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A Study of the Effects of Charter Schools on Achievement, Attendance and Selected Mitigating Factors in a Midwestern State's Small Urban School Districts

Frederick C. Clarke

Western Michigan University, fclarket@gmail.com

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A STUDY OF THE EFFECTS OF CHARTER SCHOOLS ON ACHIEVEMENT,
ATTENDANCE AND SELECTED MITIGATING FACTORS IN A
MIDWESTERN STATE'S SMALL URBAN
SCHOOL DISTRICTS

by
Frederick C. Clarke

A dissertation submitted to the Graduate College
in partial fulfillment of the requirements
for the degree of Doctor of Philosophy
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Doctoral Committee:

Walter L. Burt, Ph.D., Chair
Gary Miron, Ph.D.
Dennis McCrumb, Ed.D.

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Frederick Clarke, Ph. D.

Western Michigan University, 2015

The purpose of this study was to determine whether students attending urban charter schools did better, or worse, than students attending traditional public schools, over a five-year time period, in a Midwestern state. Thirty-one urban school districts affiliated with a Midwestern Urban Education Association, and corresponding charter schools, located within these Midwestern school districts, were selected to participate in this study.

This study utilized a quasi-experimental research design and was supported by the earlier research of Dr. Gary Miron and Dr. Jerry Horn from Western Michigan University (Miron & Horn, 2000; Miron & Horn, 2002; Miron, 2005) and Dr. Scott Imberman from the University of Houston (Imberman, 2007; Imberman, 2011).

To conduct this study, data were collected from 145,183 students that attended 772 buildings in 31 school districts that served K-8 students in traditional Midwestern public schools, along with data from 46,480 students attending corresponding 88 charter schools located within these small urban school districts. This Midwestern state's department of education provided data for students in grades 3 – 8 that attended traditional school districts, and corresponding charter schools, during the 2008 to 2012 school years.

Four research hypotheses were tested based upon the identified purposes of study. A t-test was used to determine whether statistically significant differences existed between the two comparison cohorts. In addition, an Analysis of Variance (ANOVA), was used to determine whether ethnicity, gender, and SES influenced the differences between the performances of students in the two comparison cohorts.

Findings in this study indicated that students having transferred to charter schools from the identified contiguous traditional small urban school districts performed significantly less in mathematics and reading, coupled with having lower attendance rates, over a period of three consecutive years. In the fourth year, however, charter school students out performed, and had greater attendance rates, than students attending the identified traditional small urban district schools. Additionally, this study also found that ethnicity and poverty level influenced student performance when students transferred to a charter school. Gender, on the other hand, had little or no influence on student performance after having transferred to a charter school. However, a word of caution should accompany these conclusions. There may be other factors that could contribute to these findings (e.g., reduction in school buildings' population sizes, or "pyramidal" effects, and student persistence).

The study concluded by providing four recommendations to guide future research studies.

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Frederick C. Clarke

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CHAPTER I

INTRODUCTION

Throughout history, reforming education in America has been rooted in the conflicts associated with efficiency, equity, quality, and choice (Levin, 1990). The word “conflict” is associated with these issues because each is complicated by competing agendas that play out in the political arena. The political points of conflict surrounding these issues have shaped the way policy makers operate and respond as each conflict becomes the “hot topic” in the public discourse of voters. Often resulting from temporary compromises, policies are often set into motion until the next round of conflicts begin and the politics of the issue, again, heats up. This can take decades. The current Charter School movement in the identified Midwestern state is just such an example of temporary compromise resulting from repeated rounds of political debate over the points of policy conflict.

Over the past two decades, the primary focus in public education has been on measuring performance of student achievement in reading and mathematics. Increased accountability measures have put pressure on educational institutions to show gains and close achievement gaps (Barr, 2007; Betts & Tang, 2011; Bifulco & Ladd, 2006; Eberts & Hollenbeck, 2001; Gray, 2012; Hinojosa, 2009; Miron, 2005; Ni, 2012; Nisar, 2011; Winters, 2010). It would seem that increasing the pressure would improve achievement scores; however, since the report *A Nation at Risk* was released in 1983, student achievement in reading has remained stagnant (Sticht, 2008; Ornstein, 2010). This increase in pressure to adhere to state standards and follow federal regulations has resulted in more teacher complaints (Popham, 2001). Many feel they lack autonomy and

their creativity is being compromised by “teaching to the test” (Angrist, Pathak, Parag, & Walters, 2013; Barrow & Rouse, 2008; Eberts & Hollenbeck, 2001; Lubienski, Weitzel & Lubienski, 2009; Popham, 2001). The lack of results for reforming education through traditional schools has prompted states to pursue other forms of reform. Several educational pundits feel that the increased desire to look for an educational silver bullet has resulted in increased support for charter schools (Levy, 2010; Renzulli & Roscigno, 2005; Buras, 2011).

The charter school concept had its origins in the late 1980’s in Minnesota. A proposal by the American Federation of Teachers (AFT) President, Albert Shanker, laid out the concept for a new form of educational reform. Suggested as a strategy for avoiding the red tape and bureaucracy of running a school, the model utilized the theory behind the creation of a “charter” so innovative teachers could create unique programs to meet the needs of particular students (Levy, 2010; Renzulli & Roscigno, 2005). The term *charter* was coined in a conference paper by Ray Budde in 1974 which he later published in 1988. He suggested that schools should “set up an autonomous (and therefore performance-based) public school which students could choose to attend without charge. The intent is not simply to produce a few new and hopefully better schools; It is to create dynamics that will cause the main-line system to change so as to improve education for all students” (Budde, 1996, p.73).

Albert Shanker based his proposal on Budde’s theory of school district restructuring (Budde, 1996). The central idea behind this type of reform is to allow groups to identify how they hope to accomplish success in their newly formed school. Once the charter is granted, the school operates under much less regulation and oversight

than the traditional public school (Wells, Lopez, Scott & Holme, 1999; Goodman, 2001). According to advocates, a charter school, out from under the umbrella of collective bargaining, can set teacher salaries and reward systems (Levy, 2010; Renzulli & Roscigno, 2005; Buras, 2011). Some critics believe that charter schools may actually help expand the pool of teachers because many burn out in the public schools and drop out of teaching altogether (Eberts & Hollenbeck, 2001; Sass, 2006). A charter school could convince teachers to come back into the classroom with less of a bureaucracy (Goodman, 2001). Finn, Manno and Vanourek (2006) believe that charter schools are the most robust form of educational reform due to their "... potential to renew and redefine public education in the United States" (p. 14). Critics of the movement, however, have expressed concerns ranging from fear that charter schools could cause re-segregation of public school students to apprehension that this approach would skim the cream of the crop students from traditional public schools (Levy, 2010; Frankenberg, Siegel-Hawley & Wang, 2011; Buras, 2011; Betts & Loveless, 2005; Conte, 2002; Mishel, 2004).

When comparing the implementation rates of charter schools, the selected Midwestern state chosen for this study experienced the most rapid growth of charter schools in the nation over the past decade (National Center for Educational Statistics, 2014). A large portion of this growth has occurred in areas that are contiguous to urban school districts. Many of these school districts are affiliated with a selected Midwestern urban school district association which advocates for urban school districts outside of the larger cities in the selected Midwestern state. At the time of this study, there were 31 school districts in the selected Midwestern urban school district association consortium. The association's mission is to serve as an advocate for member districts to ensure quality

educational programs for all students. The reader is referred to Appendix A for a listing of school districts in the selected Midwestern urban school district association located within the identified state.

Research on the efficacy of charter schools has shown mixed results. The majority of the research studies typically focus on comparing charter and traditional school achievement scores as determined by state or nationally normed standardized tests. These comparison studies typically illustrate the variance in test scores and equate relative success or failure based on whether they are significantly different. Consequently, there is a paucity of research that compares other success factors (i.e., attendance, discipline, referral to special education, attitudes, or college degree attainment, etc.) Only a few studies have examined attendance as an indicator determining the efficacy of charter schools (Hinojosa, 2009; Imberman, 2007; Angrist et al., 2013), and fewer still have included discipline (Imberman, 2011). This study, in comparison to previous studies, attempted to bring more clarity to the efficacy of charter schools by comparing the academic achievement and attendance of students that attended traditional public school districts to those students that attended corresponding contiguous charter schools in the selected Midwestern urban school district association districts.

Purposes of Study

The overall purpose of this study was to provide an answer to the following question: To what extent, if any, do urban charter schools situated in a large Midwestern region outperform students in regular contiguous Midwestern urban school district association school districts in such areas as student achievement and attendance?

Correspondingly, this study had four sub-purposes that were addressed. They were, specifically:

1. Do children who attend charter schools do better in mathematics than corresponding students in contiguous selected Midwestern urban school district association schools?
2. Do children who attend charter schools do better in reading than those students in corresponding contiguous selected Midwestern urban school district association schools?
3. Do children who attend charter schools have higher attendance rates than students in corresponding contiguous selected Midwestern urban school district association schools?
4. Does ethnicity, gender, or poverty level serve as a mitigating factor that affects student performance in identified school indicators (e g., achievement and attendance)?

Statement of the Problem

As charter schools continue to grow in number, questions about their effectiveness also increase (Betts & Tang, 2011; Erickson, Larwin, & Irshwood, 2013; Hassel & Terrell, 2006; Hill, Angel, & Christensen, 2006). Several studies have concluded that charter school students fare better academically than public school students (Angrist et al., 2013; Center for Research on Education Outcomes, 2013; Hoxby & Murarka, 2009; Miron, 2004; Miron, 2005; Miron, Cullen, Applegate, & Farrell, 2007; Miron, Nelson, & Risley, 2002). Some studies even suggest that although students who attend charter schools initially perform worse than public school students, over time, they

begin to outperform, or do just as well, as public school students (Mead, 2006; Nisar, 2011). Several other studies have concluded that students who enroll in charter schools actually show no difference, or perform worse, on average, as students who attend regular public schools (Ballou, Teasley & Zeidner, 2006; Bifulco & Ladd, 2006; Booker, Gilpatric, Gronberg & Jansen, 2007; Eberts & Hollenbeck, 2001; Erickson et al., 2013; Hanushek, Kain & Rivkin, 2002; Hinojosa, 2009; Imberman, 2007; Imberman, 2011; Miron & Horn, 1999; Miron & Horn, 2000; Miron & Horn, 2002; Miron & Nelson, 2000; Miron, Coryn & Mackety, 2007; National Assessment of Educational Progress, 2005; National Charter School Research Project, 2006; Nelson & Hollenbeck, 2001; Ni & Rorrer, 2012; Resmovits, 2013; Winters, 2010).

The preponderance of research on the effectiveness of charter schools has focused primarily on student academic achievement in reading and mathematics. A few studies have investigated the impact of charter schools on student attendance (Hinojosa, 2009; Imberman, 2007; Imberman, 2011). Yet, there are still unanswered questions about whether charter school students do better than regular public school students when considering long term effects of cohort groups (Betts & Tang, 2008; Miron & Horn, 2002; Miron et al., 2002; Noblit & Dickson, 2001; Sass, 2006). Most charter schools tend to aggregate in close proximity to struggling urban school districts (Carr & Ritter, 2007; Hanushek et al., 2002; Winters, 2010), as in several urban school districts in the selected Midwestern state. In several states, the regulations governing whether to authorize the charter must consider factors such as proximity to lower performing school districts (Imbermann, 2007). Thus, since there are higher concentrations of failing schools in urban settings, it only stands to reason that the concentration of charter schools

will be found predominantly higher in urban schools than contiguous suburban and rural school districts.

This study helps to address these unanswered questions about whether statistically significant differences exist between charter schools in the selected Midwestern state and their corresponding contiguous selected Midwestern urban school district association schools. In addition, this study sheds light on the impact of charter schools in areas such as improved academic achievement and student attendance, and whether this design (i.e., Charter Schools) has lived up to its promise of providing positive alternative educational opportunities to students who have been attending some of the lowest performing schools in the selected Midwestern state.

Background of the Problem

The Midwestern state chosen for this study, as is the case of many states adopting charter school legislation, has allowed an alternative form of public education in an effort to improve its schools. Throughout the nation, there has been great interest in the implementation of charter schools for the same purposes for which the selected Midwestern state seeks. Public rationale for the interest in the development of this alternative approach to educating youth seems to be originating from the desire to create choice in school selection. The primary driving force, presumably, behind this movement is to create a higher quality of educational experience than is otherwise provided by the existing public school system. Evidence of the increased interest is indicated by state support for charter schools, which has increased steadily since Minnesota penned the first legislation in 1991 (National Center for Educational Statistics,

2014; Center for Research on Education Outcomes, 2013; National Assessment of Educational Progress, 2005).

From its original outset, the charter school movement has been polarized into advocates and critics when discussing the efficacy of this educational model. Advocates quote the research studies that indicate charter schools show greater improvement than traditional public schools. The studies that indicate more positive achievement gains than traditional public school students reviewed data collected from Massachusetts, Idaho, Colorado, Georgia and Wisconsin (Angrist et al., 2013; Ballou et al., 2006; Brodsky, Medler, & Schoals, 2006; Georgia Department of Education, 2007; Nisar, 2011). In contrast, those who question the efficacy of charter schools often quote the research conducted in New Jersey, North Carolina, Texas, Arizona and Utah (Barr, 2007; Bifulcio & Ladd, 2006; Booker et al., 2007; Hanushek et al., 2002; Hinojosa, 2009; Loveless, 2002; Nelson & Hollenbeck, 2001; Ni & Rorrer, 2012). Both positive and negative results in student achievement comparisons were found in studies collecting data in Connecticut, Michigan, New York, Delaware, Pennsylvania, Florida and Ohio (Betts & Tang, 2011; Center for Research Outcomes, 2013; Eberts & Hollenbeck, 2001; Miron, 2005; Miron & Horn 2000; Miron & Horn, 2002; Miron et al., 2002; Miron et al., 2007; Ni & Rorrer, 2012; Raymond, 2010, Sass, 2006; Winters, 2010).

Since the majority of charter schools tend to be located at or near urban environments (National Center for Educational Statistics, 2014), it would seem that the majority of research studies would also focus on urban environments. However, this is not the case. Only a handful of studies would be characterized as being conducted exclusively in an urban environment (Angrist et al., 2013; Barr, 2007; Betts & Tang,

2011; Henig, Holyoke, Lacireno-Paquet & Moser, 2001; Hoxby & Murarka, 2009; Imberman, 2011; Nisar, 2011; Raymond, 2010; Winters, 2010). With the increase in charter schools throughout the nation, and most notably in the selected Midwestern state, several questions should be put forward regarding their effectiveness and efficiency.

Urban school districts are affected by the charter school movement more so than non-urban school districts. With the uncertainty surrounding the relative impact of charter schools in the selected Midwestern state's school districts, studies that seek to determine the positive and negative implications of this alluring initiative are sorely needed. There is, however, a paucity of research in this area when considering the impact of school choice, particularly as it relates to the matriculation of students in charter schools, on a longitudinal basis, when considering comparative factors such as student achievement and attendance in comparison to traditional public school buildings.

The implementation of charter schools in the Midwestern state identified for this study, and throughout the nation, seemingly appears to be driven by a desire to improve failing school districts. Notwithstanding these noble claims, there is still much speculation about the intent of placing charter schools in close proximity to failing urban school districts. If the motivation behind increasing charter schools is centered on developing models that will ensure successful student outcomes in a different educational paradigm, then it seems apparent that after ten years or more, we should see evidence of improvements in student outcomes in these selected student measures. After all, policy makers have spent considerable financial and human resources on this social experiment and now is the time to determine whether we are experiencing evidence on the return of this significant investment by policymakers, the state department of education, and the

parents and students who made a conscious decision to attend these promising educational enterprises.

Theoretical Framework

Based on the research literature examined by this researcher, it can be anticipated that a significant relationship will occur between the various variables identified in this study. The research of Imberman (2011) shall serve as the theoretical framework.

Figure 1 provides a sample of standard deviations of reading scores of students that matriculated in charter schools after having transferred from a traditional public school.

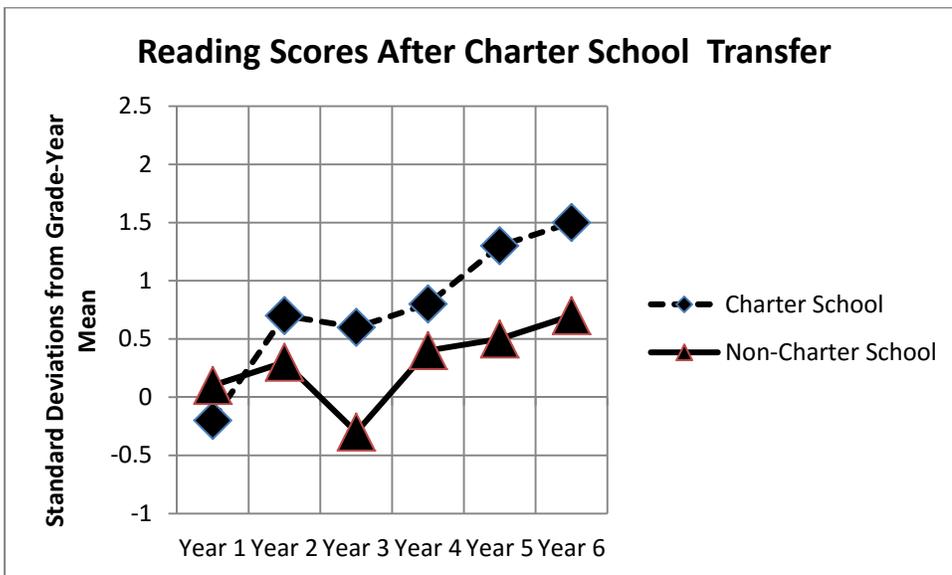


Figure 1. Sample graph showing standard deviations from the mean each year for collected data.

Note. The above Figure compares the attendance data of students in traditional public school with students in charter schools (Imberman, 2011).

The above graph illustrates that the relationship between reading scores of non-charter school students and charter school students are significantly different. The research of Imberman (2007) further supports an earlier study conducted by Miron (2005)

in which achievement scores of cohort groups of students attending charter schools were compared from fourth grade to sixth grade. In addition, the work also supports an earlier study comparing the effects of charter school attendance on achievement scores in New York City (Hoxby & Murarka, 2009). This study expands on the same conceptual framework by including an additional variable for attendance rate. Therefore, this study utilizes a framework that suggests there are other factors that can determine success. Unlike previous studies, which relied upon the utilization of cohort group means, this study will utilize individual student data for analysis and grouping.

Hypotheses of Study

This study addressed four hypotheses that were designed to determine whether there are statistically significant differences between charter and non-charter public school students when considering such factors related to academic achievement and school attendance. Four null hypotheses were identified in this study. They were:

H₀: There will be no statistically significant difference in the academic achievement of students who transfer to a charter school in grades four through eight as compared to students in the same grade level who remain in non-charter public schools on the Mathematics section of the selected Midwestern state's assessment in selected Midwestern urban school district association contiguous school districts over a five-year time period.

H₀: There will be no statistically significant difference in the academic achievement of students who transfer to a charter school in grades four

through eight as compared to students in the same grade level who remain in non-charter public schools on the Reading section of the selected Midwestern state's assessment in selected Midwestern urban school district association contiguous school districts over a five-year time period.

H₀: There will be no statistically significant difference in the attendant rates of students who transfer to a charter school in grades four through eight as compared to students in the same grade level that remain in non-charter schools in selected Midwestern urban school district association contiguous school districts over a five-year time period.

H₀: There will be no statistically significant difference in the performance of students on the state's Mathematics and Reading assessment scores and attendance rates when comparing the performance of students in selected Midwestern urban school district association school districts over a five-year time period, when examining those students that transferred between charter and non-charter schools when controlling for ethnicity, gender, or poverty.

Variables of Study

The two dependent variables used in this study are student achievement, as measured by the identified Midwestern state's assessment performance scores, and attendance rate. The explanatory variables are the type of public school attended (charter v. non-charter), ethnicity (Black, White, Hispanic, or Other), gender (female or male), and poverty level (poverty or non-poverty).

Methodology

The population studied is elementary age students enrolled in schools that fall within the boundaries of selected small urban school districts within this Midwestern state. The focus of this study is on students enrolled in both contiguous charter and non-charter schools. The primary sampling units (psu) are fourth through eighth grade students that attended selected small urban school districts, as well as students who left these districts and later attended a contiguous public charter school within the selected small urban school district boundaries. The study further delineates the data into fourth through eighth grade students over a five-year time period, including the 2008 to 2012 school years. Data were collected for students that attended the selected small urban schools by utilizing the Midwestern state's Department of Education's Center for Educational Performance and Information (CEPI) databases. Anonymous student data were requested from CEPI to determine achievement and attendance rates of students who attended the selected small urban school districts, as well as those students who transferred out of these districts to attend contiguous public charter schools, from 2008 to 2012.

