The most significant variables impacting PARCC scores were teachers with advanced degrees, students receiving free and

reduced lunch, and teacher attendance rate. In eight of the ten models, the percentage of teachers with advanced degrees was the most significant variable, accounting for the most variance of 2017 PARCC scores, with students on free and reduced lunch being the next most significant predictor and teacher attendance rate being third. Superintendent years in district was significant in one model indicating that there was a statistically significant relationship between superintendent longevity and 2017 PARCC Algebra 1 scores. Remaining models indicated no statistically significant relationship between independent and dependent variables in this study.

Outcomes and insights of this research can assist local policy makers, legislators, and boards of education to recognize the importance of school district leaders and shape their beliefs that stability in educational leaders is important to create stable educational environments. This research identified three aspects of the school community that have significant influences on student academic outcomes and the results of this research can assist federal, state, and local school leaders develop new policies and practices to improve student academic environments. The significance of socioeconomics and characteristics of teachers continues to be an area of focus for improving the academic outcomes of the students served by the public school systems and can shape hiring practices, professional development opportunities, and contractual negotiations.

keywords: education, superintendent longevity, PARCC, achievement, teacher mobility, teacher characteristics, student achievement, multiple regression, socioeconomic

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## **Chapter I**

### **Introduction**

The position of superintendent has long been associated with school district leadership and connected to the quality of the educational program within a particular school district. Research conducted at the Mid-Continent Research for Education and Learning (McREL) by Waters and Marzano in 2006 indicated that a statistically significant positive relationship exists between district leadership and student achievement. It is important to continue to examine the association of superintendent continuity and student academic success at the district level.

Since the inception of the No Child Left Behind Act in 2001 and the multiple public school reform efforts over the past 10–15 years, school districts have been thrust into the spotlight with the assessment and evaluation of the educational programs offered. The call for accountability across the nation and in the state of New Jersey focuses on many variables, but always includes the examination of student success on state administered assessments, such as the New Jersey Assessment for Skills and Knowledge (NJ ASK, 2004–2014), the upper grade High School Proficiency Assessment (HSPA, 2001–2014), the Partnership for Assessment of Readiness for College and Careers (PARCC, 2015–present) [New Jersey Department of Education Website, “Historical Context: Overview of New Jersey’s Statewide Testing Program,” 2017], and the New Jersey Student Learning Assessments. All were developed to annually assess specific grades of students and their comprehension levels of the Department of Education approved curriculum standards for students in New Jersey public schools. According to the No Child Left Behind legislation (2001), by 2014, every student was expected to be proficient on the approved exams and each school and district was to have 100% proficiency for all students taking the state assessment. School districts that did not meet this 100% student proficiency

requirement by 2014 were identified as in need of improvement or failing districts. The districts were required to implement a number of mandatory reformation policies and procedures in order to receive federal educational funding. This included the adoption of a new model curricula for mathematics and Language Arts, more recently referred to as the Common Core State Standards. These reforms were in addition to new efforts to assess teacher effectiveness in the classrooms by utilizing a number of different assessment methods including a new testing consortium that measured the readiness of students for college and careers. According to the Pearson Corporation, the Partnership for Assessment of Readiness for College and Careers (PARCC) was a combined effort of several states working together to develop a set of assessments that measure whether students are on track to be successful in college and careers (Pearson, 2015). This assessment was the student academic assessment tool for math and English Language Arts/Literacy (ELA/L) in New Jersey from 2015 to 2018. In 2019, the New Jersey Department of Education switched to a PARCC-like assessment built from former PARCC questions, titled the New Jersey Student Learning Assessment (NJSLA).

In addition to the relationship between superintendent longevity and student achievement, this research included an examination of the relationship between faculty mobility rate of each school district and the length of tenure of the district superintendent. The faculty mobility rate allowed for an examination of district stability of certificated staff members, the stability of program implementation, and satisfaction levels of the certificated staff serving the sample districts. The PARCC scores, along with other factors including the faculty mobility rates of districts, were examined to measure and assess the success of a school district, the effectiveness of district leadership, and specifically the efficacy of the superintendent as the district chief educational officer. For these reasons, this research focused on the 2017 PARCC Grade 5 math



& ELA/L, the Algebra 1 and ELA/L 10 assessment scores and the district faculty mobility rate for each kindergarten through Grade 12 school district selected for this study to determine success of academic achievement of students as influenced by the continuity of school district leadership.

The focal areas of this research was to determine if superintendent longevity and continuity had an association with overall district level student achievement and faculty stability, indicating district success. The five research questions focused on the outcome variables of the 2017 PARCC Grade 5 math and ELA/L, PARCC Algebra 1 and PARCC ELA/L 10 test scores at the district level, along with the district level faculty mobility rate for the sample districts selected. Through a meta-analysis of 27 different studies since 1970, Waters and Marzano (2006) identified a number of positive relationships between the superintendent and effective school districts. One aspect, not originally intended to be studied by Waters and Marzano, was the effect of superintendent tenure on student academic achievement. “Two studies that we examined reported correlations between superintendent tenure and student academic achievement” (Waters & Marzano, 2006). This research study expanded upon this ancillary finding from Waters and Marzano and applied it to kindergarten through twelfth grade districts with a focus on Grade five through Grade ten 2017 PARCC scores and faculty mobility rates of public school districts across New Jersey.

According to Waters and Marzano (2006), “Of the 27 reports examined in the meta-analysis, 14 (excluding statistical outliers) contained information about the relationship between overall district-level leadership and average student academic achievement in the district. These 14 reports included data from 1,210 districts. The computed correlation between district leadership and student achievement was .24 (95 percent confidence interval: .19 to .30). The fact

that the 95 percent confidence interval does not include 0 indicates this correlation is significant at the .05 level.” In line with Waters and Marzano’s meta-analysis, the position of superintendent should continue to be viewed as an educational leader who has a direct impact on student academic success.

### **Conceptual Framework**

In addition to his previous works, Fullan’s *Change Theory, A Force for School Improvement* (2006) was utilized to guide this study to examine the theoretically based process for effective school improvement and the impact of the superintendent on effectuating change and improvement within a school district. Fullan’s research on effective school improvement in the early 2000s has led to a number of conceptual philosophies on the implementation of change beyond superficially implemented programs that will not result in long-term school improvements. Fullan identified flawed theories of change along with outlining his effective change strategies. Fullan (2006) stated that:

There are seven core premises that underpin our use of change knowledge. (True to the theory of action itself, it should be noted that the seven premises have been ‘discovered’ via reflective action, especially over the past decade). The seven premises are:

1. A focus on motivation
2. Capacity building, with a focus on results
3. Learning in context
4. Changing context
5. A bias for reflective action
6. Tri-level engagement
7. Persistence and flexibility in staying the course

Fullan's work expanded upon each premise and outlined important practices within each change premise. In addition to the change theories by Fullan, the research focused on premise 7, persistence and flexibility in staying the course. The research by Waters and Marzano in the meta-analysis, *School District Leadership That Works: The Effect of Superintendent Leadership on Student Achievement, a working paper* (2006) served as the main base theory for this study and continued to be the main research-based theoretical concept guiding this research. One key finding of this meta-analysis is outlined below:

“In addition, the positive correlations that appear between the length of superintendent service and student achievement confirms the value of leadership stability.

Superintendents should note the importance of remaining in a district long enough to see the positive impact of their leadership on student learning and achievement.”

Understanding the results of Fullan's change theory on educational organizational improvement, the shorter average length of tenure for New Jersey superintendents—five years or less (Kolu, 2014)—may impact the effectiveness of the superintendent. They cannot experience the full outcomes of Fullan's seven premises, thus leading to ineffective school district educational programs.

A dearth of research examines the relationship between superintendent longevity, student academic performance, and faculty mobility at the district level. As identified previously, Waters and Marzano (2006) conducted a wide-ranging research review of the effects of school district leadership, and one ancillary finding of this research review was in the relationship between district superintendent leadership and its influence on student academic performance. This study has greatly contributed to the development of the conceptual framework of this research. Although it did not directly study New Jersey public school districts or the specific

outcome variables of this research, this study was used as a key research basis for the examination of the association between superintendent longevity on the success of public school districts. More recent research efforts, although limited in nature, confirm the McREL study and include additional characteristics of successful school districts by studying the relationship between superintendent longevity and student outcomes. This research includes studies looking at the state of the American school superintendent by Glass and Franceschini (2007), studies on superintendent longevity by Alborano (2002), Gianquinto (2011), and Plotts (2011), and a limited number of other studies focusing on longevity and school district success. Utilizing research by Marzano and Waters and other related studies, the outcomes and findings associated with superintendent longevity, student academic success, and faculty mobility rate at the district level were examined.

### **Statement of the Problem**

The problem examined in this research was the association of superintendent longevity in a public school district on district effectiveness in the areas of academic performance of students on state assessments in New Jersey and the local district faculty mobility rates. Across our nation, superintendent longevity has decreased significantly over the past 65 years and shorter superintendent tenure lengths could have a long-term negative impact on district success (Cooper, Fusarelli, & Carelle 2000; Winters, 2000; Alborano, 2002; Waters, 2005; Waters & Marzano 2006; Glass & Franceschini, 2007; Plotts 2011; Gianquinto, 2011, Petty 2018). Adding to the decreases in superintendent longevity across our country, in February of 2011, New Jersey implemented “superintendent salary caps” that have been referenced by many news outlets and professional organizations as having a negative effect on the continuing service of many established, experienced, and seated school superintendents. In 2014, the New Jersey School

Boards Association conducted a survey that indicated over 100 superintendents “cited the salary cap as a factor” for leaving their position as superintendent between the implementation of the salary caps and February 2014 (Jahn, 2014). In New Jersey, “statewide tenure for superintendents averages five years; in the context of district grade configurations, the average tenure for superintendents in K–12 and K–8 districts drops to 2.7 years and increases to 7.5 years for superintendents in special school districts” (Kolu, 2014). When combined with the New Jersey superintendent salary caps instituted in 2011, these reform efforts have led to an increased exodus of experienced school district leaders.

According to the New Jersey Schools Boards report and additional research and reports, “approximately 38.4% of the state’s 570 operating districts have experienced turnover; over the same period, there were 295 instances of turnover with several districts having two or more interim superintendents” (C. Jahn, NJSBA, Final Report on the Study of the Impact of the Salary Cap on Chief School Administrators, 2014; M. Hayes, Panel Paper: The Effect of NJ Superintendents; NJPSA 11/2016; Kachmar, K. & Yi, K., APP.com; Superintendent Salary Cap Fails Taxpayers, 2/2016). The reduction of the average superintendent tenure in public schools directly coincides with the increase in accountability and influence of reform efforts in the public school sector, along with the limiting or cutting of school superintendent salaries (C. Jahn, NJSBA, Final Report on the Study of the Impact of the Salary Cap on Chief School Administrators, 2014). “Since the enactment of the superintendent’s salary cap, there has been a significant increase in the mobility rate of experienced superintendents—either to retirement or to take out-of-state positions” (M. Hayes, Panel Paper: The Effect of NJ Superintendents; NJPSA 11/2016). On a national level, 61.4% of superintendents have served in their current position less than five years according to the American Association of School Administrators (AASA)

2016 superintendent survey (Finnan & McCord, 2017, p. 3). Although this research did not include superintendent salary caps as a variable, it examined the impact of these salary limitations as a result of the current rates of longevity in the state of New Jersey on district level student academic success and teacher mobility.

The demands for improvement in our schools have tremendously increased since the implementation of the No Child Left Behind efforts of the early 2000s. In the age of reform, consistent school district leadership is essential to systematic school change and implementation of academic improvement programs. According to Fullan (2006), school district leadership persistence is a key component to implementing true organizational change. Fullan's "Theory of Action with Merit" outlines seven core premises including motivation, capacity building, learning in context, changing context, a bias for reflective action, tri-level engagement, and persistence and flexibility in staying the course (Fullan, M. 2006). Limited quantitative, correlational research exists that examines the relationship between superintendent longevity and student academic performance and faculty mobility at the district level.

As indicated throughout this chapter, these seven (7) core elements cannot be supported through constant school district leadership change. Understanding Fullan's core elements of change and the environment needed to effectuate real organizational improvement, true change cannot be accomplished with ever-changing leadership philosophies that accompany short-term school superintendents.

### **Purpose of Study**

The purposes for this correlational, explanatory, cross-sectional study were to examine the association of superintendent longevity and continuity on district level student achievement and faculty mobility. This research examined the relationship of the length of service of a

superintendent in a district on student achievement as evidenced by 2017 PARCC Grade 5 math and ELA/L, Algebra 1, and ELA/L 10 scores of the K–12 public school districts in New Jersey. An additional measure of district success examined was the district level faculty mobility rate. According to research conducted by Allensworth, Ponisciak, and Mazzeo (2009), “Teachers are more likely to stay in schools where they have positive, trusting, working relationships with each other. Likewise, teachers are more likely to remain teaching in schools where they feel that their colleagues are innovative; that is, where teachers have a “can do” attitude and work together on improving the school” (Allensworth, et al., 2009). Understanding the loose connection between the faculty mobility rate, school district success, and faculty satisfaction in the district, retaining effective teachers is a key to student, school, and district success. The question was if superintendent longevity has a direct positive association with student achievement and district success on five different outcome variables. This research analyzed the relationship between superintendent longevity and the identified factors of district success. Understanding that these outcome variables were the research focus, the researcher acknowledges that other variables may influence the selected outcomes variables of student/district success as measured by PARCC assessments. Other influencing variables that may impact success in a school district can range from attendance rates, free and reduced lunch rates, ethnicity, and other district demographic factors, but these factors were outlined in the limitations of the research study.

Through the review of the literature and process of conducting this research, the researcher identified any statistically significant relationship between superintendent longevity and school district success as defined by student PARCC scores at three different grade levels. Also examined was the relationship between superintendent longevity and the retention of district faculty members through the examination of the district faculty mobility rate. The results

of this research furthered the understanding of how important the leadership position of superintendent is to the effective implementation of academic programs within a school district based on the two main factors of district academic success and retention of staff members. School Board members in New Jersey and beyond the state's borders can gain valuable insight on the importance of the ongoing relationship between the superintendent and the board of education. This research also identified how increasing superintendent tenure may positively impact education by resulting in improved educational programs, continuity and consistency within a district, and effective instruction delivery by experienced and knowledgeable staff.

The study and resulting data analysis may assist aspiring superintendents to develop deeper district ties and longer lengths of service that may result in more successful public school districts. This research study allowed the practicing superintendent, school boards of education, legislators, and Department of Education officials the opportunity to examine the data regarding the relationship between reduced lengths of service of superintendents because of a number of influencing factors. Longer periods of superintendent tenure within a public school district may lead to having a more vested and involved professional advocate for the well-being of the district, its staff, and the students who are served by the public school district. At this time, public school superintendents bear much of the burden of school accountability with the advent of the No Child Left Behind legislation of 2001. Superintendents have recently experienced a call from the New Jersey legislature to shift many school and district level responsibilities from the superintendent to the school principal level. This could be the result of a perception that there has been a concerted effort by New Jersey state politicians, in particular Governor Christie, with salary cap implementation, to reduce the importance of a centralized leadership in the public school districts in New Jersey and lead to a fragmented and schools-based program



development model. The minimization of the position of superintendent could also be a political push to marginalize the leadership of smaller districts in an effort to combine and regionalize the locally controlled school districts.

School district accountability continues to be a main focus of our Department of Education at the state and federal level. According to the NCLB legislation, New Jersey was approved for a waiver relaxing the mandate of 100% proficiency for all students by 2014. However, as part of the waiver, New Jersey public school districts still had to meet yearly improvement levels established from base scores from state assessments in 2012. The information gained through this research called for a more introspective examination of a school board's effort to create district leadership positions that focus on creating longer lengths of service and creating a sense of urgency to retain experienced superintendents to improve student academic success and overall district success. The insight gained through this research provided pertinent information about the impact of district leadership on district success for educators interested in becoming a superintendent, but have not yet chosen to ascend to the position of superintendent because of many factors including the uncertainty of job stability, impact of new mandates, and other political and fiscal variables impacting the climate with our public schools. The outcomes of this research can help the education community understand the relationship between the leadership stability at the district level and how this longevity may transition down into the schools, leading to improved student academic success and decreased faculty mobility rates. This research and resulting information may help seated superintendents in effectively assisting district and school administrators with the skills, knowledge, and consistency to increase student achievement on the PARCC assessments. This may lessen the mobility rate of teachers and other district measures of success by identifying key relationships between district

leadership stability and the implementation of effective instructional improvement programs for the school district.

### **Research Questions**

1. What is the relationship between New Jersey public school superintendent longevity and student achievement as measured by Spring 2017 Partnership for Assessment of Readiness for College and Careers (PARCC) Grade 5 math when controlling for school and student characteristics?
2. What is the relationship between New Jersey public school superintendent longevity and student achievement as measured by Spring 2017 Partnership for Assessment of Readiness for College and Careers (PARCC) Grade 5 English Language Arts/Literacy when controlling for school and student characteristics?
3. What is the relationship between New Jersey public school superintendent longevity and student achievement as measured by 2017 Partnership for Assessment of Readiness for College and Careers (PARCC) Algebra 1 when controlling for school and student characteristics?
4. What is the relationship between New Jersey public school superintendent longevity and student achievement as measured by Spring 2017 Partnership for Assessment of Readiness for College and Careers (PARCC) English Language Arts/Literacy 10 when controlling for school and student characteristics?
5. What is the relationship between New Jersey superintendent longevity and district faculty mobility as evidenced by the 2017 School Performance Report faculty mobility rate percentage when controlling for school and student characteristics?

## **Null Hypothesis**

No statistically significant relationship exists between a New Jersey school superintendent's length of time in a school district and student academic achievement, as evidenced by the 2017 PARCC scores in Grade 5 mathematics when controlling for school and student characteristics.

No statistically significant relationship exists between a New Jersey school superintendent's length of time in a school district and student academic achievement, as evidenced by the 2017 PARCC scores in Grade 5 English Language Arts/Literacy when controlling for school and student characteristics.

No statistically significant relationship exists between a New Jersey school superintendent's length of time in a school district and student academic achievement, as evidenced by the 2017 PARCC scores in Algebra 1 when controlling for school and student characteristics.

No statistically significant relationship exists between a New Jersey school superintendent's length of time in a school district and student academic achievement, as evidenced by the 2017 PARCC scores in English Language Art/Literacy 10 when controlling for school and student characteristics.

No statistically significant relationship exists between a New Jersey school superintendent's length of time in a school district and district success, as evidenced by the 2017 district faculty mobility rate when controlling for school and student characteristics.

## **Study Design and Methods**

This research study used a non-experimental, exploratory, cross-sectional design with quantitative methods. The quantitative method allowed for an examination of the strength of

relationships between the longevity of the school superintendent and multiple measures of school district success. The research methods allowed for further examination of the relationship between length of service of superintendents and resulting student academic performance and faculty stability as identified by the annual mobility rate of teachers. This research provided a more in-depth analysis examining if a superintendent's length of tenure in a public school district can influence district level student achievement in multiple grade levels and academic areas.

The New Jersey school districts examined were a cross section of kindergarten through twelfth grade public schools in New Jersey in all District Factor Groups (DFG) of A through J (218 schools) that provided valid PARCC assessment scores in Grades 5, 9, and 10 in both math and ELA/L exams as reported by the New Jersey Department of Education. Student academic success at the district level was determined by the percentage of students scoring a minimum of 750 on the PARCC assessments during the 2017 school year. Faculty mobility rate success at the district level was defined as having a percentage of faculty arriving at or leaving the district at a percentage level lower than the sample districts mean. The resulting data points were analyzed using multiple analysis methods of the Statistical Package for the Social Sciences (SPSS) including descriptive, exploratory, correlational, and multiple regression analysis to examine the strength of relationship of the predictor variables on the dependent variables in this quantitative data analysis.

Data were gathered utilizing three different sources. Information was collected from data sets contained at the website operated by the Asbury Park Press, Data Universe, which annually lists the name, school district, salary, years of service, and date of enrollment in the pension system. New Jersey Department of Education information was reviewed from publicly available files located at the New Jersey Department of Education website including the "staff

submission” report required to be submitted to the Department of Education each year by all New Jersey school districts, and the annual School Performance Report. Lastly, data were requested from the New Jersey Association for School Administrators, which conducted a number of surveys regarding superintendent employment, years of service, and salary data, and a number of other data points. Data points retrieved are the years of service as a superintendent, and years of service to K–12 public school districts that meet the sample criteria. Also reviewed was the 2017 School Performance Report of up to 218 sample school districts that provide the Department of Education with data on the levels of successful passing rates on the 2017 PARCC score reports for the predetermined dependent variables. This includes data on the PARCC Grade 5 math and ELA/L assessments, Algebra 1 assessment, and the 2017 PARCC ELA/L 10 assessment for public school students. There are minimal threats to the reliability of the data because of misreporting of the data by school districts and the range of students taking the required PARCC state assessments. The School Performance Report was utilized to collect data on control variables of all the districts in the sample as outlined in the variable section of this chapter and the research design of the study.

The data sets from the predictive variable of superintendent longevity and the dependent variable of PARCC scores and faculty mobility was collected from the annual School Performance Report and other publicly available resources and reports (<https://rc.doe.state.nj.us>), Data Universe ([php.app.com](http://php.app.com)), and the School Performance report <https://www.nj.gov/education/schools/achievement>).

### **Significance of the Study**

This study is significant as it further explores the limited research on the relationship between the superintendent’s length of tenure and continuity relative to student academic success

and district faculty stability and satisfaction. Public school effectiveness is an important factor in the success of our students and to the future of our country. Superintendents are under increasing pressures to develop programming that will result in the success of their student body and as result of this increased emphasis on results and the need for immediate positive impacts as expected by Boards of Education and local communities, the position of superintendent has become a position where there is less continuity and more superintendent migration across our country.

Developing successful educational programming takes time to research, educate, professionally develop, and implement. Once implemented it takes, on average, two to five years for full implementation as indicated by current research by Fullan, (2006); Waters & Marzano, (2006); and Togneri & Anderson, (2003). After implementation, each program should be thoroughly evaluated for effectiveness. “While statewide tenure for superintendents averages at five years, in the context of district grade configurations, the average tenure for superintendents in K–12 and K–8 districts drops to 2.7 years and increases to 7.5 years for superintendents in special school districts” (Kolu, 2014). Understanding this, when the average superintendent tenure is two to five years, district academic programming may be adversely affected by inadequate implementation timelines and lack of superintendent continuity for districts (Fullan 2006; Waters & Marzano, 2006; Gianquinto, 2011; Plotts, 2011, Kolu et al., 2014). In the 2016 AASA Superintendent Salary and Benefits study, Tables 1/2 indicate that the average tenure of respondents across the country in their current position indicated that 60.1% have been with their current district for less than five years of service time (Finnan, L. & McCord, 2017).

Table 1  
*Gender (Q44) and longevity in present position (Q8)*

Longevity in Present Position							
Gender	1 Year or Less	1-5 Years	6-10 Years	11-15 Years	16 Years or More	Omitted Longevity	Total
Male	67 (6.4%)	576 (54.9%)	285 (27.1%)	73 (7%)	42 (4%)	7 (0.7%)	1050 (100%)
Female	17 (5.4%)	166 (52.7%)	84 (26.7%)	32 (10.2%)	15 (4.8%)	1 (0.3%)	315 (100%)
Omitted	1 (3.7%)	10 (31%)	6 (22.2%)	2 (7.4%)	0 (0%)	8 (29.6%)	27 (100%)
Total	85 (6.1%)	752 (54%)	375 (26.9%)	107 (7.7%)	57 (4.1%)	16 (1.2%)	1392 (100%)

(Finnan, L. & McCord, 2017)

Table 2  
*Gender (Q44) and Longevity as a Superintendent (Q9)*

Longevity in Present Position							
Gender	1 Year or Less	1-5 Years	6-10 Years	11-15 Years	16 Years or More	Omitted Longevity	Total
Male	34 (3.2%)	398 (37.9%)	305 (29%)	169 (16.1%)	138 (13.1%)	6 (0.6%)	1050 (100%)
Female	13 (4.1%)	122 (38.7%)	85 (27%)	62 (19.7%)	32 (10.2%)	1 (0.3%)	315 (100%)
Omitted	0 (0%)	10 (37%)	7 (25.9%)	2 (7.4%)	2 (7.4%)	6 (22.2%)	27 (100%)
Total	47 (3.4%)	530 (38.1%)	397 (28.5%)	233 (16.7%)	172 (12.4%)	13 (0.9%)	1392 (100%)

(Finnan, L. & McCord, 2017)

This research allowed school districts to better understand the association between superintendent stability on district success and will assist districts in making informed data-based decisions on the retention of school district leaders. In addition, this research can assist boards of education to have better insight when assessing the merits of policies developed by the Department of Education in relationship to the local school superintendent (i.e., superintendent salary caps).

## **Variables**

- Years of superintendent service to the a school district
- Total number of years as a superintendent
- District PARCC Algebra 1 percentage of students meeting expectations
- District PARCC English Language Arts/Literacy percentage of students meeting expectations
- District PARCC Grade 5 math percentage of students meeting expectations
- District PARCC English Language Arts/Literacy percentage of students meeting expectations
- District faculty mobility rate percentage
- District free and reduced lunch percentage
- District student chronic absenteeism percentage
- District special education percentage
- District English language learner percentage
- District faculty attendance percentage
- District faculty with advanced degrees percentage

## **Limitations and Delimitations**

Prudence was used when examining the results and attempting to generalize the findings as there are a number of limitations and delimitations to this quantitative research study.

Correlational studies such as this cannot determine cause and effect. The results from this study cannot be generalized to the school level or other states. Another limitation of this study is that some superintendents enter or leave mid-year prior to the PARCC assessment administration periods. The research in this study only focused on one year, 2017, of testing data for the sample



school districts. The research was limited by the fact that only data collected in the academic realm was the PARCC data for the sample school districts. As reported by the Department of Education, the New Jersey School Boards Association (NJSBA School Board Notes, 4/21/15), and New Jersey Advanced Media (A. Clark, 2/8/16), in 2015 and 2016 participation rates on the PARCC ranged between 86.4% on the PARCC Algebra 1 as reported by the Department of Education in 2015 and 89% as reported by NJ Advanced Media for all Grades 3–11 in February of 2016. According to NJ Advanced Media, approximately 124,000 students from Grades 3–11 who were supposed to participate in the math assessment “did not participate and did not receive a score.” The participation rates on the PARCC assessment were significantly reduced as compared to the participation rates of the HSPA as reported on the School Performance Reports. Based on these same district level reports, student proficiency and outcomes were also significantly reduced in comparison to the previous assessment of the HSPA. Understanding these opt-out and test motivation statistics, there may be issues with reliability and validity of the PARCC data. The PARCC data test results could be limited by accuracy of reporting and coding students at the local school level along with the accuracy of the reporting of the New Jersey Department of Education. The test-taking environment was diverse across the state at local district schools and for this reason there may be more and less optimal testing procedures and environments for the students sitting for the exam. The outcomes of this research can only be generalized to the same populations that were selected as the study sample.

A delimitation of this research is that all the data collected was from K–12 school districts in New Jersey who have a permanent school superintendent. A second delimitation was that the data from all school districts was collected from Grades 5, 9, and 10, in addition to the accounting of the faculty mobility rate for each K–12 district in the state.

There could be additional limitations or delimitation through the process of collecting and analyzing the data that were not identified.

### **Definitions of Terms**

The following terms are defined as used in this proposed study:

**Academic Achievement:** Academic achievement is based on 2017 Partnership for Assessment for Readiness for Colleges and Careers (PARCC) Algebra 1 scores and 2017 Partnership for Assessment for Readiness for Colleges and Careers (PARCC) English Language Arts–Literacy 10 test scores for students.

**Continuity:** Uninterrupted duration or continuation especially without essential change while working in an educational setting. In terms of the superintendent, it is the uninterrupted service to a school district while employed as the superintendent.

**Mid-continent Research for Education and Learning (McREL):** McREL is a 501(c)(3) non-profit, nonpartisan education research and development organization that—for more than 50 years—has turned knowledge about what works in education into practical, effective guidance and training for K–12 teachers and education leaders.

**District Factor Group:** The DFGs represent an approximate measure of a community’s relative socioeconomic status (SES). The classification system provides a useful tool for examining student achievement and comparing similarly situated school districts in other analyses. This research focused on high schools within the DFG of CD through GH districts ([www.nj.gov/education](http://www.nj.gov/education); New Jersey Department of Education website 2018).

**The Partnership for Assessment of Readiness for College and Careers:** A set of assessments that measure whether students are on track to be successful in college and careers (<https://parcc.pearson.com>). In the 2014–15 school year, New Jersey transitioned from its

former assessments to the Partnership for Assessment of Readiness for College and Careers (PARCC) in mathematics and English Language Arts/Literacy. The PARCC assessments more accurately measure the higher-level skills developed under the New Jersey Student Learning Standards and provide parents and educators with meaningful information to improve teaching and learning (NJ DOE PARCC website 2018).

**High School Superintendent:** Provides educational leadership by directing the formulation of district-wide goals, plans, policies, and budgets, by recommending their approval by the district board of education and by directing their district-wide implementation. Chief educational officers of the school district contracted and hired by the members of the school district Board of Education. The superintendent is employed for a specific number of years and can be an interim (temporary) position or a full-time position.

**School District:** The geographical boundaries outlining the borders of the school district unit responsible for the local administration of schools. Included in this research are all New Jersey K–12 school districts with a permanent school superintendent.

**Longevity:** Length of service, tenure, seniority, etc. (Dictionary.com 2018). The number of consecutive years that the superintendent serves a specific school district in the same position.

**Turnover:** The number or percentage of workers who leave an organization and are replaced by new employees (smallbusiness.chron.com/employee-turnover-definitions). The rate of movement and replacement of superintendents because of resignations, non-renewals, retirements, and other separation of service reasons.

