UNDERSTANDING THE IMPACT OF MSHSAA BY-LAW 3.15.3 ON PARTICIPATION IN MISSOURI HIGH SCHOOL ATHLETICS FROM 2008-2016

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Doctor of Education

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by

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The undersigned, appointed by the dean of the Graduate School,

have examined the dissertation entitled

UNDERSTANDING THE POTENTIAL IMPACT OF MSHSAA BY-LAW 3.15.3

ON PARTICIPATION IN MISSOURI HIGH SCHOOL ATHLETICS

FROM 2008-2016

presented by Casey L. Vokolek,

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it is worthy of acceptance.

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TABLE OF CONTENTS

LIST OF TABLES AND FIGURES

List of Tables

List of Figures

ABSTRACT

This quantitative policy analysis seeks to understand the potential impact of MSHSAA By-Law, 3.15.3, the contact day policy, on sport participation in Missouri high school athletics. This policy increased the number of practices Missouri coaches could have with their athletes in the summer from 14 to 25 days. There was a concern from MSHSAA school leaders and coaches that this policy could impact single and multi-sport participation. This study seeks to determine if a relationship can be identified with the implementation of the policy and changes in participation.

The research questions address additional variables, including the location of schools, whether a school offers more or less sport playing opportunities, and whether the school offers 11-man football. These variables support the inquiries from MSHSAA school leaders and coaches. This is a non-experimental quantitative descriptive study. The participants in the study include both single sport and multi-sport athletes in MSHSAA member schools from 2008-2016. Descriptive statistics are reported for the first research question describing trends in the number of sport participants from 2008-2016. A chi-square analysis was performed to answer research questions two through seven using three years prior to implementation and three years following implementation.

This quantitative policy analysis revealed a significant difference in single sport and multiple sport participation for the years prior to and following the implementation of MSHSAA By-Law 3.15.3. Research question two revealed that there has not been a significant change in the overall number of single sport and multi-sport participants. Research questions three and five revealed that urban school participation has significantly

decreased following the implementation of the By-Law. Research questions four and six revealed that students that attend schools that offer ten or less sports have also seen a decrease in single and multi-sport participation. Finally, research question number seven revealed that multi-sport participation has decreased significantly in schools that do not offer 11-man football and has increased in schools that do offer 11-man football.

CHAPTER ONE

INTRODUCTION TO RESEARCH

In 2017, over 7.9 million students participated in high school athletics in the United States (National Federation of State High School Associations, 2018). The positives and negatives of sport participation have been researched at length by multiple researchers. Hanson, Larkson and Dworkin's (2003) study is a clear summary of both the positive and negative aspects of extra-curricular participation. Through their research of 450 high school students, they described positive traits developed by the adolescents such as self-knowledge, goal setting, time management, and emotional regulation (Hanson, Larkson, and Dworkin, 2003). They also indicated that there were negative aspects to high school extra-curricular participation such as stress, social exclusion, and negative peer interactions (Hanson, Larkson, & Dworkin, 2003). However, school leaders have touted that the number of additional benefits to extra-curricular participation ranging from improved social emotional skills to increased graduation rates far outweigh any potential negatives (Myer, Jayanthi, DiFiori, 2015).

The National Federation of State High School Associations (2018) promote the following studies as overwhelming support of high school athletic participation. Marsh and Kleitman (2002) found that "participation in extracurricular activities in high school appears to be one of the few interventions that benefit low-status, disadvantaged students as much or more than their more advantaged peers". Another study determined that participation in extracurricular activities was linked to higher levels of academic achievement and lower dropout rates (Zaff, Moore, Papillo, & Williams, 2003). A study completed in 1995 found that students who are not involved in extracurricular activities are

57 percent more likely to drop out of high school than those that spend one to four hours per week in extracurricular activities (Zill, Nord, & Loomis, 1995). The improvement of college admission test scores, especially for minority students, were proven to increase for those students that participated in extracurricular activities (Everson & Millsap, 2005). Finally, a study completed for the Colorado High School Activities Association indicated that "students who participate in some form of interscholastic activities have significantly higher grade-point averages than students who do not" (McCarthy, 2000). These studies provide the data the school leaders use to support the argument for high school athletics.

In conjunction with the promotion of high school sports by school leaders, the display of talent at a young age from athletes like Olympic swimmer Missy Franklin, NBA star LeBron James, and most notably Tiger Woods, has left a lasting impact on the culture of American youth sports (Cummings and Ewing, 2002). Many parents and coaches believe that talent can be identified at a young age and should be nurtured accordingly (Gould and Carson, 2004). Despite data in the contrary, latest trends show that parents have encouraged their children to choose one sport, otherwise known as specialization, and focus the athlete's time and efforts toward achieving greatness in that sport (Gould & Carson, 2004; Jayanth, Pinkham & Dugas 2012). Consequently, these expectations have been placed on school coaches to ensure that the experience of the high school athlete meets the parent's expectations (Forneris, Camire & Trudel, 2010; Jowett, Timson-Katchis, 2005).

This increased emphasis society has placed on youth sports has required a significant amount of time and resources be used to ensure a quality youth and high school sport

experience (Ehrmann & Jordan, 2011; Lipscomb, 2008). Educators are discussing the positives and negatives of this dynamic for high school students across the United States (Ehrmann & Jordan, 2011). Much discussion has been about the changes in experiences for youth to young adult athletes (Forneris, Camire & Trudel, 2012). Specifically, educators and researcher are debating topics like specialization, workload, and the emphasis that American culture places on youth sports (Ehrmann & Jordan, 2011).

Coalescing the deemed negative societal trends with the positive aspects of high school sports is deliberated by high school leaders at the national and state level according to the National Interscholastic Association of Athletic Administrators (2018). Despite the perceived negatives trends of youth sports, school leaders have stood by the research that has consistently proven that high school participation positively affects the mental, physical, and emotional growth of young people (Hedstrom & Gould, 2004). This research has been the impetus for educational leaders and communities to continue to provide high school students with extra-curricular opportunities (Gould & Carson, 2010).

With the continued support of high school extra-curricular activities, school districts are still debating how much time, money, and resources they are willing to devote to provide these opportunities (Libscomb, 2008; Ward, 2008). Parents expectation of winning for high school coaches combined with the belief that more time and resources will equal better development of high school athletes has made high school athletics a difficult balance for schools (Ehrmann & Jordan, 2011). The state of Missouri along with many other state high school athletic associations have specifically debated the topic as to how much time high school coaches and athletes should spend practicing and training in the offseason (MIAAA, meeting notes, 2011). Similarly, school leaders in Missouri are

debating the extent that schools are responsible for the athletic development of students (Mundell, personal communication, July 14th, 2014).

The Missouri State High School Activities Association's (MSHSAA) mission is to "promote the value of participation, sportsmanship, team play, and personal excellence to develop citizens who make positive contributions to their community and support the democratic principles of our state and nation" (MSHSAA, 2018). In addition, MSHSAA members are fielded the task of making high school sports in Missouri as equitable, fair, and safe as possible (MSHSAA, 2018). Each year policies, otherwise known as By-Laws, are created, removed, or changed to support this mission.

In 2011 the MSHSAA member schools decided to revise the number of days that a high school coach can have sport-specific contact with student-athletes during the summer time. The "contact day rule", MSHSAA By-Law 3.15.3, states that coaches in MSHSAA member schools have to abide by the 25 contact day rule. This means that each coach can have 25 days during the summer months in which they can have sport specific instruction. Concurrently, a student that plays two sports can have 50 days of sport specific activity, and a student that plays three sports can have 75 days of sport specific instruction during the summer. The summer days for most schools in Missouri range 70-88 days (Missouri Department of Elementary and Secondary Education, 2016). Previous to implementation of this rule, high school coaches had the opportunity to have 14 days with their high school athletes in the summer (MSHSAA, 2010). This rule was proposed by the Football and Athletic Director Advisory Committee in 2009, was passed by a MSHSAA member vote, and became effective in May of 2011.

> "3.15.3 Limits on Contact – High School**:** For High Schools (Grades 9-12), a limit of 25 contact days is allowed per sport, per gender during the summer (as defined in By-Law 3.15.1.a). Sports contact, as defined above, between any coach for a particular sport and gender and any student enrolled at the member school or who will be enrolled in and attending the member school that fall will count as one day of contact toward the limit of 25 days for that sport." (MSHSAA Handbook, p. 77)

Missouri high school principals and athletic directors are now asking the following questions:

- "Have we perpetuated the problem of unfair expectations of coaches, unequal opportunities for kids, and an unhealthy athletic environment?"
- "Are we creating an equity gap for our young student athletes with the increased summer time requirement."
- "Is there a place to discuss the potential effects on participation depending on the location of the school?"
- "Do students miss the benefits of multi-sport participation because they are unable to meet the summer demands?"

These questions have been discussed and debated at meetings since the implementation of MSHSAA By-Law 3.15.3 (Mundell, personal communication, July 14th 2014).

Now that the policy has been in place for seven years, MSHSAA's Executive Staff, Board of Directors, and member school representatives would like to know if there has been a change in the trends of participation in high school sports. Has this policy "promoted the value of participation"? This study will attempt to determine,

quantitatively, the potential impact of the contact day rule and changes in high school participation. This study is not seeking to prove causation, but rather to understand if a relationship exists between the implementation of the contact day policy and sport participation in Missouri high schools. This study will consider over variables to further understanding any potential impact. These variables include school location, number of sports offered, and 11-man football playing schools. These variables were chosen since they are of interest to the MSHSAA school leaders and MSHSAA Executive Board.

Statement of the Problem

There is a lack of information as to whether a policy implemented by high school leaders in Missouri has potentially impacted sport participation, depending on school location, number of sports offered, and whether a school offers 11-man football. There are benefits for students that participate in extra-curricular activities. Specifically, athletics have provided the opportunity for many students to receive those benefits for free within high schools across the United States (Hedstrom & Gould, 2004). One concern is that there may not be enough quantitative research being done before the implementation of policy (Bardach, 2012). It is not known whether the increased demand on student athletes' time will impact the number of students participating in one our multiple sports (Brenner, 2007).

The other problem, from the perspective of many Missouri high school coaches, is that there are a limited number of students at every high school. These coaches believe that in order to properly field a competitive team, high school athletes need to participate in multiple sports within the school (Dugas, Jayanthi, & Pinkham, 2012; Gould & Carson, 2004). Researchers have discussed whether students are experiencing burnout and

deciding not to participate in any athletic activity while in high school (Gould & Carson, 2004; Jowett and Cramer 2009,). It is important to know if the policies that are being created are impacting participation of Missouri high school student-athletes. It is also important to know if the policy has impacted overall student participation based on school location and number of sport playing opportunities. Finally, since this policy was recommended by the MSHSAA Football Advisory Committee, among other groups, we would like to know how the policy has potentially impacted participation in schools that offer 11-man football. It is important to note that MSHSAA also offers 8-man football as a championship series sport. However, only 23-three out of almost six hundred MHSHAA schools participate in 8-man football in Missouri. Eighteen of those schools are located in the same region of Missouri. Due to the low number of schools and isolated region, it was decided by the researcher not to use 8-man football schools as a variable for this study.

The Missouri High School Athletic Association board of directors and members would like to know if there has been a significant change in single sport and multiple sport participants in Missouri High School sports since the implementation of MSHSAA By-Law 3.15.3, the "contact day rule" (MSHSAA, 2018). MSHSAA members would like to know the type of change that has occurred, if any, in participation numbers. This information could be used to revisit the policy, if necessary, and offer alternative solutions (Bardach, 2012). Currently, we know very little about the changes, if any exist, in participation in Missouri High School athletics. Additionally, we do not know if a relationship can be identified with MSHSAA By-Law 3.15.3 and any potential changes that exist.

Research Purpose

The intent of this study is to understand the changes, if any, over time in the number of participants in one and multiple sports prior to and since the implementation of the MSHSAA By-Law 3.15.3 rule in 2011. To further the understanding of the impact, this study will also consider the school location of Missouri high schools and number of sports offered in these schools. Since this policy was initiated by the MSHSAA football advisory committee, this study will also include the participation changes in schools that offer 11-man football. The data will be described for three years prior to and five years following the implementation of the MSHSAA contact day rule in 2011. The overall aim is to understand the trends and changes in participation in specific sports and multiple sports over time in order to determine the possible effect of the contact day rule. This study will be used to inform the policy makers of Missouri high school sports of the possible impact of MSHSAA By-Law 3.15.3.

Research Questions

The following questions were developed to guide this study:

1. What are the descriptive statistics from single sport and multiple sport participants for 9-12 grade students in MSHSAA member schools from 2008-2016?
2. Is there a difference in the number of single sport participants and multi-sport participants in MSHSAA member schools since the implementation of MSHSAA Rule 3.15.3 in 2011?
3. Is there a difference in the number of single sport participants in MSHSAA member schools since the implementation of MSHSAA Rule 3.15.3 in 2011 when considering rural, urban, and suburban schools?

4. Is there a difference in the number of single sport participants in MSHSAA member schools since the implementation of MSHSAA Rule 3.15.3 in 2011 when considering the number of sports offered?
5. Is there a difference in the number of multiple sports participants in MSHSAA member schools since the implementation of MSHSAA Rule 3.15.3, when considering rural, urban, and suburban Missouri High Schools?
6. Is there a difference in the number of multiple sport participants in MSHSAA member schools since the implementation of MSHSAA Rule 3.15.3 in 2011 when considering the number of sports offered?
7. Is there a difference in the number of multiple sport participants in MSHSAA member schools since the implementation of MSHSAA Rule 3.15.3, when considering schools that do or do not offer 11-man football?

