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The relationship between NWEA scores of resident and non-resident students

Steve Prissel

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The Relationship Between NWEA Scores of Resident and Non-Resident Students

by

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Dissertation

Submitted to the Department of Leadership and Counseling

Eastern Michigan University

in partial fulfillment of the requirements for the degree of

DOCTOR OF PHILOSOPHY

Education

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Abstract

The purpose of this study was to examine whether a relationship exists between the Northwest Evaluation Association (NWEA) scores of school of choice students and resident students. Background factors were also considered in the study, with focus on grade, gender, race, and special education and socioeconomic status of the students. The study included 5,975 students from 14 school districts in one Michigan intermediate school district (ISD). The NWEA computer-adaptive test assessed achievement/progress in math and reading in grades 3–8. This study used pre and post assessments, once in the fall and once in the spring, to assess the level of achievement growth. Students in this study completed the math and reading portions of the NWEA during the 2014–15 school year.

A quantitative, correlational design was used in this study to show the relationship, if any, between NWEA math and reading scores of school of choice (SOC) and resident students. What was the relationship between students' residency status and math and reading achievement as measured by NWEA? and What was the relationship between students' residency status and math and reading achievement as measured by NWEA after controlling for background factors? These guiding questions and this research are important because of growing nationwide concerns by parents, policy-makers, and school leaders about the educational value of school choice and the competition for per-pupil funding based the school district's ability to attract and retain out-of-district students. Maintaining high achievement scores is critical. This study concluded that the grade level of the student was impactful to achievement scores, but the SOC status was not.

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Chapter I: Introduction and Background

Introduction

Competition among Michigan's schools has increased since the passage of the State of Michigan's Proposal A, which connected funding to the number of students enrolled in each school district. Loeb and Cullen (2004) reported that the State of Michigan's Proposal A passed in 1994, shifted school funding from a local revenue model to a per-pupil model, tying the amount of revenue school districts received to total pupil enrollment. For every student lost to another district or educational entity, school districts face the loss of about \$7,500 (Michigan House Fiscal Agency, 2009). Attachment of school funding to pupil counts points to the importance of the number of students who reside within school boundaries as well as students who attend schools of choice within the district. All across the state, school districts are gaining and losing students, and the competition to retain and attract students gains in intensity every year. Increased competition is thought to lead to greater success in all schools, as schools reform and improve to maintain enrollments (Chubb & Moe, 1992). In this competitive environment, school districts' ability to retain and attract students as well as to maintain high achievement scores is critical.

This research focuses on whether there is a difference between the Northwest Evaluation Association (NWEA) scores of school of choice students and resident students in one Michigan intermediate school district (ISD). The NWEA computer-adaptive test assesses achievement/progress in math and reading in grade 3–8 and is administered three times each year, in the fall, winter, and spring. The assessment takes about 45–50 minutes on average per subject. The computer adjusts the difficulty of items up or down as the test progresses; thus, the

assessment precisely measures a student's current achievement, providing greater sensitivity to detect growth over time for students at all achievement levels. The data from the NWEA drives instruction and intervention. School districts across Michigan have been forced to address the schools of choice issue, as implementation affects budgets, programs, personnel, and overall viability of districts. This study involved one Michigan ISD, 14 school districts, and included data of more than 10,000 students.

Statement of Problem

Public Act 300 of 1996 was important legislation, as it made it possible for school districts to receive funding for enrolling students who were nonresident to the school district but resided within the ISD. Since that legislation, there have been other expansions to support schools of choice.

It is critical for a school district to retain and attract students to ensure a consistent funding stream and a healthy budgetary standing. Because of the circumstances surrounding schools of choice students and the need to maintain high achievement scores to attract those students, the researcher believes it is important to know the difference in achievement scores between schools of choice students and resident students. Schools operate in an environment of choice and it is important districts understand the implications of their achievement scores.

Purpose of the Study

The purpose of this study is to examine the relationship between a student's residency status (schools of choice or resident) and student achievement as measured by NWEA. Proposal A has forced districts to rely on head counts each fall and spring to determine their yearly budget. Audrey Spalding (2013) stated, "Using count days to determine funding for school

districts is a high-stakes game: Districts must have a student in attendance on those two particular days in order to receive full funding on the behalf of that student” (p. 2). The high stakes of this policy lead school districts to review their enrollment trends and question what they can do to attract and retain students because overall enrollment numbers dictate the staffing and programming that districts can provide for their students and community.

Choice has broad and lasting effects. As a rule, organizations respond to competition by becoming more efficient (Hoxby, 2002). The efficiency of all K-12 educational institutions is consistently challenged, especially in the environment of schools of choice. The pressure on schools to perform and respond to competition is key to the success of moving districts forward.

Research Questions and Null Hypotheses

This study was guided by two research questions.

Research Question 1. What was the relationship between students’ residency status and math and reading achievement as measured by NWEA?

Null 1. Neither math nor reading achievement will be related to the type of student (schools of choice versus resident).

Research Question 2. What was the relationship between students’ residency status and math and reading achievement as measured by NWEA after controlling for background factors?

Null 2. Neither math nor reading achievement will be related to the type of student (schools of choice versus resident) after controlling for background factors.

Study Design

A quantitative, correlational design was used in this study to show the relationship, if any, between NWEA math and reading scores and the difference between schools of choice and resident students with respect to grade, gender, race, and socioeconomic status.

Participants

This study included 5,975 students from 14 school districts in one Michigan ISD. The students were in Grades 3 through 8 and had completed the math and reading portions of the NWEA in the 2014–15 school year.

Delimitations

Delimitations are choices made by the researcher, which should be mentioned. They describe the boundaries that have been set for the study. For the purpose of this study the following delimitations were set by the researcher:

1. This study will be conducted in one ISD in Northern Michigan.
2. The NWEA is the assessment chosen for this study.
3. Data collection will include only NWEA scores from Grades 3 through 8 in the 2014–15 school year.
4. The study only includes scores from resident students and schools of choice students from districts that use NWEA.
5. Although the data gathered in this specific ISD are not generalizable, the process for collecting the data may be applied in other ISDs.

Limitations

Limitations are influences that the researcher cannot control. They are the shortcomings,

conditions, or influences that place restrictions on conclusions. The limitations for this study were as follows:

1. It is unknown if students were willing participants in the NWEA assessment.
2. Students may be unfamiliar with the use of keyboards and navigating on the computer-based NWEA assessment.
3. The NWEA is administered three times a year, although the school district may choose to administer the test more or fewer times a year.
4. The correlational design of this study does not establish cause and effect.

Significance of Study

The achievement of students on standardized assessments is critical to the vitality of any school district. Achievement status is not only important for student learning, but it is also one of the top reasons that parents choose a school district, and hence, achievement status affects schools of choice enrollment. Due to the State of Michigan funding schools on a per pupil basis, the topic of school choice is epic because enrollment drives schools' budgets, programs, and personnel.

Summary

The impact of schools of choice upon school districts in the State of Michigan was introduced in this chapter. This quantitative, correlational study examines the relationship between students' residency status (schools of choice or resident) and student achievement as measured by the Northwest Evaluation Association (NWEA). Assessment data were gathered from 5,975 students in 14 school districts in one Michigan intermediate school district.

Chapter II: Review of Literature

History of Schools of Choice

The options for families and students vary from state to state, but even if school of choice is not an option, it surely is a topic of discussion. The Alliance for School Choice (2010) indicated that school choice means different things to different families, but most families agree that school choice provides an opportunity for their children to excel and to thrive. The Alliance also referenced school vouchers, scholarship tax credit programs, and public charter schools as types of school choice and recognized that this is not an exhaustive list, that other options are available, and that it varies from state to state. Choice is one way a state can meet its obligation to ensure that children get a good education (Hill, 2003).

Schools of choice may seem to be a recent topic, but the issue has been around for many years. For example, Lindelow (1980) reported that a voucher system was implemented in Alum Rock, California in 1970. Voluntary programs began to emerge as an option in the early 1980s. The first mandatory statewide program did not exist until the implementation of Minnesota's policy in 1991 (Boyd, Hare, & Nathan, 2002). In 1991, the number of choice plans in the country was on the rise, including comprehensive statewide inter-district choice plans in Arkansas, Idaho, Iowa, Minnesota, Missouri, Nebraska, Ohio, and Utah. Alabama, California, Colorado, Maine, Massachusetts, New Jersey, Oklahoma, Oregon, Vermont, Washington, and Wisconsin had limited choice plans (Pipho, 1991). More recently, the National Center for Education Statistics (2011) communicated that inter-district open enrollment has expanded rapidly and that only eight states and the District of Columbia were without some form of a

choice policy. Schools of choice is a national, educational topic—and is certainly an important topic in Michigan.

Enabling legislation in Michigan. Public Act 300 of 1996 was a significant piece of legislation, as it made it possible for Michigan school districts to receive funding for enrolling nonresident students who were within their resident intermediate school district (ISD). In 1999, Public Act 119 made it possible for school districts to enroll and receive state aid for students who lived in a different ISD. These two key pieces of legislation, known as section 105 and 105C, respectively, made it possible for Michigan schools, as schools of choice, to offer enrollment to nonresident students. Overall, the number of students who participated in the choice program in Michigan schools grew from 5,611 in the 1996–1997 school year to 26,025 in 2000–2001 (Mackinac Center for Public Policy, 2001). Arsen, Plank, and Sykes (1999) asked the following question regarding the implementation of the new law: “If you introduce choice and competition into regular public schools, will competition stimulate all kinds of improvements on the part of those regular public schools?” Nathan (1989) acknowledged that choice plans can provide the freedom parents seek, the expanded opportunities many students need, and the dynamism the public education system requires. The answer to the aforementioned question is uncertain, but the implementation of school choice does create an environment for change in school districts.