### **Organization of the Dissertation**

Chapter I outlined the purpose of the proposed study, the background of the research problems, hypothesis of the study, and the significance of the study. It concluded with the

limitations and delimitations of the research, the definition of terms, and the organization of the research study. Chapter II is an in-depth review of the history of the superintendent and the ever-changing roles and responsibilities of the chief educational officer in addition to the changing face of accountability in our public schools in New Jersey and across our country. Critical changes in policy and regulations affecting public schools were examined as well as how this increased attention to improve public schools was not a new phenomenon and has occurred for many years with many different titles and phases. This research focused on more recent regulations that have had an impact on local schools districts ranging from superintendent salary caps, changing the state assessment program, to new reform efforts across our nation and in New Jersey. Chapter III outlines the design of the research project, the methodology employed for the data collection, and what statistical analysis tools were utilized in the analysis of the relationship between the independent variable of superintendent longevity on the multiple outcome variables measuring school district success. Chapter IV focuses upon a full presentation of the statistical analysis of the data points used for this research. It provides the findings and results of the investigation. This chapter outlines an interpretive and detailed explanation of the research findings as connected to the research questions posed in this study. Chapter V discusses the important findings as they link to previous studies and current practices. The present research findings, guided by the research questions and the purpose of the study, were utilized to suggest future research, and examine current educational policy and leadership practices employed by local school districts, and the New Jersey Department of Education.

## **Chapter II**

### **Review of the Literature**

The position and perception of the public schools system has changed significantly in the past two decades. According to Mendoza-Jenkins (2009), “The superintendency position has transitioned from a managerial-focused position to one focused on instructional leadership. As a result, it is critical that system leaders have both the skill set and knowledge base necessary to direct multi-dimensional, district-wide action toward a single objective: improving student achievement.” The purpose of the review was to critique empirical studies that examined the history, evolution, and changing role of the school district superintendent, investigate superintendent leadership longevity and its resulting influence on the New Jersey public school district; and consider the effect the school leader has on student achievement and organizational stability and retentions of staff while controlling for specific student predictor variables that past literature had identified as an influencing factor of student achievement (i.e., student attendance, student socioeconomic status, students with disabilities).

The increasing calls for accountability by multiple community and state entities, the release of President Reagan’s commissioned report “Nation at Risk” led by Education Secretary Bell in 1983, and amendments to the No Child Left Behind and the Every Student Succeeds Act have significantly impacted the way public schools are held accountable (Alborano, 2002; Glass & Franceschini, 2007; Plotts, 2011; Gianquinto, 2011). In addition, aspects of each of these reauthorizations, like the NCLB Act’s call for testing students at multiple times at every grade level each year from Grade 3 through 11, have pushed for greater testing accountability and a larger investment in the assessment program (Alborano, 2002; Glass & Franceschini, 2007; Plotts, 2011; Gianquinto, 2011). In 2014, President Obama began his administration with

revision of the educational law; these changes brought an increased federal presence in state educational realms with the implementation of the Common Core State Standards and in New Jersey, the PARCC assessments.

Former New Jersey Governor Chris Christie implemented new regulations on superintendent salaries that capped them at certain levels based upon enrollment numbers. The executive order led to many superintendents in New Jersey leaving the profession, creating a vacuum in experienced school superintendents in the public school districts.

The changes and the clear call for increased accountability have had significant influence on the delivery of instruction in all New Jersey public school districts. Understanding these changes and the ever-evolving face of the educational landscape, the lack of district leadership longevity in a district could affect the academic success of students in the district, along with overall district success. Additionally, the lack of longevity could have negative impacts on the effective implementation of program improvement plans and the resulting professional development of the teaching staff. The resulting dissatisfaction of the staff may lead to an increased exodus of staff from the district, resulting in a loss of institutional knowledge.

Combined with other public school accountability concerns, numerous influences at the local district level have impacted school districts and led to ineffectual programmatic changes. The lack of stability in district leadership is in direct contrast to the guidelines set forth by the expectations of the Change Theory as explained by Fullan (2006) in his research findings. For these reasons, this research examined the effects of the increasing demands on the position of superintendent and the resulting drain upon experienced superintendents as reported by various agencies including the New Jersey Association for School Administrators (NJASA), New Jersey School Boards Association (NJSBA), and numerous news outlets and employment surveys

conducted by the American Association of School Administrators (AASA). Understanding these reports, combined with the research conducted by Waters and Marzano (2006) indicating that superintendent longevity can positively influence student academic outcomes, the position of superintendent and the recent exodus of experienced and stable school district leaders have had an impact on school district success.

### **Inclusion and Exclusion Criteria for the Literature Review**

Research and statistics used in this review had to contain the following criteria in order to be included:

1. Experimental, quasi-experimental, and non-experimental studies with control variables or groups
2. Peer reviewed research including dissertations and governmental reports
3. Peer reviewed journals and reference or governmentally based news articles
4. Studies that focused on student achievement included Grades 5–11 or included faculty mobility rates
5. Literature found in government reports that meet previous criteria outlined
6. Research conducted within the last 35 years
7. Seminal works

### **Purpose for the Review**

This literature review examined research-based articles and studies on the topic of superintendent longevity relative to student achievement, culture and climate, staff morale, and teacher transience leading to organizational stability. This review expanded upon the identified positive relationship between superintendent tenure and student academic success, district stability, and retention of experienced successful staff through effectual district leadership. The

literature review examined the evolving role of the superintendent in the public schools system, the changing expectations of the position, the increasing call for accountability, and the connection between superintendent longevity and student success. According to Gianquinto (2011), “During the past several decades, the demand for accountability has increased, with much of the attention and pressure on school district leaders, particularly the public school superintendent” (Johnson, 1996; Carter & Cunningham, 1997; Patterson & Kelleher, 2005).

As identified previously, there is limited research in the area of cause and effect of superintendent longevity and student academic performance and school district success. This research further examined those relationships as well as the association between school district leadership continuity and staff retention and stability. The “popular perception is that of an impossible job where superintendents confront escalating and competing demands, find themselves besieged by confusing and conflicting interest groups, and enjoy little to no security” (Cooper et al., 2000). Job uncertainty, combined with other district related pressures and lack of ability to appropriately remunerate the superintendent has led to decreased lengths of tenure for superintendents and decreased stability for school districts across our nation (Cooper, Fusarelli & Carella, 2000; Winters, 2000; Alborano, 2002; Waters & Marzano, 2006; Glass & Franceschini, 2007; Plotts 2011; Gianquinto, 2011). Studies by Alborano, 2002; Glass and Franceschini, 2007; Plotts, 2011; Giaquinto, 2011; Petty 2018 and other limited research focused on the longevity of a superintendent and the impact on student academic performance. The main focus was based on the research and meta-analysis conducted by Waters and Marzano (2006) where “research increasingly points to the relationship between effective leadership and increased student achievement.”

The responsibilities and expectations of the superintendent have changed dramatically



from the establishment of public schools in the middle seventeenth century to today's educational climate. This role has evolved tremendously over the past 150 years, but much more so in the last twenty years with the inception of the No Child Left Behind Act and the Every Student Succeeds Act (ESSA). The federal educational law has inspired public school reforms at the state level in the area of teacher evaluation with NJ Achieve, the Pearson-developed online state assessment with the approval of the Partnership for Assessment for College and Careers (PARCC) test, annual school assessment monitoring, and numerous other reform mandates. In addition to federal reforms, state mandated reforms, including the superintendent salary caps, were instituted in New Jersey on February 7, 2011. The culmination of all these reform initiatives, along with local district level expectations, has changed the position of superintendent forever.

The literature examined through this chapter reflected the fact that research indicated increased accountability on public schools has transitioned to the district leadership and these accountability measures and expectations for success has impacted the role of the superintendent. The expectation for public school improvement has required school superintendents to develop, evaluate, and implement initiatives to positively impact district educational programs. The task of public school program improvement rests upon the position of superintendent and as the district leader, the outcomes of the improvement plans continue to further delineate the role and success of the superintendent. Combining the increased accountability measures with the New Jersey superintendent salary caps and other influencing factors, the ability of superintendents to effectuate meaningful changes over an adequate period of time may negatively be impacted by the shorter periods of longevity for school district leaders.

Research conducted by Waters and Marzano (2006) and other researchers indicates that

superintendent leadership makes a difference in student academic performance. Superintendents who devote their efforts to creating a collaborative atmosphere and developing process and goal oriented school districts lead more effectively, and these efforts have been positively correlated with student academic success. Schools that have a defined autonomous bureaucratic structure between the superintendent and the building principal have students who are more academically successful and are more successful in the multiple measures of district effectiveness (Waters & Marzano, 2006).

### **Literature Review Procedures**

The goal of this review of the literature was to identify research related to the topic of superintendent longevity and its relationship between student academic and school district success. The review provided a framework for the basis of this research development and offered a critical examination of the state of the superintendency, prospective development, reviewed study methodologies, and synthesized literature to explain the possible significance of this study. Limited research prior to 1990 was utilized to gain a historical perspective of educational legislation preceding the No Child Left Behind era. From that period forward there were numerous changes to the laws and regulations governing public schools in New Jersey and across our country, impacting the expectations of school superintendents. The effort to hold public schools and public school district leaders accountable for student performance is not a new concept, but it was codified and applied in a manner heavily based in assessment results and student testing like never before in the history of public schools.

The basis for this study was derived from the Waters & Marzano (2006) meta-analysis *School District Leadership that Works: The Effect of Superintendent Leadership on Student Achievement*. Other quantitative, observational, and experimental research was reviewed. The

literature review included peer reviewed journals, research dissertations, media accounts, and local, state, and federal reports on educational stability, outcomes, and academic success.

Research literature in the domain of effective educational change was also reviewed including Fullan's research on instituting effective organizational change and other institutional change theories.

The review was completed using various databases such as ProQuest, ERIC, Dissertation Abstracts databases, the Seton Hall University Library search engine, EBSCO, Google Scholar news articles, and books. In addition, numerous website searches were conducted for the purpose of gathering historical information. These sites included the New Jersey Department of Education, the United States Department of Education, various New Jersey newspapers, and local news publications. Data Universe, the New Jersey Association of School Administrators, and the American Association for School Administrators were utilized to gather superintendent salaries, years of service, mobility, and other research related data. Keywords used to initiate the search for research included superintendent longevity, superintendent longevity and student success, school district effectiveness, superintendent impact on school success, superintendent salary caps, superintendent salary caps and longevity, and a number of other keyword searches.

### **Public Schools: A Historical Perspective**

In examining the history of public schools, it was important to recognize the transition and changing roles of the public school institution and the role of the school superintendent as the institutional instructional leader. The existence of public schools goes back almost 400 years to the early Puritan age settlers with the approval of the Massachusetts Bay School Law of 1642 (Brackemyre, 2015) which took the education of children out of the hands of the clergy and forced parents to teach their children how to read and write. This law did not have the success

that the legislators planned and this lack of success led to new laws like the *Old Deluder Act of 1647*. This decree “ordered that every township in this jurisdiction, after the Lord hath increased them to fifty households shall forthwith appoint one within their town to teach all such children as shall resort to him to write and read.” (The Governor and Company of the Massachusetts Bay, 1853). Although these early laws were developed to address an upper class family’s issue, it was these early established laws that led to the push to educate our children in common facilities, eventually establishing the early concepts of a public school system.

The system has developed from these seventeenth century schooling laws to the current form of public schools with regulations, monitoring, and school reforms including the Elementary and Secondary Education Act (ESEA) proposed by Lyndon Johnson and approved in 1965 (Fuhrman & Lazerson, 2005; Spring 2002). The ESEA regulations included the Title I changes that focused increased attention to the disadvantaged learner. The No Child Left Behind Reauthorization (2001), the Common Core State Standards implementation in 2009, and the more recent Every Student Succeeds Act (2015) have all impacted the state of accountability for public schools across our nation. Each of these initiatives, along with a number of additional laws and reforms, have all led to an increased push for accountability and an environment where superintendents are expected to efficiently perform the executive functions of the district and produce students’ academic outcomes that are exceptional. These remediation measures and regulations come with additional accountability and expectations put upon the school superintendent.

In the 1990s the attention to student outcomes and public school accountability increased and the scrutiny of what school district leaders were doing to improve educational delivery and outcomes in the schools came to the forefront of the educational platform. The perceived

failures of schools to address disadvantaged learners gained attention when high profile federal legislators such as Senator Ted Kennedy and Representative George Miller grew frustrated that increased federal education spending didn't seem to be making an academic difference for students. The rationale was that the federal ESEA funding was not improving results for disadvantaged learners (Hess, 2015) and there needed to be additional educational reforms to continue to address the learning gaps for the Title 1 students. In addition, other federal legislative leaders felt there was a need to increase accountability in schools because of the continued failures to improve student performance.

These efforts were the precipitating factors leading up to the approval of the No Child Left Behind Act from the early 2000s to the current Every Student Succeeds Act (ESSA) approved on December 10, 2015 (U.S. Department of Education, 2018).

### **School District Accountability**

#### **No Child Left Behind Act: A Historical Perspective**

The NCLB Act was the reauthorization of the 1965 educational law passed and signed by Lyndon B. Johnson titled Elementary and Secondary Education Act (ESEA). The ESEA law was part of President Johnson's Great Society Program that clearly established a federal role in the K-12th grade policy by providing \$1,000,000,000 in public schools aid under the "Title I" section of the law (Klein, 2015). This funding was intended to be used to improve the educational experiences for lower socio-income and disadvantaged students. As Barbara Micheleman stated, "K-12 education was a longstanding state and local responsibility, with more than 90 percent of the cost of public school funding being provided by the states and districts. The federal government reserved most of its authority to ensuring that its resources helped disadvantaged children and those with special needs. Over the years, federal

policymakers and presidents increasingly discussed education as a national priority, yet their conversations did not necessarily translate into policies because of the limited federal government funding and role in education decision making” (Micheleman, 2012). The ESEA act was the first major funding program instituted at the federal level that directly affected public school policy. From 1965 until 2015, the ESEA laws have been reauthorized seven times.

In 2001 the reauthorization was completed, once again, under the direction of President George W. Bush, renamed The No Child Left Behind Act (NCLB). One of President Bush’s early initiatives was to address the reauthorization of the ESEA and to institute new reforms to the aging ESEA educational laws. The NCLB Act was updated in January of 2001 and “effectively scaled up the federal role in holding schools accountable for student outcomes” (Klein, 2015). The new law was developed out of concern that the United States was no longer competitive on an international level. This reauthorization significantly increased the federal role in holding schools responsible for the academic progress of all students (Klein, 2015). A main component of the law was to make sure that 100% of students in the assessed grades from three through eight and eleventh grade were able to successfully pass a state Department of Education approved assessment for students. Under the NCLB law, states were required to institute a number of new initiatives in their public schools including a requirement to “test students in reading and math in Grades 3 through 8 each year and once in high school” (Klein, 2015). In addition to the new testing requirements, each school was required to report out the results of the testing program “for both the student population as a whole and for particular ‘subgroups’ of students, including English language learners and students in special education, racial minorities, and children from low-income families” (Klein, 2015). The final goal of the NCLB testing program was that all students would be proficient by the conclusion of the 2014

school year. This would be measured at 100% proficiency in both math and English subject areas. In addition to the new testing goals, schools were required to establish Annual Measurable Objectives (AMO) to track the progress of the school and then report to the Department of Education on the Annual Yearly Progress (AYP) toward the 100% proficiency level (No Child Left Behind Act, 2002). These provisions would act as the annual criterion to measure the school's success in progression to the ultimate goal of 100% proficiency for all students.

For the purposes of this research, this literature review focus was on the changes in educational accountability as a result of the No Child Left Behind Act from its enactment in 2001 until December of 2015. The research examined the relationship between high stakes testing in New Jersey public schools and the resulting student success on the PARCC ELA/L and math assessments as related to superintendent longevity. The increased accountability as a result of the NCLB laws and the associated testing requirements has impacted the position of school superintendent.

The new NCLB regulations included provisions to increase oversight by the Department of Education for schools that did not meet the requirements outlined in the law including the goal setting AMOs and the adequate yearly progress targets. The sanctions, which would increase each time a school did not meet their goals, ranged from increased paperwork and dedicated Title I instructions to complete takeover by state educational agencies. According to Klein (2015), a school that missed its annual goal for the overall student population or for a certain subgroup could face the following penalties:

- A school that misses AYP two years in a row has to allow students to transfer to a better performing public school in the same district.

- If a school misses AYP for three years in a row it must offer tutoring.
- Schools that continue to miss achievement targets could face state intervention. The state can choose to shut these schools down, turn them into charter schools, take them over, or use another, significant turnaround strategy.
- What's more, schools that don't make AYP have to set aside a portion of the federal Title I dollars for tutoring and school choice. Schools at the point of having to offer school choice would have to hold back ten percent of their Title I money (Klein, 2015).

According to Sybrant (2012), The No Child Left Behind Act was designed to close the achievement gap between high and low performing students, hold all public schools accountable for improving academic achievement for all students, promote school wide reform, and ensure access to effective scientifically based instructional strategies and challenging academic content. With the implementation of NCLB, the efforts to increase accountability in schools have significantly changed the administrative and academic environment in public schools. The high level of accountability and the public concerns for improved educational outcomes has significantly shifted the role of superintendent. Much more time and attention is dedicated to the increased regulations and standards, which have required the superintendent to be more accountable for academic outcomes of the students they serve in the public schools.

In 2012 the ESEA/NCLB laws were relaxed for school districts and then in 2014 each state had the opportunity to take part in the ESEA/NCLB flexibility requirements. During this period it was evident that the schools across our nation were not going to meet the NCLB requirement of 100% proficiency in the 2014 year. President Obama began to address the issue of local and state failures to meet the NCLB requirements through reauthorization in 2014 and Congress passed the Every Student Succeeds Act in December of 2015. The federal Department



of Education and the president introduced the option that “each state agency may request flexibility on its own behalf and on the behalf of local educational agencies and the associated regulatory, administrative, and reporting requirements” (United States Department of Education, 2017). As a result of all these changes, the increased regulations and reform measures intended to improve our public schools and the call for improved student success, the position of superintendent became much more difficult. This research examined the reform platforms, the effect on superintendent longevity, and the resulting students’ and school district success in the New Jersey public high school system.

### **Common Core State Standards as a Result of NCLB**

Common Core State Standards were developed as a new set of standards to be used across the United States to homogenize the process of curriculum development. The effort to develop the Common Core State Standards across the nation continued to be pursued in 2009 by state leaders, including governors and state commissioners of education from 48 states, two territories, and the District of Columbia, through their membership in the National Governors Association Center for Best Practices (NGA Center) and the Council of Chief State School Officers (CCSSO) (Common Core State Standards Initiative, 2017). According to the Common Core State Standards Initiative site, state school chiefs and governors recognized the value of consistent, real-world learning goals and launched this effort to ensure all students, regardless of where they live, are graduating high school prepared for college, career, and life (Common Core State Standards Initiative, 2017). Another goal was to standardize state-to-state educational standards so that students with transient families and a lack of stability in school and residency would be accommodated with similar curriculum and grade level standards (Common Core State Standards Initiative, 2017). The standardization of

grade level goals would lead to a more simplistic transition for students moving from district to district compared to the current individual, state-led efforts to develop local sets of standards.

The effort to approve and adopt the CCSS came with some opposition as it was viewed as national curriculum. The idea of a national curriculum comes with some controversy and is highly controversial in a local control state like New Jersey that takes pride in the development of community based, locally led school districts. Opponents of the CCSS indicated it was an overreach of the federal government to implement national standards; others criticized the quality of the standards, claiming they hadn't been field tested, they weren't grounded in research, and that it was unclear if they have been appropriately benchmarked against international standards (Bidwell, 2014).

A large percentage of states that originally adopted the CCSS have since dropped out of the testing consortiums or have changed and adopted newer standards that are more locally developed for their state's school districts. The expressed concerns by many New Jersey residents did not prevent the New Jersey Department of Education from approving these standards in 2009 and more recently, revising these standards with minimal changes and titling them the New Jersey Student Learning Standards for all New Jersey school districts to follow for curriculum standards in 2017.

### **Testing Developments and Implementation–PARCC**

In the 2014–2015 school year, the PARCC test was adopted as the state assessment and administered to students in Grades 3 through 8 and 11 in New Jersey. As a result of the federal government awarding approximately \$330 million dollars in grant money to two different test development companies, state departments of education now had an online test for measuring the comprehension levels of students in the CCSS. According to Arne Duncan, U.S. Secretary of

Education in 2010, “The grant requests, totaling approximately \$330 million, are part of the Race to the Top competition and will be awarded to the Partnership for Assessment of Readiness for College and Careers (PARCC) and the SMARTER Balanced Assessment Consortium (SBAC) in the amounts of approximately \$170 and \$160 million respectively (Duncan, 2010, p. 1). The secretary’s 2010 press release went on to state that the Partnership for Assessment of Readiness for College and Careers was a coalition of 26 states including AL, AR, AZ, CA, CO, DC, DE, FL, GA, IL, IN, KY, LA, MA, MD, MS, ND, NH, NJ, NY, OH, OK, PA, RI, SC and TN. The SMARTER Balanced Assessment Consortium was a coalition of 30 states including AL, CO, CT, DE, GA, HI, IA, ID, KS, KY, ME, MI, MO, MT, NC, ND, NH, NM, NV, OH, OK, OR, PA, SC, SD, UT, VT, WA, WI, and WV. States could choose to be a member of one of the two groups or could be members of both consortia. According to *Education Next* writers Jochim and McGuinn, “In 2010, the PARCC and SBAC consortia reported having 26 and 30 member states, respectively, representing diverse political environments. Only Alaska, Minnesota, Nebraska, Texas, and Virginia declined to join by the end of that year. As of March 2017, many states had dropped out of each of these consortiums and the remaining states, seven in the PARCC and 14 in the Smarter Balanced consortiums, are still utilizing the testing services of these companies” (Gewertz, 2016). Only 32% of U.S. public school students live in states that are using the federally funded PARCC or Smarter Balanced tests statewide to measure mastery of the common core. This number is a significant percentage drop from only a year ago, when 46% of students participated in these assessments (Gewertz, 2016). The remaining states either use a provider that is something other than one of the federal grant approved trainers or they use a combination of Smarter Balance and PARCC and other test development providers including local, state, and Department of Education (Gewertz, 2016).

The PARCC and Smarter Balance took similar approaches in the design phase of assessment development. According to Jochim and McGuinn, both companies sought to develop state-of-the-art assessments that focused on problem solving and the application of knowledge and moved away from former tests' reliance on multiple-choice questions and the testing of factual recall. The new assessments would be administered online using computers, reducing the time needed to evaluate and grade results leading to enhancements to the timeliness and usefulness of this information for teachers and school districts. Finally, both consortia committed to transparent communication of student-achievement data to stakeholders (Jochim & McGuinn, 2016). The development of the PARCC exam was based upon a mid-year assessment and a final end-of-year assessment that would act as the measurement of comprehension of the Common Core State Standards. The PARCC was developed to more accurately measure comprehension of the Common Core State Standards in math and English Language Arts for New Jersey students and is purported to be especially strong in the content and depth of the ELA and mathematics assessments in Grades 5 and 8. The PARCC assessment was rated higher than both ACT Aspire and the Massachusetts MCAS, the latter of which was previously considered the leading assessment in the country (Doorey & Polikoff, 2106). Doorey and Polikoff (2016) stated in their report that the PARCC was more accessible to students with disabilities and English language learners than previous state tests. The accommodation of the IEP learner, although taken into account in the new PARCC assessment, continued to face challenges in the process of administration of the PARCC assessment in this student population subgroup.

PARCC math and ELA exams were developed to measure the career and college readiness of students as compared to the cognition and comprehension of the ELA and Mathematics standards as outlined by the Common Core State Standards. According to PARCC

and as outlined in Maroun (2018 p. 34), “the assessments are designed to achieve several purposes including providing:

evidence to determine whether students are on track for college and career readiness, provide the structure needed to access the full range of CCSS and measure the total breadth of student performance and to provide data to help inform classroom instruction, student interventions and professional development.”

To achieve these broad goals, PARCC developers had to have a clear understanding of the Common Core State Standards as adopted by the states associated and aligned with Pearson and the PARCC exam (Doorey & Polikoff, 2106).

In the development stages of the PARCC exam, Pearson and test developers started with ‘Master’ claims and then broke the Master claims into ‘Major’ claims and/or a subset of ‘Sub’ claims according to Pearson and PARCC guidance sheets (ETS; Pearson, 2016). The overall Master claim for both ELA and math was that the students were “on track or ready for college and careers” as indicated in the research and by the PARCC website. In the ELA assessment, the ‘Major’ claims were broken up the exam into reading and writing activities to be assessed by the measurement tool. The claims outlined in ELA as five (5) sub-claims: three (3) in reading and two (2) in literacy. The sub-claims indicated that in reading, the assessment would focus on reading literacy text area, reading informational text area, vocabulary, and information as part of the assessment (ETS; Pearson, 2016). In the literacy area, the two sub-claims were written expression and conventions and knowledge of language measured by the PARCC ELA assessment (ETS; Pearson, 2016). In mathematics, the Master claim transitioned into five sub-claims ranging from ‘major content’ to ‘fluency in applicable grades.’ Each of these Major

claims were broken into sub-claims as evidence statements in each sub-claim area to further outline the structure of the PARCC exam (ETS; Pearson, 2016).

Taking a closer examination at the PARCC ELA exam, the NJ Department of Education (2018) stated that “PARCC is a more thorough academic measurement tool” as it is more technology based, moving away from the old paper and pencil test heavily reliant on multiple choice and true/false questions that were based in the rote memorization abilities of students. The PARCC intention was to measure reasoning and higher order thinking skills of the students. According to the PARCC Resource Center, unlike previous New Jersey assessments, PARCC ELA allowed students to “read and analyze passages from real texts fiction and nonfiction and sometimes watch video or listen to audio. They write, using what they’ve learned from the passages and multimedia to support their arguments. These skills are critically important for students in college and in the workplace” (Partnership for Assessment of Readiness for College and Careers, 2018). This assessment was intended to more accurately measure the proficiency of students to be successful in careers and college as they proceed through their schooling experience.

Performance levels of the ELA were broken down into three areas: text complexity, range of accuracy in expressing reading comprehension demonstrated in student responses, and quality of evidence (Partnership for Assessment of Readiness for College and Careers, 2018). These three areas were combined to demonstrate the ability of the students to read the text, develop a solution or answer, and then support their argument, solution, or answer with appropriate evidence. These comprehension and higher order thinking skills, intended to be developed by following the new curriculum based on the CCCS and the measured success on the PARCC exam, were designed to more accurately indicate the ability of students to be successful in

college or careers post high school.

PARCC exam results were intended to provide immediate and informative feedback to schools, teachers, students, and parents to assist in shaping educational decisions. For schools, the test results were used to shape curriculum decisions, adjust the delivery of unit content, and allow for inspection of student academic growth from year to year. The individual student scores were used to adjust individual educational plans for students based on the feedback results broken into five different levels of proficiency. The Individual Score Reports (ISR) for students focused on overall performance and then further as one of five performance levels in each tested area. As cited in Petty (2018) and identified at the Department of Education website (2018), the performance levels were as follows:

- Level 1: Did Not Yet Meet Expectations
- Level 2: Partially Met Expectations
- Level 3: Approached expectations
- Level 4: Met Expectations
- Level 5: Exceeded Expectations

These five performance levels were expected to more clearly outline to the students and schools the current performance levels of the students on the questions formulated to assess the comprehension of the Common Core State Standards. As Maroun (2018) stated in his research study from Pearson (2016, pg. 193), the PARCC questions were designed “to elicit evidence from the students that support valid and reliable claims about which they are college and career ready or on track toward that goal and making expected academic gains based on the Common Core State Standards (CCCS).”

Overall, the implementation of the PARCC assessment program was not without its

challenges and detractors. The exam faced both technical and political pressures since its implementation in 2015. In the initial testing window, the examination was met with many local technology issues and these deficiencies prevented schools from taking the test or having access to the online assessment. Issues with the specification standards set forth by Pearson for the testing devices were common experiences as students were unable to utilize some computers for the online testing program. In addition to the technical issues, there was a strong political opposition to the PARCC assessment and as previously stated, a large segment of the population were opposed to the new test and thus refused to take the assessment. This opposition continued to occur through the time period when the PARCC exam was used. To address the PARCC opposition, some districts took the opportunity to educate schools, parents, and students about the exam to better understand it and be less resistant to taking the PARCC. Furthermore, the implementation schedule to account for using PARCC as a graduation qualification assessment was delayed by the Department of Education. There are multiple paths to graduation as students could use a number of other qualifying exams ranging from SAT and Accuplacer scores to the submission of a portfolio assessment to the New Jersey Department of Education. These pathways, along with additional options, were used to substitute for the requirement of PARCC scores.

The following requirements were outlined for the classes of 2018 and future New Jersey public school seniors. (Currently being addressed in the New Jersey court systems as of May of 2019):

“The Classes of 2018 and 2019 – Students graduating as members of the Classes of 2018 and 2019 could meet graduation assessment requirements through any of these three pathways: (1) Achieving passing scores on high-level PARCC assessments; (2)



Achieving certain scores on alternative assessments such as the SAT, ACT, or Accuplacer; or (3) The submission by the district of a student portfolio through the Department's portfolio appeals process. Special Education students whose Individualized Education Plans (IEPs) specify an alternative way to demonstrate proficiencies are required to continue to follow the graduation requirements set forth in their IEPs" (NJDOE website, 2018).

The Class of 2020 – Students in the Class of 2020 can demonstrate graduation assessment proficiency through the same three pathways as those in the Classes of 2017 through 2019, provided that students in the Class of 2020 take all PARCC assessments associated with the high-school level courses for which they are eligible and receive valid scores. As of the September 6, 2016 effective date the amendments were adopted by the State Board of Education.

In 2018 the New Jersey Department of Education moved away from the title of PARCC assessment, recommending to the State Board of Education a change for the Class of 2023 and beyond that students would have two pathways to meet the high school graduation assessments requirements: (1) Pass the newly adopted New Jersey Student Learning Assessments for ELA/L 10 and Algebra 1 exams; or submission by the district of a student portfolio through the Department's portfolio appeals process, assuming the student had taken all PARCC or NJSLA assessments associated with the high-school level courses for which they were eligible and received valid scores" (New Jersey Department of Education, 2018).