Mathematics and reading achievement scores from the Midwestern state's assessment were utilized to assess and compare student performance over time. Student attendance rates were calculated based on the number of days students were absent during each school year. Ethnographic, gender, and poverty identifiers were also included in the data set for purposes of data analysis. Prior to any data collection, Human Subjects Internal Review Board (HSIRB) approval for the study was sought and received (Appendix H). To maintain confidentiality, the data were collected with the student ID

replaced with a randomly generated unique identifier in order to comply with Family Education Right to Privacy Act (FERPA) requirements. The risks to participants were negligible because the investigator relied upon CEPI's database, as this entity established safeguards to protect students' anonymity throughout the identified Midwestern state.

Data were analyzed to determine whether significant differences existed between student achievement (mathematics and reading) for each charter cohort group (first year after transfer, second year after transfer, etc.) and the corresponding selected Midwestern urban school district association contiguous school districts (between groups). In addition, statistical analyses were conducted to determine whether statistically significant differences existed between the two populations on such matters pertaining to attendance. In all statistical test applications, either the $p < .05$ level or the $p < .001$ level of confidence were used for determining statistical significance. For comparison of means (t-tests), the $p < .05$ level of significance was utilized. Due to sample size variance for determining the effects of mitigating factors (ANOVA), a more stringent level of significance was utilized. In order to reduce the potential effects of Type I errors due to unequal variances, the $p < .001$ level of significance was utilized. The null hypotheses were utilized if no significant differences were found. Likewise, the alternate hypotheses were utilized whenever means differed significantly.

Significance of Study

The charter school movement has prompted research studies seeking to determine the impact of this educational approach on improving educational opportunities for the nation's children (Betts & Tang, 2008; Betts & Tang, 2011; Erickson et al., 2013; Hill et al., 2006; Hassel & Terrell, 2006). Hundreds of millions of dollars were spent on this

initiative by the federal government during this time. Since the inception of charter schools in 1991, their numbers have increased rapidly, particularly in the identified Midwestern state (National Center for Educational Statistics, 2014). From 2001 to 2010, charter school numbers have increased by 185% throughout the nation (National Center for Educational Statistics, 2014). With one of the largest ratios of charter students to public school students, and when considering the fastest growing rate of charter school implementation over the past decade, the selected Midwestern state in this study appears to stand apart from other states and continues to move forward seeking legislation to expand charter schools (Associated Press, 2012). This unprecedented growth has been publicly justified by many who believe that charter schooling is the answer to failing schools (Arsen, Plank, & Sykes, 1999; Schultz, 2009). Yet, there has been a paucity of research to show whether charter schools improve the quality of education compared to traditional public schools.

If the ultimate goal of charter schools is to improve education in failing urban settings, it is critical that policy makers and legislators have research-based information to provide insight in their decision-making processes as they continue to move forward. Previous studies regarding charter schools have focused on overall performance of isolated groups based on snapshots in time, cohort studies, or panel studies (Hassel & Terrell, 2006). The majority of the research only focuses on reading and mathematics achievement to draw their conclusions about efficacy. This study, contrary to previous research studies, will address these deficiencies by providing additional data on attendance rates, in addition to reading and mathematics achievement. Decision makers will need a better understanding of the longitudinal effect on student achievement over

time once a student enrolls in a charter school. Although this study is limited in its scope, it will, however, provide insight into the ever-revolving issue regarding charter schools and its overall efficacy of addressing the educational needs of students in surrounding struggling coterminous school districts. This study will also provide policy makers with insights for developing criteria and indicators of success for charter schools. It will help to better understand the value, or corresponding shortcoming these policies may create. Meeting the educational needs of students, whether they are educated in traditional, or charter schools, will be of critical concern to both this state and nation over the ensuing decades (Arsen et al., 1999; Levy, 2010).

Delimitations of Study

Delimitation is defined as a specific variable or central phenomenon that narrows the scope of a study (Creswell, 2003). Identified delimitations establish the boundaries, exceptions, reservations, and qualifications inherent in a study. This study is delimited to the population of school districts identified as members of the selected Midwestern urban school district association, and the charter schools that are contiguous to those districts located within a Midwestern state.

The time frame from which data were collected is another delimitation. The study will utilize data from the 2008 through 2012 school years. Delimiting participating districts to selected Midwestern urban school district association school districts, and corresponding contiguous charter schools, is advantageous because it further reduces the variance that exists between states and their corresponding differences between state legislation and the methodology about how student achievement is gauged. Since the

study is delimited to one Midwestern state during a specific time frame, results will not be generalizable to other states.

This study will be further delimited by including charter schools that are demographically similar to the selected Midwestern urban school district association school districts and reside in close proximity to those districts. Therefore, the findings of this study will only be generalizable to these districts, and charter schools within this geographical area.

Another delimitation of this study is that it will only focus on the selected Midwestern state's assessment performance of fourth through eighth grade students in the selected Midwestern urban school district association school districts and the corresponding charter contiguous to these school districts. There were a greater number of charter elementary, or K–8 schools, as compared to high schools. Therefore, this study was delimited to schools that served students that were enrolled in grades four through eight.

Finally, the study is delimited by the types of methodologies chosen. A comparison of means across each grade level will not result in comparative data for each school year. This study utilized t-tests to determine if there were significant differences between students who attended traditional and contiguous charter schools. The study also utilized ANOVA to determine the interaction effects between mitigating factors and school type. Given the large size of the student population, there was no attempt to examine the effect selected demographic and conditional variables have on explaining the variations between students attending charter and traditional small urban schools.

Of necessity, this study is delimited to a five-year time frame and, consequently, will not make any inferences beyond this time period. Finally, this study was based upon the assumption that any and all information obtained through CEPI is factual and is representative of incidences that actually occurred within charter and non-charter school buildings.

Limitations of Study

According to Creswell (2003), a limitation is defined as a potential weakness of a study (Creswell, 2003). Therefore, this study was limited to students who attended the selected Midwestern urban schools affiliated with the association and corresponding charter schools within those same geographical boundaries. The study was further limited to student performance and attendance data, and did not include any other confounding variables that may impact student learning (Howley & Howley, 2004).

A situational variable for this study considered the inability of the investigator to control for student mobility or differences that existed between traditional and charter schools. Obviously, these differences may affect student results in many different areas (Miron, 2004). Due to the unique design of this longitudinal study, this study recognized that there were students that may have transferred several times between traditional and charter schools. Consequently, this study may under-estimate the impact of student mobility on student achievement and attendance in school.

The use of the state assessment results as a measure of student performance was another limitation of this study. At the time of this study, the identified Midwestern state's assessment elementary data were the most reliable measures made available to this researcher.

Student records were not selected based on the specific public school attended prior to transferring to a contiguous charter school. Thus, the assumption is that students typically attend charter schools within their neighborhood or other proximate area. The research design was another limitation because it was based upon yearly student achievement scores, rather than an overall average achievement score over the span of the study. Varying cut scores were determined each year by the selected Midwestern state's Department of Education. This process resulted in vast differences in cut scores from year to year.

Definition of Terms

Charter school—A public school operated independently of the local school board, often with a curriculum and educational philosophy different from the other schools in the system, while operating under the rules governing health, safety and civil rights (Brodsky et al., 2006; Budde, 1996; Greene, Forster & Winters, 2003; Hoxby & Murarka, 2009; Miron et al., 2007).

CHAPTER II

REVIEW OF THE RELEVANT LITERATURE

Methodological Issues of Charter School Research

A review of literature from 1990 to 2014 indicates that research on charter schools has been mixed or inconclusive. The research that tends to show the greatest positive or negative comparisons between charter and public schools were overtly reflective of the organizational affiliations of the researchers. Much of the earlier research was authored by those who were either advocates for or critics against charter schools. Similar studies using the same methodologies have resulted in differing results. Very few studies of charter schools have analyzed the specific aggregated growth data of individual students. The typical studies conducted are based on school-level rather than student-level analysis (Arsen et al. 1999; Chang 2009; Frankenberg et al. 2011; Godwin 2002; Goldhaber & Eide 2002; Lubienski et al. 2009; Miron 2004; Miron 2005; Miron & Horn 2000; Miron et al. 2007; Nelson & Hollenbeck, 2001; Snell 2005; Zhang & Cowen 2009). These studies are typically based on single schools or annual reports with described data listed for schools. Few of these studies contain evaluative judgments on charter school performance as either being better or worse for students after they transfer when compared to non-charter schools. In other words, these studies only look at each year to year comparison data, and typically do not follow the student after they transfer. Most studies have not been designed to analyze specific cohorts of students as they progress through grades. Studies of achievement data have utilized annual data with a different group of students for each cohort. This study will attempt to address this

problem by controlling for mobility—a matter that has not been addressed in previous charter school studies.

Categories of Study

The sources utilized for this study have been organized into two categories: historical context and performance studies. Of the 110 sources reviewed, there were 62 that discuss the history or impact of charter schools or schools of choice. The remaining 48 sources reviewed were categorized as research studies that tested various hypotheses pertaining to the impact of charter schools. The research studies were reviewed through three different lenses: 1) type of study, 2) location of study; and 3) findings of study.

Categories Based on Study Type

The type of research studies included in the literature review is organized into four sub-categories. They are: 1) Snapshot—studies that look at only one or more points in time (Hassell & Terrell, 2006); 2) Panel—studies that look at individual student data over time controlling for various demographic characteristics; 3) Cohort—studies that look at change over time, but not at individual students (i.e., looking at school-wide averages); and 4) Meta-Analysis—a collection of several studies (Creswell, 2003).

Table 1 summarizes the types of research study and whether they concluded positive, negative, or mixed results for charter schools.

Table 1

Categorization of Charter School Research Studies by Type

Research Study Type	Positive Results for Charters	Negative Results for Charters	Mixed Results for Charters
Snapshot	4	6	3

Table 1 - continued

Cohort	1	6	4
Panel	3	10	6
Meta	0	1	4
Total	8	23	17

Note. Studies were categorized based on the four types of studies reviewed (Hassell, B. & Terrell, G., 2006).

The 48 studies reviewed indicate that there were more studies which resulted in negative conclusions for charter school effectiveness (23 vs. 8). The studies whose conclusions were mixed typically found that one or more groups or categories studied showed positive gains, whereas others within the study showed negative or negligible gains compared to traditional public school performance. Panel studies, which follow individuals over time, tend to produce results that are a better indicator of longitudinal growth.

This literature review of the 48 research studies shows that only 19 are panel studies. Even though there are more panel studies that reached negative conclusions about the effectiveness of charter schools, the small number of overall studies does not really lend itself to drawing conclusions. For this study, I will be utilizing a panel study to establish growth over a given period of time.

Categories Based on Location

Of the 48 research studies included in this literature review, 35 studies were conducted in individual states or within the District of Columbia. Thirteen studies conducted research in several states within the same study. Among the four types of sub-categories from the previous section, studies are further categorized into urban or non-

urban. Of the 48 studies included, 11 studies focused exclusively on urban environments. Of these, there were two studies that showed positive achievement as a result of enrollment in charter schools, six studies that showed negative results, and three studies that had mixed or inconclusive results.

The positive results in favor of charter schools were found in studies from Massachusetts, Idaho, Colorado, Georgia and Wisconsin (Angrist et al., 2013; Ballou et al., 2006; Brodsky et al., 2006; Georgia Department of Education, 2007; Nisar, 2011). The negative results that favored charter schools were found in studies from New Jersey, North Carolina, Texas, Arizona and Utah (Barr, 2007; Bifulcio & Ladd, 2006; Booker et al., 2007; Garcia, McIlroy & Barber, 2008; Hanushek et al., 2002; Hinojosa, 2009; Nelson & Hollenbeck, 2001; Ni & Rorrer, 2012). Either mixed or inconclusive results were found in studies from Connecticut, Michigan, New York, Delaware, Pennsylvania, Florida and Ohio (Betts & Tang, 2011; Center for Research on Education Outcomes, 2013; Eberts & Hollenbeck, 2001; Florida Department of Education, 2006; Gleason, Clark, Tuttle & Dwoyer, 2010; Miron, 2005; Miron & Horn 2000; Miron & Horn, 2002; Miron et al., 2002; Miron et al., 2007; Ni & Rorrer, 2012; Raymond, 2010, Sass, 2006; Winters, 2010).

Categories Based on Findings

A review of the 48 studies pertaining to student performance explored and identified gaps that exist in current literature which is the foundation for the research questions identified in this current study. Only eight of the studies identified for this literature review showed positive results for charter schools. Twenty-three studies concluded that charter school students performed worse than their traditional public

school counterparts. Seventeen studies concluded either mixed or negligible results. This literature review, although not exhaustive, parallels the findings of several meta-analysis studies as well as the conclusions of other researchers. Some researchers have indicated that charter schools have not significantly improved achievement at all (Eberts & Hollenbeck, 2001; Nelson & Hollenbeck, 2001; Raymond, 2009).

A number of large-scale state and federally funded studies on charter schools have produced mixed findings. For instance, a study of charter schools (Miron & Nelson, 2002) found both disappointing comparisons between student outcomes for charter schools versus their students' home schools and disturbing evidence of re-segregating student populations along socioeconomic and racial or cultural lines. These and other studies have shown that the establishment of charter schools throughout the nation has had a tendency to follow along racial lines rather than achievement gap lines (Levy, 2010). In many cases, the enrollment trends of charter schools tend to follow along with segregation trends within districts (Renzulli, 2006).

Similar to this literature review, in general, studies found that charter schools across the country tend to lag behind public schools when it comes to student achievement (Frankenberg et al., 2011). However, there are pockets of success, as well as failures, throughout the nation. For example, a study of New York City charter school students performed 20 to 30 points higher than public school students on reading and mathematics assessments. A larger study in 2009, utilizing data from the Center for Research on Education Outcomes (CREDO), found mixed results when comparing charter school students across 15 states to their public school counterparts. Seventeen percent of the charter schools performed better than public schools, 52% showed no

difference, however, 37% performed worse (Frankenberg et al., 2011). A similar study using CREDO data found that ELL students performed better on reading and mathematics assessments in California, New Mexico, Texas and Arizona. Some researchers argue that the gains seen for charter schools are due to students who are more prepared than those who are not.

Another research study revealed that students who opted out of their public school, on average, had more preparation for school prior to entering kindergarten (Frankenberg et al., 2011). An analysis of mathematics and reading scores in Massachusetts, averaged over a three-year period, showed that charter school and public school students performed the same. A similar study revealed that charter school students had lower graduation rates than public school students in Boston, MA. However, another study showed that charter school middle school students in Chicago and Florida were 7 to 15 percent more likely to graduate than public school students (Booker, Sass, Gill, & Zimmer, 2008; Florida Department of Education, 2006; Frankenberg et al., 2011). A study conducted by the Civil Rights Project at Harvard University showed no evidence that charter schools perform better than public schools (Levy, 2010).

In a 1999 Michigan study, researchers concluded that test scores of the state's charter schools did not improve, and in some cases declined when compared to public school students (Goldhaber & Eide, 2002). Another Michigan study conducted by Eberts and Hollenbeck (2001) revealed that charter school students were performing two to four points lower on fourth grade achievement tests in mathematics and reading. A study in Ohio and Michigan revealed that charter schools had a negative effect on neighboring

schools achievement, which goes against the argument that charter schools will have a positive impact on public schools due to increased homogeneity and competition (Frankenberg et al., 2011).

When considering innovation in the selected Midwestern state's charter schools, some offer distinct programs but few have developed innovative approaches or new models of curriculum (Arsen et al., 1999). Many parents favor a traditional curriculum and instruction so the charter schools in the selected Midwestern state are less likely to pursue innovative approaches (Arsen et al., 1999.). Thus, some would argue that the charter school movement has not resulted in improving overall education in the identified Midwestern state (Arsen et al., 1999).

There is a gap in the research when considering the impacts of charter schools in the selected Midwestern state, particularly in urban environments. Research is lacking when determining the impact of charter school choice as measured by other success indicators, such as attendance rates. This study will address the paucity of research studies by including additional success factors as well as achievement scores. In addition, this study will focus exclusively on urban school environments.

In the 1950s, educational policy makers focused on efficiency issues. In the 1960s, they focused on equity issues, coinciding with mandated desegregation and special education laws. The 1980s brought a wave of focus on quality issues (Levin, 1990). A document produced in 1983, *A Nation at Risk*, caused alarm throughout the nation, and opened the door to competition through market theory (Renzulli & Roscigno, 2005). Well into the 1990s, policy makers continued to focus on quality of education and excellence. Educational institutions have been under heightened public scrutiny over the

past several decades as families demand more for the next generation (DeFrance, 2001). Several theorists contend that public schools have become inefficient and ineffective over the past several decades because they are not based on developing curriculum and pedagogies that attempt to increase the quality of education. School districts choose policies that are politically influenced rather than policies that will produce a higher quality education for students (Godwin, 2002). During the 1990s, awareness of quality was heightened when the democratic right to choose came into question (Arsen et al., 1999). Thus, the schools of choice movement was born. The No Child Left Behind initiative allowed for the ranking of schools to create an even more competitive atmosphere (U.S. Department of Education, 2002).

Godwin (2002) stated that in a liberal democratic society, there are four fundamental goals for education. First, students should learn economic skills to become independent. Second, they should learn the political skills needed to support the democratic process. Third, students must have the moral reasoning to understand ethical behavior. Finally, that everyone should have equal educational opportunities. The desire for equity is as part of American culture as apple pie. For almost two and a half centuries, the pivot point for our democratic society has often been on ensuring equitable access. Access to a quality education notwithstanding, the ability to choose has been a cornerstone. Having multiple options for choice has also been a desirable condition for Americans. Many believe that it stands to reason that educational opportunities should not be excluded from the choice list. Throughout the twentieth-century, parents often exercised their right to choose a school by way of choosing their residence. In addition, parents have always had the right to choose a private school option over the public school

offering. Limitations as to who can exercise these options stem from the socioeconomic status of the family, however. If parents are in a higher income bracket, they have more flexibility to choose the housing option that best fits their child's educational needs. In addition, they are more likely to be able to afford the tuition costs associated with attending a private school.

Over the past several decades, newer forms of school choice rose. Spurred from the Civil Rights movement of the 60s, students were bused in an effort to desegregate the schools. In a roundabout way these options provided families with another option for schooling regardless of their income. Technically, it was not a true choice since many busing situations were mandated by the courts (Conte, 2002). Magnet schools emerged around the same time. These were specialized schools that had a particular theme that attracted families (Frankenberg, 2011; Dougherty, Harrelson, Maloney, Murphy, Smith, Snow, & Zannoni, 2009). There was also a movement to provide open enrollment for students. Various forms of intra and inter district transfers have been incorporated into state policy throughout the nation (Conte, 2002; Dougherty et al., 2009; Rabovsky, 2011). Some districts allow free transfers within their district schools. Others open their borders to neighboring districts.

The Choice Debate

In the United States, approximately 89% of the nation's elementary and secondary age children attend public schools. This consumes 92% of the educational spending (Goodman, 2001). As more and more scrutiny is placed on public schools, parents and policymakers are looking at increasing their ability to choose. Choice has been a much debated topic over the past decade resulting in the framing of several policies hammered

out through the political process (Conte, 2002; Frankenberg et al., 2011). Ideally, the choice movement was designed to improve public education. Choice has taken many forms such as inter-district transfers, public and private school tuition vouchers, and charter schools. The United States has now gone through a generation of students in K–12 choice programs and many are accustomed to government-financed alternatives to traditional school districts (Howe, Eisenhart & Betebenner, 2001). Variations of choice have been governmentally mandated, challenged, and implemented with mixed results (Kluver & Rosenstock, 2003). With time and resources to study and evaluate major policy initiatives, researchers and evaluators can eventually produce findings that will help policy makers understand the impact of what they legislated and if it actually produces positive outcomes. Such has been the case with choice.

Benefits of the Choice Model

Supporters of school choice typically utilize the following four arguments. First, applying a market mentality, school choice will increase competitions among schools. Schools will be forced to operate more efficiently in order to survive (Betts & Loveless, 2005; Godwin, Leland, Baxter & Southward, 2006; Marlow, 2010; Smith & Meier, 1995; Howe et al., 2001; Barrow & Rouse, 2008). Second, the newer forms of choice options are more accessible to less affluent families, thus equalizing the playing field for poor families as well (Betts & Loveless, 2005; Kluver & Rosenstock, 2003; Smith & Meier, 1995). Third, without a monopoly of providing educational services, different providers will be able to better meet the diverse needs of students (Betts & Loveless, 2005; Godwin, 2002; Smith & Meier, 1995; Howe et al., 2001; Lubienski et al., 2009). Finally, greater choice will result in improved student achievement by increasing parental

involvement and matching the schools with the appropriate learning style of the child (Godwin, 2002; Lubienski et al., 2009).