Conceptual Framework

The benefits of student participation in high school athletics have been researched for many years. However, there are a very limited amount of studies that seek to determine how policies implemented by state activity associations could impact high school participation. Though this study is not providing qualitative data on the motives and political factors that led to the implementation of this policy, it is providing the quantitative data of how this policy could have impacted participation. This impact on participation could be supportive of the mission of MSHSAA member schools or it could contradict the mission. In an attempt to understand the benefits or challenges to student participation that MSHSAA Policy 3.15.3 may present, the policy analysis strategies of "interests" and "equity", proposed by Deborah Stone (2012), and "assembling the evidence" proposed by

Eugene Bardach (2012) provide the guiding principles for this study. Additionally, this study will consider in the historical role of policy in high school athletics to understand the changes in high school sports since its inception in the United States. It is the attempt of this study to combine these concepts in order to provide a comprehensive study that can "help policy makers whose actions may have significant implications in the future, make well informed decisions" (Lempert, Popper, & Banks, 2003). Figure 1 below provides a visual for understanding the framework of this study.

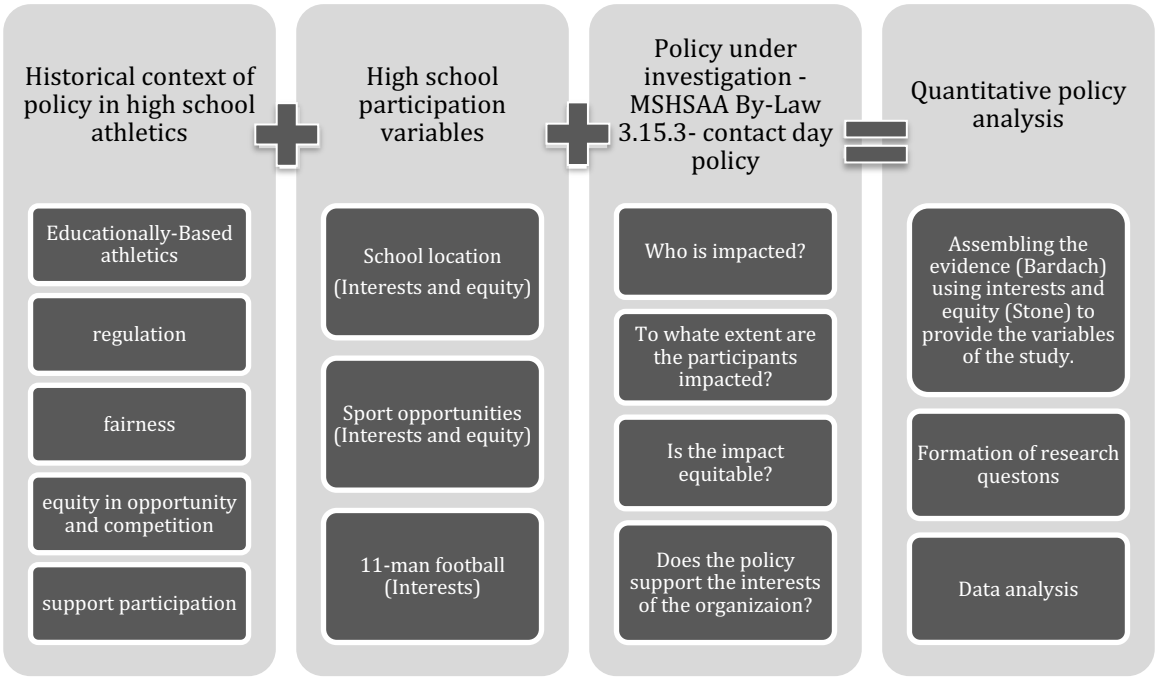

Figure 1. A model representing the framework of this study including the factors leading to determination of variables and including Stone's (2012) and Bardach's (2012) concepts of policy analysis.

Interest and equity

Stone identifies two concepts that closely align with both the MSHSAA policy and this study, "interests" and "equity" (Stone, 2012). The first concept is her description of how the prevailing interests of a group serve as motivation for creating and implementing policy (Stone, 2012, p. 228). Stone claims that within society groups naturally form

and people survey their particular situation to determine how to make their lives better (Stone, 2012, p.230). She explains that policy is difficult as interests can divide and "it is much easier to identify common problems of a group than to find a common solution." (Stone, 2012, p. 230). The difficulty of politics lies within the process of identifying and supporting the interests of the group, because as Stone states, "no matter how important the group identity might be (things such as gender, race, or class), differences within groups can undermine common interests" (Stone, 2012, p. 230). The interests of Missouri school leaders led to the implementation of a policy that potentially increased summer obligations for coaches and student participants. This study seeks to determine if the interest groups responsible for promoting and implementing this policy impacted participation across all types of schools in Missouri. Additionally, did this policy support the mission of MSHSAA.

The second concept that aligns this study with Stone's work is her description of the role of equity and equality in policy decisions. Stone discusses equity, fair distributions, and equality, uniformed distributions, while explaining the considerations that policy makers use in determine the best policy to implement (Stone, 2012, p.40). "Distributions – whether of goods and services, wealth and income, health and illness, or opportunity and disadvantage – are at the heart of policy controversies" (Stone, 2012, p.39). Stone describes the three dimensions of equity as "the recipients (who gets something?), the item (what is being distributed?), and the process (how is the distribution carried out?)" (Stone, 2012, p. 45). Political decision makers go to great lengths to determine how and to whom to distribute the resource to achieve the end goal. With this in mind, it is important to understand whether the distribution of more time for coaches and athletes

was equitable for all Missouri students and impacted all MSHSAA member schools equally.

Historical Context

In order to comprehend the purpose of policies in high school athletics, considering the historical context is essential. This context supports the work of this study in the way that it addresses the attempt by school leaders to continue to provide an educationally based experience for all students.

High school athletics faced many challenges and changes in the United States since its inception in the late 1700's (Pruter, 2013). Originally, it was student organized and led "free play" activity during non-school hours. There was not any control by school personnel of these activities. Slowly school leaders began to see the need to regulate the activities of their students for a number of reasons, but mainly since these groups were seen as representatives of the schools (Pruter, 2013). High school athletics transitioned from an after-school activity organized by school boys to highly competitive, organized contests led by school leaders (Pruter, 2013). The support of interscholastic athletics grew rapidly, and the educational benefits were touted by school leaders (Pruter, 2013). Once the National Federation of State High School Athletic Associations was formed in 1923, policy became the focus of the agendas for both the national and state associations. "The high school athletic world would soon come to reflect the assertion of authority by secondary-school administrators as they moved in their final search for control to place high school interscholastic competition into a realm deemed appropriate to the overall mission of the secondary-school educational system" (Pruter, 2013, p. 292). The original policies reflected the attempts to gain control by regulating contests under specific rules,

determining player eligibility requirements, and prohibiting unsanctioned contests (Pruter, 2013). Policy has since evolved in both a national and state level to develop equity, consistency, and maintain a focus on educationally based athletics.

Participation and Policy

Policy implementation and the decision making of school leaders has impacted high school participation in recent history. Current research shows that most students have access to athletic participation and almost 55 percent of high school students participate in at least one high school sport (National Federation of State High School Associations, 2018). Since the 1970's many studies have been done to identify existing factors that could limit participation. Historically, these factors have included school location, socioeconomic constraints, school funding, and discrimination. Numerous policies have been created to combat inequalities to provide access to all opportunities (Roscigno, 2006).

One example of this type of policy is the 1972 Educational Amendment. A portion of that Amendment, Title IX, was a law designed to end discrimination in any education program or activity by ensuring "no person in the United States shall, on the basis of sex, be excluded from participation in, be denied the benefits of, be subjected to discrimination." (United States Department of Labor, 1972). Title IX in particular has led to significant growth for female participation in sports growing from one in 27 to one in three females over a 25-year period (Stevenson, 2007). Many state high school associations followed the lead of Title IX to ensure that opportunities to participate are available to all by performing audits of the athletic programs and adding athletic opportunities where deemed necessary.

Though Title IX specifically relates to the opportunity for participation, there are decisions that school or government leaders make that may indirectly impact participation. School leaders, state associations, and state governments are working for ways to increase participation and access for all students to high school sports. Many states such as Florida, Nevada, and Illinois are being faced with the decision to include home school students in high school interscholastic athletics (Moy, 2015). Proponents believe that high school athletics is a privilege that should be accessible for all students (Roberts, 2009). Other schools are faced with the low funding and still finding ways to provide opportunities and educationally based athletics to all students (Roscigno, 2006). They work to provide these athletic opportunities on reduced budgets or are faced with the decision to get rid of them all together (Popke, 2007). These are the types of decisions that school leaders and political decision makers are faced with that directly impact participation.

Missouri policy implementation

MSHSAA acts as the governing body for Missouri high school athletics and all policies are created and enacted in a similar fashion to that of a state and federal government. The major political players are the Board of Directors, MSHAA Executive Staff, high school principals, and athletic directors. Policy agendas as described by Kingdon (1995), can come from anywhere and may not have a specified origin (Kingdon, 1995). However, there was an impetus that led to the decision to approve and implement MSHSAA Rule 3.15.3. MSHSAA saw the need to put a rule in place that increased the number of days and type of activity that students could do in each sport during the summer (MSHSAA Liaison Committee Report, 2010). Kingdon explains that an identified

problem that has been discussed by the organization over time becomes a political agenda item (Kingdon, 1995).

Viewing the situation facing MSHSAA member schools through the political frame explains that there were three specific resources being discussed as the focus of the policy (Bolman & Deal, 2011). These resources were student athletes, coaches, and time. Though the purpose of this policy was to set a limit for the amount of sport-specific training that student-athletes and coaches could be involved in the summer months. The consequences of the decision were unknown at the onset of the policy implementation. The goals of MSHSAA may have conflicted with that of coaches and competing interests were at stake (Bolman & Deal, 2011). Because of the coalition that existed between MSHSAA and its members, the policy was approved by a majority of MSHSAA's members (Bolman & Deal, 2011).

This non-experimental quantitative policy analysis will study the potential impact of MSHSAA By-Law 3.15.3 on high school athletic participation in Missouri.

Analyzing MSHSAA By-Law 3.15.3

This study is a post-positivist approach to policy analysis (Creswell, 2013). There is an understanding by the researcher that there is a conflict and potential bias that exists in the is study. The conflict is that researchers have proven the benefits of extracurricular activities in high school students, however, there may be decisions educational leaders make based on societal pressures that could negatively impact a student's ability to participate. This is what Bardach describes as a "potential public problem" (2012) that should be quantified, if possible, to determine if there if such problem exists. It is also understood for the purpose of this study, that the policy being investigated may not be the

only variable that could impact participation. Those other variables could be perceived safety risks, parental pressure, cultural changes, and socioeconomic constraints. However, for the purpose of this study we will consider measurable and quantifiable data like school location, number of opportunities, along with single and multiple sport participation trends in order to determine if a correlation can be identified. The aforementioned factors will be significant indicators of the trend of participation, both before and after the implementation of the MSHSAA By-Law 3.15.3.

This study will help determine whether or not this policy was beneficial in "promoting the value of participation" (MSHSAA Handbook, 2018). Specifically, it is the work of this study to determine if there were any consequences of this policy on athletic participation in MSHSAA member schools. The hope is that this study will provide support in determining if a better decision could be made that would produce the desired result from the school leaders in the Missouri (Bardach, 2012).

Design and Methods

The intent of this non-experimental quantitative descriptive study is to understand the changes in the number of athletic participants before and after the implementation of MSHAA rule 3.15.3 in Missouri high schools (Creswell, 2013; Mertler, 2016). According to Mertler (2016)

> "Nonexperimental (descriptive) research designs embody a group of techniques used to conduct quantitative research where there is no manipulation done to any variable in the study. In other words, variables are measured as they occur naturally, without interference of any kind by the researcher. In descriptive research, the researcher is simply studying the

> phenomenon of interest *as it exists naturally*; no attempt is made to manipulate the individuals, conditions, or events." (p.111)

This design was chosen in order to present the most specific information concerning changes in athletic participation to identify a group that may have been significantly impacted. It is important to know that causation is not the goal of this study, but rather to understand the changes and trends from the years 2008-2016 (Field, 2009).

The study participants will be limited to student athletes that have participated in one or more of the nineteen championship sports offered by all MSHSAA member schools from 2008-2016 (MSHSAA, 2018). The data will be collected from the MSHSAA office database is located in Columbia, Missouri. The data is stored in a computer archive program that can only be accessed at the MSHSAA office. The data will consist of identifying numbers for each student that participated in high school athletics in MSHSAA member schools from 2008-2016. Each identifying number will be associated with a single sport or multiple sports by school and year. The participants will be identified and sorted by year. The data will be examined for trends over the time period of 2008-2016. To further refine the study and determine the impact, if any, of the policy, the analysis will include the independent variables of school location, number of sports offered, and whether the school offers 11-man football. The analysis of trends and study of significance of change over time will produce the desired information to understand the possible impact of the policy.

Defining Rural, Urban, and Suburban

Whether it is standardized test scores, facilities, or interscholastic athletics, school leaders compare themselves to other schools that are similar in location, demographic,

and socio-economic characteristics to determine how they measure up to their counterparts (Orr, 2007). It is important for this study to reflect data that schools use to compare themselves to similar schools. It is also important that the Missouri school leaders that make policy decisions for high school athletics are able to understand how a policy may affect different types schools. For the purpose of this study an objective method is used to identify schools as urban, rural, and suburban.

To determine rural, urban, and suburban schools, this study uses data from the United States Census Bureau and the National Center for Education Statistics (NCES). For this particular study, an explanation from the Census Bureau clarifies the separation between urban and rural:

> The Census Bureau uses a definition based on population density and other measures of dense development when identifying urban territory. The definition seeks to draw the boundary around an urban area's "footprint" to include its developed territory. To accomplish this, the Census Bureau's definition of urban is largely based on residential population density and a few other land-use characteristics to identify densely developed territory. In order for a block to qualify as urban, it must have a density of 1000 people per square mile" (Ratcliffe, Burd, Holder, & Fields, 2016)

The Census Bureau goes on to define that any area that is not included in an urban area is defined as "rural" (Ratcliffe, Burd, Holder, & Fields, 2016).

The NCES has developed a classification system in conjunction with Census data that further helps identify each school as urban, suburban or rural (NCES, 2019). Figure 2 displays the definitions used by the NCES.