As expected with these challenges, there was an uphill climb to getting students comfortable and motivated to take the exam in New Jersey as they had multiple methods to use as a graduation requirement up until the class of 2023. The Class of 2023 was to be the first class to be required to take the NJSLA as part of allowing them to graduate from their respective

New Jersey public schools. The funding stream provided to the PARCC consortium was depleted from the federal Department of Education and the contract between the New Jersey Department of Education and Pearson expired after the 2018 school year. The Department of Education Commissioner, Dr. Lamont Repollet, formulated a test advisory committee made up of school leaders, teachers, students, and members from the Department of Education to review and develop options for future test assessment for public schools in New Jersey (Clark, 2018). The local issue this advisory team faced was how to meet the requirements of the Every Student Succeeds Act requiring that assessments were taken to “measure every child’s progress in reading and math in each of Grades 3 through 8 and at least once during Grades 10 through 12” (U.S. Department of Education, 2017; Repollet, 2018).

In 2018, the New Jersey Department of Education dropped the PARCC name and adopted a new exam entitled the New Jersey Student Learning Assessment for the 2019 school year. The State Board of Education approved this recommendation by the Education Commissioner and additional modifications to the exam, and administrative aspects of the test were implemented, but the content of the exam remained mostly unchanged from the 2018 PARCC assessments. In a number of NJ DOE broadcasts the Department of Education indicated that additional assessment changes would be implemented in the future, although no specifics have been outlined for public school districts across New Jersey.

### **Teacher Mobility**

Teacher mobility has been a concern for school district leaders for many years; the ability to retain district employees who are professionally trained and experienced educational practitioners is a concern for district leaders. Each year across the nation, for a variety of reasons, massive numbers of teachers leave their teaching position. The exodus of these teachers

can lead to a lack of continuity in schools and may have an impact on student academic success.

According to Vagi (2017), “a significant body of research has been devoted to understanding the factors that are associated with a teacher leaving his or her school. These factors can be grouped into three broad categories: characteristics of teachers, characteristics of students, and school contextual factors.” The ability of a school superintendent to develop a successful orientation program, developing school ownership in the teaching and learning process, and a successful indoctrination process may lead to higher teacher satisfaction and less teacher mobility. Research indicated finding the right fit for a teacher led to lower teacher mobility rates. Researchers have identified that teacher mobility is higher among young and older teachers as opposed to teachers who are middle-aged and in the middle years of their employment (Barbieri et al., 2011; Elfers et al., 2006; Gilbert, 2011). This phenomenon was attributed to the fact that mobility among young teachers often results from a mismatch with either their initial teaching placement or their career choice, while mobility among older teachers often reflects a decision to retire (Vagi, 2017).

As identified by Fullan (2006), organizational change takes time and persistence, a clearly articulated vision, and a system-wide comprehensive plan and framework for continuous improvement. A stable school leader can create these environmental conditions to allow for the elements of Fullan to effectuate change and teacher stability leading to student academic success. Anderson (2006) identified a key element to district success in the ability of the district leadership and school level staff to develop a district-wide and school-level emphasis on teamwork and professional community (including, in several cases, positive partnerships with unions).

Factors leading to teacher stability and the ability to develop a strong sense of school

community among the educational professionals has led to a more stable district workforce. In his examination of teacher mobility and student academic success, Sullivan et al. (2017) found that there were significant positive correlations between teacher mobility and student academic success on the Texas Assessment of Academic Skills (TAAS). School and district level teacher satisfaction, as identified by teacher mobility, may have a significant impact on student outcomes and overall district success in New Jersey public school districts. It was important to examine the relationship between the teacher mobility rate and the length of tenure of the school superintendent.

### **School District Superintendency: A Historical Perspective**

The position of the public school superintendent has vastly changed from the early days of public schools to its current incarnation relative to the recent changes in public school accountability (Waters & Marzano, 2006; Plotts, 2011; Gianquinto 2012). “The American school superintendency is an institution that is now over 150 years old. With the pressures and demands from the educational community and public at large for high performing schools that offer diversified curricular and extracurricular programs in the informational age, a series of great challenges fall on the top leaders of the nation’s school systems” (Alborano, 2002). Along with accountability changes, many other factors contribute to the ever-changing role of the superintendent including recent changes to salary structure, changing political climates, and the loss of public school superintendent longevity. It is for these reasons that research was examined more closely as it relates to the success of public school districts and the students who are served by these educational institutions. The constant evolution of the position, combined with a significant increase in accountability measures, motivated this research and required a closer look at the evolution of the district leadership position and the multitude of influences that have

both positive and negative impacts upon the successful fulfillment of the expected job responsibilities.

In today's educational environment, the role of district leader is one of many contending roles that compete for the attention of the superintendent. Accountability and academic outcomes are utilized to measure the success, or lack thereof, of the school superintendent. Job performance is directly linked to the successful management of these competing forces. School superintendents must now adapt and change the way they function on a daily basis. Throughout this chapter, the researcher referenced the history of the responsibilities of the public school superintendent and documented the transitions and emergence of the job responsibilities as the accountability of public schools was more closely scrutinized. As a result of numerous legislative changes in public education, the district leadership position has been forced to adapt and change to address community needs and desires, in addition to the expectation of increased success for student performance. The stability of the district leadership position is important to overall success in program implementation in districts (Fullan, 2006) and shorter lengths of tenure may have an impact on overall district success.

According to the New Jersey Association of School Administrators Executive Director Richard Bozza, "It's become a cottage industry, you don't have stable permanent leadership and what you have is a significant amount of turnover" (Katchmar, 2016). The constant turnover of school superintendents leading to fewer average years of service to school districts (Finn, McCord, 2017, pg.11) could lead to lower student performance as indicated in Waters and Marzano and associated other studies as outlined in Chapter I and II.

### **Superintendent Salary Caps**

Since 2011, New Jersey superintendents were required to follow an executive order

implemented by the governor of New Jersey and executed by the commissioner of education for all public school superintendents in New Jersey that limits salary based purely upon school district enrollment. The exceptions to this executive order were the largest public school districts with more than 10,000 students, public charter schools, public special education, and county vocational/technical schools who were not required to follow the outlined standards for salaries.

Numerous sources indicated that the salary caps have led to an exodus of experienced, qualified superintendents from New Jersey to retirement or surrounding states that do not employ this same salary-limiting regulation. According to an article in the *Daily Record*, “Some school districts are finding it difficult to find qualified superintendents; fewer candidates are applying for openings, experts say. In other cases, top bosses have moved across the border to Westchester and other New York counties, where districts pay \$100,000 above New Jersey’s average superintendent salary of \$152,000” (Kachmar, 2016).

Although often mentioned in media reports and discussed by state governors and legislators, relatively few states—three, actually—have employed the use of salary caps as evidenced by a recent study and survey conducted by the American Association of School Administrators. According to the last 2017 salary survey conducted by AASA, there was a decrease of superintendents surveyed being impacted by a state or legislative salary cap on superintendents. As indicated in Table 7.13 from the 2016 survey, the percentage of impacted superintendents was 6.4% of those responding. In the 2017 AASA survey, the impacted decreased by 1.4% to an overall level of 5% indicated that salary caps have had a lower impact on a superintendent’s ability to develop compensation packages without having the restrictions of salary caps (Finnan & McCord 2016; Finnan & McCord, 2017).

As we explored the associations between the imposition of salary caps on school

superintendent longevity, we had to keep in mind that this was a local phenomenon limited to specific states and superintendents, and the results of these caps on superintendent terms of service could only be applied to the specific states or areas where caps were imposed and cannot be understood to apply generally across the country. Across the United States, there are a very limited number of states that have or are currently utilizing the practice of capping or limiting superintendent salaries. New Jersey, New York, and Minnesota were among a limited number of states that have historically utilized superintendent salary caps. According to the New Jersey School Boards Association and the New Jersey Association of School Administrators, the result of these imposed salary caps has been an increase in school mobility, a loss of experienced school district leaders of up to 40% (Sitran, 2018), and a smaller candidate pool for open positions. According to a 2017 article written by Deena Yellen from the NorthJersey.com website, “Over 54.3% of the districts that responded to a 2014 study by the New Jersey School Boards Association underwent a change in superintendents since the state salary cap went into effect” (Yellen, 2017). Another associated impact in New Jersey would be in the increase in the use of ‘interim’ superintendents across the state.

Many school districts with open leadership positions choose to fill these open chief school administrator roles with temporary, former administrators who were retired and then started careers as temporary fill-in administrators for up to two full years for school districts searching for a new superintendent. As of 2015 in New Jersey, approximately 30 to 40% of superintendents were practicing interim superintendents who were considered to be a contracted service in the school district. Although they have all the legal responsibility and opportunity to act as a regularly employed school superintendent, the reality is that they were temporary employees who served the district for no more than two years, which often created a feeling of

instability within the district.

The lack of continuity may negatively affect long-term planning and goals setting as they were legally mandated to leave the district after two years. According to Waters and Marzano (2006), district stability and leadership matters and the implementation of salary restrictions led to a reduction of experienced and stable superintendents heading New Jersey's public school districts.

### **Roles of the Superintendent and Impacts on Longevity**

In the last three decades, the attention given to school accountability rose dramatically because of the widespread concern about the quality of public education. "During the last decade, the scope, complexity, and intensity of reforms have increased interest in large scale systematic reforms" (Barnett, Ferrigino, et al., 2005). As a result of the increased interest in reforming and improving public schools, superintendents were viewed as the instructional leaders charged to implement widespread reforms and were held accountable for the outcomes of the improvement activities. The superintendent's role in providing leadership beyond the school district was associated with political realities and professional responsibilities. In the political framework, superintendents were commonly seen as public property (Blumberg, Blumberg, 1985; Kowalski, 1995; Kowalski, McCord, Petersen, Young, & Ellerson, 2011). Local taxpayers who support public schools viewed superintendents as gatekeepers to the schools; the public face of the district, and the view of the role of superintendent was one that shifted depending upon the context of reviewer on how the position of superintendent was perceived. Although considered public servants, many did not only see superintendents as public servants; they also viewed them as public resources filling multiple roles within the school system (Kowalski, 1995). In this light, many citizens believed that the responsibilities of the position extended beyond managing



the school district to include activities such as attending public functions and speaking publicly at events and serving on the boards of various civic groups (Lober, 1993).

Understanding the multiple roles that must be fulfilled by the superintendent, the increased intensity and attention to system-wide school reforms, and the ever-increasing fiscal demands put upon local taxpayers, the role of superintendent became increasingly complex, political, and demanding. These multiple factors, combined with a loss of job stability through the loss of tenure in 1991, superintendent mobility increased and the average length of term of service decreased over the past two decades (Giaquinto, 2011). The average superintendents' longevity decreased by approximately 16 years from reported rates in the 1950s to the early 1980s and into the present times. The decrease is even greater in urban school districts.

With the combined forces of the public and business communities' call for school reform, and the high-stakes accountability of NCLB, the need for public schools to change their culture and practices seemed inevitable. It became clear that school district leadership was a key to effective school improvement and reform. But understanding organizational change takes time; there exists a need for superintendent longevity (Renchler, 1992; Kowalski, 1995; Austermuhl, 2000; Alborano, 2002; Natkins, Cooper, & Alborano, 2002; Maritz, 2006, Fullan (2006), Giaquinto, 2011). The resulting loss of longevity in the position of superintendent led to issues with educational continuity and consistency. As superintendents entered a new school district, they needed time to acclimate to the new environment, conduct needs assessments for the districts and then work with key personnel as agents of change and reform through a collaborative process so that change was sustainable and effective. Without the necessary time to conduct these important tasks, improvements to schools districts were destined to fail. Rapid turnover and lack of stability negatively affected a public school system (Kowalski, 1995,

Alborano, 2000; Cooper, et al., 2000, Kowalski, et al., 2011, Giaquinto, 2011 Petty, 2018). In addition to the factors that affect school superintendent longevity identified in Alborano (2002), including support for school construction and bonds in the district, levels of board intrusiveness into the domain of the superintendent, whether the district was recently merged or not, socioeconomic level of the district, as measured by the percentage of students on free or reduced lunch support, the ethnicity of the superintendent (White or African American), and whether the district hired an insider or an outsider as superintendent, schools became much more political in recent years with the push for reduced tax burdens for residents, increased school curriculum rigor, and overall national push for school reforms. This meant that a number of superintendents survived shorter service time and the stable, long-term standing in a position was necessary to make significant change happen (Alborano, 2002; Fullan (2006); Giaquinto, 2011).

With these combined factors and the institution of the New Jersey superintendent salary caps, there was a continued reduction of the length of term of service for superintendents in New Jersey school districts. Alborano (2002) asserted, “one can assume from the study that six years is the median length of service. Understanding that this is an average number of years of service, a number of superintendents survive less than that time, and that stable, long-term standing in a position is necessary to make significant change happen.” This phenomenon created less effective environments for school reform, as the educational leaders were not stable, long-term participants in the reform efforts.

### **Superintendent Longevity Related to Student Achievement**

Waters and Marzano (2006) conducted a meta-analysis of research on superintendents and the following five questions were used to guide their analysis:

- What is the strength of relationship between leadership at the district level and average

student academic achievement in the district?

- What specific district-level leadership responsibilities are related to student academic achievement?
- What specific leadership practices are used to fulfill these responsibilities?
- What is the variation in the relationship between district leadership and student achievement?
- Is there a relationship between length of superintendent service and student achievement?

According to Waters & Marzano (2006), “the answers we found to these five questions affirm the long-held, but previously undocumented, belief that sound school leadership at the district level adds value to an educational system.” The researchers went on to identify, “Two studies that were examined reported correlations between superintendent tenure and student academic achievement. The weighted average correlation (corrected for attenuation) from these two studies was .19 significant to the .05 level.” This finding supported the idea that superintendent longevity does have a positive effect on school academic achievement. These findings were in direct contrast to other research indicating there was a distanced and limited impact on student achievement by extending superintendent continuity.

According to Bennett, Finn, and Cribb (1999), “The public school establishment is one of the most stubbornly intransigent forces on the planet. It is full of people and organizations dedicated to protecting established programs and keeping things just the way they are. Administrators talk of reform even as they are circling the wagons to fend off change, or promoting to outflank your innovations.” The perception of superintendent inefficiency, considered the ‘blob’ from Bennett’s research as far back as 1987, was contradicted by Waters and Marzano’s research indicating that an effective leader with clear goals and autonomy could

lead to positive impacts on student achievement and school district efficacy. Waters and Marzano (2006) maintained, “certainly one could find examples of local school district bureaucracies that stand in the way of efforts to improve students’ learning. Indeed our research supports the assertion that not all superintendents’ behaviors produce a positive impact on student achievement. However our research does not support Bennett’s broad-stroke condemnation of superintendents, district office staff and school board members.”

The findings of Waters and Marzano (2006) indicated that with the proper setting and clear expectations of responsibilities, “profound, positive impact on student achievement can be achieved in school districts.” This research was the basis for this dissertation study on the impact of school superintendents on school district successes.

### **Institutional Change**

As the association between superintendent longevity and student academic achievement was examined in this study, an accompanying review of the theories of organizational change was conducted to investigate the needed conditions to implement effective programs. An investigation on how to best implement educational policies and programs was essential as the intention of this research was to determine if the time of service in a district had an influence on effective change or could contribute to institutional fatigue. Researchers like Fullan, Burke, Bolman & Deal, and others examined the process of organizational change and present relevant and important theories as to the most effective methods of change. This research focused on the work of Fullan’s Change Theory to frame the aspects of effective educational institutional change. As described in Chapter I, Fullan’s Change Theory, “Theory of Action with Merit,” is based on seven core elements: motivation; capacity building; learning in context; changing context; a bias for reflective action; tri-level engagement; and persistence and flexibility in

staying the course (Fullan, 2006).

The research was focused on the relationships between the superintendent longevity and resulting academic success and teacher stability, the core elements of Fullan's theory that concerned the ability of a superintendent to motivate staff members in a designated period of time, engagement on multiple levels, and persistence and flexibility to stay the course, all of which were impacted by the time of service of the school leader.

The ability to develop strong, trusting relationships is essential to begin building instructional teams that possess a shared vision and mission. A way to provide for the development of these important relationships is to have a continuous and clear message from school district leaders. Once this is established, the central office teams can be professionally trained on the district's vision and can act as key stakeholders in the change process. One way to effectuate change is to provide the institutional leaders with lateral supports to refocus the role of mid-level central office staff to act as brokers, "cultivating the exchange of information and expertise within and across schools, between schools and third parties, and between instructional leaders working at the very top of the system and those running reforms from inside the school" (Burch & Spillane, 2004, p. 4; Pfeiffer, 2015).

The lack of institutional consistency and constant turnover of school superintendents can have a negative impact on district success (Velazquez, 2017, pg. 34; Pfeiffer, 2015). "Each superintendent turnover affects student achievement because every superintendent has different priorities or motives" Velazquez (2017, pg. 34). Frequent superintendent turnover can lead to fractured program implementation and ineffective implementation of organizational change if not immediate and "systemic reform could take five years or more, and the negative impacts of high turnover could last even longer (Fullan & Stiegelbauer, 1991). According to Velasquez

(2017, pg. 35), “This, in turn, ultimately affects teacher and staff job satisfaction and staff morale and ultimately impacts the culture of a school district and the schools that comprise it (Alsbury, 2008). However, existing literature offered little theoretical basis for the cultural impacts of superintendent turnover (Grissom & Anderson, 2012).”

Research was ample in the area of superintendent longevity and its impact on organizational change. The negative impact of inconsistent policies, changing missions and visions, as well as ineffective short-term impacts of short-term superintendents had clear negative impacts on institutional health.

For these reasons this research examined the relationship of superintendent longevity in New Jersey, as impacted by superintendent salary caps, and the resulting outcomes of student achievement and teacher mobility leading to school district success.

### **District Factor Groups**

School districts in New Jersey were classified into District Factor Groups (DFG) since 1975 when the New Jersey Department of Education classified schools into categories based upon a number of factors ranging from the socio-economic status of the residents located within the district boundaries, the educational levels of the community, to population density and other factors (New Jersey Department of Education, 2017). According to the New Jersey Department of Education website (2017):

“The District Factor Groups (DFGs) were first developed in 1975 for the purpose of comparing students’ performance on statewide assessments across demographically similar school districts. The categories are updated every ten years when the Census Bureau releases the latest Decennial Census data. Since the DFGs were created, they have been used for purposes other than analyzing test score performance. In particular,

the DFGs played a significant role in determining the initial group of districts that were classified as Abbott districts. Additionally, subsequent to the *Abbott IV* court ruling, the DFGs were also used to define the group of school districts on which Abbott v Burke parity remedy aid would be based.”

In the late 1990s the NJ Department of Education updated the formula to exclude population density of the school district and included elements that were more closely tied to socioeconomic status. Six factors were utilized to determine the DFG classifications using the 2000 census data. The New Jersey Department of Education used the percentage of adults with no high school diploma, percentage of adults with some college education, occupational status, unemployment rate, percentage of individuals in poverty, and median family income (New Jersey Department of Education, 2017). Each decade the District Factor Group classification is updated with the latest United States census data.

The research utilized school districts from all DFG categories for the sample and examined the impact on district success by using multiple control variables including free and reduced lunch percentages as a socioeconomic control variable in this research study.

## **School District Report Card / School Performance Report**

In New Jersey numerous reports were available to review and assess the success of public school districts with data in multiple areas including the Department of Education's published School Report Card, now entitled the School Performance Report. The New Jersey Department of Education organized and compiled information from a number of New Jersey state reports including the certificated staff submission, statewide assessment results from each school and district, and a number of additional data points using the new student tracking system NJ SMART. These annual reports were designed to take specific school district data and organize it in a manner that the community could review and assess the success of each school and district within New Jersey. The development of the reports were a direct result of the call to increase accountability in districts while providing transparency through the attainment of educational progress of the students who were served by school districts across New Jersey. In his 1988 State of the State Address, then Governor Thomas Kean proposed an annual report (Van Tassel, 1989, p. 12) to be developed in New Jersey to collect school data and publish it for public review. The reports were to be used by parents and community members to evaluate how schools in their neighborhoods were doing compared to others in the local area and across the state. According to Governor Kean, "We happen to believe the more parents know, the more involved they can be; this is a way to arm them with that knowledge" (Van Tassel, 1989, p. 12). The expansion of accountability was evident in this report and according to Sal Cooperman, the New Jersey Department of Education commissioner at the time, "With knowledge, hopefully, will come the ability to act intelligently to improve the schools" (Van Tassel, 1989, p. 12). Initially, the School Performance Reports were not universally accepted, as there was opposition to the idea of reporting statistics on public schools because of the fact that this data could have



been used to cast an unfavorable picture of local schools.

As a result of the implementation of a new reporting procedure, some felt it was unfair to compare schools that were not on even socio-economic grounds. “Karen Joseph, a spokeswoman for the New Jersey Education Association in February 1989, said it was time to quit reporting and to act more aggressively to improve schools” (Associated Press, 1989). She went on to say, “Regardless of the positive attitude the governor and commissioner seem to be putting forth, they’re still going to be comparing a Camden to a Livingston,” (Associated Press, 1989). In addition, opposition came from the leadership of school districts across the state. James A. Moran, executive director of the New Jersey Association of School Administrators, which represented the state’s public school superintendents, said, “We don’t believe it will do good for the students of New Jersey or the school districts” (Hanley, 1989). In the 2013–14 school year, the Department of Education developed and approved a new school performance accountability report aptly named the School Performance Report. This report replaced the New Jersey School Report Card that had been used in New Jersey since 1995. This report was utilized to collect district specific data to complete this research.

## **Summary**

As identified in previous chapters and throughout the literature review, the role of school superintendent is constantly evolving. Understanding the ever-changing role of superintendents, and the increased accountability for school districts and instructional leaders, it is very important to create a learning environment that has effective academic program assessments, implementation, and evaluation. According to Mendoza-Jenkins, (2009), “The superintendent position has transitioned from managerial-focused position to one focused on instructional leadership. As a result, it is critical that system leaders have both the skill set and knowledge

base necessary to direct multi-dimensional, district wide action towards a single objective: improving student achievement” (The Superintendent and Reform: A Case Study of Action by the System Leader to Improve Student Achievement in a Large Urban District, Mendoza-Jenkins, 2009, pg. xi). Understanding this shift in position over the past fifty years, the position of superintendent continues to be one in which there are multiple responsibilities including acting as the chief educational officer of the district, facilities planner, budget developer, community outreach coordinator, and a plethora of other daily responsibilities. In review of these responsibilities, it was concerning that there has been a mass exodus of school district leadership from New Jersey since 2011 because of a number of collaborative factors mainly focusing on working conditions and salary cap restriction imposed by the State of New Jersey Department of Education.

For program implementation, a stable and consistent school leader is essential. According to Fullan (2006), the key steps to effective program implementation includes step seven that outlines “persistence and flexibility staying the course” (Fullan, 2006). A key aspect of step seven would be to have a superintendent with longevity in the district leadership position. On average, according to a number of studies including Fullan (2006), organizational change could take a minimum of two to three years and in many cases a longer period of time. Understanding that the longevity rate of superintendents at this time is less than five years (Kolu, 2014), the impact on effective educational programming may be affected.

Focusing on the work by Waters and Marzano’s *School District Leadership That Works: The Effect of Superintendent Leadership on Student Achievement, a working paper* (2006), this research was an extension of a key finding that superintendent longevity had a positive correlation to student academic success. It was imperative that this relationship be further

examined to assess the strength and direction of this relationship. Superintendent longevity and leadership continuity could be a large contributor to creating a positive and effective academic environment.

In New Jersey, superintendent salary caps, increased regulations, and the call for public school accountability were factors contributing to the exodus of experienced superintendents across the state. The loss of experience and stability among school district leadership was an important and concerning topic in this research and the decreasing superintendent length of service also contributed to the positive or negative nature of the educational environment.

This subject of superintendent longevity connected to school district success became of utmost importance to the stability of our public schools across the State of New Jersey. The possible impact of the district leader on district success was an important and essential question that deserved further introspection and examination.

## **Chapter III**

### **Methodology**

The purposes for this correlational, explanatory, cross-sectional study were to examine the association of superintendent longevity and continuity on district level student achievement and faculty mobility. Through this process was the examination of the length of service for a school district leader and how it influenced district level student assessment scores on the PARCC exam and faculty mobility rate at the district level for traditional school districts in New Jersey that included kindergarten through Grade 12. The dependent variables of Grade 5 ELA/L, math, Algebra 1, and ELA/L 10 PARCC scores for the 2017 assessment year in addition to the 2017 district faculty mobility rate for the sample school districts were utilized as the measures of district success for the purposes of this research. As explained previously, researchers indicated that many factors influence school districts success.

For this study, a multiple regression statistical analysis was used to examine the strength of relationship between the predictor variables of superintendent longevity in a school district and overall service time as a superintendent in New Jersey on the multiple outcome variables in the academic realm using the PARCC assessments, and an additional measure of district stability by using the outcome variable of faculty mobility rate. Understanding the limitations in the research having used state based geographical boundary, all New Jersey kindergarten through Grade 12 school districts utilized had seated, annually contracted school superintendents and not interim titled superintendents. Using all statewide K–12 schools, the research sample reached across regional and socioeconomic lines as all DFG schools allowed access to identify differences between these sample school districts. This method of selecting all K–12 school districts allowed a more complete review and comparison by school boards and school district

leaders as they attempt to understand the relationship of superintendent longevity and school district success.

### **Research Questions**

The following five (5) research questions guided this study:

1. What is the relationship between New Jersey public school superintendent longevity and student achievement as measured by Spring 2017 Partnership for Assessment of Readiness for College and Careers (PARCC) Grade 5 math when controlling for school and student characteristics?
2. What is the relationship between New Jersey public school superintendent longevity and student achievement as measured by Spring 2017 Partnership for Assessment of Readiness for College and Careers (PARCC) Grade 5 English Language Arts/Literacy when controlling for school and student characteristics?
3. What is the relationship between New Jersey public school superintendent longevity and student achievement as measured by 2017 Partnership for Assessment of Readiness for College and Careers (PARCC) Algebra 1 when controlling for school and student characteristics?
4. What is the relationship between New Jersey public school superintendent longevity and student achievement as measured by Spring 2017 Partnership for Assessment of Readiness for College and Careers (PARCC) English Language Arts/Literacy 10 when controlling for school and student characteristics?
5. What is the relationship between New Jersey superintendent longevity and district faculty mobility as evidenced by the 2017 School Performance Report faculty mobility rate percentage when controlling for school and student characteristics?

## **Research Design and Methods**

This research study used a non-experimental, exploratory, cross sectional design with quantitative methods. Data collection procedures for this quantitative research were conducted by a thorough and complete review of local, regional, and state reports directly related to New Jersey public school district performance. Annually, all New Jersey public school districts are required by the New Jersey Department of Education to complete data reports related to attendance rates, PARCC test scores, suspension rates, faculty/staff mobility rates, and a number of additional data points. School districts must also complete a number of demographic reports including, but not limited to race, socio-economics, educational program placement, student district enrollment history, ethnicity, and numerous other demographic data points. These public Department of Education reports were used to collect outcome variable data points of PARCC exam scores and school district faculty mobility percentages. The specific data points were collected from the School Performance Report and PARCC score report for each selected school district. The outcome variable grade level examined were the school district level PARCC scores of students enrolled in Grades 5, 9 and 10. The School Performance Report was utilized to collect each sample school district's faculty mobility rate as this information is required to be reported annually by New Jersey public school districts. School district profiles and additional state educational reports were utilized to confirm the data points used in this study. The New Jersey Department of Education annual Staff Report, Data Universe, and APP.com were reviewed to collect information on superintendent longevity in a school district and overall experience as a superintendent in New Jersey. Other local, state, and national professional organizations (i.e., county Department of Education, New Jersey Association for School Administrators, American Association of School Administrators) have developed data sets

directly related to salary levels, benefits of superintendents, longevity in the position, as well as additional superintendent demographic data important to this research. These professional associations were referenced when collecting the information needed to conduct this research.

All data points were entered in a comma separated value method into a simple excel spreadsheet to organize the data points for eventual entry into the SPSS statistical program for analytical purposes. Specific data to be reported for the predictor variable of superintendent longevity were the years of continual service to the current school district and years of service of each superintendent in New Jersey. Outcome variable data examined included the 2017 district faculty mobility rate, 2017 PARCC assessment scores for Grade 5 ELA/L and math, and Grade 9 Algebra 1 and Grade 10 English Language Arts/Literacy in New Jersey Public School districts. In addition to these outcome data points, additional district level demographic data were collected, including free and reduced lunch percentage, faculty education levels, English Language Learner percentage, teacher attendance rates, percentage of chronic absenteeism and other demographic information during the 2017 school year from the sample districts for each K–12 public school district across New Jersey with contracted superintendents.

The data were entered into and analyzed using the SPSS statistical software program. A non-experimental explanatory multiple regression statistical analysis was utilized to examine any statistically significant relationships between the independent variable of superintendent longevity in the school district and overall experience and the outcome variables of the school district level student academic performance as evidenced by scores on the 2017 PARCC exams for Grade 5, Algebra 1 and ELA/L 10 assessment scores for enrolled students of the sample public school districts and the district faculty mobility rate for the 2017 school year. As previously identified, the control variables entered into the regression statistical analysis were the

2017 free and reduced lunch percentages, district free and reduced lunch percentage, district student chronic absenteeism percentage, district special education percentage, district English language learner percentage, district faculty attendance percentage, district faculty with advanced degrees percentage, and chronic absenteeism percentage for the sample kindergarten through Grade 12 school districts.

This study focused on relational associations of superintendent longevity and district academic performance as identified by Waters and Marzano (2006) and further researched by Glass & Franceschini (2007), Mendoza-Jenkins (2009), Giaquinto (2011), Plotts (2011), Petty (2018), and other similar studies conducted to examine the educational impact of the superintendent on student success. This research examined the length of tenure of superintendents within the school district as a measure of district effectiveness or ineffectiveness as identified by Graziano (2012) in her research studying the effect of faculty mobility rate on HSPA scores of New Jersey public schools. In reviewing research involving superintendent longevity and school district success, limited research specifically focused on the relationship between superintendent longevity and school district success as evidenced by resulting state assessment scores and overall district faculty mobility rate. The meta-analysis by Waters and Marzano (2006) indicated a statistically significant relationship between superintendent longevity and student success and for these reasons, this non-experimental study focused on the longevity of the district superintendent and the relationship of this variable on district academic scores for the PARCC and faculty mobility rates of the district. This research was non-experimental as it focused on an educational research problem in regards to superintendent longevity and its possible resulting educational impacts.

