School Choice Factors and Varsity Football Success in Ohio Interscholastic Athletics

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Abstract

This study investigates the relationship between Ohio interscholastic varsity football playoff success and a set of variables derived from the extant literature with explicit attention towards those factors related to school choice initiatives. This quantitative study utilized multiple statistical tests to investigate these relationships with the specific intent of informing future policy revision and development.

Significant results include the correlation between previous year playoff appearances and the percentage of open enrollment students in a district, the relationship between the percentage of open enrollment and both playoff depth and previous year playoff appearances, and significant differences for participants with previous year playoff appearances at both the regional final and state final levels in their respective percentages of open enrollment students. Results also suggest a positive correlation between school type (public or private) and playoff success. One interesting finding is the results did not suggest an advantage in post season success for teams that are affected by divisional movement based on size or competitive balance in the year of the initial movement. Statistically, significant results also reveal a correlation between playoff depth and certain district demographical factors such as percentage of non-White students, typology, and percentage of socioeconomically disadvantaged students.

Key implications include the effects of athletic playoff success on subsequent season playoff success, the need to evaluate factors other than divisional movement for competitive balance, the disproportionate success of private school football teams at the championship level, and nexus between deep playoff success and select demographical factors.

Keywords: school choice, competitive balance, open enrollment, Flutie effect

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Chapter 1

The perpetually relentless wave of United States educational policy reform focused on increased accountability and choice has been driven in large part by pervasive global competition to become the top-scoring educational nation in the world (Carr, 2011; Coulson, 2009). The momentum of this movement has increased the advocacy efforts of school choice proponents under the assertion that choice options provide the remedy for failing public school systems and have the expressed capability to cultivate a gateway to increased educational quality for disenfranchised students (Fowler, 1996; Garcia, 2008; Ghosh, 2010; Ledwith, 2010).

Opponents, on the other hand, argue that school choice options have not been shown to increase student performance empirically (Fowler, 1996; Hong & Choi, 2015; Ledwith, 2010) and that increasing choice may, in fact, elevate segregation by social and demographic factors (Carlson, 2014; Godwin, Leland, Baxter, & Southworth, 2006; Howe, Eisenhart, & Betebenner, 2001; Jimerson, 2002; Lauen, 2007; Lavery & Carlson, 2012; Ledwith, 2010; Moe, 2008; Ni, 2010; Paquette, 2005; Phillips, Larsen, & Hausman, 2015; Thomson, 2010). Additional concern is exhibited in the abundant non-academic reasons upon which students and their families have been observed to base their individual school choice decisions. These latent, motivational factors have been found to include reasons such as general convenience for the family based on the proximity of the school in relation to the home or place of employment of the parent (Bagley, 2006; Hoxby, 2003), access to extra-curricular opportunities such as athletics (Jacobs, 2011), or class size, safety, and the desire to be with a friend or group of friends (Kleitz, Weiher, Tedin, & Matland, 2000).

While the debate over school choice rages on, assessing the effectiveness of the policies unleashed by this national movement is critical due to the potential short-term and long-term

impact of these policies on the American student and society at large (Gray, 2012). Given the potential magnitude of these policies to affect the educational experience of students, it is essential for the research community to continue to examine the pros and cons of school choice, the likely movement of students from higher performing schools to lower performing schools for non-academic factors, and the overarching impact of school choice on the stated intent of its origin - to cultivate a gateway to increased educational quality for disenfranchised students (Fowler, 1996; Garcia, 2008; Ghosh, 2010; Ledwith, 2010). This study has been designed to contribute a focused analysis to an area that has remained relatively unexamined in the body of research on school choice and open enrollment. This will be achieved through a quantitative examination into the strength of the relationship between factors commonly associated with school choice and the success of Ohio high school and school districts in varsity football playoffs and championships.

Problem Statement

School choice has been characterized by some as being one of the most controversial educational policy issues of all time (Cowen, 2008; Fowler, 1996). Gray (2012) wrote "society puts enormous emphasis on education; it is the lifeblood of a free society and a thriving economy. Policies concerning education, therefore, deserve a thoughtful, appropriate, and thorough review as to their effects" (p. 55). Given the aforementioned assertions of reformers and policymakers, it is imperative that school choice impacts are examined to determine if the practice is effective in meeting the needs in which its inception and implementation are manifested. While school choice has been touted as a gateway to increased educational quality for disenfranchised students (Fowler, 1996; Garcia, 2008; Ghosh, 2010; Ledwith, 2010), quantitative studies investigating school choice have found only marginal and non-significant

gains in student achievement resulting from school choice (Iarussi & Larwin, 2015; Ledwith, 2010; Welsch & Zimmer, 2012). If students are not gaining in achievement, it becomes reasonable and necessary to question the factors that influence students and parents who engage in school choice (Chung, 2013; Moe, 2008, Ni, 2010). These problematic findings coupled with the absence of an in-depth analysis of the relationship between the factors associated with school choice and success in interscholastic athletic competition should compel emergent investigations.

Ohio's Competitive Balance Model, implemented by the Ohio High School Athletic Association (OHSAA) implemented in 2014, was, in part, a measure pointed at addressing the public school versus private school debate. Porter (2019) wrote:

> from 2007-08 through 2016-17, non-public OHSAA member schools claimed the majority of state championships in football (56 percent), boys' soccer (80 percent), girls' soccer (77 percent) and volleyball (55 percent). In boys' basketball (40 percent), girls' basketball (35 percent) and baseball (40 percent), non-public schools experienced slightly less success, while non-public softball programs captured only one state championship in that 10-year span. (para. 7)

Disparate data such as these, coupled with concerns over the unlimited reach of private schools for enrollment acquisition (Epstein, 2008; James, 2007; Johnson, Giannoulakis, & Scott 2017) and the perceived notion that private schools recruit athletes (Epstein, 2008; James, 2007; Johnson et al.) has perpetuated the development of Ohio's Competitive Balance policy which clearly places the focus on enrollment as an influencing factor for successful athletic outcomes. These policies are almost entirely based on factors associated with enrollment and school-type with a pervasive emphasis on the issue of fair and equitable access to interscholastic athletic

success: meaning winning. Perhaps this is why some consider fairness to be the issue at the "at the heart of the public versus private debate" (Johnson et al., p. 45).

In subsequent referendums, OHSAA's Competitive Balance Committee has adjusted the multiplier tiers of its competitive balance model for districts based on enrollment growth and the range of total students within each tier. The probability of continued referendums is substantial given the heavy emphasis on fairness in postseason outcomes and the benefit of athletic success to Ohio school districts and students. In essence, Ohio schools and the OHSAA have turned enrollment, or more practically, students, into a commodity thereby targeting school choice and enrollment provisions as a means of leveling the playing field in interscholastic athletics. This notion alone should compel an examination into the potential relationship between school choice and post-season interscholastic outcomes.

Statement of Purpose

This study was designed to provide a thorough examination of the relationship between school choice, enrollment, and the success of Ohio high school football teams in varsity playoffs and championships. By design, this study extrapolates three foundational theories from the existing research levying a critical analysis of the advertising effects of interscholastic success on enrollment, the relationship between open enrollment and interscholastic success, and the public versus private debate. Additionally, this study will deeply scrutinize a series of potential variables that may serve as predictors for success in varsity football for Ohio school districts and high schools. The intended outcome of this study is to provide the OHSAA and their member schools with critical and empirical evidence to either confirm or refute the practice of basing Competitive Balance guidelines on factors such as residency, school type, and school choice migrations of students. Further, this study may potentially contribute significant findings to what

is presently a narrow body of research on interscholastic athletics (Blackburn, Forsyth, Olson, & Whitehead, 2013), and interscholastic competitive balance which is largely unexamined with the exception of critiques and opinions found in mainstream media (Johnson, Pierce, Tracy, & Haworth, 2014).

Research Questions

This study examines the strength of the relationship between school choice and varsity athletic success through an investigation into the following research questions:

1. Is the Flutie Effect observable in interscholastic athletics?
2. Is there a relationship between open enrollment and Ohio high school football team appearances in varsity football regional semi-finals, regional finals, state finals, and those that win state championships?
3. Is there an observable private school advantage in varsity football championship outcomes in the State of Ohio?
4. Are there district factors that serve as significant predictors for Ohio high school football team appearances in varsity football regional semi-finals, regional finals, state finals, and those that win state championships?

Overview of Methodology

This quantitative, descriptive, non-experimental study will contribute to the body of research on school choice, competitive balance, and interscholastic athletics through a broad examination of the relationship between factors commonly associated with school choice and the success of Ohio districts in varsity football playoffs and championships. This will be achieved using regression analysis in the form of a two-level hierarchical linear model to determine the strength of the relationship between the determined variables. Enrollment growth was chosen as

the primary research focus for this investigation since Competitive Balance policies prioritize enrollment as the central statistic in their multiplier-based modeling. Additionally, this study will deeply scrutinize a series of potential variables that may serve as predictors for success in varsity football for Ohio high school football teams such as district typology, race, socioeconomics, and additional athletic-related variables. The private versus public debate will be directly addressed by determining the strength of the relationship between being a public or private school and postseason participation. This investigation will be extensive in that a substantial number of Ohio's public and private school districts and high schools are potential participants based on their teams' appearances in Ohio high school varsity football semi-final, quarter-final, and final playoffs during the years of 2009 and 2019.

Rationale, Significance, and Assumptions

This study was prompted in part by the researcher's participation on the Division Committee for the OHSAA. The committee was assembled to examine the perceived impact of disparity in enrollment on Competitive Balance. In order to achieve this, the committee analyzed significant data including historical movement between divisions, championship outcomes, and the disparity created for those districts at the bottom end of their division in terms of school size (enrollment). This analysis was productive and valuable; however, there remains a need to scrutinize whether or not increases in enrollment are truly related to the success of interscholastic athletic teams. It seems highly plausible that there are potential external and internal variables that may be predictors of such outcomes - some of which will be investigated in the present study. This study is designed, in part, to examine factors that could provide significant evidence for consideration by the Division and Tier Review Committee and the OHSAA.

While this study is uniquely focused on high school varsity football and school choice, there is strong potential for this research to contribute to a relatively narrow body of research which has focused more directly on practical school choice factors such as student achievement and interdistrict enrollment in Mahoning County (Iarussi & Larwin, 2015) and state-wide subgroup participation, success, and continuity (Carlson & Lavery, 2017). The only dedicated effort by the state of Ohio to scrutinize school choice and open enrollment policy comes in the form of a 2013 report by the Ohio Open Enrollment Task Force examining the potential for differences in the achievement of open enrollment students by socioeconomic status (SES), assessment type, assessment year, and district revealing no significant differences. This patent void in research, and the general welfare of Ohio's students and their schools accentuates the need to more deeply examine the immense number of variables associated with school choice in Ohio. The present study partially fulfills this need by examining athletics and school choice, a relationship that has gone relatively unexamined.

Further, many researchers and school choice advocates have argued that the promise of school choice is one of granting disenfranchised students access to better schools or increased educational opportunity and quality (Fowler, 1996; Garcia, 2008; Ghosh, 2010; Ledwith, 2010). The potential of parents and students to utilize open enrollment to select a school based on non-academic factors such as a particular curricular focus, extracurricular activities, safety, or convenience (Jacobs, 2011) are foundational factors motivating this study. The current examination will look at the relationship between school choice, based on enrollment, and post-season football appearances; however, in investigating this relationship the research can also gauge the potential of sporting success as a motivational factor for those students and families electing to utilize school choice.

Underlying researcher beliefs include: parents want what is best for their children but many place athletic opportunities above academic success; successful sports teams are a factor in the decision-making process for student athletes and their families and serve as a passive form of school marketing; private schools have a distinct advantage in interscholastic athletics; and the wealth of a school district impacts interscholastic program success.

Definition of Key Terms

Chartered private schools - private schools that abide by the Operating Standards for Ohio Schools and are sponsored by the State Board of Education. These schools are supported by public tax dollars and can still utilize religious-based curriculum (Ohio Department of Education [ODE], 2018).

Competitive Balance - "...is a process which makes modifications to how schools are placed into tournament divisions in the team sports of baseball, basketball, football, soccer, softball and volleyball. The modifications are based on which students are actually on each respective roster" (OHSAA, 2019, para. 1)

Creaming/Skimming – the tendency of the best choice schools to be filled with the best students leaving struggling students behind in the worst schools (Carlson, 2014; Howe et al., 2001; Moe, 2008; Paquette, 2005; Shober, 2011).

Interdistrict Open Enrollment - Interdistrict open enrollment is a choice option that gives students the opportunity to attend other public and community schools outside of their district of residence tuition free (Jimerson, 2002). Ohio Law requires that districts specify whether they will accept students from adjacent districts only or statewide as a condition of their enactment of an interdistrict open enrollment policy (Cowen, 2008).

Non-chartered private schools - private schools that do not follow Operating Standards for Ohio Schools and are not sponsored by the State Board of Education. "The Ohio Department of Education does not have legal authority to regulate the curriculum taught in non-chartered schools" (ODE, 2018, para. 3).

Theoretical Framework

This study is purposefully designed to evaluate and inform the development and review of OHSAA's policies pertaining to Competitive Balance. At the most basic level, this research is compelled by the moral obligation that should compel society and the research community to assess the effectiveness of policies that impact education given the significance of education on the overall lives of American citizens (Gray, 2012).

Milton Friedman is often credited with the advent of school choice and argued passionately for a market-based, competition-laden, educational atmosphere which would usurp the government's chokehold on public education (Lubienski & Weitzel, 2008). In his 1955 essay, *The Role of Government in Education*, Friedman argued that a competitive, market-based model would lead to an improved system of education and he predicted that the resistance to school choice would be largely based on potential social impacts (Buckingham, 2007). Given the steady increase in Ohio students utilizing interdistrict open enrollment as a choice option, this study is both timely and it effectively serves as an evaluation of Friedman's (1955) theoretical premises. If a relationship exists between enrollment growth and interscholastic athletic outcomes, Friedman's (1955) assertions of the ability of a market-based model of education to improve educational outcomes could come into greater question.

Consideration is also given to B. F. Skinner's concept of operant conditioning. Skinner's focus on the impact of the environment on behavior is foundational in the school choice debate.

School choice proponents make the case that a change in environment will result in a behavioral change through their assertion that an underperforming student will realize increased achievement in a higher performing school. Skinner also recognized that the potential exists for non-environmental factors such as genetics, to be determinate of behaviors regardless of environment and experience (DeBell & Harless, 1992). This notion is reflective of the school choice opponent argument that student performance is affected by a plentitude of external variables, such as motivation, that are unrelated to the educational institution or environment (Lubienski & Weitzel, 2008). This concept can be easily applied to the present study as success in interscholastic athletics is a potential motivational factor for those students and families who are seeking a different school environment. Consistent success of interscholastic athletic programs has the potential to play into the desires of athletes and their families to win, which is a means of positive reinforcement. This could compel students to choose successful programs as they might perceive participation in that program with a positive outcome.

Lastly, a principle research question in this study was developed based on the "Flutie Effect", which describes the latent advertising effect of winning and championship sports teams on college applications (Chung, 2013, p. 679; Murphy & Trandel, 1994; Silverthorne, 2013). In 1984, quarterback Doug Flutie led Boston College in a victorious playoff game against the University of Miami which is believed to have resulted in an approximately 30% surge in applications for Boston College in the two years following the game (Chung, 2013). Chung (2013) found that "when a school goes from being mediocre to performing well on the football field, applications increase by 17.7%" (p. 696). If this effect is observable in the present investigation into high school football and enrollment, this study will be one in many

scrutinizing over whether or not school choice is fulfilling the promise of giving disenfranchised students equitable access to better academic opportunities (Shober, 2011).

Summary

This study investigates what has been classified as one of the most highly contested and controversial social-educational issues of the modern educational landscape (Cowen, 2008; Fowler, 2002; Ghosh, 2010). The debate over the effectiveness and lawfulness of school choice options has been played out in the public arena over the last 20 years. Interdistrict open enrollment has been characterized as "an oasis of calm" by Jimerson (2002) as a result of the limited controversy that it has yielded (p. 16). The potential impact of school choice and interdistrict open enrollment on interscholastic athletics is even less prevalent in research. In response to this void, this study is purposefully designed to provide a thorough examination of the relationship between school choice and the success of Ohio districts in varsity football playoffs and championships.

The following chapters provide an investigation into the essence of these issues and seek to produce evidence to address the chosen research questions. The next chapter presents a review of the extant research on school choice, interdistrict open enrollment, and competitive balance.

Chapter 2

Review of the Literature

This chapter will provide a thorough analysis of the extant literature addressing school choice, open enrollment, and interscholastic athletics with a focus on competitive balance. School choice is commonly proclaimed as a solution for the disparity that select populations of students experience in education with an emphasis on liberating students ensnared in failing urban education institutions (Fowler, 1996). While research exists pertaining to this common notion, there is extensive dissimilarity in the factors associated with school choice that recent researchers have examined. This chapter will begin with a review of the historical and legal foundations of school choice in order to establish the intended outcomes of those who both advocated for and legislated school choice options.

The types of school choice will be examined also as they are defined in research with an emphasis, again, on extrapolating the intended outcomes of each choice option and the similarities and differences between options. This will lead to a review of literature focused on the specific arguments for and against school choice including factors such as achievement, competition, and market-based education, parental choice, school resources and funding, extra-curricular participation, and social and racial stratification. The characteristics of the students and the influence of their parents are also found in related research and will be examined in this chapter. This review will ultimately be circumscribed to focus on school choice and open enrollment in Ohio and will include a more concise examination of research that establishes the partial context for this study.

This chapter will conclude with a review of the limited extant literature focused on competitive balance and the prepatent motivational factors associated with interscholastic athletic success.

Historic Overview of School Choice

In 1647, “The General Court of the Massachusetts Bay Colony decrees that every town of fifty families should have an elementary school and that every town of 100 families should have a Latin school”(Race Forward, 2015, para. 1). This historic decision marked the beginning of public education in the New World. The formation of an elementary school in the Bay Colony was to provide Puritan children with the skills needed to read the Bible and to continue to grow in their religion. Ironically, the first public elementary school in the United States was solely created for the advancement of Calvinist religion. In 1785, The Continental Congress called for a “survey of the ‘Northwest Territory’", which included what was to become the state of Ohio. The law created "townships," reserving a portion of each township for a local school” (Race Forward, 2015, para. 3) thereby laying the framework for the current geographic-based public education system in the United States. Despite this clear political interest in public education, churches continued to oversee the majority of public schools in the United States into the 1890s. The first step towards separation came in 1802 when Thomas Jefferson introduced the concept of “a separation between church and state” (Hardin, 2019, para. 2). In 1875, Congressman James Blaine proposed legislation calling for the prohibition of public fund expenditure on religious organization-owned institutions such as schools (Green, 1992; Witte, Carlson, & Lavery, 2008). This measure failed; however, it established a starting point for eventual state and federal policy aimed at achieving Blaine’s intent.

Still, in 2020, the standard model of public education in the United States most commonly provides students with access to schools based on their area of residency or geographical area (Welsch & Zimmer, 2012). This historic modus of delivering public education fell under heavy scrutiny in April of 1983 when the National Commission on Excellence in Education released an open letter to the American people called *A Nation at Risk*. The report detailed a national, educational crisis in which students were under-educated and educational rigor was softened. One of the primary "risks" in the report stated:

> We live among determined, well-educated, and strongly motivated competitors. We compete with them for international standing and markets, not only with products but also with the ideas of our laboratories and neighborhood workshops. America's position in the world may once have been reasonably secure with only a few exceptionally well-trained men and women. It is no longer. (Gardner, 1983, p. 14)

While a competent citizenry is also advocated for, among other key changes in education regarding content, expectations, time, and teaching, *A Nation at Risk* set the stage for a culture of educational change and reform. The traditional model of education characterized by Welsch and Zimmer (2012) in which students attended a school within their geographic district quickly gave way to new alternatives in the decade after *A Nation at Risk*. Minnesota became the first state to permit interdistrict, open enrollment-enacting policy "requiring schools and districts to allow and accept student transfers across district boundaries" in 1988 with Arkansas, Iowa, Nebraska, and Ohio indoctrinating comparable policies in 1989 (Mikulecky, 2013, p. 2). Subsequently, Idaho, Utah, and Washington joined the movement in 1990 (Mikulecky, 2013, p. 2).

"By the early 1990s, more than half the states had adopted some form of school choice or were seriously considering doing so" (Fowler, 1996, p. 518). The interdistrict, open enrollment movement was flanked by the legislation to create charter schools in many states as a means to address emergent concerns about disparate school performance (Shober, 2011). The growth of school choice acceptance throughout the 1990s led to a modern era of perpetual school choice initiatives encumbered by emergent accountability measures to gauge the effectiveness of public schools primarily. A report by the National Center for Educational Statistics (NCES) indicated that by 2001, "32 states had passed legislation permitting or requiring some form of public-school choice" (NCES, 2003, p. x). According to the same report, school choice measures included charter schools, voucher options, and open enrollment as primary options. In recent years, states have also begun to issue scholarships which are an extension of the voucher model option.

One of the most prominent pieces of legislation to aggrandize school choice in the United States was the No Child Left Behind Act of 2002 (NCLB). NCLB (2002) invoked annual growth and achievement levels and established the required annual testing of students in grades three through eight in math and reading. In addition to the accountability measures of NCLB (2002), policymakers included sanctions that required "a wide range of school choices" for those students who attended school districts that could not meet the individual and subgroup-based achievement goals for their students (Carr, 2011, p. 258). These subgroups included all students, American Indian/Alaskan Native, Asian/Pacific Islander, Black (non-Hispanic), multiracial, White, Non-Hispanic, economically disadvantaged, students with disabilities, and limited English proficient students. NCLB (2002) also spurred a heightened competitive marketplace by issuing grants "to eligible entities to enable the entities to establish or expand a program of

public school choice" while encouraging such entities to utilize funds to generate "public education campaigns to inform students and parents" about choice programs (NCLB, 2002, para. 1). Congress went so far as to include charter school conversions as an "alternative to improve public schools deemed as failing"(Garcia, 2008, p. 806). Furthermore, the NCLB Act (2002) accelerated open-enrollment options by requiring states (unless prohibited by state law) to allow students the option of transferring to higher-performing schools that were willing to accept new students within the district if their home school failed to make Adequate Yearly Progress (AYP) for two consecutive years (Mikulecky, 2013, p. 2).

In addition to the student progress gleaned through NCLB (2002), school improvement policy-making was also strongly impacted by assessment results from universal instruments such as The National Assessment of Educational Progress (NAEP, 1969). The fact that American students have continually been shown to be statistically deficient in global standardized assessments, such as the NAEP (1969), and the lack of adequate yearly progress on achievement scores, has prompted a litany of reform legislation with perceived stringent benchmarks and requirements for student performance (Gray, 2012). This national obsession with global educational competition has sparked a movement in which the approach to improving student achievement has become "one of the most important public policy questions that government and society face" (Carr, 2011, p. 257). Skeptics recognized the pitfalls of summarizing the merits of a nation's educational system on a singular assessment; however, educational reformers and the mass media have made these results impactful in establishing an urgent need for reform (Coulson, 2009).