The Michigan Department of Education (2009) communicated many recommendations to Michigan school districts to facilitate schools of choice. Local school boards have the authority to offer a student the option of enrolling in the school building of his choice. These governing bodies also have the right to establish both intra and inter-district enrollment options

for families. The intra-district is a local decision, whereas the inter-district decisions must abide by the 105 and 105C guidelines. A school board’s decision to participate in the 105/105C schools of choice program is voluntary; however, if a school board elects to provide schools of choice, they are bound by Public Act 300 and 119.

Public Act 300 of 1996, or section 105, permits local school districts to enroll students who reside in other local school districts within the same intermediate school district (Michigan Department of Education, 2013). Public Act 119, or section 105C, allows enrollment of students who reside in school districts in contiguous intermediate school districts. School districts may also opt out of participation in section 105/105C and still participate in schools of choice if they have a cooperative agreement with other local or intermediate school districts. Each local school district decides whether it will participate in schools of choice under Section 105 and/or 105C.

Responsibilities of districts of Michigan Public Act 300 are shown in Figure 1.

Publish the grades, schools, and special programs, if any, for which it will accept non-resident students.
Determine whether it has a limited or unlimited number of positions available for non-resident applicants.
Provide notice to the public that applications will be taken for a period of at least 15 calendar days. The notice must include the dates of the application period, as well as the place and manner for submitting applications. Published notice may precede the application period. Note: Programs with limited enrollment must limit the application period to no more than 30 days.
If the number of applicants does not exceed the number of positions available, the district must accept all eligible applicants. If the number of applicants exceeds the number of positions available, the district must accept eligible applicants in the following order: <ol style="list-style-type: none"> 1. Students who reside in the same household as students enrolled under section 105 or 105C in the immediately preceding school year, semester or trimester; 2. Other students selected according to a random draw system, which must also be used to establish a waiting list.

<p>Follow the specific application procedures and timelines described in the legislation. These procedures and timelines are different for districts with limited and unlimited numbers of positions available. Note: Periods referenced in the statute are calendar days.</p>
<p>Determine which students met the enrollment requirements and notify parents of their child's acceptance in the program. The date for enrollment shall be no later than the end of the first week of school.</p> <p>Note: A district may not grant or refuse enrollment based on age, except in the case of an applicant for a program not appropriate for his/her age. A district may not grant or refuse enrollment based upon religion, race, color, national origin, sex, height, weight, marital status or athletic ability, or, generally, in violation of any state or federal law prohibiting discrimination.</p>
<p>A district may refuse to enroll an applicant who has been suspended within the preceding two years or who has ever been expelled.</p>
<p>Provide information to the parents of accepted students on available transportation. Districts are not required to provide transportation for students under Section 105 or 105C.</p>
<p>Allow students who enrolled under Section 105 or 105C in the immediately preceding school year, or semester or trimester, to continue to enroll until they graduate from high school. This requirement does not prohibit a district from expelling a student for disciplinary reasons.</p> <p>Note: Non-resident students enrolled under Section 105 or 105C that have been counted in membership on either the pupil membership count day or the supplemental count day shall continue to be enrolled. A district may expel a student for disciplinary reasons. A student enrolled under Section 105 or 105C that relocates to another resident district shall continue to be enrolled.</p>
<p>Develop and implement an individualized education plan for a student who is eligible for special education programs and services, or a child with disabilities under the <i>Individuals with Disabilities Education Act</i></p>
<p>A district may not refuse enrollment to a student eligible for special education programs and services, unless the application is under Section 105C and there is no written agreement with the district of residence. Special education programs and services are not considered "special programs" under Section 105 or 105C.</p>

Figure 1. Responsibilities of districts under Section 105 and/or 105C of Michigan Public Act 300

The actual documents for a schools of choice family to complete for a participating district depends on whether the district participates with the state's 105 and 105C guidelines or the district is involved with an a local ISD and has a separate schools of choice agreement. In the former, the family would complete the Michigan Department of Education's waiver request form, or in the local agreement, the parents would complete the schools of choice form for that particular ISD. In this situation, the participating local district would have to opt out of section 105 and 105C state agreements and agree to an allowable schools of choice contract with the ISD.

One well-known choice program in our country is U. S. is the Milwaukee Parental Choice Program (MPCP), which was established in 1990 to provide more educational options for parents and students and is the longest-running school choice voucher program (Alliance for School Choice, 2009). Proponents of the voucher plan argued that vouchers would enhance educational quality and stimulate additional learning opportunities (Fowler, 1980). Robinson (2005), communicated that programs such as MPCP could lead to improved academic achievement, especially among African-American students; positive results in public schools, and high levels of parent satisfaction. However, there is always another side. To that point, Salganik (1981) indicated that opponents of the voucher plan argued that because education is a public good, choices should be supplied within a democratically controlled school system, one possessing a variety of schools with diverse programs and well-measured quality. As Robinson (2005) referenced, there are multiple positive impacts of choice, and people in the educational community are hoping for many more.

The positive impact of school choice is the goal for parents and students, and it does come in a variety of ways. Studies have shown improvements for the low-achiever located in new and different learning environments, for example, in relation to attitudes toward school and learning, in attendance and behavior patterns, and in achievement (Foley & McConaughy, 1982). These gains can happen rapidly, as Konrad (1979) indicated that improvements have sometimes arrived as multi-year learning gains within a matter of months, as measured by standardized tests. Choice has also been recognized as helping to keep students in school. A team that studied at-risk students in Chicago reached a conclusion that school choice opportunity could do much to prevent dropping out of school (Kyle, 1986). McCann and Landi (1996) recognized, that, for many, the different learning environment appears to be the key to success. They also indicated that the often-misunderstood testimony to this effect comes from the dramatic improvements some youngsters make in an alternative environment, only to revert to the earlier problems once returned to the *regular* school.

Furthermore, it is important for parents to match their child with the school that fits the child's learning mode and style to ensure success. Researchers found that it is not just the importance of choice, but that student fit is critical. The person-environment fit may eventually be shown to be just as important to positive learning outcomes as the adequacy of an environment (Fisher & Fraser, 1983). It is evident that as parents across the country look to choice as an option for their children, there is more to the decision than high achievement scores or nice facilities at a particular school.

Livingston (1982) indicated that student satisfaction levels have been found to be higher in schools of choice than in the host school. Even though the opportunity for children varies from

state to state, the common focus is for parents to have an opportunity to see their child succeed, whether at the school district of residence or one of choice. As our nation shares the issue of choice, parents and districts may take into account the fit of the student to the learning environment.

It may be important for educational leaders to understand the significance of the history of education and schools of choice. Corfield (2008) asserted that “History is inescapable. It studies the past and the legacies of the past in the present. Far from being a 'dead' subject, it connects things through time and encourages its students to take a long view of such connections” (para. 1). These connections are significant as educational leaders address multiple issues and communicate with a diverse population. History can only help in the leadership forum as leaders use all attainable information to help in decision-making.

Impact of Schools of Choice on Funding

The amount of funding a district receives for each inter-district transfer it accepts varies from state to state, but Reback (2008) noted that the amount the district receives is generally greater than the cost of educating an additional student. In 1994, voters approved a statewide ballot item that changed the funding structure for Michigan school districts. This new funding mechanism created an environment where schools were funded less by local property taxes and more on statewide sales, use, cigarette, and income taxes (Spalding, 2013). Since the passage of that legislation, schools have been funded primarily in the form of a foundation allowance. This allowance is important to schools of choice because when students enroll in another district as a choice student, their foundation allowance follows them.

This funding structure for schools of choice has created a very competitive environment

among schools districts for student enrollment. Scafidi (2012) noted that the evidence on the fiscal effect of school choice on public school districts is not readily available. Regardless of the availability of financial data, as school districts see increasing costs and declining enrollment, many are looking to choice as a part of the solution to assist with the local budget.

Spalding (2013) also reported that the number of students enrolled in schools of choice has more than doubled (from 40,753 to 99,301) during the past 10 years, and the number of districts enrolling students through schools of choice has increased dramatically as well. It would seem that districts elect to participate in Michigan's schools of choice program due to the district's choice perspective and assistance with school funding. However, there are districts in Michigan who opt out of participating in schools of choice. In some areas of Michigan, districts do not participate in schools of choice because they want to protect their district from particular groups of students. Arsen et al. (1999) argued that some districts use choice selectively:

From our interviews with school administration, it is apparent that suburban school boards consider the racial composition of their own enrollments when they decide whether to participate in inter-district choice. For example, all of the districts bordering Benton Harbor have “opted out” of inter-district choice but have managed their participation to ensure that the inflow does not significantly increase their percentage of minority students. (p. 85)

Some districts participate in schools of choice but limit it to certain grades and/or buildings. For the 2011–12 school year, the State of Michigan awarded schools financially if they participated in schools of choice. New funds, or *Best Practice Incentive*, were secured when a school district complied with a list of requirements, one of which was participation in

schools of choice.