This research focused on any identified statistically significant relational associations



between the length of service of the superintendent and the PARCC scores and faculty mobility percentage rate as reported in the district level School Performance Report during the 2017 school year.

### **Sample**

The research sample for this study was limited to the public school districts located within New Jersey. In addition, only kindergarten through Grade 12 school districts were used as the sample selection for this research. Each of the New Jersey public school districts must have administered the 2017 PARCC ELA/L and math exams in Grade 5, Algebra 1, and the English Language Arts/Literacy 10 to the required student populations at each of the district schools during the data sample period. Each school district must have had valid student and district score results for the 2017 PARCC Grade 5 ELA/L and math, Algebra 1 and ELA/L 10 assessments reported to the New Jersey Department of Education for each public high school in the K–12 school district.

Additionally, this research focused on each of the sample district's state reported 2017 faculty mobility rate as a secondary measure of school district effectiveness. In the 2016–2017 school year there were 590 operating school districts across the state that ranged from regular operating public schools to charter schools and schools for disabled students. Of the 590 districts, 218 of these New Jersey public school districts were organized in a kindergarten through Grade 12 format (New Jersey Department of Education, Public School Fact Sheet, 2017). This grade configuration allowed for the selected outcome variable data that were focused on in this study. On an annual basis, the New Jersey Department of Education posts the scores for each school district on the New Jersey PARCC Score Reports at the Department of Education website and through the New Jersey School Performance Report. This research

focused on the 218 kindergarten through Grade 12 school districts (New Jersey Department of Education, Public School Fact Sheet, 2017; Rutgers University, New Jersey Data Book, 2019) that are regular operating public schools within New Jersey. Sample school districts eliminated were charter, magnet, and schools for disabled students because of the student population not being a heterogeneous district boundary established student sample. The 218 schools selected for this research were all school districts within New Jersey that educate kindergarten through Grade 12 students in a regular operating district format. All district factor group (DFG) school districts were included in the study sample so that there was a complete cross section of school district DFGs from A to J and regional differences are addressed by sampling from the north, central, and south region of the state.

### **Instrumentation**

This study examined the association between the overall number of years a superintendent served a specific school district and the identified school district's measurements of success. The final percentage of students who achieve proficiency on the PARCC assessment for the school district was utilized as the main academic indicator of success for the school district. An additional measurement of school district stability was indicated to be a lower percentage for the faculty mobility rate of the sample school districts. During the 2017 school year, the minimum score of 750 on the PARCC exam was considered proficient. This PARCC score was used as the qualifying numeric minimum score used for a measurement of success for the purposes of the research. The PARCC has been the New Jersey assessment exam since 2015. The PARCC was developed to measure the competency and comprehension of students' success on the New Jersey State Board of Education approved New Jersey Student Learning Standards and the previous standards called the Common Core Curriculum Content Standards. All students

in New Jersey were expected to take the state assessment including general education students, special education students, English Language Learners, and all levels of socio-economic status students in the public school system. School districts were permitted by the federal Every Student Succeeds Act and New Jersey Department of Education regulations to have up to 1% of Individualized Educational Plan students exempted from this required testing program. The 2017 test administration method included one exam administered in the Spring to all Grade 3 through Grade 11 students. This exam was utilized as a culminating assessment of the New Jersey Student Learning Standards.

The results of this assessment can be used to improve classroom instruction, to assess the comprehension of standards by students and the development of academic interventions. Overall assessment data may assist with shaping and developing school and district wide professional development plans. There were no state Department of Education graduation requirements to pass the exam through the 2017 year. Understanding there were no requirements to take and pass the exam during these years, the Department of Education did establish baseline scores and minimum passing scores on the Grade 5 ELA/L, math, Algebra 1, and ELA/L 10 exam.

As identified in this chapter, the minimum passing scores were determined to be 750 by the New Jersey State Department of Education. This research used this passing score and the overall percentage of students reaching the proficient level as a measure of student academic success in each school district.

### **Reliability**

Reliability is the ability of the assessment tool to provide test score scales that are consistent in measuring the success of comprehension (levels of understanding) of the intended targets skill sets it is developed to assess. A high reliability indicates that the results of the test

are consistent and repeatable in measuring the true differences in student comprehension levels rather than score fluctuation that is a result of chance. The PARCC is a nationally developed criterion referenced exam developed by Pearson Education that was administered to all students in Grades 3 through 11, except those exempted by the Individual Educational Plans, and seniors who successfully achieved the minimum basic passing score as juniors. According to Petty (2018) in his research of a principal's impact on local test scores, "There are many ways of estimating reliability. The type reported in Person's Final Technical Report for 2016 Administration was an internal-consistency measure. This measure was derived from analysis of the consistency in the performance of individuals across items within the test." According to the 2017 PARCC Score Technical Report for the PARCC English Arts/Literacy, "The average reliability estimates for the CBT tests for Grades 3 through 11 ELA/L range from a low of .91 to a high of .94. The average reliability estimates for the PBT tests for ELA/L Grades 3 through 11 ranges from a low of .86 to a high of .94. The tests for Grades 3 through 5 have fewer maximum possible points than for the Grades 6 through 11 tests. The average reliability estimates are at least .90 except for Grades 4 and 5 PBT tests, which are .88, and Grade 11 PBT, which is .86. The average raw score SEM is consistently between five to six percent of the maximum possible score." The 2017 PARCC math reliability "The average reliability estimates for the Grades 3 through 8 mathematics assessments range from .90 to .94 for the CBT tests and from .86 to .93 for the PBT tests. Most of the average reliability estimates are above .90 except for two PBT and one CBT. The raw score SEM consistently ranges from four percent to six percent of the maximum score." The high levels of reliability (over .86) as outlined in the 2017 PARCC Technical Report indicate a consistency of the PARCC scores to measure, in a repeatable manner, the comprehension of the New Jersey Student Learning Standards and the former

Common Core State Standards.

## **Validity**

Validity is different from reliability in the fact that it is not examining the ability of the assessment tool to produce consistent and repeatable scale scores, but rather examining if the assessment tool developed is accurate in measuring the comprehension levels of the students of the NJSL and CCSS as intended by the PARCC developers. According to the 2017 PARCC Technical Report, “The Standards for Educational and Psychological Testing, issued jointly by the American Educational Research Association [AERA], American Psychological Association [APA], and National Council on Measurement in Education [NCME] (2014) reports:

Validity refers to the degree to which evidence and theory support the interpretations of test scores for proposed uses of tests. Validity is, therefore, the most fundamental consideration in developing tests and evaluating tests. The process of validation involves accumulating relevant evidence to provide a sound scientific basis for the proposed score interpretations (p. 11). The purpose of test validation is not to validate the test itself, but to validate interpretations of the test scores for particular uses. Test validation is not a quantifiable property but an ongoing process, beginning at initial conceptualization and continuing throughout the lifetime of an assessment.”

PARCC developers took a number of precautions to increase the validity of the exam from annual field testing of PARCC test question items to continuous collection of feedback from students, staff, test coordinators, and administrators about testing issues, concerns, and the online testing format. The PARCC test was intended to measure the ability of a student to be successful in college or a career by the proficient completion of the PARCC exam by achieving a score of 750. According to the 2017 PARCC Technical Report, “The PARCC determined that

this level means graduating from high school and having at least a 75% likelihood of earning a grade of “C” or better in credit-bearing courses without the need for remedial coursework.” The PARCC assessment annual report review indicates validity of the assessment to measure college and career readiness by showing a “high total group internal consistencies as well as similar reliabilities across subgroups provide additional evidence of validity. High reliability of test scores implies that the test items within a domain are measuring a single construct, which is a necessary condition for validity when the intention is to measure a single construct” (New Jersey Department of Education; PARCC Technical Report, 2017).

It is for these reasons the study focused on using the PARCC assessment at different grade levels in K–12 the sample school districts to produce a valid measurement of academic success in a school district.

## **Variables**

The outcome/dependent variables for this research were the district level New Jersey PARCC assessment scores for the Grade 5 ELA/L, math, high school Algebra 1, English Language Arts/Literacy 10 exams, and the district faculty mobility rate for the K–12 school districts in the research sample. The assessment year used for this research was the Spring 2017 assessment of the PARCC exam for New Jersey public school districts selected as the research sample group. A secondary measure of district stability and success utilized as an outcome variable for the purposes of this research was the 2017 faculty mobility rate of the school districts sampled. The district faculty mobility rate was measured by the percentage of teachers arriving and/or leaving the school district during the 2016–2017 school year.

Focused on Waters & Marzano’s meta-analysis of 27 different studies, additional research work from Alborano (2002), Glass & Franceschini (2007), Mendoza-Jenkins (2009),

Plotts (2011), Giaquinto (2011), Petty (2018), and others, this study focused on the association between superintendent longevity and the outcome variables of student academic achievement. A secondary relational analysis was conducted during this research examining superintendent years of service in the district (longevity) and the 2017 school district faculty mobility rates as reported by the School Performance Report for all kindergarten through Grade 12 New Jersey public school districts.

The PARCC exam was the New Jersey Department of Education mandated assessment required to be administered in each of the selected sample high schools in New Jersey. For this reason the focus on the four academic outcome variables of Grade 5 ELA/L, math (Grade 5 being the culminating grade of the primary school educational experience), Algebra 1, and ELA/L 10 as the high school assessments were selected. The high school assessments were chosen for this research as they were the New Jersey Department of Education required high school graduation exams for the class of 2021. In 2018, the graduation regulations faced a legal challenge as the sole graduation requirement in New Jersey and the PARCC exit exam requirement was struck down by the state appellate court. The New Jersey Department of Education considered its options and informed the public school districts that the spring 2019 NJSLA assessment would continue to be administered as planned. Although prior to 2021, there are a number of graduation exit exam options, the New Jersey Department of Education determined that students who successfully passed the Algebra 1 and ELA/L 10 possessed the college and career ready skills to be successful at the next level of their schooling or employment without further remediation. As referenced previously, the Pearson PARCC manual, as stated in Maroun (2018), the PARCC assessment outlines “the academic knowledge, skills, and practices students must demonstrate to show readiness for success in entry level, credit-bearing college

courses, and relevant technical courses” (Pearson, 2016, p. 120; Maroun, 2018, p. 64).

All data points and variables used in this research were collected and aggregated by the Department of Education and published in multiple public reports including the PARCC Assessment Score reports (<https://www.nj.gov/education/schools/achievement>), the School Performance Reports (<https://rc.doe.state.nj.us>), the New Jersey Staff Submission Report (<https://www.state.nj.us/education/njsmart/staff/staff>), Data Universe (<https://php.app.com/agent>), and data mined at the New Jersey Department of Education website (<https://www.state.nj.us/education>).

### **Analysis of Data**

This researched used publicly available data and did not utilize human subjects so it did not need a pre-research approval by the Institutional Review Board (IRB) of Seton Hall University. The data were analyzed using SSPS software and statistical methods consistent with previous studies of superintendent longevity and academic achievement as outlined in previous research by Waters and Marzano (2006), Alborano (2002), Plotts (2011), Giaquinto (2011), and Petty (2018). The data were mined from a number of authentic sources ranging from the New Jersey Department of Education (New Jersey School Report Card and the New Jersey Certificated Staff Report), Data Universe, and the New Jersey Association for School Administrators. The data were organized in an excel spreadsheet for review and cleaning of the data prior to importing the data sets into SPSS. All school districts (219) were reviewed with 14 school districts being eliminated from the sample because of incomplete data points. The remaining 205 school districts were reviewed to determine if there was an interim superintendent during the 2016–2017 school year. As a result of this examination an additional 16 school districts were eliminated from the data sample leaving 189 sample school districts for analysis.



The variables were analyzed using a variety of methods including a descriptive analysis, descriptive exploratory, frequency analysis, correlational bivariate analysis, and multiple regression analysis. These statistical analysis methods were used to measure the strength of relationship between the predictive variables of years of service as a superintendent in a school district and overall years as a superintendent to the dependent variables of district level PARCC Grade 5 ELA/L and math, Algebra 1 and ELA/L 10 scores, and the district faculty mobility rate.

The five research questions were evaluated via continuous multiple regression analyses examining the correlational relationships between the independent variables of superintendent years in district and total number of years as a superintendent, and the dependent variables of PARCC scores and teacher satisfaction as evidenced by the district teacher mobility rate.

Control variables included in this research were 2016–2017 free and reduced lunch percentages, district free and reduced lunch percentage, district special education percentage, district English language learner percentage, district faculty attendance percentage, district faculty with advanced degrees percentage, and chronic absenteeism percentage reported by the district School Performance Report. The collected data were aggregated into units based on predictor variables (length of service in the district as superintendent and overall years as a superintendent) and outcome variables (district level 2017 PARCC Grade 5 ELA/L and math, PARCC Algebra 1 and ELA/L 10 scores, and district level faculty mobility rate) collected from various federal, state, and local resources and reports. The elements of the data sets were titled and coded to align with each of the five research questions in the study. The data were reviewed to identify any similarities or themes based upon the assigned codes as it was entered into the data recording sheets. Once any statistically significant relationships were identified by the regression analysis, these results were examined in relationship to the outlined research questions. The data from the

various sources were to be downloaded into a Microsoft Excel spreadsheet in the “comma separated value” format allowing for the disaggregation of the data. The data were analyzed in response to each of the research questions. The main data analysis was completed using the Statistical Package for Social Sciences (SPSS). Demographic information was collected from the 218 school districts in the sample with the understanding each sample school district must be a kindergarten to Grade 12 school district. As previously outlined, in the demographic information reviewed from each school district a number of control variables were included in the statistical analysis. Each sample district’s superintendent employment status was considered and designated whether the superintendent was a regularly employed superintendent or an interim temporarily assigned superintendent. If the New Jersey school district was employing an interim superintendent, the district was eliminated from the K–12 sample district population for this study.

The following steps were utilized to analyze the data:

1. The data were imported from an excel spread sheet that was reviewed to remove the non-qualifying sample districts. Sample cleaning included removing districts with incomplete data sets and districts with seated interim superintendents during the 2017–2017 school year. The spreadsheet contained the independent and dependent variable for this cross sectional correlational study. The independent variables were superintendent years of service in a district and superintendent total years of service. Dependent variables outlined were 2017 PARCC scores for Grade 5 math and ELA/L, 2017 PARCC Algebra 1, 2017 PARCC Grade 10 ELA/L, and the 2017 faculty mobility rate. All were properly aligned with identifiable titled columns.
2. A descriptive analysis was conducted with all the continuous variables to examine and

determine the maximum and the minimum variable levels, the established mean for each variable, and the standard deviation for each continuous variable.

3. The variables were then analyzed using a descriptive exploratory method analysis to establish whether the variables met the assumption of normality and to examine any skewness of the data set variables assuming the range of normality is from -1 to 1.
4. A two-tailed Pearson bivariate correlational analysis was conducted on the independent and dependent variables to examine the strength and direction of the relationship between the independent and dependent variables as outlined.
5. Using the independent variables of superintendent experience in the district and total years as a superintendent, a simultaneous multivariate regression analysis was conducted, which included a correlational analysis examining the standardized coefficients (beta). This analysis provided the strength and direction of variable relationships and the significance of the impact of the independent variables.
6. This process was conducted for each of the independent variables on the dependent variables selected for this research. Also included were control variables as outlined previously in the methods section of this chapter.
7. A multivariate diagnostic was used to examine collinearity between the independent variables by running a variance inflation factor (VIF) analysis. The resulting table was examined for a VIF score of above 4.000 suggesting a potential threat to statistical analysis interpretation.
8. A number of simultaneous multiple regression models were run utilizing the independent variables impact on our dependent and control variables. Each model was examined to determine the best fit model that predicts the impact of superintendent experience on the

academic outcomes of PARCC testing in Grade 5, Algebra 1, ELA/L 10, and district employee satisfaction as measured by the teacher mobility rate for public school districts. Each model analysis also examined the impact of the control variables on the outcome variables of academic success and teacher mobility.

9. The best fit models were reviewed to determine if there was linear strength present on the scatterplots and if there were any significant relationships as a result of the simultaneous multiple regression analysis. The confidence interval of .05 was determined to be the threshold for significance and the models were examined to determine if the relationships between variables were significant at the 95% confidence level for each model.

## **Summary**

Chapter III described the rationale for this research, including the statement of the problem that the research focused upon during the study. This chapter outlined the steps to complete the study, the research questions, research methods and design, sample size and designation of participants, the methods used to mine the relevant data, what statistical analysis was utilized and what the independent and dependent variables were identified for the study. PARCC was selected as the academic outcome variable because of its widespread administration in all public schools in New Jersey. The PARCC exam supplanted the High School Proficiency Exam (HSPA) which was used by the Department of Education as the graduation requirement from 2002 until 2015. PARCC was replaced by the NJSLA for the 2019 school year. The research focused on the 2017 primary Grade 5 PARCC exams, Algebra 1, and English Language Arts–Literacy 10 exams as they were designated by the New Jersey Department of Education as the thresholds students needed to successfully complete to graduate.

The association and relationship between superintendent longevity and district level

student success and faculty mobility rate as a measure of district success needed to be examined more closely as the public accountability of school districts increased with the new federal Every Student Succeeds Act and the revised New Jersey Department of Education QSAC monitoring process. Superintendents are considered district decision makers and the decisions and choices they make each day have a direct impact educational programming. This study built upon the limited research in the area of district leadership's impact on specific measures of district success. As Waters and Marzano (2006) identified in their meta-analysis, School District Leadership that Works: The effect of superintendent leadership on student achievement, "research increasingly points to the relationship between effective leadership and increased student achievement." It is for these reasons that this research focused on the relationship of superintendent longevity on student academic achievement and faculty stability in New Jersey public school districts.

This non-experimental, exploratory, cross sectional, quantitative research study utilized the SPSS data analyzation tool to conduct a multiple regression model analysis for the data points collected from various public data resources as outlined in this chapter. The results of this study will build upon previous research by Waters and Marzano (2006), Alborano, (2002), Glass & Franceschini (2007), Mendoza-Jenkins (2009), Plotts (2011), Giaquinto (2011), Petty (2018), and limited other research papers focusing on the longevity of a superintendent and impacts on student academic performance and faculty mobility and stability. This information will be useful to school district administrators, school boards of education, and numerous local, state, and national associations that support school districts and employees as they strive to achieve improved student academic success. Additionally, the results of this study may provide valuable insights on the impact and relationship of school district leadership stability, and the stability

created within the faculty ranks of each district used as a sample and selected academic measures of district success.

Furthermore, this study can be used as a basis to further examine the long-term effect of superintendent stability on school district success as the research in this area is limited and should be explored in a more in-depth manner to determine new policies, procedures, and hiring/firing practices.

## **Chapter IV**

### **Analysis of the Data**

The position and responsibilities of the public school superintendent has evolved tremendously over the past 100 years. Initially considered a position of organizational responsibilities, management, and implementation of state and local curricula, the position has become one of diversity having responsibilities across the entire educational spectrum including political and community outreach activities. With added responsibilities, the push for public school reform and constant call for school improvement came a significant increase in accountability for student and school district success. The superintendent, acting as the chief educational officer, has inherited the responsibility to assure the community that the schools are highly functioning and students are afforded opportunities to succeed as they transition out of K–12 educational experiences and into higher education, the armed services, or a vocation.

School district leaders are no longer able to have a singular focus of student achievement, as the 21<sup>st</sup> century school leader must be a multidimensional community leader who is an expert in matters of curriculum, budget, human resources, community activism, and a plethora of other district leadership responsibilities.

#### **Purpose of the Study**

The purpose of this research study was to build upon the research by Waters and Marzano (2006) and Fullan (2006) examining the impact of superintendent longevity and continuity on district level student achievement and faculty mobility at the school district level. This research examined superintendent years of service in a school district and success measures of district level 2017 PARCC Grade 5 math and English Language Arts/Literacy scores and PARCC Algebra 1 and English Language Arts/Literacy scores in addition to district level faculty mobility rates as reported on the 2017 School Performance Reports.

This chapter contains an overview of the process and procedures for a non-experimental, exploratory, cross sectional design with a quantitative research data analysis from a population of 219 New Jersey school districts. Twenty school districts were excluded because of certain criteria, including not having a permanent school superintendent, valid PARCC scores, or other unreported data points.

The chapter includes the procedures within the analysis of the data and description of additional demographics of the data points collected for this research. This chapter describes how the data were collected and analyzed using a correlational analysis and reports the results of the statistical analysis. This chapter includes the descriptive statistic of the sample, the procedure of the data analysis, and the output analysis using the Statistical Package for the Social Sciences (SPSS) and provides the research findings that respond to the research questions and the null hypothesis.

### **Organization of the Chapter**

Chapter IV contains a review of the procedures and steps for the quantitative data analysis of the research sample of 219 kindergarten through Grade 12 public school districts in New Jersey selected for this research. It includes a description of how the sample schools were selected and includes elimination factors utilized to clean the data set. The chapter outlines how the data sets were collected, analyzed, and reported using multiple statistical analysis procedures summarizing the results.

The chapter provides a descriptive and exploratory analysis of the sample looking for data skewness and data set outliers utilizing the Statistical Package for the Social Sciences (SPSS, Version 26) software. The chapter further examines the output models using SPSS by examining the correlational analysis and a review of the multiple regression analysis of the



selected school districts, variables, and complete data samples. The chapter ends with providing the research findings that answer the five research questions and the null hypothesis.

## **Research Questions**

The research questions that steered this study were:

What is the relationship between New Jersey public school superintendent longevity and student achievement as measured by Spring 2017 Partnership for Assessment of Readiness for College and Careers (PARCC) Grade 5 math when controlling for school and student characteristics?

No statistically significant relationship exists between a New Jersey school superintendent's length of time in a school district and student academic achievement, as evidenced by the 2017 PARCC scores in Grade 5 mathematics when controlling for school and student characteristics.

What is the relationship between New Jersey public school superintendent longevity and student achievement as measured by Spring 2017 Partnership for Assessment of Readiness for College and Careers (PARCC) Grade 5 English Language Arts/Literacy when controlling for school and student characteristics?

No statistically significant relationship exists between a New Jersey school superintendent's length of time in a school district and student academic achievement, as evidenced by the 2017 PARCC scores in Grade 5 English Language Arts/Literacy when controlling for school and student characteristics.

What is the relationship between New Jersey public school superintendent longevity and student achievement as measured by 2017 Partnership for Assessment of Readiness for College and Careers (PARCC) Algebra 1 when controlling for school and student

characteristics?

No statistically significant relationship exists between a New Jersey school superintendent's length of time in a school district and student academic achievement, as evidenced by the 2017 PARCC scores in Algebra 1 when controlling for school and student characteristics.

What is the relationship between New Jersey public school superintendent longevity and student achievement as measured by Spring 2017 Partnership for Assessment of Readiness for College and Careers (PARCC) English Language Arts/Literacy 10 when controlling for school and student characteristics?

No statistically significant relationship exists between a New Jersey school superintendent's length of time in a school district and student academic achievement, as evidenced by the 2017 PARCC scores in English Language Art/Literacy 10 when controlling for school and student characteristics.

What is the relationship between New Jersey superintendent longevity and district faculty mobility as evidenced by the 2017 School Performance Report faculty mobility rate percentage when controlling for school and student characteristics?

No statistically significant relationship exists between a New Jersey school superintendent's length of time in a school district and district success, as evidenced by the 2017 district faculty mobility rate when controlling for school and student characteristics.

### **Independent and Dependent Variables**

In reviewing the literature and specifically the research conducted by Waters and Marzano (2006) and other identified researchers, it is suggested that certain predictor variables have a significant relationship with student academic achievement, teacher satisfaction, and

school district success. The independent variable of superintendent longevity with a school district was collected through the use of the 2017 New Jersey Department of Education annual School District Fall Staff Report, NJASA member survey data, and Data Universe at (Asbury Park Press website) APP.COM. The dependent variables, for the purposes of this research, were the 2017 PARCC scores from Grade 5, Grade 9, Grade 10, and the district teacher mobility rate were sourced from multiple school and state reports. The PARCC scores for all grades were retrieved from the New Jersey Department of Education website, the New Jersey School Performance Report for each school district, and each district's school approved website. The district teacher mobility rate was retrieved from the district level 2017 New Jersey School Performance Report for each school district.

Table 3  
*Independent / Dependent / Control Variables Used In This Study*

Variables	Label	Description
Superintendent Years of Experience In District – Independent Variable (Scale)	SuperYrs	Total number of years superintendent has served in the district
Superintendent Years of Experience Overall – Independent Variable (Scale)	SuperYrsTtl	Total number of years the experiences as a superintendent
District PARCC English Language Arts / Literacy Grade 5 – Dependent Variable (Scale)	PARCCELALGr5	Percentage of students who meet or exceed (4/5) the expected score on this section of the PARCC assessment
District PARCC Math Grade 5 – Dependent Variable (Scale)	PARCCMathGr5	Percentage of students who meet or exceed (4/5) the expected scores on this section of the PARCC assessment
District PARCC Algebra 1 - Dependent Variable (Scale)	PARCCAlg1	Percentage of students who meet or exceed (4/5) the expected scores on this section of the PARCC assessment
District PARCC English Language Arts / Literacy Grade 10 - Dependent Variable (Scale)	PARCCELALGr10	Percentage of students who meet or exceed (4/5) the expected scores on this section of the PARCC assessment
District Faculty Mobility Rate - Dependent Variable (Scale)	FacMobRate	One year retention rate – percentage of teachers assigned to the district in 2015–16 that were still assigned to the district in 2016–17
District Faculty Advance Academic Degrees – Control Variable (Scale)	FacAdvDeg	Highest level of education attained by the teachers based on BA/MA/Ed.D/Ph.D
District Faculty Attendance Rate - Control Variable (Scale)	FacAttendance	Percentage of days that faculty members were present during the school year
District Free and Reduced Lunch Percentage - Control Variable (Scale)	FreeRedLunch	Percentage of economically disadvantaged students who qualify for free and reduced lunches
District English Language Learners Percentage - Control Variable (Scale)	ELLRate	Percentage of students identified by the district as needing English language proficiency services
District Chronic Absenteeism Percentage - Control Variable (Scale)	ChronAbsent	Percentage of students that were absent for 10% or more of the school year
District Special Education Percentage - Control Variable (Scale)	SpEdPercent	Percentage of students that were classified with an Individualized Educational Plan (I.E.P)

## Descriptive Statistics

A descriptive analysis was performed using the statistical package SPSS Version 26 to examine the variables included in this study. The independent variable of superintendent years of experience in the district and overall superintendent experience was analyzed as were the dependent variables of NJ PARCC Grade 5 ELA/L and math, NJ PARCC Algebra 1 assessment, NJ PARCC ELA/L 10 assessment, and teacher mobility rate for each school district. Control variable examined were district faulty advanced degree percentage, faculty attendance rate, district free and reduced lunch percentage, district ELL percentage, district chronic absenteeism percentage, and district special education percentage. The analysis was utilized to examine sample size, minimum and maximum values, mean of each variable and the standard deviation for all variable included in this research. The results of this analysis are provided in Table 4.

Table 4  
*Descriptive Statistics*

	N	Minimum	Maximum	Mean	Std. Deviation
SuperYrs	189	1.00	19.00	4.6402	3.41892
SuperYrsTtl	189	1.00	26.00	7.9788	5.02754
PARCC ELA Gr5	189	19.00	95.00	62.4074	16.48591
PARCC ELA Gr10	189	12.00	84.00	48.0317	15.92533
PARCC Math Gr5	189	5.00	86.00	49.5556	17.86007
PARCC Alg1	189	12.00	97.00	41.9788	18.74804
FacAdvDeg	189	12.00	78.00	45.4762	14.43163
FacMobRate	189	58.00	95.00	88.4497	4.15957
FacAttendance	189	89.00	100.00	96.2275	1.86972
SpEdPercent	189	8.00	28.00	16.3122	3.22769
FreeRedLunch	189	.00	100.00	31.6402	24.82123
ELLRate	189	.00	30.00	4.9947	5.44557
ChronAbsent	189	1.80	29.70	9.2688	4.81784
Valid N (listwise)	189				

This research study included 189 kindergarten through Grade 12 public school districts. The average years of experience for the district superintendent was 4.64 years in districts and

overall experience as a superintendent averaged 7.98 years. The minimum and maximum for years in district area were 1 year to 19 years respectively. The total years of experience for superintendents ranges from 1 year to 26 years in the K–12 grade sample districts. Examining the dependent variables, the mean passing score for the Grade 5 ELA/L and Grade 10 ELA/L scores were 62.41% and 48.03% respectively, with minimum scores of 19% and maximum scores of 95% passing for Grade 5 ELA/L. Grade 10 ELA/L minimum and maximum districts passing scores were 12% and 84% for students. The math score passing rate averages were 49.56% for Grade 5 math and 41.97% for Algebra 1 assessments, each having minimum scores of 5% and 12% respectively and maximum scores of 86% and 97% respectively. The faculty mobility rate, staying with the school district from year to year averaged 88.45%, meaning that 88.45% of the current staff returned in the 2016–17 school year from the previous year. The minimum faculty mobility rate was 58% and the maximum retainage of certificated staff was 96%. The descriptive analysis was performed for the control variables and the following means were identified: 45.48% of the teachers had advanced degrees in the schools sampled with a minimum of 12% and a maximum of 68%; faculty attendance rate averaged 96.23% daily with a minimum of 89% and a maximum of 100%; Special education classification percentages for the sample schools averaged 16.31% for students with a minimum of 8% and a maximum of 28%; free and reduced lunch percentage means for the districts was 16.31% of students with minimum of 0% and a maximum of 100%; English Language Learner mean rates were 4.99% with a minimum of 0% and a maximum of 30%; chronic absenteeism for the 189 schools districts averaged 9.27% for students enrolled in these identified districts with a minimum of 1.8% to 29.7%.