Locale	Definition
City (Urban)	
Large	Territory inside an urbanized area and inside a principal city with population of 250,000 or more
Midsize	Territory inside an urbanized area and inside a principal city with population less than 250,000 and greater than or equal to 100,000
Small	Territory inside an urbanized area and inside a principal city with population less than 100,000
Suburb	
Large	Territory outside a principal city and inside an urbanized area with population of 250,000 or more
Midsize	Territory outside a principal city and inside an urbanized area with population less than 250,000 and greater than or equal to 100,000
Small	Territory outside a principal city and inside an urbanized area with population less than 100,000
Rural	
Fringe	Census-defined rural territory that is less than or equal to 5 miles from an urbanized area, as well as rural territory that is less than or equal to 2.5 miles from an urban cluster
Distant	Census-defined rural territory that is more than 5 miles but less than or equal to 25 miles from an urbanized area, as well as rural territory that is more than 2.5 miles but less than or equal to 10 miles from an urban cluster
Remote	Census-defined rural territory that is more than 25 miles from an urbanized area and is also more than 10 miles from an urban cluster

Figure 2. National Center for Education Statistics descriptions and definitions for urban, suburban, and rural. (National Center for Education Statistics, 2019)

NCES has classified all schools into one of these categories based on schools' actual addresses and corresponding coordinates of latitude and longitude. For the purpose of this study, we will only be using the general categories of urban, suburban, and rural (NCES,

2019). These categories will be used in two research questions in order to categorize the impact of MSHSAA By-Law 3.15.3 on the number of participants in those types of schools.

Assumptions

It should be assumed that all high school students that attend MSHSAA member schools have had access to participate in sports unless they did not meet the "student essential requirements" as defined by MSHSAA (MSHSAA, 2018). This study is conducted under the assumption that a policy that could potentially increase summer time requirements for students could impact student participation. It is also assumed that this policy was implemented without any statistical data but rather anecdotal evidence to support the implementation of MSHSAA By-Law 3.15.3. It is assumed by the researcher that participation numbers should be similar each year as there is not any data or research to suggests significant factors that would impact participation in Missouri from 2008-2016. These assumptions form the basis of this study.

The researcher also needs to disclose his own bias. The researcher is a high school athletic director in Missouri. The researcher is also a former high school coach in Missouri. Based on these roles, the researcher understands he may have bias based on anecdotal evidence observed during his time in these roles. This is what Trochim (2006) identified this as "experimenter expectancies". This is used to describe instances in which the researcher influences the outcomes of a study either consciously or subconsciously. The researcher must be aware of potential biases when reporting findings and conclusions as a result of the data analysis. The researcher will focus only on the results of the data and make conclusions based on those results.

Definition of Key Terms

Missouri State High School Athletic Association (MSHSAA). MSHSAA is the governing body junior high and high school athletics and activities for MSHSAA member schools. It is comprised of elected officials as well as representation from each member school.

Interscholastic Athletics. Athletic participation and competition between schools (Miriam-Webster, 2018)

Multi-sport athlete. Student athletes that participate in more than one of the nineteen MSHSAA championship series sports during the MSHSAA calendar year.

Single sport participant. Student athletes that participate in one of the nineteen MSHSAA championship series sports during the MSHSAA calendar year.

MSHSAA By-Law. For the purpose of this study, policies are interchangeable with By-Laws as those are the policies created and implemented by MSHSAA.

MSHSAA By-Law 3.15.3. This is also known as the "contact day rule", which states that student athletes and coaches have a limit of 25 contact days per sport, per gender during the summer (MSHSAA, 2011).

Summer. As defined by MSHSAA, the summer months includes each school's original last day (pending make-up days) of school and the first day of practice for fall sports.

Contact day. A contact day is any day in which a student athlete participates in sport specific practice or competition during the summer (MSHSAA, 2011).

Significance of the Research for Leadership Practice

This study should help inform MSHSAA policy decision makers about the impact of the increase of summer time contact days on the number of student participants in single and multiple sports. The MSHSAA Executive Staff, Board of Directors, Missouri superintendents and athletic directors are interested in providing the best high school athletic environment possible and staying true to the vision and mission of the organization. It is important to know if the policy is impacting high school sport participation in Missouri. The MSHSAA Executive Board and the athletic directors will use the information gather from this study to determine if changes need to be made to MSHSAA Rule 3.15.3.

In addition, this type of study could be used as a template for other MSHSAA policy decisions. There have been similar policies implemented in regard to demands placed on high school students and coaches. As the researcher was encouraged by the MSHSAA Executive Board and colleagues to investigate this policy, this could lead to additional research. Since there is very little data nationwide, this study could also be useful for other state high school athletic associations to have access in order for school leaders to make educated decisions within similar contexts.

Summary

When determining policy, it is important to understand the needs of society and whether or not a potential problem exists (Bardach, 2012, Stone, 2012). School leaders and policy makers have a significant role to implement policies that are altruistic, but also improve the climate, culture, and success of the organization (Stone, 2012). It is important that MSHSAA member schools contribute to promoting the mission of the organization, including participation. The analysis of the number of single sport participants

and multi-sport participants during the years of 2008-2016 could give the MSHSAA Executive Board and athletic directors across the state of Missouri the information they need in order to review MSHSAA Rule 3.15.3 and make appropriate changes, if necessary. The non-experimental descriptive design is chosen in order to give the most complete information concerning the changes, if any, that have taken place in participation within Missouri high school athletics. It is the goal of this study to help policy makers analyze the data to determine potential impacts of this policy on high school sport participation in Missouri.

CHAPTER TWO

REVIEW OF THE LITERATURE

This review of literature will provide further insight into the three underpinnings of this study. The first underpinning of this study is the analysis of policy. This literature review will include ideas of policy analysis that are applicable to this particular study. This second underpinning of this study is the history of policy in high school sports, both nationally and in Missouri. This provides a framework for understanding why policy exists in high school athletics. The third underpinning that supports this study is a description of the variables that impact high school participation. This review of literature will conclude with examples of similar policies from other states that are consistent with the policy being analyzed in this study.

Policy Analysis

As we begin to look deeper at the contact day policy and the potential impacts it has had on participation in Missouri high school athletics, it is important to understand the motivation for the configuration and implementation of policy. Furthermore, it is important to identify the specific political concepts and ideas that pertain to this particular study. To do this both Deborah Stone's and Eugene Bardach's work on policy was used as a guide to the understanding of policy for the purposes of this study.

Deborah Stone, in her book *Policy Paradox* (2012), describe the paradoxes that exist when policy makers create rules for society. Stone aims to explain that political reasoning is not always objective and easily defined, and includes an emotional, value-based discussion about solutions for the world's problems (Stone, 2012, p.12). She explains that many times the traditional political analysis strategy, known as "rational decision-making

model", cannot account for the "struggle over ideas" (Stone, 2012, p.13). In addition, it cannot always account for the motives of policy makers and unforeseen problems that arise from political decisions. Stone insists that policy does not always impact the community the way it was intended, so a fluid thought process and adjustments on the part of policy makers are part of the policy-making process (Stone, 2012, p. 13). As she describes the paradox that exists that exists in policy, Stone (2012) states:

> "…people don't always perceive a goal first and then look for discrepancies between the goal and status quo. Often, they see a problem first, which triggers a new awareness of ideals and a search for solutions. Or, perhaps they see a solution first, then formulate a problem that requires their solution (and their services)." (p. 13)

Stone disputes that policy making is not always rational and there are a multitude of factors that determine the steps of policy makers (Stone, 2012, p.13)

Interests. Within her work, Stone identifies two concepts that closely align with both the MSHSAA policy and this study, "interests" and "equity" (Stone, 2012). The first concept is her description of how the prevailing interests of a group serve as motivation for creating and implementing policy (Stone, 2012, p. 228). Stone claims that within society groups naturally form and people survey their particular situation to determine how to make their lives better (Stone, 2012, p.230). These determinations become interests and many times serve as divides within communities, forming interest groups (Stone, 2012, p.230). Stone describes interests as "people and organizations who have a stake in an issue or are affected by it" (Stone, 2012, p. 229). She explains that this is where policy is difficult as interests can divide and "it is much easier to identify common problems of a

group than to find a common solution." (Stone, 2012, p. 230). The difficulty of politics lies within the process of identifying and supporting the interests of the group, because as Stone states, "no matter how important the group identity might be (things such as gender, race, or class), differences within groups can undermine common interests" (Stone, 2012, p.230).

Stone describes multiple concerns that exist when political leaders attempt to address the interests of the group through policy creation and implementation. Her first concern is that all groups are not equally represented and have a leader that can voice the opinions of the group equally to the other interest groups (Stone, 2012, p.231). In addition, these leaders may have different motivations than that of the group, and some may be more skilled or prominent than the leaders of other interest groups (Stone, 2012, p.231).

Secondly, Stone asserts that the ability of certain interest groups to "mobilize" their group in order to gain the largest amount of support for their interests is not always fair (Stone, 2012, p.232). Stone states that even though "all groups have an equal chance to have their grievances heard…deep inequalities (financial, social, political) that prevent some interests from getting adequate representation" (Stone, 2012, p.232). Both of these ideas address the concerns that exist in a group's ability to mobilize their interests and according to Stone, "interest mobilization is crucial to citizen's capacity to define their problem and link them to policy solution" (Stone, 2012, p.234)

Finally, Stone (2012) expresses the power of collective action in society. She states that even though people can be self-interested "even to the point of self-destruction", the ability of the group to mobilize, communicate, and cooperate is many times an

example of the passion they have for the policy change they are striving to achieve (Stone, 2012, p. 237). These groups seek to access or regain something that they believe will benefit their lives. Stone states, "They can make a particular interest appear to be the interest of the general public…" (Stone, 2012, p. 246). The ability of these groups to represent the programs as benefits for the group plays a significant role in the success of their political strategy (Stone, 2012, p.243)

It is important to coalesce Stone's theory of interests with the process that led to implementation of MSHSAA By-Law 3.15.3. A common group of high school leaders, coaches, administrators, and athletic directors felt the need to address an issue with summer time contact between coaches and athletes. It was stated that this issue was brought to the forefront by the interest group of coaches that felt more time was necessary during the summer to meet the needs of their programs (M. Mundell, personal communication, July 14, 2014). It is not known whether the coaches felt this way in response to parents complaining about a struggling program needing to practice more, or competition with club coaches for summer time access to students, or simply coaches seeking a competitive advantage and wanting more time to prepare for the upcoming seasons. It is known that this specific policy became a MSHSAA ballot issue because there was a mobilization by MSHSAA members, athletic directors, principals, and superintendents to support this effort of the coaches and enact a change in summer time contact (Stone, 2012, p. 232). The prevailing interests of MSHSAA members were mobilized to communicate the problem and develop a policy as a solution that they expressed with benefits for all. The MSHSAA voting members had to determine the extent to which this policy would affect the students, coaches, and athletic programs at their school. MSHSAA By-Law 3.15.3 is

an example of how the interest group, in this case school leaders and coaches, within Missouri high school athletics navigated an issue and created a policy to meet the interests of the members of the organization (Stone, 2012, p. 229). In this instance, it wasn't that there was two opposing sides, but that there was a group with "concentrated interests" and an "organized effort" while the rest of the MSHSAA member schools may not have been aware of the potential costs or benefits of the policy.

Equity. The second concept that aligns this study with Stone's work is her description of the role of equity and equality in policy decisions. Stone discusses "equity, fair distributions, and equality, uniformed distributions", while explaining the considerations that policy makers use in determine the best policy to implement (Stone, 2012, p.40). "Distributions – whether of goods and services, wealth and income, health and illness, or opportunity and disadvantage – are at the heart of policy controversies" (Stone, 2012, p.39). Stone describes the three dimensions of equity as "the recipients (who gets something?), the item (what is being distributed?), and the process (how is the distribution carried out?)" (Stone, 2012, p. 45). Political decision makers go to great lengths to determine how and to whom to distribute the resource to achieve the end goal.

MSHSAA identifies one of its objectives is to "formulate minimum uniform and equitable standards." (MSHSAA, 2018, p.19). This objective describes the equity that MSHSAA attempts to create for all MSHSAA member schools. Stone describes the three dimensions of equality; recipients, items, and distribution, as being clearly defined. However, she explains that these dimensions all have at least two sides and therefore, policy likely will not have may not have an equal impact on the recipients (Stone, p.60).

Using Stone's concepts in the example of MSHSAA By-Law 3.15.3, students and coaches, "the recipients", would gain an equal amount of time to practice in the summer (Stone, 2012). She describes this practice time as the "item" that is being distributed (Stone, 2012). The students may gain more instruction and exercise since this is an increase from the previous amount of time that coaches and participants could practice in the summer. This "group-based" distribution of time for coaches and MSHSAA student participants to practice was given in equal amounts (Stone, 2012). This was an increase in time from the previous policy that allowed coaches and students to improve the performance of the athlete or team. MSHSAA gave each school the ability to distribute this time within the constraints of the rule, as defined by the MSHSAA By-Law. Students that attend schools in the different regions of rural, urban, or suburban may have a different experience with the contact day rule. Coaches may not have the ability to offer each student 25 days of practice each summer. Students may not have the ability to attend 25 days for each of the sports he or she plays. In addition, students with a different number of opportunities at his or her school may be impacted differently by the by-law. In theory, each student would be getting the same opportunity, but in practice, that may not be the case (Stone, 2012). All voting MSHSAA school leaders had the opportunity to vote on this by-law. Their vote was an expression of their belief about how this by-law would impact the school in which they represent. It was determined that each type of school is not equally represented, so it is possible that the interests and votes of some types of schools could outweigh the interests and votes of others (Stone, 2012). Table 1 below uses Stone's "Concepts of Equality" to understand the dilemmas that exist within the passage and implementation of MSHSAA By-Law 3.15.3.