Whether districts opt in or out of schools of choice or selectively limit choice to certain grades, the financial implications are great. The Senate Fiscal Agency (2014) indicated that the enacted minimum per pupil foundation allowance in 2010 was \$7,316. In the Calhoun Intermediate School district example, almost \$22 million dollars of per pupil funding was exchanged. This extent of financial exchange might suggest that there are winners and losers.

In April 2012, the online educational option for students hit a significant number for Michigan, as Michigan virtual schools reached a milestone enrollment of 100,000 students (Vandergriff, 2012). Michigan virtual schools partners with K-12 schools to provide online courses, but the program isn't the only cyber-learning option in the state. For example, two cyber-charter schools, one in Grand Rapids and one in Okemos, operate as full-time, K-12 virtual public schools. These schools enroll students from across the state. The programs include curriculum mandated by the state and follow rules as all K-12 schools in the state. In the two virtual school examples, students take all of their classes online. Werrell (2013) indicated that online options are prevalent for many reasons, but needing a change in the environment and flexibility are two main reasons parents choose the online option. Considering the 100,000 Michigan virtual school enrollments and the other online options in the state, per pupil funding changes hands many times from district to district.

However, the Foundation for Educational Choice (2012) would contend that when using a voucher school of choice system, the financial impact on public schools is positive. When students use vouchers to leave public school, the public school is relieved of the duty/costs of educating those students. Declining enrollment typically leads to a revenue loss for public

schools, but this is true whether the departing students switch to a private school or another public school. In the latter case, the receiving public school may see a gain in revenue. Although Scafidi (2012) pointed to a lack of financial data on impact of schools of choice, research has shown positive and negative financial implications for public schools.

Section 22f, the Best Practice Incentive, and Section 25e are two specific sections of the State School Aid Act that have connections to schools of choice and the funding school districts receive. According to the Michigan Department of Education (2014), on June 24, 2014, the governor implemented legislation under Section 22f of PA 196 that appropriates \$75,000,000 to provide \$50 per pupil allocations for the FY 2014–15 school year to local school districts and public school academies that meet seven of nine of the following best practices:

1. Hold policy on medical benefit plans (if directly employed by district or not excluded by a voluntary employee beneficiary association).
2. Obtain competitive bids for the provision of 2014–15 non-instructional services.
3. Accept applications for enrollment of non-resident pupils under Section 105 or 105C.
4. Offer online courses or blended learning opportunities to all eligible pupils and publish course syllabi.
5. Provide to parents and community members a dashboard/report card with required financial information on website.
6. Note that teachers' and administrators' job performance is a significant factor in compensation determination.
7. Certify that collective bargaining agreements do not include provisions contrary to prohibited subjects by statute.

8. Implement a comprehensive guidance and counseling program.
9. Offer K-8 students one credit worth of non-English language learning experiences.

For some districts, it was imperative to accept applications for enrollment of non-resident pupils (item # 3) to ensure that they secured the \$50 per pupil. The 22f legislation is significant in terms of school funding, and to have Section 105 and 105c eligibility as a best practice includes schools of choice as a means of securing these funds.

Section 25e (Pupil Membership Transfers) was clarified by the Michigan Department of Education and its Pupil Accounting Manual (2014). This legislation impacts funding in terms of schools of choice because funding follows students as they move from one district to another, even during the school year. Section 25e of the State School Aid Act provides districts with the ability to count a proration of a full-time equated (FTE) for pupils who transfer from one district to another between the pupil membership count day (fall count) and the supplemental count day (spring count). Consequently, if a student transfers via schools of choice (or change of residence), the prorated dollar amount for per pupil funding from the original school will then be sent to the school of transfer. This type of funding movement due to transferring students mid-year has not been an option in past years for school districts. As parents choose certain schools for their children, the funding implications are evident for those districts involved with schools of choice. Educational leadership requires an understanding of the financial environment of schools. The need to understand choice and its funding impact is critical as choice continues to increase and impact school budgets.

Reasons Why Parents Choose Certain Schools

Sewell (1989) noted that school choice has immense and growing appeal among parents,

many of whom are upset more by drug-infested playgrounds and insensitive bureaucrats than classroom deficiencies. How and why parents participate in schools of choice varies from state to state; however, reasons that parents choose certain schools appear to be common, regardless of their state of residence. Lacireno-Paquet (2008) reported on two studies that focused on the reasons why parents chose certain schools. A 1998 Michigan survey of more than 1,000 charter school parents found that academic reasons were four of the top five rated reasons, and safety was the other. A similar study in Texas found very similar reasons. Parents of more than 1,000 charter school students were surveyed and asked to rate the significance of five possible factors in choosing a school: educational quality, class size, safety, location, and friends at school. A very high percentage (93–96%) of all parents ranked educational quality as important or very important. In these two studies, it is important to note that regardless of race and income, the quality of education was paramount. Also, Zeehandelaar and Northern (2013) indicated that the Thomas B. Fordham Institute found, in August of 2012, that the highest ranking school characteristic for SOC was a strong core curriculum in reading and mathematics.

The impact of race and socioeconomic status is certainly a consideration in SOC. Lacireno-Paquet and Brantley (2008) noted that “Parents overwhelmingly say they are looking for a better education but much, though not all, of the research examined suggest that parents are paying more attention to the social and racial demographics of potential choice schools than they are to measures of academic quality.” In addition, Roda and Wells (2013) noted that parents felt tremendous pressure to have their children accepted into the best schools, and interviews showed that White parents want their children to attend schools with what they call a critical mass of other White children, and that race is important as parents constructed their decision for the

SOC. When considering race effects of SOC on integration and segregation, Koedel et al. (2009) found that students' families attempted to move students into peer groups up the socioeconomic ladder, which included schools with more White students, higher-achieving students, students of a higher socioeconomic level, higher parental-education levels, and lower levels of English-language learners. Race and socioeconomic factors are certainly considerations within the SOC discussion.

Online charter academies are beginning to multiply as an option for parents. Littlefield (2013) found that the top three reasons parents chose online high schools were to

1. help teens make up missed credits,
2. help teens get ahead and graduate early,
3. provide flexibility for teens with unusual schedules.

Similarly, the Buechner Institute for Governance (2012) reported that the three most important reasons students gave for attending an online school were related to school success. The list of the most important reasons included the following:

1. They like the choice of classes that are available.
2. They want to graduate early.
3. They want classes to move faster.
4. They were falling behind in classes.
5. They need to make up credits.

The convenience of being able to access curriculum at home via technology is an increasingly available option for parents.

When considering a private school, parents still ranked educational quality at or near the

top of reasons for their choice, but other factors also weighed in when choosing a private school.

Kelly and Scafidi (2013) found that the top six reasons parents choose a private school are

1. better learning environment,
2. better education,
3. smaller class sizes,
4. more individual attention for my child,
5. religious education,
6. better preparation for college.

The Council for American Private Education (2013) found the same six reasons in their research. There is some indication that attire is important to parents as well. Beavis (2004) discovered another factor for parents' choice of private schools: the extent to which the school embraced traditional values regarding discipline, religious or moral values, the traditions of the school itself, and the requirement for a uniform. Those who have considered sending their children to private schools tend to come from higher family economic backgrounds (Goldring & Rowley, 2006). Additionally, they reported that a family earning \$80,000 or more annually is about 74% more likely to consider private schools for their children than families earning less than \$60,000. Furthermore, Hsieh and Shen (2000) found that parents with high income and education levels were most likely to choose private religious or secular schools.

Many parents choose to enroll their children in the designated public school where they live. Drennan (2009) argued that the main reason parents choose public schools is because that is where they pay taxes. Based on the Hsieh and Shen (2001) study, parents who chose private religious, non-religious private, or public schools cited academic quality as a key reason for their

choice. Of the parents who chose public schools, 40% based their decisions on social factors such as convenient location or safe school area. The public school decision that best served their current overall needs was strongly considered under their constrained educational choices (Hausman & Goldring, 2000). Interestingly, parent involvement, transiency, and transportation could be three of the constraints on parents. In addition, Carlson, Lavery, and Witte (2011) indicated that distance played a significant role in SOC decisions, where transfer rates declined as the distance between the district of residence and the transfer opportunity grew. Hastings, Kane, and Staiger (2005) found that for every mile increase in distance to a prospective school, the likelihood of selection decreased. Parental involvement in choice is believed by some to be a way to help draw parents back into the education fold (Paulu, 1989). There is not much doubt that parent involvement is important; however, Bell (2009) cited a potential barrier:

As parents set about constructing their choice sets and determining which school might be best for their child, they do so in a segregated, stratified social context. Parents do not have equal access to transportation, information, time for school visits, money for tuition, or English language skills. Resources, both material and immaterial, are not distributed evenly among parents of differing social class backgrounds. (p. 193)

How parents address school issues has been found to be affected by this social context.

Horvat, Weininger and Lareau (2003) found

That when faced with problems such as inappropriate teacher behavior or disagreeable academic placements, middle-class parents' networks provided the information, authority, and expertise necessary to resolve disagreements in the parents' favor. In contrast, working-class networks did not provide parents such resources and their

negotiations with school were less successful than middle-class parents. (p. 332)

Furthermore, Bifulco et al. (2009) determined that college-educated parents were more likely to use choice than non-college-educated parents based on the proportion of low socioeconomic students in their district of residence.

Henig (1994) communicated that urban parents, many of whom are single mothers, do not have time to adequately research choice options, and thus, are under-informed. Further, the information that flows across social networks is another type of social capital that has been linked to parents' school selections (Schneider, Teske, Roch, & Marschall, 1997).