Similarly, when the State of Michigan began a statewide public schools-of-choice program in 1996, the rationale was stated publicly. The premise was in alignment with the nationwide trend, according to the state policy writers and supporters; legislators made three statements arguing for the choice policy. First, competition in the business world improves businesses; therefore, competition amongst school districts should improve schools. Second, students from a failing district could attend any other school district regardless of their economic status. The establishment of choice created more options for families. Third, it was thought that competition from schools-of-choice and charter schools would result in increased efficiency within school districts because they would be forced to streamline their efforts to survive (Levin, 1990). Unfortunately, there may have been unintended negative consequences associated with this program implementation in Michigan (DeFrance, 2001).

The economic theory used to argue in favor of school choice is based on Nobel Laureate Milton Friedman's 1955 notion that with increased competition to supply goods or services to a market, the better off the consumer will be. He stated that the "American norm of requiring parents to send their child to the nearest public school is economically inefficient because it prohibits competition among schools" (Betts & Loveless, 2005). Economic theory also follows that in the case of perfect competition, schools will compete for students and the less efficient schools will cease to exist, increasing the value of each dollar spent. Thus, the allocation of dollars under true competition will improve the welfare of one or more students while decreasing the welfare of one or more other

students (Betts & Loveless, 2005). The economic theory also supports the notion that those students who do not choose a different school will also benefit. Proponents argue that by providing consumers with choice, less efficient schools will improve themselves in order to prevent loss of students to better schools (Betts & Loveless, 2005; Barrow & Rouse, 2008). A Harvard study concluded that tuition subsidies introduced which led to more students leaving the public schools, forced a response to improve their product and prevent more student loss (Goodman, 2001). In addition, allowing choice gives individuals the freedom to exit failing schools and take their tax dollars with them, thus increasing competition (Rabovsky, 2011).

Concerns with the Choice Model

According to Betts and Loveless (2005), there is an argument that choice will benefit the students who are left behind because there will be greater homogeneity among those students. Thus, the schools can tailor their methods to meet the specific needs of those students. There is also the argument proponents use regarding overall community and state support. They contend that increased choice will foster voter confidence that the public school system is spending money wisely; thus, the community will be more likely to support higher school spending (Betts & Loveless, 2005).

Those who oppose school choice usually fall within these three arguments. First, choice will hurt students who are left behind in lower performing districts who do not have the resources to keep up (Betts & Loveless, 2005; Carroll, Gentry, & Gentry, 2001; Howe et al., 2001). Second, choice without any controls will resegregate schools again (Betts & Loveless, 2005; Rabovsky, 2011; Carroll et al., 2001; Howe et al., 2001). Third, and ironically since it is also an argument in favor of choice, increased variety will

undermine the shared and cultural experiences of the public school (Betts & Loveless, 2005; Howe et al., 2001).

Opponents of choice also argue that although perfect competition can result in improvements in efficiency, equitable access will be impacted. They argue that the gap between “have” and “have-not” families will become increasing wider (Betts & Loveless, 2005). Godwin et al. (2006) found that public school choice has resulted in a pattern based on family income. Studies show that as income rises, parents demand more education for their children. The higher the socioeconomic status, the more likely their children will participate in choice. This is a result of two reasons. First, low-income families have greater difficulty obtaining information about choice options (Carroll et al., 2001; Barrow & Rouse, 2008; Conte, 2002). Parents do not have all of the data they need to assess and evaluate their school’s success (Bell, 2009). The schooling market is perceived to be open and fair. However, when all parents do not have access to the information they need, they will select from the limited school options they have. Typically, if their child is failing, they want something different than what is currently being offered. With a lack of criteria for success, it is difficult to know what information needs to be obtained. Second, low-income families have more difficulty arranging for transportation outside their residential school zone (Godwin et al., 2006; Frankenberg et al., 2011). Affluent parents have been the main beneficiaries of earlier forms of school choice such as vouchers and inter-district transfer options (Betts & Loveless, 2005; Paquette, 2005). Other educators argue that parental choice can be destructive to black children as it dismantles the public education system which could lead to education

becoming a purely financial and politically-driven undertaking with no accountability (Carroll et al., 2001).

Betts and Loveless (2005) point out that another opposing viewpoint regarding choice focuses on student learning. They contend that simply making a choice does not increase student learning. Parents having the right to choose will not make improvements, but the practices that are utilized within the chosen school will. The argument from supporters of choice indicates that it will increase heterogeneity of curriculum offerings to satisfy a diverse learning community. Betts and Loveless (2005) contend that the effects of choice will be confounded with the success or failure of a particular practice, not the overall improvement of education itself. Average educational outcomes will not improve because policies focus on governance rather than pedagogy (Godwin, 2002). Expanded school choice could also lead to a negative impact on non-choosers when the talented students leave their building. The quality of the student peer group would be lower at the underperforming schools. This practice, known as “cream skimming,” could hurt the academic achievement of the students left behind which is based on the research showing that students learn from one another (Betts & Loveless, 2005; Godwin, 2002; Marlow, 2010). Students from higher socioeconomic families tend to create positive spillovers that benefit how students learn in the classroom (Godwin, 2002). Godwin continues by arguing any policy that inadvertently groups students by race or ethnicity will disadvantage those assigned to schools with high concentrations of low-income and minority students. Referencing the San Antonio choice program in the 90s, there was a substantial amount of skimming higher socioeconomic status families from attendance zone schools. Better students became more segregated into certain

schools because those parents were more informed about the choice options (Betts & Loveless, 2005; Renzulli, 2006). A similar effect occurred in England. Choice policies allowed choice schools to select and choose their students through a wide variety of unchecked processes. The result led to segregation based on socioeconomic and racial lines (Reinoso, 2008). In the Charlotte-Mecklenburg Schools, a controlled choice option was put into place in 2002. In just three years, the policy was abandoned because it created inequitable segregation, particularly for low socioeconomic black children (Godwin et al., 2006). Segregation of students by income and ethnicity were not the original intent of educational policies, but the action of these policies led to these results.

Choice Model Research

A review of the research found that the advantages of choosing another school district are minimal at best, and that in those instances which do produce gains, the evidence is inconclusive as to causation (Lubienski et al., 2009). In other countries, similar results have been found regarding choice. In Europe, the choice movements in the Netherlands, Sweden, Denmark, Hungary, and Ireland resulted in no significant improvements in student achievement and a decrease in equity among students based on economic status (Poder, 2005). Likewise, in Chile, analysis of student performance showed no significant correlation between public and choice students (Chang, 2009). In the United Kingdom, the choice policies, although being promoted as the solution to social inequities in urban schooling, produced opposite results (Okpala, Bell & Tuprah, 2007; Paquette, 2005; Reinoso, 2008). Some research indicates that these policies were detrimental to disadvantaged families (Renzulli, 2006). Choice in the United Kingdom has created a market for a system in which educational selection is based on how much

income you have, rather than the individual abilities of the students (Paquette, 2005). In Spain, the choice system established over the past 20 years has shown similar inequities. A qualitative study conducted in Granada, Spain, revealed that the families with higher socioeconomic status were able to access information easier than families from lower socioeconomic status; thus creating inequitable access based on family income (Reinoso, 2008).

Research suggests that the three main arguments have fallen short. Specifically, several studies have shown that increased choice has not resulted in the improvement of schools (Levin, 1990; Kluver & Rosenstock, 2003; Marlow, 2010; Rabovsky, 2011; Barrow & Rouse, 2008). Evidence available provides little reason to believe that choice has resulted in an overall improvement of achievement (Howe et al., 2001; Barrow & Rouse, 2008). More often schools that are competing for students are becoming more responsive to parents by way of changing sports or non-academic programming and ignoring curriculum changes (Barrow & Rouse, 2008). For urban school districts in particular, choice options have resulted in academic outcomes that have been mixed (Goldhaber, 1997). Achievement is very difficult to measure because it is a combination of observable and unobservable factors. Programming, socioeconomic mix, students' background and family structures can influence a student's achievement (Lubienski et al., 2009). Of particular note, choice seems to have provided opportunities for small groups of students while those who remain in sending districts suffer (Okpala et al., 2007). Critics of school choice also point out that non-public schools that claim to be superior at educating children are not educating the same group of students. Due to selection processes in one form or another, higher achieving students can be drawn into choice

schools (Rouse, 1998). In fact, when selecting students of similar demographics and socioeconomic background, there is no difference between students achievement scores (Goldhaber, 1997). In Milwaukee, test score comparisons between students in the choice schools and public school and low income students showed mixed results (Goodman, 2001). In 1995, Witte, Sterr and Thorn showed that there were no statistically significant differences in achievement gains among choice students (Rouse, 1998). However, Greene et al. (2003) found that mathematics and reading scores were slightly higher after three years. The research methodology and the pro school choice political backing of this research study, however, have been questioned by several other researchers (Rouse, 1998; Lubienski et al., 2009). In 2003, Greene stated in the *New York Times* that “the research community is settled on this issue [whether or not choice is working] and we have reached consensus.” A study of research conducted by Lubienski, Weitzel and Lubienski in 2009 found that the consensus has been anything but settled. They discovered that research conducted on choice-based programs did not demonstrate compelling evidence that they are more effective at raising student achievement than public schools. On the contrary, recent research reviewed revealed that there is hardly consensus on this issue (Lubienski et al., 2009). Rouse (1998), looking to verify the findings of Greene et al. (2003), utilized a more randomized approach to studying the data. She concluded that there were slight gains in mathematics but negligible results in reading. Some studies have shown average gains in reading and mathematics the first few years after choosing a different school, but there seems to be a leveling out of the gains after two years. A study of the choice programs in New York, Washington, and Dayton revealed that in the first year, Black students performed better than they had in

the public school by an average of 3.3 percentage points, and at the end of two years 6.3 percentage points better. However, after two years, the students performed at the same levels (Goodman, 2001). Using data from the National Education Longitudinal Study of 1988 (NELS), Goldhaber (1997) found no advantage in the effectiveness of choice schools. An examination of the 2003 National Assessment of Educational Progress (NAEP) fourth and eighth grade achievement, Lubienski et al. (2009) discovered that differences in student demographics more than accounted for the differences in achievement between public and choice schools. They actually found that public school students outperformed choice students when controlling for demographics.

The Charter School Movement

In the early 1990s, charter schools emerged. The term *charter* was coined in a conference paper by Ray Budde in 1974 in which he suggested that schools should create their own policies and goals to explore innovative pedagogical techniques (Levy, 2010). The central idea behind this type of reform is to allow groups to identify how they hope to accomplish success in their newly formed school. This type of schooling utilizes state funds under a charter agreement between a granting body, such as a school board, and an outside group which operates the school without most regulations from the state. Once the charter is granted, the school operates under much less regulation and oversight than the traditional public school (Wells et al., 1999; Goodman, 2001). It is believed that charter schools are the wave of the future and state-level authorization is more likely to be efficient and less wasteful (Buras, 2011). According to advocates, a charter school, out from under the umbrella of collective bargaining, can set teacher salaries and reward systems. Some believe that charter schools may actually help expand the pool of teachers

because many burn out in the public schools and drop out of teaching altogether. A charter school could convince that group of teachers to come back into the classroom that has less bureaucracy (Goodman, 2001).

The very first charter school opened in Minnesota in 1992 (Holland & Soifer, 2001). A recapitulation of charter school laws find that California passed charter school legislation in 1992. Colorado, Georgia, Massachusetts, Michigan, New Mexico and Wisconsin followed suit in 1993. Steady growth of charter school legislation continued at a rate of three states passing legislation per year from 1994 to 2003 (National Center for Educational Statistics, 2014). In 2001, more than 2,400 charter schools were in operation throughout the United States. These schools occupied 34 states and served over 576,000 students. By 2010 there were 5,714 charter schools in operation within 38 states (National Center for Educational Statistics, 2014). Each year it is estimated that charter school enrollments increase by 10% (Holland & Soifer, 2001). Current statistics from the National Center for Educational Statistics (2014) indicate that 40 states, including the District of Columbia, housed charter schools that served approximately 2.06 million students.

Distribution of Charter Schools

Charter schools tend to be located within close proximity to urban environments (Angrist et al., 2013; Betts & Tang, 2011; Booker et al., 2007; Erickson et al., 2013) that could explain the absence of these types of schools in several northern states. It is important to note that several state legislatures have enacted laws governing the establishment of charter schools that include sets of criteria to consider prior to granting the charter (Renzulli & Roscigno, 2005). One of the criteria often considered is the

proximity to low performing schools or school districts (Miron & Horn, 2000). When considering demographic characteristics, the percentages show different concentrations of ethnic groups (Table 2). Charter schools have a higher percentage of Black and Hispanic students.

Table 2

Percentage Distribution of Students Attending Traditional and Charter Schools in the United States and the District of Columbia by Ethnicity

Ethnicity	Traditional (Noncharter) Schools	Charter Schools
White	61.9%	42.5%
Black	16.9%	33.5%
Hispanic	15.9%	19.6%
Asian/Pacific	4.1%	2.8%
Am Indian	1.2%	1.5%

Note. Ethnicity percentages based on information provided by the National Center for Educational Statistics (2014).

When comparing socioeconomic status of students who attend charter schools compared to traditional non-charter schools, higher concentrations of students who are designated as receiving free or reduced-price lunch are found in charter schools (Table 3).

Table 3

Percentage Distribution of Students Attending Traditional and Charter Schools in the United States and the District of Columbia by Free and Reduced Lunch Eligibility

Percent of Students Eligible	Traditional (Non-charter) Schools	Charter Schools
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Table 3 - continued

0 to 25.0	45.0%	36.9%
25.1 to 50.0	25.5%	12.7%
50.1 to 75.0	16.1%	13.0%
More than 75.0	12.2%	14.3%

Note. Ethnicity percentages based on information provided by the National Center for Educational Statistics (2014).

Charter schools in the selected Midwestern state have grown rapidly compared to most other states (Betts & Loveless, 2005). According to Arsen, Plank, and Sykes (1999), in 1998, about 34,000 students were enrolled in 138 charter schools in the selected Midwestern state, which accounted for slightly over 2% of all students. Based on recent data acquired from the National Center for Educational Statistics (2014), in 2012, approximately 118,177 students were enrolled in 306 charter schools in the state, which accounted for 7.7% of the selected Midwestern state students. This growth over a ten-year period is the largest of the states participating in charter schools. The Midwestern state selected for this study has the fourth largest ratio of charter to public school students preceded by Arizona (12.6%), Colorado (9.8%) and Delaware (8.0%) (National Center for Educational Statistics, 2014). Charter school agencies include local school districts, Intermediate School Districts (ISDs), community colleges and public universities. The selected Midwestern state charter schools are not limited by geographic location. The amount of funding received from the state is dependent upon the number of students enrolled.

Charter Schools: Promises or Illusions?

Charter school laws vary from state to state however. Some states only allow existing school buildings to be converted to charter schools; others allow the creation of brand new buildings (Greene, et al, 2003). Although charter schools are considered to be public schools, several states allow the subcontracting of private for-profit organizations to run these schools. The selected Midwestern state in this study has the highest percentage of organizations, or Educational Management Organizations (EMOs), controlling their charter schools (Arsen et al., 1999). Control of charter schools also varies from state to state. In Rhode Island, charter schools are run almost exclusively by teacher unions. Whereas in Arizona, charter schools are allowed to operate with little oversight from the state (Bifulco & Ladd, 2006). Interestingly, the enactment of charter school laws in states tends to be inversely correlated with the political strength of teacher unions (Levy, 2010; Renzulli & Roscigno, 2005). The stronger lobbying power of unions can slow down any legislation they perceive as a threat. Charter school laws are also influenced by a state's wealth as well. It has been noted that the higher the average income level in a state, the more likely communities will organize and lobby successfully to obtain a charter. Researchers found that the higher the graduation rate is for a state, the less likely charter school laws will be enacted (Levy, 2010). The same study did not find a correlation between percentages of Black students and charter legislation, however. A possible explanation could be the degree of integration, rather than the demographics of a state that determine the likelihood of charter school legislation.

Nationally, there has been a push for more charter school legislation. In their first year in office, the Obama Administration held that charter schools should be a central

component of educational reform (Frankenberg et al., 2011). The U.S. Department of Education has given priority to states to quickly expand the number of charter schools. Also, the Administration's first two budgets contained provisions for increased charter school funding. The trend over the past decade has been to give charters larger shares of educational spending (local, state and federal). The No Child Left Behind Act has also created many opportunities for charter schools. Urban districts with large numbers of low performing schools have the option to create new charter schools (Snell, 2005). Although it may appear that charter schools are taking over public education, nationwide charter schools only compromise 2.5% of total public school enrollment (Frankenberg et al., 2011).

Another rationale for the charter school movement is to have educational options that are free from bureaucratic controls that hinder public school reform efforts. An autonomous charter school, in theory, should be able to become an effective organization that can be free to be innovative, and more in tune with the needs of students (Levy, 2010). However, the patterns that have emerged over the past several decades suggest that the push for charter schools is based on political rhetoric and copying other states rather than true educational reform (Levy, 2010). Because of the market rationale, parents and educators are forced to focus time and resources on keeping enrollments up rather than on the curriculum (Howe et al., 2001). Because of these market forces, there is less likely to be any experimentation or innovation.

The idea of *public education* has become clouded with the idea of *publicly funded education* (Howe et al., 2001). Charter school legislation may be viewed as opportunistic for politicians. Without actually having to make a change in the educational system, a

politician can show people that they care about education by supporting such laws (Levy, 2010). The expansion of charter schools has less to do with choice and innovation as it does for the redistribution of funds to the private education sector (Snell, 2005). Case and point, most charter schools are K–8 schools, which are much less expensive than a high school. Because of this disparity, it would seem that the charter school movement is not focusing on improving education, but the overhead profits that can be acquired (Arsen et al., 1999).

Financial Impact

School districts are facing more and more financial pressures as the economy continues to remain unstable, particularly in the selected Midwestern state where the auto industry has been hit hard as a result in the decline in automotive sales over the past several decades (DeFrance, 2001). Underperforming schools are not able to compete with neighboring districts because they are already starved for resources (Goodman, 2001). In addition, communities are demanding more and more of their school systems. These “community voices” focus on issues of concern such as class size, broader instructional offerings, better education, and more enrichment programs (Levin, 1990). School districts are expected to produce graduates of high quality who possess specific skills for productive citizenry. To follow through on this expectation, school districts must maintain enrollment by utilizing funds that are distributed based on the prior years “count days” (in September and February). They must ensure that the state mandated curriculum requirements are followed. With the rising costs of health insurance, retirement, and inflation, the funds required to operate schools are severely diminished (Timmis, 2007).

For urban school districts, these pressures are further exacerbated. Urban school systems spend disproportionately more money on school maintenance, security, and special services than school districts in suburban and rural school districts (Levin, 1990; DeFrance, 2001). The current school funding formula for the selected Midwestern state does not seem to provide many school districts, and particularly poor and urban school districts, with the necessary resources to maintain their educational programming. Therefore, they are unable to maintain the same level of program offerings as their neighboring districts (Bell, 2009; Betts & Loveless, 2005; Chang, 2009; DeFrance, 2001; Goldhaber & Eide, 2002; Holland & Soifer, 2001; Levin, 1990; Liepa, 2001; Paquette, 2005). In addition, poor and urban school districts that suffer declining enrollments lose students to charter and other choice options. Consequently, these districts are now affected two-fold. First of all, they suffer from declining state and federal revenues due to economic conditions. Secondly, urban school districts lose even more revenues because of declining student enrollment. The diminishing funds create additional budgetary problems that force districts to lay off teachers, increase class size, and eliminate programs. Since the trend of movement tends to be from high minority urban school districts to districts with lower minority students, the urban districts suffer more depletion of revenues compared to the non-urban school districts (Frankenberg et al., 2011; Levin, 1990; Liepa, 2001; Paquette, 2005). As enrollments decline due to economic conditions, and state and federal dollars are reduced, an economic strain is placed upon these affected school districts.

Published studies that specifically focus on the impact of the selected Midwestern state choice and charter legislation indicate that there is a disproportionate amount of

urban school districts (versus suburban and rural districts) losing students due to schools-of-choice and charter schools (Arsen et al., 1999). Small urban communities without a charter school option are also suffering from the effects of choice due to parents utilizing schools-of-choice options to send their children to neighboring districts. As families perceive that a district in an urban setting is a failing school system, the more they will seek out other options; thus, putting more stress on urban districts through declining enrollments along with lagging achievement and persistently high drop-out rates. A 1993 study of the proposed choice plan revealed that Detroit residents, particularly low socioeconomic minority families who viewed their school as failing, were in favor of the proposal (Goldhaber & Eide, 2002).

Opponents of choice disagree with the economic theory market analysis because education is not a homogeneous commodity that can be provided by a large number of suppliers. They argue that if less efficient schools go out of business, there will be losers (in this case, the children who are still in the inefficient schools) (Betts & Loveless, 2005; Liepa, 2001). Under the current school finance system, school systems that are big losers due to choice are forced to cut and eliminate programs in order to maintain a balanced budget, thus making it even more difficult to compete (DeFrance, 2001). In addition, urban school districts spend disproportionately more on remedial courses and special services for their students (DeFrance, 2001). The impact on urban school districts is exacerbated even more because the funding formulas do not allow losing school districts to recover from the student enrollment decreases. The result is a decline that continues to spiral downward, with these districts losing parental resources and striving to find new programs to attract students (Howe et al., 2001).