Table 1

Stone's "Concepts of Equality" as it relates to MSHSAA By-Law 3.15.3

Stone's Dimensions	Issue	MHSAA By-Law	Dilemma
Recipients	Membership	MSHSAA student-athlete participants	Will some participants have the opportunity to benefit more than others?
Items	Boundaries of the item	25 summer contact days for coaches and participants	Does every participant get the same opportunity to use the 25 days?
Process	Voting	All member schools voted and this policy passed according to MSHSAA	All school leaders did have an opportunity to vote, but different types of schools are not equally represented.

Stone concludes that "Once you have mapped out the arguments (within the dimensions), ask yourself whether they seem accurate, reasonable, persuasive, and, ultimately fair" (Stone, 2012, p.57). As equity is certainly a goal of the MSHSAA organization, it is important to determine how this policy impacts the students that participate in its member schools.

Bardach's Eightfold Path

Finally, this study uses Baradach's (2012) work with policy analysis to support the research question design and direction of this quantitative policy analysis. intends to complete one important aspect of policy analysis as described by Eugene Bardach (2012) in his book, *A Practical Guide for Policy Analysis: The Eightfold Path to More Effective Problem Solving*. Bardach (2012) begins with a recommendation of political analysts to "define the problem". He states that, "problems deserving our attention don't necessarily exist today but are in prospect for the future, whether near or distant" (Bardach, 2012, p.2). As it was described in a previous section, a policy that could threaten the opportunity of participation in Missouri schools multi-sport participation is the focus of this

study. It is not known as to whether this policy, or other policies of this nature, have impacted participation. Two other steps in Bardach's Eightfold Path are of particular importance for this study and will provide a path to find this answer.

Assembling the evidence. Bardach's (2012) recommendation is that within any policy analysis, the researcher must "assemble the evidence" in order to make reasonable projections about the impact of the policy being studied. He states that the researcher should "…try to collect only those data the can be turned into information that, in turn, can be converted into evidence that has some bearing on your problem. (Bardach, 2012, p. 11). The problem being addressed with this study is that there is a lack of information about the impact of the contact day policy. It is understood by the researcher that the quantitative data will be the emphasis of this research, though there could be other people and sources of information that could be relevant (Bardach, 2012). It does not discount the research on this particular problem, due to the value of the evidence. Bardach explains the value of the quantitative (factual) evidence is that it can produce a logical projection for policy changes and provide pathways for further research (Bardach, 2012).

Project the outcomes. Additionally, Bardach (2012) explains the importance of being able to "project the outcomes" (p. 47). "Policy is about the future, not about the past or the present, but we can never be certain about how the future will unfold, even if we engage it with the best of intentions and the most thoughtful of policy designs" (Bardach, 2012, p. 47). As Bardach's (2012) work states, there may be some undesirable side effects from any policy implementation. Ideally, those outcomes would be identified and averted prior to the implementation of policy (Bardach, 2012). However, the analysis of a policy and its continued impact is acceptable and common when looking for policy

alternatives (Bardach, 2012). This study intends to identify the outcomes of the contact day policy. Specifically, the impact on multi-sport and single sport participation.

Bardach concludes with the discussion about policy analysis and determining the effectives of the policy by the analyst's ability to ask the right question (Bardach, 2012). The table below will adapt Bardach's questions to help understand the MSHSAA response and questions of this study.

Table 2

Bardach's questions for policy analysis as they relate to the study of the impact of MSHSAA By-Law 3.15.3

Bardach's Questions	MSHSAA Answer	Study Questions
What is the mission of the organization?	To promote "equity and participation"	Is MSHSAA By-Law 3.15.3 supporting participation and equity?
Why is the policy being implemented?	To provide an increased and consistent policy for all schools as it relates to summer time contact between coaches and participants	Does this policy impact participation at the different types of schools due to the increase in summer time contact?
Who will be directly impacted?	Coaches and student participants	Will this policy impact participants ability to participate in multiple activities?
Is there data to support this policy?	Other states are using these kinds of policies to regulate summer contact days	What quantitative data exists to that could help analyze the impact of this policy?

Bardach contends that aspects of the organization structure must be analyzed, including the capacity to implement such policy in the manner in which it was intended. The goal of this study would be to determine whether this policy impacted athletes and promoted the value of equity and participation in Missouri High school athletics, as it

was intended. Questions like these can help the researcher project the outcomes of a particular policy (Bardach, 2012).

Educational Policy and Reform

Educational policy and reform have existed in United States public education since its inception in the late 1600's (Massachusetts School Law, 1642). Education reform is considered task of the United States government and has led to a number of reforms, laws, and policies including Individuals with Disabilities Act, No Child Left Behind, Elementary and Secondary Education Act, and the 14th Amendment of the Constitution (Ramathon, 2008, Parker, 2007, Thomas & Brady, 2005). Government oversight has infiltrated almost every aspect of public education (Thomas & Brady, 2005).

Historical context of national policies in high school athletics. Reform and oversight were also part of high school athletics in its inaugural stages. It was said that in the early 1900's "student activities in the early common schools were a natural development stemming from the interests of pupils" (Keller, 1979). High school sports first emerged in the boarding schools of the East. They began as casual sports and games, mostly baseball and football, played by students as far back as the late 1700s. The earliest record of these sports was in boarding schools located in New England area (Pruter, 2013).

> "Schoolmasters of the day tried to discourage ball playing in proximity to the windows, but generally looked at the boys' games as being good for their health and physical development. We know about these students' early engagements in bat and ball games and football from the various regulations imposed by the schools and local towns to

> reduce noise and damaged windows. Such play, however, did not fall under the school curriculum, but instead took place during "unsupervised recess activities" and in non-school hours." (Pruter, 2013, p. 1)

During the late 1800's organized interscholastic activities that were taking place were student directed and initiated (Pruter, 2013). Both government and school leaders began to look at potential regulation of these events for a number of reasons. Mainly, to address "reported abuses, but to also make them part of the physical education curriculum" (Pruter, 2013, p. 45).

> "Physical education reformers in the high schools followed the colleges in taking over sports programs with the catchphrase "Athletics are educational." Their reform was tied to the overall reform in American education and overall reform in American society during the Progressive Era. Reformers of high school sports reflected the era's values in their vision that athletics and games for youth would help ameliorate some of the pathologies of modern industrial society, particularly in the large urban centers. (Pruter, 2013, p. 45)

Youth and high school sports became seen as more than just opportunities to play outdoors, but a "means to build good character and citizenship" (Pruter, 2013). In an era where the goal became and education for all, including lower income families and immigrants, sports were considered an important part of the educational experience.

In the early 1900's school administrators began to take control of all extracurricular student opportunities, which were previously run by students, in order to create opportunities for all students (Pruter, 2013). The initial efforts of educators were to establish

leagues and state associations (Pruter, 2013). Leagues were developed so these school leaders could begin to regulate the competition, both who was competing and how the games were played (Pruter,2013). Most regulation was focused on basketball and track in the early years with not much interest in regulating other sports during this time (Pruter, 2013).

> "Not long after the turn of the century, educators had already begun their debates and arguments over how large a role adult authority should have in high school leagues, and in some cities, such as Chicago and Boston, adult oversight was gradually imposed over a number of years…. At a presentation given to a gathering of principals at the National Education Association in 1902, W. J. S. Bryan of St. Louis argued for the need for leagues in the following manner: When more than one school is involved, concerted action is required, and the conscious cultivation of the true sportsman's spirit. In school organizations and interscholastic leagues, faculty, pupils, and alumni should act in conjunction, if the best results are secured. The desire of school authorities must be to contribute to maturity of judgment and knowledge of affairs, which pupils may not possess on account of inexperience . . . . They must be made to feel that, while the management of athletics is laid largely upon them, the very existence of school organizations is dependent on the favor and approval of the principal."
>
> (Pruter, 2013, p. 65)

By the 1920's, state associations existed throughout the entire country and "developed a basis for national governance (Pruter, 2013, p. 66). It was at that time, when

policy and regulation of interscholastic sports became a focus of state associations. Most of the questions were concerning whom contests could and could not be played against.

It is important to understand the formation and reason for existence of these governing organization in greater detail. Though Missouri was one of the last states to officially form a governing body for high school athletics, the development of a governing body was similar for many states (Keller, 1979). The concerns for school administrators in Missouri were consistent with those nationwide. Specifically, administrators focused on the following: officiating of contests, equipment safety, proper coaching, legitimacy of student enrollment, equity of competition, and "championship" games (Keller, 1979). For example, there were many contests with officials that had little knowledge of the rules of the game leading to frustrated coaches, spectators, and players (Keller, 1979). More serious concerns included the legitimacy of players and "part-time" students. "Part-time" students attended schools and played on teams only during the "sport" season (Keller, 1979). School administrators took little responsibility in the early athletic teams and contests, leaving most of the management up to the students (Keller, 1979). "Student management of athletic teams bearing the name of high schools frequently caused embarrassment for the school officials as disputes arose and occasional fights occurred. There was little or no control over outsiders who played with or against high school athletes, and whose influence upon them was not always good" (Keller, 1979, p. 18). In addition, there were many competitions between high school teams and local college teams (Keller, 1979).

In light of these concerns, school administrators began to take responsibility of the activities and competitions (Keller, 1979).

> "The first attempts to exercise control over practices which they considered objectionable and not in the best interests of their students came from individual high school administrators...Common sense was about the only guideline they had to follow, although some of them, no doubt, had learned what was being tried by schools in other states to solve problems similar to their own." (Keller, 1979).

In the early part of the 20th century, Missouri schools within the same region began to form governing associations in order to attempt to combat some of the issues plaguing the athletic contests (Keller, 1979). Cooperative action within regions grew as schools formed conferences and district associations (Keller, 1979). "How many individual conferences were in existence by 1925 is not known, but there was a goodly number and they were found in all parts of the state. They were successful in improving the conditions surrounding the athletic contests within the conference and in establishing some common standards of eligibility" (Keller, 1979). However, issues still existed as teams competed against schools outside of their conference and it was deemed that more oversight was necessary. "Improvements were made, but inconsistencies in regulations still existed over the State, largely because there was no central organization with authority to resolve them. In the meantime, the high schools in all of Missouri's neighboring states had formed state high school associations by 1925…Hence it was the realization of a need for a statewide association of high schools in Missouri that prompted some of its leading educators to take active steps in 1925 to organize one" (Keller, 1979). On February 4, 1926 at a meeting of Missouri school superintendents, the first MSHSAA Constitution was approved by a unanimous vote (Keller, 1979).

MSHSAA Framework and Constitution

The Missouri State High School Activities Association officially came into existence in 1926 (Keller, 1979). This organization is comprised of over 500 Missouri public and private schools that have agreed to abide by the MSHSAA By-Laws in order to compete in MSHSAA sanctioned events and state championship series.

The original constitution provided a framework for the organization (Keller, 1979). There are three primary roles or branches of the organization, including adopting legislation, completing administrative tasks, and making judiciary decisions (Keller, 1979). "The member schools have always retained the legislative authority (creating and changing by-laws) unto themselves" (Keller, 1979). Each member school gets one vote on all legislative decisions. The constitution also included the description a "Board of Control" compromised of elected members of each district in the state (Keller, 1979). The primary task of the Board of Control was to control the abuses of its member schools and complete the necessary administrative tasks of the organization (Keller, 1979). In addition, the Board of Control was viewed by the organization as providing direction for the organization (Keller, 1979). Since the creation of MSHSAA some parts of the organization have changed including the qualifications and election process of choosing the Board of Directors (formerly Board of Control), the number of districts, the hiring of a MSHSAA staff, and many additional by-laws, the duties of each branch of the organization have remained consistent (MSHSAA, 2017).

MSHSAA Policy. In this study, it is important to understand how MSHSAA policy is created. The process for amending or changing by-laws is outlined in the MSHSAA Handbook in Article IV of the Constitution. The first step in the process would be to

propose an amendment or change in by-law to the constitution. This process is specifically outlined in the Constitution under Article VI, Section 3.

> "Amendments may be proposed by the Board of Directors or by a petition. Requests for petitions for amendments shall be submitted in writing by a member of a Board of Education, school's administrative staff, faculty or approved coaches/directors no later than October 15 and shall be worded by the Executive Director within 30 days of receipt, with final acceptance of the petition from the initiator. In order for a proposal submitted by petition to be certified for the Annual Ballot, the petition shall be signed by the Principals or Superintendents of at least ten percent of the MSHSAA membership, and that total shall include signatures (Principal or Superintendent) from at least ten percent of the member schools in at least five of the eight geographic Board districts" (Keller, 1979).

The next step in the process is as follows:

> "The Constitution of this Association may be amended by a two-thirds majority of schools voting and the By-Laws by a majority of those voting provided the proposed amendment has been submitted to the Executive Director and received at the MSHSAA office no later than December 15 (see also Section 3 for procedures). The Executive Director shall submit all proposed amendments to member schools no later than the first Monday in April. Ballots shall be distributed to all member schools, with each member school having one vote…Ballots shall be received at the MSHSAA office no later than May 1. The Executive Director in the

> presence of at least one witness, shall tabulate the votes when paper ballots are being received. The results of the election shall be officially approved at the next meeting of the Board of Directors and such changes as have been adopted will be incorporated in the Constitution and By-Laws the following July 1 unless the effective date is specified in the amendments." (Keller, 1979)

This process verifies that each policy adopted as a By-Law is a representation of MSHSAA member schools. Each member is able to cast a vote in which they believe serves the interests of their school and/or community. MSHSAA By-Law 3.15.3 did go through this process before it was implemented in 2010.

Participation Policy and Variables

The act of implementing a statewide organization overseeing high school activities in Missouri is consistent with how Fowler describes the building of political agendas (2006). Fowler (2006) states that the building of political agendas can stem from "social issues that attract the attention of the government and are placed on the list of issues that the government seeks to address through its policy making (Fowler, p. 46). Fowler's macro arena which includes participants, parents, coaches, and school leaders have brought the issue of summer time requirements among others to the members of these state associations (2006). Policies enacted by these state associations tend to mirror the current trends.