Transiency exacerbates these constraints even more. Bainbridge and Sundre (1992) indicated that the average American family moves every three years. Also, Asimove (2003) pointed to parents who are uninterested in their children's education or make decisions that are somewhat less than rational. These issues may be a large reason why only 2 to 3% of families have used schools of choice to move out of failing schools (Schemo, 2002).

As many families move from home to home and also have social barriers, most encounter transportation issues. Findings of Teske, Fitzpatrick, and O'Brien (2009) demonstrated that transportation is indeed a barrier to choice for many low- and moderate-income families. The researchers found that almost two-thirds of those surveyed (and 80% of the parents with the lowest incomes) reported that they would choose a (hypothetical) better school farther from their home if transportation were provided.

Home schooling is a school of choice, but little data are available on the decision-making of parents. However, the National Center for Education Statistics (2003) conducted a survey focused on home schooling of students. The four most often cited reasons for parents to choose

home schooling were school environment; concerns with such elements as safety, drugs, and peer pressure; the desire to provide religious or moral instruction; and dissatisfaction with the instruction in schools. The New Hampshire Homeschooling Coalition (2015) cited three broad categories of reasons why parents chose homeschooling: religious/moral values, inadequate school-based education, and political beliefs. In Michigan, parents who elect to home school students are supposed to notify their ISD of their choice; however, this is not regulated, and therefore, not much specific data are available.

The options discussed for schools of choice are not exhaustive. Increasingly, schools of choice programs are being developed and implemented at the school district and state levels. Education Encyclopedia-StateUniversity.com (2015) compiled a list of schooling options that parents encounter across the nation.

- **Alternative or optional schools:** A wide variety of established alternative schools serve all levels and kinds of students. These schools range from programs for at-risk, expelled, and violent students to schools for the exceptionally gifted and talented. Many alternative or optional schools serve heterogeneous student bodies with average achievement and behavior characteristics.
- **Career-theme or technical magnet schools:** Originally popularized as part of court-ordered desegregation efforts, magnet schools emerged over time into specialized programs employing career themes. Students complete high school graduation requirements while they focus on and apply curriculum to a career theme, academic discipline, or area of emphasis, and by participating in relevant work and service experiences.
- **Charter schools:** As of 2001 these schools had been approved by legislatures in 38 states, the

District of Columbia, and Puerto Rico. Charter schools exchange many of the rules and regulations of public education for the opportunity to operate with autonomy to demonstrate student achievement.

- **Contract schools:** School districts "contract" with an organization or group (usually private) to provide public education services. Examples of these schools include schools to teach disruptive and/or suspended students, programs to supplement reading services, and in some cases actually contracting out the entire administrative and/or educational operation of a school district.
- **Open enrollment programs:** Parents and their children may choose to attend any public school in their district or in another district to which their state education funds would follow. Transportation is usually provided if the students' home residence district and school district share a common physical boundary.
- **Residential alternatives:** A number of states, including North Carolina, Maine, Louisiana, and Texas have established academic-focused residential science/mathematics high schools for gifted and talented students in cooperation with state universities.
- **Voucher programs:** Three states, Wisconsin, Ohio, and Florida, have attempted to establish voucher programs to provide publicly funded vouchers to poor students "trapped" in low-performing public schools. These vouchers may be applied to the tuition costs of attending private or parochial schools. Publicly funded voucher programs, as of 2001, continue to be involved in litigation regarding the issue of expending public funds for private or parochial education.
- **Home schools:** Since the 1970s there has been a dramatic growth in the home schooling of K–

12 students. Most states require public schools to offer a variety of services, courses, and programs to home-schooled students.

- **Internet courses and programs:** During the late 1990s, a growing number of courses, programs, and schools available through the Internet emerged. These learning opportunities are offered by community colleges, universities, private educational organizations, and an increasing number of public school districts.
- **Blending high school with college:** A number of states encourage high school students to begin taking college courses during the eleventh and twelfth grades. Some states have created "middle colleges" within community colleges and universities to better serve high school students. A number of states permit students to double-list mutually approved courses so that they meet both high school and college requirements.
- **Area learning centers:** Established first in Minnesota, area learning centers are open from early morning to late evening year-round (some are open 24 hours a day), serving K–12 students and adults. The centers offer both General Educational Development (GED) and regular diplomas as well as childcare and are available to students on a full- or part-time basis. (p. 1746)

The reasons why parents choose particular schools vary from area to area. Educational leaders and parents can work together to provide an attractive environment for families and students. It is teamwork that remains the ultimate competitive advantage, both because it is so powerful and so rare (Lencioni, 2002).

Changes in the Number of Michigan Schools

Michigan has seen many changes in the overall structure of schools. A result of

economic hardships felt across the state has been a change in the number of schools. Reduction in the number of students in the state has resulted in fewer traditional public and non-public schools. In the last ten years, Michigan public schools have decreased from 553 Local Education Agencies (LEAs) in 2004 to 545 today (Michigan Department of Education, 2014). One intermediate school district (ISD) has also been lost during this time and now stands at 56. Michigan non-public schools saw the largest decrease, from 961 in 2004 to 692 in 2014, a loss of 269.

A decrease in students would usually result in fewer schools. However, from 2004 to 2014, two school models have increased. In 1994, as part of the state's school finance reform, lawmakers passed Public Act 362 of 1993, the so-called charter school law, which allowed *academy* schools for the first time. Michigan was one of the first states to take such a step (Public Sector Consultants, INC., 1998). In successive years after the establishment of the law, establishment of public school academies or charter schools proliferated, from 199 charter schools in 2004 to 298 in the 2013–14 school year (Michigan Department of Education, 2014). These establishments removed students from existing schools. With respect to charter schools, Zimmer et al. (2009) found that there was no evidence that charters were pulling and segregating high-achieving students. Additionally, Vandergriff (2012) reported that 2011 marked the first time Michigan had more than 100,000 students enrolled in online/virtual schools; thus, the public school sector shows that there are actually more schools, while there are fewer students. These developments have created a very competitive atmosphere for attracting and retaining students.

Overall Student Enrollment Trends

The number of students in the State of Michigan has decreased. According to the Michigan Department of Education (2014), 200,000 fewer students attended public schools in 2014 than in 2003. Non-public schools saw a loss of nearly 50,000 students during that period of time. Due to an inconsistent accounting system, it is very difficult to get an actual number of students who are home schooled, although this type of parental choice is occurring across the state.

In the last five years, the participating intermediate school district in this study has seen a 6% decrease (1,493 students). Within this intermediate school district, only three districts of 16 have seen an enrollment increase, one of the three is a charter school.

It is important to understand enrollment data and trends to help make informed decisions. Educational leaders need to be aware of enrollment trends in schools of choice and to understand how those data affect the number of schools in Michigan. Leaders should use these data to help with decisions and also to inform staff and constituents.

Politics of Choice

Nationally, it is predicted that 49.8 million students will attend public schools. This number is about the same as the record high set in 2013 (National Center for Education Statistics, 2014). The topic of schools of choice is not immune to the effects of politics. The U. S. is an integrated community, where each sub-community stresses its own ends and advocates its own values relative to what public schools ought to be achieving (Fantini, 1973). The 21st Annual Gallup Poll of public attitudes reported that, by a 2 to 1 margin, the public favors allowing students and their parents to choose which public school in their community students

will attend (Elam & Gallup, 1989). These data have political implications and have led to legislation. In Milwaukee, a voucher plan was implemented to allow low-income students to attend nonpublic schools (Walsh, 1992), and it has been politically divisive in the state. A California referendum on parental choice attempted to secure financial assistance for attendance at both private and public schools (Olson, 1992). The Association of California School Administrators tried to block the referendum, charging that it would lead to the demise of public education (EDCAL, 1992). Raywid (1989) believed the open market of schools of choice would require major structural changes in the educational system (statutes and practices). Furthermore, the subcommittee on choice of the New York Board of Regents (1991) argued that public education may remain viable under a system of choice, to the extent that policy-makers ensure the strategy for maximizing choice does not result in the concentration of the best teachers and students and disproportionate resources in certain schools at the expense of others. Gutmann (1987) communicated that skeptics of school choice routinely contend that such policies have the potential to *cream* away the best students, *crop* away the worst, and thus, result in greater levels of stratification along academic, socioeconomic, and racial dimensions.

One very sensitive area in which choice affects public schools is a local millage. This funding mechanism in Michigan stipulates that only residents who live within the school district lines will pay for the local school tax. This becomes a very hot topic when local residents see many students from other districts using the facilities they pay for, and that makes it difficult for school districts to pass a millage or bond proposal. Data that specifically point to this conflict involving choice and the local tax burden are limited. However, researchers have examined the relationship between the percentage of individuals who are 65 years of age or older and/or those

who do not have children and the likelihood of passing a millage (Berkman & Plutzer, 2005).

Although those data are not specifically related to the issues of choice, this research does indicate the need for data to show how people vote when they have no connection to the school. Even with extant data, it is difficult to quantify the effect or to establish a cause and effect relationship with millage election outcomes.