NAEP's global and political influence has culminated in the results it yields becoming the quintessential, international yardstick for evaluating accountability policies such as NCLB

(2002). The United States Department of Education ([DOE], n.d.) and Federal Government continues to focus more deliberately on domestic policy and data despite NAEP's (1969) international standing. In June of 2007, the Center on Educational Policy (CEP) released a report that analyzed available achievement data in efforts to determine the relative effectiveness of NCLB (2002). The analysis revealed that reading and math scores had increased in most states and that a narrowing of the achievement gap between groups of students had occurred since the authorization of NCLB in 2002 (CEP, 2007, p. 7). The same report concluded that the multitude of educational policy measures from state to state made it impossible to correlate these marginal gains directly to the measures of NCLB (CEP, 2007, p. 7). The modest gains reported by the CEP (2007) were also determined in a 2012 analysis by the National Center for Fair and Open Testing (Guisbod, Neill, & Schaeffer, 2012, p. 2). Despite these gains on NCLB- (2002) aligned accountability measures, "gains have stagnated or slowed for almost every demographic group in both subjects and both grades" (Guisbod et al., p. 2). One of the more telling indicators is the fact that "4th grade math scores jumped 11 points between 1996 and 2003 but increased only 6 points between 2003 and 2011" (Guisbod et al., p. 2).

On December 10, 2015, President Obama signed The Every Student Succeeds Act (ESSA) extending many of the tenets of NCLB (1969). This latest reauthorization of NCLB (1969) shifted the burden of establishing student performance targets, school ratings, and accountability/intervention measures from the federal to state level (DOE, n.d.). Central provisions of the law included the advancement of equity for disadvantaged and students with substantial need, a requirement that all students were prepared for success in college and careers, a continuation of standardized assessments with new limitations in place regarding the volume of testing, the expansion of access to high quality preschools, and a continuation of the climate of

accountability with an emphasis on addressing the lowest-performing schools (DOE, n.d.). Section 1003(b) of the ESSA (2015) extended the ability of states to expand school choice by replacing failing schools with charter schools, expanding strategies that lead to charter school conversion, expansion, and growth, and shifting funds to high-performing charter schools for the development of new schools.

A review of the policy also revealed a dedicated effort by lawmakers to expand school choice accessibility and opportunity. In a document titled *ESSA Flexibilities* (2018), the DOE quantified a series of autonomous policies, called flexibilities, which are open for interpretation by each respective state. A key ESSA (2018) flexibility gave states clear discretion to increase school choice options and access. Flexibility F expressly focused on the charter schools' program (ESEA section 4301 et seq.) and described *The Expanding Opportunity Through Quality Charter Schools Program* (CSP, 1994). This program

> authorizes the Department to award grants to various eligible entities (i.e., specific state entities, charter management organizations, and charter school developers) to support the creation of new charter schools as well as the replication and expansion of high-quality charter schools. (DOE, 2018)

This provision provided charter grantees and subgrantees increased flexibility in developing their charter school programs and in the application process. Specifically, under ESEA section 4303(d 5), "eligible entities may include in their applications requests for waivers of any statutory or regulatory requirement over which the Secretary exercises administrative authority, except requirements related to the definition of 'charter school' in section 4310(2) of

the ESEA"(DOE, 2018). This provision granted the United States Secretary of Education broad powers and vast flexibility in the process and criteria for the approval of charter schools.

School Choice Options

Interdistrict open enrollment can be defined as "a process through which students can attend public schools located in a district other than the one in which they reside" (Carlson, 2014, p. 287). This public-school choice option allows families and students to attend the open enrollment school of their choosing without having to pay tuition. "In some states, students are allowed to attend any public school in the state while other states limit choice to those schools in a student's district of residence (typically subject to space availability)" (NCES, 2003, p. 97). Policies from state to state also vary in terms of whether their programs are mandatory for all districts or if districts are permitted to choose to accept students under an open enrollment program (Mikulecky, 2013; Ni, 2010). "A distinction can also be made as to whether the programs are voluntary or mandatory. Voluntary programs allow districts to choose whether to participate, given space availability in the district, while mandatory programs require districts within a state to participate in the program, given space availability in the district" (50-State Comparison: Open-Enrollment Policies, 2015, para 4).

Another common provision of open enrollment law is the strong limitations placed on open enrollment districts to protect students from "transfer refusal" (Carlson, 2014, p. 287). The list of allowable conditions for transfer refusal is uniquely determined by each state's policy, but two of the most common conditions on these lists include a lack of capacity in the district and an applicant's history of behavioral problems, such as suspensions, expulsions, or substance abuse (Carlson, 2014, p. 287).

The interdistrict open enrollment option grew in the wake of the *A Nation at Risk* report with 13 states adopting interdistrict open enrollment policies by 1992 (Fowler, 1996). According to a nationwide analysis conducted by the Education Commission of the States, 46 states currently have either voluntary or mandatory interdistrict open enrollment policies (50-State Comparison: Open-Enrollment Policies, 2015). Open enrollment has escaped the public scrutiny that other school choice options have received allowing it to exist as a relatively "benign policy" alluding controversy (Jimerson, 2002, p. 257). This is in spite of the fact that inter- and intra-district open enrollment are the most common school choice avenues both made available to and executed by consumers (Reback, 2008). The dearth of research examining the effectiveness of open enrollment may in part result from the nearly non-existent political, media-based, or public reaction to the practice. Researchers may be further dissuaded by the complexity associated with controlling potential external variables such as socioeconomic status and ethnicity on student performance (Ledwith, 2010).

Further, complexity in assessing student performance was heightened by the constant flux in standardized assessment instrumentation at the state level (Welsch, Statz, & Skidmore, 2010). The few existent examinations regarding the effectiveness of open enrollment policies have revealed small and isolated gains (Iarussi & Larwin, 2015; Ledwith, 2010; Malugade, 2014; McClure-Hartman, 2012). Others question whether these non-significant gains mitigate the potential impact open enrollment has on those students left behind or held hostage by the resistance of districts surrounding high-need districts to accept open enrollment students (McClure-Hartman, 2012).

Districts may also have policies permitting intradistrict open enrollment thereby affording students a choice between two or more schools, or specialized programs, within a district's

boundaries (NCEA, 2003; Phillips et al., 2015). While intradistrict open enrollment is not commonly studied by researchers, significantly more students exercise this choice option than others (Reback, 2008). The dearth of research is in part due to the lack of available public data on which students elect to attend a different school within their residential districts (Powers, Topper, & Silver, 2012). Intradistrict is also used as a non-choice method of balancing racial composition and other factors in some public-school districts (Witte et al., 2008).

Magnet schools, another type of intradistrict open enrollment, were founded in the 1970s in response to desegregation efforts. "Magnet schools are public specialty schools, typically located in urban school districts, designed to provide advanced or theme courses to a select group of students" (Linklow, 2011, p. 416). Given the specialization of these schools they often have entrance criteria and, in some cases, auditions for admittance (Linklow, 2011).

Interdistrict open enrollment, intradistrict enrollment, and magnet schools most commonly afford students and their families the choice of a participating public school (Carlson, 2014; NCES, 2003). In contrast, charter schools, private schools, voucher programs, and scholarship programs provide choice options that operate without significant involvement of local districts and in many cases outside the criteria of state and federal law (Carlson, 2014; Linklow, 2011; NCES, 2003). Rather, charter and private schools "are accountable to their authorizing agency and their consumers (i.e., parents and students) for fulfilling their mission"(Linklow, 2011, p. 417). Governance from the state may include factors pertaining to health, safety, and student achievement, while leaving charter schools the power to create and monitor curriculum, standards, instructional methods, and other factors (NCES, 2003). Charter schools also operate, in most instances, without being bound by geography meaning students can

attend providing that they have a means of getting to the school (Linklow, 2011). Linklow (2011) wrote that

> charter schools differ from district schools because students and parents choose to go to them—they are not assigned; their staff choose to work there; they are run by individuals or groups separate from the government; they are free from many of the rules and bureaucracy of district schools; and, they can be closed if they do not fulfill their charter or do not maintain sufficient student enrollment. (p. 417)

The fact that charter schools can be closed creates an operational awareness that is not common in most publicly run schools and districts. This notion feeds into the argument of those choice proponents who suggest that a free market system of education will result in increased educational quality resultant from the need to survive and compete for students (Carr, 201; Fowler, 1996; Howe et al., 2001; Ledwith, 2010; Merrifield, 2005, Moe, 2008). The pressure of attracting and maintaining non-captive students is intensified by student performance goals; according to *Overview and Inventory of State Education Reforms: 1990-2000* (NCES, 2003), "...charter schools are held accountable for student performance. Schools are chartered for a limited time, typically 3 to 5 years, and their charter specifies the educational goals the school is expected to meet" (p. 97). Failure to meet these goals can result in charter schools being closed by the state.

Private schools are schools that do not receive public tax dollars and are typically only accessible for students whose families can afford to pay tuition - often those with higher annual incomes (Hoxby, 2003; Mikulecky, 2013; Phillips et al., 2015). These schools are typically religious with some being non-secular (Anderson & Resnick, 1997). Understandably, there is

less research on private schools due to the lack of publicly available data. Much of the literature regarding private schools is either self-published by the schools themselves or is mere conjecture through mass media publications. A 1997 report compiled by Anderson and Resnick for the National School Boards Association (NSBA) examined the quality of public schools versus private schools concluding that "all things being equal, a good school is a good school - whether it is public or private"(p. 4). That conclusion aside, they did detail increased academic performance, enrollment in college preparatory courses, improved academic performance for minority students, and significantly lower dropout rates in private schools (Anderson & Resnick, 1997). Further, they conducted a public opinion polling finding that "the general public believes that private schools have higher academic standards, are safer, and are more likely to promote honesty and responsibility" (Anderson & Resnick, 1997, p. 1). These communal perceptions may be one of the factors driving the advancement of school choice voucher and scholarship programs.

Milton Friedman made a case that "a voucher program would increase the choices available to families by allowing them to transfer easily between schools and stimulate the establishment of new, market-driven schools" (Powers et al., 2012). Voucher programs arrived with other school choice options throughout the late 1980s (Hoxby, 2003; Linklow, 2011; Witte et al., 2008). "Vouchers grant families public funds to attend private secular or nonsecular schools or high performing public schools"(Linklow, 2011, p. 418). Voucher programs are designed to increase equity in education and free-market competition for school improvement like many of the additional school choice options (Moe, 2018; Powers et al., 2012). Wisconsin, Ohio, and Florida were key states that passed legislation establishing voucher programs targeting improvement for economically disadvantaged students, poor achieving students, and underserved

special education students (Linklow, 2011; NCES, 2003). The Milwaukee Voucher Program, implemented in 1989, capped enrollment based on a percentage (175%) of the poverty line with a maximum participation of 22,500 students (Linklow, 2011). By 1999, 5.7% of Milwaukee's students received a voucher. The Cleveland Voucher Program, enacted in 1995, was less restrictive permitting students whose family incomes were below 200% of the poverty line to participate with no cap on participation (Linklow, 2011; Plucker, Makel, Hansen, & Muller, 2007). Florida also implemented a voucher program granting access to students in consistently underperforming schools based on standardized test scores or the preference of dissatisfied parents of special education students who felt their needs could be better served in a different school (Linklow, 2011).

While voucher programs never realized significant political support (Powers et al., 2012), the concept of vouchers has slowly shifted towards school choice scholarship programs and income tax credit scholarships. Many of these programs follow the Florida model and are based on specific criteria, special circumstances, and student performance data. Figure 1 displays the current voucher and scholarship programs offered by 30 participating states and the District of Columbia.

Program Name	**Participation**	**Participation Rate**
Alabama – Education Scholarship Program	4,006	2%
Alabama –Parent-Taxpayer Refundable Tax Credits	145	<1%
Arkansas – Succeed Scholarship Program	427	<1%
Arizona –Individual Income Tax Credit Scholarship Program	32,585	5%
Arizona – Low-Income Corporate Income Tax Credit Scholarship	20,964	5%
Arizona – Empowerment Scholarship Accounts	6,967	3%
Arizona – "Switcher" Individual Income Tax Credit Scholarship	22,348	2%
Arizona – Lexie's Law for Disabled and Displaced Students Tax Credit Scholarship Program	1,103	1%

District of Columbia – Opportunity Scholarship Program	1,724	10%
Florida Tax Credit Scholarship Program	108,570	12%
Florida – John M. McKay Scholarships Students with Disabilities	28,935	8%
Florida – Gardiner Scholarship Program	13,884	4%
Florida – Hope Scholarship Program	66	<1%
Florida – Family Empowerment Scholarship Program	9,095	<1%
Georgia Special Needs Scholarship Program	4,873	2%
Georgia – Qualified Education Expense Tax Credit	13,895	1%
Iowa – Tuition and Textbook Tax Credit	116,707	33%
Iowa – School Tuition Organization Tax Credit	10,791	5%
Illinois – Tax Credits for Educational Expenses	297,492	23%
Illinois – Invest in Kids Program	7,178	1%
Indiana – Private School/Homeschool Deduction	56,025	37%
Indiana – Choice Scholarship Program	36,290	11%
Indiana – School Scholarship Tax Credit	10,146	2%
Kansas – Tax Credit for Low Income Students Scholarship	369	1%
Louisiana – Elementary and Secondary School Tuition Deduction	77,097	50%
Louisiana Scholarship Program	6,892	3%
Louisiana – School Choice Program for Certain Students with Exceptionalities	486	2%
Louisiana – Tuition Donation Credit Program	2,115	1%
Maryland – Broadening Options and Opportunities for Students Today (BOOST) Program	3,168	2%
Maine – Town Tuitioning Program	5,374	100%
Minnesota – K–12 Education Credit	46,948	37%
Minnesota – Education Deduction	212,160	34%
Mississippi Dyslexia Therapy Scholarship	249	2%
Mississippi – Nate Rogers Scholarship for Students with Disabilities Program	2	<1%
Mississippi – Equal Opportunity for Students with Special Needs	502	<1%
Montana – Tax Credits for Contributions to Student Scholarship Organizations	25	<1%
North Carolina – Opportunity Scholarships	12,183	3%
North Carolina – Special Education Scholarship Grants for Children with Disabilities	1,754	1%
North Carolina – Personal Education Savings Accounts	282	<1%
New Hampshire – Town Tuitioning Program	17	16%
New Hampshire – Education Tax Credit Program	413	1%

Nevada – Educational Choice Scholarship Program	2,306	2%
Ohio – Cleveland Scholarship Program	7,438	16%
Ohio – Autism Scholarship Program	3,789	15%
Ohio – Educational Choice Scholarship Program	24,885	4%
Ohio – Income-Based Scholarship Program	9,532	3%
Ohio – Jon Peterson Special Needs Scholarship Program	5,621	2%
Oklahoma – Lindsey Nicole Henry Scholarships	827	1%
Oklahoma Equal Opportunity Education Scholarships	2,555	1%
Pennsylvania – Opportunity Scholarship Tax Credit Program	14,419	9%
Pennsylvania – Educational Improvement Tax Credit Program	37,725	5%
Puerto Rico – Free School Selection Program	N/A	N/A
Rhode Island – Tax Credits for Contributions to Scholarship Organizations	397	1%
South Carolina – Educational Credit for Exceptional Needs Children Fund	1,951	2%
South Carolina – Refundable Educational Credit for Exceptional Needs Children	322	<1%
South Dakota – Partners in Education Tax Credit Program	720	1%
Tennessee – Individualized Education Account Program	137	<1%
Tennessee – Education Savings Account Pilot Program	N/A	N/A
Utah – Carson Smith Special Needs Scholarship Program	978	1%
Virginia – Education Improvement Scholarships Tax Credits	4,435	1%
Vermont – Town Tuitioning Program	3,350	100%
Wisconsin – Milwaukee Parental Choice Program	28,917	64%
Wisconsin – Parental Private School Choice Program (Racine)	3,324	35%
Wisconsin – K–12 Private School Tuition Deduction	37,070	31%
Wisconsin – Parental Choice Program (Statewide)	7,140	5%
Wisconsin – Special Needs Scholarship Program	692	<1%

Figure 1. Voucher, Scholarship, and Tax Credit Overview for Participating States

The Battle Over School Choice

School choice has been recognized by some as being among the most controversial educational policy issues of all time (Cowen, 2008; Fowler, 1996). This is evidenced through the literature regarding school choice which is overflowing with conflicting viewpoints relating

to the potential educational equality issues forecasted to accompany the majority of school choice models (Carlson, 2014). Despite this controversy, school choice continues to be prominently touted as the remedy for a great number of schooling issues by reformers and choice supporters. Gray (2012) wrote that the introduction of choice into the current system of education, specifically, in the form of charter schools is "hypothesized to yield two district types of effects on academic achievement: participation effects and systemic effects" (p. 558). Participation effects are measured when students attend schools by choice and are examinable to determine whether or not they have gained through their participation (Gray, 2012). Systemic effects are derived from the impact of charter schools on traditional public schools (Gray, 2012). Therefore, the theorists who support school choice advance that participation in school choice can have positive effects for both the individual students who participate as well as the schools affected by their participation. These two ideals are prominent in the literature as many suggest that there is little incentive for public schools to improve or to invest in creative, individualized, technology-rich educational opportunities for their students (Adnett & Davies, 2005; Harrison, 2005). Harrison, (2005) suggested that government-owned schools create a culture in which political and bureaucratic factors are set above student needs and that this issue can be partially addressed through school choice.

The Consumer-Driven Marketplace Debate

The consumer-driven marketplace viewpoint asserts that the infusion of competition through a market-based approach system to education affords the nation with a more complete system of education that will provide better and more innovative options of schooling, while also forcing change in the public system. A cornerstone of the case articulated by school choice advocates is that there is no incentive for public schools to improve and that infusing choice into

the educational sector will result in a consumer-driven marketplace resulting in increased quality profoundly manifested in a culture of competition (Adnett & Davies, 2005; Harrison, 2005). Advocates contended that infusing competition into the schooling arena would create more appropriate channels to meet diverse learners than the current "one-size-fits-all" approach commonly found in public schools (Howe et al., 2001, p. 138). Merrifield (2005) wrote "without a minimum level of consumer mobility and informedness, families cannot reward superior performance or escape inferior performance" (p. 319). This position led to the first assertion of those who advocated for the merits of a market-based education which was that choice will lead to higher quality education as an effect of creating a competitive school marketplace in which students and parents are given the freedom to choose (Howe et al.; Ledwith, 2010; Moe, 2008). In essence, the entire system of schools would be positively impacted due to both the creation of new and innovative school options and the resulting pressure on existent schools to become more competitive with new and feasibly better options (Ledwith, 2010; Moe, 2008; Ni, 2010).

Bagley (2006) contended that a market-based, competitive approach to schooling would respond to following "directive influences":

a. producer domain (encompassing schools, governors, and staff);

b. consumer domain (encompassing parents and pupils);

c. micro-environmental domain (encompassing local government); and

d. macro-environmental domain (encompassing national government) (p. 357)

The prevailing assertion is that a competitive market would engage these groups, or "domains," to stimulate "vigorous competition among schools, and the profit motive… associated with the most effective and responsive education systems" (Coulson, 2009, p. 32). Researchers also contended that this competitive culture might stimulate incentive for

innovation, improvement, and technology integration in a system of government ownership that has failed to incentivize leading to stagnancy (Harrison, 2005; Lubienski, 2005). This notion is rooted in the neoclassical economic theory which essentially predicts that "increased competition will induce school leaders to focus their resources more intensively on instructional activities that raise student achievement (Arsen & Ni, 2011, p. 6)

The literature suggests that choice might provide students with a schooling experience that presents "a better match" analogy (Hoxby, 2003, p. 288). A competitive culture for school choice has the potential to empower parents to function as "market-style choosers" allowing them the opportunity to choose the best, most effective, and most appropriately aligned education to meet the needs of their children (Lubienski, 2005, p. 332). Further, education would undergo substantial changes due to the diverse preferences of students and their families in a competitive marketplace (Merrifield & Salisbury, 2005). Merrifield (2005) wrote that "specialization and choice would defuse some divisive issues. It would allow families to get what they want without imposing their preferences on others" (p. 328).

Arguments against the potential positive effects of competitive school marketplace are equally as abundant. First, in a supply and demand system, there is potential for "a situation in which demand for places outstrips a school's ability to supply them, and where in such cases distance criterion will largely determine who gains admission" (Bagley, 2006, p. 359). This could lead to situations in which certain schools utilize "exclusive admissions procedures or tout the high test scores of their students in order to 'skim' the most able students" (Howe et al., 2001, p. 138).

A second argument advanced by opponents is that there is a potential erroneous assumption in a competitive market that parents will make an accurate school choice based on schools that are higher achieving. Research has shown that parents sometimes make decisions based on ancillary factors such as "aspects of affluence, whiteness [*sic*], and other factors that often serve as (unfortunate) surrogates for school quality" (Lubienski, 2005, p. 338). "A plurality (40 percent) of parents with children participating in Minnesota's early open enrollment program cited 'Convenience,' a category including geographic proximity, parent work in the district, and daycare, among others, as the main reason for their participation" (Witte et al., 2008, p. 10). Other researchers have found that parents will make school choice decisions based on additional reasons unrelated to school performance such as racial composition, class, athletics, proximity, and convenience (Jacobs, 2011; Kleitz et al., 2000; Moe, 2008; Ni, 2010). In an analysis of parental preference, Jacobs (2011) surmised that it is perhaps a false assumption that parents will select schools based on academic quality finding that "parental preference for the neighborhood charter school is a significant predictor" in the parent choice process leading to a potential increase in racial segregation levels (p. 475). Other research has shown that parent choices are made based on factors such as race, class, more segregated opportunities (Moe, 2008), curricular focus, extracurricular activities, safety, and convenience (Ni, 2010). In examination of a mandatory choice program in the Charlotte Mecklenburg School District, Godwin et al. (2006) found that Anglo families received their top choice at a much higher percentage than minority groups calling into question the ability of a choice model to lead to better opportunities for all students. In the same study, students who were "eligible for free or reduced lunches experienced significant drops in their Z-scores in math and reading, as did African Americans and Latinos" on standardized assessments (Godwin et al., p. 991). In the

same district, parental participation in a voluntary choice program was shown to positively impact reading scores but not math scores (Godwin et al.) revealing mixed results from the choice model.