As participation in high school athletics has continued to grow, government, or in many cases, state association oversight has become the norm. Despite the fact that only that only .2-.5 percent of high school athletes ever reach the

professional level of their desired sport and less than five percent of high school athletes will play college sports, parent's and coach's encouragement of sport participation continues to increase (Cummings & Ewing, 2002). Additionally, in the minds of many parents and coaches, high school sports have changed from a recreational or extra-curricular activity to a serious opportunity for college scholarship and professional athletic careers (Cummings & Ewing, 2002). With the increased expectations, high school coaches feel the need to increase the intensity and number of practices in order to meet the demands of parents and improved level of competition (Brenner, 2007; Forneris, Camiera, & Trudel, 2010).

This consideration can be seen in direct conflict of the pursuit of success for young athletes adopted by sport coaches outside of high school as well (Ehrmann & Jordan, 2011). Non-school coaches are motivated to have a successful business and capitalize on a parent's desire to develop athletic stardom in their children at a young age (Thompson, 2017). Non-school coaches are able to establish a rapport with parents and convince them that kids need to choose one sport and practice daily, in addition to or instead of the school participation, in order to achieve the desired results (Ehrmann & Jordan, 2011). Parents, looking for the competitive edge for their child, push young athletes towards these alternate athletic opportunities and encourage kids to not only specialize in a sport, but participate all year long (Hedstrom & Gould, 2004). There is a significant conflict plaguing youth sports in which policies are being enacted at all levels by both private and public youth sport organizations (Thompson, 2018)

This dynamic is one example of how private or individual interests coupled with what local schools are expected to provide is being debated (Loss and McGuinn, 2018). Furthermore, the increased level of accountability with public schools has seeped its way into all aspects of a child's education (Loss and McGuinn, 2018). The aforementioned description of the role of high school sports in the education of United States students is much different than the original purpose. Coaches and Activities Directors are now competing with these entities to keep healthy participation numbers and protect high school sports (Ehrmann & Jordan, 2011).

Title IX

Though there have been numerous policies to support students in accessing interscholastic opportunities, possibly the most significant law passed to support participation for United States students was Title IX. Title IX was passed 40 years ago as part of the 1972 Educational Amendment. It states that, "No person in the United States shall, on the basis of sex, be excluded from participation in, be denied the benefits of, or be subjected to discrimination under any education program or activity" (United States Department of Labor, 1972).

The law's origin stems from the civil rights and feminist movements of the sixties and seventies and was geared towards the elimination of discrimination based on sex (Valentin, 1997). In an effort to expand the Civil Rights Act of 1964 to eliminate sex discrimination, specifically in education and pay, Representatives Martha Griffiths (MI) and Edith Green (OH) created a subcommittee and drafted the bill famously known as Title IX (Valentin, 1997). Though equity in opportunity is not the focus of this study, it is of importance to understand the strides that have been made in order provide opportunity for

all high school students, especially those in protected classes. In addition, many states have adopted policies in order to ensure compliance with the Title IX law.

As we analyze the policies that may potentially impact student participation in extracurricular activities, it is important to identify whom it may impact and if that impact may differ based on location. Furthermore, the emphasis on opportunities for students in schools of a particular size or in a particular location is the focus of this section of the review of literature. As we do not know the impact of MSHSAA By-Law 3.15.3 on student participation, it is a goal of this research to understand if that impact, if found significant, varies based on the other variables within the schools.

Number of Opportunities and School Location

School size and location are of particular relevance to this study as there is a wide variety of school sizes in Missouri ranging from 17 to 2547 students (MSHSAA, 2018) offering a similarly wide range of sports. An analysis of opportunities to participate done by Stearns and Glennie (2009) indicated many helpful findings to understand the level of access that students have to extracurricular activities depending on the school size. The researchers sample attempted to 302 high schools in the state of North Carolina that represented 95.3% of the schools enrolling high school aged students (Stearns and Glennie 2009). They were able to obtain information about school-based extracurricular activities for 264 (87.4%) of these high schools. The majority of these schools provided information for the 1999−2000 school year. Their findings indicate that "extracurriculars are not equally distributed across schools" (Glennie & Stearns, 2009). Generally, students in larger schools have access to more extra-curricular opportunities (Glennie & Stearns, 2009). Additionally, they found that even though school size was positively associated

with numbers of sports, it is negatively associated with sports participation (Glennie & Stearns, 2009). Glennie and Stearns (2009) stated, "in larger schools, students may compete for those spots, but small schools recruit students to join because they must have a certain number of students to fill the slots." Thus, participation rates are higher in smaller schools than larger schools (McNeal, 1999; Schoggen & Schoggen, 1988). Glennie and Stearns (2009) concluded that schools with more extracurricular activities did not have greater participation from a limited number of people, but rather schools with more activities had participation from more students than schools with limited numbers of activities (Glennie & Stearns, 2012). Consistently though, Glennie and Stearns (2009), found that school size was positively associated with the number of opportunities for students.

Opportunities in extracurricular activities for students based on the location of the school seems to be less clearly defined with some conflicting literature. In addition, addressing school location without addressing socioeconomic factors is difficult considering the strong correlation between the two (Roscigno, 2006). However, for the purposes of this study and the audience for which it is intended, school location, rather than socioeconomic status, is the point of emphasis. In addition, focusing strictly on location of schools and the opportunities that are provided to students helps narrow this literature review to reflect the information this study intends to provide.

One study in particular used data from the Office of Civil Rights database that was cross sectioned with data from the National Center for Education Statistics of 24,370 public four-year high schools (Sabo & Veliz, 2011). This study analyzed the athletic opportunities for student in urban, rural, and suburban locations (Sabo & Veliz, 2011). An athletic opportunity is described as "a situation or condition within a school that allows or

enables a young person to participate in some type of athletic activity" (Sabo & Veliz, 2011). They analyzed both the percent of opportunities for students and the number of athletic opportunities students had. In rural areas, 66 percent of males had the opportunity to play sports, while 53 percent of females (Sabo & Veliz, 2011). This percentage was greater than both suburban, 48 percent males and 37 percent females, and urban, 35 percent males and 25 percent females. This data was consistent with what Glennie and Stearns (2009) had determined in their research which was even though larger urban and suburban school had more athletic teams, rural schools had the highest rate of participation. This was due to the fact that they had to have students participate in order to fill the "spots" for teams (Glennie & Stearns, 2009)

The Sabo and Veliz (2011) study also compared the number of teams offered in each school location. In 2006, both male and female suburban students had an average of nine athletic teams in which they could participate (Sabo & Veliz, 2011). Urban high school students had 7.7 athletic teams to participate, while rural students had 6.6 sports that they could play (Sabo & Veliz, 2011). The National Endowment for the Arts (2003) research also found that suburban and urban schools offer more sports activities than rural schools. Rural areas were found to have the lowest number of athletic opportunities because it was determined that rural adults are "significantly less likely to participate in a wide variety of sports activities than adults in metropolitan areas" (National Endowment for the Arts, 2003). Over time school districts determine that without the numbers to support the programs they no longer need to provide those programs (National Endowment for the Arts, 2003). Essentially, these schools are still providing opportunities, but it may not be the same number of opportunities (Cohen, Taylor, Zonta, Vestal, & Schuster,

2007). Glennie and Stearns (2009) touched on this as well in their research. They indicated that the availability to access activities did not differ from urban and rural schools and students had access to participate in athletics and activities if they chose (Glennie & Stearns, 2009).

Guest (2018) did extensive research on two particular high schools, one urban and one suburban, investigating the opportunities for students of each school. Though the results and experience of the students that participated in these sports was very different, the same opportunity to participate was available for students at both schools. He did find that "fewer sports opportunities are available in urban areas due to lower demand from lack of interest, other obligations (eg, caring for younger siblings, working), or living in neighborhoods where staying after school may not be possible (eg, because of crime risk or transportation problems) (Guest, 2018). The means to engage in physical activity are more likely to be inadequate and unpredictable for individuals living in these neighborhoods" (Guest, 2018). Similarly, urban time use patterns were examined by Pederson & Seidman (2004). They found that urban youth spend less time in structured after-school activities than a comparison sample of suburban adolescents. On average the urban sample spent only .5% of their time engaged in such activities, compared to 1.6% among suburban youth. (Pederson & Seidman, 2004). T

These studies, among many others, indicate reasons that policies have been created to provide equity in opportunity for all students. The aforementioned studies will provide a background into the specific research questions of this particular study.

MSHSAA By-Law 3.15.3

This review will conclude with the "why" behind the reason for such a policy, specifically in regard to summer time contact. First, it is important to understand how the MSHSAA contact day policy compares to other policies in the United States. This review is a good indicator of the wide variety of policies that state associations have implemented concerning summer time contact and expectations of student athletes and coaches. Bardach (2012) suggests that "it is only sensible to see what kinds of solutions have been tried in other jurisdictions, agencies, or locales" (p.109). The states used as examples in this literature are mostly midwestern states. It was found that these states tend to be more conservative in approach to summer time contact with student athletes. States like Florida, Texas, and California did not have any restrictions on school personnel contact with student athletes in the summer time (University Interscholastic League, 2016, Florida State High School Activities Association, 2018):

> 20.1.1 Not Regulated in Summer. FSHSAA does not regulate the athletic activities of member schools held with their own students during the summer as herein with the exception of football. The individual member school principal, district school superintendent, district school board, charter or private school governing board are responsible for adopting regulations governing the activities of their respective schools during this period of time. (p. 82)

Table 3 displays the wide range of summer contact day policies in midwestern states close to Missouri in proximity.

Table 3

Examples of summer time contact day policies

States	Contact day policies
Kansas	The state of Kansas allows one week of summer camp per sport to be permitted. (Kansas High School Activites Association, 2018).
Iowa	School personnel are not allowed to coach that schools' students at any time outside of the recognized school sports seasons (Iowa High School Athletic Association, 2018).
Nebraska	School personnel may organize two 10-day camps in the summer. In addition, there is not a limit on the amount of contact a coach may have with the student athletes in the summer (Nebraska State High School Activities Association, 2018)
Arkansas	Individual students are limited to a maximum of eight (8) days of competitive activities per sport during summer break. This includes but is not limited to camps, tournaments, 7 on 7, jamborees, etc. In addition, Arkansas Athletic Association requires a mandatory 2-week dead period in the summer when no contact is allowed between school personnel and student athletes. (Arkansas Activities Association, 2018)
Illinois	School personnel may have a maximum of 25 days of contact in that sport with students from that school during the period between the last day of classes or and the first day of fall sports. The students may have a maximum of 25 days of contact per sport with persons who coach that sport at the school they attend during the same time period (Illinois State High School Activities Association, 2018)

These policies provide context for the By-Law implemented in 2011 by MSHSAA. This Missouri By-Law is the focus of this study:

> Limits on Contact – High School**:** For High Schools (Grades 9-12), a limit of 25 contact days is allowed per sport, per gender during the summer (as

> defined in By-Law 3.15.1.a). Sports contact, as defined above, between any coach for a particular sport and gender and any student enrolled at the member school or who will be enrolled in and attending the member school that fall will count as one day of contact toward the limit of 25 days for that sport. Summer contact days shall be documented and available upon request to other member schools and/or the MSHSAA office. (MSHSAA Handbook, p. 77)

Summary

Considering the interests of the MSHSAA members and the equity that the organization strives to achieve gives context to the reasons for policies like MSHSAA By-Law 3.15.3. In addition, the study may reveal an understanding of the MSHSAA organization and, specifically, how policy is created and implemented helps to determine the purpose of by-laws and potential influences on policy. By assembling the appropriate evidence this study should shed light on the impact of this policy on participation to further inform future policy decisions.

The regulation and oversight of high school sports has been a task of many state and national organizations since its inception. Most states have developed organizations that seek to provide a structure for these sports and maintain control with altruistic intentions for the student athletes. Similarly, the Missouri State High School Activities Association (MSHSAA) was formed to create equity and fairness during a time when there was little structure for high school sports in Missouri. As more schools joined the organization, the need to create policies and standards to meet the member schools needs became essential. The MSHSAA Board created a process for making changes and implementing

policy. These policies are voted on by each member school every April. These policies provide guidance to MSHSAA member schools as to how to operate their athletic programs.

The MSHSAA contact day rule has the potential to impact athletic participation in various ways. As Stone (2012) states, "one common way to define a policy problem is to measure it" (p.183). The variables used in this study should provide a clearer picture of the impact of MSHSAA By-Law 3.15.3. Measuring the number of participants, in light of the variables of number of opportunities, location of schools, and 11-man football, should help determine if there was a positive or negative impact following implementation of the by-law. Though other variables could be considered, these objective measures will give us insight into the potential impact on participation that MSHSAA By-Law 3.15.3 has had.

CHAPTER THREE

RESEARCH DESIGN AND METHODOLGY

In 2011, the Missouri State High School Athletic Association implemented a rule that allows every high school coach to have 25 sport-specific contact days with student-athletes during the summer time months (MSHSAA, 2011). Under MSHSAA Rule 3.15.3, any student that plays in multiple sports could have to potentially participate in 50 or more days of sport-specific activity during the summer. This presented a demanding schedule and workload for any student-athlete to meet. The policy had the potential to impact student access to one or multiple sports during high school.

Now that the policy has been in place for seven years, MSHAA policy makers would like to know if there has been a significant change in athletic participation in Missouri High School sports since the implementation of MSHSAA By-Law 3.15.3, the "contact day rule" (MSHSAA, 2011). There is an interest and additional interest in the impact on the number of single and multi-sport participants considering school location, number of opportunities available, and whether schools offer 11-man football.

This study will analyze this policy by analyzing single sport and multi-sport participation data before and after the implementation of the policy. Though there have been many studies on the importance of participation in high school activities and athletics, including Hanson, Larkson and Dworkin (2003) and Kleitman (2002), there has not been a study on how summer practice policies impact high school sport participation. The following sections of this chapter will identify the purpose and research questions that framed this study and helped determine the research design. That will be followed by a description of the study design, including the data collection process and instruments

used to analyze the data. Those items will be followed by a description of how human subjects were protected. This chapter will conclude with explanations of the reliability of the study, validity of the study, and the limitations, assumptions and design controls. The purpose of this study is to explore the trends in participation of high school sports in Missouri from 2008-2016.