Also there is an argument that expanded school choice could lower the quality of education. With fixed costs such as heating, electricity and administration, the cost to run the building will be the same if half the students leave. Thus, the added costs would mean fewer resources available for the whole education system (Betts & Loveless, 2005). Both choosers and non-choosers would be harmed.

Funding equity becomes a problem for most inner city school districts. Because states require the local school districts to raise their tax levies in order to raise revenue, an unfair advantage for property wealthy districts results (DeFrance, 2001). Inner city school districts usually have lower assessed tax value due to the impoverished areas they serve. A tax increase of a penny would hardly generate significant enough amounts of revenue. Whereas, in property wealthy districts, a penny increase can generate several millions of dollars more. Thus, funding structures are typically inequitable and inner-city school districts are not able to generate enough revenues to compete. Therefore, they are limited as to the quality of education they can offer which forces families to consider utilizing choice to seek out a wealthier district. In the selected Midwestern state, inner city school districts are having difficulty reversing the decline of revenue as enrollments decrease due to choice, and the continuing decline may harm those students left behind (Arsen et al., 1999). Several states have attempted to address the inequitable funding structure not by taking funds from the rich districts and giving to the poor, but by increasing the state funding in needy districts (Godwin, 2002).

In a study of the impact of Charter Schools in New York City, Winters (2010) states:

In some urban centers, charter schools have grown so numerous that they have siphoned a considerable number of students from the traditional public school system.

Because school districts rely so heavily on student enrollment for resources, charter schools can exacerbate the financial pressure even more by drawing off students living in a traditional public school's attendance zone. Sass (2006) indicates that those who oppose publicly-funded school choice programs argue that these programs will drain resources away from public schools, skim the best students, and promote racial segregation.

Social Impact

Compounding the issue for inner-city schools is the political structure. There is agreement among those who oppose choice and those who support it that inner-city schools are havens for extremely poor education, and that this schooling is bad for low-income and minority students. Godwin (2002) indicates that these schools tend to be highly bureaucratized due to the conflicting interests within the political infrastructure. Thus, there are more controls put in place that restrict any sort of high quality leadership, a necessary component of school reform. Furthermore, supporters of choice tend to believe that the local school boards are politicized and ineffective and that either state level control or city control is more preferable (Buras, 2011). An increase in regulations results in a decrease in quality (Godwin, 2002).

Charter schools receive public funding; however, private groups are allowed to be the operators. Some are non-profit and some are for profit. This can result in targeted recruitment and pedagogical methods based on the promises made to those private

fundings (Frankenberg et al., 2011). If left unchecked, as it is in several states, it will lead to even more inequalities. The political framework of the charter school movement has also resulted in several groups creating their own schools to get away from failing inner-city school districts. This too has resulted in more segregation. A review of charter school trends and patterns over several states reveals that segregation seems to be one of the unintended consequences. Due to the locations and isolated groups that charter schools target, population shifts result in racial patterns that are significantly more skewed than the contiguous school populations. A study concluded that charter schools in every one of the 40 states showed racial and socioeconomic segregation (Levy, 2010). These students are not only isolated by race, they are also isolated by class (Frankenberg et al., 2011). Ironically, the level of segregation in charter schools happens despite the fact that most states with charter school legislation also have extremely strict laws requiring the enforcement of desegregation (Levy, 2010). Segregation in charter schools does not appear to be exclusionary towards one race, however. In some regions, Black students were overrepresented. In others, White or Hispanic students shifted the balance. In New Orleans, the charter school response after hurricane Katrina has been described as less of a response to the needs of the students as a reconstruction to segregate students and allow for private companies to profit (Buras, 2011). Due to a lack of oversight, some charters have been known to set up informal exclusion and recruitment practices that target certain groups. They may set up arduous application procedures, put enrollment caps into place, and/or utilize “pushing out” or dumping of students periodically to modify or control who is enrolled (Buras, 2011). This further segregates students as well.

Frankenberg et al. (2011) conclude that after 20 years of charter schools promising to foster equality and integration in America, they have fallen short.

Although survey data indicate that academic quality is most important, researchers have found that the actions of parents lean towards other areas. Several studies conclude that racial composition and socioeconomic status of charter schools matter when they are choosing a school for their children (Betts & Loveless, 2005). Parents may be responding on surveys with what they consider more “socially acceptable” answers. Rabovsky (2011) found that there were significant differences in the rationales for choice depending on grade level. Parents with children in lower grades tend to be more focused on race whereas higher grade levels focus more on school performance. The decision to exercise choice is also related to circumstances in the school. Research indicates that parents and students primarily react to personal disciplinary problems or safety concerns, rather than student achievement issues when deciding to choose another school (Rabovsky, 2011). Research on magnet schools show that parents will choose schools that enroll in lower percentages of minority students than the school they left (Godwin, 2002). Also, minority parents tend to choose schools where their child is in the majority group (Betts & Loveless, 2005; Frankenberg et al., 2011; Goldhaber & Eide, 2002). Some studies have shown that race was the main determining factor for parents when choosing a school for their child (Conte, 2002; Kluver & Rosenstock, 2003). Parents tend to select a school that has the lowest minority population, regardless of their race. The districts that have high concentrations of African American students tend to be leaving district more often. Those with predominantly Caucasian or mixed populations, particularly if adjacent to high African

American population districts, tend to receive students more often (Arsen et al., 1999). As a result, increased segregation has occurred in choice schools. Over the past several decades, the increase in inner-city school districts that are considered failing has prompted policy makers to change the rules for accessing education. However, the policies in place created unequal educational opportunities, particularly for inner-city children (Godwin, 2002). The value families place on education tends to be correlated with race, class, and culture (Godwin, 2002). Although the intentions of the policies are not racially based, the consequences of implementation are. Renzulli (2006) describe this in terms of the research in race and ethnic relations. Practices that result in racial division are increasingly hidden, embedded in the normal operations of institutions, avoid direct racial terminology, and are invisible to most Whites (Renzulli, 2006). These practices are more difficult to challenge because they are not obvious to the observer.

The fastest population growth in charter schools has been with Black students, which can be attributed to the majority of charter schools being created in or around inner-city school districts (National Center for Educational Statistics, 2014). This is a concern because even 50 years after the landmark decision of *Brown v. Board of Education*, segregation still leads to a lack of opportunities and access to a quality education. Students in segregated schools, whether charter or not, are less likely to have more advantaged social networks (often linked to jobs and higher education opportunities) and they have fewer opportunities to prepare for living in a diverse society (Frankenberg et al., 2011). Advocates for charter schools do not bring racial isolation into their conversations. Instead they focus on access to a charter school being a civil rights issue. The research on families and choice options reveal that charter school

access is determined by the degree of social network access, language, socioeconomic status, and ability to transport their children (Frankenberg et al., 2011). Stratification results when there is unrestricted choice. For example, considering the application process for a new charter school specializing in a given subject, several steps need to occur for parents. They must hear about it, which is dependent upon how the charter school has advertised, whether the documentation is available in multiple languages, and whether the parent is part of a social network with the information. The application process may require testing or recommendations. These steps can limit families with limited resources, thus more affluent families are able to take advantage (Frankenberg et al., 2011).

Charter schools are not always available as an option, depending on where a family lives. Potential school operators are less likely to set up a charter school in states where the legislature has changed policy with little notice to the schools. Also, some states have altered their agreements regarding financial support after charter schools are already set up (Betts & Loveless, 2005). These types of actions by states put charter schools at a disadvantage because they are less willing to borrow money for facilities if there is that much inconsistency in the state legislature. This can create even more segregation if charters limit themselves only to certain locations.

A study revealed that charter schools have altered the racial segregation in the selected Midwestern state schools (Betts & Loveless, 2005). During the time of the study, 47% of students in the state's charter schools were Black, compared to 17% in regular schools. This can be explained by charter school operators opening schools in predominantly Black neighborhoods. The study concluded that the selected Midwestern

state's charter operators on the whole aim to serve nonwhite students, which goes against the theory that charter schools have a desire to "skim off" affluent (and typically White) students (Betts & Loveless, 2005; Frankenberg et al., 2011). Similar results were found when analyzing the National Center for Education Statistics Common Core of Data. Michigan, Minnesota, Texas, North Carolina, Massachusetts, and Connecticut all served higher percentages of students of color than public schools in those states (Frankenberg et al., 2011). Research indicates that while charter schools in certain areas have higher percentages of White students than traditional public schools (Minneapolis, MN), a far greater number of charter schools are more segregated for other races compared to their public school settings (Frankenberg et al., 2011). Conte (2002) stated that school choice in Michigan is not about innovation and general improvement in performance. Instead, it is about managing which students they enroll. It has only served to reinforce the prestige hierarchy (Conte, 2002).

Most researchers conclude that school choice is neither good nor bad. It is the ability of school choice to improve the equity and efficiency of our nation's schools, and the policy decisions that are made that matter. The debate over whether school choice is "good" or "bad" does not seem to be at the forefront. However, choice in and of itself is not going to provide solutions to truly reform our educational system. Policymakers and citizens agree that School Choice is here to stay and it will likely grow.

Summary of the Literature Review

Charter schools have only been existence for a little over two decades. It is not surprising that there have not been a large number of studies conducted to determine the relative impact of charter schools on student achievement, graduation rates, school

acculturation, and the likes. Given the polarizing effect that the charter school debate can spark, the majority of articles written have focused on qualifying whether charter schools are good or bad as an institution. Although there have been several research studies conducted over the past two decades, the studies I reviewed were limited in their scope and applicability. There is a paucity of research studies that have looked at more than just mathematics and reading achievement scores to determine the effectiveness of this reform initiative. To date, there is still a paucity of research studies that have focused on the effects of charter schools in an urban environment. Fewer research studies have investigated the impact of charter school on other matters that impact student achievement such as attendance in school in relationship to the performance of their corresponding counterpart in traditional non-charter schools. Since this area is the cornerstone of my future research efforts, my study attempts to determine whether students attending charter schools in an urban environment outperform their corresponding counterparts on such measures as academic achievement and attendance.

CHAPTER III

METHODOLOGY

The purpose of this study was to explain whether students who transfer to a charter school actually perform better than their traditional public school counterparts. Current research is mixed or inconclusive regarding whether students show higher achievement once in a charter school. Student data spanning a five-year time period (2008–2012) was analyzed to determine if there were differences between the comparison groups.

The primary research question this study addressed is, namely: To what extent, if any, do students in charter schools situated in urban school districts outperform their corresponding counterparts in regular contiguous traditional school districts in such areas as student achievement and attendance? This study utilized data collected from the selected Midwestern state’s Department of Education’s Center for Educational Performance and Information (CEPI) database from 2008 to 2012 school years. This chapter is divided into the following sections: research design, population sample, data collection, and data analysis.

Research Design

This study utilized a quantitative non-experimental factorial design. Also known as *ex post facto*, this design examines data as a dependent variable in respect to investigating causes, relationships or associations, and their meanings (Cohen, Manion, & Morrison, 2007). The term *ex post facto* is defined as “from what is done afterwards.” In this regard, a naturalistically occurring treatment was examined after the treatment had already occurred. In this study, the identified independent variables were not

manipulated. Comparison of group differences were made on the dependent variable to examine whether there were any effects resulting from preexisting conditions (Cohen et al., 2007). This type of *ex post facto* design is often used in education, social, and psychological research studies in which the researcher is unable to control the independent variable(s) and whenever the researcher must rely on pre-existing groups within the population sample. For this study, even though the independent variables were not manipulated, group difference comparisons were made on the dependent variable to determine whether there was a causal effect from preexisting conditions (ethnicity, gender, or poverty level) on subsequent differences between subjects (school type) (Creswell, 2003). By gaining numeric descriptions and analyzing objective data the results can be generalized to a particular population (Creswell, 2003).

The *ex post facto* design is utilized to show correlations between factors retrospectively. In a sense, the study will investigate possible relationships within subjects (type of school chosen) as well as between subjects when other independent variables are identified (ethnicity, gender, or poverty level), by observing an existing condition, and search back in time for plausible correlations (Creswell, 2003). This type of study is appropriate in situations where more powerful experimental designs are not possible due to the inability to control or manipulate the factors necessary to determine direct cause and effect relationships. In addition, it is widely used in behavioral research designs because this type of study involves not only the examination of the independent and dependent variables, but also the effects of independent variables in combination, thus a more rich multidimensional view is provided (Creswell, 2003).

Using this type of design is advantageous because it can show correlations if more rigorous experimentation is not possible. In addition, it can be useful to avoid artificiality, the degree to which experimental conditions are unable to reflect real-life situations (Cohen et al., 2007). External validity is reduced if the degree of artificiality is high. A disadvantage for this type of design is the lack of control for independent variables and randomizing subjects. Only possible conclusions can be determined rather than specific causal factors. Within this type of design, any relationship determined between two factors does not necessarily establish cause and effect. Consequently, there may be multiple causes that explain the effect (Cohen et al., 2007).

Population Sample

The samples were composed of 145,183 students that attended 772 buildings in 31 school districts that served K–8 students in traditional Midwestern public schools, along with data from 46,480 students attending corresponding 88 charter schools located within these urban school districts. Under the No Child Left Behind Act, each state is required to assess students annually in grades three through eleven (Zhang & Cowen, 2009). For this study, only one Midwestern state was chosen due to the fact that different assessment instruments are utilized. Each state’s assessment is correlated to its own state learning standards. Roughly two thirds of charter schools serve students in grades three through eight in the chosen Midwestern state during the identified time frame of the study (National Center for Educational Statistics, 2011). Therefore, to ensure an adequate sample size for comparison, only grades three through eight were chosen for this study. The research study focuses on school environments in an urban setting. Many of these school districts are affiliated with an organization that advocates for small urban school

districts outside of the larger cities in the identified Midwestern state. At the time of this study, there were 31 school districts in the Midwestern urban school districts consortium. The request for data only included those districts and the 88 charter schools serving in the same area contiguous to those schools.

Data Collection

As stated previously, data were acquired via request from the selected Midwestern state's Department of Education's Center for Educational Performance and Information (CEPI) database. For the past decade, this state's Department of Education required school districts to assign a unique state ID to each student in their student database management system. Annually, the data are collected by the state's Department of Education and warehoused in the CEPI database. The unique student ID allows for a student to be monitored no matter which school district they attend. Anonymous student data were requested from CEPI which included achievement and enrollment data of students that attended selected small urban schools districts, as well as those students that transferred out of these districts to attend contiguous public charter schools, during the 2008 to 2012 school years. Prior to any data collection, as a requirement for CEPI student data requests and Western Michigan University policy, Human Subjects Internal Review Board (HSIRB) approval for the study was sought and received. The application for HSIRB outlined the parameters of the study that included a statement regarding the lack of need to recruit and identify subjects since the information was already stored in a database. In addition, it was not necessary to obtain informed consent because the data were collected from the identified state's database rather than from individual subjects. These data are maintained on all students that attend public schools in the identified

Midwestern state and are available on the Department of Education's website, in aggregate form, for public consumption. In addition, procedures were followed to ensure names of students would not be published or distributed.

Upon HSIRB approval, a letter of approval was submitted along with the research proposal to the CEPI Research Collaborative Internal Review Board for approval. To maintain confidentiality, a request was made to replace the student ID field with a randomly generated unique identifier listed as the only identifying variable in order to maintain compliance with Family Education Right to Privacy Act (FERPA) requirements. The risks to participants were negligible because the data were already compiled by CEPI. The internal review board determined that the study met all aspects of HSIRB and the request was granted. Confidentiality of student information was maintained at all times during the course of this study.

Data acquired via a secure server from CEPI was uploaded into Microsoft Excel for aggregation and initial analysis. Utilizing algorithms, additional fields were populated based on students' prior year enrollment and which type of school they were attending (traditional or charter). Fields were created to identify the number of years since a charter school student transferred from a traditional school. The completed data set was uploaded into Statistical Package for the Social Sciences (SPSS, version 23) to perform statistical analysis. The data utilized for the study were retained and secured within the office of the researcher's advisor within the Educational Leadership, Research and Technology Department at Western Michigan University.

Data Analysis

Students were placed into cohorts based on school type they attended (traditional or charter). The charter students were then subdivided into categories based on the number of years since the transfer to a charter school occurred. The traditional public schools utilized for this study were from 31 urban districts that were designated as belonging to a consortium for Midwestern urban school districts. The charter schools utilized in the study were contiguous to those districts. For a given year within the range identified for the study (2008 to 2012), a student was classified into one of six categories based on school type chosen. They were either enrolled in a traditional school or in their first through fifth year since transfer to a charter school. There were 196,669 students within the data received from CEPI. Only those students who received an assessment Math or Reading score were included in the analysis. This same group of students was utilized for the analysis regarding attendance rates.

An assessment scale score was created for each student for each school year that they were in either the small urban school district grades four through eight or contiguous charter school grades three through eight. Mathematics and reading scores were adjusted for yearly comparisons by determining the difference between the state average scale score and the students scale score for the given year the assessment was administered. The state average for all students was utilized to determine the difference. Attendance rates were determined for the identified student population samples by calculating the number of days attended divided by the number of days enrolled for each year of the study. Demographic data (ethnicity, gender, and poverty level) were also collected and

analyzed. For simplification, ethnicity was re-coded into a new variable containing only four categories (Black, White, Hispanic and Other).

The “number of years since transfer to a charter school” was determined based on the enrollment of the student in the previous year, i.e., if the student, regardless of grade level, was enrolled in a traditional school the previous year and a charter school the year of the assessment, that student was designated as a first year charter attendee. If the student, regardless of grade level, was enrolled the previous year in a charter school as a first year charter attendee, that student was designated as a second year charter attendee. Charter school students were assigned into one of the five categories using a student ID matching algorithm in Microsoft Excel. The date range of the data limited the study to the possibility of a student having a maximum of five years as a charter school attendee since transferring.

Although third grade data was collected, it was not utilized as part of the study for comparing means. Based on the data collected, the type of school (traditional or charter) cannot be determined for the previous year attended by a third grade student. Thus, it would be difficult to tell how many years the student had been in a charter school. Therefore, the third grade data was only utilized to determine the previous type of school attended by a fourth grade student. The study only compares means for fourth through eighth grade.

Achievement score mean differences from state average were determined for each charter transfer year cohort and compared to the mean score difference from state average for each grade level. An independent samples t-test analysis was utilized to compare means between each charter school transfer year cohort and the selected small urban

traditional school for that grade level. The results of the t-test analysis provide information for describing the extent and direction of difference between charter school and traditional school district students. For all statistical t-tests, an alpha level of .05 was used to determine whether to reject or accept the first three null hypotheses (mathematics, reading and attendance). This level of significance is most often used in studies involving the social sciences (Creswell, 2003). If the p-value was greater than the significance level ($p < .05$), the null hypotheses were rejected. This would mean that there was a 5% chance that the results obtained would be inconsistent with the null hypotheses as they would be to random chance (Creswell, 2003).

Initially, a Two-Way Analysis of Variance (ANOVA) at the .05 probability level ($p = .05$) was used to determine if there significantly significant differences between charter school transfer students and traditional school students, and whether there were significant interaction effects with ethnicity, gender, or poverty. However, based on a Levene's Test for Equality of Variances, there was insufficient evidence to claim that variances were not equal ($p < .05$), most likely due to the comparison of large cohort to small cohort means. When comparing the largest standard deviation squared to the smallest standard deviation squared in each grouping, the ratio was less than 3.0 to 1. Therefore, we can interpret the ANOVA in spite of the violation of homogeneity of variances (Creswell, 2003). In order to increase the statistical power and reduce the effects of Type I errors due to unequal variances between cohorts, a $p < .001$ level of significance was used instead (Cohen et al., 2007).

To simplify the procedure, ethnicity was converted into four sub-categories for analysis. Due to the large number of possible ethnic categories contained in the ethnicity

variable within the dataset received from CEPI, a new ethnicity variable was coded which identified a student in one of four categories (Black, White, Hispanic, Other). Separate ANOVA tests were conducted using ethnicity, gender, or poverty as a fixed factor paired with Charter Transfer Year to determine whether there was a significant relationship between the dependent variables (difference from State average for mathematics, difference from State average for ELA, and attendance) and the combination of independent variables. There were five cohort comparisons within each of the three categories (mathematics, reading and attendance) for each of the three fixed factors (ethnicity, gender and poverty). Main effects were determined by comparing estimated marginal means. Means were adjusted within the ANOVA analysis to account for large differences in variance between sample sizes.