Marketing the school district has increased in past years. Because of the heightened competition among schools, marketing to attract students has become a common practice. Districts have many choices about how to present a positive image, and Catalano (2010) suggested spending about half of the marketing budget on the school website and public relations/social media. District marketing is a political topic concerning whether it is appropriate to use taxpayer dollars to draw in out-of-district students, who again do not contribute to the debt service. Districts that lay off staff yet display promotional billboards may create controversy in the community. The more students you have, the more revenue a district has. In connection with that revenue, it should be noted that Reback (2008) found that, when looking at all district revenues, spending per pupil had no statistically significant effect.

When schools are involved in choice, they do not have the liberty of accepting or rejecting students based on students' aptitude. Discussion with parents and staff points out that the choice option may attract students who are high achievers, but the obligation is to also enroll students who are extremely needy. Some people would contend that choice students bring down some districts' achievement scores; others believe that choice may lower achievement scores at the local school because higher achieving students leave to attend other districts. Hoxby (2002) stated, "The usual argument runs as follows: If the better students leave the regular public

schools to attend choice schools, the students who remain in regular schools will be worse off” (p. 303). Whether students are coming or going, there will be political concern about how choice affects achievement.

The Webster’s New World Dictionary (2000) defined politics as political affairs, methods, opinions, or scheming. Educational leadership is about knowledge, decision-making, relationships, work ethic, and much more. It is imperative that school leaders have an understanding of people’s opinions and schemes. Complacency for leaders in high achieving districts is a consideration as Carlson et al. (2011) found that students were leaving high-achieving districts to attend even higher-achieving districts. This is not to say leaders will agree with all opinions and schemes, but knowledge of political interests and influence may help lead to decisions.

The Conceptual Framework

The conceptual framework is an analytical, interpreting, and organizing tool. Along with the problem statement, the conceptual framework supports specific research questions that drive this study to determine whether there is a difference in achievement scores between schools of choice and resident students (Academic Medicine, 2001). The concept map organizes elements of the study and provides a lens through which the researcher looks at the data.

The framework shown in Figure 2 identifies the ISD as the overarching entity. The concept map draws from the pertinent literature focusing on why parents choose certain schools and the impacts of schools of choice. With the individual school districts central to the process, arrows show movement of traditional public school students in and out of the individual ISD participant school districts, and students within the districts who are attending private,

charter/online, and home schools. The three larger arrows at the bottom represent the flow of data to the final focus, which is the study, NWEA math/reading achievement scores and the relationship to students' residency.

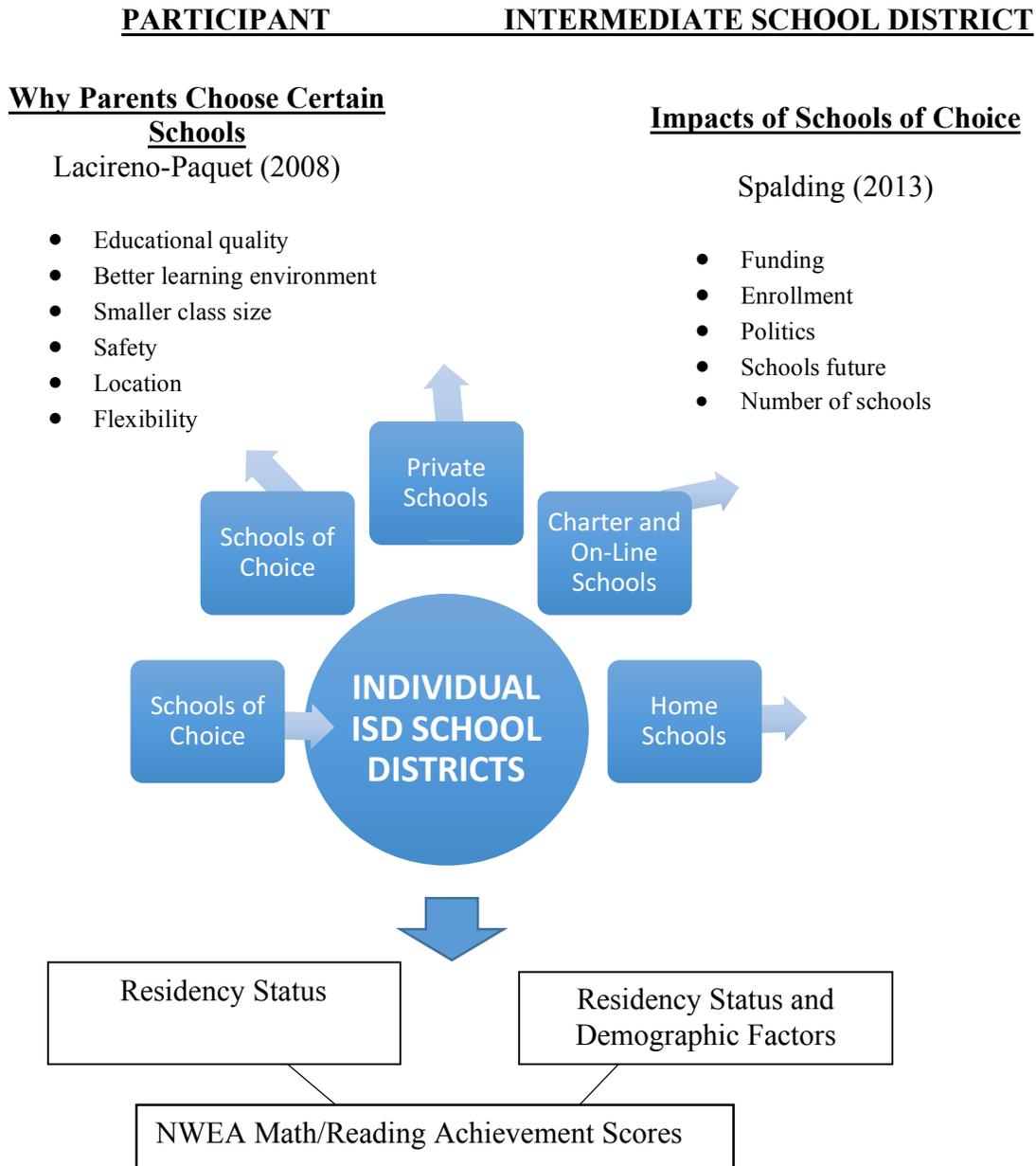


Figure 2. Conceptual framework

Summary

Schools of choice has been an important educational topic for many years and continues to influence the structure of schools in Michigan and across the United States. The review of literature relevant to the issues about schools of choice established a base of knowledge for this study. The history of schools of choice and the impact upon school funding led to discussions of parental decision-making for school choice, fluctuation in numbers of schools and enrollment, and the political ramifications of school choice. A conceptual framework provided an image of the flow of data to address the research question regarding the relationship between NWEA math/reading achievement scores and students' residency.

Chapter III: Research Design and Methodology

This study examined the relationship between a student's residency status (schools of choice or resident) and student achievement as measured by NWEA.

Research Design

According to Cohen, Manion, and Morrison (2000), the value of quantitative correlational research is that it is able to help achieve a fuller understanding of human behavior. Grinnell and Unrav (2005) indicated that quantitative research includes a well-identified problem statement, which, in this study, is two-fold and defined in the competition among school districts to attract students in an environment of choice and to maintain high achievement scores to ensure a consistent funding stream. Given that the decision to embrace the schools of choice model is discretionary, it may be important for school districts to know whether there is a relationship between achievement based on standardized tests scores of in-district resident students and school of choice students. Socioeconomic status were added to the variables of NWEA math and reading scores and residential status of students.

Correlation, or the degree of relationship, is shown by use of several statistical tests that result in a correlation coefficient, defined as a numerical representation of the strength and direction of a relationship (Borg & Gall, 1989). Pearson product-moment correlation coefficient r and multiple regression statistical tests were conducted on the student achievement data provided by the ISD from the secure databases of NWEA and Michigan Center for Educational Performance and Information (CEPI). Simon (2003) noted that the multiple regression technique is valuable to determine whether there is a significant relationship between a variable

(standardized test scores) and one or more of the predictor variables (residency and socioeconomic factors).

Research Questions

Two research questions guided this study.

Research Question 1. What was the relationship between students' residency status and math and reading achievement as measured by NWEA in one Michigan ISD?

Null 1. Neither math nor reading achievement will be related to the type of student (schools of choice versus resident).

Research Question 2. What was the relationship between students' residency status and math and reading achievement as measured by NWEA after controlling for background factors in one Michigan ISD?

Null 2. Neither math nor reading achievement will be related to the type of student (schools of choice versus resident) after controlling for background factors.

Participants

This study included 5,975 students from 14 school districts in one Michigan ISD. The students in Grades 3 through 8 completed the math and reading portions of the NWEA during the 2014–15 school year. Additionally, the students in the sample had been in their school district the entire school year and completed both the first and last NWEA for that academic year. This study used this pre- and post- assessment to assess the level of achievement growth.

Instrumentation and Materials

The researcher understands that math and reading can be assessed by various instruments. NWEA was chosen because it is given three times a year, is nationally normed

referenced, and has an accessible database. NWEA was founded nearly 40 years ago and is a global not-for-profit educational service known for assessment. Both NWEA and CEPI have qualities that ensure validity and reliability in the data. NWEA has more than 7,400 partners. There have been more than half a billion assessments done by NWEA, and they measure their success against the core beliefs of their educator-founders:

1. continuous growth provides opportunity and challenge,
2. collaborative efforts contribute to mutual strength and vitality,
3. Investment in local expertise and resources enhances students' growth,
4. continuing relationships are vital to effectiveness,
5. credibility is built through quality products and responsive service,
6. thoughtful questioning and reflection are critical to creating the future,
7. contributing to the discovery and dissemination of knowledge expands our capacity to improve education.