The literature also highlights potential negative effects to districts in light of the supporting argument which suggests that competition would foster academic improvement for students held captive by failing schools. The competitive marketplace could make organizations less likely to try new things out of fear or financial risk in the competitive market (Lubienski, 2005). Failing schools have fixed budgets and will most likely not be able to innovate or improve in a competitive market (Merrifield, 2005). This will leave many districts unable to specialize and unable to compete particularly as districts are forced to shift funds towards marketing and promotions and away from instruction (Bagley, 2006). Similarly, morale and performance may be affected as educators see "school choice and competition as part of an agenda to replace the public-school system with a free-market alternative" (Moe, 2008, p. 561).

The Liberation of the Disenfranchised Debate

Another core argument from school choice supporters is that increased choice, in part, addresses social and racial inequity by freeing those students and families trapped in failing schools (Arsen & Ni, 2011; Carr, 2011; Fowler, 1996; Hubbard, 2014). They maintain that choice options will effectively serve as a means of liberation for the impoverished, or disenfranchised, racial groups commonly observed to be trapped in failing urban districts as a result of the current modus of schooling, which in large, binds students to schools as a result of their residency (Carlson, 2014; Fowler, 1996; Ni, 2010; Phillips et al., 2015). This assertion leads to the notion that school choice would allow commonly disenfranchised student subgroups such as poor, disabled, and minority students "equal access" to higher quality education and

"reduced segregation" (Hong & Choi, 2015, p. 63). Supporters advance that school choice has the potential to perpetuate more productive and appropriate public schools and to have positive impacts on both social justice issues and academic achievement (Moe, 2008).

More generally, the prevailing case made by supporters is that choice can improve educational opportunities for all students, especially those confined to failing schools due to residency and demographic factors (Ghosh, 2010; Moe, 2008). Carlson (2014) wrote "from an absolute perspective, interdistrict choice is still quite likely to result in a decline in stratification when open enrollers are disproportionately low achieving" (p. 284). This notion reflects the correlation of racial and socioeconomic factors to low achievement, which provided Carlson (2014) the grounds to advance such an assertion. In examining stratification effects in Colorado's 184 Public Districts, Carlson (2014) used the dissimilarity index revealing that "Colorado's interdistrict open enrollment program may be disproportionately used by nonpoor racial and ethnic minority families" (p. 293). Despite this finding, the empirical analysis recognized a "decrease in racial/ethnic stratification, a slight increase in socioeconomic stratification, and no meaningful effect on academic stratification" (Carlson, 2014, p. 298). In the same study, Carlson (2014) found the state average of White students using open enroll to be 6.7%; however, this statistic increased to 13.5% of White students in urban districts (p. 294). Data such as these suggest the potential for school choice to extend equality if choice options are accessible to all students providing equal access to increased opportunity and reduced stratification for all students (Hong & Choi, 2015).

Similar studies have yielded mixed results. Jimerson (2002) noted "most studies of the segregatory potential of choice programs indicate that choice causes increased stratification along ethnic and socioeconomic lines" (p.17). In a 2002 study of open enrollment in Minnesota,

Jimerson found that "in over one-third of all Minnesota districts 100 percent of students involved in the [interdistrict open enrollment] program were white [*sic*]" (Jimerson, 2002, p. 17). Thus, in a large number of districts, no minority students participated. Exacerbating the issue is the fact that research has shown that impoverished students are less likely than their peers to engage in choice options such as interdistrict open enrollment (Hong & Choi, 2015). In their study of 36,602 Minneapolis students, Hong and Choi (2015) found that "students who were eligible for free/reduced lunch showed significantly lower participation rates (1.5%) than their counterparts (3.2%)" (p. 65). In the same study "minority students demonstrated a higher participation rate (2.6%) than white [*sic*] students (1.1%)" showing the inconsistency in stratification results among studies (Hong & Choi, 2015, p. 65). In their 2015 study of what Phillips et al. (2015) called the "liberation model", they found that "the academic performance of schools is not significantly related to school choice, and school choice tends to promote greater social stratification, particularly in diverse sociogeographic areas" (p. 48). Correspondingly, students assigned to low performing districts are "no more likely to participate in school choice than students zoned to higher performing schools" (Phillips et al.).

One possible reason that students do not elect to exercise a choice option is that they may be afraid to feel "out of place" in a higher performing or wealthier district than their current district (Gray, 2012, p. 576). Other factors hypothesized to possibly inhibit students and families from using school choice are a general lack of resources, awareness, or education for those living in disadvantaged neighborhoods and districts (Lauen, 2007). In a study on the impact of latent variables affecting school choice Cowen (2008) discovered that

> students who declined the random voucher were statistically significantly more likely to be African American (although students in all subgroups are

> overwhelmingly black [*sic*]), less likely to live with both parents, more likely to have a mother who failed to complete high school, and less likely to have a mother who attended some college. (p. 308)

Jimerson (2002) added that the "policy challenge for states is to determine if it is possible to implement open enrollment so that it minimizes (or eliminates) the harm for some, while expanding the benefits for all" (p. 19). Factors such as parental education, complicated applications only produced in English, and cultural norms must be considered as plausible barriers to school choice access for some families (Jimerson, 2002; Lauen, 2007).

The issue of access is intensified by the fact that transportation is not provided for most choice options thereby greatly limiting those with access and potentially increasing inequality and stratification based on race and subgroup (Ghosh, 2010; Jimerson, 2002; Ledwith, 2010). Ghosh (2010) reported that "there is no obligation on the part of either the sending or receiving district to provide transportation to choice students thus the cost of transportation clearly limits the number of school districts that parents are able to consider while transferring their child outside the home district" (p. 442). Jimerson (2002) affirmed that this is the case in many states but that there are some states that require districts to transport students from the boundaries of their residential area, others that reimburse transportation costs for low-income families, and select states that have policies mandating the transportation of special education students who are engaged in school choice.

This restrictive aspect of school choice presents a major barrier to many impoverished and working-class families and limits those who have access to broad choice options creating a context in which choice providers have the potential cream or skim away the best students from

failing schools leaving behind those with the greatest academic need (Carlson, 2014; Paquette, 2005). Over time, this can leave failing public schools with a homogeneous population of low performing students who are more costly and challenging to serve (Paquette, 2005). This is amplified by "white [*sic*] flight" as research has shown that "students [have] exited district schools with more exposure to students from other racial/ethnic groups to attend charter schools with less exposure" therefore again leaving behind a stratified student body with extreme academic needs and limited diversity (Garcia, 2008, p. 818). In a study on Arizona students in second through ninth grade, Garcia (2008) found that "students exited district schools in which the average White student was exposed to 30% minority students to attend charter schools in which the average White student was exposed to 18% minority students" indicating the potential of white [*sic*] flight as a by product of school choice (p. 818). Similarly, researchers suggest that financially advantaged students were more likely to opt out of their residential districts; particularly if their residential districts had a high number of disadvantaged students (Ni, 2010; Paquette, 2005). Moreover, Fowler (1996) found that "the demographic characteristics most clearly associated with being open were declining enrollment, small enrollment, rural location, racial homogeneity, and below average per pupil expenditure" (p. 528). Conversely, Fowler (1996) reported that above average, per pupil expenditure was a common factor in districts that did not have policies permitting open enrollment. This suggests that despite the possibility to gain funding by permitting choice, districts may avoid doing so in order to avoid an influx of students that may be perceived to be "undesirable" deepening the gap and degree of disenfranchisement for students who are poor, under-achieving, and non-White (Fowler, 1996).

The Money Factor Debate

A final core contention of those opposing school choice centers on the fact that school choice has been shown to be a detriment to public school funding (Arsen & Ni, 2011; Godwin et al., 2006). The loss of funds for students leaving districts to pursue choice options can force public school districts to become open enrolled for the solitary factor of gaining access to increased funding instead of utilizing the threat of competition to improve their practices (Fowler, 1996). Fowler (1996) conducted a study two years after Ohio implemented its interdistrict open enrollment policy finding that the top reason school districts chose to enact the voluntary practice of accepting outside students via open enrollment was to maintain enrollment figures (52% of respondents) followed by the need for more funds (37% of respondents) (p. 529). More alarming was the fact that "the overwhelming majority of high-spending districts (93%) and suburban districts (72%) had opted not to accept students from outside" which should generate questions as to whether or not open enrollment created access to better education options for the neediest of students (p. 528).

A core argument of school choice opponents is the impact that school choice could have on the fiscal abilities of public schools to meet the needs of those students who remain. Carr-Chellman and Marsh (2009) reported that states provide "approximately 47%, a little less than half, of all elementary and secondary education funding. Local governments generally contribute 44% of the total, and the federal government contributes 9% of all direct expenditures" (p. 51). The local share of funds is typically derived from property tax. Disparity exists since

> wealthier, property-rich locales, which have the ability to collect more in property taxes, are able to provide adequate funding while maintaining relatively low tax rates while poorer communities have a lower property-tax base, which results in

> higher tax rates for the residents of those communities. (Carr-Chellman & Marsh, 2009, p. 51)

This issue is in part compounded by school choice, which is why opponents advance that choice benefits the most advantaged families (Lavery & Carlson, 2012). Research reveals that even the upper end of the poorest migrate out, leaving regular public schools with diminished resources to meet the privations of the students with the greatest needs for support and intervention (Carr, 2011; Hubbard, 2014; Moe, 2008). These factors result in a cycle of despair discovered in research that points to a correlation between low student performance and low-income, which connects to the fact that "as a school's percentage of low-income students increased, its ability to raise funds decreased, and vice versa" (Howe et al., 2001, p. 143).

Opponents also suggest that the amount districts receive for choice students are often only generally greater than the marginal cost of educating an additional student (Reback, 2008). Questions arise concerning whether or not choice schools, or any schools for that matter, will have adequate funding available to truly specialize and meet diverse learner needs. Ultimately, school choice may be potentially damaging to both districts and individual students (Jimerson, 2002). Hubbard (2014) pointed to the link between school choice and the potential for increased class size in schools that are depleted of resources (p. 798). Skimming can occur in which high performing students are pulled away from low achieving districts resulting in the isolation of underperforming students in underperforming schools without the funds necessary to meet such needs (Howe et al., 2001). School choice also leads to increases in student mobility and transiency which has been shown to have a negative impact on student achievement (Lavery & Carlson, 2012). High mobility levels make it impossible for districts to anticipate budgets from year to year limiting their ability to innovate and improve. Governmental policy and ethics are

called into play given that “the for-profit education industry has experienced substantial growth not from individual consumers choosing education services but from government mandates that have directed more resources to the private-education sector” (Snell, 2005, p. 268).

Given that funding is almost always based on enrollment for public schools, choice turns the focus of public schooling organizations from education to retaining an acceptable number of students (Arsen & Ni, 2011; Carr, 2011; Malugade, 2014). These pressures have pushed districts to create and implement costly and “intensive marketing programs that included information about their districts' academic performance” as a means to attract and retain students (Fowler, 1996, p. 521). These practices divert funding that could be utilized for student programing.

In their analysis of a statewide panel data set of Michigan school districts from 1994 – 2006, Arsen and Ni (2011) “results indicate[d] that the loss of students to charter schools has a significant negative impact on the revenues” of public schools (p. 23). Arsen and Ni (2011) found the loss of funds resultant from charter school competition had a negative impact on the percentage of funding public districts allocated towards instruction; however, Michigan districts responded to interdistrict school choice (open enrollment) competition by dedicating more funds to instruction (p. 20). Other research suggests that the declines in funding ensuing from school choice competition fail to stimulate increased spending on instruction and instead force public districts to choose to become open enrollment providers as a means of increasing funding (Fowler, 1996).

Another issue created by the funding mechanism of school choice is that such a substantial “loss in revenue generates pressure for expenditure cuts and makes it harder for districts to continue providing programs of the same quality, let alone improve educational

services"(Arsen & Ni, 2011, p. 23). Jimerson (2002) found that districts suffering enrollment declines have

> tended to defer maintenance; cut positions in art, music, and physical education; eliminate special programs in elementary school such as foreign language and elementary science; decrease the numbers of special education assistants; cut field trips; reduce guidance positions; and eliminate advanced math and science courses in high schools. (p. 18)

Malugade (2014) wrote "any attempt to rationalize the less than optimal education received by students left behind in the losing districts fails to take into consideration the fundamental state constitutional guarantee of '[a]n equal opportunity for a sound basic education'" (p. 850). Hoxby (2003) shared similar concerns writing "perhaps schools were not losing productivity; perhaps they were simply working with students from worse family backgrounds. There is no definitive way to address this issue..." (p. 289).

School Choice Effectiveness

One of the hallmarks of NCLB has been the promise of school choice as the solution for failing schools with regards to student achievement. The question of whether or not school choice achieves this end should be at the forefront of political discussions, program evaluations, and efforts to expand school choice options. However, these questions are universally disregarded since "…no evidence conclusively proves that the act of choosing improves students' academic achievement" (Jimerson, 2002, p. 19). While small gains for select students engaging in open enrollment have been discovered in recent research, these statistics are often

not significant and plagued with both internal and external variables threatening any such validity (Ledwith, 2010; Welsch & Zimmer, 2012).

Welsch and Zimmer (2012) found complexity in attaining a true assessment of Wisconsin's school choice programming resulting from the constantly changing state assessments that are utilized to monitor student progress (p. 205). With the data they were able to compile, they found that districts that experienced a 5% increase in outgoing migrations realized a 4-7% increase in the number of students that scored proficient in standardized exams resulting in further questions about the overall impact of open enrollment regarding school competition (Welsch & Zimmer, 2012, p. 206). Ledwith (2010) also found certain advantages for student achievement through school choice depending largely on contextual factors of the schools from where and to students were attending (p. 257). Specifically, Asian students selecting a school outside of their residential districts were found to score significantly better on achievement assessments then those Asian students who remained in their residential districts (Ledwith, 2010). Ledwith (2010) suggested that "one potential explanation for this high level of achievement is the model-minority hypothesis, which identifies Asian Americans as a 'model minority' based upon their motivation to succeed" and that Asian students were found to spend significantly more time on homework than the other examined racial groups (p. 252).

Iarussi and Larwin (2015) studied the achievement test scores of open enrollment students for the entire tested student population of Mahoning County (Ohio). Their analysis included achievement tests scores for the years of 2004 through 2014 for third grade through high school students. Ultimately, they found that students who utilized open enrollment to attend a different public school in Mahoning County performed "at or above those remaining in the home district[s]" (Larwin & Iarussi, 2015, para. 6). This study yielded results found by other

research in that the observed "differences were not found to be practically or statistically significant, with the exception of [those leaving] the poorest performing district" which also happened to be the largest and most diverse urban school district in Mahoning County (Larwin & Iarussi, 2015, para. 6).

The debate is whether or not small and isolated gains are truly beneficial when compared to the educational and contextual disadvantage that may be created by school choice options (Ledwith, 2010; Malugade, 2014; McClure-Hartman, 2012). Malugade (2014) wrote "any attempt to rationalize the less than optimal education received by students left behind in the losing districts fails to take into consideration the fundamental state guarantee of '[a]n equal opportunity for a sound basic education'" (p. 850) illustrating that open enrollment policies can disenfranchise students in schools that lose large numbers of students to open enrollment. Further, the "Not in My Backyard" phenomenon motivates districts that surround the neediest districts to allude open enrollment thereby isolating the students with the greatest need from increased opportunity for academic improvement (McClure-Hartman, 2012, p. 222).

Another potential failure of school choice resulting in increased student achievement and success has been seen in that "the children of parents who made judgment errors in school selection were admitted to lower quality schools and achieved lower test scores…" (Lai, Sadoulet, & de Janvry, 2009, p. 485). In an examination of 4,147 middle school students in Beijing, Lai et al. found that "the reduction in the overall test score associated with parental error in open enrollment is 8.3 points" when examining standardized assessments (p. 492). Research conducted by Kleitz et al. (2000) built upon this assertion by illustrating that the motivational factors for school choice decisions vary by household and can include such factors as the safety, class size, presence of friends, in the location of choice schools. In measuring these factors, they

asked respondents to rate the importance of factors associated with their decision to use school choice including: education quality, class size, safety, location, and friends. Education quality was found to be ranked "very important" at the highest percentages among all studied subgroups (Anglo, Black, Hispanic, low income, moderate, and high income (Kleitz et al.). Of particular interest was that "only one of the six subgroups have a majority (51.4%) of respondents for whom the "friends" factor is important or very important - low income households" (Kleitz et al., p. 851). Without question, additional research needs to be undertaken to determine the breadth of the impact of parental influence and selection error on open enrollment choice and student achievement outcomes.

School Choice in Ohio

Ohio law has permitted inter-district open enrollment since 1989 for adjacent districts, and statewide, open enrollment since 1998. In addition, "the state implemented a charter school program which is now tied directly to the accountability grading system" (p. 258) and the Educational Choice Scholarship Program "which provides vouchers to students in chronically underperforming schools, allowing them to attend private and religious schools" in 2005 (Carr, 2011, p. 258). At present, the state of Ohio provides four scholarship pathways for students and their families. The first of these, the Autism Scholarship Program (ASP), is available to any student that is at least three years of age or older and has an IEP for the disability condition of autism (ODE, n.d.). ASP gives the parents of children with autism who qualify for a scholarship the choice to send the child to a special education program other than the one operated by the school district of residence to receive their education and the services outlined in the child's individualized education program (IEP). (ODE, n.d.)

The second scholarship pathway in Ohio is called the Cleveland Scholarship Program. Under this option, students in grades kindergarten through 12 are given the opportunity to choose to attend Cleveland area schools with the state providing partial reimbursement for tuition (ODE, n.d.). Families must be residents of the Cleveland Municipal School District in order to receive this scholarship with a current maximum reimbursement schedule of $4,650 for students in Grades K-8 and $6000 for those in high school (ODE, n.d.).

The EdChoice Scholarship, Ohio's third scholarship option, is nearly identical to the Cleveland Scholarship Program with the exception that these programs are available to all students in Ohio whose public-school building has been deemed to be an EdChoice Listed Building (ODE, n.d.). In both instances, the amount of tuition reimbursement families receive is based on whether or not the student's family income is above 200% of the federal poverty guidelines (Linklow, 2011; Plucker et al., 2007; ODE, 2020).

Last is Ohio's Jon Peterson Special Needs Scholarship Program (JPSN), which is available to students in Grades K-12 and requires that the student has an IEP in order to participate. What is unique about this scholarship is that the scholarship amount is based on the child's specific disability condition with a maximum amount of $27,000 per student.

Ohio school choice policies have been implemented with a general lack of substantive oversight or accountability. One exception is found among the provisions of Ohio House Bill 59 which resulted in Ohio Revised Code § 263.450 and mandates requiring the formation of an Open Enrollment Task Force as a means of examining the state's open enrollment programming. The task force was required to assemble and present a subsequent report and recommendations to Ohio's Governor, the Ohio House and Senate leaders no later than December 31, 2013 (ORC §

263.450). The report addressed many of the funding issues associated with open enrollment including the need to increase funding for special education, to closely examine the relative impact of open enrollment on the passage of levy issues, and the fiscal plight of districts that have experienced significant fiscal consequences resulting from high percentages of students exercising their open enrollment rights (Report of the Ohio Open Enrollment Task Force, 2013). Additionally, the report revealed the lack of access to open enrollment options for many urban districts and went as far as to recommend a state-wide requirement that all districts become open enrollment to ensure that inner-city school students have public school choice options (Report of the Ohio Open Enrollment Task Force, 2013). Despite the density of this report, at no point is the academic success of students exercising the open enrollment option mentioned. The report stated that "Ohio's open enrollment opportunities has been and continues to be an appropriate and viable state strategy for providing highly effective learning opportunities to all students" (Report of the Ohio Open Enrollment Task Force, 2013). However, the report does not provide any data to support this statement. The task force appeared to focus their efforts towards funding and operational issues with complete disregard for the impact and relative success, or lack thereof, on students and their success. Despite the lack of a true analysis into the quantitative impacts of school choice and open enrollment on student success, the task force report was clear that the number of open enrollments has continued to grow in the state of Ohio since 2003 as is observable in Figure 2.

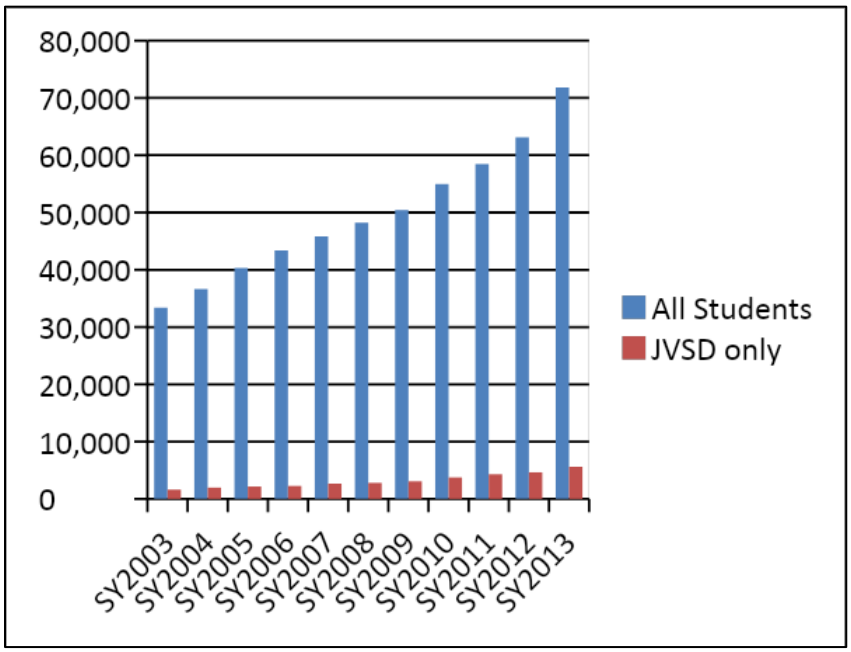

Figure 2. Growth in Ohio Student Open Enrollment. Reprinted Report of the Ohio Open Enrollment Task Force, 2013.

Figure 2 shows clear incremental growth in open enrollment totals from 2003 through 2013 for both public schools and joint vocational schools. The evidence of open enrollment growth in Ohio was strengthened in a report developed by Carlson and Lavery (2017), on behalf of the Fordham Institute, which determined that by 2014, more than 120,000 Ohio students were attending charter schools with an additional 70,000 using some form of interdistrict open enrollment. What is clear is that school choice in Ohio is expanding but the degree of scrutiny remains almost non-existent. Alarmingly, the Report of the Ohio Open Enrollment Task Force (2013) was accompanied by an Open Enrollment Map (Figure 3), which seems to highlight the potential stratification effects of school choice highlighted in the research (Gray, 2012; Hong & Choi, 2015; Jimerson, 2002; Phillips et al., 2015).