An alpha level of .001 was used to determine whether to reject the fourth null hypothesis (mitigating effects of ethnicity, gender, or poverty level). If the p-value was greater than the significance level ($p < .001$), the null hypothesis was rejected. This would mean that there was a 0.1% chance that the results obtained would be inconsistent with the null hypotheses as they would be to random chance (Creswell, 2003).

Summary

This chapter has presented an overview, how data were selected and grouped, along with the methodology chosen. The choice to utilize the statistical procedures identified was deemed appropriate to determine whether charter school students in selected urban environments are performing better. Chapter IV describes the findings of this study.

CHAPTER IV

FINDINGS OF STUDY

The purpose of this study was to compare the performance of students attending charter and traditional schools in a Midwestern urban school setting. This study sought to determine whether students attending traditional and charter schools exhibited different levels of academic performance in mathematics and reading, as well as attendance, after controlling for a number of student demographic variables (i. e., ethnicity, gender, and SES). The focus of this study was centered on fourth through eighth grade students that attended identified small urban school district schools, and corresponding charter schools established in close proximity to those schools during the 2008 to 2012 school years.

This section will provide data to support the testing of each hypothesis in the four major categories. They were: (1) Mathematics; (2) Reading; (3) Attendance; and (4) Mitigating effects of ethnicity, gender, and poverty level. After providing pertinent background information about each of the above research categories, the student investigator will restate each hypothesis, and then provide an appropriate statistical test to determine whether the hypothesis will be accepted, or failed to accept, the hypothesis presented.

Generally speaking, and from a cursory perspective, it appeared that charter school students performed worse than students attending contiguous traditional schools during the earlier years under investigation. (The reader is referred to Appendix B which contains data depicting the mean (μ) differences in mathematics and reading averages, including attendance rates, for students in traditional and contiguous charter schools during the 2008 through 2012 school years.) Average differences in mathematics and

reading scores for all cohort groups were negative; thus indicating that urban schools and contiguous charter school students performed at lower levels than the state's average in every grade during the 2008 to 2012 time period. Overall, average attendance rates for students in charter schools were lower than students attending traditional schools, with the exception of seventh and eighth grade charter students in their fourth year of transfer from a traditional school.

To determine the significance of these differences, the investigator utilized a t-test to determine whether the first three hypotheses exhibited statistically significant differences between students attending traditional schools, as compared to students attending charter schools in contiguous districts. The $p < .05$ confidence level was used for determining statistical significance. Additionally, when considering the fourth hypothesis, the investigator utilized an Analysis of Variance (ANOVA) statistical test and determined that there were interaction effects between the selected independent variables. To reduce the potential effects of a Type I error due to unequal variances, the $p < .001$ level of significance was used.

Testing of Hypotheses

To test the first hypothesis, the investigator restated the hypothesis and provided an appropriate statistical test to determine whether it was supported. If the statistical analysis showed that the significance level was below the .05 confidence level, the null hypothesis was rejected and the alternate hypothesis accepted.

H₀: There will be no statistically significant difference in the academic achievement of students who transfer to a charter school in grades four

through eight as compared to students in the same grade level who remain in non-charter public schools on the Mathematics section of the selected Midwestern state’s assessment in contiguous identified small urban school districts over a five-year time period.

Mathematics achievement scores of traditional school students, and corresponding charter school students, were placed into individual testing cohorts by fourth through eighth grade level and the number of years since transferring to a charter school (first through fifth years). The dependent variable in this study was the mean (μ) score difference between what students scored in comparison to the mean (μ) score difference of students who attended charter schools in corresponding contiguous school districts. The scores generated in this study were established by utilizing publicly-posted data for all students in this Midwestern state in grades four through eight. (The reader is referred to Appendix C.) Each student selected from this statewide data base received a scale score calculated by subtracting the overall mean (μ) state average for that tested year and the individual test scores each student received at that respective grade levels. (Appendix D contains a more in-depth discussion of how these scale scores were derived.)

A t-test analysis was conducted to determine whether there were significant differences between mathematics mean (μ) scale scores of charter school students and the traditional school students in the same grade level. The reader is referred to Table 4.

Table 4

T-test summary: Mathematics Assessment Mean (μ) Scale Scores by Grade Level for All Student Categories When Comparing Traditional (T) or Charter (C) Schools and Years After Transfer to a Charter Schools from 2008 to 2012 School Years

Grade	Type	t	df	Sig (2-tailed) Difference	Mean
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Table 4 – continued

4	T		-	-	9.176
	C (1 st Yr.)	19	7076	0.000	-21.005
5	T	-	-	-	12.111
	C (1st Yr.)	7	5998	0.000	-17.721
	C (2nd Yr.)	13	4395	0.000	23.417
6	T	-	-	-	12.469
	C (1st Yr.)	5	5719	0.000	-16.787
	C (2nd Yr.)	12	3704	0.000	-25.072
	C (3rd Yr.)	-7	3012	0.000	-6.777
7	T	-	-	-	14.678
	C (1st Yr.)	4	5132	0.000	-19.527
	C (2nd Yr.)	8	3532	0.000	-25.001
	C (3rd Yr.)*	-6	64053	0.000	-6.72
	C (4th Yr.)*	-7	63537	0.000	-4.63
8	T	-	-	-	-16.237
	C (1st Yr.)	4	4485	0.000	-21.67
	C (2nd Yr.)	6	3651	0.000	-23.84
	C (3rd Yr.)*	-4	64140	0.000	-10.401
	C (4th Yr.)*	-3	63500	0.003	-10.281
	C (5th Yr.)*	-5	63062	0.000	-5.66

Note. *Levene’s test for equality of variances indicates that the assumption of homogeneity of variances was met with the comparisons of seventh and eighth grade students in their third year of transfer to a charter, seventh and eighth grade students in their fourth year of transfer to a charter, and eighth grade students in their fifth year of transfer to a charter to the traditional schools. Therefore, equal variances were assumed in each of these cases.

The above table indicates the result of independent samples t-tests for each first year transfer cohort of traditional students and charter school students in that particular grade level. Findings from this analysis indicate that all fourth grade students who transferred to a charter school after one year of attendance had statistically significantly lower mean (μ) difference in mathematics (-21.005 ± 49.15) than the fourth grade students who remained in traditional schools (-9.176 ± 35.57), $t(19) = 7076$, $p = 0.000$. For all fifth grade students in the dataset, two independent samples t-tests were conducted comparing fifth grade students in traditional school to fifth grade students who attended charter school after having transferred to a charter school after two years of attendance. Both t-test results showed a significant difference between the mean (μ) scale scores of traditional school students and their corresponding counterparts attending charter schools. First year students attending charter schools who transferred to a fifth grade class had statistically significantly lower mean (μ) difference from the state mathematics scale scores (-17.721 ± 56.50) than the corresponding fifth grade students who remained in traditional schools (-12.111 ± 47.30), $t(7) = 5998$, $p = 0.000$. Second year charter school students who transferred in fifth grade also had statistically significantly lower mean (μ) difference in state mathematics scale scores (-23.417 ± 52.79) than the corresponding fifth grade students who remained in traditional schools (-12.111 ± 47.30), $t(13) = 4395$, $p = 0.000$. For the third year students who were in sixth grade, three independent samples t-tests were conducted. T-tests for these three cohorts in sixth grade (first year, second year, third year charter school transfers) all showed significant differences in mean (μ) scale scores when compared to the corresponding sixth grade students in traditional schools. For seventh and eighth grade students, four and five independent

samples t-tests were run, respectively. An analysis of comparison cohorts showed significant differences in mathematics mean (μ) scale scores at the $p < .05$ level of significance in each case. However, a Levene's Test for Equality of Variances indicated that there was insufficient evidence to claim that variances were not equal. Findings from this test showed that there was a significant difference in the mathematics performance of students attending charter schools, in comparison to the mathematics performance of students attending traditional schools at the $p > .05$ level for seventh grade third and fourth year charter transfers, as well as eighth grade third, fourth, and fifth year charter transfers.

In summary, this null hypothesis was rejected for all comparison cohorts in the area of mathematics. Significant differences in mathematics achievement were found at all grade levels between traditional and charter school students over the five-year time span. Therefore, the alternate hypothesis is accepted that there were significant differences in the academic achievement of students who transferred to a charter school in grades four through eight as compared to students in the same grade level who remained in non-charter public schools on the Mathematics section of the identified Midwestern state's assessment in selected small urban school districts over a five-year time period.

H₀: There will be no statistically significant difference between the academic achievement of students who transfer to a charter school in grades four through eight and students in the same grade level who remain in non-charter public schools on the Reading section of the state's assessment in

selected contiguous small urban school districts over a five-year time period.

Reading achievement scores of traditional school and corresponding charter school students were placed into individual testing cohorts by fourth through eighth grade level and the number of years since transferring to a charter school (first through fifth years). The dependent variable was the mean (μ) difference from state scores on the state Reading assessment program. Scores were computed utilizing the selected Midwestern state's Department of Education publicly posted data for all students in the state in grades four through eight (The reader is referred to Appendix C). Similar to mathematics, each student received a reading scale score calculated by subtracting the state average for that tested year and grade level. (Appendix E contains a more in-depth discussion of how these scale scores were derived.)

A t-test analysis was conducted to determine whether there were significant differences between reading mean (μ) scale scores of charter school students and traditional school students in the same grade level. The reader is referred to Table 5.

Table 5

T-Test Summary: Reading Assessment Mean (μ) Scale Scores by Grade Level for All Student Categories When Comparing Traditional (T) or Charter (C) Schools and Years After Transfer to a Charter Schools from 2008 to 2012 School Years

Grade	Type	t	df	Sig (2-tailed) Difference	Mean
4	T	-	-	-	-9.603
	C (1st Yr.)	22.155	8436	0.000	-19.796
5	T	-	-	-	-9.508
	C (1st Yr.)	11.741	7543	0.000	-14.432
	C (2nd Yr.)	17.846	4953	0.000	-19.955

Table 5 – continued

6	T	-	-	-	-8.779
	C (1st Yr.)	7.735	7576	0.000	-11.794
	C (2nd Yr.)	15.544	4293	0.000	-17.986
	C (3rd Yr.)*	-4.749	64765	0.000	-6.343
7	T	-	-	-	-11.083
	C (1st Yr.)	5.092	6878	0.000	-13.307
	C (2nd Yr.)	12.904	4243	0.000	-19.205
	C (3rd Yr.)*	-9.512	63754	0.000	-5.349
	C (4th Yr.)	-10.918	2011	0.000	-3.048
8	T	-	-	-	-8.869
	C (1st Yr.)	5.281	5611	0.000	-11.147
	C (2nd Yr.)	11.467	4151	0.000	-15.694
	C (3rd Yr.)	-9.058	2830	0.000	-4.637
	C (4th Yr.)	-9.155	1845	0.000	-3.832
	C (5th Yr.)	-11.055	1213	0.000	-0.719

Note. *Levene’s test for equality of variances indicates that the assumption of homogeneity of variances was met with the comparisons of sixth and seventh grade students in their third year of transfer to a charter. Therefore, equal variances were assumed in each of these cases.

The above table indicates the result of independent samples t-tests for each transfer year cohort comparing the traditional students in that particular grade level to the charter school cohorts. This study found that all fourth grade students who transferred to a charter school after one year had statistically significantly lower mean (μ) difference from reading state scale scores (-19.796 ± 38.27) than the fourth grade students who remained in traditional schools (-9.603 ± 29.39), $t(22) = 8436$, $p = 0.000$. For all fifth

grade students in the dataset, two independent samples t-tests were conducted comparing fifth grade traditional school students to either fifth grade charter school students after one year of transfer, or fifth grade charter school students after having transferred two years from traditional school districts. Both t-tests resulted in significant differences between mean (μ) scale score differences. First year charter transfers in fifth grade had statistically significantly lower mean (μ) difference from reading state scale scores (-14.432 ± 32.36) than the fifth grade students who remained in traditional schools (-9.508 ± 28.97), $t(12) = 7543, p = 0.000$. Second year charter transfers in fifth grade also had statistically significantly lower mean (μ) difference from reading state scale scores (-19.955 ± 38.82) than the fifth grade students who remained in traditional schools (-9.508 ± 28.97), $t(18) = 4953, p = 0.000$. For sixth grade, three independent samples t-tests were conducted. The t-tests for the three cohorts in sixth grade (first year, second year, third year charter transfers) all showed significant differences compared to the sixth graders in traditional schools. For seventh and eighth grade, four and five independent samples t-tests were run, respectively. Comparison cohorts showed significant differences for reading at the $p < .05$ level of significance in each case, however, a Levene's Test for Equality of Variances indicated that there was insufficient evidence to claim that variances were not equal. Findings from this test showed that there was a significance level of $p > .05$ for sixth and seventh grade third year charter transfers.

In summary, this null hypothesis was rejected for all comparison cohorts for reading assessment comparisons. Significant differences in reading achievement were found at all grade levels between traditional and charter school students over the five year time span. Therefore, the alternate hypothesis is accepted that there were significant

differences in the academic achievement of students who transfer to a charter school in grades four through eight as compared to students in the same grade level who remain in non-charter public schools on the reading section of the state's assessment in selected contiguous small urban school districts over a five-year time period.

H₀: There will be no statistically significant difference between the attendance rates of students who transfer to a charter school in grades four through eight and students in the same grade level who remain in non-charter public schools in selected contiguous small urban school districts over a five-year time period.

Attendance rates of traditional school students and charter school students were grouped by grade level (fourth through eighth) and number of years since transferring to a charter (first year through fifth years). The dependent variable was attendance rate. Mean (μ) attendance rates for comparison cohorts were computed utilizing requested the selected Midwestern state's Department of Education CEPI data for all students attending the selected small urban school district schools in grades four through eight. (The reader is referred to Appendix F.) Attendance rates for each individual grade level were also calculated. (The reader is referred to Appendix G.)

A t-test analysis was conducted to determine whether there were significant differences between attendance rates of charter school students and traditional school students in the same grade level. The reader is referred to Table 6.

Table 6

T-test Summary: Attendance Rates by Grade Level for All Student Categories When Comparing Traditional (T) or Charter (C) Schools and Years After Transfer to a Charter Schools from 2008 to 2012 School Years

Table 6 – continued

Grade	Type	t	df	Sig (2-tailed) Difference	Mean
4	T	-	-	-	94.95%
	C (1st Yr.)	25.412	6723	0.000	91.54%
5	T	-	-	-	94.96%
	C (1st Yr.)	14.596	5727	0.000	93.19%
	C (2nd Yr.)	21.554	4128	0.000	91.52%
6	T	-	-	-	94.27%
	C (1st Yr.)	5.01	5951	0.000	93.66%
	C (2nd Yr.)	18.098	3663	0.000	90.96%
	C (3rd Yr.)*	6.792	64677	0.000	93.11%
7	T	-	-	-	94.09%
	C (1st Yr.)	5.404	5245	0.000	93.36%
	C (2nd Yr.)	14.655	3460	0.000	91.43%
	C (3rd Yr.)	5.757	2461	0.000	93.17%
	C (4th Yr.)	-5.651	1865	0.000	95.12%
8	T	-	-	-	93.51%
	C (1st Yr.)	5.736	4483	0.000	92.57%
	C (2nd Yr.)	10.578	3566	0.000	91.61%
	C (3rd Yr.)	4.055	2404	0.000	92.78%
	C (4th Yr.)	-3.849	1677	0.000	94.37%
	C (5th Yr.)	1.352	1165	0.177	92.90%

Note. *Levene's test for equality of variances indicates that the assumption of homogeneity of variances was met with the comparisons of sixth grade students in their third year of transfer to a charter. Therefore, equal variances were assumed in each of these cases.

The above table indicates the results of independent samples t-tests for each transfer year cohort comparing the traditional students in that particular grade level to the charter school cohort(s). This study found that all fourth grade students who transferred to a charter school after one year had statistically significantly lower mean (μ) attendance rates ($91.54\% \pm 10.56\%$) than the fourth grade students who remained in traditional schools ($94.95\% \pm 5.60\%$), $t(25) = 6723, p = 0.000$. For all fifth grade students in the dataset, two independent samples t-tests were conducted comparing attendance rates of traditional school fifth grade students to either fifth grade charter school students after one year of transfer, or fifth grade charter school students after having transferred two years from traditional school districts. Both t-tests resulted in significant differences between mean (μ) scale score differences. First year charter transfers in fifth grade had a statistically significant lower mean (μ) attendance rate ($93.19\% \pm 8.69\%$) than the fifth grade students who remained in traditional schools ($94.96\% \pm 5.80\%$), $t(15) = 5727, p = 0.000$. Second year charter transfers in fifth grade also had a statistically significantly lower mean (μ) attendance rate ($91.52\% \pm 9.96\%$) than the fifth grade students who remained in traditional schools ($94.96\% \pm 5.80\%$), $t(22) = 4128, p = 0.000$. For sixth grade, three independent samples t-tests were conducted. The t-tests for the three cohorts in sixth grade (first year, second year, third year charter transfers) all showed significant differences in attendance rates compared to the sixth graders in traditional schools. For seventh and eighth grade, four and five independent samples t-tests were run, respectively. Comparison cohorts showed significant differences for attendance rates at the $p < .05$ level of significance in all but one cohort. Attendance rate for fifth year charter transfers in eighth grade ($92.90\% \pm 15.19\%$) were not found to be significantly

different than the attendance rate of traditional schools ($93.51\% \pm 8.90\%$), $t(1) = 1165$, $p = 0.177$. Results of the independent t-tests for seventh grade fourth year transfers ($95.12\% \pm 7.52\%$) indicate a significantly higher attendance rate than their seventh grade traditional school counterparts ($94.09\% \pm 8.20\%$), $t(-6) = 1865$, $p = 0.000$. Also, results of the independent t-tests for eighth grade fourth year transfers ($94.37\% \pm 8.69\%$) indicate a significantly higher attendance rate than their eighth grade traditional school counterparts ($93.51\% \pm 8.90\%$), $t(-4) = 1677$, $p = 0.000$. Again, a Levene's Test for Equality of Variances indicated that there was insufficient evidence to claim that variances were not equal. Findings from this test showed that there was a significance level of $p > .05$ for sixth grade third year charter transfers.

In summary, attendance rate comparisons indicate that all cohorts at all grade levels, with the exception of one, were found to be significantly different ($p < .05$). There was no significant difference between eighth grade students in traditional school students and eighth grade students in their fifth year charter transfer, $t(1165) = 1.35$, $p < .001$. Therefore, the null hypotheses were rejected for all comparison cohorts for attendance rates, with the exception of the eighth grade comparison cohort between traditional school students and fifth year charter transfer students. In those cases, the alternate hypothesis is accepted that there were statistically significant differences between the attendance rates of students who transfer to a charter school in grades four through eight and students in the same grade level who remain in non-charter public schools in selected contiguous small urban school districts over a five-year time period.

To determine whether there were interaction effects from mitigating factors when analyzing significant differences between traditional school students and charter school

students, students were grouped by grade level (four through eight) and number of years since transferring to a charter (one year through five years). The dependent variables were mathematics, reading, and attendance rates. There were three identified fixed factors (ethnicity, gender, and poverty). Main effects were determined by comparing estimated marginal means.

To test the fourth hypothesis in this study, the investigator restated the hypothesis and provided an appropriate test to determine whether the hypotheses were supported. In all test applications, due to large sample size variances, the .001 level of confidence was used for determining statistical significance. This level of significance reduced the potential effects of Type I errors due to unequal variances and created a more stringent test for significance. If the statistical analysis shows that the significance level is below .001, the null hypothesis was rejected and the alternate hypothesis accepted. The fourth null hypothesis was tested nine times based on the groupings.

H₀: There will be no statistically significant difference in the performance of students on the state's Mathematics and Reading assessment scores and attendance rates when comparing the performance of students in selected contiguous small urban school districts, as compared to charter schools, over a five-year time period, when examining those students that transferred between charter and non-charter schools when controlling for ethnicity, gender, or poverty.

In reference to mathematics mean (μ) scale scores of charter school students and traditional school students in the same grade level and the interaction between ethnicity and school type, the reader is referred to Table 7.

Table 7

Two-Way ANOVA for Mathematics Assessment Mean (μ) Difference from State Average for School Type and Ethnicity with Students Grouped by Transfer Year to a Charter School

Variable	Source	Df	F	MS	p
Transfer Yr 1	(Gr 4–8)				
	School Type	1	2.30	1405	.130
	Ethnicity	3	1867	1142014	.000
	School Type * Ethnicity	3	108	65795	.000
	Within (Error)	337803			
Transfer Yr 2	(Gr 5–8)				
	School Type	1	202	133393	.000
	Ethnicity	3	864	571299	.000
	School Type * Ethnicity	3	227	149871	.000
	Within (Error)	262132			
Transfer Yr 3	(Gr 6–8)				
	School Type	1	494	272860	.000
	Ethnicity	3	756	417603	.000
	School Type * Ethnicity	3	12	6618	.000
	Within (Error)	192060			
Transfer Yr 4	(Gr 7–8)				

Table 7 – continued

	School Type	1	429	238630	.000
	Ethnicity	3	527	292287	.000
	School Type * Ethnicity	3	13	7493	.000
	Within (Error)		126199		
<hr/>					
Transfer Yr 5	(Gr 8)				
	School Type	1	134	74198	.000
	Ethnicity	3	222	123048	.000
	School Type * Ethnicity	3	10	5806	.000
	Within (Error)		62620		

Note. **Levene's test for equality of variances indicates that the assumption of homogeneity of variances was not met for each grouping. Therefore, equal variances are not assumed and the $p < .001$ significance level is used to prevent making a Type I error.