Purpose of the Study

The intent of this study is to understand the changes over time in the number of participants in one and multiple sports prior to and since the implementation of the MSHSAA By-Law 3.15.3, otherwise known as the "contact day rule" (MSHSAA, 2018). In addition, this study will include additional variables to make for a more complete interpretation of the data. The number of Missouri high school single sport and multiple sport participants in the years 2008-2016 will be the dependent variable in the study. The following variables will be the independent variables for this study:

- The year of the implementation of MSHSAA rule 3.15.3 is 2011. The three years prior to this implementation and the five years following will be the time period analyzed for the study.
- Location of the MSHSAA member schools as identified using the National Center for Education Statistics location coordinate system (NCES, 2019).
- The number of sports offered by each member school will be identified on the MSHSAA website. The only sports considered for this study will be the nineteen championship series sports offered by MSHSAA. This includes: football, boys basketball, girls basketball, boys cross country, girls cross country, boys tennis, girls tennis, boys track, girls track, girls volleyball,

boys soccer, girls soccer, boys swimming, girls swimming, boys golf, girls golf, baseball, softball, wrestling (MSHSAA, 2017). All MSHSAA member schools have the option to offer any or all of the sports that MSHSAA sponsors provided they have the required numbers to participate.

- The MSHSAA member schools that offer 11-man football. It is important to note that MSHSAA also offers 8-man football. There are only 23 schools that participate in 8-man football. Eighteen of those schools are located in the same region of Missouri. Due to the low number of schools and isolated region, it was decided by the researcher not to use 8-man football schools as a variable for this study.

With the information gathered in this study, the policy makers will be able to determine if there were changes in single and multi-sport participation following the implementation of MSHSAA By-Law 3.15.3. This data will be further analyzed using the variables of school location, number of athletic opportunities offered by schools, and whether a school offers 11-man football to determine if the policy potentially impacted schools differently. This information will be viewed by the MSHSAA Executive Board and the athletic directors in order to determine what impact, if any, this rule has had on sport participation in Missouri.

Research Questions

For the purpose of this study, the following research questions were formulated to help guide and inform the study (see Table 4):

1. What are the descriptive statistics from single sport and multiple sport participants for 9-12 grade students in MSHSAA member schools from 2007-2016?

2. Is there a difference in the number of single sport participants and multi-sport participants in MSHSAA member schools since the implementation of MSHSAA Rule 3.15.3 in 2011?
3. Is there a difference in the number of single sport participants in MSHSAA member schools since the implementation of MSHSAA Rule 3.15.3 in 2011 when considering rural, urban, and suburban schools?
4. Is there a difference in the number of single sport participants in MSHSAA member schools since the implementation of MSHSAA Rule 3.15.3 in 2011 when considering the number of sports offered?
5. Is there a difference in the number of multiple sports participants in MSHSAA member schools since the implementation of MSHSAA Rule 3.15.3, when considering rural, urban, and suburban Missouri High Schools?
6. Is there a difference in the number of multiple sport participants in MSHSAA member schools since the implementation of MSHSAA Rule 3.15.3 in 2011 when considering the number of sports offered?
7. Is there a difference in the number of multiple sport participants in MSHSAA member schools since the implementation of MSHSAA Rule 3.15.3, when considering schools that do or do not offer 11-man football?

Null Hypotheses

The study tested the following null hypotheses:

H_o1: There is not a difference in the number of single sport participants and multi-sport participants since the implementation of MSHSAA Rule 3.15.3 in 2010.

H_o2: There is no difference in single sport participants in MSHSAA member schools since the implementation of MSHSAA Rule 3.15.3 when considering rural, urban, and suburban schools.

H_o3: There is no difference in single sport participants in MSHSAA member schools since the implementation of MSHSAA Rule 3.15.3 in 2010 when considering the number of sports offered.

H_o4: There is no difference in multiple sport participants in MSHSAA member schools since the implementation of MSHSAA Rule 3.15.3 when considering rural, urban, and suburban schools.

H_o5: There is no difference in multiple sport participants in MSHSAA member schools since the implementation of MSHSAA Rule 3.15.3 when considering the number of sports offered.

H_o6: There is no difference in multiple sport participants in MSHSAA member schools since the implementation of MSHSAA Rule 3.15.3 when considering schools that do or do not offer 11-man football.

Table 4 displays the research questions, variables used in each research question, type of data each variable represents, and the statistical analysis used to answer each research question.

Table 4

Research Questions, Variables, and Analysis

	Research Questions	Independent Variable	Dependent Variable	Data type	Statistical analysis
1.	What are the descriptive statistics for single sport and multiple sport participants for 9-12 grade students in MSHSAA member schools from 2008-2016?	Years, number of sports offered	Number of single sport and multiple sport participants	Categorical Continuous	Descriptive
2.	Is there a difference in the number of single sport participants and multi-sport participants in MSHSAA member schools since the implementation of MSHSAA Rule 3.15.3 in 2011?	Years, number of sports offered	Number of single sport and multiple sport participants	Categorical	Pearson chi-square
3.	Is there a difference in the number of single sport participants in MSHSAA member schools since the implementation of MSHSAA Rule 3.15.3 in 2011 when considering rural, urban, and suburban schools?	Years, location of schools, number of sports offered	Number of single sport participants	Categorical	Pearson chi-square
4.	Is there a difference in the number of single sport participants in MSHSAA member schools since the implementation of MSHSAA Rule 3.15.3 when considering the number of sports offered?	Years, number of sports offered	Number of single sport participants	Categorical	Pearson chi-square
5.	Is there a difference in multiple sports participants in MSHSAA member schools since the implementation of MSHSAA Rule 3.15.3, when considering rural, urban, and suburban Missouri High Schools?	Years, location of schools, number of sports offered	Number of multiple sport participants	Categorical	Pearson chi-square
6.	Is there a difference in multiple sport participants in MSHSAA member schools since the implementation of MSHSAA Rule 3.15.3 in 2011 when considering the number of sports offered?	Years, number of sports offered	Number of multiple sport participants	Categorical	Pearson chi-square
7.	Is there a difference in multiple sport participants in MSHSAA member schools since the implementation of MSHSAA Rule 3.15.3, when considering schools that do or do not offer 11-man football?	Years, 11-man football schools	Number of multiple sport participants in schools that offer 11-man football	Categorical	Pearson chi-square

Design for the Study

A quantitative design was chosen for this study. Though policy analysis can lend itself to both a qualitative and quantitative study, the assembling of quantitative data is the desire of MSHSAA member schools and school leaders in order to determine the impact of MSHSAA By-Law 3.15.3, the contact day rule (Bardach, 2012). This study examines archival data obtained from the MSHSAA office to determine if there were any changes over time in the number of single and multiple sport participants in Missouri High School athletics. The approach used to provide a clear picture of the changes over time is a non-experimental quantitative descriptive study (Creswell, 2013). Glass and Hopkins (as cited by Suhr, 2003) explain that descriptive research involves gathering data, organizing the data, and describing the data collection in order to describe the existing status (Suhr, 2003). This data is the primary evidence used for this quantitative policy analysis. The statistical data and study of the variations over time can provide useful for "making inferences about the circumstances underlying the variation" (Suhr, 2003).

The subjects of this descriptive analysis are high school student-athletes in Missouri from 2008-2016. This study includes extensive data collection from archival data of approximately 1 million anonymized high-school student-subjects over ten years in order to provide a thorough sample size (Creswell, 2013). It is required that MSHSAA member schools submit this information on a yearly basis. The independent variable of the year of implementation of MSHSAA Rule 3.15.3 was already introduced to the group in 2011, so there will not be any variables introduced by the researcher. The dependent variables of school location, sports offered by each MSHSAA member school, specifically citing schools that offer 11-man football, is also be collected and used in the analysis. This

study is possible because all of the data is stored in an electronic database at the MSHSAA office and was shared with the researcher after IRB permission was obtained.

Included in this study design will be two statistical tests to create a complete picture of the data. Field describes a trend analysis and Pearson chi-square as reputable statistical tests that each serves a specific purpose (2009). There will be additional post hoc chi-square tests to specify statistical significance within the data. A significance level of .05 was established for the chi-square tests, and the adjusted Bonferroni alpha of .017 was used for the post hoc chi-square test. These tests will describe the data in understandable formats as well as answer the research questions.

Population and Sample

The participants for this study all high school athletes of MSHSAA member schools from 2008-2016 who participated in one or more of the nineteen championship series sports. These sports include football, boys basketball, girls basketball, boys cross country, girls cross country, boys tennis, girls tennis, boys track, girls track, girls volleyball, boys soccer, girls soccer, boys swimming, girls swimming, boys golf, girls golf, baseball, softball, and wrestling (MSHSAA, 2011). This study included students from grades 9-12 from all MSHSAA member schools. This data includes students from both public and private schools. These students are delineated by identification numbers on MSHSAA eligibility rosters. These rosters are input by athletic directors before the start of each sports season. The MSHSAA office maintains these records each year. In addition, further analysis will consider multiple sport participants in schools that offer 11-man football. This sample size includes over one million participants on eligibility rosters from 2008-2016. This sample size was chosen to gain the most complete information for

this descriptive study.

Data Collection and Instrumentation

The data used for this study was collected from archival records. This section outlines how the data was obtained. Additionally, this section provides an overview of how the researcher ensured the rights and protection of the participants. Next, the researcher explains how the data was analyzed in order to answer the research questions associated with this study. As part of this, the researcher provided the statistical program used to assist in the analysis and the specific analysis method used on the data. Finally, the researcher provides a discussion of validity and reliability of the analysis methods used to support the quality of the study.

Data collection and procedures. All of the data was collected through the MSHSAA database at the MSHSAA office. This information is housed in an electronic warehouse at the MSHSAA office in Columbia, Missouri. This data is available to all MSHSAA member school athletic directors, principals, and superintendents upon request. As an Athletic Director in Missouri, the researcher has the knowledge that the data exists. This data is available because athletic directors in each MSHSAA school are required to input eligibility rosters into the MSHSAA website for each sport that school offers before the start of each season. Once eligibility rosters are input by the athletic directors, MSHSAA assigns each participant an identification number. The identification number is used to track student participation throughout the participant's high school athletic career. The identification number is also used to maintain the confidentiality of student information.

After gaining approval from IRB and the MSHSAA Executive Director, the

Director of Technology was able to access the data and provide it to the researcher for the purposes of this study. The data was accessed by compiling eligibility roster information from all MSHSAA member schools from 2008-2016. Then the data was simplified to only include the year, school name, student identification number, grade, school sport, and gender. Gender was required for the purposes of this study to help determine the number of sports offered since some sports are gender-specific. This includes girls and boys track and field, girls and boys basketball, girls and boys cross country, girls and boys soccer, girls and boys golf, and girls and boys tennis, and girls and boys swimming. Gender was not used for any other purposes in this study. From the data set provided, the research was able to identify the number of sports offered at each school as well as whether a school offered 11-man football, two of the independent variables used for this study.

Additional data was collected using the National Center for Education Statistics website. This website supported the identification of the geographic location of each MSHSAA member school and identified them as rural, urban, or suburban based on the geographic location.

The school location information was combined into one Microsoft Excel data set, separated by year, for the purpose of this analysis.

Table 5

Example Data Set

Year	School Name	School Location	ID Number	Grade	Sport	Gender	# of Sports	11-man FB
2016	Adrian High School	R (rural)	1066380	9	Wrestling	Boys	Over (10)	Yes

Human Subjects Protection

The rights and privacy of the participants are protected in this study. The researcher obtained Institutional Review Board (IRB) approval from the Chair of the IRB committee prior to gaining access to any of the archival data provided by employees of the MSHSAA office.

Since this study uses only preexisting, anonymized archival data, there is no risk posed to participants. Though the data provided by the MSHAA office is for use of MSHSAA member schools, there was no identifying information within the data provided to the researcher. The identification number is used to determine whether a student was a single sport or multiple sport athlete. Gender is used to determine how many sports were offered at each MSHSAA member school. There was no way to use the identification number or gender to link the information back to a specific participant. In addition, there will not be any names included in the presentation of the findings.

Data Analysis

All data was analyzed using Statistical Product and Service Solutions (SPSS) version 22 for Windows. SPSS was used for the purpose of answering the research questions for this particular study. The researcher established a significance level of 0.05 for all analyses to limit Type I errors that may occur (Field, 2009) for the chi-square tests. The researcher also established a significance level of .017, using the Bonferroni adjustment, for post hoc chi-square tests used to analyze data for RQ3 and RQ5.

The data was collected and analyzed in two ways in order to answer the research questions for this study in the most appropriate manner. A trend analysis was used to identify the descriptive statistics in RQ1 (Field, 2009). This trend analysis will include

the single sport and multiple sport data from all MSHSAA member schools from all the data, including the years 2008-2016. This analysis will include participation percentages for each of the sports and overall participant percentages over the nine-year time period. This data will be displayed and analyzed using multiple linear models (Field, 2009). Linear models are used to display data according to specific sport and participation numbers. Additional graphs will be used to identify the total numerical trend of single sport and multiple sport athletes by year. This data will include both single and multiple sport athletes in a bar graph (Field, 2009).

For research questions two through seven (RQ2, RQ3, RQ4, RQ5, RQ6, and RQ7) Pearson chi-square tests were used to determine significance of the association in single sport participation and multi-sport participation for three years before and three years after the implementation of the policy. In order to gather data specific to the time of implementation of MSHSAA By-Law 3.15.3, the researcher used data from three years prior and three years post implementation for the chi-square statistical analysis. The researcher found that using data beyond three years post implementation did not provide a clear picture of the impact of the policy and allowed other variables to factor in the results. After running analysis with the large amounts of data, the researcher concluded that using the data of the three years following the implementation would most specifically pinpoint significant changes in the participation numbers for the variable being used in the analysis. For each of the chi-square tests the data was divided into two sets. The first set was all participants before the implementation of MSHSAA By-Law 3.15.3, which included the years 2008-2010. The second set was all participants for the three years following the implementation of MSHSAA By-Law 3.15.3, including the years 2011-2014.