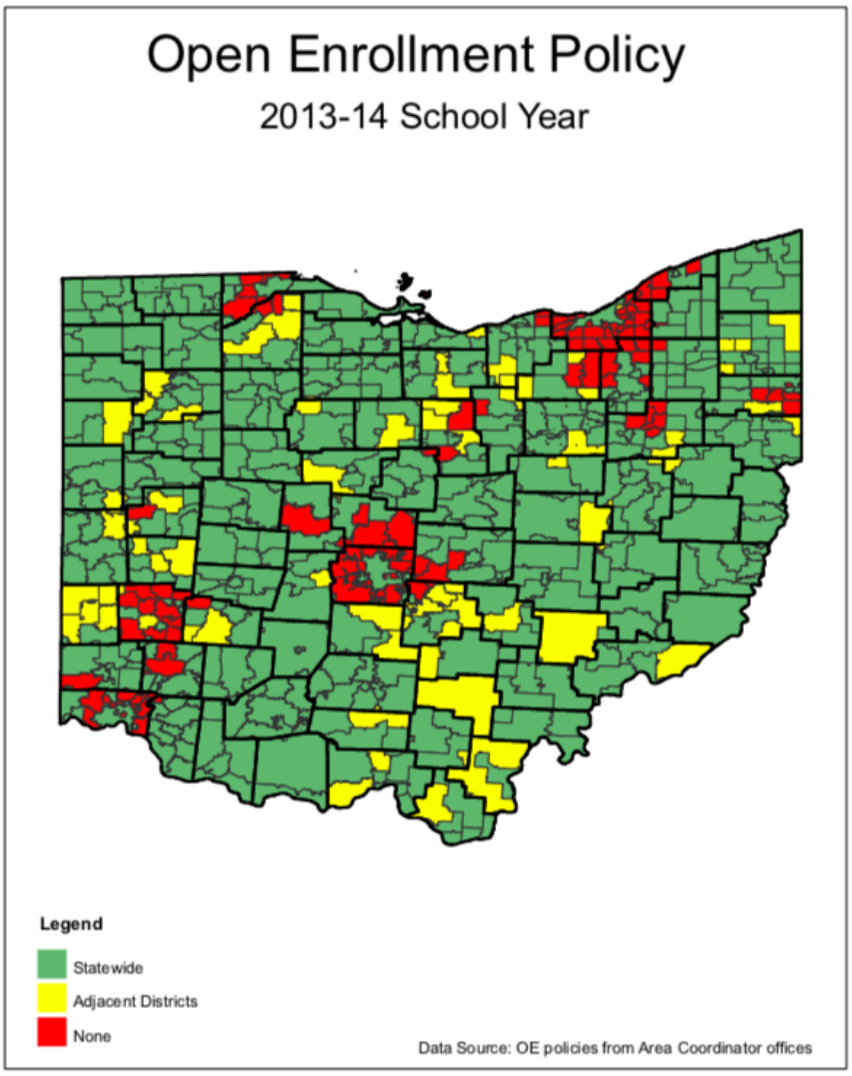

Figure 3. Map of Open Enrollment by District. Reprinted Report of the Ohio Open Enrollment Task Force, 2013.

The argument of school choice supporters is that increased choice positively impacts social and racial inequity by freeing those students and families trapped in failing schools (Arsen & Ni, 2011; Carr, 2011; Fowler, 1996; Hubbard, 2014). Further, that choice option effectively serves as a means of liberation for the impoverished, or disenfranchised, racial groups commonly observed to be trapped in failing urban districts as a result of the current modus of schooling,

which in large, binds students to schools as a result of their residency (Carlson, 2014; Fowler, 1996; Ni, 2010; Phillips et al., 2015). The Open Enrollment Policy Map (Figure 3) seems to contradict these assertions by directly demonstrating the "increased stratification along ethnic and socioeconomic lines" (Jimerson, 2002, p.17). The map clearly illustrates that Ohio's eight largest urban districts are, in large part, surrounded by districts that do not permit open enrollment. The students who lived in the urban centers of Cleveland, Cincinnati, and Columbus in 2013 had absolutely no adjacent district open enrollment access - a fact that should have been a major focus of this report.

School Choice and Ohio Interscholastic Athletics

The relationship between school choice and interscholastic athletics is another area that has gone without a preponderance of research. The literature pertaining to school choice and athletics is almost explicitly focused on competitive balance and "comes from editorials in hometown newspapers with clear biases relative to local high schools. These sources are abundant; nevertheless, the editorial nature of this information limits a rigorous investigation of policy…" (Johnson et al., 2017). Many of these articles are squarely focused on the perceived unfair advantages private schools have in interscholastic athletics due to enrollment and subversive recruitment practices (Johnson et al., 2017).

The literature pertaining to school choice and interscholastic athletics almost always equates school choice with enrollment (Johnson et al., 2017). As a result, the scope of this literature review was expanded to include the research examining interscholastic athletics and enrollment. Additionally, intercollegiate athletics were included given the dearth of research on this topic and potential correlations to the focus of these studies and the present study. As a result, four unique studies pertaining to enrollment and athletics were discovered at the intercollegiate level. Chung

(2013) studied the impact of successful intercollegiate football programs on enrollment. Of particular interest was a situational outcome that that popular media has since deemed the "Flutie Effect" (Chung, 2013, p. 679). In 1984, quarterback Doug Flutie led Boston College in a David and Goliath match-up against the University of Miami (Chung, 2013). Flutie and Boston college shocked the nation by defeating Miami in this nationally televised game which happened to be played on the day after Thanksgiving (Chung, 2013). Chung (2013) wrote that "two years after this extraordinary game, Boston College experienced an approximately 30% surge in applications" (p. 679). A similar effect was observed when

> Georgetown University applications multiplied 45 percent between 1983 and 1986 following a surge of basketball success [and] Northwestern University applications advanced 21 percent after winning the Big Ten Championship in football. (Silverthorne, 2013, para. 3)

Chung (2013) based his study of 120 colleges competing in college bowl games during the years of 2001 and 2009 on the Flutie Effect leading to significant results. Chung (2013) found that "when a school goes from being mediocre to performing well on the football field, applications increase by 17.7%" (p. 696).

Murphy and Trandel (1994) also examined the relationship between a university's football record and enrollment. This study examined the within-conference winning percentage of college football teams from the six major college football conferences from 1978 through 1987 finding that when a school's winning record increased by .25% the number of applicants rise by 1.3%". An interesting finding was that Murphy and Trandel (1994) connected this

positive but insignificant increase to a university's application pool to "advertising" creating a new context for additional research" (p. 268).

Friedson and Bogin (2013) added to this sparse and intriguing research by examining high school football championships and property values. Friedson and Bogin (2013) highlighted ways in which successful high school sports teams impact the community such as excitement gained by attending home games, positive publicity in local media, and the general sense of community pride created by the team's success arguing that these positive benefits should be "capitalized" (p. 54). To measure this relationship Friedson and Bogin (2013) studied "every private home sale in upstate New York between 2000 and 2009" and related football championships finding that "a state championship raises district property values by approximately 1.6% in the year following a team's first championship" (p. 55).

Another aspect of athletics and enrollment examined by researchers is competitive balance. Johnson et al. (2017) informed that "to date there exists no universal definition of competitive balance" (p. 257). The OHSAA defines competitive balance as " process which makes modifications to how schools are placed into tournament divisions in the team sports of baseball, basketball, football, soccer, softball and volleyball" (OHSAA, n.d.). Researchers have further defined competitive balance as a means of creating closer competitions (Epstein, 2008; McEwen & Metz, 2016) or a solution "meant to equipoise perceived private school advantages" (Johnson et al., 2014). Johnson et al. (2017) conducted one of the only research-based examinations into competitive balance at the interscholastic level. Their qualitative approach "included semi-structured in-depth interviews" of state athletic administrators with open-ended questions based upon: "(a) sociocultural and historical characteristics of competitive balance; (b) contextual elements that have shaped competitive balance; (c) public/nonpublic issues; (d)

effectiveness of competitive balance policies; and (e) future competitive balance trends" (Johnson et al., p. 261). The theoretical framework of this examination was the theory of distributive justice which Johnson et al. (2017) explained "is rooted in general theories of fairness and equity and indicates that benefits or burdens are distributed to groups or individuals based on their characteristics or achievements" (Johnson et al., 2017, p. 260). Their results yielded several "higher order themes" associated with competitive balance policies including: the "concepts of equity and fairness," the heavy societal emphasis on winning and high school teams having equitable access to winning, the political influence state level administrators are exposed to, and the complex challenges associated state level athletic administrators face when developing such policies" (Johnson et al., 2017, pp. 263-266). These complex challenges were found to include factors that will be examined in the present study including school size (enrollment), wealth (socioeconomic status), and a general lack of public awareness of state level policy (Johnson et al., 2017).

Interscholastic competitive balance policies typically apply a multiplier to student enrollment counts in attempts to level the playing field and to make access to success more equitable (Epstein, 2008; James, 2007; Johnson et al., 2014). Competitive balance and multipliers have both stemmed forth from the ongoing debate centered on the perceived advantages of private schools in interscholastic athletic competition (Epstein, 2008; James, 2007; Johnson et al., 2014). For example, in the case of Ohio,

> from 2007-08 through 2016-17, non-public OHSAA member schools claimed the majority of state championships in football (56 percent), boys' soccer (80 percent), girls' soccer (77 percent) and volleyball (55 percent). In boys' basketball (40 percent), girls' basketball (35 percent) and baseball (40 percent). (Porter, 2019, para. 7)

Statistics such as these have prompted athletic and school administrators to levy a litany of complaints against the inequities between private and public-school districts in athletic competition. "At the heart of the public versus private debate and competitive balance is an issue of fairness" (Johnson et al., 2014, p. 45).

A central contention of the debate is that public schools are restricted to enrollment based on district boundaries while private schools have unlimited reach (Epstein, 2008; James, 2007; Johnson et al., 2014). Consequently, statewide open enrollment policies are not commonly discussed as a means of leveling the playing field with regards to this particular grievance. Another point of contention is the perceived notion that private schools actively recruit and strip away high-quality athletes from public districts (Epstein, 2008; James, 2007; Johnson et al., 2014). Additional tension points include the fact that private schools tend to have better facilities, increased parent involvement, and better coaches (Johnson et al., 2014).

Much of the literature covering the private versus public debate is found in mass media publications with little empirical evidence. There are a few studies that have sought to examine these practices. Johnson et al. (2014) examined Indiana's interscholastic tournament success factor (TSF) in order to determine if Indiana had a measurable public versus private issue finding that while private schools only represented 14% of the schools in all sports they disproportionately won 32.9% of all state titles (Johnson et al., 2014). As a result, 64.7% of schools that were required to move up a division "which is well over the 14% of private schools represented in the state" (Johnson et al., 2014 p. 55). Even with the TSF in place to create competitive balance, "the numbers for public school champions (219 down to 199) and runners-up (264 down to 247) demonstrated a decline in public school success during the most recent eight-year period" (Johnson et al., 2014, p. 56).

Currently there are 21 states that utilize some type of multiplier - "all with the goal of addressing the perceived imbalance between the athletic programs of private and public schools" (Porter, 2019, para. 2). There are other approaches that states have taken in their efforts to make interscholastic athletic competition more equitable. The state of New York utilizes a sport-specific system in which select athletic competitions are segregated by multiple state athletic associations (public, private, and independent) while others are played under the auspices of one over-arching state association (Epstein, 2008). Despite ongoing legal challenges, the state of Maryland has maintained separate tournaments for public and private schools (Epstein, 2008). The state of Indiana added four classifications to its championships in 1997; however, from 1997 to 2008 private school teams earned championships in 30 out of 60 opportunities (Epstein, 2008).

OHSAA Member Schools voted Competitive Balance into existence in 2014, collected enrollment data in 2016, and fully implemented the Competitive Balance system in 2017 (OHSAA, n.d.). Ohio's model uses a multiplier based on past enrollment (school roster data) rather than school type. Districts are given a window of time at the end of each season during which they must enter accurate roster data. Data from these rosters are then calculated using Ohio's three-tier multiplier model and added to the school's state enrollment count data to arrive at an adjusted enrollment count statistic that is used for divisional placement for the subsequent year's tournament (OHSAA, n.d.).

Summary

This research is compelled by the moral obligation that should require society and the research community to assess the effectiveness of policies that impact education given the significance of education on the overall lives of American citizens (Gray, 2012). Upon reviewing the limited extant literature pertaining to school choice and the potential relationship

between school choice interscholastic athletic success, it is even more evident that additional empirical investigations are in abundant need.

From its conception, school choice was promised as the gateway to granting commonly disenfranchised student subgroups such as poor, disabled, and minority students equal access to higher quality education and reduced segregation (Hong & Choi, 2015). Among the finite quantitative studies investigating school choice, only marginal and non-significant gains in student achievement resulting from school choice were observed (Iarussi & Larwin, 2015; Ledwith, 2010; Welsch & Zimmer, 2012). If students are not gaining in achievement it becomes reasonable and necessary to question the factors that influence students and parents who engage in school choice such as race, class, (Moe, 2008), innovative curriculum, extracurricular activities, safety, and convenience (Ni, 2010). Chung (2013) and Murphy and Trandel (1994) found a potential advertising effect resultant from winning and championship teams. The "Flutie Effect" is particularly relevant to this study and the investigation into the potential relationship between outside enrollment growth and Ohio school district appearances in varsity football semi-final, quarter-final, and final playoffs.

The private versus public debate is also compelling. As a primary argument of the debate, public schools are restricted to enrollment based on district boundaries while private schools have unlimited reach to acquire students (Epstein, 2008; James, 2007; Johnson et al., 2014). Despite this common assertion, open enrollment has yet to be studied as a potential means of leveling the playing field with regards to this particular grievance. Critics of private schools cry foul citing the perceived notion that private schools recruit athletes (Epstein, 2008; James, 2007; Johnson et al., 2014) and that private schools have better facilities and increased parent involvement (Johnson et al., 2014). Despite these assertions prevalent in the debate, their

empirical impact has yet to be investigated. While such an analysis is beyond the scope of this study, investigating variables that serve as significant predictors for participation in Ohio's interscholastic playoffs may yield results that are more concise factors that prognosticate the athletic success of private schools.

The subsequent chapter will outline the methods, instrumentation, and procedures for the present study. Limitations of the study will also be examined.

Chapter 3

Methods

The original intent of this study was to examine the potential relationship between open enrollment and the Ohio interscholastic appearance in varsity football semi-final, quarter-final, and final playoffs. An extensive review of the prevailing literature concomitant with school choice and interscholastic athletics has culminated in three fundamental ideas that will implicitly impact the focus of this examination.

The first of these is the “Flutie Effect” which describes the latent advertising effect of winning and championship sports teams on college applications (Chung, 2013, p. 679; Silverthorne, 2013, para. 1). This phenomenon has compelled the researcher to scrutinize whether or not the same advertising effect of athletic success is observable at the interscholastic level. Silverthorne (2013) built into the intrigue of this investigation citing Harvard Business School Assistant Professor of Marketing, Doug J. Chung’s assertion that "The primary form of mass media advertising by academic institutions in the United States is, arguably, through their athletic programs" (para. 3). If postseason interscholastic success is demonstrated to increase outside enrollment, this study will be one in many causing increased scrutiny as to whether or not school choice is achieving its expressed purpose - providing students access to schools where they can realize increased academic success (Shober, 2011).

The core arguments of private versus public debate also compel aspects of the present study. Public school administrators have fought for competitive balance measures largely based on issues of fairness. Johnson et al. (2014) wrote that “at the heart of the public versus private debate and competitive balance is an issue of fairness” (p. 45). This has impelled some researchers to base their inquiries into competitive balance on the theory of distributive justice

(Johnson et al., 2017). The present study examined competitive balance on three levels as it relates to school choice.

First, competitive balance proponents complain that public schools are restricted to enrollment based on district boundaries while private schools have unlimited reach (Epstein, 2008; James, 2007; Johnson et al., 2014). They do so with disregard to the fact that all public schools, at least in Ohio, have the ability to accept open enrollment from the entire state. According to the 2019-2020 Open Enrollment Summary generated by the ODE, there are currently 644 public districts operating in the state of Ohio with 552 (85.7%) of these districts allowing open enrollment from adjacent districts or statewide (ODE Open Enrollment Page, Open Enrollment Summary Form, 2019).

Second, since 2012 Ohio has seen an increase in both the number of students who take advantage of interdistrict open enrollment and the districts that accept students either from adjacent school districts or from districts statewide. In June of 2017, the Fordham Institute published a study titled *Interdistrict Open Enrollment in Ohio: Participation and Student Outcomes* (Carlson & Lavery, 2017). Among the findings of this examination was the clear upward trend in the number of Ohio public school districts that accepted open enrollment students from school districts state-wide. Understandably, there is also a downward trend in districts that only accept interdistrict open enrollment students from adjacent districts or not at all. This trend, coupled with the assertion of competitive balance advocates that private schools have an inequitable advantage in procuring students, compels an investigation into whether or not incoming open enrollment is a predictor of interscholastic postseason success.

Third, critics of private schools commonly ascertain that private schools have an ability to recruit athletes promising access to better facilities, winning programs, and other factors that

have yet to be investigated empirically (Epstein, 2008; James, 2007; Johnson et al., 2014). Such an analysis is beyond the scope of the present study; however, public school athletic, demographic, and economic factors will be evaluated as potential predictors of interscholastic postseason success. Investigating variables such as these may generate results that are more concise factors in prognosticating the postseason athletic success of both public and private schools. Further, this study examined whether or not simply being a private school is a significant predictor of postseason athletic success in Ohio.

This quantitative, causal-comparative, non-experimental study might contribute to the body of research on school choice, competitive balance, and interscholastic athletics through a broad examination of the relationship between factors commonly associated with school choice and the success of Ohio high school football teams in varsity playoffs and championships. This was achieved using regression analysis in the form of a two-level hierarchical linear model to determine the strength of the relationship between the determined variables. This investigation was driven by the following research questions:

1. Is the Flutie Effect observable in interscholastic athletics?
2. Is there a relationship between open enrollment and Ohio high school football team appearances in varsity football regional semi-finals, regional finals, state finals, and those that win state championships?
3. Is there an observable private school advantage in varsity football championship outcomes in the State of Ohio?
4. Are there district factors that serve as significant predictors for Ohio high school football team appearances in varsity football regional semi-finals, regional finals, state finals, and those that win state championships?

The balance of this chapter details the study participants, the instrumentation utilized for data analysis, the procedures for data collection and coding, and an overview of potential limitations of the examination, and a concluding discussion section.

Participants

This study examined all Ohio public and private districts that have participated in varsity football between the years of 2009 and 2019. This range of years was chosen in order to provide a decade's worth of analysis of the available data. For each of these years, the eight regional semi-final teams were included for each division. In Ohio, there were six divisions (I, II, III, IV, V,VI) from 2009-2012 and seven divisions (I, II, III, IV, V,VII) from 2013-2019 in varsity football. An overview of adjusted enrollment by division and the total schools per division is detailed in Table 1.

Table 1

2019 Varsity Football Division Overview for Ohio

Division	Adjusted Enrollment	Schools
I	591 and more	72
II	590 - 376	107
III	375 - 269	106
IV	268 - 208	106
V	207 - 158	107
VI	157 - 117	105
VII	116 and less	111
	Total Schools	714

Note. Data collected using the OHSAA website at https://ohsaa.org/sports/football

In examining those teams qualifying for regional semi-finals from 2009 through 2019 in aa divisions, this study scrutinized $n = 585$ varsity football teams. These playoff appearances and championships are the primary dependent variables for this investigation. Additionally, previous school-year appearances in regional semi-finals to championships were examined as a predictor or independent variable given the fact that many of the teams had participated in regional-semifinals multiple times throughout the years being studied.

Instrumentation

The research questions investigated in this study were based explicitly on existing data that were publicly available. The OHSAA chronicles the tournament history of all of their sanctioned sports in sport-specific sections of their website. Data for teams qualifying in regional semi-finals, regional finals, state finals, and state champions have been collected and maintained by the OHSAA. Data pertaining to completive balance and divisional movement have only been released publicly for the 2017, 2018, and 2019 seasons. As a result, the researcher will utilize final computer ranking reports from year to year to assess whether or not teams changed divisions to compile the divisional movement data for the years of 2009 through 2016.

A second set of pre-existing data was secured through the public websites and databases of the Ohio Department of Education (ODE). ODE collects and publicly reports pubic school enrollment data collected electronically from the state's Education Management Information System (EMIS) for those students in attendance during the first week of October (Ohio Department of Education, 2020). Since non-public schools are not included in EMIS they are required to submit an average daily membership (ADM) report during the first week of October (Ohio Department of Education [ODE], 2020). These data were utilized to generate building

enrollment growth variables for the investigation into research question 1. Additionally, reports created annually by the ODE through EMIS, the District Profile Reports (CUPP Report) and Foundation Funding Reports contain publicly accessible data pertaining to open enrollment, socioeconomical disadvantaged students, district racial composition, number of high schools per district, and median income. These data are not reported to the state of Ohio by non-public schools.

This study also included district typology as an independent variable. The ODE created typology classifications in 1996 in order to "stratify districts for research purposes" (ODE, 2019, para. 1). The typology has been modified twice since to include more current census data but is still soundly based on "shared demographic and geographic characteristics" giving researchers the ability "to focus on a specific type of district, such as major urban districts or rural districts with high poverty" (ODE, 2019, para. 2). Figure 4 details Ohio's current typology codes which were utilized in this study as an independent variable (DYTP).

2013 Typology Code	Major Grouping	Full Descriptor	Districts Within Typology	Students Within Typology
1	Rural	Rural - High Student Poverty & Small Student Population	124	170,000
2	Rural	Rural - Average Student Poverty & Very Small Student Population	107	110,000
3	Small Town	Small Town - Low Student Poverty & Small Student Population	111	185,000
4	Small Town	Small Town - High Student Poverty & Average Student Population Size	89	200,000
5	Suburban	Suburban - Low Student Poverty & Average Student Population Size	77	320,000
6	Suburban	Suburban - Very Low Student Poverty & Large Student Population	46	240,000
7	Urban	Urban - High Student Poverty & Average Student Population	47	210,000
8	Urban	Urban - Very High Student Poverty & Very Large Student Population	8	200,000

Figure 4. Source: Typology of Ohio Schools. Amended January 2015

Procedures

This study received Youngstown State University (YSU) Institutional Review Board (IRB) approval prior to the data collection. The sample for this study (n = 585) was populated by identifying the Ohio public and private districts with appearances in varsity football regional semi-finals, regional finals, and state finals by division for the years of 2009 through 2019. This was achieved by examining the official Ohio High School Athletic Association (OHSAA) playoff brackets for each division for each year of the present study. Simultaneously, the researcher utilized these brackets to evaluate and record whether or not each participating team had a previous year playoff appearance (PYP).