The above table indicates, after adjustments due to the large variances of sample sizes, the estimated marginal means were not significantly different for first year transfer students compared to their traditional school counterparts, $F(1, 337803) = 2.30, p > .001$. However, simple main effects analysis for the second through fifth year transfer students revealed significant differences at the $p < .001$ level. Likewise, simple main effects analysis for ethnicity for all comparison cohorts revealed significant differences at the $p < .001$ level. Within each comparison cohort, there were statistically significant interactions between the effects of school type and ethnicity ($p < .001$), indicating that any differences between mathematics assessment mean (μ) scores were dependent upon the ethnicity of the subjects.

In summary, the null hypothesis was rejected for all comparison cohorts when controlling for the mitigating effect of ethnicity. When means were adjusted, there were still main effect significant differences. The interaction effect between school type and ethnicity was significant in all groupings ($p < .001$). Thus the alternate hypothesis that when controlling for the mitigating effects of ethnicity, there will be significant differences in performance, is utilized for all groupings.

In regards to mathematics mean (μ) scale scores of charter school students and traditional school students in the same grade level and the interaction between gender and school type, the reader is referred to Table 8.

Table 8

Two-Way ANOVA for Mathematics Assessment Mean (μ) Difference from State Average for School Type and Gender with Students Grouped by Transfer Year to a Charter School

Variable	Source	Df	F	MS	p
Transfer Yr 1	(Gr 4–8)				
	School Type	1	749	497599	.000
	Gender	1	3.40	2256	.065
	School Type * Gender	1	0.20	119	.672
	Within (Error)	337807			
Transfer Yr 2	(Gr 5–8)				
	School Type	1	2012	1445157	.000
	Gender	1	0.10	62	.769
	School Type * Gender	1	1.10	764	.302
	Within (Error)	262136			
Transfer Yr 3	(Gr 6–8)				

Table 8 – continued

	School Type	1	299	181733	.000
	Gender	1	2.40	1433	.125
	School Type * Gender	1	0.20	96	.692
	Within (Error)		192064		
<hr/>					
Transfer Yr 4	(Gr 7–8)				
	School Type	1	298	183926	.000
	Gender	1	5.90	3615	.015
	School Type * Gender	1	2.50	1548	.113
	Within (Error)		126203		
<hr/>					
Transfer Yr 5	(Gr 8)				
	School Type	1	156	96005	.000
	Gender	1	.40	275	.504
	School Type * Gender	1	.0002	.151	.987
	Within (Error)		62624		

Note. **Levene’s test for equality of variances indicates that the assumption of homogeneity of variances was not met for each grouping. Therefore, equal variances are not assumed and the $p < .001$ significance level is used to prevent making a Type I error.

The above table indicates that simple main effects analysis for gender revealed no significant differences at the $p < .001$ level in each transfer year comparison cohort. In addition, within each comparison cohort, there was no statistically significant interaction between the effects of school type and gender ($p > .001$).

In summary, the null hypothesis was accepted for all comparison cohorts when controlling for the mitigating effect of gender. When means were adjusted, there were no

main effect significant differences. There were no significant interaction effects between school type and gender in all groupings ($p > .001$).

In reference to mathematics mean (μ) scale scores of charter school students and traditional school students in the same grade level and the interaction between poverty level and school type, the reader is referred to Table 9.

Table 9

Two-Way ANOVA for Mathematics Assessment Mean (μ) Difference from State Average for School Type and Poverty Level with Students Grouped by Transfer Year to a Charter School

Variable	Source	Df	F	MS	p
Transfer Yr 1	(Gr 4–8)				
	School Type	1	2403	1445767	.000
	Poverty	1	1334	802724	.000
	School Type * Poverty	1	435	261785	.000
	Within (Error)	256732			
Transfer Yr 2	(Gr 5–8)				
	School Type	1	2172	1434451	.000
	Poverty	1	2618	1728836	.000
	School Type * Poverty	1	247	163115	.000
	Within (Error)	209275			
Transfer Yr 3	(Gr 6–8)				
	School Type	1	254	137601	.000
	Poverty	1	2241	1212659	.000
	School Type * Poverty	1	17	9230	.000
	Within (Error)	152581			

Table 9 – continued

Transfer Yr 4	(Gr 7–8)				
	School Type	1	294	161627	.000
	Poverty	1	1403	770723	.000
	School Type * Poverty	1	0.35	192	.555
	Within (Error)		99938		
<hr/>					
Transfer Yr 5	(Gr 8)				
	School Type	1	164	89667	.000
	Poverty	1	549	298767	.000
	School Type * Poverty	1	3.96	2153	.047
	Within (Error)		49475		

Note. **Levene’s test for equality of variances indicates that the assumption of homogeneity of variances was not met for each grouping. Therefore, equal variances are not assumed and the $p < .001$ significance level is used to prevent making a Type I error.

The above table indicates that the estimated marginal means were significantly different for all transfer year cohorts compared to their traditional school counterparts ($p < .001$). For first, second, and third year charter transfer students, there were statistically significant interactions between the effects of school type and poverty ($p < .001$). There was no statistically significant interaction effect between poverty level and school type for fourth year transfer students, $F(1, 99938) = 0.35, p > .001$. In addition, there was no statistically significant interaction effect between poverty level and school type for fifth year transfer students, $F(1, 49475) = 3.96, p > .001$.

In summary, even after means were adjusted, there were significant main effect differences for poverty and school type ($p < .001$). Each null hypothesis is rejected for first, second, and third year charter transfer student cohorts when controlling for the

mitigating effects of poverty level. Thus, for those grade levels the alternate hypothesis that when controlling for the mitigating effects of poverty, there will be significant differences in performance, is utilized. The null hypothesis is accepted for fourth and fifth year transfer students when controlling for poverty level ($p > .001$).

In regards to reading mean (μ) scale scores of charter school students and traditional school students in the same grade level and the interaction between ethnicity and school type, the reader is referred to Table 10.

Table 10

Two-Way ANOVA for Reading Assessment Mean (μ) Difference from State Average for School Type and Ethnicity with Students Grouped by Transfer Year to a Charter School

Variable	Source	Df	F	MS	p
Transfer Yr 1	(Gr 4–8)				
	School Type	1	3.10	2433	.078
	Ethnicity	3	1664	1299721	.000
	School Type * Ethnicity	3	84	65613	.000
	Within (Error)	341884			
Transfer Yr 2	(Gr 5–8)				
	School Type	1	92	71718	.000
	Ethnicity	3	650	506538	.000
	School Type * Ethnicity	3	214	166539	.000
	Within (Error)	263563			
Transfer Yr 3	(Gr 6–8)				
	School Type	1	330	236398	.000
	Ethnicity	3	650	465418	.000
	School Type * Ethnicity	3	6.80	4879	.000

Table 10 – continued

	Within (Error)		192432		
<hr/>					
Transfer Yr 4	(Gr 7–8)				
	School Type	1	238	173973	.000
	Ethnicity	3	358	261225	.000
	School Type * Ethnicity	3	2.40	1719	.070
	Within (Error)		126175		
<hr/>					
Transfer Yr 5	(Gr 8)				
	School Type	1	53	33369	.000
	Ethnicity	3	117	74489	.000
	School Type * Ethnicity	3	.37	237	.773
	Within (Error)		62525		

Note. **Levene’s test for equality of variances indicates that the assumption of homogeneity of variances was not met for each grouping. Therefore, equal variances are not assumed and the $p < .001$ significance level is used to prevent making a Type I error.

The above table indicates that the estimated marginal means were not significantly different for first year transfer students compared to their traditional school counterparts, $F(1, 341844) = 3.10, p > .001$. However, simple main effects analysis for the second through fifth year transfer students revealed significant differences at the $p < .001$ level. Likewise, simple main effects analysis for ethnicity for all comparison cohorts revealed significant differences at the $p < .001$ level. For the first, second, and third year charter transfer student comparison cohorts, there were statistically significant interactions between the effects of school type and ethnicity ($p < .001$). There were no

statistically significant interaction effects for fourth and fifth year transfer students with $p = .070$ and $p = .773$, respectively.

In summary, the null hypotheses for reading were rejected for the first, second and third year charter transfer student comparison cohorts when controlling for the mitigating effect of ethnicity. When means were adjusted, there were still main effect significant differences in all but one student cohort (first year charter transfer). The interaction effect between school type and ethnicity was significant in the first three years of charter transfer ($p < .001$), however, the effect is not seen in transfer years four and five. Thus the alternate hypothesis that when controlling for the mitigating effects of ethnicity, there will be significant differences in performance, is utilized for first through third grade.

In reference to reading mean (μ) scale scores of charter school students and traditional school students in the same grade level and the interaction between gender and school type, the reader is referred to Table 11.

Table 11

Two-Way ANOVA for Reading Assessment Mean (μ) Difference from State Average for School Type and Gender with Students Grouped by Transfer Year to a Charter School

Variable	Source	Df	F	MS	p
Transfer Yr 1	(Gr 4–8)				
	School Type	1	831	685795	.000
	Gender	1	817	673633	.000
	School Type * Gender	1	6.9	5692	.009
	Within (Error)	341888			

Table 11 – continued

Transfer Yr 2	(Gr 5–8)				
	School Type	1	1453	1195355	.000
	Gender	1	480	395266	.000
	School Type * Gender	1	2.30	192	.126
	Within (Error)	263567			

Transfer Yr 3	(Gr 6–8)				
	School Type	1	158	120218	.000
	Gender	1	326	249011	.000
	School Type * Gender	1	.001	.92	.972
	Within (Error)	192435			

Transfer Yr 4	(Gr 7–8)				
	School Type	1	182	141393	.000
	Gender	1	201	156485	.000
	School Type * Gender	1	.386	300	.535
	Within (Error)	126179			

Transfer Yr 5	(Gr 8)				
	School Type	1	109	73334	.000

Table 11 – continued

Gender	1	53	35537	.000
School Type * Gender	1	1.40	958	.233
Within (Error)		62529		

Note. **Levene’s test for equality of variances indicates that the assumption of homogeneity of variances was not met for each grouping. Therefore, equal variances are not assumed and the $p < .001$ significance level is used to prevent making a Type I error.

The above table indicates that the estimated marginal means were significantly different for all transfer year cohorts compared to their traditional school counterparts ($p < .001$). Simple main effects analysis for gender revealed significant differences at the $p < .001$ level, also in each transfer year comparison cohort. Within each comparison cohort, there were no statistically significant interactions between the effects of school type and gender ($p > .001$).

In summary, the null hypotheses for reading were accepted for all comparison cohorts when controlling for the mitigating effect of gender. When means were adjusted, there were still main effects significant differences between all groupings of either school type or gender. There were no significant interaction effects between school type and gender in all groupings ($p > .001$).

In regards to reading mean (μ) scale scores of charter school students and traditional school students in the same grade level and the interaction between poverty level and school type, the reader is referred to Table 12.

Table 12

Two-Way ANOVA for Reading Assessment Mean (μ) Difference from State Average for School Type and Poverty Level with Students Grouped by Transfer Year to a Charter School

Table 12 – continued

Variable	Source	<i>Df</i>	<i>F</i>	<i>MS</i>	<i>p</i>
Transfer Yr 1	(Gr 4–8)				
	School Type	1	1732	1306688	.000
	Poverty	1	2085	1573073	.000
	School Type * Poverty	1	379	754	.000
	Within (Error)	261590			
Transfer Yr 2	(Gr 5–8)				
	School Type	1	1578	1196022	.000
	Poverty	1	2720	2060919	.000
	School Type * Poverty	1	312	236587	.000
	Within (Error)	211036			
Transfer Yr 3	(Gr 6–8)				
	School Type	1	153	104391	.000
	Poverty	1	2303	1576103	.000
	School Type * Poverty	1	11	7704	.001
	Within (Error)	153185			
Transfer Yr 4	(Gr 7–8)				
	School Type	1	161	113371	.000
	Poverty	1	1189	836928	.000
	School Type * Poverty	1	4.40	3116	.035

Table 12 – continued

	Within (Error)			100073	
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Transfer Yr 5	(Gr 8)				
	School Type	1	90	53181	.000
	Poverty	1	390	229572	.000
	School Type * Poverty	1	0.55	327	.456
	Within (Error)			49473	

Note. **Levene’s test for equality of variances indicates that the assumption of homogeneity of variances was not met for each grouping. Therefore, equal variances are not assumed and the $p < .001$ significance level is used to prevent making a Type I error.

The above table indicates that the estimated marginal means were significantly different for all transfer year cohorts compared to their traditional school counterparts ($p < .001$). Likewise, simple main effects analysis for poverty revealed significant differences at the $p < .001$ level in each transfer year comparison cohort. For first, second, and third year charter transfer students, there were statistically significant interactions between the effects of school type and poverty ($p < .001$). There were no statistically significant interaction effects for fourth and fifth year transfer students with $p = .035$ and $p = .456$, respectively.

In summary, similar to mathematics, even after means were adjusted for reading scale scores, there were significant main effect differences for poverty and school type ($p < .001$). Each null hypothesis is rejected for first, second, and third year charter transfer student cohorts when controlling for the mitigating effects of poverty level. Thus the alternate hypothesis that when controlling for the mitigating effects of poverty, there

will be significant differences in performance, is utilized for first through third grade. The null hypothesis is accepted for fourth and fifth year transfer students when controlling for poverty level ($p > .001$).

In regards to attendance rates of charter school students and traditional school students in the same grade level and the interaction between ethnicity and school type, the reader is referred to Table 13.

Table 13

Two-Way ANOVA for Mean (μ) Attendance Rates for School Type and Ethnicity with Students Grouped by Transfer Year to a Charter School

Variable	Source	Df	F	MS	p
Transfer Yr 1	(Gr 4-8)				
	School Type	1	270	1.60	.000
	Ethnicity	3	81	0.50	.000
	School Type * Ethnicity	3	80	0.50	.000
	Within (Error)	337573			
Transfer Yr 2	(Gr 5-8)				
	School Type	1	538	3.50	.000
	Ethnicity	3	17	0.10	.000
	School Type * Ethnicity	3	157	1.00	.000
	Within (Error)	262045			
Transfer Yr 3	(Gr 6-8)				
	School Type	1	25	0.20	.000
	Ethnicity	3	14	0.10	.000

Table 13 – continued

	School Type * Ethnicity	3	22	0.20	.000
	Within (Error)		192076		
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Transfer Yr 4	(Gr 7–8)				
	School Type	1	20	0.10	.000
	Ethnicity	3	5	0.30	.003
	School Type * Ethnicity	3	17	0.10	.000
	Within (Error)		1262600		
<hr/>					
Transfer Yr 5	(Gr 8)				
	School Type	1	1.0	.008	.322
	Ethnicity	3	1.1	.009	.340
	School Type * Ethnicity	3	7.9	.065	.000
	Within (Error)		62646		

Note. **Levene’s test for equality of variances indicates that the assumption of homogeneity of variances was not met for each grouping. Therefore, equal variances are not assumed and the $p < .001$ significance level is used to prevent making a Type I error.

The above table indicates that the estimated marginal means were significantly different for all charter transfer students compared to their traditional school counterparts ($p < .001$), with the exception of fifth year charter transfer students ($p = .322$). Simple main effects analysis of ethnicity for all comparison cohorts revealed significant differences at the $p < .001$ level for the first, second, and third year charter transfer student comparison cohorts. Main effects analysis of Ethnicity for fourth and fifth year

charter transfer students revealed no significant differences ($p = .003$ and $p = .340$, respectively). Analysis of interaction indicates that all charter transfer student cohorts show significant effects between school type and ethnicity ($p < .001$).

In summary, the null hypotheses for attendance rate were rejected for the first, second, third, and fourth year charter transfer student comparison cohorts when controlling for the mitigating effect of ethnicity. When means were adjusted, there were still main effect significant differences in earlier transfer years (first through third) for ethnicity. The interaction effect between school type and ethnicity was significant in the first four years of charter transfer ($p < .001$). Thus the alternate hypothesis that when controlling for the mitigating effects of ethnicity, there will be significant differences in attendance, is utilized for those grade levels. For fifth year charter transfers, the interaction effect is significant between ethnicity and school type, even though the main effects are not, $F(3, 62646) = 7.9, p < .001$.

In reference to attendance rates of charter school students and traditional school students in the same grade level and the interaction between gender and school type, the reader is referred to Table 14.

Table 14

Two-Way ANOVA for Mean (μ) Attendance Rates for School Type and Gender with Students Grouped by Transfer Year to a Charter School

Variable	Source	Df	F	MS	p
Transfer Yr 1	(Gr 4–8)				
	School Type	1	974	5.80	.000
	Gender	1	92	0.50	.000
	School Type * Gender	1	17	0.10	.000

Table 14 – continued

	Within (Error)		337577		
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Transfer Yr 2	(Gr 5–8)				
	School Type	1	1619	10.60	.000
	Gender	1	76	0.50	.000
	School Type * Gender	1	3.20	0.20	.076
	Within (Error)		262049		
<hr/>					
Transfer Yr 3	(Gr 6–8)				
	School Type	1	83	0.60	.000
	Gender	1	21	0.20	.000
	School Type * Gender	1	10	0.10	.002
	Within (Error)		192080		
<hr/>					
Transfer Yr 4	(Gr 7–8)				
	School Type	1	39	0.30	.000
	Gender	1	16	0.10	.000
	School Type * Gender	1	2	0.10	.174
	Within (Error)		126264		
<hr/>					
Transfer Yr 5	(Gr 8)				
	School Type	1	5	0.04	.028
	Gender	1	9	0.07	.003
	School Type * Gender	1	33	0.27	.000

Table 14 – continued

Within (Error) 62650

Note. **Levene’s test for equality of variances indicates that the assumption of homogeneity of variances was not met for each grouping. Therefore, equal variances are not assumed and the $p < .001$ significance level is used to prevent making a Type I error.

The above table indicates that the estimated marginal means were significantly different for first, second, third, and fourth year charter transfer cohorts compared to their traditional school counterparts ($p < .001$). For fifth year charter transfer students, after means were adjusted for analysis of variance, there was no significant main effect difference in mean (μ) attendance rate compared to traditional school students. Simple main effects analysis for gender revealed significant differences at the $p < .001$ level for first, second, third, and fourth year transfer student comparison cohorts. There were statistically significant interactions between the effects of school type and gender ($p > .001$) for first and fifth year charter transfer students and their traditional school counterparts.

In summary, the null hypotheses for attendance rate were rejected for the first and fifth year charter transfer student comparison cohorts when controlling for the mitigating effect of gender. When means were adjusted, there were still main effect significant differences in all cohorts for school type and gender, with the exception of fifth year charter transfer students. The interaction effect between school type and gender was significant in the second, third, and fourth years of charter transfer ($p < .001$). Thus the alternate hypothesis that when controlling for the mitigating effects of gender, there will be significant differences in attendance, is utilized for those transfer years.

In reference to attendance rates of charter school students and traditional school students in the same grade level and the interaction between poverty level and school type, the reader is referred to Table 15.

Table 15

Two-Way ANOVA for Mean (μ) Attendance Rates for School Type and Poverty Level with Students Grouped by Transfer Year to a Charter School

Variable	Source	Df	F	MS	p
Transfer Yr 1	(Gr 4–8)				
	School Type	1	1891	11.8	.000
	Poverty	1	151	0.90	.000
	School Type * Poverty	1	151	0.90	.000
	Within (Error)	256732			
Transfer Yr 2	(Gr 5–8)				
	School Type	1	1704	11.70	.000
	Poverty	1	145	1.00	.000
	School Type * Poverty	1	285	1.90	.000
	Within (Error)	208972			
Transfer Yr 3	(Gr 6–8)				
	School Type	1	125	0.90	.000
	Poverty	1	154	1.20	.000
	School Type * Poverty	1	81	0.60	.000
	Within (Error)	152428			

Table 15 – continued

Transfer Yr 4	(Gr 7–8)				
	School Type	1	16	0.10	.000
	Poverty	1	164	1.20	.000
	School Type * Poverty	1	17	0.10	.000
	Within (Error)	99869			
<hr/>					
Transfer Yr 5	(Gr 8)				
	School Type	1	8	0.10	.006
	Poverty	1	81	0.70	.000
	School Type * Poverty	1	0.8	0.10	.367
	Within (Error)	49425			

Note. **Levene’s test for equality of variances indicates that the assumption of homogeneity of variances was not met for each grouping. Therefore, equal variances are not assumed and the $p < .001$ significance level is used to prevent making a Type I error.