A descriptive exploratory analysis was conducted on each of the independent, dependent,

and control variables to examine additional statistical qualities of confidence levels, means, variance, skewness, and kurtosis of each variable. After the first analysis, there were some variables with significant skewness issues and as a result, the explorative descriptive analysis was conducted again after reviewing all data points and removing outliers within the data set. This process of winsorizing the data set minimized the undue influence on the data set and outcomes of the analysis. Winsorization of data is an acceptable practice within the research community. The focus of this exploratory analysis was the skewness of the data looking for all variable to be within the + or – 1.0 range. The skewness for the independent variables of superintendent years in district and total experience as a superintendent were 1.489 and 0.843. The skewness level for the dependent variables were as follows: 2017 PARCC ELA/L 5 at -0.374; 2017 PARCC ELA/L 10 at -0.030; 2017 PARCC math 5 at -0.126; 2017 PARCC Algebra 1 at -0.708; 2017 faculty mobility rate at -0.621. The control variables utilized for this research study were included in the exploratory analysis and skewness was determined to be -0.602 for faculty with advanced degrees; -1.346 for faculty attendance rate; 0.205 for special education classification percentage; 0.695 for free and reduced lunch percentage; 2.225 for English language learner percentage rate, and 1.209 for chronic absenteeism rate for the sample school district in this study. Additional analysis points can be reviewed in Table 5.

Table 5  
Descriptive Exploratory Analysis

			Statistic	Std. Error
SuperYrs	Mean		4.6402	.24869
	95% Confidence Interval for Mean	Lower Bound	4.1496	
		Upper Bound	5.1308	
	5% Trimmed Mean		4.3010	
	Median		4.0000	
	Variance		11.689	
	Std. Deviation		3.41892	
	Minimum		1.00	
	Maximum		19.00	
	Range		18.00	
	Interquartile Range		4.00	
	Skewness		1.489	.177
	Kurtosis		2.920	.352
SuperYrsTtl	Mean		7.9788	.36570
	95% Confidence Interval for Mean	Lower Bound	7.2574	
		Upper Bound	8.7002	
	5% Trimmed Mean		7.6890	
	Median		7.0000	
	Variance		25.276	
	Std. Deviation		5.02754	
	Minimum		1.00	
	Maximum		26.00	
	Range		25.00	
	Interquartile Range		6.50	
	Skewness		.843	.177
	Kurtosis		.586	.352
PARCCELALG r5	Mean		62.4074	1.19917
	95% Confidence Interval for Mean	Lower Bound	60.0418	
		Upper Bound	64.7730	
	5% Trimmed Mean		62.8539	
	Median		64.0000	
	Variance		271.785	
	Std. Deviation		16.48591	
	Minimum		19.00	
	Maximum		95.00	
	Range		76.00	
	Interquartile Range		24.50	
	Skewness		-.374	.177
	Kurtosis		-.596	.352
PARCCELALG r10	Mean		48.0317	1.15840
	95% Confidence Interval for Mean	Lower Bound	45.7466	
		Upper Bound	50.3169	
	5% Trimmed Mean		48.0497	
	Median		49.0000	
	Variance		253.616	
	Std. Deviation		15.92533	



	Minimum		12.00	
	Maximum		84.00	
	Range		72.00	
	Interquartile Range		24.50	
	Skewness		-.030	.177
	Kurtosis		-.638	.352
PARCCMathGr 5	Mean		49.5556	1.29913
	95% Confidence Interval for Mean	Lower Bound	46.9928	
		Upper Bound	52.1183	
	5% Trimmed Mean		49.7055	
	Median		50.0000	
	Variance		318.982	
	Std. Deviation		17.86007	
	Minimum		5.00	
	Maximum		86.00	
	Range		81.00	
	Interquartile Range		27.50	
	Skewness		-.126	.177
	Kurtosis		-.776	.352
PARCCAlg1	Mean		41.9788	1.36372
	95% Confidence Interval for Mean	Lower Bound	39.2887	
		Upper Bound	44.6690	
	5% Trimmed Mean		41.4256	
	Median		40.0000	
	Variance		351.489	
	Std. Deviation		18.74804	
	Minimum		12.00	
	Maximum		97.00	
	Range		85.00	
	Interquartile Range		31.50	
	Skewness		.374	.177
	Kurtosis		-.708	.352
FacAdvDeg	Mean		45.4762	1.04975
	95% Confidence Interval for Mean	Lower Bound	43.4054	
		Upper Bound	47.5470	
	5% Trimmed Mean		45.3918	
	Median		46.0000	
	Variance		208.272	
	Std. Deviation		14.43163	
	Minimum		12.00	
	Maximum		78.00	
	Range		66.00	
	Interquartile Range		20.50	
	Skewness		.048	.177
	Kurtosis		-.602	.352
FacMobRate	Mean		88.6508	.23731
	95% Confidence Interval for Mean	Lower Bound	88.1827	
		Upper Bound	89.1189	
	5% Trimmed Mean		88.7963	

	Median		89.0000	
	Variance		10.643	
	Std. Deviation		3.26242	
	Minimum		80.00	
	Maximum		95.00	
	Range		15.00	
	Interquartile Range		4.50	
	Skewness		-.621	.177
	Kurtosis		.144	.352
	Mean		96.2275	.13600
FacAttendance	95% Confidence Interval for Mean	Lower Bound	95.9592	
		Upper Bound	96.4958	
	5% Trimmed Mean		96.3907	
	Median		97.0000	
	Variance		3.496	
	Std. Deviation		1.86972	
	Minimum		89.00	
	Maximum		100.00	
	Range		11.00	
	Interquartile Range		1.00	
	Skewness		-1.347	.177
	Kurtosis		2.159	.352
SpEdPercent	Mean		16.3122	.23478
	95% Confidence Interval for Mean	Lower Bound	15.8490	
		Upper Bound	16.7753	
	5% Trimmed Mean		16.2704	
	Median		16.0000	
	Variance		10.418	
	Std. Deviation		3.22769	
	Minimum		8.00	
	Maximum		28.00	
	Range		20.00	
	Interquartile Range		4.00	
	Skewness		.205	.177
	Kurtosis		.707	.352
FreeRedLunch	Mean		31.6402	1.80548
	95% Confidence Interval for Mean	Lower Bound	28.0786	
		Upper Bound	35.2018	
	5% Trimmed Mean		30.3148	
	Median		26.0000	
	Variance		616.093	
	Std. Deviation		24.82123	
	Minimum		.00	
	Maximum		100.00	
	Range		100.00	
	Interquartile Range		37.00	
	Skewness		.695	.177
	Kurtosis		-.487	.352
ELLRate	Mean		4.9947	.39611

	95% Confidence Interval for Mean	Lower Bound	4.2133	
		Upper Bound	5.7761	
	5% Trimmed Mean		4.2622	
	Median		3.0000	
	Variance		29.654	
	Std. Deviation		5.44557	
	Minimum		.00	
	Maximum		30.00	
	Range		30.00	
	Interquartile Range		4.00	
	Skewness		2.225	.177
	Kurtosis		5.334	.352
ChronAbsent	Mean		9.2688	.35045
	95% Confidence Interval for Mean	Lower Bound	8.5775	
		Upper Bound	9.9601	
	5% Trimmed Mean		8.9072	
	Median		8.2000	
	Variance		23.212	
	Std. Deviation		4.81784	
	Minimum		1.80	
	Maximum		29.70	
	Range		27.90	
	Interquartile Range		6.25	
	Skewness		1.209	.177
	Kurtosis		2.000	.352

A simultaneous multiple regression analysis was performed based on each of the five research questions. The simultaneous multiple regression was performed to determine the variance of the predictor variables of years of service to the district as superintendent and total number of years as a superintendent on the dependent variables of 2017 PARCC scores and 2017 teacher mobility rate percentage. Additionally, simultaneous multiple regression was performed for the identified control variables to analyze the variance and impact on the outcome variables previously identified. The statistical analysis was used to determine the significance between the independent, control, and dependent variables.

The independent and dependent variables were examined using a simultaneous multiple regression statistical analysis testing method to determine the resulting strength of relationship between variable and if the variable relationships were statistically significant to the 95%

confidence level. This analysis was completed to determine which variables were statistically significant predictors on the dependent variables outlined for this research and the strength of the relationship.

The following statistical analysis outcomes were noted as the data were reviewed:

The models all included a review of the R and R<sup>2</sup> to identify which independent or dependent variables contributed the most to the final adjusted R<sup>2</sup> value. As the adjusted R<sup>2</sup> outcomes were reviewed, the F and P values were also examined for each model to indicate the variance between the means of the samples and probability or statistical probability of rejecting the null hypothesis of each model run for each research question. Each model included an Analysis of the Variance (ANOVA) test, which indicated the overall significance level for each model test. The coefficients tables were examined in each model to review the Beta (B) values to identify each statistically significant standardized coefficients. The tolerance and VIF (variance inflation factor) were outlined in the coefficients table of the statistical analysis. The assumptions of linearity, normally distributed errors, and uncorrelated errors were checked and met. The reported collinearity statistics for the model indicated no observable multicollinearity issues between the predictor variables.

## **Analysis and Results**

### **Research Question 1:**

What is the relationship between New Jersey public school superintendent longevity and student achievement as measured by Spring 2017 Partnership for Assessment of Readiness for College and Careers (PARCC) Grade 5 math when controlling for school and student characteristics?

In an attempt to answer this research question a simultaneous multiple regression analysis

was conducted using the SPSS V. 26 program that included 1 predictor variable of superintendent years of experience in district, the six control variables, and the dependent variable of 2017 district PARCC Grade 5 math scores as indicated in Table 6. This analysis was conducted to determine how much of the variance in 2017 PARCC Grade 5 math scores could be explained by the predictor variables of superintendent years in the district and the control variables of free and reduced lunch, special education percentage, faculty attendance rate, faculty with advanced degrees, student chronic absenteeism, and English language learner rates.

Table 6  
*Superintendent Years in District – Grade 5 PARCC Math Variables Entered/Removed<sup>a</sup>*

Model	Variables Entered	Variables Removed	Method
1	SuperYrs, FreeRedLunch, SpEdPercent, FacAttendance, FacAdvDeg, ChronAbsent, ELLRate <sup>b</sup>	.	Enter

a. Dependent Variable: PARCCMathGr5

b. All requested variables entered.

In Table 7 and Table 8, the model summary indicated an R<sup>2</sup> value of 0.289 and an Adjusted R<sup>2</sup> value of 0.261. The maximum and minimum values of R<sup>2</sup> were +1.00 to -1.00. The values identified positive and negative direction of relationship. This model indicated a positive relationship between year in district as a superintendent and 2017 PARCC Grade 5 math scores. The regression analysis reported an R<sup>2</sup> value of 0.289 indicating the overall model could explain 28.9% of the variance in the outcome variable of 2017 PARCC Grade 5 math scores. An adjusted R<sup>2</sup> of 0.261 was reported indicating that 26.1% of the variance could be explained if the model was run using the entire population as a sample. This model summary R<sup>2</sup> values between 26.1% and 28.9% of the passing student scores on the 2017 PARCC Grade 5 math assessment can be explained by the superintendent number of years in the public school districts and the

control variables in this model. The Analysis of Variance (ANOVA–Table 8) analysis indicates that the regression model was statistically significant to the .001 level ( $p < .000$ ) in predicting 2017 PARCC Grade 5 math scores for the public school districts using the outlined predictor variables with values of  $F(7, 181) = 10.505$ ,  $p < 0.001$ .

Table 7  
*Model Summary*

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	R Square Change	Change Statistics		
						F Change	df1	df2
1	.537 <sup>a</sup>	.289	.261	15.34927	.289	10.505	7	181

Table 8  
*ANOVA<sup>a</sup>*

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	17325.054	7	2475.008	10.505	.000 <sup>b</sup>
	Residual	42643.613	181	235.600		
	Total	59968.667	188			

a. Dependent Variable: PARCCMathGr5

b. Predictors: (Constant), SuperYrs, FreeRedLunch, SpEdPercent, FacAttendance, FacAdvDeg, ChronAbsent, ELLRate

In Table 9 (coefficients table), the beta and standardized beta and the statistical significance were examined for the independent variable and control variables. Analyzing this table, three of the seven predictor variables were indicated as statistically significant. The predictor variables identified as statistically significant to the explained variance of 2017 PARCC Grade 5 math scores were as follows: faculty advanced degree ( $b = 0.440$ ,  $B = 0.356$ ,  $t(188) = 5.428$ ,  $p = 0.000$ ); free and reduced lunch ( $b = -0.223$ ,  $B = -0.311$ ,  $t(188) = -2.585$ ,  $p = 0.011$ ), and faculty attendance rate ( $b = 1.725$ ,  $B = 0.625$ ,  $t(188) = 2.762$ ,  $p = 0.006$ ). The focus independent variable of superintendent years in district indicated as not being a statistically significant relationship at the  $P \leq .05$  level with a value of ( $p = 0.051$ ). Coefficients Table 9

indicates no issues with multicollinearity and variance inflation factors (VIF) ranging from 1.056 to 3.674.

Based on the standardized beta weights for the significant predictor variables in coefficients Table 9, it is assumed that the amount of variance on the outcome variable can be explained by the predictor variable. Squaring the standardized beta values of each of the four significant predictor variables denotes the strength of the variable on the dependent variable, district 2017 PARCC Grade 5 math scores. The strongest contributor to the academic success of students in this model was the percentage of faculty advanced degrees ( $b = 0.440$ ,  $B = 0.356$ ,  $t(188) = 5.428$ ,  $p = 0.000$ ) explaining 12.67% of the overall variance for 2017 PARCC Grade 5 math district scores. The positive beta score indicated that when there was a higher percentage of faculty with advanced degrees the percentage of students meeting or exceeding 2017 PARCC scores thresholds increased. For every unit increase in a district's faculty with advanced degrees, the district 2017 PARCC Grade 5 math score increased by 0.440 units.

The next strongest predictor of academic success was free and reduced lunch percentages for the district ( $b = -0.223$ ,  $B = -0.311$ ,  $t(188) = -2.585$ ,  $p = 0.011$ ) which explains 9.67% of the variance in 2017 PARCC Grade 5 math district scores. The negative beta value in this predictor variable indicated that when free and reduced lunch percentages increased, the percentage of students meeting or exceeding threshold scores on the 2017 PARCC Grade 5 math assessment decreased. For every unit increase in a district's percentage of free and reduced lunch students, the district 2017 PARCC Grade 5 math score decreased by 0.223 units.

Faculty attendance rate percentage ( $b = 1.725$ ,  $B = 0.181$ ,  $t(188) = 2.762$ ,  $p = 0.006$ ) was the third strongest predictor variable, accounting for 3.28% of the overall variance of the outcome variable district 2017 PARCC Grade 5 math scores. The positive beta score indicated

that the higher faculty attendance rate percentage, the higher percentage of students meeting or exceeding the 2017 PARCC math score levels, resulting in a higher district passing percentage. For every unit increase in a district's faculty with advanced degrees, the district 2017 PARCC Grade 5 math scores increased by 1.75 units. The model indicated that faculty with advanced degrees, free and reduced lunch percentages, and faculty attendance rate were significant predictors to the 2017 PARCC Grade 5 math district level scores. No other variables were considered significant in this regression model inclusive of the focus control variable of superintendent years in the district.

Table 9  
*Coefficients<sup>a</sup>*

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.	Collinearity Statistics	
		B	Std. Error	Beta			Tolerance	VIF
1	(Constant)	-138.849	61.233		-2.268	.025		
	FacAdvDeg	.440	.081	.356	5.428	.000	.914	1.094
	FacAttendance	1.725	.625	.181	2.762	.006	.919	1.089
	SpEdPercent	.320	.379	.058	.843	.400	.837	1.195
	FreeRedLunch	-.223	.086	-.311	-2.585	.011	.272	3.674
	ELLRate	.260	.339	.079	.768	.443	.369	2.712
	ChronAbsent	-.016	.310	-.004	-.051	.960	.561	1.783
	SuperYrs	.662	.336	.127	1.966	.051	.947	1.056

Table 10  
*Collinearity Diagnostics<sup>a</sup>*

Model	Dimension	Eigen value	Condition Index	Variance Proportions				
				(Constant)	Fac AdvDeg	Fac MobRate	Fac Attendance	SpEd Percent
1	1	7.048	1.000	.00	.00	.00	.00	.00
	2	.453	3.946	.00	.00	.00	.00	.00
	3	.299	4.856	.00	.03	.00	.00	.01
	4	.101	8.348	.00	.01	.00	.00	.00
	5	.075	9.713	.00	.73	.00	.00	.12
	6	.023	17.342	.00	.19	.01	.00	.85
	7	.001	83.547	.02	.00	.85	.09	.00
	8	.000	216.361	.98	.03	.15	.91	.01



The second aspect of research question 1 was the impact of the total number of years as a superintendent on the outcome variable of 2017 PARCC Grade 5 math scores. The following model was developed and run through a multiple regression using SPSS using the following variables in Table 11:

Table 11  
*Total Years as a Superintendent–Grade 5 PARCC Math Variables Entered/Removed*

Model	Variables Entered	Variables Removed	Method
1	SuperYrsTtl, FreeRedLunch, FacAttendance, SpEdPercent, FacAdvDeg, ChronAbsent, ELLRate <sup>b</sup>	.	Enter

a. Dependent Variable: PARCCMathGr5

b. All requested variables entered.

In Table 12 and Table 13, the model summary indicated an R<sup>2</sup> value of 0.281 and an adjusted R<sup>2</sup> value of 0.253. The maximum and minimum values of R<sup>2</sup> were +1.00 to -1.00. The values identified positive and negative direction of relationship. This model indicated a positive relationship between total number of years as a superintendent and 2017 PARCC Grade 5 math scores. The regression analysis reported an R<sup>2</sup> value of 0.281 indicating the overall model could explain 28.1% of the variance in the outcome variable of 2017 PARCC Grade 5 math scores. An adjusted R<sup>2</sup> of 0.253 was reported indicating that 25.3% of the variance could be explained if the model was run using the entire population as a sample. This model summary R<sup>2</sup> values between 25.3% and 28.1% of the passing student scores on the 2017 PARCC Grade 5 math assessment can be explained by the total number of years as a superintendent in the public school districts and the control variables in this model. The Analysis of Variance (ANOVA–Table 13) analysis indicated that the regression model was statistically significant to the 0.001 level ( $p < 0.001$ ) in

predicting 2017 PARCC Grade 5 math scores for the public school districts using the outlined predictor variables with values of  $F(7, 181) = 10.113$ ,  $p < 0.001$ .

Table 12  
*Model Summary*

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Change Statistics			
					R Square Change	F Change	df1	df2
1	.530 <sup>a</sup>	.281	.253	15.43273	.281	10.113	7	181

Table 13  
*ANOVA<sup>a</sup>*

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	16860.056	7	2408.579	10.113	.000 <sup>b</sup>
	Residual	43108.611	181	238.169		
	Total	59968.667	188			

a. Dependent Variable: PARCCMathGr5

b. Predictors: (Constant), SuperYrsTtl, FreeRedLunch, FacAttendance, SpEdPercent, FacAdvDeg, ChronAbsent, ELLRate

In Table 14 (coefficients), the beta and standardized beta and the statistical significance were examined for the independent variable and control variables. Analyzing this table, three of the seven predictor variables were indicated as statistically significant. The predictor variables identified as statistically significant to the explained variance of 2017 PARCC Grade 5 math scores were as follows: faculty advanced degree ( $b = 0.430$ ,  $B = 0.347$ ,  $t(188) = 5.294$ ,  $p = 0.000$ ); free and reduced lunch ( $b = -0.241$ ,  $B = -0.334$ ,  $t(188) = -2.782$ ,  $p = 0.006$ ); and faculty attendance rate ( $b = 1.573$ ,  $B = 0.165$ ,  $t(188) = 2.513$ ,  $p = 0.013$ ). The focus independent variable of total years as a superintendent indicated as not being a statistically significant relationship at the  $P \leq .05$  level with a value of ( $p = 0.173$ ). Coefficients Table 14 indicated no issues with multicollinearity and variance inflation factors (VIF) ranging from 1.011 to 3.636.

Based on the standardized beta weights for the significant predictor variables in

coefficients Table 14, the amount of variance on the outcome variable could be explained by the predictor variable. Squaring the standardized beta values of each of the three significant predictor variables denotes the strength of the predictor variables on the dependent variable, district 2017 PARCC Grade 5 math scores. The strongest contributor to the academic success of students in this model was the percentage of faculty advanced degrees ( $b = 0.430$ ,  $B = 0.347$ ,  $t(188) = 5.294$ ,  $p = 0.000$ ), explaining 12.00% of the overall variance for 2017 PARCC Grade 5 math district scores. The positive beta score indicated that when there was a higher percentage of faculty with advanced degrees the percentage of students meeting or exceeding 2017 PARCC scores thresholds increased. For every unit increase in a district's faculty with advanced degrees, the district 2017 PARCC Grade 5 math scores increased by 0.430 units.

The next strongest predictor of academic success was free and reduced lunch percentages for the district ( $b = -0.241$ ,  $B = -0.334$ ,  $t(188) = -2.782$ ,  $p = 0.006$ ), explaining 11.20% of the variance in 2017 PARCC Grade 5 math district scores. The negative beta value in this predictor variable indicated that when free and reduced lunch percentages increased, the percentage of students meeting or exceeding threshold scores on the 2017 PARCC Grade 5 math assessment decreased. For every unit increase in a district's percentage of free and reduced lunch students, the district 2017 PARCC Grade 5 math score decreased by 0.241 units.

Faculty attendance rate percentage ( $b = 1.573$ ,  $B = 0.165$ ,  $t(188) = 2.513$ ,  $p = 0.013$ ) was the third strongest predictor variable accounting for 2.72% of the overall variance of the outcome variable district 2017 PARCC Grade 5 math scores. The positive beta score indicated that the higher faculty attendance rate percentage, the higher percentage of students meeting or exceeding the 2017 PARCC math score levels, resulting in a higher district passing percentage. For every unit increase in a district's faculty with advanced degrees, the district 2017 PARCC

Grade 5 math scores increased by 1.573 units.

The model indicated that faculty with advanced degrees, free and reduced lunch percentages, and faculty attendance rate were significant predictors to the 2017 PARCC Grade 5 math district level scores. No other variables were considered significant in this regression model inclusive of the focus control variable of total number of years as a superintendent.

Table 14  
*Coefficients<sup>a</sup>*

Model	Unstandardized Coefficients		Standardized Coefficients Beta	t	Sig.	Collinearity Statistics	
	B	Std. Error				Tolerance	VIF
1 (Constant)	-121.895	61.037		-1.997	.047		
FacAdvDeg	.430	.081	.347	5.294	.000	.922	1.085
FacAttendance	1.573	.626	.165	2.513	.013	.925	1.081
SpEdPercent	.261	.381	.047	.685	.494	.837	1.195
FreeRedLunch	-.241	.086	-.334	-2.782	.006	.275	3.636
ELLRate	.341	.338	.104	1.008	.315	.374	2.676
ChronAbsent	-.031	.312	-.008	-.100	.920	.562	1.781
SuperYrsTtl	.308	.225	.087	1.368	.173	.989	1.011

a. Dependent Variable: PARCCMathGr5

Table 15  
*Collinearity Diagnostics<sup>a</sup>*

Model	Dimension	Eigen value	Condition Index	Variance Proportions				
				(Constant)	FacAdv Deg	FacAttendance	SpEd Percent	FreeRed Lunch
1	1	6.702	1.000	.00	.00	.00	.00	.00
	2	.691	3.114	.00	.01	.00	.00	.04
	3	.254	5.137	.00	.02	.00	.00	.00
	4	.197	5.831	.00	.06	.00	.00	.07
	5	.078	9.298	.00	.27	.00	.11	.21
	6	.060	10.541	.00	.47	.00	.02	.58
	7	.018	19.412	.00	.15	.00	.83	.09
	8	.000	197.352	1.00	.03	1.00	.03	.01

In reviewing Tables 4–15, three predictor variables were determined to be statistically significant in both models. The predictor variable of faculty with advanced degrees was a significant influencer of 2017 PARCC Grade 5 math scores to the  $p < .001$  level in both models

with the significance  $p = 0.000$ . The next biggest impacting variable significant in both models was the free and reduced lunch percentage rates for the public school districts. Both models indicated a statistical significance to the  $p < .01$  level with model 1 and 2 indicating a significance level of 0.003 and 0.006. This relationship was negative in both models, which indicated that when the percentage of students with free and reduced lunch status increased, the Grade 5 math scores decreased. The third most impactful predictor variable for the dependent variable of Grade 5 math scores was the faculty attendance percentage rate for the public school districts with a  $p$  value of 0.006 and 0.013. Both models indicated a positive relationship between increased faculty attendance rates and the increased percentage of students meeting or exceeding threshold levels for the 2017 PARCC Grade 5 math assessment levels for the sample public school districts. All other variables input into these models were not considered significant including the main target predictor variables of superintendent years in the district and total years as a superintendent and their impact on Grade 5 math PARCC district scores.

#### **Null Hypothesis 1:**

No statistically significant relationship exists between a New Jersey school superintendent's length of time in a school district and student academic achievement, as evidenced by the 2017 PARCC scores in grade 5 mathematics when controlling for school and student characteristics.

The null hypothesis is retained for research question one based on the data analysis and findings discussed from the SPSS output tables in the multiple regression. Superintendent years of experience in district and total years of experience were determined not to be a significant predictor variable of 2017 PARCC Grade 5 math district scores. SuperYrs ( $B = 0.127$ ,  $p = 0.051$ ); SuperYrsTtl ( $B = 0.087$ ,  $p = 0.173$ ).

## Research Question 2:

What is the relationship between New Jersey public school superintendent longevity and student achievement as measured by Spring 2017 Partnership for Assessment of Readiness for College and Careers (PARCC) Grade 5 English Language Arts/Literacy when controlling for school and student characteristics?

To answer the second research question in this study, a simultaneous multiple regression analysis was conducted using the SPSS V. 26 program that included one independent variable of superintendent years of experience in district, the six control variables and the dependent variable of 2017 district PARCC Grade 5 ELA/L scores as indicated in Table 16.

Table 16

*Superintendent Years in District–Grade 5 ELA/L Variables Entered/Removed<sup>a</sup>*

Model	Variables Entered	Variables Removed	Method
1	SuperYrs, FreeRedLunch, SpEdPercent, FacAttendance, FacAdvDeg, ChronAbsent, ELLRate <sup>b</sup>	.	Enter

a. Dependent Variable: PARCC ELA/L Gr5

b. All requested variables entered.

In Table 17 and Table 18, the model summary indicated an R<sup>2</sup> value of 0.332 and an adjusted R<sup>2</sup> value of 0.306. The maximum and minimum values of R<sup>2</sup> were +1.00 to -1.00. The values identified positive and negative direction of relationship. This model indicated a positive relationship between years in district as a superintendent and 2017 PARCC Grade 5 ELA/L scores. The regression analysis reported an R<sup>2</sup> value of 0.332 indicating the overall model could explain 33.2% of the variance in the outcome variable of 2017 PARCC Grade 5 ELA/L scores. An adjusted R<sup>2</sup> of 0.306 was reported indicating that 30.6% of the variance could be explained if the model was run using the entire population as a sample. This model summary R<sup>2</sup> values

between 30.6% and 33.2% of the passing student scores on the 2017 PARCC Grade 5 ELA/L assessment can be explained by the superintendent number of years in the public school districts and the control variables in this model. The Analysis of Variance (ANOVA–Table 8) analysis indicated that the regression model was statistically significant to the 0.001 level ( $p < 0.000$ ) in predicting 2017 PARCC Grade 5 ELA scores for the public school districts using the outlined predictor variables with values of  $F(7, 181) = 12.832$ ,  $p < 0.001$ .

Table 17  
*Model Summary*

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Change Statistics			
					R Square Change	F Change	df1	df2
1	.576 <sup>a</sup>	.332	.306	13.73721	.332	12.823	7	181

Table 18  
*ANOVA<sup>a</sup>*

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	16938.961	7	2419.852	12.823	.000 <sup>b</sup>
	Residual	34156.668	181	188.711		
	Total	51095.630	188			

a. Dependent Variable: PARCCELALGr5

b. Predictors: (Constant), SuperYrs, FreeRedLunch, SpEdPercent, FacAttendance, FacAdvDeg, ChronAbsent, ELLRate

In Table 19 (coefficients), the beta and standardized beta and the statistical significance were examined for the independent variable and control variables. Analyzing this table, three of the seven predictor variables were indicated as statistically significant. The predictor variables identified as statistically significant to the explained variance of 2017 PARCC Grade 5 ELA/L scores were as follows: faculty advanced degree ( $b = 0.480$ ,  $B = 0.420$ ,  $t(188) = 6.608$ ,  $p = 0.000$ ); free and reduced lunch ( $b = -0.169$ ,  $B = -0.254$ ,  $t(188) = -2.184$ ,  $p = 0.030$ ); and faculty attendance rate ( $b = 1.474$ ,  $B = 0.167$ ,  $t(188) = 2.637$ ,  $p = 0.009$ ). The focus independent variable of years as superintendent in the district indicated as not being a statistically significant

relationship at the  $p = < .05$  level with a value of ( $p = 0.083$ ). Coefficients Table 19 indicated no issues with multicollinearity and variance inflation factors (VIF) ranging from 1.056 to 3.674.

Based on the standardized beta weights for the significant predictor variables in coefficients Table 19, the amount of variance on the outcome variable could be explained by the predictor variable. Squaring the standardized beta values of each of the three significant predictor variables denotes the strength of the predictor variables on the dependent variable, district 2017 PARCC Grade 5 ELA/L scores. The strongest contributor to the academic success of students in this model was the percentage of faculty advanced degrees ( $b = 0.480$ ,  $B = 0.420$ ,  $t(188) = 6.608$ ,  $p = 0.000$ ), explaining 17.64% of the overall variance for 2017 PARCC Grade 5 ELA/L district scores. The positive beta score indicated that when there was a higher percentage of faculty with advanced degrees, the percentage of students meeting or exceeding 2017 PARCC threshold scores increased. For every unit increase in a district's faculty with advanced degrees, the district 2017 PARCC ELA/L Grade 5 scores increased by 0.480 units.

The next strongest predictor of academic success was free and reduced lunch percentages for the district ( $b = -0.169$ ,  $B = -0.254$ ,  $t(188) = -2.184$ ,  $p = 0.030$ ), explaining 6.45% of the variance in 2017 PARCC Grade 5 ELA/L district scores. The negative beta value in this predictor variable indicated that when free and reduced lunch percentages increased, the percentage of students meeting or exceeding threshold scores on the 2017 PARCC Grade 5 ELA/L assessment decreased. For every unit increase in a district's percentage of free and reduced lunch students, the district 2017 PARCC ELA/A Grade 5 score decreased by 0.169 units.