Team names and regional semi-finals, regional finals, and state finals appearances were recorded in a secure spreadsheet. These data were utilized as a dependent variable (playoff depth - DEP) therefore it was coded and prepared for analysis where regional semi-finals = 1, regional finals = 2, state finals = 3, and state champions = 4. An additional dependent variable, championships (CHMP) was coded where regional semi-finals, regional finals, and state finals =0, and state champions = 1. The researcher also recorded the unique OHSAA number for each team and added the last two digits of the year creating the unique identifier for each team by year.

Given the controversy surrounding Ohio's Competitive Balance Model, the researcher secured and recorded additional data for districts that have changed divisions in one or more of the examination years (2009-2019) in order to populate the divisional movement independent variable (MOV). Divisional movement was chosen over competitive balance in general since movement between divisions is the primary instrument of competitive balance and competitive balance movement information was only recently reported publicly. OHSAA's Competitive

Balance Program which creates tiers and counts students based on how the student came to the district. OHSAA (2019) defined the state's multiplier model as follows:

- There are three Tiers (Tier 0, Tier 1, Tier 2) and each Tier is a multiplier;
- Tier 0 = each student on a particular team's roster meeting the criteria of this factor, multiplied by 0 (so that number will always be 0);
- Tier 1 = each student on a particular team's roster meeting the criteria of this factor, multiplied by 1 (so that number will always be 1);
- Tier 2 = each student on a particular team's roster meeting the criteria of this factor, multiplied by the sport specific factor (Football = 3);
- If a student has at least one parent who currently resides in the district they are counted at Tier 0;
- If the student has maintained continuous enrollment in the district since grade seven student is counted as Tier 1;
- In all other situations the student is a Tier 2; and
- Once Tier placement for all students is determined, the following formula is applied:

  Initial Enrollment Count (from EMIS - all students in Grades 9 through 11 in a school) + Additional Roster Count (the students on a respective team, which is determined by multiplying each student on the Initial Roster Count by either Tier 0, Tier 1 or Tier 2 Sport Specific Factor and adding them together) = Adjusted Enrollment Count (count used for tournament division placement; calculated by the OHSAA office) (para. 3).

This complicated model also includes sports specific factors and additional guidelines for both public and private schools leaving Ohio high school teams uncertain as to which team they

might appear on from one year to the next. Data for divisional movement (MOV) independent variable were attained directly from OHSAA databases for the 2017 through 2019 seasons. The researcher utilized final computer ranking reports from each year looking up each individual team to assess whether or not they had changed divisions for the years of 2009 through 2016.

Data for the additional variables were secured from a variety of resources available on the Ohio Department of Education (ODE) website. District enrollment data were downloaded from ODE's Enrollment Data page (http://education.ohio.gov/Topics/Data/Frequently-Requested-Data/Enrollment). Fall enrollment headcount reports were used for public district and building data. Fall enrollment ADM reports were utilized for non-public building data, and chartered, nonpublic student enrollment data were used for non-public district data. Building enrollment growth (BEG) was calculated by subtracting the previous year's total enrollment from the present year's. Subsequently, the researcher coded building enrollment growth where growth is 1 and no growth is 0.

The data for the independent variables of percent open enrollment (POE) and median income (MINC) were found in ODE foundation funding reports. Median income was unexaminable for private, non-public high schools and their percentage of open enrollment students was recorded as 100% since they do not have residential students and are technically total open enrollment schools.

Data for the independent variables percent socioeconomically disadvantaged (ECD), percent non-White (PNW), and whether the district had more than one high school (ORM), were secured using the district profile reports (CUPP Report). These variables were not examined for private, non-public high schools and districts since these data are not publicly available.

All of the data collected were added to a secure spread sheet for those high schools and districts determined to be participants in this study resultant from their appearances in varsity football regional semi-finals, regional finals, and state finals.

Proposed Data Analysis

Multiple analytical tests were employed using IBM SPPS Statistics to conduct the analysis. Each statistical test was chosen based on the data being examined, their intended usage, and their respective reliabilities. In order to determine whether or not the "Flutie Effect" was observable in interscholastic athletics (research question 1), state championship victories (dependent variable) was examined in relation to the building enrollment growth (independent variable). Fisher's exact test was chosen given its appropriateness for evaluating the binary categorical structure of both variables in which the data fit into a 2 X 2 contingency table as is the case with the variables being examined in this investigation (Field, 2013). This instrument provides a "way of computing the exact probability of the chi-square statistic" and it is most appropriate for small samples, which makes it suitable for this study (Field, 2013, p. 724).

The initial investigation into research question 2 began with the dependent variable (playoff depth) which was evaluated against the independent variables of percentage of district open enrollment (POE) and previous year playoff appearances at the regional semi-finals level and beyond (PYP). IBM SPSS statistics was utilized to run the univariate analysis of variance process yielding between-subject factors, descriptive statistics including mean and standard deviation, and Levene's test of equality and variance which measures the homogeneity of variance between variables. The results of these tests provide greater understanding with respect to the association between these data thereby enabling the researcher to further examine potential patterns, frequencies, and variations in means and standard deviations (Tabachnick & Fidell,

2013, p. 69). Ultimately, Pearson's correlation was employed given its specific design for quantifying the strength of the association between variables (Field, 2013). The output of this test, Pearson's correlation coefficient (r), is a statistical measure of the strength of positive or negative correlations. The coefficient of determination (R^2) can be calculated by squaring r as a means of providing greater insight into the amount of variability between variables (Field, 2013). The dependent and independent variables analyzed using Pearson's correlation are shown in Table 2.

Table 2

Description of Variables – Research Question 2

Dependent Variable (DV)	**Independent Variables (IV)**
Playoff Depth (DEP)	% Open Enrollment (POE)*
	Typology (TYP)*
	% Socioeconomically Disadvantaged (ECD)*
	% Non-white (PNW)*
	Median Income (MINC)*
	One or More High Schools (ORM)*
	Previous Year Playoffs (PYP)

Note. Variables marked with an asterisk (*) are only available for public school districts and community schools.

Significant correlations from the Pearson test prompted a test of between-subject effects and the Scheffe Post Hoc Analysis of Variance test to deepen the investigation into the relationship between these variables.

Multiple methods were also utilized to investigate research question 3. The independent variables of school type (POP), divisional movement (MOV), and previous year playoff appearances (PYP) were examined against the dependent variable of state championships (CHMP). For the initial inquiry into the strength of the relationship between school type (POP) and championships (CHMP), Fisher's exact test was chosen. Pearson's chi-square test was employed for both the initial analysis and the secondary analysis with the inclusion of divisional movement (MOV) and previous year playoffs (PYP) given its appropriateness in measuring the presence of a relationship between categorical variables (Field, 2013).

Research question 4 was an examination of public schools only due to the lack of available data. Statistics were examined through the use of a Pearson correlation. Table 3 displays the dependent and independent variables that were scrutinized.

Table 3

Description of Variables – Research Question 4

Dependent Variables (DV)	**Independent Variables (IV)**
Playoff Depth (DEP)	Median Income (MINC)
Championships (CHMP)	One or More High Schools (ORM)
	% Socioeconomically Disadvantaged (ECD)
	% Non-white (PNW)
	Typology (TYP)
	% Male (PMLE)
	County (CTY)

Research Limitations

Educational research such as this is prone to external validity threats. As such, it is imperative to consider the potential impact of external factors when determining whether or not "a causal relationship…exists between your program and the intended outcome" (Trochim, Donnelly, & Arora, 2016, p. 210). In the present study, post season playoff depth, state championship victories, and enrollment growth are all impacted by countless external and intervening variables that are not being measured in the present study. This is the specific reason why the coefficient of determination (R^2) was utilized to avoid making "direct conclusions about causality from a correlation"(Field, 2013, p. 276). Further, in interpreting the significant

findings of the study the researcher was deliberate in presenting these results as observations, correlations, or other interactions while avoiding assertions of potential cause-effect relationships (Trochim, Donnelly, & Arora, 2016).

While external validity threats are a factor, internal validity threats are less prevalent in the present examination. This study strictly considers extant quantitative data utilizing proven and respected statistical measures. One possible threat to internal validity is the instrumentation and process utilized by both the ODE and the OHSSA to collect that data. In each case they are depending on data entry from various personnel in each unique school district and building in the state. The likelihood of errors and omissions in this process is strong; however, it is unlikely to have a significant impact on the data being studied in the present study. Similarly, the collection of the data for the present analysis was time-consuming, intensive, and complicated in view of the variability of format and substance of the databases and sources these data were secured from. Errors or omissions on the part of the researcher, while unlikely, could present a selection-history threat (Trochim et al., p. 214).

A final possible limitation of the present study is the fact that it was deliberately limited in scope. This study was designed to examine factors relating to and predictive of deep playoff success in Ohio high school varsity football with heavy focus on those factors commonly associated as advantages created by school choice initiatives. The participants in the present study (n=585) only included those teams that made it to regional semi-finals and beyond. As a result, the teams being studied were perhaps the most elite teams in each division each year. This study considers factors associated with success exclusively and therefore does not consider the difference between those teams that were successful and those that were not.

Summary

This study has the potential to answer critical questions about the potential advertising effects ("Flutie Effect") of successful varsity football teams in Ohio, the impact of enrollment and school size on postseason qualification, the perceived advantages of private schools over public schools, and the predictive strength of carefully selected demographic and contextual variables on postseason qualification. Moreover, the results of this statistical analysis could be among the first empirical data to influence the discussion of issues relating to interscholastic athletics that have previously been based on feeling and conjecture alone. The subsequent chapter will detail the findings of the study.

Chapter 4

Results

This study was explicitly designed to examine the relationship between Ohio interscholastic appearances in varsity football regional semi-finals, regional finals, state championships and a defined set of variables prompted in part by a thorough review of the existing literature. The researcher was compelled to conduct this study using quantitative methods in order to generate data for the consumption and consideration of state-level policymakers at the OHSSA and in Ohio's schools and locker rooms. Further, this study is in part a response to the call for researchers to carefully scrutinize the effects of educational policy given the compelling equitability of education as the "lifeblood of a free society and a thriving economy (Gray, 2012, p. 55). Specifically, the following research questions are to be addressed:

1. Is the Flutie Effect observable in interscholastic athletics?
2. Is there a relationship between open enrollment and Ohio high school football team appearances in varsity football regional semi-finals, regional finals, state finals, and those that win state championships?
3. Is there an observable private school advantage in varsity football championship outcomes in the State of Ohio?
4. Are there district factors that serve as significant predictors for Ohio high school football team appearances in varsity football regional semi-finals, regional finals, state finals, and those that win state championships?

This chapter details the results of this quantitative, causal-comparative, non-experimental examination. Categorical and continuous variables were examined for $n = 586$ high school football teams appearing in regional semi-final, regional final and championship games playoff

games from 2009 through 2019. Multiple analytical methods were employed through IBM SPSS Statistics (version 24) yielding quantitative results that inform the present investigation into each of the four research questions being examined.

Descriptive Statistics

The sample examined in this study includes $n = 586$ high school football teams. Some high schools enjoyed multiple appearances in regional semi-finals, regional finals, finals, or championships throughout the timeframe being investigated in this study. The design of this study warrants the classification of each team's appearance in a given year as a separate participation in the analysis given that the continuous and categorical variables will in all likelihood be unique from year to year for each team.

Table 4 indicates the participants by depth in the final four rounds of the Ohio high school football playoffs. These data include all divisions for the years of 2009 through 2019. As anticipated, the number of participants incrementally decreases as the playoffs deepen.

Table 4

Depth in the Playoffs

	Frequency	Percent
Regional Semi-Finalist	293	50.1
Regional Finalist	145	24.8
Finalist	74	12.6
Champion	73	12.5

Table 5 provides a breakdown of the frequency and percent of state champions and teams that participated in the regional semi-finals, regional finals, or finals without winning the championship.

Table 5

Championship Teams

	Frequency	Percent
Regional SF to Finalist	512	87.5
Champion	73	12.5

Table 6 outlines the movement of teams by division leading into the football season in which they appeared in the regional semi-final playoffs or deeper.

Table 6

Divisional Movement

	Frequency	Percent
Down 2 Divisions	4	0.7
Down 1 Division	58	9.9
Same Divisions	497	85.0
Up 1 Divisions	26	4.4

As Table 6 indicates the majority of teams remained in the same division that they competed in during the previous season (n = 497).

Table 7 provides an overview of building enrollment growth indicating that the majority of schools (n = 314) did not have an increase in building enrollment in the school year immediately following their appearance in the regional semi-final playoff game or deeper.

Table 7

Building Enrollment Growth in the Year after the Playoff Appearance

	Frequency	Percent
Enrollment <= Previous Year	314	53.7
Enrollment > Previous Year	215	36.8

This measure of building growth was not conducted for the 2019-2020 season resulting from the absence of needed growth data from the subsequent school year.

Table 8 depicts the number of public schools and private schools being examined. The number of public-school qualifiers exceeds the number of private school qualifiers by 337.

Table 8

School Type - Public or Private

	Frequency	Percent
Public School	461	78.8
Private School	124	21.2

Table 9 shows the top five counties by frequency of deep playoff appearance and state championship.

Table 9

Frequency of Regional Semi-Finals, Regional Finals, Championship Games, and State Championships by County

	Frequency	Percentage
Franklin	47	8
Cuyahoga	42	7.2
Hamilton	42	7.2
Summit	30	5.1
Montgomery	27	4.6

The complete list of counties can be found in Appendix A. As Table 9 indicates, teams from these five counties account for 32.1% of the deep playoff and state championships in varsity football from 2009 through 2019.

Table 10 displays the number and percent of qualifying teams by typology indicating that the greatest number (n = 106) of qualifiers comes from the small town, low poverty, and small population typology. Private schools are not included in this statistic as they are not assigned typology codes by the State of Ohio.

Table 10

District Typology

	Frequency	Percent
1 - Rural - High Poverty/Small Population	46	7.9
2 – Rural - Average Poverty/Very Small Population	71	12.1
3 - Small Town - Low Poverty/Small Population	106	18.1
4 - Small Town - High Poverty/Average Population	42	7.2
5 - Suburban - Low Poverty/Average Population	62	10.6
6 - Suburban - Very Low Poverty//Large Population	67	11.5
7 - Urban - High Poverty/Average Population	53	9.1
8 - Urban - Very High Poverty/Very High Population	14	2.4

As indicated in Table 11, the majority of qualifying high schools are from districts with only one high school (n = 542).

Table 11

Number of High Schools in District

	Frequency	Percent
Single High School	542	92.6
Multiple High Schools	43	7.4

Table 12 denotes that the number of qualifying teams that were not previous year regional semi-final or deeper playoff qualifiers (n = 374) exceeds those that were (n = 211) by 163.

Table 12

Previous Year Playoff Appearance

	Frequency	Percent
No Regional Semi-Final or Deeper Playoff Appearance	374	63.9
Regional Semi-Final or Deeper Playoff Appearance	211	36.1

Preliminary Analysis

The data collected for this examination include both categorical and continuous variables from 585 unique participants. Participants included qualifying public (n = 461) and private (n = 124) high school football teams from the years of 2009 through 2019. Since this study consists of multiple response and analytical measures it is important to analyze the internal consistency of select variables. Table 13 provides the basic descriptive statistics for the continuous variables.

Table 13

Basic Statistics for Continuous Variables

	POE	%NOE	ECD	PNW	MINC	PMLE
N	585.00	585.00	461.00	461.00	413.00	585.00
Mean (%)	30.01	23.37	31.41	15.86	36782.15	55.08
Std. Deviation (%)	39.12	40.40	24.47	24.70	10427.10	13.19
Skewness	1.02	1.31	1.38	2.14	1.62	2.44
Kurtosis	-0.65	-0.14	1.43	3.84	3.09	7.32

As Table 13 indicates, there is missing data for the variables of percent economically disadvantaged students (ECD), percent non-White (PNW), and median income (MINC). In the case of the percentage of economically disadvantaged students and non-White students, this is a result of these data not being collected by the State of Ohio for private schools. Median income data are also not available for private school nor was this data available for the 2019-20 school year. These data will only be utilized for investigating research question 4 which does not include private schools.

Skew and kurtosis values above or below 0 indicate a possible abnormality with good skewness being |2| and kurtosis |5| (Field, 2013, p. 21). In Table 13, good skewness is observable for the variables percent open enrollment (POE), percent net open enrollment (%NOE), percent socioeconomically disadvantaged (ECD), and median income (MINC). Good kurtosis is shown for variables of percent open enrollment (POE), percent net open enrollment (%NOE), percent socioeconomically disadvantaged (ECD), percent non-White, and median

income (MINC). The irregular kurtosis and skewness of percent male (PMLE) is not unanticipated given the small number of participants that are exclusively all male private schools (n = 38). Table 13 also indicates a positive skew for the percent of non-White students (PNW). This is resultant from the large number of participants (n = 148) observed to be populated with all White students.

Research Question 1 - *Is the Flutie Effect observable in interscholastic athletics?*

Two variables were examined in investigating this research question. The dependent variable championships (CHMP) was coded so that schools participating in regional semi-final, regional final and championship games are 0 and those that win championship games are 1. The independent variable, building growth data (BEG), was coded where participating schools whose enrollment stayed the same or decreased in the subsequent year are 0 and those that saw an increase are 1. Fisher's exact test was chosen due to the binary categorical structure of both variables (Field, 2013). These results are presented in Table 14 and Figure 5.

Table 14

Cross-tabulation of Growth and Championships

	No Growth	Growth	Total
Regional Semi-Finals, Regional Finals, State Finals Appearance	272	191	463
State Champions	42	24	66
Total	314	215	529

Table 14 indicates that 81 less regional semi-finals to finals qualifying teams (n = 191) realized an enrollment increase in the year following their playoff appearance than those that did

not (n = 272). Also shown is the fact that 18 less championship teams experienced an enrollment increase in the year following their playoff appearance (n = 24) than those that did not (n = 42). Figure 5 depicts a visual representation of this analysis.

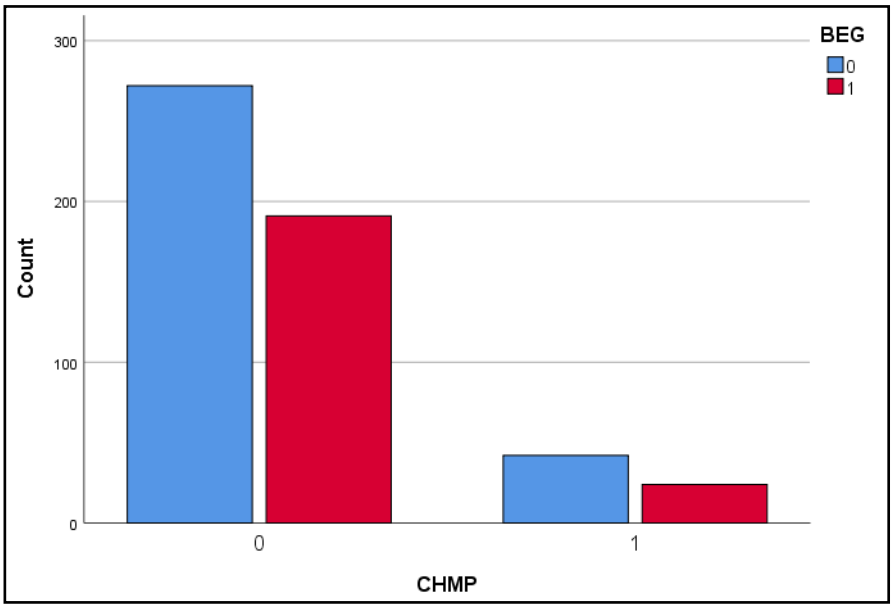

Figure 5. Building Enrollment Growth and Championships

Fisher's exact test yields non-significant results (p =.504) suggesting no significant relationship between building enrollment growth and high school football championships. Additional Fisher's exact tests were conducted for public schools (p = .719) and private schools (p = 1.00) again suggesting no significant relationship between the independent variable of championships (CHMP) and the dependent variable building growth (BEG). Therefore, we accept the null hypothesis.

Research Question 2 - *Is there a relationship between open enrollment and Ohio high school football team appearances in varsity football regional semi-finals, regional finals, state finals, and those that win state championships?*

To investigate research question 2, the dependent variable playoff depth (DEP) was evaluated against the independent variables of percentage of district open enrollment (POE). The playoff depth variable was coded categorically where 1 = regional semi-final qualifier, 2 = regional final qualifier, 3 = finals qualifier, and 4 = state champion. Univariate analysis of variance was deployed as the primary method of data analysis given its effectiveness in comparing means to determine statistical significance (Tabachnick & Fidell, 2013, p. 69).

Correlation and interactions' effects were also examined for the independent variables typology (TYP), percent socioeconomically disadvantaged (ECD), percent non-White (PNW), median income (MINC), one or more high schools (ORM), and previous year regional semi-final or deeper playoff appearances (PYP). Variables that needed coded include Previous Year Playoffs (PYP) where No = 0 and Yes = 1 and one or more high schools (ORM) where one high school = 0 and more than one high school = 1.

Table 15 displays the distribution of between-subject factors based on the dependent variables of playoff depth (DEP) and previous year playoffs (PYP).

Table 15

Distribution of Between-subjects Factors

		N
DEP	Regional Semi-Final	247
	Regional Final	114
	State Final	61
	State Champion	39
PYP	No Previous Year Appearance	311
	Previous Year Appearance	150

As Table 15 indicates, the greatest number of subjects (n = 247) were regional semi-final qualifiers and 161 less subjects had a previous year regional semi-final appearance (n = 114) than those that did not.

Table 16 contains descriptive statistics for the dependent variables of playoff depth (DEP) and previous year playoff appearances (PYP).

Table 16

Descriptive Statistics

DEP	PYP	Mean (%)	Std. Deviation (%)	N
Regional Semi-Final	No Previous Year Appearance	7.30	8.96	191
	Previous Year Appearance	8.42	10.55	56
Regional Final	No Previous Year Appearance	17.53	24.02	77
	Previous Year Appearance	25.68	25.34	37
State Final	No Previous Year Appearance	6.45	13.39	31
	Previous Year Appearance	15.56	16.91	30
State Champion	No Previous Year Appearance	8.33	12.31	12
	Previous Year Appearance	8.33	12.01	27
Total	No Previous Year Appearance	9.79	15.27	311
	Previous Year Appearance	14.09	18.13	150
	Total	11.19	16.36	461

As indicated in Table 16, there are small standard deviations indicating a relatively close spread of the data around the mean (Field, 2013). Teams appearing as regional finals' qualifiers with previous year playoff appearances are shown to have the largest standard deviation. Levene's test of equality of error variances indicated that for the percentage of open enrollment students' variable the variances are unequal for playoff depth (DEP) and previous year playoff appearances (PYP) $F(7, 453) = 88.551$, $p < .001$. This indicates that the variances are significant between playoff depth (DEP) and previous year playoff appearances (PYP).

Table 17 shows the results of the Pearson correlation test where percent open enrollment is the independent variable (POE) and typology (TYP), percent socioeconomically disadvantaged (ECD), percent non-White (PNW), median income (MINC), one or more high schools (ORM), and previous year playoffs (PYP) are the dependent variables.