A chi-square test was used to analyze research question two (RQ2) to compare the number of single sport and multiple sport participants for three years prior and three years following the implementation of the policy. For the rest of the research questions, chi-square is used to determine the change in association between categorical variables (Field, 2009). The chi-square test was used to compare the number of single sport and multiple sport participants in rural, urban, and suburban schools in research questions three (RQ3) and five (RQ5). A post hoc chi-square test was completed to identify the changes in participant numbers changed when comparing location of schools. School location was described as urban, suburban, and rural.

A chi-square test was used to compare the number of single and multiple sport participants in schools that offer more than ten sports and schools that offer ten or less sports for research questions four (RQ4) and six (RQ6) (Field, 2009). Schools that offer multiple sports were identified in the following ways:

a. Schools that offer 1-10 sports will be identified with the “under”.
b. Schools that offer 11-19 sports will be identified with the letter “over”.

Additionally, schools that offer 11-man football were identified with a “Yes” or “No”. A chi-square test was used to determine if there is a significant association of multiple sport athletes with schools that do or do not offer 11-man football before and after the implementation of MSHSAA Rule 3.15.3 in research question seven (RQ7).

This study determined if there was a significant change single sport and multiple sport participation, considering the variables, in the years before and after the time of the implementation of MSHSAA Rule 3.15.3. A p-value of .05 was used to determine significance in this test (Field, 2009).

Independent Variables

The number of sports offered at each MSHSAA member school was an independent variable in this study. MSHSAA offers a championship series for a total of 19 sports at the high school level (MSHSAA, 2018). This means that a Missouri individual or team state champion can be declared in the following sports: football, boys basketball, girls basketball, boys cross country, girls cross country, boys tennis, girls tennis, boys track, girls track, girls volleyball, boys soccer, girls soccer, boys swimming, girls swimming, boys golf, girls golf, baseball, softball, and wrestling (MSHSAA, 2011). All MSHSAA member schools have the option to offer any or all of the sports that MSHSAA sponsors provided the school has eligible participants to form a complete team.

Another independent variable in this study was the location of MSHSAA member high schools in Missouri. Schools will be categorized as rural, urban, and suburban. There are currently 592 private and public schools in the state of Missouri that are members of MSHSAA (MSHSAA.org, 2018). This is important as it will inform the study as to the number of sport participating opportunities the students have at urban, rural, and suburban schools.

The final independent variable was time, specifically, the time before and after the implementation of MSHSAA Rule 3.15.3. The time frame of the study included data from the three years prior to the policy date and the six years following the implementation.

Dependent Variable

The dependent variable in this study was the number of high school athletic participants each year, as identified by MSHSAA state statistics. This will include

participants three years prior to the implementation of the policy and five years after the implementation of the policy. This data was the most complete data provided to the researcher from the MSHSAA Director of Technology. This participation data was also disaggregated into individual sport participation and multi-sport participants. In addition, this data was analyzed according to school location, number of sports offered, and schools that offer 11-man football over the nine-year time period. A list of variables covered by the descriptive and summary statistics of this study are summarized in Table 6.

Table 6

Study Variables

Independent Variables	Dependent Variables
Number of MSHSAA member schools from 2008-2016 Number of sports offered by MSHSAA member schools from 2008-2016 Location of MSHSAA member schools MSHSAA member schools offering 11-man football from 2008-2016	Number of single sport participants in MSHSAA member schools from 2008-2016 Number of multi-sport participants in MSHSAA member schools from 2008-2016

Trustworthiness

As an athletic director in Missouri, the researcher has complete access to all of the necessary data to complete the report. Since MSHSAA policy makers and athletic directors will use this report, the researcher has a responsibility to accurately collect, analyze, and report the data. It was also the goal that the data analysis used for this study be applicable and replicable for similar policy analysis. Additionally, the data has been entered by athletic directors, per the MSHSAA requirement, at all MSHSAA member schools from 2008-2016 on a yearly basis and has been strictly collected in a database at the MSHSAA office. The data has not been tampered with or used for any purpose other than annual participation reports.

Reliability and Validity

A non-experimental descriptive study was appropriate for this study in order to determine the statistical changes over time of participation (Field, 2009). This quantitative policy analysis gives the policy makers the appropriate data to draw conclusions from trends and changes that are observed over the nine-year period being studied (Creswell, 2013). The use of the chi-square test offers a deeper level of knowledge by providing insight into the associations of the data before and after the policy was implemented (Field, 2009). This study is reliable because there are not any additional variables being introduced. The data sets are consistent for the ten-year time period. There are not any statistical outliers in this study (Fields, 2009).

The Missouri High School Activities Association provided the participation data for this study. The data is archival in nature. The MSHSAA office is responsible for collecting accurate data to in order to track student eligibility, ensure compliance with By-Laws, and record keeping. This statistical data is also provided to the membership and the National Federation of High School Sports (NFHS). Due to these factors, accuracy of this data is important.

In reference to the validity of the study, there was not be an instrument introduced for this study. The content being measured included a consistent sample of data from all schools over the ten-year time period. The characteristics of the participants are similar in age, high school students, and sport activity (Creswell, 2009). The sample was large enough to include extreme examples of school sport participation without sacrificing the integrity of the data analysis (Creswell, 2009). Though school sizes and number of opportunities may change over that time, having a nine-year time span of data allowed those

changes to not drastically alter the overall results. Similarly, there were schools that offered 11-man football during some years, but not others. Using nine years of data allowed for the data to still be generally stable and provide an accurate description of the overall changes in participation. Finally, all school sport participants were analyzed on the same criteria with the introduction of the MSHSAA contact day rule in 2011. School sport participation was being analyzed the same for all schools based on the three years prior and five years following the implementation of MSHSAA By-Law 3.15.3, when applicable (Creswell, 2009).

Limitations, Delimitations, and Assumptions

While the current study had a significant amount of data included, certain limitations and assumptions must be considered to fully understand the study. This study, like many others, had assumptions and was limited to some extent in its scope. The role of the researcher was to identify as many of these potential problems and inform the readers of these issues or take corrective actions to remedy the issues as appropriate. Additionally, since there were very few studies like this one, other researchers will be able to improve further studies by understanding the limitations of this study. This section is designed to address those issues and limitations.

Limitations. The intent of this study was to describe the trends and identify changes in the number of single and multiple sport participants of high school athletes following the implementation of MSHSAA Rule 3.15.3 based on school location, number of opportunities available at each school, and whether a school offers 11-man football. This study attempted to identify associations of the changes in data over time, examine the significance of changes, and determine the participation trends for single sport and

multiple athletes before and after the implementation of MSHSAA Rule 3.15.3 (Fields, 2009). Though it is important to still consider the goal as a policy analysis of MSHAA Rule 3.15.3, there are certain limitations within the study that prevent the researcher from proving causality.

It is possible there are a number of factors that could contribute to an increase or decrease in sport participation (Hedstrom & Gould, 2004). The negative or positive experiences for youth could have happened before high school, and schools may be receiving students that decided about their participation before beginning high school (Brenner, 2007). A fear of injuries, national popularity, a national recession, and other socioeconomic factors are all potential influencers of sport participation (Chan, 2016, Gibbs, Erickson, Dufur, & Miles, 2015). However, the researcher's role as an athletic director allows the researcher the ability to clearly understand the data and make appropriate observations.

A second limitation was that there have not been any identified studies of this type of policy implementation on high school sport participation. Therefore, this data may lead to a more thorough examination of the problem, including additional variables, different research questions, and a more extensive research design. If it was found that significant changes have occurred, it could lead policy makers to explore further possible causes in order to ensure that MSHSAA policy carry out the vision of the organization. Ultimately, it may support MSHSAA members schools attempts to create a more equitable, healthy, and educationally-based athletic environment.

Another limitation was the process to define a rural, urban, or suburban school. The National Center for Education Statistics was used to define those schools for this

study. However, there could be disagreement in how those schools are labeled by the readers of this study. Particularly factors like poverty and race have been used to support the identification of schools as rural, urban, or suburban in other studies (Burdick-Will & Logan, 2018). There are multiple studies on participation according to school location, so it is important for the reader to understand that the identification of schools may differ between studies.

A fourth limitation is that it is unknown as to how many of the contact days are being used by school coaches. A survey would be required to determine how many of the 25 days the coaches are using. Even then, that number could change each year and there would be other variables that factor into the use of the contact days. It should not be assumed that coaches are all using the same number of days and school athletic directors may have different expectations for coaches and student athletes during the summer.

The final limitation is that only participation in the nineteen championship series sports were included in this particular study. There are many other opportunities for students including school clubs and activities. Additionally, there are many non-school athletic opportunities available for high school aged students. It is important for the reader to know that if participation changed following the implementation of the contact day rule, students may still be participating in sports or activities not included in the MSHSAA championship series sports.

Delimitations. This study also contained delimitations which limited scope of the research. Completing the study over a nine-year time period allowed for the researcher to identify changes in participation immediately following the implementation of MSHSAA By-Law 3.15.3 and the years preceding and following. This gives the researcher the

opportunity to determine if the changes are significant while offering a holistic representation of athletic participation in Missouri.

Also providing a boundary for this study was considering only participants in the nineteen MSHSAA championship series sports. This consideration was made to narrow the focus to those sports that would be impacted by the MSHSAA By-Law. Including other activities and sports would not have been relevant to this particular study and would have compromised the validity.

The data for this study includes over one million participants. This limits the opportunity for statistical anomalies to impact the overall analysis and negate the validity of the findings (Creswell, 2009).

Assumptions. It should be assumed that all high school students that attend MSHSAA member schools have had access to participate in sports unless they did not meet the academic, citizenship, and residency requirements as defined by MSHSAA (2018). This study has been conducted under the assumption that a policy that could potentially increase summer time requirements for students could impact student participation. It is also assumed that this policy was implemented without any statistical data to support the implementation of MSHSAA By-Law 3.15.3. Specifically, it is assumed that there was not any data provided to the voting members about how summer contact day policies may or may not impact the number of multi-sport students; students that attend schools in different kinds of locations; or students that are able to access a different amount of sport participation opportunities. These assumptions form the basis of this study.

It should also be assumed that the data consists of the normal population of

Missouri high school students at is gathered from all regions of the state of Missouri and includes all MSHSAA member schools from 2008-2016. The researcher will have a large enough sample size to negate extreme changes in data from specific schools that may drop certain sports programs or close down altogether. There will be schools that open or close and add or remove programs over the nine-year time period that could affect the trend analysis or significance of change studies (Creswell, 2009). However, the amount of data included will support in providing an accurate picture of changes in participation over time (Fields, 2009).

The data for this study has been maintained in a database at the MSHAA office. The data should be considered as complete, as it is not being collected through a voluntary survey and data reporting for MSHSAA member schools is mandatory on a yearly basis. The access to this data has been very limited and the likelihood of accuracy is very high. Though the participants have changed over time, the data consists of the same population sample, high school student athletic participants in the nineteen MSHSAA championship series sports. The scales used to analyze this data will be consistent throughout this study, using years, sports, and location of school as necessary. Finally, the anonymity of the participants will be secured as name will not be used in the study, but rather a student identification number (Creswell, 2013).

Summary

The research design and methodology of this study provides insight into the participation trends and changes over time of Missouri high school athletic participation. Using a design that provides both a trend analysis and significance level of changes that have occurred gives statistical support to the possible effects of the implementation of

MSHSAA Rule 3.15.3 on single and multiple sport participation. The population for this study is all 9-12 athletes in the state of Missouri in the nineteen state championship series sports offered by the Missouri High School Athletic Association. Archival data was collected from the MSHSAA databased located at the MSHSAA office in Columbia, Missouri. An employee of the MSHSAA office compiled all of the data into one data set, by year, and included only the necessary information of ID#, grade, gender, school, and sport to maintain anonymity of the participants. The researcher analyzed all data using he SPSS version 20 for Windows.

Introducing additional variables into the study, such as school location, number of sports offered by each school, and whether a school offers 11-man football will provide a more complete picture of participation in Missouri. Pearson's chi-square test is used to compare single sport students with multiples sports students before and after the implementation of the policy. Pearson chi-square test and post hoc chi-square analysis was used to compare single and multi-sport athletes that participated in rural, urban, and suburban schools. A Pearson chi-square analysis was used to compare schools that offered 1-10 sports or 11-19 sports. Finally, a chi-square test was used to determine the changes in participation for those schools that offered 11-man football. Since the sample size was large enough and accessible, this data met the needs of the policy makers that are looking to make possible changes the MSHSAA policy.

Though the researcher's data analysis may lead to the desire for more research, it was a reliable, valid, and trustworthy attempt at presenting the appropriate findings to inform policy makers of the changes and trends in MSHSAA athletic participation.

CHAPTER FOUR:

PRESENTATION AND ANALYSIS OF DATA

This chapter provides the presentation and analyses of data collected to answer the research questions of this study. The data was archival data located in the MSHSAA database housed in the MSHSAA office in Columbia, Missouri. Data collected to answer the research questions of this study included the following independent variables: years prior to implementation of MSHSAA By-Law 3.15.3, years following the implementation of MSHSAA By-Law 3.15.3, location of MSHSAA member schools, number of sports offered at MSHSAA member schools, and MSHSAA schools that offer 11-man football. The dependent variables in this student were the number of single sport and multi-sport participants in the years of 2007-2016.

A review of the problem and purpose of the study are provided at the beginning of this chapter. An overview of the organization of the data analysis is outlined, including the rationale for selected statistical analyses for each research question. Next, an analysis of the data for each research question is described. Finally, a summary is included at the end of the chapter.

Review of Problem and Purpose of Study

There is a lack of information as to whether a policy implemented by high school leaders concerning the amount of days that coaches can have contact with players during the summer months in Missouri has potentially impacted sport participation. There are a wide variety of social, emotional, educational, and health benefits for students that participate in extra-curricular activities (Hedstrom & Gould, 2004, Hanson, Larkson, and Dworkin, 2003). There was a lack of information about whether the increased demand on

student athletes' time impacted the number of students participating in one or multiple sports (Brenner, 2007) in Missouri. Researchers have discussed whether students are experiencing burnout and deciding not to participate in one or multiple sports while in high school due to the level of commitment required in interscholastic athletics (Gould & Carson, 2004; Jowett, Cramer 2009).