NWEA is a computer-adaptive test. By adjusting the difficulty of items up or down, the assessment precisely measures a student's current achievement, providing greater sensitivity to detect growth over time for students of all achievement levels. Because the test is tightly targeted, the error of measurement is very low. It also owes its ability to produce accurate and fair results to something no other assessment offers: a mature, reliable, and stable scale. This test is given three times a year, in the fall, winter and spring. The assessment takes about 45–50 minutes, on average, per subject. The data from the NWEA are used to drive instruction and intervention, and student information is shared with families in the fall and spring.

According to NWEA (2015), development and use of NWEA assessments are guided by the Standards for Educational and Psychological Testing that were developed jointly by the American Educational Research Association, American Psychological Association, and the National Council on Measurement in Education. Furthermore, to ensure test reliability, validity and fairness across all populations tested, the NWEA research team regularly conducts a variety of studies and analyses such as pool depth analysis, test validation, comparability studies, and differential item functioning analysis. NWEA testing that has been used by the participant districts for at least four years, is a major piece of assessment, and drives instruction.

The Michigan Center for Educational Performance and Information (CEPI), the agency responsible for collecting, securely managing, and reporting education data in Michigan, will provide information related to the socioeconomic status of students in participating districts. CEPI, originally part of MDE, is now under the Department of Technology, Management, and Budget (DTMB) in the state budget office. Their mission is to coordinate collections, connections, and reporting of education data in Michigan; CEPI is the liaison between the U.S. Department of Education and MDE to report particular facts and data to comply with Federal and State legislation. Some of the types of data CEPI collects include:

- student information (demographics, program participation, test data, courses),
- teacher information (demographics, credentials, assignment information, rating),
- school information (e.g., demographics, crime and safety, finances).

Data are collected using several secure online applications that help schools report efficiently and accurately. CEPI also actively solicits user input to streamline collections as much as possible. To ensure data quality, CEPI customer support services assist reporting

personnel with online resources, trainings, and regular announcements of legislative changes and deadlines. In addition, data quality analyses are performed to inform schools of potential anomalies or errors. Access to CEPI data is strictly password-protected and students are identified with anonymous student identification numbers.

Only authorized school personnel who are given a secure code by the local school district and the State of Michigan may enter the student test data and family-provided socioeconomic data to the CEPI. The authorized staff members are specifically titled as the Director of Pupil Accounting or the Student Achievement Data Specialist at the ISD.

Data Collection and Analysis

The NWEA password-protected database was utilized to locate data on student achievement/progress in math and reading in Grades 3–8. The students' grade, gender, and race was also gathered via the NWEA. The Michigan Center for Educational Performance and Information (CEPI), the agency responsible for collecting, securely managing, and reporting education data in Michigan, provided information related to the socioeconomic status of students in participating districts.

Correlation was used to measure the association between variables; regression was used to predict one variable from the other or others (Tabachnick & Fidell, 1989, p. 55). In studies of relationships, the statistical procedures testing correlation and regression are common, although correlation measures the extent of association between independent and dependent variables, and the regression procedure often intends to analyze prediction of one variable upon another. “Regression techniques can be applied to a data set in which the IVs are correlated with one another and with the DV to varying degrees” (p. 123).

The alpha level of the study was set at $\alpha < .05$. Pearson correlations were conducted to determine the relationship between students' residency status and math and reading achievement as measured by NWEA. Multiple regression models were constructed using math or reading scores as the dependent/criterion variable (DV). The primary independent/predictor (IV) variable was the type of student (schools of choice versus resident). In addition, control/covariate variables of students' gender, race, socioeconomic status, and grade level were tested by the multiple regression technique.

To determine the needed sample size for a multiple regression model, the G*Power 3.1 software program was used (Faul, Erdfelder, Buchner, & Lang, 2009). With seven predictors (type of student [resident or SOC], gender, race, socioeconomic status, special education student, homeless status and grade level) based on a medium effect size ($f^2 = .15$), an alpha level of $\alpha = .05$, the needed sample size to achieve sufficient power (.80) would be 92 respondents. The anticipated sample size of 10,000 will be more than adequate.

Legal, Ethical and Moral Issues

The researcher requested and received approval from the Eastern Michigan University Human Subjects Review Committee (see Appendix A). The students were anonymous and only identified by their identification numbers. The NWEA and CEPI databases are password-secured. Furthermore, ISD personnel provided data to the researcher via a spreadsheet. As a superintendent, the researcher has legal access to some of the information, but for the purposes of this study, the students were not identified.

Summary

The research design and methods used in the conduct of this study were described in Chapter III. A review of the research questions and participants were followed by discussion of the sources collection, and plan for analysis of data. Measures were taken to acquire university approval for conduct of the study and to ensure ethical protection for the anonymity of the student information accessed.

Chapter IV: Results of Data Analysis

This study examined whether a relationship exists between the NWEA scores non-resident [school of choice] students and resident students in one Michigan intermediate school district (ISD). The NWEA computer-adaptive test assesses achievement/progress in math and reading in Grades 3–8 and is administered three times each year, in the fall, winter, and spring. The study included 5,975 students from 14 school districts in one Michigan ISD. The students in Grades 3 through 8 all completed the math and reading portions of the NWEA during the 2014–15 school year. Additionally, the students in the sample have been in their school district the entire school year and completed both the first and last NWEA for that academic year. This study used this pre- and post-assessment to determine the level of achievement growth.

The NWEA password-protected database was used to locate data on student achievement/progress in math and reading in Grades 3–8. The students' grade, gender, special education status, and race was also gathered via the NWEA. The Michigan Center for Educational Performance and Information (CEPI), the agency responsible for collecting, securely managing, and reporting education data in Michigan, provided information related to the socioeconomic status of students in participating districts. The students were anonymous and only identified by identification numbers. ISD personnel provided data to the researcher via a spreadsheet.

This study was guided by two research questions:

Question 1. What was the relationship between students' residency status and math and reading achievement as measured by NWEA?

Null 1. Neither math nor reading achievement will be related to the type of student (schools of choice versus resident).

Question 2. What was the relationship between students' residency status and math and reading achievement as measured by NWEA after controlling for background factors?

Null 2. Neither math nor reading achievement will be related to the type of student (schools of choice versus resident) after controlling for background factors.

The purpose of this correlational quantitative study was to determine whether there was a difference in achievement as measured by reading math scores between school of choice and resident students, specifically within NWEA. The final sample included archival data for 5,975 students.

Table 1 provides frequency counts for the demographic variables in the study. Table 2 displays descriptive statistics for the students' reading and math scores. Table 3 provides the results of the *t* test comparisons for independent means of reading and math scores based on school of choice. Tables 4 and 5 display the Pearson correlations for reading and math scores with school of choice and other selected demographic variables to answer Research Question 1. Tables 6 and 7 provide the results of the multiple regression models that predict reading and math scores after controlling for background factors to answer Research Question 2.

The original archival dataset included 9,995 records. The final dataset ($N = 5,975$) was selected based on the following criteria: (a) third through eighth grade levels, (b) students who had reading and math scores for both fall and spring, (c) non-missing data for the school of

choice variable, and (d) change scores (spring minus fall) within the 1st percentile to the 99th percentile. Those change scores below the 1st percentile and greater than the 99th percentile were trimmed from the dataset to remove the influence of outliers and potentially invalid test scores. The RIT (Rasch Unit) scale score was used within the adaptive testing approach by NWEA. The RIT scale is a stable equal-interval vertical scale. You can compare the performance of students and school/district relative to national achievement and growth norms state standards, including the Common Core State Standards (NWEA, 2015). Some possible reasons for invalid test scores could include data entry errors as well as students being careless, oppositional, sick, fatigued, or otherwise not being at their best on testing day, which would underestimate their actual achievement level

Description of the Sample

Table 1 displays the frequency counts for the demographic variables in the study. Participants included 2,620 students in Grades 3–5 (44.1%) and 3,315 students in Grades 6–8 (55.9%). Most were resident school students (89.6%); 2,961 were female (49.9%) and 2,974 were male (50.1%). There were 916 special education students (15.4%). About half the students were not economically disadvantaged (47.6%), but 1,088 students did not have information available (18.3%). Most students were White (92.1%)

Table 1

Frequency Counts for Selected Variables (N = 5,975)

Variable	Category	<i>n</i>	%
Grade Grouping	3rd to 5th	2,620	44.1
	6th to 8th	3,315	55.9
School of Choice	Yes	619	10.4
	No	5,316	89.6
Gender	Female	2,961	49.9
	Male	2,974	50.1
Special Education	No	5,019	84.6
	Yes	916	15.4
Economically Disadvantaged	No	2,827	47.6
	Yes	2,020	34.0
	Unknown	1,088	18.3
Race	White	5,468	92.1
	American Indian	156	2.6
	African American	78	1.3
	Asian American	66	1.1
	Hispanic	159	2.7
	Pacific Islander	8	0.1

Table 2 displays the descriptive statistics for the reading and math scores of the students in the study. Reading score means increased from $M = 205.99$ in the fall to $M = 211.35$ in the spring (Change $M = 5.36$, $SD = 7.76$). Math score means increased from $M = 209.65$ to $M = 217.14$ (Change $M = 7.49$, $SD = 7.20$).