Table 17

Pearson Correlation of Percent Open Enrollment, District Factors, and Previous Year Playoff Appearances

	POE	TYP	ECD	PNW	MINC	ORM	PYP
POE	-	-0.056	0.01	-0.039	0.032	-0.075	.123**
TYP		-	.286**	.708**	.207**	.332**	.104*
ECD			-	.617**	-.647**	-0.023	-0.065
PNW				-	-.189**	.276**	0.037
MINC					-	.287**	.104*
ORM						-	0.016
PYP							-

** Correlation is significant at the 0.01 level (2-tailed)
* Correlation is significant at the 0.05 level (2-tailed)

Table 17 shows a statistically significant positive correlation between previous year playoff appearances (PYP) and the percentage of open enrollment students, (POE) $r(459) = .12$, $p = .008$. While statistically significant $r = .12$ is considered to be a small effect measure meaning

that it explains little about the variability between variables (Field, 2013). Table 18 displays the between-subject effects for percent open enrollment (POE), playoff depth (DEP), and previous year playoffs (PYP).

Table 18

Tests of Between-subject Effects

Source	Type III Sum of Squares	Mean Square	F	Sig.	Partial Eta Squared
Corrected Model	15765.52a	2252.22	9.50	0.00	0.13
Intercept	38248.92	38248.92	161.34	0.00	0.26
Playoff Depth (DEP)	12685.07	4228.36	17.84	0.00	0.11
Previous Year Playoff (PYP)	1354.54	1354.54	5.71	0.02	0.01
DEP * PYP	1312.15	437.38	1.85	0.14	0.01
Error	107389.98	237.06			
Total	180861.06				
Corrected Total	123155.50				

Note. R Squared = .128

As indicated in Table 18, there are significant interaction effects between the percentage of open enrollment (POE) and both playoff depth ($p < .001$) and previous year playoffs ($p = 0.017$). The partial eta squared indicates that there is no practical significance for PYP or the interaction between DEP and PYP ($\eta 2 = .01$) As indicated in Table 18, DEP is the only variable providing weak level of support to the model ($\eta 2 = .11$)

The table also suggests no significant interaction effects between the percentage of open enrollment (POE) and playoff depth (DEP) and previous year playoff (PYP) when measured jointly.

Table 19 displays the results of the post hoc test of variance.

Table 19

Scheffe Post Hoc Analysis of Variance

					95% Confidence Interval	
(I) DEP	(J) DEP	Mean Difference (I-J)(%)	Std. Error(%)	Sig.	Lower Bound	Upper Bound
Regional Final	Regional Semi	12.62*	1.74	0.000	7.73%	17.51%
	State Final	9.25*	2.44	0.003	2.39%	16.10%
	State Champion	11.84*	2.86	0.001	3.83%	19.86%

Note. The error term is Mean Square (Error) = 237.064. * The mean difference is significant at the .05 level.

As indicated in Table 19 and Figure 6, the mean difference is significant for those teams qualifying for regional finals when compared to those qualifying for regional semi-finals ($p <$ .001), championship games ($p = .003$), and those winning championship games ($p = .001$). Figure 6 displays estimated marginal means of the percent open enrollment across the playoff depth levels where 1 = regional semi-finals, 2 = regional finals, 3 - state finals, and 4 = state champions. Previous year playoff status is shown where 0 = no previous year playoffs and 1 = previous year playoffs.

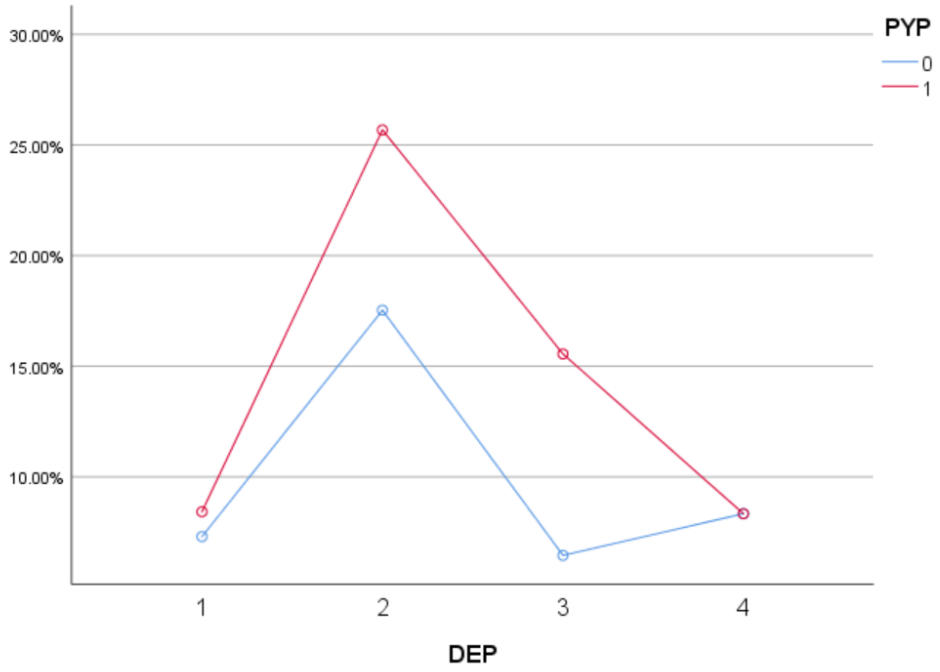

Figure 6. Estimated Marginal Means of POE (DEP, PYP)

As indicated in Figure 6, there is no significant difference in the percentage of open enrollment for those teams who did not have previous year playoff appearances at the regional semi-finals', state finals', or state champions' level in computed percentage of open enrollment. However, at the regional finals' level there is a significant difference in the percentage of open enrollment percentage for teams that did not have previous year playoff appearances. Similarly, there are no significant difference for the teams who did have previous year playoff appearances at the regional semi-finals' or state champion levels in the computed percentage of open enrollment but there are observable significant differences for the districts of teams with previous year playoff appearances at both the regional final and state final levels in percentage of open enrollment.

These findings prompted the researcher to further scrutinize the relationship between the playoff depth (DEP) and previous year playoff appearances (PYP). Pearson's correlation yielded

statistically significant results $r(583) = .31$, $p < .001$. Similarly, statistically significant results $r(583) = .26$, $p < .001$ were observable when running Pearson's correlation for championship victories (CHMP) and previous year playoff appearances (PYP).

Research Question 3 - *Is there an observable private school advantage in varsity football championship outcomes in the State of Ohio?*

Multiple methods were utilized to investigate research question 3. The independent variables of school type (POP), divisional movement (MOV), and previous year playoff appearances (PYP) were scrutinized against the dependent variable of state championships (CHMP), which was coded so that schools participating in regional semi-final, regional final and championship games are 0 and those that win championship games are 1. Independent variables were coded as follows: School type (POP) - Public 1, Private 2; Divisional movement (MOV) - Moved down -1, No Movement 0, Moved up +1; Previous Year Playoffs (PYP) - No 0, Yes 1.

For the initial analysis of the relationship between school type (POP) and championships (CHMP), Fisher's exact test was chosen due to the binary categorical structure of both variables (Field, 2013). Pearson's chi-square test was employed for both the initial analysis and the secondary analysis with the inclusion of divisional movement (MOV) and previous year playoffs (PYP) given its strength in indicating whether or not a relationship is observable between categorical variables.

Table 20 contains cross-tabulation results for the independent variable playoff depth (DEP) and the dependent variable public or private (PYP).

Table 20

Cross-Tabulation of Playoff Appearance and School Type

	Public	Private	Total
Regional Semi-Final to State Final	422	90	512
State Champions	39	34	73
Total	461	124	585

Table 20 indicates that $n = 332$ more public schools ($n = 422$) than private schools ($n = 90$) were regional semi-final to state final qualifying teams. In addition, five more public schools ($n = 39$) than private schools ($n = 34$) were state champions.

Figure 7 depicts a visual representation of this crosstab analysis.

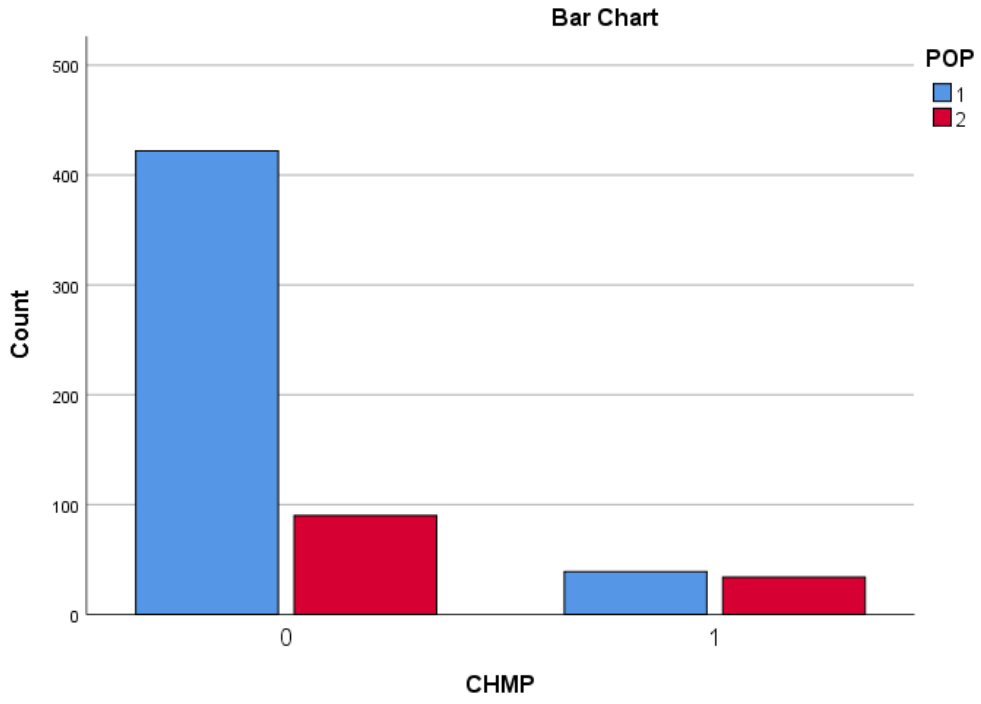

Figure 7. School Type and State Championships

There is latent statistical significance in the fact that 27.4% of the private schools that qualified for regional semi-finals advanced to win the state championship title, while only 8.5% of public-school qualifiers enjoyed the same success.

Fisher's exact test yields significant results ($p < .001$) suggesting a statistically significant relationship between school type (public or private) and regional semi-final to championship appearances. Therefore, we reject the null hypothesis. The Pearson chi-square test also yielded statistically significant findings X^2 (1, $N = 585$) = 31.16, $p < 0.001$) further indicating the strength of the relationship between school type and regional semi-final to championship appearances.

Table 21 provides cross-tabulation results for the variables public or private (POP), divisional movement (MOV), and championships (CHMP).

Table 21

Cross Tabulation of Divisional Movement, School Type, and State Championship

		Down Division	Same Division	Up Division	Total
Public	Regional Semi-Final to State Final	42	366	14	422
	State Champions	7	31	1	39
	Total	49	397	15	461
Private	Regional Semi-Final to State Final	13	70	7	90
	State Champions	0	30	4	34
	Total	13	100	11	124
Total	Regional Semi-Final to State Final	55	436	21	512
	State Champions	7	61	5	73
	Total	62	497	26	585

As evidenced in Table 21, the majority of public and private schools examined did not move divisions over the summer leading into their playoff appearances. When examining movement 28 more public school teams moved down a division (n = 42) than moved up a division (n = 15) with most remaining in their current division (n = 397).

Figure 8 provides a visual representation of these measurements.

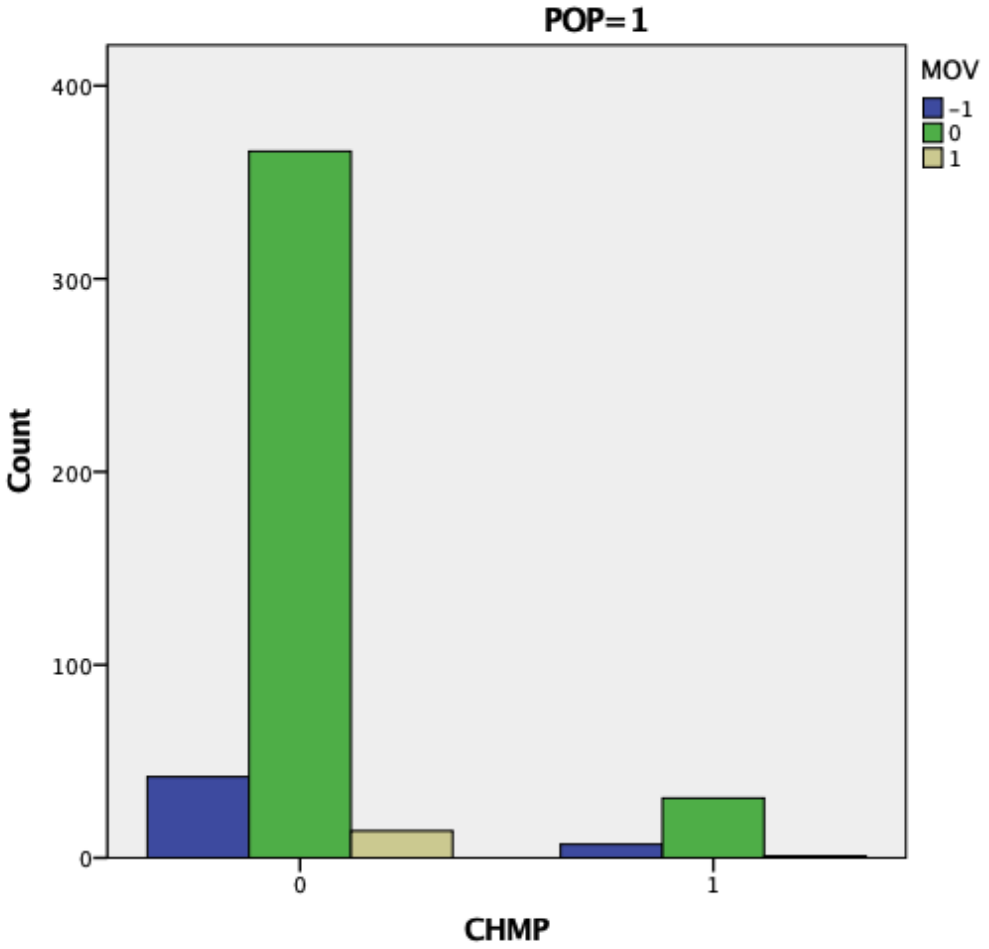

Figure 8. Public School Divisional Movement and State Championships

Table 21 also indicates that six more private school teams moved down a division (n = 13) than moved up a division (n = 7) with most remaining in their same division (n = 70).

Figure 9 provides a visual representation of these measurements.

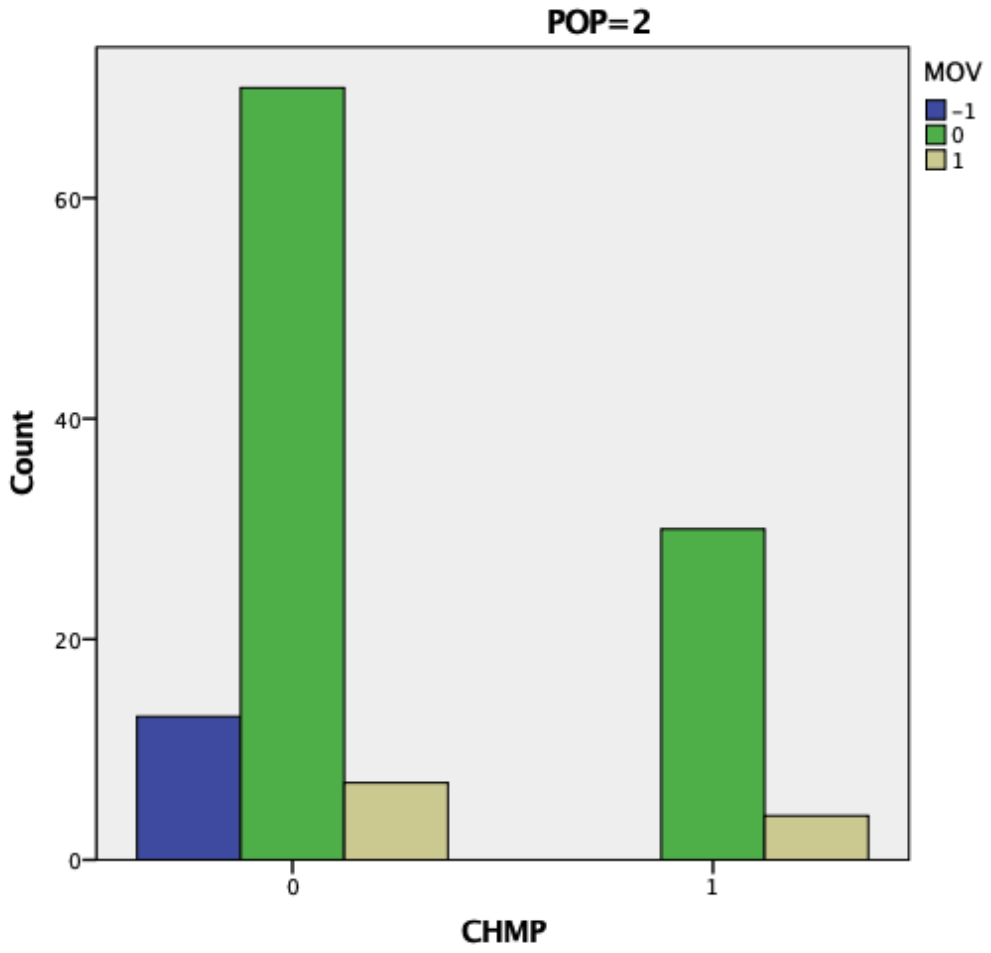

Figure 9. Private School Divisional Movement and State Championships

Table 22 presents results from a Pearson chi-square test examining the relationship between divisional movement (MOV) and state championships (CHMP) for both private and public schools.

Table 22

Pearson Chi-Square Test (School Type, Divisional Movement, and State Championships)

		Value	df	Asymptotic Significance (2-sided)
Public	Pearson Chi-Square	2.427b	2	0.297
	N of Valid Cases	461		
Private	Pearson Chi-Square	5.688c	2	0.058
	N of Valid Cases	124		
Total	Pearson Chi-Square	1.185a	2	0.553
	N of Valid Cases	585		

As Table 22 indicates, the Pearson chi-square test did not reveal a statistically significant relationship between divisional movement and state championships for public schools X^2 (2, N = 462) = 2.427, p = 0.297) or private schools X^2 (2, N = 124) = 5.688, p = 0.058). The results for private schools do indicate a near significant relationship (p = 0.058) where p < = 0.05 is statistically significant (Field, 2013).

Table 23 contains cross-tabulation results for the variables public or private (POP), previous year playoffs (PYP), and state championships (CHMP).

Table 23

Cross-Tabulation of School Type, State Championship, and Previous Year Playoffs

		No Previous Year Appearance	Previous Year Appearance	Total
Public	Regional Semi-Final to State Final	299	123	422
	State Championship	12	27	39
	Total	311	150	461
Private	Regional Semi-Final to State Final	52	38	90
	State Championship	11	23	34
	Total	63	61	124
Total	Regional Semi-Final to State Final	351	161	512
	State Championship	23	50	73
	Total	374	211	585

Table 23 also specifies that 27 more state championship teams had a playoff appearance in the preceding year (n = 50) than those without a previous year playoff appearance (n = 23). Also, that 15 more public schools (n = 27) with previous year playoff appearances in the regional semi-finals or deeper won state championships than those without previous year playoff appearances (n = 12).

Figure 10 provides a visual representation of these measurements where the (CHMP) variable is represented along the bottom of the figure with 0 indicating a regional semi-finals, regional finals, or state finals appearance and 1 indicating a state championship victory.

The previous year playoff variable (PYP) is displayed with 0 indicating no previous year playoff appearance and 1 indicating a previous year playoff.

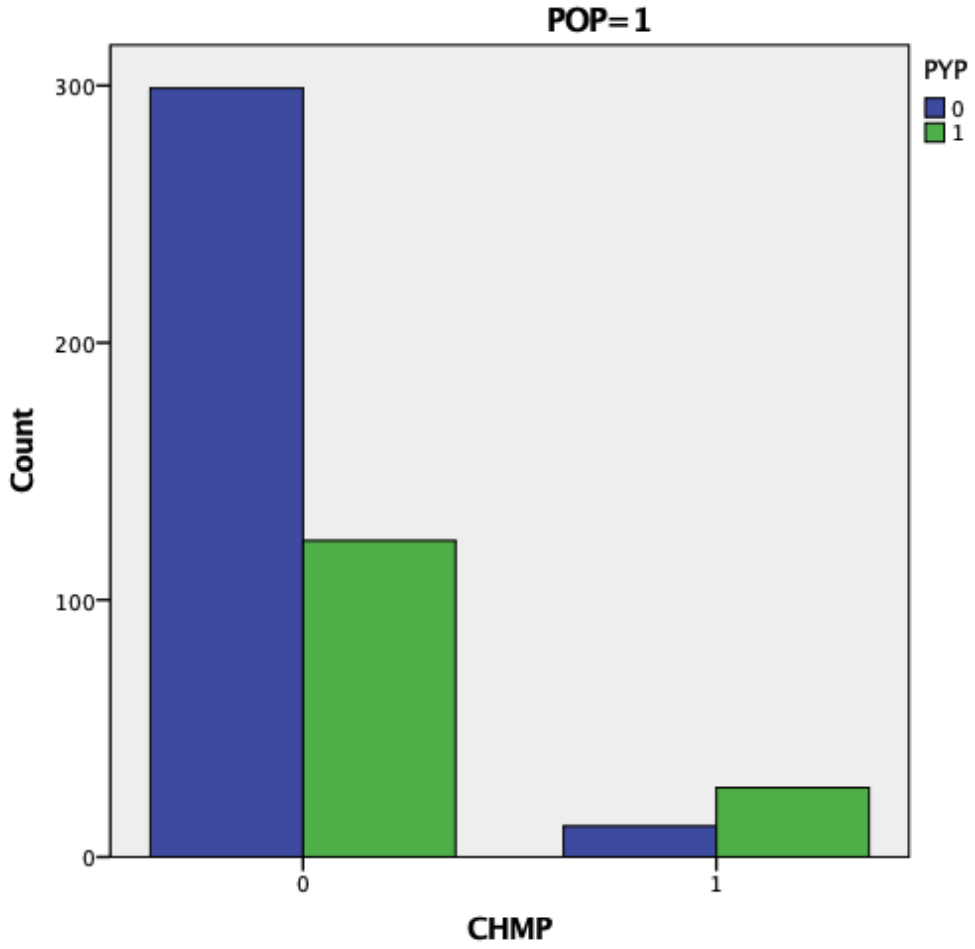

Figure 10. Public School State Championships and Previous Playoff Appearances

Figure 10 shows that previous year playoff appearances (PYP) were more prominent among those teams that won state championships than those teams that did not. Further, Table 23 denotes that there are 12 more private schools (n = 27) with previous year playoff appearances in the regional semi-finals or deeper won state championships than those without previous year playoff appearances (n = 12).