The above table indicates that the estimated marginal means were significantly different for first, second, third, and fourth year charter transfer cohorts compared to their traditional school counterparts ($p < .001$). There were no significant differences in adjusted marginal means for fifth year charter transfer students when compared to the attendance rates of their traditional school counterparts ($p = .006$). Simple main effects analysis for poverty revealed significant differences at the $p < .001$ level in each transfer year comparison cohort. For first, second, third, and fourth year charter transfer students, there were statistically significant interactions between the effects of school type and poverty ($p < .001$). There was no significant interaction effect for fifth year transfer students with $p = .367$.

In summary, the null hypothesis for attendance rate and poverty level was rejected only for the fifth year charter transfer student comparison cohorts when controlling for the mitigating effect of poverty level, $F(1, 49425) = 0.8, p > .001$. When means were adjusted, there were still main effect significant differences in all cohorts for school type and poverty level, with the exception of fifth year charter transfer students for school type, $F(1, 49425) = 8, p > .001$. The interaction effect between school type and gender was significant in the first, second, third, and fourth years of charter transfer ($p < .001$). Thus the alternate hypothesis, when controlling for the mitigating effects of poverty level, there will be significant differences in attendance, is utilized for the fifth year charter transfer cohort.

Summary of Results

Results indicate that students in the urban school districts in each cohort group performed at lower levels than the state average. There were significant differences in student achievement indicating that students in charter schools perform worse than traditional school students during the first few years of transfer, however, over time they begin to perform better. Generally, students in charter schools attended school significantly less than students in traditional schools. There were interaction effects in regards to the mitigating factors of ethnicity and poverty level. However, gender did not seem to be a mitigating factor.

CHAPTER V

SUMMARY, CONCLUSIONS AND RECOMMENDATIONS

The overall purpose of this study was to determine whether students who once attended traditional selected small urban school districts, and subsequently transferred to charter schools in contiguous districts, did better on selected demographic variables than those students who continued in these traditional small urban school districts. More specifically, this study sought to determine whether certain conditional variables (i.e., school type, year of transfer to charter schools, and grade level) and immutable variables (i.e., ethnicity, gender, and poverty level) influenced mathematics and reading scores and attendance rates of students who transferred out of traditional schools to attend contiguous charter schools.

This study sought to answer these overarching questions. They were:

1. Do children who attend charter schools do better in math than corresponding students in selected contiguous small urban school districts?
2. Do children who attend charter schools do better in reading than those students in corresponding selected contiguous small urban school districts?
3. Do children who attend charter schools have higher attendance rates than students in corresponding selected contiguous small urban school districts?

And,

4. Does ethnicity, gender, or poverty level serve as a mitigating factor that affects student performance in identified school indicators (e.g., achievement and attendance)?

In this final chapter, the investigator will use the purposes of study as a framework for providing answers to these overarching questions. In this regards, each purpose statement will be restated and a corresponding answer will be provided to give information that supports how the findings support or contradict the relevant literature. In several cases, this study will identify new findings previous research studies have failed to investigate. These findings shall serve as the basis for formulating recommendations for further study.

Summary of Findings

The first purpose of this study was to answer the following question: Do children who attend charter schools do better in mathematics than corresponding students in selected contiguous small urban school districts?

Findings in this study suggest that there were significant differences between the identified state’s mathematics assessment score differences from state averages when isolating students by grade level and years transferred to a charter school from a traditional school ($p < .05$). Thus, the null hypothesis that there would be no significant differences was rejected in all student group comparisons for mathematics. Although the average difference from the state score was lower for all student groups, a trend emerged, however, which suggested that the longer students stay in charter schools, the better they perform in mathematics. The reader is referred to Table 16.

Table 16

T-test summary: Mathematics – Indicator of Cohort Means That Were Significantly Higher ($p < 0.05$) After Transfer to a Charter School

Grade	After 1 Year	After 2 Years	After 3 Years	After 4 Years	After 5 Years
4	Traditional	-	-	-	-

Table 16 – continued

5	Traditional	Traditional	-	-	-
6	Traditional	Traditional	Charter	-	-
7	Traditional	Traditional	Charter	Charter	-
8	Traditional	Traditional	Charter	Charter	Charter

Note. Dashes indicate that data were not available for student comparisons due to the date range limitation of 5 years (2008 to 2012).

The above table indicates that students in their first or second year of transfer to a charter school perform at significantly lower levels in mathematics than traditional school students in contiguous urban school districts. These findings would support the preponderance of research conducted in the field indicate negative, or mixed results, for charter schools and its impact on improving student achievement (Ballou et al., 2006; Eberts & Hollenbeck, 2001; Hinojosa, 2009; Imberman, 2007; Imberman, 2011; Miron & Horn, 1999; Miron & Horn, 2000; Miron & Horn, 2002; Miron & Nelson, 2000; Miron et al., 2007; Nelson & Hollenbeck, 2001; Ni & Rorrer, 2012; Resmovits, 2013; Winters, 2010).

In this study, however, it was in the 3rd – 5th year of attendance that students who had transferred to a charter school began to outperform their corresponding counterparts in traditional schools ($p < .05$). (The reader is referred to Table 4.) These findings contradict the existing literature that suggest charter school transfers do worse than their corresponding peers after having transferred to a charter school. In this study, however, the opposite is true. The longer a student stayed in a charter school after transferring from a contiguous traditional school, the better they performed in mathematics than their

corresponding counterparts. Previous studies have investigated average scores of cohort groups over a period of years (Imberman, 2011; Sass, 2006; Nisar, 2011); however, they have not investigated the longitudinal effects of remaining in a charter school, particularly in the area of mathematics.

The second purpose of this study was to answer the following question: Do children who attend charter schools do better in reading than their corresponding counterparts?

Findings in this study show similar results for reading. There were significant differences between the identified state's assessment reading score differences from the state averages when isolating students by grade level and years they had transferred to a charter school from a traditional urban school district ($p < .05$). (The reader is referred to Table 5.) Students in traditional schools outperformed their contiguous counterparts in the first and second years of schooling. In years 3 through 5, students that had transferred to neighboring charter schools outperformed their corresponding counterparts that remained in traditional urban school districts. For this hypothesis, the null hypothesis for no significant difference was rejected in all student cohort comparisons as students in traditional schools outperformed students in the charter schools in the first and second years. Students having transferred out of traditional schools to charter schools outperformed their corresponding counterparts that remained in traditional schools. The reader is referred to Table 17.

Table 17

T-test summary: Reading – Indicator of Cohort Means That Were Significantly Higher ($p < 0.05$) After Transfer to a Charter School

Table 17 – continued

Grade	After 1 Year	After 2 Years	After 3 Years	After 4 Years	After 5 Years
4	Traditional	-	-	-	-
5	Traditional	Traditional	-	-	-
6	Traditional	Traditional	Charter	-	-
7	Traditional	Traditional	Charter	Charter	-
8	Traditional	Traditional	Charter	Charter	Charter

Note. Dashes indicate that data were not available for student comparisons due to the date range limitation of 5 years (2008 to 2012).

The third purpose of this study was to answer the following question: Do children who attend charter schools have better attendance rates than their corresponding counterparts in selected contiguous small urban school districts? Findings in this study suggest that there were significant differences between calculated attendance rates when disaggregating students by grade level and number of years they had transferred to a charter school. (The reader is referred to Table 6.) In this regard, students that attended traditional schools had higher attendance rates than their corresponding counterparts who left the traditional school to attend charter schools in contiguous building ($p < .05$). There was one exception. Eighth grade students in their fifth year of transfer into a charter school had higher attendance rates than their corresponding counterparts that attended traditional schools ($p = .177$). Thusly, the null hypothesis was rejected in all but one student cohort, i e., eighth grade students, and the alternate hypothesis of significant difference was accepted. The reader is referred to Table 18.

Table 18

Table 18 – continued

T-test summary: Attendance – Indicator of Cohort Means That Were Significantly Higher ($p < 0.05$) After Transfer to a Charter School

Grade	After 1 Year	After 2 Years	After 3 Years	After 4 Years	After 5 Years
4	Traditional	-	-	-	-
5	Traditional	Traditional	-	-	-
6	Traditional	Traditional	Traditional	-	-
7	Traditional	Traditional	Traditional	Charter	-
8	Traditional	Traditional	Traditional	Charter	Not Sig.

Note. Dashes indicate that data were not available for student comparisons due to the date range limitation of 5 years (2008 to 2012).

The fourth purpose of this study was to answer the following question: Does ethnicity, gender, or poverty level serve as mitigating factors that affect student performance when it pertains to matters of student achievement and attendance in school? This section presents findings of the test results to determine the interaction effects between school type and the three mitigating factors (e.g., ethnicity, gender, or poverty level) on each of the three dependent variables (mathematics, reading, and attendance). This scenario resulted in three tables summarizing findings for each dependent variable.

The results of the interactions between school type and ethnicity, gender and poverty level were determined for mathematics. The reader is referred to Table 19.

Table 19

ANOVA Summary: Mathematics State Assessment Differences Between Selected Midwestern Urban School District Association Traditional School and Charter School Students After Various Years of Transfer and Whether Interactive Effects Between Three

Table 19 – continued

Mitigating Factors and School Type Exists

Factor	After 1 Year	After 2 Years	After 3 Years	After 4 Years	After 5 Years
School Type * Ethnicity	Yes	Yes	Yes	Yes	Yes
School Type * Gender	No	No	No	No	No
School Type * Poverty Level	Yes	Yes	Yes	No	No

Note. ANOVA tests conducted at the level of significance of $p < .001$.

Overall, there were significant interaction effects on the identified state’s assessment mathematics when considering such factors as ethnicity and poverty level. In this particular study, the ethnicity of a student seems to have a mitigating effect on mathematics achievement. On the other hand, the poverty level of students seem to be a mitigating factor in the earlier years of a child’s education when transferring out of a traditional public school to a charter school, but less of an effect in the latter years of a student experience in a charter school. Results of the study indicate that gender is not a mitigating factor for school type differences.

The results of the interactions between school type and ethnicity, gender and poverty level were determined for reading. The reader is referred to Table 20.

Table 20

ANOVA Summary: Reading State Assessment Differences Between Selected Midwestern Urban School District Association Traditional School and Charter School Students After Various Years of Transfer and Whether Interactive Effects Between Three Mitigating Factors and School Type Exists

Factor	After 1 Year	After 2 Years	After 3 Years	After 4 Years	After 5 Years
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Table 20 – continued

School Type * Ethnicity	Yes	Yes	Yes	No	No
School Type * Gender	No	No	No	No	No
School Type * Poverty Level	Yes	Yes	Yes	No	No

Note. ANOVA tests conducted at the level of significance of $p < .001$.

Similar to mathematics achievement comparisons, there were significant interactions between school type and ethnicity for reading. Thus, the ethnicity of a student does seem to have a mitigating effect on reading achievement, but only during the first three years of charter transfer. The same pattern emerges for poverty level and school type differences in regards to reading. This differs from the results for mathematics. For students in these particular urban environments, over time the mitigating effects of ethnicity, or poverty level, are not present for reading. As was the case for mathematics, there were no significant interactions between gender and school type.

The results of the interactions between school type and ethnicity, gender and poverty level were determined for attendance. The reader is referred to Table 21.

Table 21

ANOVA Summary: Attendance Rate Differences Between Selected Midwestern Urban School District Association Traditional School and Charter School Students After Various Years of Transfer and Whether Interactive Effects Between Three Mitigating Factors and School Type Exists

Factor	After 1 Year	After 2 Years	After 3 Years	After 4 Years	After 5 Years
School Type * Ethnicity	Yes	Yes	Yes	Yes	Yes

Table 21 – continued

School Type * Gender	Yes	No	No	No	Yes
School Type * Poverty Level	Yes	Yes	Yes	Yes	No

Note. ANOVA tests conducted at the level of significance of $p < .001$.

Overall, there were significant interactions between all three mitigating factors (ethnicity, gender, and poverty level) and school type differences. For ethnicity, interactions occurred in all five years of charter school transfer. Attendance seems to be the only dependent variable affected by the interactions between gender and school type, though only for first and fifth year students that transferred to charter schools from traditional public school districts. Interactions occurred in all but the fifth year for poverty level.

Concluding Remarks

There has been a lot of controversy surrounding the efficacy of charter schools (Ballou et al., 2006; Betts & Hill, 2006; Betts & Tang, 2011; Bifulco & Ladd, 2006; Booker et al., 2007; Brodsky et al., 2006; Eberts & Hollenbeck, 2001; Frankenberg et al., 2011; Hill et al., 2006; Miron & Nelson, 2002; Miron et al., 2007; Nelson & Hollenbeck, 2001; Raymond, 2009; Resmovitz, 2013; Strike, 2010; Winters, 2010). The rapid growth of charter schools throughout the nation, and particularly in urban environments, has resulted in an increase in questions regarding their effectiveness. The purpose of this study was to determine whether there were significant differences in success indicators between charter school and contiguous traditional school students in urban environments. In regards to findings for mathematics and reading, it is alarming that students, on average for at least three years, perform worse after transferring to a charter school.

Findings from this study suggest that students who transfer from traditional schools to charter schools in contiguous areas do not perform as well as their traditional school counterparts. These findings are consistent with previous findings (Braun, Jenkind, Grigg, & Tirre, 2006; Eberts & Hollenbeck, 2001; Hanushek et al., 2002; Hinojosa, 2009; Iberman, 2011; Zimmer, Gill, Booker, Lavertu, Sass & Witte, 2009; Finch, Baker-Boudissa, & Cross, 2007) . This study contradicts earlier research which shows charter school students outperformed traditional school students (Georgia Department of Education, 2007; Hoxby & Murarka, 2009); however, only one of these studies focused on urban schools.

A charter school as an option for students is often touted as a better approach for students who are attending poor performing schools. If, however, students in an urban environment have to struggle at lower performing levels for numerous years before experiencing success, this raises serious concerns about the overall efficacy of this school type in helping to attain the espoused goal of charter schools – i.e., providing a quality educational experience for children attending low performing schools.

The findings from this study reveal some interesting trends for charter schools in urban environments. The majority of previous studies indicate that charter schools may not be as effective as traditional schools. Few studies have focused exclusively on charter schools in urban environments (Imberman, 2011) and even fewer have focused individual students over time after they transfer to a charter school. This study revealed that charter school students in these urban environments had a tendency to perform better than their contiguous traditional school counterparts at least three years after transferring. This is an important trend to consider as modifications are made to improve schools.

However, a word of caution should accompany the conclusions made in this study. One possible explanation may be attributed to charter schools dropping, or “pushing out” students, after the state enrollment count day, and in some cases not allowing students to re-enroll until the following year (Buras, 2011). These students tend to be more challenging due to behavior or attendance, thus their achievement is not as high as students who remain in the schools (Winters, 2010). Public schools, however, are required to enroll any student regardless of the time of year. Thus, it is possible that a greater number of lower performing students would tend to be enrolled in the traditional schools over time. This phenomenon, also known as “pyramidal” enrollment, results in smaller populations of more successful students remaining in the school, thus driving the average performance rates up (Hoxby & Nurarka, 2009; Miron et al., 2007).

Another explanation is that charter schools may possibly contain a far more homogenous group than the typical public urban schools. It is possible that the average scores for students who transferred to one of the 88 charter schools in this study were higher over time due to the loss of lower performing students. Further research is needed to determine what factors, if any, influenced the average performance rates of charter school transfer students over time.

Another alternative explanation for the significant differences could be the result of differences between student groups that were not measured, such as persistence or motivation. The results of this study support the findings of the Mathematica Policy Research study (Gleason et al., 2010) in which students who transferred to a charter school initially performed at lower levels than their traditional school counterparts. The study also indicated that students who chose to remain enrolled in a charter school tend to

be those who are performing better. It is possible that the decreasing sample size for fourth and fifth year charter transfer students consists of more students who have chosen to stay due to their success. This condition may help to explain why these students have higher averages than students in traditional public schools.

It is also possible that the reduced enrollment of students in a traditional school due to transfers to charter schools may have an effect on achievement score differences. Arsen et al., (1999) found that school districts losing at least 6-7% of their students to other schools have a much more difficult time responding to the decrease. The reduction in state funding based on enrollment may reduce a district's response. Thus, their students will begin to perform worse due to declining enrollments (DeFrance, 2001). The small urban school districts identified in this study may have experienced the same phenomenon.

The trends that appear in this study warrant additional investigation which could potentially result in recommendations for educators, policymakers, professional development providers and communities as they seek to provide their children with the best educational environments possible. Based on the past several decades, the educational landscape continues to change. Public "schools" may change drastically over the next several decades, but public "schooling" is an essential component to a free and democratic society.

Recommendations for Further Study

Based on what this researcher found that previous studies failed to investigate, there are several questions that would require further study. The analysis of this study, which utilized student cohorts over time, presents several implications for educators from

policy, educational preparation and professional development perspectives. After having conducted this study of the effects of urban charter school choice on achievement and attendance, this investigator would make the following recommendations concerning future studies regarding the efficacy of charter vs. traditional schools;

R₁: It is recommended that this study be replicated. This study was limited to urban school districts in one Midwestern state. Future studies should expand the population to include public school districts and charter schools that are more representative of school districts in other standard metropolitan statistical areas (SMSAs). The increase in sample size will help to increase the precision of the statistical estimates.

R₂: It is recommended that future research would need to determine the causal effects for the initial lower achievement rates and the subsequent significantly higher achievement charter school students in these selected urban environments after 4 years of a transfer to a charter school. Specific research studies could determine the effects of student attitudes, “pyramidal” effects, low response to resource reduction, effect size, teacher perceptions, initial reading level, or other potential mitigating factors not included in this study. It should be noted that this study was limited to the use of t-tests and ANOVA. Given the large size of the student population, future studies should examine the effect selected demographic and conditional variables have on explaining the variations between students attending charter and traditional urban schools.

R3: It is recommended that future research studies should examine the efficacy of the type of charter school oversight (non-profit, for profit or independent) in the management of public charter schools. In addition, these studies should examine the effect and differences between various focus types found in charter schools. Some emphasize a “no excuses” philosophy, some focus on low income or at-risk populations, and others focus on serving all students. Studies of this nature should provide further insight into the designs of these schools and the impact each is having on improving educational opportunities for all children.

R4: This study found that there were mitigating effects from ethnicity and poverty level present in the earlier years of charter transfer. It is recommended that future research should be conducted to determine the specific reasons that these mitigating effects exist and whether there are combined interactive effects from poverty level. Several studies have shown linearity between ethnicity and poverty level (Angrist et al., 2013; Barrow & Rouse, 2008; Braun et al., 2006; Godwin et al., 2006; Gleason et al., 2010). Likewise, this study suggest that there are factors that exist that may overcome the negative mitigating effects of ethnicity and poverty level in the later years of charter school attendance. Further research should explore these factors that may be contributing to the success of charter school students over time.