Table 2

Descriptive Statistics for Reading and Math Scores (N = 5,975)

Score	<i>M</i>	<i>SD</i>	Low	High
Reading Fall	205.99	19.15	124.00	256.00
Reading Spring	211.35	17.53	121.00	260.00
Reading Change from Fall to Spring	5.36	7.76	-14.00	31.00
Math Fall	209.65	19.23	117.00	268.00
Math Spring	217.14	18.82	112.00	275.00
Math Change from Fall to Spring	7.49	7.20	-11.00	28.00

Details of Analysis and Results

Cohen (1988) provided guidelines for interpreting the strength of linear correlations. He suggested that a weak correlation typically had an absolute value of $r = .10$ ($r^2 =$ one percent of the variance explained), a moderate correlation typically had an absolute value of $r = .30$ ($r^2 =$ nine percent of the variance explained), and a strong correlation typically had an absolute value of $r = .50$ ($r^2 =$ 25 percent of the variance explained). Therefore, for the sake of parsimony, this chapter of the results of the study primarily highlights those correlations that were of at least

moderate strength to minimize the potential of numerous Type I errors stemming from interpreting and drawing conclusions based on potentially spurious correlations.

As a preliminary set of analyses, Table 3 displays the results of the t test comparisons for reading and math scores based on whether the student was in a school of choice. Inspection of the data found that five of the six comparisons were significant. Students at the schools of choice changed more from fall to spring for both their reading ($p = .03$) and math ($p = .009$) scores. However, it should also be noted that all the eta coefficients (η , Pearson correlations between a nominal/categorical variables and continuous variables) were all considered weak correlations using the Cohen (1988) criteria.

Table 3

Comparison of Reading and Math Scores Based on School of Choice. t Tests for Independent Means (N = 5,975)

Rating	School of Choice			η	<i>t</i>	<i>p</i>
		<i>n</i>	<i>M</i>			
Reading Fall				.02	1.28	.20
	Yes	619	206.92	18.39		
	No	5,316	205.88	19.23		
Reading Spring				.03	2.35	.02
	Yes	619	212.91	17.06		
	No	5,316	211.17	17.57		
Reading Change from Fall to Spring				.03	2.14	.03
	Yes	619	5.99	7.57		
	No	5,316	5.29	7.78		
Math Fall				.03	2.33	.02
	Yes	619	211.35	18.51		
	No	5,316	209.45	19.30		
Math Spring				.04	3.38	.001
	Yes	619	219.55	18.59		
	No	5,316	216.85	18.82		
Math Change from Fall to Spring				.03	2.62	.009
	Yes	619	8.20	7.64		
	No	5,316	7.40	7.14		

Answering the Research Questions

Research Question 1 asked, “Are there relationships between math or reading achievements scores and type of student (SOC versus resident)?” The related null hypothesis predicted “ H_{10} : Neither math or reading achievement will be related to the type of student (SOC versus resident).” Table 4 displays the Pearson correlations for reading and math scores with school of choice and other demographic variables. School of choice was found to be significantly correlated with five of the six outcome variables. As found with the eta coefficients in Table 3, although the correlations were statistically significant at the $p < .05$ level, they were weak according to the Cohen (1988) criteria with none stronger than $r = -.04$. These findings provided support to reject the null hypothesis.

Also in Table 4, the student’s actual grade level and grade grouping (third to fifth versus sixth to eighth) had strong correlations with the outcome measures. This was because these test scores were criterion-referenced tests that had expected increasing scores for each subsequent grade level (Farrall, Wright, & Wright, 2014). Gender had significant but weak correlations with four of the six outcomes based on the Cohen (1988) criteria.

Table 4

Correlations for Reading and Math Scores with School of Choice and Demographic

Variables (N = 5,975)

Variable	School of Choice^a	Actual Grade^b	Grade Grouping^c	Gender^d
				-
				.0
Reading Fall	.02	.63 ****	.54 ****	5 ****
				-
				.0
Reading Spring	.03 **	.59 ****	.51 ****	4 ****
Reading Change from				
Fall				.0
to Spring	.03 **	-.21 ****	-.18 ****	2
				.0
Math Fall	.03 **	.71 ****	.63 ****	4 ****
	***			.0
Math Spring	.04 *	.65 ****	.57 ****	5 ****
Math Change from Fall				.0
to Spring	.03 **	-.21 ****	-.18 ****	1

* $p < .05$. ** $p < .01$. *** $p < .005$. **** $p < .001$.

^a Coding: 0 = No 1 = Yes.

^b The actual grade level of the student ranged from 3rd to 8th.

^c Grade Grouping: 0 = 3rd to 5th 1 = 6th to 8th.

^d Gender: 1 = Female 2 = Male.

Table 5 displays Pearson correlations for reading and math scores with special education status, economic disadvantaged status, and race. Due to low a number of other race

representation in the sample, the researcher chose to identify students as Caucasian and non-Caucasian. Non-special education students and students who were not economically disadvantaged had higher test scores of weak to moderate strength. The largest correlations were between special education status and the reading fall test scores ($r = -.32, p < .001$) and the reading spring test scores ($r = -.34, p < .001$). In addition, Caucasian students performed better on the tests though all the correlations were weak (Cohen, 1988).

Table 5

Correlations for Reading and Math Scores with Selected Demographic Variables

($N = 5,975$)

Variable	Special Education^a		Economically Disadvantaged^{a,b}		White^a	
Reading Fall	-.32	****	-.26	****	.06	****
Reading Spring	-.34	****	-.27	****	.07	****
Reading Change from						
Fall to Spring	.02		.02		.01	
Math Fall	-.26	****	-.23	****	.07	****
Math Spring	-.27	****	-.24	****	.07	****
Math Change from						
Fall to Spring	-.02		-.01		.02	

* $p < .05$. ** $p < .01$. *** $p < .005$. **** $p < .001$.

^a Coding: 0 = No 1 = Yes.

^b The correlations based on the economically disadvantaged variable were based on a sample of $n = 4,847$ due to missing data.

Research Question 2 asked, “Are there relationships between math or reading achievements scores and type of student (SOC versus resident), after controlling for background

factors?” The related null hypothesis predicted “H1₀: Neither math or reading achievement will be related to the type of student (SOC versus resident) after controlling for background factors.” Tables 6 and 7 display the results of the multiple regression models that predict spring reading and spring math scores, respectively, based on school of choice and selected demographic variables. For reading (Table 6), the final five-variable model was statistically significant ($p = .001$) and accounted for 36.7% of the variance in spring reading score. However, the relationship between the school of choice variable and the spring reading score was not significant ($\beta = .01, p = .65$); (Table 6). For math (Table 7), the final five-variable model was statistically significant ($p = .001$) and accounted for 40.2% of the variance in spring math score. However, the relationship between the school of choice variable and the spring math score was not significant ($\beta = .02, p = .10$). This combination of findings provided support to retain the null hypothesis.

Table 6

Prediction of Reading Spring Score Based on Selected Variables. Multiple Regression

(*N* = 5,975)

Variable	<i>B</i>	<i>SE</i>	β	<i>p</i>
Intercept	183.40	1.16		.001
Caucasian ^a	4.20	0.67	.07	.001
Gender ^b	-0.45	0.36	-.01	.22
Grade Grouping ^c	17.57	0.37	.50	.001
Special Education ^a	-15.56	0.51	-.32	.001
School of Choice ^a	0.27	0.59	.01	.65

Final Model: $F(5, 5969) = 686.12, p = .001. R^2 = .367.$

^a Coding: 0 = *No* 1 = *Yes*.

^b Gender: 1 = *Female* 2 = *Male*.

^c Grade Grouping: 0 = 3rd to 5th 1 = 6th to 8th.

Table 7

*Prediction of Math Spring Score Based on Selected Variables. Multiple Regression**(N = 5,975)*

Variable	B	SE	β	p
Intercept	178.46	1.21		.001
Caucasian ^a	4.64	0.70	.07	.001
Gender ^b	2.72	0.38	.07	.001
Grade Grouping ^c	21.38	0.38	.56	.001
Special Education ^a	-13.45	0.53	-.26	.001
School of Choice ^a	1.03	0.62	.02	.10

Final Model: $F(5, 5969) = 798.40, p = .001. R^2 = .402.$

^a Coding: 0 = *No* 1 = *Yes*.

^b Gender: 1 = *Female* 2 = *Male*.

^c Grade Grouping: 0 = *3rd to 5th* 1 = *6th to 8th*.

Summary

This study used archival data for 5,975 students to determine if there was a difference in achievement as measured by reading and math scores between school of choice and resident students. Hypothesis 1 (reading and math with type of student) was supported but all the correlations were weak in strength (Table 3 and 4). Hypothesis 2 (reading and math with type of student controlling for demographics) was not supported (Tables 6 and 7). In the final chapter, these findings are compared to the literature, conclusions and implications are drawn, and a series of recommendations are suggested.

Chapter V: Summary, Conclusions, and Recommendations

This study examined whether a relationship exists between the NWEA scores of schools of choice students and resident students in one Michigan ISD. The NWEA computer-adaptive test assesses achievement/progress in math and reading in Grades 3–8 and was administered three times each year, in the fall, winter, and spring.

The study included 5,975 students from 14 school districts in one Michigan ISD. The students in grades three through eight all completed the math and reading portions of the NWEA during the 2014–15 school year. Additionally, the students in the sample have been in their school district the entire school year and completed both the first and last NWEA for that academic year. This study used this pre- and post-assessment to determine the level of achievement growth.