Figure 11 provides a visual representation of these measurements where the championship (CHMP) variable is represented along the bottom of the figure with 0 indicating a regional semi-finals, regional finals, or state finals appearance and 1 indicating a state championship victory. The previous year playoff variable (PYP) is displayed with 0 indicating no previous year playoff appearance and 1 indicating a previous year playoff.

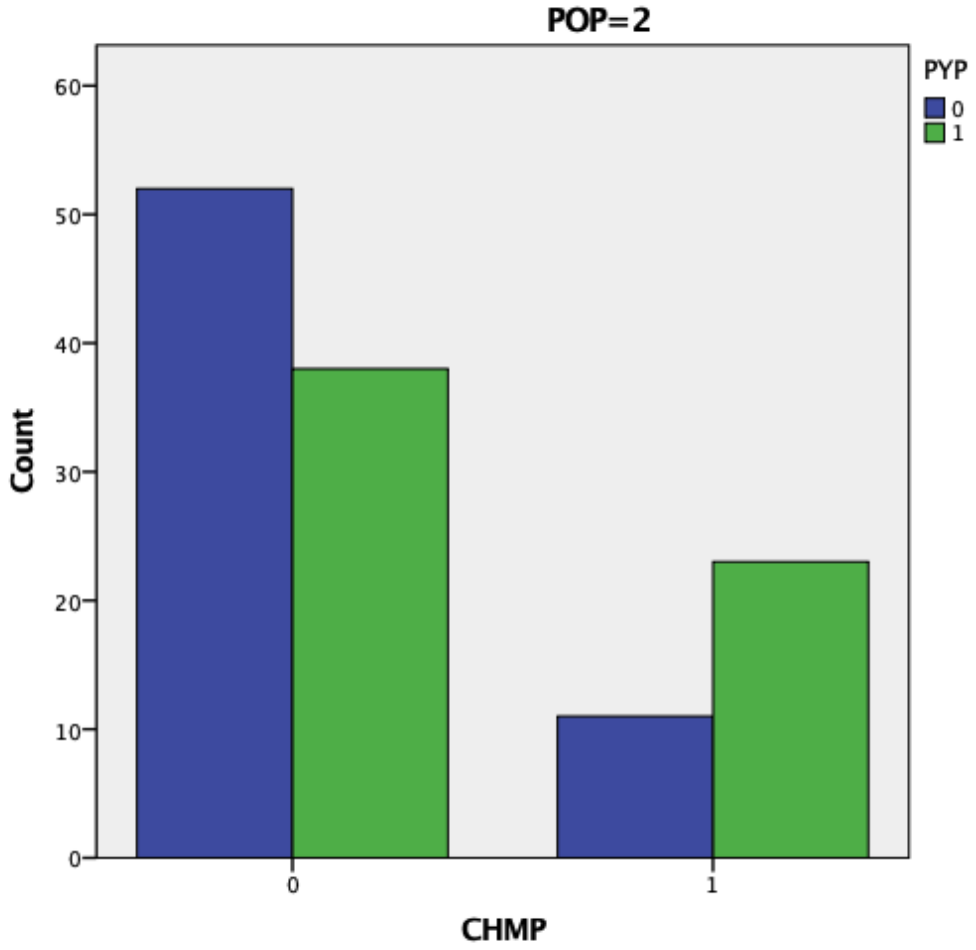

Figure 11. Private School State Championships and Previous Playoff Appearances

Table 24 presents results from the Pearson chi-square test evaluating the variables public or private (POP), previous year playoffs (PYP), and state championships (CHMP).

Table 24

Pearson Chi-Square Test (School Type, Previous Year Playoff Appearance, and State Championships)

		Value	df	Asymptotic Significance (2-sided)
Public	Pearson Chi-Square	26.132c	1	0.000
	N of Valid Cases	461		
Private	Pearson Chi-Square	6.382d	1	0.012
	N of Valid Cases	124		
Total	Pearson Chi-Square	38.029a	1	0.000
	N of Valid Cases	585		

As Table 24 displays, the Pearson chi-square test revealed a statistically significant relationship between previous year playoffs and state championships for public schools, X^2 (1, N = 461) = 26.13, $p < 0.001$, and private schools X^2 (1, N = 124) = 38.03, $p = 0.012$.

Research Question 4 - *Are there district factors that serve as significant predictors for Ohio high school football team appearances in varsity football regional semi-finals, regional finals, state finals, and those that win state championships?*

To investigate research question 4, the dependent variables of playoff depth (DEP) and state championships (CHMP) were evaluated against a series of independent variables derived from the following district factors: percentage of economically disadvantaged students (ECD),

percentage of non-White students (PNW), percentage of male students (PMLE), median income (MINC), typology (TYP), county (CTY), and whether or not the district had one or more high schools (ORM). The coding and treatment of these variables were consistent with the manner in which it was previously described in this chapter. Pearson's correlation was chosen as the ideal test to quantify the strength of the relationship between the identified dependent and independent variables (Field, 2013).

Table 25 contains results of the Pearson correlation for the independent and dependent variables as defined above.

Table 25

Pearson Correlation of Playoff Depth and State Championships to District-Related Factors

	Playoff Depth	State Championship
Median Income	0.037	0.067
One or More High Schools	-0.015	-0.017
% Socioeconomically Disadvantaged	-0.007	-.113*
% Non-White	.111*	0.028
Typology	.105*	0.007
% Male	-0.077	-0.029
County	0.034	0.025

Note. * Correlation is significant at the 0.05 level (2-tailed)

Appendix B contains the complete Pearson correlation output that is summarized in Table 25. As Table 25 specifics, playoff depth and percent non-White were positively correlated,

$r(459) = .11$, $p = .02$. While these results are statistically significant, they are not practically significant as the coefficient of determination is $R^2 = .01$ which suggests that percentage of non-White students only explains 1% of the variability in playoff depth (Field, 2013). Table 25 also suggests a significant positive correlation between playoff depth and district typology, $r(459) = .11$, $p = .03$. Again, the coefficient of determination is $R^2 = .01$ which suggests statistical but not practical significance. Further, a statistically significant negative correlation is observable between state championships and the district's percentage of socioeconomically disadvantaged students, $r(459) = -.11$, $p = .02$. In this case the coefficient of determination is $R^2 = .01$ which indicates that these results are statistically but not practically significant.

Summary

The quantitative results detailed in this chapter provide deeper insight into the research questions that have guided this examination. The reported descriptive statistics reveal the following critical observations:

- Since 2009, 85% of participants ($n = 497$) remain in the same division as they were in the previous season.
- 36.8% of participants ($n = 215$) account for building enrollment growth in the year following their appearance in varsity football regional semi-finals, regional finals, and championship playoff games and those that win state championships.
- 21% of participants ($n = 124$) were teams from private schools.
- Five counties (Franklin, Cuyahoga, Hamilton, Summit, and Montgomery) account for 32.1% of the participants.
- 18.1% of public-school participants come from small town schools with low poverty and small populations.

- 36.1% of participants had a previous year appearance in varsity football regional semi-finals, regional finals, championship games, or won the state championship.

The investigation into research question 1 yielded non-significant results thereby suggesting the absence of an observable "Flutie Effect" for Ohio high school state champions from 2009-2018. This effect was unexaminable for the 2019 season due to future enrollment data not being attainable.

In scrutinizing research question 2, the relationship between open enrollment and varsity football playoff depth was shown to be statistically significant. Further, a statistically significant correlation between previous year playoff appearances and the district's percentage of open enrollment students was observable as was the interaction between the percentage of open enrollment and both playoff depth and previous year playoff appearances. While these findings were of a relatively small effect, they suggest the possibility of a relationship between the identified variables. Furthermore, this analysis revealed differences for those teams qualifying for regional finals when compared to those qualifying for the other playoff levels with respect to the district's percentage of open enrollment with additional significant differences for participants with previous year playoff appearances at both the regional final and state final levels in their respective percentages of open enrollment students. Each of these correlations were shown to be small measures of effect despite their statistical significance.

The examination into research question 3 included multiple statistical tests disclosing latent statistical significance in the fact that 27.4% of the private school participants that qualify for regional semi-finals end up winning the state championship as compared to 8.5% of public-school participants. Two additional tests generated statistically significant results disclosing a

relationship between the public or private school variable and regional semi-final to championship appearances. Lastly, while no significant advantage or disadvantage in state football championship victories was observable for teams that move up or down a division, results did indicate a significant relationship between previous year playoffs and state championships for both public and private schools.

The investigation into research question 4 indicated positive, statistically significant results between playoff depth and both the percent of non-White students and district typology. Negative, statistically significant results were observable between state championships and the participant's percent of socioeconomically disadvantaged students. While statistically significant both of these correlations were found to be small effects suggesting an observable but limited relationship between these variables.

The subsequent chapter will further discuss the findings and interpretations of these quantitative results.

Chapter 5

Discussion

The current investigation carefully considered and partially responded to the call for researchers to carefully scrutinize the effects of educational policy given the compelling equitability of education as the "lifeblood of a free society and a thriving economy" (Gray, 2012, p. 55). Specifically, this study was designed to examine the relationship between Ohio interscholastic appearances in varsity football regional semi-finals, regional finals, state championships and independent variables associated with school choice and divisional movement. Additional district-related factors were examined including percent open enrollment, percent male, percent socioeconomically disadvantaged, percent non-White, typology, median income, county, and whether or not a district had one or more high schools. These variables were chosen given their perceived likelihood in influencing success in varsity football either positively or negatively.

Furthermore, this study sought to deliver a critical analysis of the advertising effects of interscholastic success on enrollment, the relationship between open enrollment and interscholastic success, and to inform the public versus private debate. The intended outcome of this study was to furnish the OHSAA and those they govern with empirical evidence to either confirm or refute the influence of divisional movement (Competitive Balance) on post season outcomes. The results of this study may contribute significant quantitative findings to the literature on interscholastic athletics (Blackburn, Forsyth, Olson, & Whitehead, 2013), interscholastic competitive balance, and public verses private debate which all remain largely unexamined with the exception of critiques and opinions found in mainstream media (Johnson, Pierce, Tracy, & Haworth, 2014).

Summary of Findings

Question 1

The first research question considered whether or not the Flutie Effect was observable in interscholastic athletics. The term "Flutie Effect" was coined after Boston College experienced an approximately 30% surge in applications in the years following their monumental defeat of the University of Miami in 1984 under the leadership of their quarterback, Doug Flutie (Chung, 2013). Similarly, Georgetown University applications "multiplied 45 percent between 1983 and 1986 following a surge of basketball success" (Silverthorne, 2013, para 3). In the present study, the essential question is whether or not high school varsity football success at the championship level has an observable effect on high school enrollment growth.

To examine the potential Flutie Effect at the high school varsity football level, championships and building enrollment growth were examined using Fisher's exact test. Building enrollment growth was chosen over district enrollment growth due to the fact that private schools are not organized by districts. The initial test of the complete sample produced non-significant results (p =.504) suggesting no significant relationship between building enrollment growth and high school football championships. Subsequent Fisher's exact test were conducted for public schools (p = .719) and private schools (p = 1.00) again suggesting no significant association between championships and building enrollment growth (BEG). These results suggest that within the design and context of this study the Flutie Effect is not observable for Ohio varsity football in the year following a state championship victory.

This study does not, however, account for the overt complexity of enrollment fluctuation as this investigation was explicitly focused on whether or not enrollment increased. In the age of school choice, it is plausible that positive sporting outcomes partially mitigate loss of enrollment

over time resulting from some of the other factors that researchers have found to be associated with high school varsity football outcomes including excitement gained by attending home games, positive publicity in local media, and the general sense of community pride (Friedson & Bogin, 2013).

Question 2

The second research question asked if a relationship was observable between open enrollment and Ohio high school football team appearances in varsity football regional semi-finals, regional finals, state finals, and those that win state championships. This potential relationship was examined since the literature pertaining to school choice and interscholastic athletics almost always equates school choice with enrollment and the perceived advantages of a school's ability to solicit enrollment or in some cases recruit select students (Johnson et al., 2017). In addition, multiple researchers have suggested that parents will make school choice decisions based on additional factors unrelated to school performance including interscholastic athletics (Jacobs, 2011; Kleitz et al., 2000; Moe, 2008; Ni, 2010). To examine this question for the sum of participants, district open enrollment percentages were secured for each public school and all private schools were counted as being 100% open enrollment given the fact they do not have residential students and can accept students from anywhere they chose. Results from the statistical analysis indicated a statistically significant interaction effects between the percentage of open enrollment students in a school and playoff depth. However, these statistically significant results were not shown to be practical suggesting that open enrollment and playoff depth are only weakly associated.

An interesting feature of the results showed a statistically significant positive correlation (r = .12) between previous year playoff appearances and the percentage of open enrollment students. Significant differences were observable in percent open enrollment for teams that:

- competed in the regional finals level and had a previous year playoff appearance;
- competed in the state finals level and had a previous year playoff appearance;
- competed in the regional finals' level and did not have had a previous year playoff appearance

These statistically significant results may suggest that schools with larger percentages of open enrollment have more frequent playoff appearances.

Through the investigation into the relationship between open enrollment and playoff depth, previous year playoff appearances emerged as a potentially significant predictive factor of subsequent year playoff success. Findings revealed that 36.1% of participants had a previous year appearance in varsity football regional semi-finals, regional finals, championship games, or won the state championship. At the state championship level, 69.2% of the teams that won the state title had a regional semi-finals' or deeper appearances in the preceding season. In both cases, statistical testing revealed statistically significant results. In fact, the correlation coefficient for playoff depth and previous year playoffs was the strongest of this study (r = .31) with championships and previous year playoffs a close second (r = .26). There are significant implications found in these results which will be discussed in the implications section of this chapter.

Question 3

The third question called for an investigation into whether or not the perceived private school advantage was observable in varsity football championship outcomes in the state of Ohio. For statistical testing, the researcher again turned to Fisher's exact test given its appropriateness for assessing data that fit neatly into a 2 X 2 structure (Field, 2013). The results indicated a statistically significant relationship ($p < .001$) between school type (public or private) and interscholastic football championships. These findings contribute significant statistical evidence to the ongoing conversation about the perceived advantages that private schools have in interscholastic championships.

To better understand these results, cross-tabulation and descriptive data statistics were scrutinized. The data on playoff appearance and school type revealed that 422 public schools qualified for regional semi-finals playoffs accounting for 82.4% of the teams that qualified for this level of competition from 2009 through 2019 ($n = 512$). In comparison, only 90 private schools qualified for regional semi-finals playoffs accounting for 17.5% of those teams appearing at this level. However, at the state championship level a stark contrast is observable. Of the total teams winning the state championship title from 2009 through 2019, (n = 73) public schools accounted for 39 championships titles (53.4%) with private schools winning 34 championship titles (46.6%). These data support assertions from the extant literature that suggests when compared to public school teams a smaller percentage of private school teams qualify for the deep rounds of OHSAA playoffs implying significant disproportionality with the percentage of state championship titles secured by private school teams (Porter, 2019). This is perhaps why the present examination revealed latent statistical significance in revealing that

27.4% of the private school participants who qualify for regional semi-finals end up winning the state championship as compared to 8.5% of public school participants.

In addressing research question 3, the research also examined the movement of teams between divisions over the summer preceding their state championship season. While these movements were not all compelled by competitive balance, divisional movement is the primary instrument of competitive balance which applies a multiplier to student enrollment counts in attempts to level the playing field and to make access to success more equitable (Epstein, 2008; James, 2007; Johnson et al., 2014). Competitive balance is a direct outcome of the ongoing debate on the perceived advantages of private schools in interscholastic athletic competition (Epstein, 2008; James, 2007; Johnson et al., 2014) and, as such, compels the examination of divisional movement in the present study.

Results revealed a non-significant association between divisional movement and state championships for public schools ($p = 0.297$) and a near significant relationship for private schools ($p = 0.058$) where $p <= 0.05$ is statistically significant. Additional measures indicated that 85% of participants ($n = 497$) remained in the same division for the examined years. Further, 28 more public school teams moved down a division ($n = 42$) than moved up a division ($n = 15$) with most remaining in their current division ($n = 397$), while only six more private school teams moved down a division ($n = 13$) than moved up a division ($n = 7$) with most remaining in their same division ($n = 70$). In sum, these results do not reflect a significant advantage or disadvantage to divisional movement and state championship victories. To be concise, these results only look at divisional movement,, generally and cannot be used to make a conclusion about the effectiveness of competitive balance. Rather, these results indicate that

divisional movement is not significantly associated with winning state championships in the context of the present study.

Lastly, the research investigated the potential influence of previous year playoffs given the observed significance of this factor in the examination of question 2. Again, this factor is shown to be significant with Pearson's chi-square revealing a statistically significant relationship between previous year playoffs and state championships for both public schools ($p < 0.001$) and private schools ($p = 0.012$).

Results specify that 27 more state championship teams had a playoff appearance in the preceding year ($n = 50$) than those without a previous year playoff appearance ($n = 23$). Specifically, of the teams winning state championships 69.2% of public schools ($n = 27$) and 67.6% of private schools had previous year playoff appearances in the regional semi-finals or deeper. These findings again bring attention to the positive associate of previous year playoff success which has emerged as one of the strongest associative factors of success in this study.

Question 4

Question 4 considers potential district factors that may be significant predictors of Ohio high school football team appearances in varsity football regional semi-finals, regional finals, state finals, and those that win state championships. This investigation only included public schools given the fact that the state of Ohio does not collect and report these factors for private schools. This investigation was compelled by several common themes revealed through the review of literature. First, race and socioeconomics are commonly asserted as both reasons for and against school choice. Choice supporters propose that choice can improve educational opportunities for all students, especially those confined to failing schools due to residency and demographic factors (Ghosh, 2010; Moe, 2008). Others advance that factors such as transportation restrict the

potential benefits of school choice presenting an insurmountable obstacle to many impoverished and working-class families thereby limiting access to choice resulting in the potential for the creaming or skimming away of the best students from failing schools leaving behind those with the greatest academic need (Carlson, 2014; Paquette, 2005). This is specifically problematic for low-income families (Jimerson, 2002).

While these factors are commonly conveyed through existing school research, they are sparsely examined as they relate to interscholastic athletics which has already been denoted as a potential motivational factor for choice (Jacobs, 2011; Kleitz et al., 2000; Moe, 2008; Ni, 2010). As a result, the present study investigated the following district factors: the district percentage of economically disadvantaged students (ECD), percentage of non-White students (PNW), percentage of male students (PMLE), median income (MINC), typology (TYP), county (CTY), and whether or not the district had one or more high schools (ORM).

Findings of the Pearson correlation specify that playoff depth and percent non-White were positively correlated (r =.11). These results, while statistically significant, were not practically significant as the observed statistics only explain approximately 1% of the variability between the percentage of non-White students and playoff depth. In other words, the findings of this investigation weakly suggested that a team's playoff depth was associated with an elevated percentage of non-White students. Results also suggested a significant positive correlation between playoff depth and district typology (r = .11). Similarly, these findings suggested a significant but weak association between a district's typology classification and post season depth. Finally, a statistically significant negative correlation was observable between state championships and the district's percentage of socioeconomically disadvantaged students (r = -

.11). Again, these findings suggest that lack of championship success is weakly associated with the district's percentage of socioeconomically disadvantaged students.

In interpreting these results, the research utilized the coefficient of determination (R^2) as a means of measuring the strength of the association found to be significant through Pearson's correlation. In all instances, only weak associations were revealed which limits the conclusions that can be made from these observations. Regardless, significant results were discovered that in the very least can compel future research into the relationship between the variables examined in the present study.

The frequency of appearances by teams in regional semi-finals playoffs or deeper was also significant with reference to county. Descriptive statistics revealed that teams from five of Ohio's 88 counties accounted for 32.1% of the deep playoff and state championships in varsity football from 2009 through 2019. Of particular interest is that each of these counties is home to a major Ohio city classified with typology code 8 representing the Urban - Very High Student Poverty & Very Large Student Population category. These include the following counties and their percentage of the 585 teams that qualified for regional semi-finals playoffs at minimum:

-Franklin County, which includes Columbus, accounted for 8% (n = 47)

-Cuyahoga County, which includes Cleveland, accounted for 7.2% (n = 42)

-Hamilton County, which includes Cincinnati, accounted for 7.2% (n = 42)

-Summit County, which includes Akron, accounted for 5.1% (n = 30)

-Montgomery County, which includes Dayton, account for 4.6% (n = 27)

Implications

This investigation sought to provide a statistical inquiry into the factors associated with school choice and interscholastic athletic success by the existing literature. Many of the variables examined in this study have either been recognized in extant literatures as predictive factors for varsity football outcomes and others have been openly discussed in mass media and in committee meetings at the regional and state level in which the research was a participant. As such, it is important to consider that both significant and non-significant results are equally meaningful in the present study. Statistically significant results suggest the presence of the association and can in the very least be cause for further discussion and investigation into identified factors. On the other hand, non-significant results suggest that these factors may deserve the credit they are given in the debate about athletic success, fairness, and equitability.

Question 1

In investigating research question 1, this study did not find a significant association between winning state championships and building level enrollment growth. The Flutie Effect was therefore not observable within the context of this study. This is not entirely surprising given some of the conditional differences between interscholastic and intercollegiate athletics. First, intercollegiate athletics has substantial mass media coverage and therefore the successes of intercollegiate athletic teams are on display for the world to see, whereas, live television broadcasts of interscholastic state championships are often hard to find. In the case of Flutie Effect, Flutie and Boston College shocked the nation by defeating Miami in this nationally televised game which happened to be played on the day after Thanksgiving (Chung, 2013). This fact in itself represents a potentially confounding variable given the broad appeal of Thanksgiving Day football games.

Second, intercollegiate athletics operate under a recruitment model with significant resources levied at recruiting, marketing, and development where recruitment is prohibited in interscholastic athletics. These factors, and the absence of significant results in the present investigation imply that the Flutie Effect may be a more meaningful measure of marketing success than the influence of sporting success on enrollment.