Faculty attendance rate percentage ( $b = 1.474$ ,  $B = 0.167$ ,  $t(188) = 2.637$ ,  $p = 0.009$ ) was the third strongest predictor variable, accounting for 2.79% of the overall variance of the



outcome variable district 2017 PARCC Grade 5 ELA/L scores. The positive beta score indicated that the higher faculty attendance rate percentage, the higher percentage of students meeting or exceeding the 2017 PARCC ELA/L score levels, resulting in a higher district passing percentage. For every unit increase in a district's faculty with advanced degrees, the district 2017 PARCC ELA/L Grade 5 scores increased by 1.474 units.

The model indicated that faculty with advanced degrees, free and reduced lunch percentages, and faculty attendance rate were significant predictors to the 2017 PARCC Grade 5 ELA/L district level scores. No other variables were considered significant in this regression model inclusive of the focus predictor variable of years as superintendent in the district.

Table 19  
*Coefficients<sup>a</sup>*

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.	Collinearity Statistics	
		B	Std. Error	Beta			Tolerance	VIF
1	(Constant)	-99.689	54.802		-1.819	.071		
	FacAdvDeg	.480	.073	.420	6.608	.000	.914	1.094
	FacAttendance	1.474	.559	.167	2.637	.009	.919	1.089
	SpEdPercent	.092	.339	.018	.270	.787	.837	1.195
	FreeRedLunch	-.169	.077	-.254	-2.184	.030	.272	3.674
	ELLRate	.048	.303	.016	.159	.874	.369	2.712
	ChronAbsent	-.043	.278	-.013	-.155	.877	.561	1.783
	SuperYrs	.526	.301	.109	1.746	.083	.947	1.056

a. Dependent Variable: PARCC ELA/L Gr5

Table 20  
*Collinearity Diagnostics<sup>a</sup>*

Model	Dimension	Eigen value	Condition Index	Variance Proportions				
				(Constant)	FacAd Deg	Fac Attendance	SpEd Percent	FreeRed Lunch
1	1	6.636	1.000	.00	.00	.00	.00	.00
	2	.680	3.123	.00	.01	.00	.00	.04
	3	.342	4.405	.00	.01	.00	.00	.00
	4	.187	5.959	.00	.07	.00	.00	.06
	5	.079	9.162	.00	.27	.00	.10	.21
	6	.058	10.712	.00	.46	.00	.03	.61
	7	.018	19.457	.00	.16	.00	.83	.07
	8	.000	197.555	1.00	.02	.99	.03	.01

The second aspect of research question 2 was the impact of the total number of years as a superintendent on the outcome variable of 2017 PARCC Grade 5 ELA/L scores. The following model was developed and run through a multiple regression using SPSS utilizing the following variables in Table 21.

Table 21  
*Total Years as a Superintendent Years – 2017 PARCC Grade 5 ELA/L Variables Entered/Removed<sup>a</sup>*

Model	Variables Entered	Variables Removed	Method
1	SuperYrsTtl, FreeRedLunch, FacAttendance, SpEdPercent, FacAdvDeg, ChronAbsent, ELLRate <sup>b</sup>	.	Enter

a. Dependent Variable: PARCCELALGr5

b. All requested variables entered.

In Table 22 and Table 23, the model summary indicated an R2 value of 0.321 and an adjusted R2 value of 0.295. The maximum and minimum values of R2 were +1.00 to -1.00. The values identified positive and negative direction of relationship. This model indicated a positive

relationship between total years as a superintendent and 2017 PARCC Grade 5 ELA/L scores. The regression analysis reported an R<sup>2</sup> value of 0.321 indicating the overall model could explain 32.1% of the variance in the outcome variable of 2017 PARCC Grade 5 ELA/L scores. An adjusted R<sup>2</sup> of 0.295 was reported indicating that 29.5% of the variance could be explained if the model was run using the entire population as a sample. This model summary R<sup>2</sup> values between 29.5% and 32.1% of the passing student scores on the 2017 PARCC Grade 5 ELA/L assessment can be explained by the superintendent number of years in the public school districts and the control variables in this model. The Analysis of Variance (ANOVA—Table 23) analysis indicated that the regression model was statistically significant to the 0.001 level ( $p < 0.000$ ) in predicting 2017 PARCC Grade 5 ELA/L scores for the public school districts using the outlined predictor variables with values of  $F(7, 181) = 12.230$ ,  $p < 0.001$ .

Table 22  
*Model Summary*

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Change Statistics			
					R Square Change	F Change	df1	df2
1	.567 <sup>a</sup>	.321	.295	13.84368	.321	12.230	7	181

Table 23  
ANOVA<sup>a</sup>

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	16407.453	7	2343.922	12.230	.000 <sup>b</sup>
	Residual	34688.177	181	191.647		
	Total	51095.630	188			

a. Dependent Variable: PARCCELALGr5

b. Predictors: (Constant), SuperYrsTtl, FreeRedLunch, FacAttendance, SpEdPercent, FacAdvDeg, ChronAbsent, ELLRate

In Table 24 (coefficients), the beta and standardized beta and the statistical significance were examined for the independent variable and control variables. Analyzing this table, three of the seven predictor variables were indicated as statistically significant. The predictor variables

identified as statistically significant to the explained variance of 2017 PARCC Grade 5 ELA/L scores were as follows: faculty advanced degree ( $b = 0.467$ ,  $B = 0.409$ ,  $t(188) = 6.414$ ,  $p = 0.000$ ); free and reduced lunch ( $b = -0.183$ ,  $B = -0.275$ ,  $t(188) = -2.356$ ,  $p = 0.020$ ); and faculty attendance rate ( $b = 1.372$ ,  $B = 0.156$ ,  $t(188) = 2.443$ ,  $p = 0.016$ ). The focus independent variable of total years as a superintendent indicated as not being a statistically significant relationship at the  $p < .05$  level with a value of ( $p = 0.634$ ). Coefficients Table 24 indicated no issues with multicollinearity and variance inflation factors (VIF) ranging from 1.011 to 3.636.

Based on the standardized beta weights for the significant predictor variables in coefficients Table 24, the amount of variance on the outcome variable could be explained by the predictor variable. Squaring the standardized beta values of each of the three significant predictor variables denotes the strength of the predictor variables on the dependent variable, district 2017 PARCC Grade 5 ELA/L scores. The strongest contributor to the academic success of students in this model was the percentage of faculty advanced degrees ( $b = 0.467$ ,  $B = 0.409$ ,  $t(188) = 6.414$ ,  $p = 0.000$ ), explaining 16.73% of the overall variance for 2017 PARCC Grade 5 ELA/L district scores. The positive beta score indicated that when there was a higher percentage of faculty with advanced degrees the percentage of students meeting or exceeding 2017 PARCC threshold scores increased. For every unit increase in a district's faculty with advanced degrees, the district 2017 PARCC Grade 5 ELA/L scores increased by 0.467 units.

The next strongest predictor of academic success was free and reduced lunch percentages for the district ( $b = -0.183$ ,  $B = -0.275$ ,  $t(188) = -2.356$ ,  $p = 0.020$ ) explaining 7.56% of the variance in 2017 PARCC Grade 5 ELA/L district scores. The negative beta value in this predictor variable indicated that when free and reduced lunch percentages increased, the percentage of students meeting or exceeding threshold scores on the 2017 PARCC Grade 5

ELA/L assessment decreased. For every unit increase in a district's percentage of free and reduced lunch students, the district 2017 PARCC ELA/L Grade 5 scores decreased by 0.183 units.

Faculty attendance rate percentage ( $b = 1.372$ ,  $B = 0.156$ ,  $t(188) = 2.443$ ,  $p = 0.016$ ) was the third strongest predictor variable accounting for 2.43% of the overall variance of the outcome variable district 2017 PARCC Grade 5 ELA/L scores. The positive beta score indicated that the higher faculty attendance rate percentage, the higher percentage of students meeting or exceeding the 2017 PARCC ELA/L score levels, resulting in a higher district passing percentage. For every unit increase in a district's faculty with advanced degrees, the district 2017 PARCC ELA/L Grade 5 scores increased by 1.372 units.

The model indicated that faculty with advanced degrees, free and reduced lunch percentages, and faculty attendance rate were significant predictors to the 2017 PARCC Grade 5 ELA/L district level scores. No other variables were considered significant in this regression model inclusive of the focus control variable of total number of years as a superintendent.

Table 24  
*Coefficients<sup>a</sup>*

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.	Collinearity Statistics	
		B	Std. Error	Beta			Tolerance	VIF
1	(Constant)	-86.762	54.753		-1.585	.115		
	FacAdvDeg	.467	.073	.409	6.414	.000	.922	1.085
	FacAttendance	1.372	.562	.156	2.443	.016	.925	1.081
	SpEdPercent	.056	.342	.011	.165	.869	.837	1.195
	FreeRedLunch	-.183	.078	-.275	-2.356	.020	.275	3.636
	ELLRate	.110	.303	.036	.363	.717	.374	2.676
	ChronAbsent	-.057	.280	-.017	-.204	.838	.562	1.781
	SuperYrsTtl	.096	.202	.029	.476	.634	.989	1.011

a. Dependent Variable: PARCC ELA/L Gr5

Table 25  
*Collinearity Diagnostics<sup>a</sup>*

Model	Dimension	Eigen value	Condition Index	Variance Proportions				
				(Constant)	FacAdv Deg	Fac Attendance	SpEd Percent	FreeRed Lunch
1	1	6.702	1.000	.00	.00	.00	.00	.00
	2	.691	3.114	.00	.01	.00	.00	.04
	3	.254	5.137	.00	.02	.00	.00	.00
	4	.197	5.831	.00	.06	.00	.00	.07
	5	.078	9.298	.00	.27	.00	.11	.21
	6	.060	10.541	.00	.47	.00	.02	.58
	7	.018	19.412	.00	.15	.00	.83	.09

In reviewing Tables 16–25, three predictor variables were determined to be statistically significant in both models. The predictor variable of faculty with advanced degrees was a significant influencer of 2017 PARCC Grade 5 ELA/L scores to the  $p < 0.001$  level in both models as the significance was  $p = 0.000$ .

The next biggest impacting variable significant in both models was the free and reduced lunch percentage rates for the public school districts. Both models indicated a statistical significance to the  $p < 0.05$  level with models 3 and 4 indicating a significance level of 0.030 and 0.020 respectively. This relationship was a negative one in both models which indicated that when the percentage of students with free and reduced lunch status increased, the Grade 5 ELA/L scores decreased. In the regression models for Grade 5 ELA/L, the faculty attendance percentage rate was also considered significant at the  $p < .05$  level as the values for the significance were 0.009 and 0.016.

All other predictor variables input into these models were not considered significant to the  $p \leq 0.05$  level, including the main target predictor values of superintendent years in the district and total years as a superintendent and the superintendent longevity impact on Grade 5 ELA/L PARCC district scores.

**Null Hypothesis 2:**

No statistically significant relationship exists between a New Jersey school superintendent's length of time in a school district and student academic achievement, as evidenced by the 2017 PARCC scores in Grade 5 English Language Arts/Literacy when controlling for school and student characteristics.

The null hypothesis is retained for research question one based on the data analysis and findings discussed from the SPSS output tables in the multiple regression. Superintendent years of experience in district and total years of experience was determined not to be a significant predictor variable of 2017 PARCC ELA/L Grade 5 district scores. SuperYrs ( $B = 0.109$ ,  $p = 0.083$ ); SuperYrsTtl ( $B = 0.029$ ,  $p = 0.476$ )

**Research Question 3:**

What is the relationship between New Jersey public school superintendent longevity and student achievement as measured by 2017 Partnership for Assessment of Readiness for College and Careers (PARCC) Algebra 1 when controlling for school and student characteristics?

To answer this research question regarding district leadership and PARCC Algebra 1 scores, a simultaneous multiple regression analysis was conducted that included one independent variable of superintendent years of experience in district, the six control variables, and the dependent variable of 2017 district PARCC Algebra 1 district scores as indicated in Table 26.

Table 26

*Superintendent Years in District – 2017 PARCC Algebra 1 Variables Entered/Removed<sup>a</sup>*

Model	Variables Entered	Variables Removed	Method
1	SuperYrs, FreeRedLunch, SpEdPercent, FacMobRate, FacAttendance, FacAdvDeg, ChronAbsent <sup>b</sup>	.	Enter

a. Dependent Variable: PARCCAlg1

b. All requested variables entered

In Table 27s and 28, the model summary indicated an R2 value of 0.347 and an adjusted R2 value of 0.321. The maximum and minimum values of R2 were +1.00 to -1.00. The values identified positive and negative direction of relationship. This model indicated a positive relationship between years in district as a superintendent and 2017 PARCC Algebra 1 scores. The regression analysis reported an R2 value of 0.347 indicating the overall model could explain 34.7% of the variance in the outcome variable of 2017 PARCC Algebra 1 scores. An adjusted R2 of 0.321 was reported indicating that 32.1% of the variance could be explained if the model was run using the entire population as a sample.

This model summary R2 values between 32.1% and 34.7% of the passing student scores on the 2017 PARCC Algebra 1 assessment can be explained by the superintendent number of years in the public school district and the control variables in this model. The Analysis of Variance (ANOVA–Table 28) analysis indicated that the regression model was statistically significant to the 0.001 level ( $p < 0.000$ ) in predicting 2017 PARCC Algebra 1 scores for the public school districts using the outlined predictor variables with values of  $F(7, 181) = 13.710$ ,  $p < 0.001$ .



Table 27  
Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Change Statistics			
					R Square Change	F Change	df1	df2
1	.589 <sup>a</sup>	.347	.321	15.44607	.347	13.710	7	181

Table 28  
ANOVA<sup>a</sup>

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	22896.734	7	3270.962	13.710	.000 <sup>b</sup>
	Residual	43183.181	181	238.581		
	Total	66079.915	188			

a. Dependent Variable: PARCCAlg1

In Table 29 (coefficients), the beta and standardized beta and the statistical significance were examined for the independent variable and control variables. Analyzing this table, four of the seven predictor variables were indicated as statistically significant including the main focus predictor variable of superintendent years in the district. The predictor variables identified as statistically significant to the explained variance of 2017 PARCC Algebra 1 scores were as follows: faculty advanced degree ( $b = 0.520$ ,  $B = 0.400$ ,  $t(188) = 6.368$ ,  $p = 0.000$ ); free and reduced lunch ( $b = -0.264$ ,  $B = -0.350$ ,  $t(188) = -3.040$ ,  $p = 0.003$ ); faculty attendance rate ( $b = 2.341$ ,  $B = 0.233$ ,  $t(188) = 3.724$ ,  $p = 0.000$ ); and the focus predictor variable of superintendent years in district indicated as being a statistically significant relationship ( $b = 0.669$ ,  $B = 0.122$ ,  $t(188) = 1.975$ ,  $p = 0.050$ ). Coefficients Table 29 indicated no issues with multicollinearity and variance inflation factors (VIF) ranging from 1.056 to 3.674.

Based on the standardized beta weights for the significant predictor variables in coefficients Table 29, the amount of variance on the outcome variable could be explained by the predictor variable. Squaring the standardized beta values of each of the four significant predictor

variables denotes the strength of the predictor variables on the dependent variable, district 2017 PARCC Algebra 1 scores. The strongest contributor to the academic success of students in this model was the percentage of faculty advanced degrees ( $b = 0.520$ ,  $B = 0.400$ ,  $t(188) = 6.368$ ,  $p = 0.000$ ), explaining 16% of the overall variance for 2017 PARCC Algebra 1 district scores. The positive beta score indicated that when there was a higher percentage of faculty with advanced degrees the percentage of students meeting or exceeding 2017 PARCC threshold scores increased. For every unit increase in a district's faculty with advanced degrees, the district 2017 PARCC Algebra 1 scores increased by 0.520 units.

The next strongest predictor of academic success was free and reduced lunch percentages for the district ( $b = -0.264$ ,  $B = -0.350$ ,  $t(188) = -3.040$ ,  $p = 0.003$ ), explaining 12.25% of the variance in 2017 PARCC Algebra 1 district scores. The negative beta value in this predictor variable indicated that when free and reduced lunch percentages increased, the percentage of students meeting or exceeding threshold scores on the 2017 PARCC Algebra 1 assessment decreased. For every unit increase in a district's percentage of free and reduced lunch students, the district 2017 PARCC Algebra 1 scores decreased by 0.264 units.

Faculty attendance rate percentage ( $b = 2.341$ ,  $B = 0.233$ ,  $t(188) = 3.724$ ,  $p = 0.000$ ) was the third strongest predictor variable accounting for 5.43% of the overall variance of the outcome variable district 2017 PARCC Algebra 1 scores. The positive beta score indicated that the higher faculty attendance rate percentage, the higher percentage of students meeting or exceeding the 2017 PARCC Algebra 1 score levels, resulting in a higher district passing percentage. For every unit increase in a district's faculty with advanced degrees, the district 2017 PARCC Algebra 1 scores increased by 2.341 units.

In this model the focus predictor variable of superintendent years in the district was the

fourth strongest significant variable ( $b = 0.669$ ,  $B = .122$ ,  $t(188) = 1.975$ ,  $p = 0.050$ ) accounting for 1.49% of the overall variance of the outcome variable district 2017 PARCC Algebra 1 scores. The positive beta score indicated that the higher faculty attendance rate percentage, the higher percentage of students meeting or exceeding the 2017 PARCC Algebra 1 score levels, resulting in a higher district passing percentage. For every unit increase in years of experience of the superintendent in district, the district 2017 PARCC Algebra 1 scores increased by 0.669 units.

The model indicated that faculty with advanced degrees, free and reduced lunch percentages, faculty attendance rate, and superintendent years in district were significant predictors to the 2017 PARCC Algebra 1 district level scores. No other variables were considered significant in this regression.

Table 29  
*Coefficients<sup>a</sup>*

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.	Collinearity Statistics	
		B	Std. Error	Beta			Tolerance	VIF
1	(Constant)	-207.151	61.619		-3.362	.001		
	FacAdvDeg	.520	.082	.400	6.368	.000	.914	1.094
	FacAttendance	2.341	.629	.233	3.724	.000	.919	1.089
	SpEdPercent	.080	.382	.014	.209	.835	.837	1.195
	FreeRedLunch	-.264	.087	-.350	-3.040	.003	.272	3.674
	ELLRate	.400	.341	.116	1.175	.242	.369	2.712
	ChronAbsent	.235	.312	.060	.753	.452	.561	1.783
	SuperYrs	.669	.339	.122	1.975	.050	.947	1.056

a. Dependent Variable: PARCCAlg1

Table 30  
*Collinearity Diagnostics*

Model	Dimension	Eigen value	Condition Index	Variance Proportions				
				(Constant)	FacAdv Deg	Fac Attendance	SpEd Percent	FreeRed Lunch
1	1	6.636	1.000	.00	.00	.00	.00	.00
	2	.680	3.123	.00	.01	.00	.00	.04
	3	.342	4.405	.00	.01	.00	.00	.00
	4	.187	5.959	.00	.07	.00	.00	.06
	5	.079	9.162	.00	.27	.00	.10	.21
	6	.058	10.712	.00	.46	.00	.03	.61
	7	.018	19.457	.00	.16	.00	.83	.07
	8	.000	197.555	1.00	.02	.99	.03	.01

The second aspect of research question 3 focused on the impact of the total number of years as a superintendent on the outcome variable of 2017 PARCC Algebra 1 district math scores. The following model was developed and run through a simultaneous multiple regression using SPSS using the variables in Table 31.

Table 31  
*Total Number of Years as a Superintendent – 2017 PARCC Algebra 1 Scores Variables Entered/Removed<sup>a</sup>*

Model	Variables Entered	Variables Removed	Method
1	SuperYrsTtl, FreeRedLunch, FacAttendance, SpEdPercent, FacAdvDeg, ChronAbsent, ELLRate <sup>b</sup>	.	Enter

a. Dependent Variable: PARCCAlg1

b. All requested variables entered

In Table 32 and Table 33, the model summary indicated an R<sup>2</sup> value of 0.339 and an adjusted R<sup>2</sup> value of 0.313. The maximum and minimum values of R<sup>2</sup> were +1.00 to -1.00. The values identified positive and negative direction of relationship. This model indicated a positive

relationship between total years as a superintendent and 2017 PARCC Algebra 1 scores. The regression analysis reported an R<sup>2</sup> value of 0.339 indicating the overall model could explain 33.9% of the variance in the outcome variable of 2017 PARCC Algebra 1 Grade 5 scores. An adjusted R<sup>2</sup> of 0.313 was reported indicating that 31.3% of the variance could be explained if the model was run using the entire population as a sample. This model summary R<sup>2</sup> values between 31.3% and 33.9% of the passing student scores on the 2017 PARCC Algebra 1 assessment can be explained by the total years as a superintendent and the control variables in this model. The Analysis of Variance (ANOVA–Table 32) analysis indicated that the regression model was statistically significant to the 0.001 level ( $p < 0.000$ ) in predicting 2017 PARCC Algebra 1 scores for the public school districts using the outlined predictor variables with values of  $F(7, 181) = 13.240, p < 0.001$ .

Table 32  
Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Change Statistics			
					R Square Change	F Change	df1	df2
1	.582 <sup>a</sup>	.339	.313	15.53872	.339	13.240	7	181

Table 33  
ANOVA<sup>a</sup>

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	22377.149	7	3196.736	13.240	.000 <sup>b</sup>
	Residual	43702.766	181	241.452		
	Total	66079.915	188			

a. Dependent Variable: PARCCAlg1

b. Predictors: (Constant), SuperYrsTtl, FreeRedLunch, FacAttendance, SpEdPercent, FacAdvDeg, ChronAbsent, ELLRate

In Table 34 (coefficients), the beta and standardized beta and the statistical significance were examined for the independent variable and control variables. Analyzing this table, three of

the seven predictor variables were indicated as statistically significant. The predictor variables identified as statistically significant to the explained variance of 2017 PARCC Algebra 1 scores were as follows: faculty advanced degree ( $b = 0.509$ ,  $B = 0.392$ ,  $t(188) = 6.223$ ,  $p = 0.000$ ); free and reduced lunch ( $b = -0.282$ ,  $B = -0.373$ ,  $t(188) = -3.236$ ,  $p = 0.001$ ); and faculty attendance rate ( $b = 2.189$ ,  $B = 0.218$ ,  $t(188) = 3.473$ ,  $p = 0.001$ ). The focus predictor variable of total years as a superintendent indicated as not being a statistically significant relationship at the  $p < 0.05$  level with a value of ( $p = 0.194$ ). Coefficients Table 34 indicated no issues with multicollinearity and variance inflation factors (VIF) ranging from 1.011 to 3.636.

Based on the standardized beta weights for the significant predictor variables in coefficients Table 34, the amount of variance on the outcome variable can be explained by the predictor variable. Squaring the standardized beta values of each of the three significant predictor variables denotes the strength of the predictor variables on the dependent variable, district 2017 PARCC Algebra 1 scores.

The strongest contributor to the academic success of students in this model was the percentage of faculty advanced degrees ( $b = 0.509$ ,  $B = 0.392$ ,  $t(188) = 6.223$ ,  $p = 0.000$ ) explaining 15.37% of the overall variance for 2017 PARCC Algebra 1 district scores. The positive beta score indicated that when there was a higher percentage of faculty with advanced degrees the percentage of students meeting or exceeding 2017 PARCC threshold scores increased. For every unit increase in a district's faculty with advanced degrees, the district 2017 PARCC Algebra 1 scores increased by 0.509 units.

The next strongest predictor of academic success was free and reduced lunch percentages for the district ( $b = -0.282$ ,  $B = -0.373$ ,  $t(188) = -3.236$ ,  $p = 0.001$ ), explaining 13.91% of the variance in 2017 PARCC Algebra 1 district scores. The negative beta value in this predictor

variable indicated that when free and reduced lunch percentages increased, the percentage of students meeting or exceeding threshold scores on the 2017 PARCC Algebra 1 assessment decreased. For every unit increase in a district's percentage of free and reduced lunch students, the district 2017 PARCC Algebra 1 score decreased by 0.282 units.

Faculty attendance rate percentage ( $b = 2.189$ ,  $B = 0.218$ ,  $t(188) = 3.473$ ,  $p = 0.001$ ) was the third strongest predictor variable accounting for 4.75% of the overall variance of the outcome variable district 2017 PARCC Algebra 1 scores. The positive beta score indicated that the higher faculty attendance rate percentage, the higher percentage of students meeting or exceeding the 2017 PARCC Algebra 1 score levels, resulting in a higher district passing percentage. For every unit increase in a district's faculty attendance rate, the district 2017 PARCC Algebra 1 score increased by 2.189 units.

The model indicated that faculty with advanced degrees, free and reduced lunch percentages, and faculty attendance rate were significant predictors to the 2017 PARCC Algebra 1 district level scores. No other variables were considered significant in this regression model inclusive of the focus control variable of total number of years as a superintendent.

**Table 34**  
*Coefficients<sup>a</sup>*

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.	Collinearity Statistics	
		B	Std. Error	Beta			Tolerance	VIF
1	(Constant)	-190.072	61.457		-3.093	.002		
	FacAdvDeg	.509	.082	.392	6.223	.000	.922	1.085
	FacAttendance	2.189	.630	.218	3.473	.001	.925	1.081
	SpEdPercent	.022	.384	.004	.057	.955	.837	1.195
	FreeRedLunch	-.282	.087	-.373	-3.236	.001	.275	3.636
	ELLRate	.482	.340	.140	1.415	.159	.374	2.676
	ChronAbsent	.219	.314	.056	.699	.486	.562	1.781
	SuperYrsTtl	.296	.227	.079	1.305	.194	.989	1.011

Table 35  
*Collinearity Diagnostics<sup>a</sup>*

Model	Dimension	Eigen value	Condition Index	Variance Proportions				
				(Constant)	FacAdv Deg	Fac Attendance	SpEd Percent	FreeRed Lunch
1	1	6.702	1.000	.00	.00	.00	.00	.00
	2	.691	3.114	.00	.01	.00	.00	.04
	3	.254	5.137	.00	.02	.00	.00	.00
	4	.197	5.831	.00	.06	.00	.00	.07
	5	.078	9.298	.00	.27	.00	.11	.21
	6	.060	10.541	.00	.47	.00	.02	.58
	7	.018	19.412	.00	.15	.00	.83	.09
	8	.000	197.352	1.00	.03	1.00	.03	.01

In reviewing Tables 26–35, it is clear that once again in our models, there are three predictor variables that were determined to be statistically significant in multiple times across all six models. The predictor variable of faculty with advanced degrees was a significant influencer of 2017 PARCC Algebra 1 math scores to the  $p < 0.001$  level in all six models as the significance was 0.000.

The next biggest impacting variable significant in all of the models five and six tested was the free and reduced lunch percentage rates for the public school districts. All three models indicated a statistical significance to the  $p < 0.01$  level with model five and six indicating a significance level ranging from 0.001 to 0.003. This relationship was a negative one in all six models which indicates that when the percentage of students with free and reduced lunch status increased, the Algebra 1 scores decreased for students and districts.

The third most impactful predictor variable for the dependent variable of Algebra 1 scores was the faculty attendance percentage rate for the public school districts. All six models indicated a positive relationship between increased districts faculty attendance rate and the increased percentage of students meeting or exceeding threshold levels for the 2017 PARCC Algebra 1 assessment levels for the sample public school districts. An area of significance in



this model not been present in previous models was the focus predictor variable of superintendent years in the district which in the model run for Algebra 1 indicated it was a significant predictor variable that had a positive influence on the outcome variable of 2017 PARCC Algebra 1 math scores for the sample districts tested. All other variables input into these models were not considered significant, including the main target predictor variable of total years as a superintendent and its impact on 2017 PARCC Algebra 1 assessment district scores.

### **Null Hypothesis 3:**

No statistically significant relationship exists between a New Jersey school superintendent's length of time in a school district and student academic achievement, as evidenced by the 2017 PARCC scores in Algebra 1 when controlling for school and student characteristics.

The null hypothesis is rejected for aspect one of research question three, superintendent years of experience in district and 2017 PARCC Algebra 1 district scores based on the data analysis and findings discussed from the SPSS multiple regression. The predictor variable was determined to be statistically significant ( $B = 0.122$ ,  $p = 0.050$ ). The null hypothesis is retained for aspect two of research question three based on the data analysis and findings discussed from the SPSS output tables in the multiple regressions. Total years of experience was not determined to be a significant predictor variable of 2017 PARCC Algebra 1 district scores. SuperYrsTtl ( $B = 0.079$ ,  $p = 0.194$ ).

### **Research Question 4:**

What is the relationship between New Jersey public school superintendent longevity and student achievement as measured by Spring 2017 Partnership for Assessment of Readiness for College and Careers (PARCC) English Language Arts/Literacy 10 when controlling for school

and student characteristics?

In an attempt to answer research question four regarding Grade 10 ELA/L PARCC scores, a simultaneous multiple regression analysis was conducted using the SPSS program that included one independent variable of superintendent years of experience in district, the six control variables, and the dependent variable of 2017 district PARCC Grade 10 ELA/L scores as indicated in Table 36.

Table 36

*Superintendent Years in District – 2017 PARCC Grade 10 ELA/L Variables Entered/Removed<sup>a</sup>*

Model	Variables Entered	Variables Removed	Method
1	SuperYrs, FreeRedLunch, SpEdPercent, FacMobRate, FacAttendance, FacAdvDeg, ChronAbsent <sup>b</sup>	.	Enter

a. Dependent Variable: PARCCELALGr10

b. All requested variables entered

In Tables 37 and 38, the model summary indicated an R<sup>2</sup> value of 0.284 and an adjusted R<sup>2</sup> value of 0.256. The maximum and minimum values of R<sup>2</sup> were +1.00 to -1.00. The values identified positive and negative direction of relationship. This model indicated a positive relationship between years in district as a superintendent and 2017 PARCC Grade 10 ELA/L scores. The regression analysis reported an R<sup>2</sup> value of 0.284 indicating the overall model can explain 28.4% of the variance in the outcome variable of 2017 PARCC Grade 10 ELA/L scores. An adjusted R<sup>2</sup> of 0.256 was reported indicating that 25.6% of the variance could be explained if the model was run using the entire population as a sample. This model summary R<sup>2</sup> values between 25.6% and 28.4% of the proficient student scores on the 2017 PARCC Grade 10 ELA/L

assessment can be explained by the superintendent number of years in the public school districts and the control variables in this model. The Analysis of Variance (ANOVA–Table 38) analysis indicated that the regression model was statistically significant to the 0.001 level ( $p < 0.000$ ) in predicting 2017 PARCC Grade 10 ELA/L scores for the public school districts using the outlined predictor variables with values of  $F(7, 181) = 10.260$ ,  $p < 0.001$ .