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APPENDICES

Appendix A

Selected Midwestern Urban Education Association Schools and
Contiguous Charter Schools

Selected Midwestern Urban Education Association Schools

Albion Public Schools
Battle Creek Public Schools
Bay City Public Schools
Beecher Community School District
Benton Harbor Area Schools
Dearborn Public Schools
Ferndale Public Schools
Flint Community Schools
Garden City Public Schools
Grand Rapids Public Schools
Hazel Park Community Schools
Highland Park School District
Jackson Public Schools
Kalamazoo Public Schools
Lansing School District
Monroe Public Schools
Mt. Clemens Community Schools
Mt. Pleasant Public Schools
Muskegon Public Schools
Muskegon Heights Public Schools
Niles Community Schools
Pontiac School District
Port Huron Area School District
Romulus Community Schools
Saginaw Public Schools
Southfield Public School District
Waterford School District
Wayne-Westland Community Schools
Westwood School District
Willow Rune Community Schools
Ypsilanti Community Schools

Contiguous Charter Schools within the Selected Midwestern Urban School Districts

Academy for Business and Technology Elementary
Academy for Business and Technology High School
Academy of Flint
Academy of Southfield
Academy of Waterford
Academy of Westland
ACE Academy (SDA)
ACE Academy (SDA)—Calumet Center
Advanced Technology Academy

Selected Midwestern Urban Education Association Schools — continued

AGBU Alex-Marie Manoogian School
Arbor Academy
Arts and Technology Academy of Pontiac
Bay City Academy—Madison Arts Campus
Bay City Academy—YMCA Campus
Bay County PSA
Benton Harbor Charter School Academy
Bradford Academy
Business Entrepreneurship, Science, Tech. Academy
Center Academy
Cole Academy
Countryside Academy—Elementary
Countryside Academy—Middle/High School
Crescent Academy Middle School
Da Vinci Institute (K–8)
Dr. Joseph F. Pollack Academic Center of Excellence
East Arbor Charter Academy
El-Hajj Malik El-Shabazz Academy
Endeavor Charter Academy
Excel Charter Academy
Forest Academy
Fortis Academy
Francis Reh PSA
George Washington Carver Academy
Grand Rapids Child Discovery Center
Great Lakes Academy
Henry Ford Academy
Hope Academy of West Michigan
International Academy of Flint (K-12)
International Academy of Saginaw
Knapp Charter Academy
Lansing Charter Academy
Laurus Academy
Linden Charter Academy
Madison Academy—High School
Madison Academy Elementary/Middle School
Metro Charter Academy
Michigan Mathematics and Science Academy
Michigan Virtual Charter Academy
Mid-Michigan Leadership Academy
Mildred C. Wells Preparatory Academy
Mt. Clemens Montessori Academy
New Beginnings Academy
New Branches Charter Academy

Selected Midwestern Urban Education Association Schools — continued

North Saginaw Charter Academy
Northpointe Academy
Northridge Academy
Paragon Charter Academy
Paramount Charter Academy
Pontiac Academy for Excellence—Elementary
Pontiac Academy for Excellence—High School
Pontiac Academy for Excellence—Middle School
Prevail Academy
Renaissance Public School Academy
Richfield Public School Academy
Ridge Park Charter Academy
Riverside Academy
Riverside Academy—West Campus
Saginaw County Transition Academy
Saginaw Preparatory Academy
South Arbor Charter Academy
St. Clair County Intervention Academy
St. Clair County Learning Academy
Taylor International Academy
The Dearborn Academy
Three Oaks Public School Academy
Timberland Academy
Triumph Academy
Victory Academy Charter School
Vista Charter Academy
Walker Charter Academy
Walton Charter Academy
Way Point Academy
West MI Academy of Environmental Science
West Village Academy
William C. Abney Academy—Middle School
William C. Abney Academy Elementary
Windemere Park Charter Academy
Woodmont Academy

Appendix B

Mean (μ) Differences from State Mathematics and Reading Assessment Averages
and Attendance Rates for Traditional Small Urban and Contiguous Charter
Schools in Grades 4–8 in Years 2008 through 2012

Mean (μ) Differences from State Mathematics and Reading Assessment Averages and Attendance Rates for Traditional Small Urban and Contiguous Charter Schools in Grades 4–8 in Years 2008 through 2012

Mean (μ) scale scores were then calculated within each of the five categories of students in selected small urban schools and those students attending charter schools during the first and fifth year of transfer in selected elementary and middle school grades. (The reader is referred to Figure 2.)

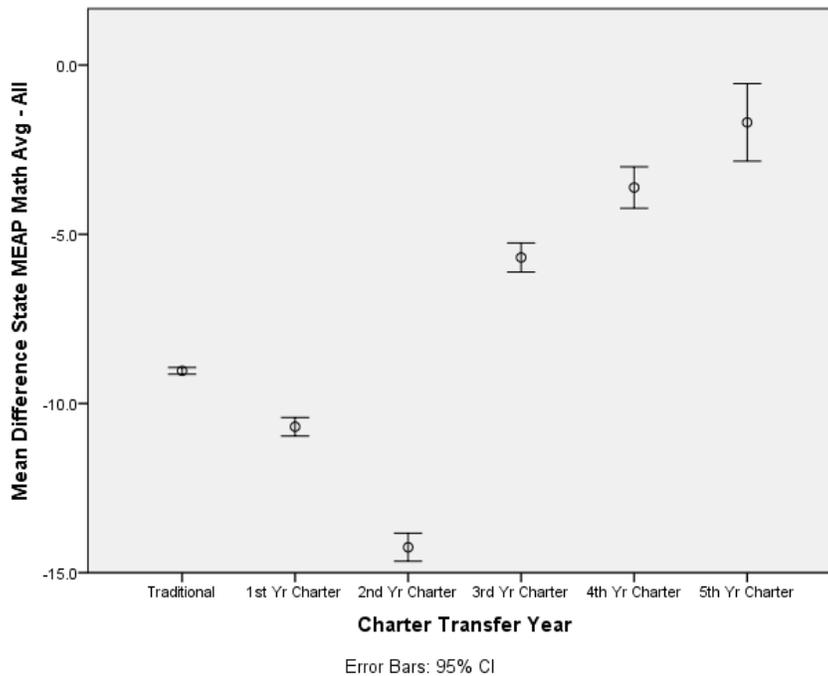


Figure 2. Comparison of mean (μ) differences from state assessment mathematics averages for selected small Midwestern school district association traditional and contiguous charter schools in grades 4 – 8 by transfer year.

Mean (μ) scale scores were calculated for each of the five categories for charter school students (1st–5th year of transfer) in all grade levels along with the mean (μ) scale score for all traditional school students attending the identified small urban schools (the reader is referred to Figure 3).

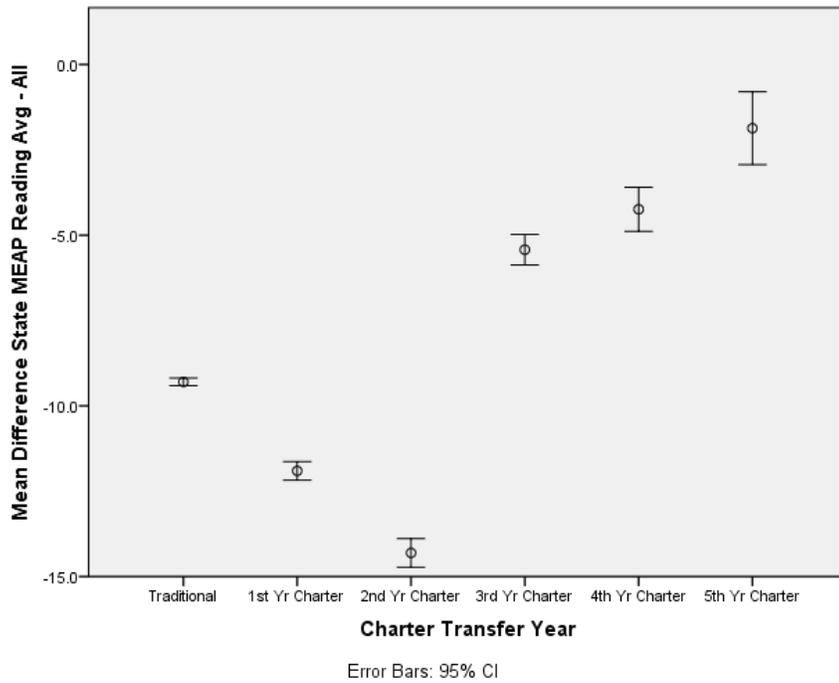


Figure 3. Comparison of mean (μ) differences from state assessment reading averages for selected Midwestern urban school district association traditional and contiguous charter schools in grades 4 – 8 by transfer year.

Each student received a calculated attendance rate for the year they were enrolled by dividing the number of days attended by the total days enrolled. Mean (μ) attendance rates were calculated for each of the five categories for charter school students (1st–5th year of transfer) in all grade levels along with the mean (μ) attendance rates for all traditional school students attending the traditional selected small urban schools. (The reader is referred to Figure 4.)

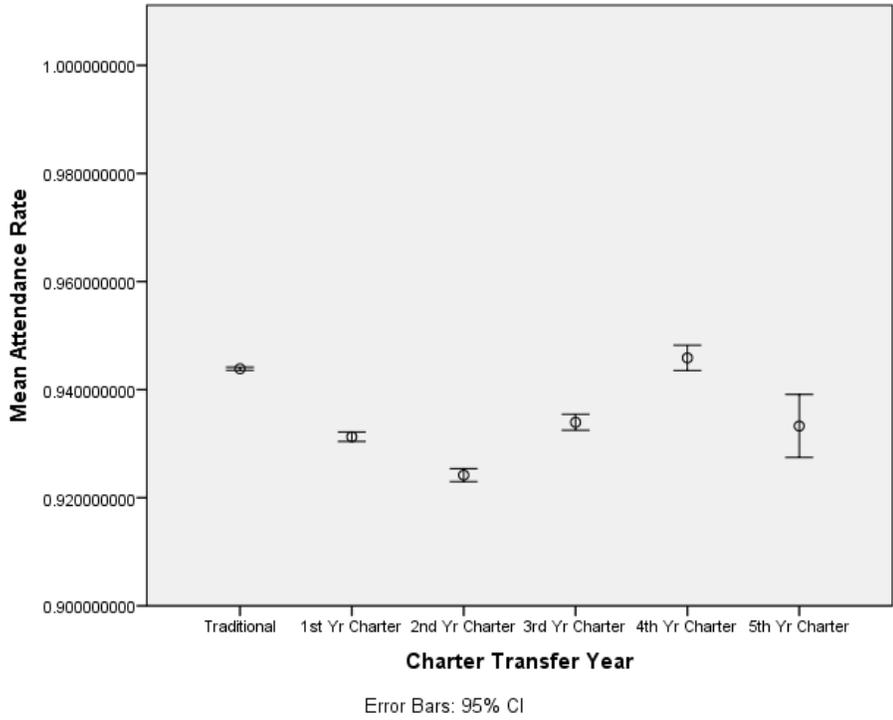


Figure 4. Comparison of attendance rates for traditional selected Midwestern urban schools and the contiguous charter schools for grades 4–8 by transfer year.

Appendix C

A Selected Midwestern State's Mathematics Assessment Mean Scores

A Selected Midwestern State's Assessment Mean Scores

Table 22

A Selected Midwestern State's Mathematics Mean Scale Scores by Year for All Student Category in Grades 4 Through 8

Year	Grade	N	Mean Scale Score	SD
Fall 2008	4	114,278	428.7	24.6
	5	115,093	524.4	31.9
	6	116,322	624.0	28.0
	7	117,926	723.7	25.8
	8	120,118	819.2	27.7
Fall 2009	4	113,762	429.9	23.2
	5	113,044	526.1	32.6
	6	114,506	624.5	28.7
	7	115,626	725.1	28.5
	8	116,030	818.2	27.7
Fall 2010	4	112,948	428.8	22.0
	5	114,255	526.0	30.3
	6	114,151	622.8	24.0
	7	115,778	724.4	26.0
	8	115,616	818.1	25.1
Fall 2011	4	108,207	429.1	22.2
	5	111,075	526.9	30.6
	6	112,847	623.8	24.3

Table 22 - continued

	7	113,115	725.3	26.1
	8	113,725	818.8	25.5
Fall 2012	4	106,725	431.5	25.7
	5	106,848	530.1	32.4
	6	110,314	625.1	28.7
	7	112,396	725.0	29.8
	8	111,748	819.9	29.6

Note. Data acquired from the selected Midwestern state's Department of Education website http://www.michigan.gov/mde/0,4615,7-140-22709_70117_31530---,00.html.

Table 23

A Selected Midwestern State's Reading Mean Scale Scores by Year for All Student Category in Grades 4 Through 8

Year	Grade	N	Mean Scale Score	SD
Fall 2008	4	113,687	427.9	30.6
	5	114,583	527.6	30.7
	6	115,828	625.1	29.9
	7	117,634	723.9	29.2
	8	119,758	820.2	28.9
Fall 2009	4	113,079	433.5	33.1
	5	112,523	531.1	29.3
	6	114,190	626.0	22.1
	7	115,461	725.2	28.2

Table 23 - continued

	8	115,962	822.7	24.1
Fall 2010	4	112,570	430.3	29.3
	5	113,940	530.9	28.7
	6	114,009	627.6	27.9
	7	115,724	724.4	31.3
Fall 2011	4	107,388	433.1	29.2
	5	110,366	532.9	28
	6	112,524	630.5	27.8
	7	112,786	727.4	31.2
	8	113,576	824.3	24.1
Fall 2012	4	105,831	433.5	28.1
	5	106,211	536.5	29.2
	6	109,822	631.0	26.3
	7	112,208	728.6	30.5
	8	111,665	828.2	25.1

Note. Data acquired from the selected Midwestern state's Department of Education website http://www.michigan.gov/mde/0,4615,7-140-22709_70117_31530---,00.html.

Appendix D

Mean Scale Score Differences from State Mathematics Assessment Average

Mean Scale Score Differences from State Mathematics Assessment Average

Table 24

Selected Contiguous Small Urban School District Mathematics Mean Scale Score Differences from State Average for All Student Category Separated by School Type Traditional (T) or Charter (C) and Years After Transfer to a Charter, from School Years 2008 to 2012

Grade	Type (Yrs After Transfer)	N	Mean Scale Score Difference from State Average	SD
4	T	63,629	-9.176	35.57
	C (1st Yr.)	7,394	-21.005	49.15
5	T	62,764	-12.111	47.30
	C (1st Yr.)	6,445	-17.721	56.50
	C (2nd Yr.)	4,576	-23.417	52.79
6	T	61,827	-12.469	53.00
	C (1st Yr.)	6,435	-16.787	61.65
	C (2nd Yr.)	4,006	-25.072	62.63
	C (3rd Yr.)	2,940	-6.777	40.31
7	T	61,197	-14.678	61.44
	C (1st Yr.)	5,872	-19.527	78.74
	C (2nd Yr.)	3,938	-25.001	69.76
	C (3rd Yr.)	2,559	-6.720	59.42
	C (4th Yr.)	1,905	-4.630	50.23
8	T	61,368	-16.237	29.39
	C (1st Yr.)	4,961	-21.670	87.10
	C (2nd Yr.)	3,895	-23.840	72.97

Table 24 - continued

C (3rd Yr.)	2,549	-10.401	61.61
C (4th Yr.)	1,713	-10.281	77.68
C (5th Yr.)	1,165	-5.660	65.76

Note. Individual Scale Score Differences from State Average were determined from the state Assessment Mean Scale Score for the same tested year at the same grade level as the student. The Mean Scale Score Differences from State Average were determined for each category.

It should be noted that there were only two cohorts identified for analysis from the database at the fourth grade level, those who were in traditional schools and those who had only transferred the previous year into a charter school. For fifth grade, there were three possible cohorts a student could belong to within the data sample, those enrolled in traditional (T) schools, those enrolled in a charter school after transferring one year earlier (C 1st Yr.) and those enrolled in a charter school after transferring two years earlier (C 2nd Yr.). For sixth grade there were four possible cohorts. Seventh and eighth grade students were in five and six possible cohorts respectively. The results for all grade levels for mathematics scale score difference from State average computations are listed above. Overall, average scores for all comparison cohorts in the small urban school data set indicate performance levels lower than the mathematics state average as indicated by the negative numbers.

Appendix E

Mean Scale Score Differences from State Reading Assessment Average

Mean Scale Score Differences from State Reading Assessment Average

Table 25

Selected Contiguous Small Urban School District Reading Mean Scale Score Differences from State Average for All Student Category Separated by School Type Traditional (T) or Charter (C) and Years After Transfer to a Charter, from School Years 2008 to 2012

Grade	Type (Yrs After Transfer)	N	Mean Scale Score Difference from State Average	SD
4	T	63,997	-9.603	29.39
	C (1st Yr.)	6,360	-19.796	38.27
5	T	63,167	-9.508	28.97
	C (1st Yr.)	6,445	-14.432	32.36
	C (2nd Yr.)	4,576	-19.955	38.82
6	T	61,827	-8.779	27.21
	C (1st Yr.)	6,435	-11.794	30.01
	C (2nd Yr.)	4,006	-17.986	36.84
	C (3rd Yr.)	2,940	-6.343	26.38
7	T	61,197	-11.083	29.88
	C (1st Yr.)	5,872	-13.307	32.17
	C (2nd Yr.)	3,938	-19.205	38.76
	C (3rd Yr.)	2,559	-5.349	29.88
	C (4th Yr.)	1,905	-3.048	31.68
8	T	61,368	-8.869	26.17
	C (1st Yr.)	4,961	-11.147	29.46
	C (2nd Yr.)	3,895	-15.694	36.56

Table 25 - continued

C (3rd Yr.)	2,549	-4.637	22.97
C (4th Yr.)	1,713	-3.832	22.35
C (5th Yr.)	1,165	-0.719	24.90

Note. Individual Scale Score Differences from State Average were determined from the state assessment Mean Scale Score for the same tested year at the same grade level as the student. The Mean Scale Score Differences from State Average were determined for each category.

As was the case for mathematics, it should be noted that there were only two cohorts identified for analysis from the database at the fourth grade level, those who were in traditional schools and those who had only transferred the previous year into a charter school. For fifth grade, there were three possible cohorts a student could belong to within the data sample, those enrolled in traditional (T) schools, those enrolled in a charter school after transferring one year earlier (C 1st Yr.) and those enrolled in a charter school after transferring two years earlier (C 2nd Yr.). For sixth grade there were four possible cohorts. Seventh and eighth grade students were in five and six possible cohorts respectively. The results for all grade levels for reading scale score difference from State average computations are listed above. Overall, average scores for all comparison cohorts in the small urban school data set indicate performance levels lower than the reading state average as indicated by the negative numbers.

Appendix F

Selected Midwestern Urban School District Association Attendance Rates

Selected Midwestern Urban School District Association Attendance Rates

Table 26

Selected Contiguous Small Urban School District Attendance Rates for All Students Attending Traditional Schools in Grades 4 Through 8 from 2008 to 2012

Grade	N	Attendance Rate	SD
4	63,997	94.95%	5.63%
5	63,167	94.96%	5.82%
6	62,066	94.27%	8.56%
7	61,428	94.09%	8.17%
8	61,503	93.51%	8.94%

Note. Data acquired from the selected Midwestern state’s Department of Education Center for Educational Performance and Information (CEPI) databases from 2008 to 2012.

Appendix G
Attendance Rate Comparison

Attendance Rate Comparison

Table 27

*Selected Contiguous Small Urban School District Attendance Rate Comparison
Separated by School Type Traditional (T) or Charter (C) and Years
After Transfer to a Charter, from School Years 2008 to 2012*

Grade	Type (Yrs After Transfer)	N	Mean Attendance Rate	SD
4	T	63,997	94.95%	0.056
	C (1st Yr.)	6,360	91.54%	0.106
5	T	63,167	94.96%	0.058
	C (1st Yr.)	5,320	93.19%	0.087
	C (2nd Yr.)	3,958	91.52%	0.100
6	T	62,066	94.27%	0.086
	C (1st Yr.)	5,038	93.66%	0.083
	C (2nd Yr.)	3,410	90.96%	0.105
	C (3rd Yr.)	2,613	93.11%	0.087
7	T	61,428	94.09%	0.082
	C (1st Yr.)	4,641	93.36%	0.089
	C (2nd Yr.)	3,237	91.43%	0.102
	C (3rd Yr.)	2,258	93.17%	0.074
	C (4th Yr.)	1,747	95.12%	0.075
8	T	61,503	93.51%	0.089
	C (1st Yr.)	4,061	92.57%	0.102
	C (2nd Yr.)	3,284	91.61%	0.100

Table 27 - continued

C (3rd Yr.)	2,216	92.78%	0.083
C (4th Yr.)	1,590	94.37%	0.087
C (5th Yr.)	1,151	92.90%	0.152

Note. Attendance rates were calculated by dividing the number of days attended by the number of days enrolled for each student at the same grade level. The Mean attendance rate was determined by averaging each category.

The results for all grade levels for attendance rates are listed above. Overall, average attendance rates for traditional schools in the selected small urban schools data set are higher than the charter schools, with the exception of fourth year charter transfer seventh and eighth graders.

Appendix H
HSIRB Approval Letter

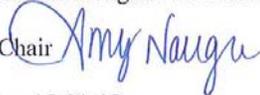
WESTERN MICHIGAN UNIVERSITY



Human Subjects Institutional Review Board

Date: January 16, 2015

To: Walter Burt, Principal Investigator
Frederick Clarke, Student Investigator for dissertation

From: Amy Naugle, Ph.D., Chair 

Re: HSIRB Project Number 15-01-18

This letter will serve as confirmation that your research project titled “A Study of the Effects of Charter Schools on Selected Demographic Variable in a Midwestern State’s Middle Cities Urban School Districts” has been **approved** under the **exempt** category of review by the Human Subjects Institutional Review Board. The conditions and duration of this approval are specified in the Policies of Western Michigan University. You may now begin to implement the research as described in the application.

Please note: This research may **only** be conducted exactly in the form it was approved. You must seek specific board approval for any changes in this project (e.g., *you must request a post approval change to enroll subjects beyond the number stated in your application under “Number of subjects you want to complete the study.”*) Failure to obtain approval for changes will result in a protocol deviation. In addition, if there are any unanticipated adverse reactions or unanticipated events associated with the conduct of this research, you should immediately suspend the project and contact the Chair of the HSIRB for consultation.

Reapproval of the project is required if it extends beyond the termination date stated below.

The Board wishes you success in the pursuit of your research goals.

Approval Termination: January 15, 2016

1903 W. Michigan Ave., Kalamazoo, MI 49008-5456
PHONE: (269) 387-8293 FAX: (269) 387-8276
CAMPUS SITE: 251 W. Walwood Hall