However, the findings in question 1 are relevant to the assertion of school choice proponents that suggest that school choice will lead to higher quality education by creating a competitive school marketplace in which students and parents are given the freedom to escape the underperformance of their of their present schools while running towards schools that are more successful (Howe et al.; Ledwith, 2010; Moe, 2008). These theories were rooted primarily in academics; however, the competitive marketplace notion is equally applicable to varsity sports. Similarly, choice opponents have suggested that parents will make school choice decisions based on factors unrelated to school performance such as racial composition, class, athletics, proximity, and convenience (Jacobs, 2011; Kleitz et al., 2000; Moe, 2008; Ni, 2010). The present study does not indicate a significant enrollment increase in the year following a state championship victory suggesting that state championships may not be enough motivation to compel a significant influx of student athletes seeking access to a successful athletic program, at least not in the context of this study.

Question 2

The second research question sought to determine if a relationship was observable between open enrollment and Ohio high school varsity football at the regional semi-final playoff level and deeper. This investigation was prompted from research showing that parents sometimes make school choice decisions based on ancillary factors such as race (Lubienski,

2005, p. 338), convenience (Witte et al., 2008, p. 10), proximity and athletics (Jacobs, 2011; Kleitz et al., 2000; Moe, 2008; Ni, 2010), personal preference (Jacobs, 2011), curricular focus, extracurricular activities, and safety (Ni, 2010). This study more closely considers the athletic success and extra-curricular activity factors mentioned by previous researchers finding a weak but statistically significant association between the percentage of open enrollment students in a school and playoff depth. These results do not strongly suggest that open enrollment percentages are affected by playoff depth; however, they are significant enough to compel additional and focused research on this matter.

Existing research also suggests a perceived notion that private schools actively recruit and strip away high-quality athletes from public districts (Epstein, 2008; James, 2007; Johnson et al., 2014). While this notion is not directly examined in the present study, the findings of this study would suggest that having a large percentage of open enrollment students is only weakly associated with deep post-season success. This is particularly interesting with respect to private schools as their percent open enrollment was measured at 100% in all cases given their lack of residential students. In essence, all of their enrollment is open enrollment. Regardless, these results cannot be used to refute or support the assertion that private schools recruit select athletes.

The results indicated a weak but statistically significant relationship between previous year playoff appearances and the percentage of open enrollment students with significant differences observable between percent open enrollment and regional finals and state finals teams with previous year playoff appearances. Further, findings suggest that previous year playoff appearances are a significant predictor of subsequent year playoff success with 69.2% of the state championship teams having had a regional semi-finals or deeper appearance in the

preceding season. Previous year playoff appearances were also significantly associated with subsequent season region semi-final or deeper playoff appearances.

These findings are an unintended but significant outcome of this study. A common assertion of the marketplace concept of school choice is that school choice results in a consumer-driven marketplace resulting in increased quality profoundly manifested in a culture of competition (Adnett & Davies, 2005; Harrison, 2005). Others suggest that a competitive market would stimulate "vigorous competition among schools…" (Coulson, 2009, p. 32) and that a competitive culture might stimulate incentive for innovation, improvement, and technology integration in a system of government ownership that has failed to incentivize leading to stagnancy (Harrison, 2005; Lubienski, 2005). Essentially, these supporters of school choice believe that success is driven by high levels of competition and that success begets success. The findings of the present study suggest the same holds true in interscholastic athletics. High levels of competition and previous season success perpetuates subsequent success and, in many instances, (69.2%) state championship titles. Ironically, this factor, which has emerged as the most significant of this analysis, is essentially non-existent in the debate over school choice, competitive balance, and interscholastic athletics.

Question 3

Question 3 considered the perception that private schools have a considerable advantage in varsity football championship outcomes in the state of Ohio. This examination was prompted by the dearth of research on the relationship between school choice and interscholastic athletics which is nearly entirely focused on competitive balance and "comes from editorials in hometown newspapers with clear biases relative to local high schools…" (Johnson et al., 2017). These articles routinely highlight the perceived unfair advantages private schools have in

interscholastic athletics due to enrollment and subversive recruitment practices (Johnson et al., 2017). As such, this investigation focuses on championship outcomes and the association of these outcomes to school type (public or private), divisional movement (competitive balance) and previous year playoff appearances.

Statistically significant results indicate a relationship ($p < .001$) between school type (public or private) and interscholastic football championships. More explicitly, findings suggest that while 461 (78.8%) of those teams qualifying for regional semi-finals were public schools, 46.5% of the state championships were won by private schools. This means that private schools accounted for 15.4% of the teams entering the regional semi-final round of playoffs but went on to win the state title 46.5% of the time. These findings potentially strengthen the assertions found in existing research which contend that a significant disproportionality exists between public and private schools in the comparative percentage of state championship titles (Porter, 2019). While these results strengthen this argument, they do not directly address the factors that might result in this imbalance.

As previously stated, one such factor that is commonly tied to this imbalance is the perceived notion that private schools recruit top athletes from their surrounding public districts (Johnson et al., 2017). Another factor of fairness levied by the extant literature is the fact that public schools are restricted to district boundaries while private schools have unlimited reach (Epstein, 2008; James, 2007; Johnson et al., 2014) and private schools tend to have better facilities, increased parent involvement, and better coaches (Johnson et al., 2014). From these concerns came interscholastic competitive balance policies which apply a multiplier to student enrollment counts in attempts to level the playing field and to make access to success more equitable (Epstein, 2008; James, 2007; Johnson et al., 2014).

The notion that public schools have boundaries while private schools do not is somewhat misleading. Public schools can elect to have statewide open enrollment policies and they have every opportunity to market their schools and programs to the broad public. Further, with the exception of reduced tuition, public schools that accept open enrollment students have the same unethical opportunities to recruit student athletes from neighboring districts. This is in part why this study examined the Flutie Effect and the relationship between varsity football success and open enrollment. In the age of school choice, there appears little to prevent all schools from capitalizing on sporting success, especially state championships, to build their programs, their enrollment, and their schools.

Nevertheless, this study examined divisional movement since divisional movement is the core mechanism employed by competitive balance formulas to level the playing field and to make access to success more equitable (Epstein, 2008; James, 2007; Johnson et al., 2014). The researcher chose divisional movement over specific competitive balance statistics due to the lack of consistent data over the examined time frame and to create a broader understanding as to whether or not divisional movement impacts success. Findings did not reveal a significant advantage or disadvantage to divisional movement with respect to state championship victories. These results cannot be used to make a conclusion about the effectiveness of competitive balance specifically, however, they do imply that divisional movement is not significantly associated with winning state championships in the context of the present study. Based on previous committee work aligned to size within divisions, the researcher anticipated an observable advantage for teams at the bottom of a division that move down one division thereby becoming one of the largest teams. This perceived advantage was not observable in the findings.

Once again, the strongest, statistically significant findings in this investigation pertain to previous year playoff appearances. Results specify that 69.2% of public school and 67.6% of private school state champions had previous year playoff appearances in the regional semi-finals or deeper in the previous year. These findings again illustrate the positive correlation between previous year playoff appearances and state championships. An important distinction to be made is how close these percentages are between private and public schools leading to a strong assertion that the influence of success and high-level previous season competition is unilaterally and unequivocally equitable for both private and public schools. Success yields success.

Question 4

Question 4 sought to examine the potential relationship between select public school factors and Ohio varsity football team appearances in varsity football regional semi-finals, regional finals, state finals, and those that win state championships. These factors include each district's percentage of economically disadvantaged students, non-White students, percentage of male students, median income, typology, county, and whether or not the district had one or more high schools.

Findings reveal positive correlations between playoff depth and the districts percentage of non-White students which include all minority groups. While only shown to be weakly associated, these results mildly indicate that having a larger population of non-White students may have a positive impact on playoff depth. This is compelling given the assertion from school choice supporters that increased choice, in part, addresses social and racial inequity by freeing those students and families trapped in failing schools (Arsen & Ni, 2011; Carr, 2011; Fowler, 1996; Hubbard, 2014). This notion, in consideration with the implications of the present study,

poses a potentially intriguing examination into the potential positive effects of school choice for minority athletes.

Results from the investigation into the relationship between playoff depth and district typology add to this notion suggesting a significant positive correlation between these two factors. While only weakly associated, these results are partially supported by the fact that teams from five of Ohio's 88 counties accounted for 32.1% of the deep playoff and state championships in varsity football from 2009 through 2019 with each of these counties being home to a large urban city with high poverty and large student population (typology code 8).

These findings are complimented by the statistically significant negative correlation observed between state championships and the district's percentage of socioeconomically disadvantaged students. This implies that as a school's percentage of socioeconomically disadvantaged students increases, their likelihood of winning state championships decreases. However, these results are limited in their implications as they were only shown to be weakly correlated.

The literature on school choice maintains that choice options will effectively serve as a means of liberation for the impoverished or disenfranchised racial groups commonly observed to be trapped in failing urban districts as a result of the current modus of schooling, which in large, binds students to schools as a result of their residency (Carlson, 2014; Fowler, 1996; Ni, 2010; Phillips et al., 2015). Subsequently, that school choice would allow commonly disenfranchised student subgroups such as poor, disabled, and minority students "equal access" to higher quality education and "reduced segregation" (Hong & Choi, 2015, p. 63). The related findings of the present study including county, typology, percent non-White, and percent socioeconomically

disadvantaged were all relatively weak correlations and, as such, caution must be exhibited in assessing their respective implications. However, these findings compel future research, particularly into how these factors interact with sporting success and the potential advancement of minority students. While the results regarding typology and percent non-White seem to imply a potential advantage in football success for typically disenfranchised students, the results for percent socioeconomically disadvantaged seem to assert the opposite. The design of the present examination is too broad to derive conclusive results about these potential factors and their potential relative impact on historically disenfranchised students, which may well be found at the individual student level.

Limitations of the Study

This study was designed as a focused investigation into the relationship between varsity football playoff success and the identified factors. Despite having 585 participants, the researcher only included those teams that appeared in regional semi-finals or deeper for the years of 2009 through 2019. For this reason, all of the participants of the present study were highly successful, elite teams in their respective years of participation. While this study only examined those teams that were successful within the parameters of the selection criteria, future researchers could replicate this work to be inclusive of all teams for a specific year or a smaller span of years. This approach would allow for the examination of a greater range of variation between teams that were successful and those that were not thereby greatly expanding the scope of the analysis.

A second limitation is absence of comparable data for private schools for the demographical components examined in response to research question 4. The lack of available private school data restricts the design of comparative studies such as this from the beginning.

This may be in part why so few quantitative studies measuring public and private school factors are conducted. The absence of available private school data also influenced the examination into research question 2. Private school enrollment data are only reported to the State of Ohio as a rudimentary headcount and there are no available databases that disaggregate private school enrollment data beyond this basic metric. As a result, private school open enrollment was determined by the researcher to be 100% given the fact that private schools do not have residential students and are therefore entirely populated with open enrollment students. While this is a logical approach, we must consider that private schools have much more control of their enrollment than a public school would, and it is commonly asserted perceived notion that private schools actively recruit and strip away high quality athletes from public districts (Epstein, 2008; James, 2007; Johnson et al., 2014). Meanwhile, public schools are governed by open enrollment laws designed to protect students from "transfer refusal" and are typically only permitted to deny students admission for conditions such as a lack of capacity in the district and an applicant's history of behavioral problems, such as suspensions, expulsions, or substance abuse (Carlson, 2014, p. 287). These disparities in enrollment practices and principles are potentially limiting to the validation and implications of any research on public and private school enrollment.

Finally, the investigation into whether or not the perceived private school advantage is observable in varsity football championship outcomes in the state of Ohio is somewhat limited in terms of scope. This study examined private school success against public school success purely with the involvement of previous year playoffs and divisional movement as additional factors. There are additional tension points in the public verses private debate that warrant further scrutiny including the perceived notion or recruitment of top athletes, the fact that private

schools tend to have better facilities, increased parent involvement, and better coaches (Johnson et al., 2014).

Recommendations for Future Research

The uniqueness of this study establishes its results as a conceivable catalyst for additional research. First, the investigation into the Flutie Effect did not significantly associate enrollment growth in the year following a state championship victory signifying that state championships may not be adequate motivators of enrollment growth. As stated previously, the Flutie Effect was likely influenced by mass media, the fact that the Boston College/Miami game was televised on Thanksgiving Day, and the recruitment and marketing activities of the university. A smaller study on specific high schools that win championships and aggressively market their schools using this success would be compelling.

There were multiple findings in this study that were weak, statistically significant correlations all of which could compel additional research. The first of these is the association between the percentage of open enrollment students in a school and playoff depth. Future studies could examine this relationship with a larger sample by accounting for the early playoff rounds. The second set of these weak, positive, statistically significant correlations included playoff depth and both percent non-White and district typology. In addition, there was a weak, negative, statistically significant correlation between championships and percentage of socioeconomically disadvantaged students. These three findings present a theoretically intriguing examination into the potential positive effects of school choice and interscholastic competition for minority athletes. Another factor from the present study that would enhance such a study is the fact that five counties, all of which contain large urban cities, accounted for 32.1% of the deep playoff and state championships in varsity football from 2009 through 2019.

This study yielded unintentional findings that should serve to motivate future research on the topic of interscholastic athletics and related factors. The strongest, statistically significant results of this investigation related interscholastic success in the form of playoff depth and championship titles to previous playoff depth. The implication is profoundly simple: success begets success. Future researchers might consider why previous year playoff appearances at the regional semi-finals level was such a significant and effective predictor of a state championship in the subsequent season. Results specify that 69.2% of public school and 67.6% of private school state champions had previous year playoff appearances in the regional semi-finals or deeper in the previous year. Inquiries into the culture of teams that repeatedly perform at the highest levels and the factors associated with those teams could prove to be meaningful.

Finally, this study establishes a foundation that could be easily replicated for future research. The significant and non-significant results compel future investigations into these same factors across other high school sports and extra-curricular programs. Some schools in Ohio have renown music and arts programs that could also be examined in relation to the school choice factors presented in this examination.

Conclusion

This study sought to examine varsity football success and some of the many factors associated with school choice. From its inception this study was motivated by the moral obligation for educational leaders to grasp the enormity of education's importance in society and to harness this understanding to ensure that effectiveness of policies concerning education is deeply and appropriately scrutinized (Gray, 2012). It was also the clear intention of the researcher to provide the OHSAA and their member schools with critical and empirical evidence

to better inform the decision-making process, revisions of existing policy, future policy, and the general and continuing conversation regarding interscholastic competition.

The results of this study provide several key considerations for OHSAA, their member schools, athletes and the interscholastic community at large. First, the interscholastic athletic community of Ohio should not disregard the non-significant findings of this study. By its design, this study investigated the relationship between defined factors and varsity football success. The examination of these factors was compelled by the existing literature and the emphasis on these factors being positively or negatively associated with school choice, competitive balance, or interscholastic athletics. Therefore, the non-significant findings also have distinct meaning. While significant findings suggest the potential need for increased scrutiny, reflection, and dialogue, non-significant findings suggest that certain factors may be underserving in the attention or controversy they produce in the ongoing discussion on interscholastic athletics. These considerations should perpetuate discernment in the continued debate between what is evidenced to be meaningful verses what is only perceived to be meaningful.

Next, as school choice numbers continue to balloon there is little question that the hotly contested debate between public and private schools will rage on for perpetuity. This study may well serve as additional fodder for this debate by exposing that private schools only accounted for 15.4% of the teams entering the regional semi-final round of playoffs but went on to win the state title 46.5% of the time. However, this observation should be considered carefully, and the athletic community should avoid concluding that this means that private schools have an advantage. Rather, these results suggest that while public schools have a significantly disproportionate chance of qualifying for regional semi-finals, private school teams appear to be

well-equipped and prepared to defeat their competition at all levels of the playoffs and to win the championship game. This notion should prompt deeper reflection into the reasons why this is valid. Factors such as recruitment practices, facilities, training and equipment, coaching, and financial backing are all logical and common assertions, but they are asserted sans evidence. School and athletic leaders ought to be charged with both the discovery of such empirical evidence and perhaps deeper scrutiny into the strength of their respective programs.

A consequential starting place would be to examine the patterns, methods, mechanics, and implementation of the complete football programs of teams that have been dominant in attaining state championships – both public and private. Public schools won 53.5% of the state championships from 2009 through 2019 showing that it is possible to do so despite any perceived or existing advantage for private schools. Attempting to define the reasons why some teams are successful, and others are not, is an exigent feat but there is one indicator that this study has unfurled with significant evidence – success builds success. It is imperative to recognize the significance of previous year playoffs as a strong predictive factor for state championships and future playoff success. At face value these results denote that successful teams often remain successful in subsequent seasons. Nearly 70% of both the public and private schools that win state champions had previous year playoff appearances in the regional semi-finals or deeper in the previous year. Rather than getting lost in the emotion and discouragement of the public verses private debate, schools and their teams may be better served by assessing the culture, leadership, legacy, program, and other latent conditions that propelled regional semi-finals teams towards their successes at the regional semi-finals level as one of many essential steps in the pathway towards a state title.

Lastly, and importantly, this study creates unanswered questions pertaining to interscholastic success, student race, and socioeconomics. The findings of this study revealed a positive association between playoff depth and a district's percentage of non-White students indicating a potential advantage for teams that have a greater percentage of minority athletes. In contrast, the district's percentage of socioeconomically disadvantaged students was shown to be a negative predictor of state championship victories. The implication of these results is profound for schools in urban settings with high rates of poverty (typology 8) in that racial diversity elevates a team's probable playoff success while poverty decreases a team's championship likelihood. If competitive balance is truly rooted in creating fairness and equitability, these results suggest that factors other than just the enrollment multiplier be should be taken into consideration.

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APPENDIX A

Regional Semi-final or Deeper Playoff Appearance

	Frequency	Percent
2 - Allen	9	1.5
3 - Ashland	5	0.9
5 - Athens	7	1.2
6 - Auglaize	12	2.1
7 - Belmont	8	1.4
9 - Butler	5	0.9
10 - Carroll	1	0.2
11 - Champaign	8	1.4
12 - Clark	3	0.5
14 - Clinton	7	1.2
15 - Columbiana	3	0.5
16 - Coshocton	5	0.9
17 - Crawford	4	0.7
18 - Cuyahoga	42	7.2
20 - Defiance	6	1
21 - Delaware	7	1.2
22 - Erie	4	0.7
23 - Fairfield	10	1.7
25 - Franklin	47	8
26 - Fulton	2	0.3
28 - Geauga	4	0.7
30 - Guernsey	1	0.2
31 - Hamilton	42	7.2
32 - Hancock	11	1.9
33 - Hardin	6	1
35 - Henry	7	1.2
37 - Hocking	5	0.9
38 - Holmes	1	0.2
39 - Huron	9	1.5
40 - Jackson	1	0.2
41 - Jefferson	6	1
42 - Knox	8	1.4
43 - Lake	21	3.6
44 - Lawrence	5	0.9
45 - Licking	11	1.9

47 - Lorain	10	1.7
48 - Lucas	16	2.7
49 - Madison	9	1.5
50 - Mahoning	15	2.6
51 - Marion	1	0.2
52 - Medina	4	0.7
54 - Mercer	24	4.1
55 - Miami	4	0.7
56 - Monroe	2	0.3
57 - Montgomery	27	4.6
60 - Muskingum	6	1
61 - Noble	1	0.2
62 - Ottawa	3	0.5
63 - Paulding	1	0.2
64 - Perry	1	0.2
67 - Portage	6	1
68 - Preble	1	0.2
69 - Putnum	8	1.4
70 - Richland	9	1.5
71 - Ross	1	0.2
72 - Sandusky	4	0.7
73 - Scioto	9	1.5
74 - Seneca	3	0.5
75 - Shelby	4	0.7
76 - Stark	13	2.2
77 - Summit	30	5.1
78 - Trumbull	11	1.9
79 - Tuscarawas	6	1
81 - Van Wert	2	0.3
83 - Warren	4	0.7
84 - Washington	3	0.5
85 - Wayne	9	1.5
86 - Williams	1	0.2
87 - Wood	3	0.5
88 - Wyandot	1	0.2

Appendix B

Pearson Correlation of Playoff Depth and State Championships to District-Related Factors

		Playoff Depth	State Champions	Median Income	One or More High Schools	% Econ. Disadv.	% Non-white	Typology	%Male	County
Playoff Depth	Pearson Correlation	1	.696**	0.04	-0.015		.111*	.105*	-0.077	0.034
	Sig. (2-tailed)		0	0.45	0.752	0.881	0.018	0.025	0.097	0.47
	N	461	461	413	461	461	461	461	461	461
State Champions	Pearson Correlation		1	0.067	-0.017	-.113*	0.028	0.007	-0.029	0.025
	Sig. (2-tailed)			0.173	0.714	0.015	0.545	0.875	0.539	0.592
	N			413	461	461	461	461	461	461
Median Income	Pearson Correlation			1	.287**	-.647**	-.189**	.207**	-.135**	-.156**
	Sig. (2-tailed)				0	0	0	0	0.006	0.001
	N				413	413	413	413	413	413
One or More High Schools	Pearson Correlation				1	-0.023	.276**	.332**	-0.051	-.212**
	Sig. (2-tailed)					0.625	0	0	0.277	0
	N					461	461	461	461	461
% Economically Disadvantaged	Pearson Correlation					1	.617**	.286**	.132**	0.022
	Sig. (2-tailed)						0	0	0.004	0.635
	N							461	461	461
% Non-white	Pearson Correlation							.708**	-0.017	-0.089
	Sig. (2-tailed)							0	0.709	0.055
	N								461	461
Typology	Pearson Correlation								-.131**	-0.075
	Sig. (2-tailed)								0.005	0.106
	N								461	461
%Male	Pearson Correlation								1	-0.016
	Sig. (2-tailed)									0.73
	N									461
County	Pearson Correlation									1
	Sig. (2-tailed)									
	N									461

** Correlation is significant at the 0.01 level (2-tailed).

* Correlation is significant at the 0.05 level (2-tailed).

Youngstown
STATE UNIVERSITY

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April 14, 2020

Dr. Karen Larwin, Principal Investigator
Mr. David Mullane, Co-investigator
Department of Counseling, School Psychology and Educational Leadership
UNIVERSITY

RE: HSRC PROTOCOL NUMBER: 151-2020
TITLE: School Choice and Varsity Football Success in Ohio High Schools

Dear Dr. Larwin and Mr. Mullane:

The Institutional Review Board has reviewed the abovementioned protocol and determined that it meets the expectations of DHHS 45 CFR 46.101(b)(4) and therefore is exempt from full committee review and oversight. Your project is approved.

Any changes in your research activity should be promptly reported to the Institutional Review Board and may not be initiated without IRB approval except where necessary to eliminate hazard to human subjects. Any unanticipated problems involving risks to subjects should also be promptly reported to the IRB.

The IRB would like to extend its best wishes to you in the conduct of this study.

Sincerely,

Dr. Severine Van Slambrouck
Director Research Services, Compliance and Initiatives
Authorized Institutional Official

SVS:cc

c: Dr. Jake Protivnak, Chair
Department of Counseling, School Psychology and Educational Leadership

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