Table 37  
*Model Summary*

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Change Statistics			
					R Square Change	F Change	df1	df2
1	.533 <sup>a</sup>	.284	.256	13.73297	.284	10.260	7	181

Table 38  
*ANOVA<sup>a</sup>*

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	13544.236	7	1934.891	10.260	.000 <sup>b</sup>
	Residual	34135.574	181	188.594		
	Total	47679.810	188			

a. Dependent Variable: PARCCELALGr10

b. Predictors: (Constant), SuperYrs, FreeRedLunch, SpEdPercent, FacAttendance, FacAdvDeg, ChronAbsent, ELLRate

In Table 39 (coefficients), the beta and standardized beta and the statistical significance were examined for the independent variable and control variables. Analyzing this table, three of the seven predictor variables were indicated as statistically significant. The predictor variables identified as statistically significant to the explained variance of 2017 PARCC Grade 10 ELA/L scores were as follows: faculty advanced degree ( $b = 0.404$ ,  $B = 0.366$ ,  $t(188) = 5.541$ ,  $p = 0.000$ ); free and reduced lunch ( $b = -0.160$ ,  $B = -0.249$ ,  $t(188) = -3.104$ ,  $p = 0.002$ ); and faculty attendance rate ( $b = 1.687$ ,  $B = 0.198$ ,  $t(188) = 3.014$ ,  $p = 0.003$ ). The focus independent variable of years as superintendent in the district indicated as not being a statistically significant

relationship at the  $p = < 0.05$  level with a value of ( $p = 0.068$ ). Coefficients Table 39 indicated no issues with multicollinearity and variance inflation factors (VIF) ranging from 1.056 to 3.674.

Based on the standardized beta weights for the significant predictor variables in coefficients Table 39, the amount of variance on the outcome variable can be explained by the predictor variable. Squaring the standardized beta values of each of the three significant predictor variables denotes the strength of the predictor variables on the dependent variable, district 2017 PARCC Grade 10 ELA/L scores. The strongest contributor to the academic success of students in this model was the percentage of faculty advanced degrees ( $b = 0.404$ ,  $B = 0.366$ ,  $t(188) = 5.541$ ,  $p = 0.000$ ), explaining 12.39% of the overall variance for 2017 PARCC Grade 10 ELA/L district scores. The positive beta score indicated that when there was a higher percentage of faculty with advanced degrees the percentage of students meeting or exceeding 2017 PARCC threshold scores increased. For every unit increase in a district's faculty with advanced degrees, the district 2017 PARCC Grade 10 ELA/L scores increased by 0.404 units.

The next strongest predictor of academic success was free and reduced lunch percentages for the district ( $b = -0.160$ ,  $B = -0.249$ ,  $t(188) = -3.104$ ,  $p = 0.002$ ), explaining 6.20% of the variance in 2017 PARCC Grade 10 ELA/L district scores. The negative beta value in this predictor variable indicated that when free and reduced lunch percentages increased, the percentage of students meeting or exceeding threshold scores on the 2017 PARCC Grade 10 ELA/L assessment decreased. For every unit increase in a district's percentage of free and reduced lunch students, the district 2017 PARCC Grade 5 math scores decreased by 0.160 units.

Faculty attendance rate percentage ( $b = 1.687$ ,  $B = 0.198$ ,  $t(188) = 3.014$ ,  $p = 0.003$ ) was the third strongest predictor variable accounting for 3.92% of the overall variance of the outcome variable district 2017 PARCC Grade 10 ELA/L scores. The positive beta score indicated that the

higher faculty attendance rate percentage, the higher percentage of students meeting or exceeding the 2017 PARCC Grade 10 ELA/L score levels, resulting in a higher district passing percentage. For every unit increase in a district's faculty with advanced degrees, the district 2017 PARCC Grade 10 ELA/L score increased by 1.687 units.

Table 39  
*Coefficients<sup>a</sup>*

Model	Unstandardized Coefficients		Standardized Coefficients	t	Sig.	Collinearity Statistics	
	B	Std. Error	Beta			Tolerance	VIF
1	(Constant)	-112.903	63.031		-1.791	.075	
	FacAdvDeg	.404	.073	.366	5.541	.000	.908
	FacMobRate	-.211	.312	-.043	-.675	.501	.969
	FacAttendance	1.687	.560	.198	3.014	.003	.917
	SpEdPercent	.013	.317	.003	.040	.968	.961
	FreeRedLunch	-.160	.051	-.249	-3.104	.002	.617
	ChronAbsent	.129	.265	.039	.488	.626	.618
	SuperYrs	.552	.300	.118	1.838	.068	.953

Table 40  
*Collinearity Diagnostics<sup>a</sup>*

Model	Dimension	Eigen value	Condition Index	Variance Proportions				
				(Constant)	FacAdv Deg	Fac Attendance	SpEd Percent	FreeRed Lunch
1	1	6.636	1.000	.00	.00	.00	.00	.00
	2	.680	3.123	.00	.01	.00	.00	.04
	3	.342	4.405	.00	.01	.00	.00	.00
	4	.187	5.959	.00	.07	.00	.00	.06
	5	.079	9.162	.00	.27	.00	.10	.21
	6	.058	10.712	.00	.46	.00	.03	.61
	7	.018	19.457	.00	.16	.00	.83	.07
	8	.000	197.555	1.00	.02	.99	.03	.01

The secondary aspect of research question four focuses on the impact of the total number of years as a superintendent on the outcome variable of 2017 PARCC Grade 10 ELA/L district

scores. The following model was developed and run through a simultaneous multiple regression using SPSS using the variables in Table 41.

Table 41

*Total Number of Years as a Superintendent – 2017 PARCC Grade 10 ELA/L scores*  
*Variables Entered/Removed<sup>a</sup>*

Model	Variables Entered	Variables Removed	Method
1	SuperYrsTtl, FreeRedLunch, FacAttendance, SpEdPercent, FacMobRate, FacAdvDeg, ChronAbsent <sup>b</sup>	.	Enter

a. Dependent Variable: PARCCELALGr10

b. All requested variables entered

In Table 42 and Table 43 below, the model summary indicated an R<sup>2</sup> value of 0.276 and an adjusted R<sup>2</sup> value of 0.248. The maximum and minimum values of R<sup>2</sup> were +1.00 to -1.00. The values identified positive and negative direction of relationship. This model indicated a positive relationship between total number of years as a superintendent and 2017 PARCC Grade 10 ELA/L scores. The regression analysis reported an R<sup>2</sup> value of 0.276 indicating the overall model can explain 27.6% of the variance in the outcome variable of 2017 PARCC Grade 10 ELA/L scores. An adjusted R<sup>2</sup> of 0.248 was reported indicating that 24.8% of the variance could be explained if the model was run using the entire population as a sample. This model summary R<sup>2</sup> values between 24.8% and 27.6% of the passing student scores on the 2017 PARCC Grade 10 ELA/L assessment can be explained by the total number of years as a superintendent in the public school districts and the control variables in this model. The Analysis of Variance (ANOVA–Table 43) analysis indicated that the regression model was statistically significant to the 0.001 level ( $p < 0.000$ ) in predicting 2017 PARCC Grade 10

ELA/L scores for the public school districts using the outlined predictor variables with values of  $F(7, 181) = 9.878, p < 0.001$ .

Table 42  
*Model Summary*

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Change Statistics			
					R Square Change	F Change	df1	df2
1	.526 <sup>a</sup>	.276	.248	13.80611	.276	9.878	7	181

Table 43  
*ANOVA<sup>a</sup>*

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	13179.663	7	1882.809	9.878	.000 <sup>b</sup>
	Residual	34500.146	181	190.609		
	Total	47679.810	188			

a. Dependent Variable: PARCCELALGr10

b. Predictors: (Constant), SuperYrsTtl, FreeRedLunch, FacAttendance, SpEdPercent, FacAdvDeg, ChronAbsent, ELLRate

In Table 44 (coefficients), the beta and standardized beta and the statistical significance were examined for the independent variable and control variables. Analyzing this table, three of the seven predictor variables were indicated as statistically significant. The predictor variables identified as statistically significant to the explained variance of 2017 PARCC Grade 10 ELA/L scores were as follows: faculty advanced degree ( $b = 0.387, B = 0.351, t(188) = 5.331, p = 0.000$ ); free and reduced lunch ( $b = -0.218, B = -0.339, t(188) = -2.813, p = 0.005$ ); and faculty attendance rate ( $b = 1.648, B = 0.193, t(188) = 2.942, p = 0.004$ ). The focus independent variable of total years as a superintendent indicated as not being a statistically significant relationship at the  $p = < 0.05$  level with a value of ( $p = 0.346$ ). Coefficients Table 44 indicated no issues with multicollinearity and variance inflation factors (VIF) ranging from 1.011 to 3.636.

Based on the standardized beta weights for the significant predictor variables in coefficients Table 44, the amount of variance on the outcome variable can be explained by the

predictor variable. Squaring the standardized beta values of each of the three significant predictor variables denotes the strength of the predictor variables on the dependent variable, district 2017 PARCC Grade 10 ELA/L scores. The strongest contributor to the academic success of students in this model was the percentage of faculty advanced degrees ( $b = 0.387$ ,  $B = 0.351$ ,  $t(188) = 5.331$ ,  $p = 0.000$ ), explaining 12.32% of the overall variance for 2017 PARCC Grade 10 ELA/L district scores. The positive beta score indicated that when there was a higher percentage of faculty with advanced degrees the percentage of students meeting or exceeding 2017 PARCC threshold scores increased. For every unit increase in a district's faculty with advanced degrees, the district 2017 PARCC Grade 10 ELA/L scores increased by 0.387 units.

The next strongest predictor of academic success was free and reduced lunch percentages for the district ( $b = -0.218$ ,  $B = -0.339$ ,  $t(188) = -2.813$ ,  $p = 0.005$ ), explaining 11.49% of the variance in 2017 PARCC Grade 10 ELA/L district scores. The negative beta value in this predictor variable indicated that when free and reduced lunch percentages increased, the percentage of students meeting or exceeding threshold scores on the 2017 PARCC Grade 10 ELA/L assessment decreased. For every unit increase in a district's percentage of free and reduced lunch students, the district 2017 PARCC Grade 10 ELA/L score decreased by 0.218 units.

Faculty attendance rate percentage ( $b = 1.648$ ,  $B = 0.193$ ,  $t(188) = 2.942$ ,  $p = 0.004$ ) was the third strongest predictor variable accounting for 3.72% of the overall variance of the outcome variable district 2017 PARCC Grade 10 ELA/L scores. The positive beta score indicated that the higher faculty attendance rate percentage, the higher percentage of students meeting or exceeding the 2017 PARCC Grade 10 ELA/L score levels, resulting in a higher district passing percentage. For every unit increase in a district's faculty with advanced degrees, the district



2017 PARCC Grade 10 ELA/L score increased by 1.648 units.

The model indicated that faculty with advanced degrees, free and reduced lunch percentages, and faculty attendance rate were significant predictors to the 2017 PARCC Grade 10 ELA/L district level scores. No other variables were considered significant in this regression model inclusive of the focus control variable of total number of years as a superintendent.

Table 44  
*Coefficients<sup>a</sup>*

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.	Collinearity Statistics	
		B	Std. Error	Beta			Tolerance	VIF
1	(Constant)	-126.872	54.604		-2.323	.021		
	FacAdvDeg	.387	.073	.351	5.331	.000	.922	1.085
	FacAttendance	1.648	.560	.193	2.942	.004	.925	1.081
	SpEdPercent	.055	.341	.011	.160	.873	.837	1.195
	FreeRedLunch	-.218	.077	-.339	-2.813	.005	.275	3.636
	ELLRate	.305	.303	.104	1.007	.315	.374	2.676
	ChronAbsent	.182	.279	.055	.651	.516	.562	1.781
	SuperYrsTtl	.190	.201	.060	.946	.346	.989	1.011

a. Dependent Variable: PARCCELALGr10

Table 45  
*Collinearity Diagnostics<sup>a</sup>*

Model	Dimension	Eigen value	Condition Index	Variance Proportions				
				(Constant)	FacAdv Deg	Fac Attendance	SpEd Percent	FreeRed Lunch
1	1	6.702	1.000	.00	.00	.00	.00	.00
	2	.691	3.114	.00	.01	.00	.00	.04
	3	.254	5.137	.00	.02	.00	.00	.00
	4	.197	5.831	.00	.06	.00	.00	.07
	5	.078	9.298	.00	.27	.00	.11	.21
	6	.060	10.541	.00	.47	.00	.02	.58
	7	.018	19.412	.00	.15	.00	.83	.09
	8	.000	197.352	1.00	.03	1.00	.03	.01

In reviewing Tables 36–45, in models seven and eight three predictor variables were determined to be statistically significant in multiple times across models. The predictor variable of faculty with advanced degrees was a significant influencer of 2017 PARCC ELA/L 10 scores to the  $p < 0.001$  level in models seven and eight as the significance was 0.000 in both outputs.

The next biggest impacting variable significant in all of the models tested was the free and reduced lunch percentage rates for the public school districts. Models seven and eight indicated a statistical significance to the  $p < 0.01$  level with models seven and eight indicating a significance level ranging from 0.009 to 0.005. This relationship was negative in all models indicating that when the percentage of students with free and reduced lunch status increased, the PARCC ELA/L 10 scores decreased for students and districts.

The third most impactful predictor variable for the dependent variable of ELA/L10 scores in models seven and eight was the faculty attendance percentage rate for the public school districts. All models indicated a positive relationship between increased districts faculty attendance rate and the increased percentage of students meeting or exceeding threshold levels for the 2017 PARCC ELA/L 10 assessment levels for the sample public school districts. All other variables input into models seven and eight were not considered significant, including the main target predictor variable of total years as a superintendent and its impact on 2017 PARCC Grade 10 ELA/L assessment district scores.

#### **Null Hypothesis 4:**

No statistically significant relationship exists between a New Jersey school superintendent's length of time in a school district and student academic achievement, as evidenced by the 2017 PARCC scores in English Language Art/Literacy 10 when controlling for school and student characteristics.

The null hypothesis is retained for research question one based on the data analysis and findings discussed from the SPSS output tables in the multiple regression. Superintendent years of experience in district and total years of experience was not determined to be a significant predictor variable of 2017 PARCC ELA/L Grade 10 district scores. SuperYrs (B = 0.109, p = 0.094); SuperYrsTtl (B = 0.060, p = 0.346).

#### **Research Question 5:**

What is the relationship between New Jersey superintendent longevity and district faculty mobility as evidenced by the 2017 School Performance Report faculty mobility rate percentage when controlling for school and student characteristics?

In an attempt to answer this research question five regarding the impact of superintendent longevity and experience with faculty mobility rate, a simultaneous multiple regression analysis was conducted using the SPSS V. 26 program that included one independent variable of superintendent years of experience in district, the six control variables, and the dependent variable of 2017 district faculty mobility rate as indicated in Table 46.

Table 46  
*Variables Entered/Removed<sup>a</sup>*

Model	Variables Entered	Variables Removed	Method
1	SuperYrs, FreeRedLunch, SpEdPercent, FacAttendance, FacAdvDeg, ChronAbsent, ELLRate <sup>b</sup>	.	Enter

a. Dependent Variable: FacMobRate

b. All requested variables entered

In Tables 47 and Table 48, the model summary indicated an R<sup>2</sup> value of 0.026 and an adjusted R<sup>2</sup> value of -0.012. The maximum and minimum values of R<sup>2</sup> were +1.00 to -1.00.

The values identified positive and negative direction of relationship. This model indicated both a positive and negative relationship between year in district as a superintendent and 2017 district faculty mobility rate percentage. The regression analysis reported an R<sup>2</sup> value of 0.026 and an adjusted R<sup>2</sup> value of -0.012 and a significance level of  $p = .678$  indicating this was not a statistically significant model. Inferences or assumptions cannot be made on this simultaneous multiple regression analysis of the predictor and outcomes variables as the model was not statistically significant. The Analysis of Variance analysis (ANOVA Table 48) confirmed that this model was not a significant model and could not predict within the  $p \leq .01$  level the impact of the predictor variables on the outcome variable of 2017 faculty mobility rate. The analysis indicated that the simultaneous multiple regression model was not statistically significant to the 0.001 level ( $p < 0.001$ ) in predicting 2017 faculty mobility rate for the public school districts with values of  $F(7, 181) = 0.693$ ,  $p = 0.678$ .

Table 47  
*Model Summary*

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Change Statistics			
					R Square Change	F Change	df1	df2
1	.162 <sup>a</sup>	.026	-.012	4.18354	.026	.693	7	181

Table 48  
*ANOVA<sup>a</sup>*

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	84.913	7	12.130	.693	.678 <sup>b</sup>
	Residual	3167.859	181	17.502		
	Total	3252.772	188			

a. Dependent Variable: FacMobRate

b. Predictors: (Constant), SuperYrs, FreeRedLunch, SpEdPercent, FacAttendance, FacAdvDeg, ChronAbsent, ELLRate

In Tables 49 and 50 (coefficients and collinearity), the beta and standardized beta and the statistical significance were examined for the predictor variable and control variables. Analyzing this table there were no significant predictor variables on the outcome variable of faculty mobility rate. The model was not considered statistically significant indicating assumed and variable impacts cannot be determined to the  $p \leq 0.05$  level.

Based on the standardized beta weights for the significant predictor variables in coefficients Table 49, any amount of variance on the outcome variable cannot be explained by the predictor variable as this model was not statistically significant.

Table 49  
*Coefficients<sup>a</sup>*

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.	Collinearity Statistics	
		B	Std. Error	Beta			Tolerance	VIF
1	(Constant)	84.234	16.689		5.047	.000		
	FacAdvDeg	.031	.022	.107	1.398	.164	.914	1.094
	FacAttendance	.026	.170	.011	.150	.881	.919	1.089
	SpEdPercent	.017	.103	.013	.167	.868	.837	1.195
	FreeRedLunch	.011	.024	.065	.460	.646	.272	3.674
	ELLRate	-.095	.092	-.124	-1.025	.307	.369	2.712
	ChronAbsent	-.032	.085	-.037	-.375	.708	.561	1.783
	SuperYrs	.106	.092	.087	1.157	.249	.947	1.056

a. Dependent Variable: FacMobRate

Table 50  
*Collinearity Diagnostics<sup>a</sup>*

Model	Dimension	Eigen value	Condition Index	Variance Proportions				
				(Constant)	FacAdv Deg	Fac Attendance	SpEd Percent	FreeRed Lunch
1	1	6.636	1.000	.00	.00	.00	.00	.00
	2	.680	3.123	.00	.01	.00	.00	.04
	3	.342	4.405	.00	.01	.00	.00	.00
	4	.187	5.959	.00	.07	.00	.00	.06
	5	.079	9.162	.00	.27	.00	.10	.21
	6	.058	10.712	.00	.46	.00	.03	.61
	7	.018	19.457	.00	.16	.00	.83	.07
	8	.000	197.555	1.00	.02	.99	.03	.01

The second aspect of research question 5 focused on the impact of the total number of years as a superintendent on the outcome variable of 2017 faculty mobility rate percentages for the sample school districts. The following model was developed and run through a multiple regression using SPSS using the variables in Table 51.

Table 51  
Variables Entered/Removed<sup>a</sup>

Model	Variables Entered	Variables Removed	Method
1	SuperYrsTtl, FreeRedLunch, FacAttendance, SpEdPercent, FacAdvDeg, ChronAbsent, ELLRate <sup>b</sup>	.	Enter

a. Dependent Variable: FacMobRate

b. All requested variables entered.

In Tables 52 and Table 53, the model summary indicated an R2 value of 0.027 and an adjusted R2 value of -0.011. The maximum and minimum values of R2 were +1.00 to -1.00. The values identified positive and negative direction of relationship. This model indicated both a positive and negative relationship between total years as a superintendent and 2017 district faculty mobility rate percentage. The regression analysis reported an R2 value of 0.027 and an R2 value of -0.011 and a significance level of  $p = 0.662$  indicating this was not a statistically significant model. Inferences or assumptions cannot be made on this simultaneous multiple regression analysis of the predictor and outcomes variables as the model was not statistically significant. The Analysis of Variance analysis (ANOVA Table 53) confirmed that this model was not a significant model and could not predict within the  $p \leq 0.01$  level the impact of the predictor variables on the outcome variable of 2017 faculty mobility rate. The analysis indicated

that the simultaneous multiple regression model was not statistically significant to the 0.001 level ( $p < 0.001$ ) in predicting 2017 faculty mobility rate for the public school districts with values of  $F(7, 181) = 0.712$ ,  $p = 0.662$ .

Table 52  
*Model Summary*

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Change Statistics			
					R Square Change	F Change	df1	df2
1	.164 <sup>a</sup>	.027	-.011	4.18202	.027	.712	7	181

Table 53  
*ANOVA<sup>a</sup>*

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	87.214	7	12.459	.712	.662 <sup>b</sup>
	Residual	3165.558	181	17.489		
	Total	3252.772	188			

a. Dependent Variable: FacMobRate

b. Predictors: (Constant), SuperYrsTtl, FreeRedLunch, FacAttendance, SpEdPercent, FacAdvDeg, ChronAbsent, ELLRate

In Tables 54 and 55 (coefficients and collinearity), the beta and standardized beta and the statistical significance with values of  $F(7, 181) = 0.693$ ,  $p = 0.678$  for model nine and  $F(7, 181) = 0.712$ ,  $p = 0.662$  for model 10 examined the impact of years as superintendent in the district and total years as a superintendent, the control predictor variables, and the outcome variable of district faculty mobility rate percentage. Analyzing this table there were no significant predictor variables on the outcome variable of faculty mobility rate. The model was not considered statistically significant indicating assumed and variable impacts cannot be determined to the  $p \leq 0.05$  level.

Based on the standardized beta weights for the significant predictor variables in coefficients Table 54, any amount of variance on the outcome variable cannot be explained by the predictor variable as this model was not statistically significant.

Table 54  
*Coefficients<sup>a</sup>*

Model	Unstandardized Coefficients		Standardized Coefficients	t	Sig.	Collinearity Statistics	
	B	Std. Error	Beta			Tolerance	VIF
1 (Constant)	87.042	16.540		5.262	.000		
FacAdvDeg	.030	.022	.104	1.361	.175	.922	1.085
FacAttendance	-.002	.170	-.001	-.011	.991	.925	1.081
SpEdPercent	.006	.103	.005	.058	.954	.837	1.195
FreeRedLunch	.008	.023	.049	.347	.729	.275	3.636
ELLRate	-.081	.092	-.106	-.886	.377	.374	2.676
ChronAbsent	-.034	.084	-.039	-.401	.689	.562	1.781
SuperYrsTtl	.074	.061	.089	1.213	.227	.989	1.011

a. Dependent Variable: FacMobRate

Table 55  
*Collinearity Diagnostics<sup>a</sup>*

Model	Dimension	Eigen value	Condition Index	Variance Proportions				
				(Constant)	FacAdv Deg	Fac Attendance	SpEd Percent	FreeRed Lunch
1	1	6.702	1.000	.00	.00	.00	.00	.00
	2	.691	3.114	.00	.01	.00	.00	.04
	3	.254	5.137	.00	.02	.00	.00	.00
	4	.197	5.831	.00	.06	.00	.00	.07
	5	.078	9.298	.00	.27	.00	.11	.21
	6	.060	10.541	.00	.47	.00	.02	.58
	7	.018	19.412	.00	.15	.00	.83	.09
	8	.000	197.352	1.00	.03	1.00	.03	.01

In reviewing Tables 46–55, models nine and ten were not statistically significant for the model or any predictor variables input into the SSPS software program with values of  $F(7, 181) = 0.693$ ,  $p = 0.678$  for model nine and  $F(7, 181) = 0.712$ ,  $p = 0.662$ . The focus predictor variables superintendent years in the district and total number of years as a superintendent were



not statistically significant nor were any of the control variables in these models. Contrary to the previous eight models utilized, the model examining the dependent variable of faculty mobility rate was determined not to be statistically significant to the  $P \leq 0.001$  level nor were any of the predictor variables significant to the  $p \leq 0.05$  significance level.

#### **Null Hypothesis 5:**

No statistically significant relationship exists between a New Jersey school superintendent's length of time in a school district and district success, as evidenced by the 2017 district faculty mobility rate when controlling for school and student characteristics.

The null hypothesis is retained for research question one based on the data analysis and findings discussed from the SPSS output tables in the multiple regression. Superintendent years of experience in district and total years of experience was determined not to be a significant predictor variable of 2017 faculty mobility rate district percentages. SuperYrs ( $B = 0.087$ ,  $p = 0.249$ ); SuperYrsTtl ( $B = 0.089$ ,  $p = 0.227$ ).

#### **Summary**

In conclusion, the null hypothesis for four of the five research questions presented in this research paper were retained. Ten models of statistical analysis were developed based on the five research questions and nine of the ten models indicated that no significant relationship exists between superintendent longevity and resulting academic achievement on the 2017 PARCC assessment in Grade 5 math/ELA/L, Algebra 1, or Grade 10 ELA/L at the district level. There was one exception of superintendent years in the district and 2017 PARCC Algebra 1 district scores. Model five indicated that there was a statistically significant relationship between superintendent years in district and 2017 PARCC Algebra 1 scores. Of the remaining predictor variables, three control variables were determined to have a statistically significant impact on the

outcome variables of academic success. Percentage of faculty with advanced degrees, free and reduced lunch percentages, and faculty attendance rate percentages were all found to be statistically significant predictors of academic success at the district level. Models nine and ten had no statistically significant predictor variables indicating the focus predictor variables and the control variables have no statistically significant impact on faculty mobility rate. A further analysis and discussion are included in Chapter V of this study.

## **Chapter V**

### **Conclusions and Recommendations**

District level leadership matters in the health and wellbeing of any educational organization. With increased attention to state mandates and school district accountability, the school superintendent is charged with managing many different aspects of a changing public school landscape. Superintendents are essential components of the comprehensive process of school improvement by being active partners in most, if not all, aspects of the educational landscape from human resources and hiring to professional development of staff and the fiscal oversight of the local public school districts. In order to continually evaluate and improve educational programs for students, school district leaders must be knowledgeable about curriculum development, human resource management, organizational change dynamics, and possess a vision for program implementation. These are important skills for district leaders to possess to be a successful school leader. Superintendents must possess an expansive skill set to successfully implement new educational programming, but in today's educational climate, that is not enough.

Superintendents must also be the public face of the organization by engaging the community as a public relations expert, a district resource for information, a fiscal and budget expert, and be proficient in the area of buildings and grounds, as these are all skills and knowledge that will be called upon through the process of serving as a school superintendent.

A limited number of studies have examined with mixed results the relationship between school district leaders and their impact on students' academic performance. A meta-study of 27 studies at McREL conducted by Waters and Marzano (2006) was one study that examined the role of the superintendent and academic success. This study, used as a basis for this research,

indicated a statistically significant relationship between superintendent continuity and academic success of students. As discussed in the Chapter II literature review, numerous influencing factors may contribute to student success beyond school district leaders. Influencers on students' academic success are expansive, but the role of the chief school administrator should be considered an essential component of educational process. Waters and Marzano (2006) identified this relationship as one in which was significant and it can be assumed that a positive impact could be identified in other research, but limited studies have focused on this relationship and fewer have identified a positive, statistically significant relationship between school superintendents and academic success.

For these reasons, the intention of this research was to focus on the role of the superintendent, continuity of district leadership, and any relationship between leadership and academic success recognizing the ever-changing face of the public school landscape in New Jersey adding to the empirical research conducted in this area.

### **Purpose of the Research**

The purpose for this study was to examine and explain the nature of the relationship and influence of superintendent longevity and experience on New Jersey student scores on the 2017 Partnership for Assessment of Readiness for College and Careers (PARCC) for math and English language arts and literacy multiple grade level assessments. Additionally, the research was conducted to examine and explain the relationship between superintendent longevity and experience and its impact on teacher mobility rates of school districts. The results and findings of this research can be used to assist policy makers, school district leaders, school boards of education, and educational professionals to identify the influencing factors and variables that can positively impact student academic success resulting in higher achieving school districts.

Having a deeper understanding of the studied variables and how they impact academic success can assist decision making at the local, state, and federal levels of educational organizations. Furthermore, it may provide information for school district boards of education to assess the importance of continuity of school district leaders and the influencing factors that can result in higher levels of district success and improved students' academic achievement.

This research can provide aspiring superintendents with the knowledge and information to better assess school district leadership opportunities and help identify the influencing factors that can lead to improved academic success at the district level.

In addition to the focal variables in this research, this study examined the influence and impact of other staff, students, and district variables on academic achievement and faculty mobility rate. These variables included faculty with advanced degrees, faculty attendance rate percentage, percentage of students on free and reduced lunch, special education classification rates, chronic absenteeism rates, and English language learner percentages all measured at the district level.

### **Organization of the Chapter**

This chapter provides a summary of the research findings, expands and expounds upon the results of this research compared to previous studies that are similar in nature, and provides recommendations that are evidence based for policy and practice, along with suggestions for future research. This study adds to the empirical body of research, existing literature base in the educational field, and can assist educational leaders with the information, data, and background to make informed decisions that may positively impact educational policy and practice.

## **Research Questions, Null Hypotheses, and Answers**

### **Research Question 1:**

What is the relationship between New Jersey public school superintendent longevity and student achievement as measured by Spring 2017 Partnership for Assessment of Readiness for College and Careers (PARCC) Grade 5 math when controlling for school and student characteristics?

No statistically significant relationship exists between a New Jersey school superintendent's length of time in a school district and student academic achievement, as evidenced by the 2017 PARCC scores in Grade 5 mathematics when controlling for school and student characteristics.