A quantitative, correlational design used in this study showed the relationship, if any, between NWEA math and reading scores and the difference between schools of choice and resident students with respect to grade, gender, race, and special education and socioeconomic status.

Findings and Discussion

The background factors refer to grade, gender, race, and special education and socioeconomic status of the students. The final sample included archival data for 5,975 students.

Two research questions guided this study:

1. What was the relationship between students' residency status and math and reading achievement as measured by NWEA?
2. What was the relationship between students' residency status

and math and reading achievement as measured by NWEA after controlling for background factors?

The purpose of this correlational quantitative study was to determine if there was a difference in achievement as measured by reading math scores between school of choice and resident students, specifically within NWEA

The research questions were addressed by correlation, as it is used to measure the association between variables. Pearson correlations were conducted to determine the relationship between students' residency status and math and reading achievement as measured by NWEA for Research Question 1. For Research Question 2, multiple regression models were constructed using math or reading scores as the dependent/criterion variable. The primary independent/predictor variable was the type of student (schools of choice versus resident). In addition, control/covariate variables of students' gender, race, socioeconomic status, and grade level were tested by the multiple regression technique.

Research Question 1. What was the relationship between students' residency status and math and reading achievement as measured by NWEA? The null hypothesis: neither math nor reading achievement will be related to the type of student (schools of choice versus resident).

School of choice, within the Pearson correlations, was found to be significantly correlated with five of the six outcome variables. As found with the eta coefficients in Table 3, although the correlations were statistically significant at the $p < .05$ level, they were weak according to the Cohen (1988) criteria with none stronger than $r = -.04$. These findings provided support to reject the null hypothesis.

Also, the student's actual grade level and grade grouping (third to fifth versus sixth to eighth) had strong correlations with the outcome measures. This was because these test scores were criterion-referenced tests that had expected increasing scores for each subsequent grade level. In summary, the grade level of the student was impactful to achievement scores, but the SOC status was not.

Research Question 2. What was the relationship between students' residency status and math and reading achievement as measured by NWEA after controlling for background factors? The null hypothesis was: neither math nor reading achievement will be related to the type of student (schools of choice versus resident) after controlling for background factors.

The results of the multiple regression models that predict spring reading and spring math scores, respectively, based on school of choice and selected demographic variables were used to answer the Research Question 2. For reading, the final five-variable model was statistically significant ($p = .001$) and accounted for 36.7% of the variance in spring reading score. However, the relationship between the school of choice variable and the spring reading score was not significant. For math, the final five-variable model was statistically significant ($p = .001$) and accounted for 40.2% of the variance in spring math score. However, the relationship between the school of choice variable and the spring math score was not significant. This combination of findings provided support to retain the null hypothesis.

When looking at this study, the representation of the sample was as the researcher suspected. The gender representation was 49.9% female and 50.1% male. The race sample distribution was predominantly Caucasian, and the special education population was at 15.4%.

However, an important finding of the research was that the economically disadvantaged status of 1,088 students or 18.3% of the sample, was unknown.

The study found that as students got older, their scores increased, but the finding depended on the age in terms of how much achievement a student gained. Younger students improved more in achievement when compared to older students. When considering math and reading scores separately, girls tended to do better in reading, whereas the boys did better in math. Not surprising, the special education population tested at a lower level when compared to their peers. Regarding the socioeconomic status, the economically disadvantaged population did not perform as well on the NWEA. Finally, Caucasians proved to achieve better than non-Caucasians.

This study found no statistically significant difference in NWEA achievement between SOC and resident students. Findings concurred with Zimmer et al. (2009) with respect to charter schools; there was no evidence that charters were pulling and segregating high-achieving students.

The achievement of students on standardized assessments is critical to the vitality of any school district. Achievement status is not only important for student learning, but also one of the top reasons that parents choose a school district, and hence affects SOC enrollment. Due to the State of Michigan funding schools on a per pupil basis, the topic of school choice is important because enrollment drives schools' budgets and therefore, programs and personnel. Taking the significance of the study into consideration, it would seem that school districts should not shy away from SOC students lest they will bring negative effects.

Implications for Educational Leadership

SOC is a topic throughout the United States. The options for families and students vary from state to state, but even if there is not an option, it surely is a topic of discussion. Educational leadership is about knowledge, decision-making, relationships, work ethic, and much more. It is imperative that school leaders have an understanding of SOC. Our families believe that choice is one way a state can meet its obligation to ensure that children get a good education (Hill, 2003). Because SOC involves school budgets, politics, programming, and achievement, it is critical that educational leaders do not become complacent on this topic. Complacency for leaders in high-achieving districts is a consideration, as Carlson et al. (2011) found that students were leaving high-achieving districts to attend even higher-achieving districts. As parents choose certain schools for their children, the funding implications are evident for those districts involved with schools of choice. Educational leadership requires an understanding of the financial environment of schools. The need to understand choice and its funding impact is critical, as choice continues to increase and impact school budgets. This study implies to educational leaders that SOC does not negatively or positively impact achievement scores. However, when dissecting achievement data, background factors such as gender, race, socioeconomic status and special education identification should be considered.

As part of their responsibilities, educational leaders must address policy. A school district's policy on SOC affects how a school operates. Some school districts may not even participate in SOC, and this consequently effects enrollment, class size, and programs. The effects may be positive, negative, or even neutral. Also, the position and thoughts of SOC within a school community may influence educational leaders within that district who are not only

school administrators but school board members as well. When addressing the topic of SOC, these leaders need to consider policy on class size, transportation, athletics, and personnel, to name a few areas. All of the attached policies with respect to SOC affect school districts and their ability to prosper.

Significance of Findings

The achievement of students on standardized assessments is a major factor in parents' decision regarding choice of school and is a determining factor in school leaders' decisions regarding budget, programs, and staff. The significance of the topic of SOC was indicated in the 21st Annual Gallup Poll of public attitudes, which reported that, by a 2 to 1 margin, the public favors allowing students and their parents to choose which public school in their community students will attend (Elam & Gallup, 1989).

The significance of the finding that SOC does not negatively or positively impact achievement scores is very important. Thus, school districts can be aggressive in pursuing SOC students without fear of the impact on achievement. In addition, background factors such as gender, race, socioeconomic status, and special education identification should be considered when looking at achievement data, as this information may indicate differences.

Choice has broad and lasting effects. As a rule, organizations respond to competition by becoming more efficient (Hoxby, 2002). The efficiency of all K-12 educational institutions is consistently challenged, especially in the environment of SOC. The pressure on schools to perform and respond to competition is key to the success of moving districts forward. This study is therefore, significant to educational leadership.

Recommendations for Future Research

Research with a more racially or ethnically diverse population is recommended for future research, even though there was an even distribution of males and females. A regional or nationwide study may be appropriate to accomplish this.

Other student factors may be considered in future research. Focus on students' attendance and behavior patterns with respect to SOC and background factors may result in significant data. This study focused mainly on achievement, but the areas of bullying, self-esteem, and graduation rates are recommended for inclusion in future research. In terms of special education, it would be beneficial to consider the label of specific special education students. For example, are the students labeled learning disabled or cognitively or emotionally impaired? Furthermore, studies should consider Individual Education Plans and level of support needed.

Summary

The relationship between the NWEA scores of schools of choice students and resident students in one Michigan ISD was the focus of this study, which provided research data on SOC and the impact on achievement scores. Implications from the study for educational leaders and recommendations for further study were discussed.

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Appendix

Appendix A: University Human Subjects Review Committee Approval

RESEARCH @ EMU

UHSRC Determination: EXEMPT

DATE: May 27, 2016

TO: Steve Priesel, Ph. D.
Eastern Michigan University

Re: UHSRC: # 911448-1
Category: Exempt category 4
Approval Date: May 27, 2016

Title: The Relationship Between NWEA Scores of Resident and Non-Resident Students in a Schools of Choice Setting

Your research project, entitled **The Relationship Between NWEA Scores of Resident and Non-Resident Students in a Schools of Choice Setting**, has been determined Exempt in accordance with federal regulation 45 CFR 46.102. UHSRC policy states that you, as the Principal Investigator, are responsible for protecting the rights and welfare of your research subjects and conducting your research as described in your protocol.

Renewals: Exempt protocols do not need to be renewed. When the project is completed, please submit the **Human Subjects Study Completion Form** (access through IRBNet on the UHSRC website).

Modifications: You may make minor changes (e.g., study staff changes, sample size changes, contact information changes, etc.) without submitting for review. However, if you plan to make changes that alter study design or any study instruments, you must submit a **Human Subjects Approval Request Form** and obtain approval prior to implementation. The form is available through IRBNet on the UHSRC website.

Problems: All major deviations from the reviewed protocol, unanticipated problems, adverse events, subject complaints, or other problems that may increase the risk to human subjects or change the category of review must be reported to the UHSRC via an **Event Report** form, available through IRBNet on the UHSRC website.

Follow-up: If your Exempt project is not completed and closed after **three years**, the UHSRC office will contact you regarding the status of the project.

Please use the UHSRC number listed above on any forms submitted that relate to this project, or on any correspondence with the UHSRC office.

Good luck in your research. If we can be of further assistance, please contact us at 734-487-3090 or via e-mail at human.subjects@emich.edu. Thank you for your cooperation.

Sincerely,

Jennifer Kellman-Fritz, PhD
Chair
University Human Subjects Review Committee