The null hypothesis is retained. Model 1 contained the predictor variable of superintendent years in the district and the focus outcome variable of 2017 PARCC Grade 5 math district scores. This model also utilized six control predictor variables of percentage of faculty with advanced degrees, percentage of students on free and reduced lunch, faculty attendance percentage rate, English language learner percentage rate, student chronic absenteeism district rate, and district percentage of classification or special education rate. Model 1 accounted for 26.1% of the variance for the 2017 PARC Grade 5 math district scores. Three of the seven predictor variables were statistically significant with the best predictor of Grade 5 math performance being the percentage of faculty with advanced degrees. Also significant was the free and reduced lunch percentages (negative relationship) and faculty attendance rates. Superintendent years in the district was not a statistically significant predictor variable ( $B = 0.127$ ,  $p = 0.051$ ) in this model, thus the null hypothesis is retained.

The null hypothesis is retained. Model 2 contained the predictor variable of total number

of years as a superintendent and the focus outcome variable of 2017 PARCC Grade 5 math district scores. This model also utilized six control predictor variables of percentage of faculty with advanced degrees, percentage of students on free and reduced lunch, faculty attendance percentage rate, English language learner percentage rate, student chronic absenteeism district rate, and district percentage of classification or special education rate. Model 2 accounted for 25.3% of the variance for the 2017 PARC Grade 5 math district scores. Three of the seven predictor variables were statistically significant with the best predictor of Grade 5 math performance being the percentage of faculty with advanced degrees. Also significant was the percentage of students on free and reduced lunch (negative relationship) and faculty attendance rates. Total number of years as a superintendent was not a statistically significant predictor variable ( $B = 0.087$ ,  $p = 0.173$ ) in this model, thus the null hypothesis is retained.

### **Research Question 2:**

What is the relationship between New Jersey public school superintendent longevity and student achievement as measured by Spring 2017 Partnership for Assessment of Readiness for College and Careers (PARCC) Grade 5 English Language Arts/Literacy when controlling for school and student characteristics?

No statistically significant relationship exists between a New Jersey school superintendent's length of time in a school district and student academic achievement, as evidenced by the 2017 PARCC scores in Grade 5 English Language Arts/Literacy when controlling for school and student characteristics.

The null hypothesis is retained. Model 3 contained the predictor variable of superintendent years in the district and the focus outcome variable of 2017 PARCC Grade 5 ELA/L district scores. This model also utilized six control predictor variables of percentage of

faculty with advanced degrees, percentage of students on free and reduced lunch, faculty attendance percentage rate, English language learner percentage rate, student chronic absenteeism district rate, and district percentage of classification or special education rate. Model 3 accounted for 30.6% of the variance for the 2017 PARC Grade 5 ELA/L district scores. Three of the seven predictor variables were statistically significant with the best predictor of Grade 5 math performance being the percentage of faculty with advanced degrees. Also significant was the percentage of students on free and reduced lunch (negative relationship) and faculty attendance rates. Superintendent years in the district was not a statistically significant predictor variable ( $B = 0.109$ ,  $p = 0.083$ ) in this model, thus the null hypothesis is retained.

The null hypothesis is retained. Model 4 contained the predictor variable of total number of years as a superintendent and the focus outcome variable of 2017 PARCC Grade 5 ELA/L district scores. This model also utilized six control predictor variables of percentage of faculty with advanced degrees, percentage of students on free and reduced lunch, faculty attendance percentage rate, English language learner percentage rate, student chronic absenteeism district rate, and district percentage of classification or special education rate. Model 4 accounted for 29.5% of the variance for the 2017 PARC Grade 5 ELA/L district scores. Three of the seven predictor variables were statistically significant with the best predictor of Grade 5 math performance being the percentage of faculty with advanced degrees. Also significant was the percentage of students on free and reduced lunch (negative relationship) and faculty attendance rates. Total number of years as a superintendent was not a statistically significant predictor variable ( $B = 0.029$ ,  $p = 0.634$ ) in this model, thus the null hypothesis is retained.



### **Research Question 3:**

What is the relationship between New Jersey public school superintendent longevity and student achievement as measured by 2017 Partnership for Assessment of Readiness for College and Careers (PARCC) Algebra 1 when controlling for school and student characteristics?

No statistically significant relationship exists between a New Jersey school superintendent's length of time in a school district and student academic achievement, as evidenced by the 2017 PARCC scores in Algebra 1 when controlling for school and student characteristics.

The null hypothesis is retained. Model 5 contained the predictor variable of superintendent years in the district and the focus outcome variable of 2017 PARCC Algebra 1 district scores. This model also utilized six control predictor variables of percentage of faculty with advanced degrees, percentage of students on free and reduced lunch, faculty attendance percentage rate, English language learner percentage rate, student chronic absenteeism district rate, and district percentage of classification or special education rate. Model 5 accounted for 32.1% of the variance for the 2017 PARCC Algebra 1 district scores. Four of the seven predictor variables were statistically significant including the focus predictor variable of superintendent years in the district. The best predictor of Grade 10 ELA/L performance was the percentage of faculty with advanced degrees. Also significant was the percentage of students on free and reduced lunch (negative relationship) and faculty attendance rates. Superintendent years in the district was a statistically significant predictor variable ( $B = 0.122$ ,  $p = 0.050$ ) in this model, thus the null hypothesis is rejected.

The null hypothesis is retained. Model 6 contained the predictor variable of total number of years as a superintendent and the focus outcome variable of 2017 PARCC Algebra 1 district

scores. This model also utilized six control predictor variables of percentage of faculty with advanced degrees, percentage of students on free and reduced lunch, faculty attendance percentage rate, English language learner percentage rate, student chronic absenteeism district rate, and district percentage of classification or special education rate. Model 6 accounted for 31.3% of the variance for the 2017 PARCC Algebra district scores. Three of the seven predictor variables were statistically significant with the best predictor of Grade 10 Algebra performance being the percentage of faculty with advanced degrees. Also significant was the percentage of students on free and reduced lunch (negative relationship) and faculty attendance rates. Total number of years as a superintendent was not a statistically significant predictor variable ( $B = 0.079$ ,  $p = 0.194$ ) in this model, thus the null hypothesis is retained.

#### **Research Questions 4:**

What is the relationship between New Jersey public school superintendent longevity and student achievement as measured by Spring 2017 Partnership for Assessment of Readiness for College and Careers (PARCC) English Language Arts/Literacy 10 when controlling for school and student characteristics?

No statistically significant relationship exists between a New Jersey school superintendent's length of time in a school district and student academic achievement, as evidenced by the 2017 PARCC scores in English Language Art/Literacy 10 when controlling for school and student characteristics.

The null hypothesis is retained. Model 7 contained the predictor variable of superintendent years in the district and the focus outcome variable of 2017 PARCC Grade 10 ELA/L district scores. This model also utilized six control predictor variables of percentage of faculty with advanced degrees, percentage of students on free and reduced lunch, faculty

attendance percentage rate, English language learner percentage rate, student chronic absenteeism district rate, and district percentage of classification or special education rate. Model 7 accounted for 25.6% of the variance for the 2017 PARC Grade 10 ELA/L district scores. Three of the seven predictor variables were statistically significant with the best predictor of Grade 10 ELA/L performance being the percentage of faculty with advanced degrees. Also significant was the free and reduced lunch percentages (negative relationship) and faculty attendance rates. Superintendent years in the district was not a statistically significant predictor variable ( $B = 0.109$ ,  $p = 0.094$ ) in this model, thus the null hypothesis is retained.

The null hypothesis is retained. Model 8 contained the predictor variable of total number of years as a superintendent and the focus outcome variable of 2017 PARCC Grade 10 ELA/L district scores. This model also utilized six control predictor variables of percentage of faculty with advanced degrees, percentage of students on free and reduced lunch, faculty attendance percentage rate, English language learner percentage rate, student chronic absenteeism district rate, and district percentage of classification or special education rate. Model 8 accounted for 24.8% of the variance for the 2017 PARC Grade 10 ELA/L district scores. Three of the seven predictor variables were statistically significant with the best predictor of Grade 10 ELA/L performance being the percentage of faculty with advanced degrees. Also significant was the free and reduced lunch percentages (negative relationship) and faculty attendance rates. Total number of years as a superintendent was not a statistically significant predictor variable ( $B = 0.060$ ,  $p = 0.346$ ) in this model, thus the null hypothesis is retained.

#### **Research Question 5:**

What is the relationship between New Jersey superintendent longevity and district faculty mobility as evidenced by the 2017 School Performance Report faculty mobility rate percentage

when controlling for school and student characteristics?

No statistically significant relationship exists between a New Jersey school superintendent's length of time in a school district and district success, as evidenced by the 2017 district faculty mobility rate when controlling for school and student characteristics.

The null hypothesis is retained. Model 9 contained the predictor variable of superintendent years in the district and the focus outcome variable of 2017 faculty mobility rate district percentage. This model also utilized six control predictor variables of percentage of faculty with advanced degrees, percentage of students on free and reduced lunch, faculty attendance percentage rate, English language learner percentage rate, student chronic absenteeism district rate and district percentage of classification or special education rate. Model 9 was not a statistically significant model and could not account for any of the variance of the focus outcome variable of 2017 faculty mobility rate. Superintendent years in the district was not a statistically significant predictor variable ( $B = 0.087$ ,  $p = 0.249$ ) in this model, thus the null hypothesis is retained.

The null hypothesis is retained. Model 10 contained the predictor variable of total number of years as a superintendent and the focus outcome variable of 2017 faculty mobility rate percentage. This model also utilized six control predictor variables of percentage of faculty with advanced degrees, percentage of students on free and reduced lunch, faculty attendance percentage rate, English language learner percentage rate, student chronic absenteeism district rate, and district percentage of classification or special education rate. Model 10 was not a statistically significant model and could not account for any of the variance of the focus outcome variable of 2017 faculty mobility rate. Total years as a superintendent was not a statistically

significant predictor variable ( $B = 0.089$ ,  $p = 0.227$ ) in this model, thus the null hypothesis is retained.

## **Conclusions and Discussion**

This study consistently found that superintendent experience as measured by years in a school district and total number of years of experience did not have a direct impact on 2017 PARCC scores at multiple grade levels with the one model exception of years of experience as a superintendent in district and 2017 PARCC Algebra 1 scores, which was a significant relationship. It may be that the PARCC results were not precise enough to detect the influence of the superintendent on the academic success of students or that the tests were only a snapshot of student academic achievement and cannot be relied upon to give a comprehensive academic assessment of a student's performance. They have never been validated as a measure of administrator effectiveness at any level. Although a direct link between the superintendent was hard to detect in this research, the indirect influences can be seen from this study in the impact of the socioeconomic influences on PARCC scores and the significant link between identified characteristics of teachers with advanced degrees and faculty attendance rate and the impact on student achievement. Understanding this, the hiring of qualified educational professionals to lead students is essential. Identifying an effective recruiting process will allow school districts to have a deeper pool of teaching candidates to select from for open positions. Superintendents influence negotiations and the support for advanced degrees is not only manifested in hiring, but is manifested in policies that support attainment of advanced degrees to improve student outcomes. Superintendents influence teacher attendance through policy and practice and developing a climate that emphasizes good attendance can contribute to higher attendance rates and improved academic achievements of students. There is very limited research on the impact

of superintendent experience on the student achievement levels of students. Waters and Marzano (2006) in their research work, *School District Leadership That Works: The Effect of Superintendent Leadership on Student Achievement*, a working paper, identified a significant relationship between the experience of a superintendent and student outcomes in their meta-analysis. The researchers indicated, “Two studies that we examined reported correlations between superintendent tenure and student academic achievement.” Other studies by Metcalfe (2007), Mendoza-Jenkins (2009), and Plotts (2011) all examine the impact of the superintendent on the outcome of student achievement with mixed results. Expanding upon this ancillary finding from Waters and Marzano, this research took into consideration other research and looked at multiple grade levels of the educational experience and incorporated both stability within a school district and overall experience of a superintendent.

In comparison to Waters and Marzano (2006), there was limited success at rejecting the null hypothesis for most models in this study, but there was confirmation that superintendent years in the district is a statistically significant influencer of Algebra 1 scores. Plotts (2011) indicated in his results that there was a significant relationship between superintendent longevity and third grade New Jersey Assessment of Skills and Knowledge Language Arts test results, which is contrary to this research that indicates no significant correlation between academic outcomes in the primary grades and superintendent longevity. One similarity of the research is the fact that the control variable of free and reduced lunch percentages were significant predictors of the success rates of students and districts on the state approved assessments that were administered. Previous studies and educational articles from Perry & McConney (2003), Lee & Wong (2004), Plotts (2011), and Tienken (2011, 2016, 2019) have indicated that socio-economic status has consistently been a significant predictor of students’ academic performance

and this study supports the theory that community and family factors have significant impacts on student academic success. With beta scores ranging from ( $B = -0.254$ ,  $p = 0.030$  to  $B = -0.373$ ,  $p = 0.001$ ), the variance of the outcome variable explained by free and reduced lunch percentages ranged from 6.45% to a high of 13.91% of the PARCC assessment scores for the district. Free and reduced lunch was the second strongest predictor variable in this study.

The strongest predictor of district academic success on the 2017 PARCC assessment in eight of the significant SPSS models was the percentage of faculty with advanced degrees. Consistently between models this control predictor variable was the strongest influencing factor to academic success. Beta scores ranged from  $B = 0.347$  to  $B = 0.420$ , explaining between 12.04% and 17.64 of the variance of the specific outcome variable of PARCC assessment score with significance levels of  $p = 0.000$ .

The third strongest predictor variable of academic success was the faculty attendance rate percentages of the sample districts included in this research. Again, research is limited in the specific area of teacher attendance rates impact and relationship on student academic success. Studies that focus on teacher characteristics sometimes included teacher attendance rate as a predictor variable, but this research is limited in nature. Castellane (2004) was one researcher who included this variable as a teacher characteristic; his study determined that there was no statistically significant relationship between the attendance rate of teachers and student academic outcomes. Contrary to this research, faculty attendance indicated as a consistent positive and had a statistically significant relationship on 2017 PARCC scores at multiple grade levels in this research. Eight of ten models in this study identified faculty attendance rate significant with each model containing an outcome variable of a 2017 PARCC score indicated that there is a significant relationship between faculty attendance and student outcomes with a beta score

ranging from  $B = 0.156$  and  $p = 0.016$  to a high beta score of  $B = 0.223$  and a significance of 0.000. This research supports the positive correlation between these variables, but takes it a step further with a statistically significant result that a more present faculty can have a positive influence on student academic scores as evidenced the 2017 PARCC scores at the grade levels selected for this research.

The focus variable of superintendent years in district was the only focus predictor variable that was determined to be statistically significant in this research. Model 5 analyzed the impact of superintendent years in the school district and the relationship to the 2017 Algebra 1 district level scores. In this model the predictor variable was statistically significant ( $B = 0.122$ ,  $p = 0.050$ ), explaining 1.48% of the variance of the outcome variable of 2017 PARCC Algebra 10 district level score. This beta score and significance level indicates that years of experiences in the district did have a positive impact on the district scores in the sample K–12 grade school districts.

### **Recommendations for Policy and Practice**

The results of this study presents important information to assist policy makers, boards of education, the Department of Education, and state leaders to the importance of continuity and consistency in the district leadership of the educational process. This study can be utilized to support the process of boards of education and assist them in the recruiting, hiring, and retention of qualified school district leaders for maximum school district efficacy. The outcomes of this research have shown that school district leadership does matter and in one model the experience of the district superintendent was proven to be a statistically significant relationship to student academic outcomes. As we view this significant result, it cannot be ignored that the three most



significant factors leading to academic success are community and classroom related variables as has been indicated in previous studies.

As a result of this research, it can be recommended that the four significant variables identified in this research be studied further with a specific focus on the superintendent experience variable of years in a school district as a main research idea. As identified by Fullan (2006), there are seven core essential elements for effective change in an organization and two of these points are directly related to the ability of a school leader to have the time and capacity to implement educational programming. Having the ability to engage the organization at multiple levels or “tri-level engagement” and having the time to be persistent and flexible to staying the course are both key elements that would assist district superintendents in creating more effective organizational structures.

Three main predictor variables were present in multiple models and each was significant in the influence on PARCC assessment scores. The second most significant variable was the socioeconomic status of students on their academic success. The community social impact variable has been clearly identified in the research as a consistent major influence on students’ success in schools. Although there may be few ways to increase the economic stability of these students, examining school to home programs, adult and family support programs in district, and mental and physical health services for students may be some possible ways to positively influence the socioeconomic status of impacted families. Social program implementation into school districts has been slow to evolve, but as research has indicated, this social impact is often a significant determiner of school success for students. Schools and local health services providers need to actively promote a collaborative effort to expand in-district services to supplement the lack of opportunity to engage these needed services in off school hours for

students. Professionally developing staff to the social-emotional needs of students can be a more pervasive way to positively impact the student academic experience in schools. As part of this process, having a better understanding of the social-emotional impacts of society on students will assist public school staff to recognize struggling students, refer them to the proper supplemental services, creating a more comfortable and positive experience for these students. School districts personnel should review their enrollment procedures to identify any deficiencies in the process that would hinder school district staff from identifying families that may be in need of social services as a supplemental service to the free and appropriate public education (FAPE). Having better screening services may allow families to engage the social services needed before the student experiences academic crisis. Although having major impacts on the outside social variables that affect students and families may not be a reality for school districts, better identification, assessment, and referrals to services may assist students in addressing essential basic needs to allow them to be more focused on academics without the outside social influences.

One conclusion that can be understood from this research is that teacher characteristics have a positive influence on student academic success as evidenced by district state assessment scores. Teacher characteristics have been identified in a number of studies as being statistically significant when determining academic success. Understanding this, the hiring of qualified educational professionals to lead students is essential. Identifying an effective recruiting process will allow school districts to have a deeper pool of teaching candidates to select from for open positions. A complete review of the hiring process with the human resources department and the school administration could identify any procedural weaknesses in the identification of qualified candidates, including issues with the process of interviewing candidates. Once candidates are effectively identified, the district leadership should have a developed and outlined orientation

and indoctrination program for staff to assist them to acclimate to the environment of the district with clear expectations and an understanding of all procedures of the district.

The strongest predictor of academic success of student in this research was the percentage of faculty with advanced degrees. In all eight significant models, the strongest predictor of district success on the 2017 PARCC assessment was the percentage of faculty with advanced degrees. As a result of this statistically significant result, it can be suggested that through the process of hiring candidates, an essential aspect of credentials review should be the degree attainment of potential candidates. To further delineate motivated candidates, the current degree level should not be the only factor reviewed, but through the vetting process the motivation to further their education as a process to continue to develop their knowledge, skill set, and improve their classroom effectiveness. In addition to the degree level of potential faculty candidates, an effective professional development plan for each district should be implemented to assist new faculty to gain valuable skills and knowledge to improve classroom teaching techniques. An essential component for boards of education to consider is the opportunity for teachers to further their education at the graduate degree level as part of the employment benefits for staff. Understanding that advanced degrees of faculty have a positive influence on academic success, it would benefit school districts to have fair reimbursement policies and practices for staff to allow them to gain new experiences and information to assist them in the effective delivery of the curriculum for students. There are multiple opportunities to gain graduate degree credit and having the flexibility to offer in-house degree programs or hosting cooperative programs with universities may be a cost effective way to offer professional development to staff at a more local venue. Providing opportunities for staff to continue to be

lifelong learners and attain advanced degrees is a task that would be indicated as important to the success of students and to school districts as a result of the outcomes of this study.

As indicated in this study, the more often the regular teacher is in the classroom the better the students do on state assessments. The faculty attendance percentage rate is a teacher characteristic that allows for increased continuity in the classroom and to support this theory, school districts should make good attendance a priority. Developing reward programs for good attendance is essential to highlighting the importance of being in school each day.

Administrative teams should develop a consistent message that is often visited at the departmental level and at the district level during faculty meetings. The endorsement of healthy living activities is a recommendation that could assist staff in developing a plan to increase their healthy habits that may result in better attendance rates. Partnering with district health professionals and the district health insurance provider may be an opportunity to not only increase attendance, but is an opportunity to lower healthcare costs for employees and the district. An important aspect of developing a community that values good attendance is developing a welcoming, supportive culture for staff who are excited about coming to work each day, understand they have a voice within the district, and are valued by the administration and board of education. Employees who feel they are valued by their employer will be more vested in the district and may have improved attendance which can lead to better academic success by the students.

Creating stability and continuity at the district administrative level has been identified as being significant to Algebra 1 district scores. According to Fullan's theory on effective organization change, boards of education, department of education policy makers, and state legislative leaders should gain a better understanding of the most effective ways to improve

educational programs and as part of the improvement process should recognize the importance of sustainable district leadership as a lynchpin of the improvement process. This research supports the idea that there can be a positive influence of longevity of the superintendent on the academic success of students and to create a culture of stability and continuity, boards of education, district staff, and the superintendent should build a collaborative, supportive, and shared vision that will allow the district to thrive and move forward in a positive manner. To allow for this collaborative environment, the key stakeholders must discuss contractual language for the superintendent that will allow the district leader to implement a long-term strategy for district improvement and will not impede the process by changing members of boards of education or political influences. One recommendation would be to implement a policy and procedure to address concerns about political influences on the employment of the district leader including protections for superintendents to neutralize agenda driven political attacks.

Internal recruitment and training of administrators is a chance to increase the opportunities to build collaborative relationships in schools and could allow for a strengthened relationship between boards of education and locally trained district leaders. This process allows for a longer term relationship building opportunity and in many cases removes the ‘unknown entity’ issues that accompany a hire outside the district. Developing in-house leadership opportunities and collective bargaining agreements that provide for continuing education for aspiring district leaders is a recommendation for boards of education. It is recommended that the department of education investigate opportunities to provide professional development for faculty to gain valuable knowledge and to assist them in achieving the background and experiences to apply for administrative certificates and or school administrator certification. Providing these opportunities in a regional format would allow staff to become certified without

the extensive travel that may be needed to get the graduate level academic work for certification. Increasing online professional development opportunities is a convenient way for staff to continue to be actively employed and get the education needed for state certifications.

Recruitment from within the district shortens the learning curve for leaders, allows for an opportunity to have continued relationship building, and can assist in the needs assessment phase of organizational change as they are more familiar with the school district, the staff, and the educational community of the school district.

In summary, district level PARCC scores can be increased by understanding the factors that positively influence the academic success of students. Student achievement can be increased by developing consistency in the district leadership level by allowing superintendents to create a culture of collaboration, develop educational improvement programs and needs assessments of program implementation by having longer terms of tenure within the district. Continuity of effective district leaders will reduce staff concerns about a cyclic, ever-changing vision for a school district and will allow for the time to implement improvement programs by allowing the “flexibility and persistence to stay the course” as indicated by Fullan (2006) in implementing effective organizational change. Addressing community influences on children by developing assistance programs for children and families will be an important aspect of developing a supportive educational environment for students that will reduce the impacts on social-emotional or socioeconomic influences on academic outcomes. Consistently within the research, SES impacts are significant influencers of academic outcomes and districts that develop effective screening processes and implement other programs to help families address these issues will see better academic outcomes for these affected students. Understanding that teachers make a difference on student outcomes is important and this study supports the suggestion that better

educated teachers who are in school more often results in the improvement of academic success in students. This study has shown how the influencing factors identified in this research study have an impact on student outcomes and recognizing these factors will allow schools to better address the needs of the students, the staff, the district, and the overall school community.

### **Recommendations for Future Research**

The results of this research have implications for future research and policy making in the educational realm. The following recommendations for future research are based on the findings and limitations of this study.

This research only included 219 schools districts that was reduced to 189 sample kindergarten through Grade 12 school districts. Future studies may want to expand upon this sample size and include the approximately 600 local public school districts in New Jersey. This expansion of the sample size may influence the outcomes of academic success resulting from district leadership tenure as it will examine smaller K–6 and K–8 school districts in the state who may or may not have a harder time creating district leadership stability based on entry level positions in these smaller districts. There is also the recommendation of increasing the sample size by expanding this K–12 sample to adjoining states who record the same data points as this research study.

It is recommended that the control variables be expanded to include additional social and community impacts on student academic success. This research included SES, language impacts and chronic absenteeism, but could be expanded to include student mobility and dropout rates and other possible impacts on student academics. The inclusion of these variables may help further explain the variance of the student academic outcomes. Additional recommendations for

future research would be to focus on the significant variables from this study that are less researched and inclusive of the impact of teacher characteristics on academic outcomes.

In this study the state of New Jersey was utilized to formulate the sample size. It is recommended that future research expand to neighboring states, but in doing so, also includes the designation of rural, suburban, or urban as a district classification to examine the differences between these public school districts. This examination would include the comparison of average longevity tenure of each classification to determine if there are regional issues with the longevity of district leaders. This recommendation would also allow for a comparison of average years of tenure of superintendents between regionalized states. This information would be helpful to aspiring district leaders.

This was a quantitative study that utilized the publicly available data to examine the impact of superintendent longevity on student success and faculty mobility rate. To examine this relationship in a deeper manner it is recommended that the structure of this research be changed to utilize a qualitative or mixed method approach to study the relationship and impact of longevity on student academic success. Utilizing surveys or interviews of school district leaders may create more in-depth understanding of district health or board–superintendent relationships that may impact longevity or environmental climate. These factors could more deeply explain the impediments to a cohesive district mission and vision. Using a mixed method approach would allow a future researcher to examine the core values of Fullan’s theory of organizational change on the current status of the sample districts. Comparing the current practices of the districts to the outlined recommendations of Fullan theories of change can help district leaders develop a more functional plan for organizational change.



Future research should examine later versions of the state PARCC assessment or possibly shift the focus to the scholastic aptitude test or the nationally administered National Assessment for Educational Progress (NAEP) so that regional comparisons of data and results can be made between states and by state departments of education and policy makers. This suggestion would also limit the reliability and validity issues that are faced by some state educational agencies. This research basis could be utilized to examine the impact of superintendent longevity and teacher characteristics on other state assessments including the possibility of utilizing the Smarter Balance based assessment.

Recommending expanding variables to include the new teacher evaluation system in New Jersey may allow researchers to make comparisons between specific teacher characteristics, the rating system for evaluations and student outcomes. Examining the relationship between the classroom teacher, the specific qualities of the teacher, the evaluation scores for the instructor, and the resulting student academic outcomes could further advance the research basis for improving student academic achievement in schools and identify important qualities of the teacher for hiring practices.

A recommendation for future research would include expanding the examination of teacher characteristics and their impact on student success. As there were two statistically significant control variables in this study that were consistent through most models, it is important to further explore the impact of additional teacher qualities on student success. Specifically, the variables of teachers with advanced degrees and teacher attendance rates should be studied further as these control variables were statistically significant in all eight models that focused on 2017 PARCC scores. Although these teacher characteristic variables were not the focus variables, the outcomes showing significant influences on student academic achievement

warrants a deeper analysis of these influences. It is important to examine the specifics of the advanced degree of the instructor as this could further explain the importance of a general advanced degree or if the advanced degree has to be in the certification area of the teacher. A difference in these two advanced degrees could be identified in future research. Additional teacher characteristic variables to be studied may include average years of teaching, average and starting salary of districts, teacher–student ratios, and administrator–student ratios. Looking more closely at the importance of teacher characteristics and conducting additional research in these areas will allow a more in-depth analysis of the academic impact of highly qualified teachers in the classroom. This examination would allow boards of education and administrators to develop a candidate qualities informational sheet to assist in the recruitment and hiring of district personnel.

### **Summary**

As a result of this research, four predictor variables were identified as having a statistically significant impact on district test scores. Most significant were three control variables: percentage of faculty with advanced degrees, percentage of students on free and reduced lunch, and faculty attendance rates for districts. It is clear that these teacher characteristics, along with socioeconomic status, have significant impacts on students' abilities to be successful on state administered tests. Understanding this, it is imperative that school districts focus on the community influences and impacts that contribute to academic strains for students so that these issues can be addressed and students can experience greater academic success. It may seem as though the PARCC may be more accurate at measuring the SES of students rather than their true academic levels and curricular understandings.

This research supports the significant impact that well trained and highly qualified teachers can have on the academic outcomes of students. Teacher quality is essential to developing an effective classroom environment for students. This research supports the idea that boards of education and administrators must be vested in the process of recruitment, vetting, and hiring of dedicated educational professionals. An effective hiring process will lead to a more effective educational environment with increased student academic outcomes. Across the United States there has been a recognized shortage of teachers in math and science specialty areas, which presents a challenge for school district leaders. Expanding the recruitment process from the traditional newspaper or online advertisements may be of benefit to school districts experiencing small applicant pools as this research supports the concept of highly effective teachers creating classroom environments that produce more successful results on state level assessments. As a result of this study it was determined that teacher characteristics and access to good teachers results in higher assessment scores.

This study focused on the longevity of superintendents and its impact on students' assessment scores at the district level and the mobility rate of teachers. Although not statistically significant on most models, one model indicated a statistically significant outcome and this should be noted. In line with research conducted by Waters and Marzano (2006), the length of tenure of the superintendent within the district has a positive impact on PARCC assessment scores in Algebra 1. This finding supports the need to focus on creating better relationships between boards and school district leaders and for increasing stability and continuity within the ranks of superintendent to have a positive impact on student academic outcomes. Assisting boards of education and policy makers in state agencies and local communities to value the experience and background of superintendents is essential to creating school district

environments that value relationships, allow for the development of long-term district improvement plans, and allow for constant assessment and adjustment of the programs. Allowing superintendents to develop deeper levels of engagement, be flexible, persistent, and stay the course will result in more effective educational environments.

It is evident that the position of superintendent has evolved tremendously over the past 20 years. Additionally, the call for accountability has increased because of numerous factors including the increased costs of providing a free and appropriate educational experiences for students. As the position has evolved, the longevity of superintendent has decreased and this instability has created a lack of continuity leading to insufficient educational program implementation. This research provides evidence that the position of superintendent is an important resource for school leaders, including administrators, to help them assess and develop effective professional development programs and congruent educational programs that will lead to increased student success.

The research completed in this study can contribute to future policy making and the recommendations provided for policy and practice can assist current school leaders, boards of education, state agencies, and state departments of education with the data and information needed to address the continuing issues faced by school districts with shortening length of leadership tenure and continuing revolving doors of district superintendents. Utilizing this information and recommendations can lead to an increase in student academic performance and district level state assessment success.

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