Another concern, from the perspective of many Missouri high school coaches, was that there were a very limited number of students at every high school (S. Robertson, personal communication, February 12, 2012). Coaches believe that in order to properly field a competitive team, high school athletes need to participate in multiple sports within the school (Gould & Carson, 2004; Jayanthi, Pinkham, Dugas, 2012). The researcher would like to know if the policy impacted single sport and multi-sport participation differently based on the location of the school or the number of sports available at the school. Furthermore, the MSHSAA football advisory committee, along with other advisory groups, proposed this by-law change in 2010, and there was a lack of information if there was any impact on participation in schools that offer 11-man football (S. Schroeder, personal communication, March 13, 2019). Ultimately, Missouri school leaders would like to know if athletic participation has been impacted by this By-Law.

Overview of Research Design

This quantitative policy analysis investigated the changes over time in athletic participation in Missouri High School athletics for the years prior to and years following the implementation of the MSHSAA By-Law 3.15.3. The researcher gained Institutional Review Board approval before the collection of the data. This archival data was collected from the MSHSAA database at the MSHSAA office. The results of this research will be

used to provide accurate data for MSHSAA policy makers to determine the possible effects of MSHSAA Rule 3.15.3. This non-experimental quantitative descriptive study should provide a clearer picture of the changes over time in athletic participation in MSHSAA member schools from 2017-2016 (Creswell, 2013).

The participants for this study were high school athletes of MSHSAA member schools from 2008-2016. This study included students from grades 9-12 for over 500 MSHSAA member schools. These schools consisted of both public and private schools. The sample for this study was only those students, male and female, that participated in the nineteen MSHSAA high school state championship series sports. Once the data was collected it was reorganized and labeled appropriately to answer the research questions. The data set used to answer all the research questions included the following: year, name of school, participant identification number, sport, gender (if applicable), and an identifier for rural, urban, or suburban schools, identifier for schools that offered more or less than ten sports, and an identifier for schools that offered 11-man football. Additionally, there were identifiers created to consolidate the data for the three years prior to the implementation of By-Law 3.15.3 and the three years following implementation. There was no way to identify the participants as each was assigned a number with no other identifying information. There were over 160,000 athletic participants each year in MSHSAA member schools.

Research Questions

This study examined independent variables which comprised of both continuous and categorial data. The first research question (RQ1) was answered using descriptive statistics. RQ1 used the entire data set to provide a trend analysis for participants and

schools using categorical data over the nine-year time period.

Research questions two through seven (RQ2, RQ3, RQ4, RQ5, RQ6, and RQ7) contained various categorical data which were compared. To appropriately use the Pearson chi-square analysis, each of these research questions compared data from three years prior to the implementation of the policy to three years following implementation of the policy. After running analysis with the large amounts of data, the researcher concluded that using the data of the three years following the implementation would most specifically pinpoint significant changes in the participation numbers for the variable being used in the analysis.

A comparison of number of single sport and multi-sport athletes prior to and following the implementation of the policy was used to answer RQ2. Research question two (RQ2) used continuous data to compare the dependent variables of number of single sport athletes and number of multi-sport athletes to the three years prior to the implementation and the three years following the implementation of the policy.

Research questions three (RQ3) and four (RQ4) examined the participation data concerning single sport participants in MSHSAA member schools from 2008-2013. Analyzing these research questions determined if there was a difference in single sport participants since the implementation of MSHSAA By-Law 3.15.3 in 2010. RQ3 and RQ4 used the data set that contained all participants that participated in only one MSHSAA sport each year from 2008-2013.

RQ3 included the independent variable of school location when examining the dependent variable of single sport participants in schools from 2008-2013. Using the National Center for Education Statistics (2019) geographic identification, each school was

labeled as rural, urban, or suburban in the data set. School location compared to single sport participants was answered using both categorical and continuous data.

RQ4 included the independent variable of number of sports offered while examining single sport participants in the years 2008-2013. Each school was identified in the data set as either providing 11 or more sport participation opportunities or ten or less sport participation opportunities. Then each single sport participant was examined as participating as a member of school that offered 11 or more or ten or less participating opportunities from the years 2008-2013. RQ4 was answered using a comparison of dependent variable of single sport participants with the number of sports offered at the participants school.

Research questions five through seven (RQ5, RQ6, RQ7) examined multiple sport participants in MSHSAA member schools from 2008-2013. Analyzing these research questions determined if there was a difference in multiple sport participants since the implementation of MSHSAA By-Law 3.15.3 in 2010. RQ5, RQ6 and RQ7 used the data set that contained all participants that participated in more than one MSHSAA sport each year from 2008-2013.

RQ5 included the independent variable of school location when examining the dependent variable of single sport participants in schools from 2008-2013. As previously described, each school was labeled as rural, urban, or suburban in the data set. School location compared to multiple sport participants was answered using both categorical and continuous data.

RQ6 included the independent variable of number of sports offered while examining multiple sport participants in the years 2008-2016. As previously described

schools were divided into two categories depending on the number of sports offered. Each multiple sport participant was examined as participating in more than one sport as a member of school that offered 11 or more or ten or less sport participating opportunities from the years 2008-2013. RQ6 was answered using a comparison of multiple sport participants with the number of sports offered at the participants school.

RQ7 comprised of a comparison between the dependent variable of multiple sport participants and the independent variable of schools that offered 11-man football. Each MSHSAA member school from 2008-2013 was identified as either offering 11-man football or not offering 11-man football. RQ7 compared students that participated in multiple sports in schools that offered 11-man football to determine changes in the number of multiple sport participants from 2008-2013.

For RQ2-RQ7, the Pearson chi-square analysis was utilized. This analysis was chosen based on type of data to be analyzed and the purpose of the question. These research questions are all comparisons of two categorical variables. Pearson's chi-square test was the appropriate statistical treatment for these data sets because it is useful in "determining the relationship between two categorical variables" (Field, 2009, p. 289). Furthermore, since the data were categorical and there were only two categorical variables in each question, this was the appropriate statistical treatment for these research questions.

After analysis of each of these research questions, the statistics are provided in both narrative and table form. Charts, where appropriate, are also provided to supply further understanding of the statistics for each research question.

Research Questions and Null Hypotheses

1. What are the descriptive statistics from single sport and multiple sport participants for 9-12 grade students in MSHSAA member schools from 2007-2016?
2. Is there a difference in the number of single sport participants and multi-sport participants in MSHSAA member schools since the implementation of MSHSAA Rule 3.15.3 in 2010?

   H_o2: There is no difference in single sport participation since the implementation of MSHSAA Rule 3.15.3 in 2010.
3. Is there a difference in the number of single sport participants in MSHSAA member schools since the implementation of MSHSAA Rule 3.15.3 in 2010 when considering rural, urban, and suburban schools?

   H_o3: There is no difference in single sport participants in MSHSAA member schools since the implementation of MSHSAA Rule 3.15.3 when considering rural, urban, and suburban schools.
4. Is there a difference in the number of single sport participants in MSHSAA member schools since the implementation of MSHSAA Rule 3.15.3 in 2010 when considering the number of sports offered?

   H_o4: There is no difference in single sport participants in MSHSAA member schools since the implementation of MSHSAA Rule 3.15.3 in 2010 when considering the number of sports offered.
5. Is there a difference in the number of multiple sports participants in MSHSAA member schools since the implementation of MSHSAA Rule 3.15.3, when considering rural, urban, and suburban Missouri High Schools?

H_o5: There is no difference in multiple sport participants in MSHSAA member schools since the implementation of MSHSAA Rule 3.15.3 when considering rural, urban, and suburban schools.

6. Is there a difference in the number of multiple sport participants in MSHSAA member schools since the implementation of MSHSAA Rule 3.15.3 in 2010 when considering the number of sports offered?

   H_o6: There is no difference in multiple sport participants in MSHSAA member schools since the implementation of MSHSAA Rule 3.15.3 when considering the number of sports offered.

7. Is there a difference in the number of multiple sport participants in MSHSAA member schools since the implementation of MSHSAA Rule 3.15.3, when considering schools that do or do not offer 11-man football?

   H_o7: There is no difference in multiple sport participants in MSHSAA member schools since the implementation of MSHSAA Rule 3.15.3 when considering schools that do or do not offer 11-man football.

Analysis of Data

This section includes the statistical analysis and discussion for each research question and null hypothesis. All data was analyzed using SPSS version 22 for Windows, using the appropriate data set for each research question.

Research Question 1

1. What are the descriptive statistics from single sport and multiple sport participants for 9-12 grade students in MSHSAA member schools from 2007-2016?

The descriptive statistics display numerical values and percentages (where appropriate) of the participants and schools in the stud. Data is provided in both table and chart format. The independent variables being identified in these descriptive statistics are the years 2008-2016, number of schools by school location, number of schools by sport offerings, and number of schools that offer 11-man football. The dependent variable being displayed is the number of single sport participants and multi-sport participants. The total number of participants is also being displayed to provide the most comprehensive view of the data.

Figure 3 displays the total number of MSHSAA participants from 2008-2016. It also shows the total number of single sport and multiple sport participants from 2008-2016. This figure shows the range from 107,046 participants in 2011 to 108,708 participants in 2016. Secondly, the figure shows that single sport participation ranges from 64,271 in 2008 to 64,713 in 2016. The figure displays multi-sport participation ranging from 43,315 in 2011 to 43,988 in 2016 for MSHAA participants.

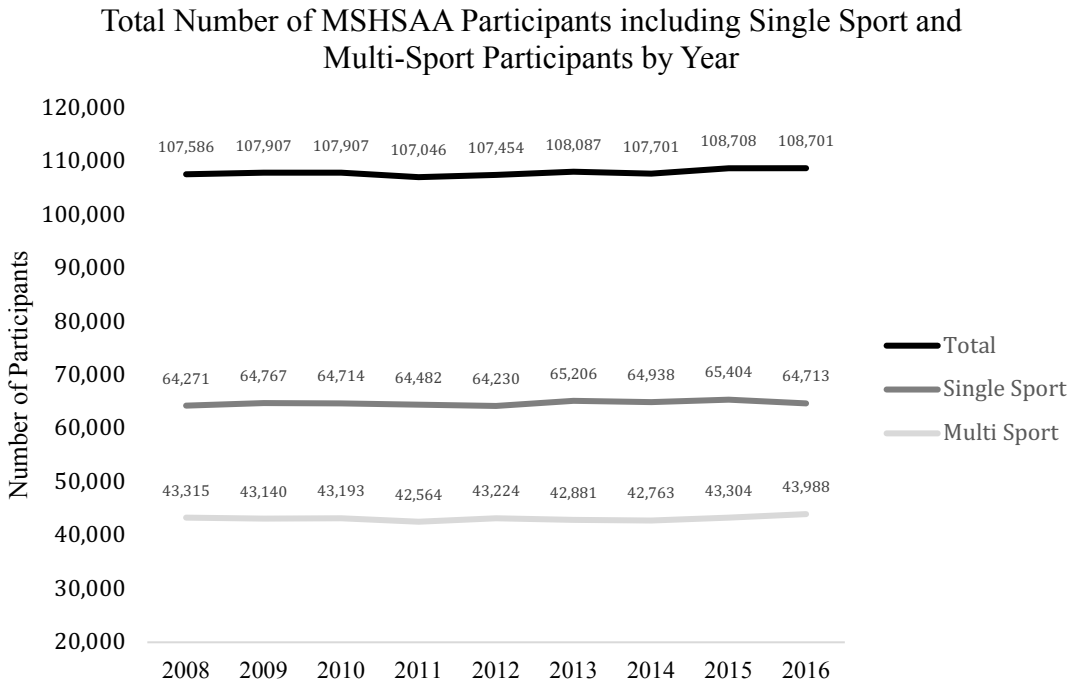

Figure 3. Total number of sport participants, including single and multiple sport participants in MSHSAA member schools from 2008-2016.

Table 7 displays the total number of participants each year by school location. The number of participants by rural schools ranges from 50,047 in 2011-12 to 51,443 in 2015-16. The number of participants in urban schools ranges from 10,722 in 2013-14 to 11,782 in 2009-10. The number of suburban participants ranges from 45,472 in 2011-12 to 46,564 in 2013.

Table 7

Rural, Urban, and Suburban Sport Participants by Year

	Rural	Urban	Suburban	Percent
2008	50,314 (46.8%)	11,621 (10.8%)	45,651 (42.4%)	100.0
2009	50,389 (46.7%)	11,782 (10.9%)	45,736 (42.4%)	100.0
2010	50,382 (46.7%)	11,716 (10.9%)	45,863 (42.4%)	100.0
2011	50,047 (46.8%)	11,435 (10.7%)	45,472 (42.5%)	100.0
2012	50,205 (46.7%)	11,049 (10.3%)	46,167 (43.0%)	100.0
2013	50,801(47.0%)	10,722 (10.0%)	46,564 (43.0%)	100.0
2014	50,660 (47.0%)	10,840 (10.1%)	46,193 (42.9%)	100.0
2015	51,443 (47.0%)	10,731 (10.0%)	46,396 (43.0%)	100.0
2016	51,228 (47.2%)	10,761 (10.0%)	46,512 (42.8%)	100.0

Table 8 Figure 7 displays the number of rural, urban, and suburban MSHSAA member schools by year. The number of schools remains consistent for rural schools. The number of urban schools increases from 101 in 2008-9 to 106 in 2016-17. The number of suburban schools ranges from 64 in 2009-10 to 57 in 2016-17.

Table 8

Number of Rural, Urban, and Suburban Schools by Year

	Rural	Urban	Suburban	Total
2008	419	101	61	581
2009	419	102	64	585
2010	420	102	63	585
2011	419	103	62	584
2012	419	103	61	583
2013	418	104	59	582
2014	420	105	57	582
2015	419	106	58	584

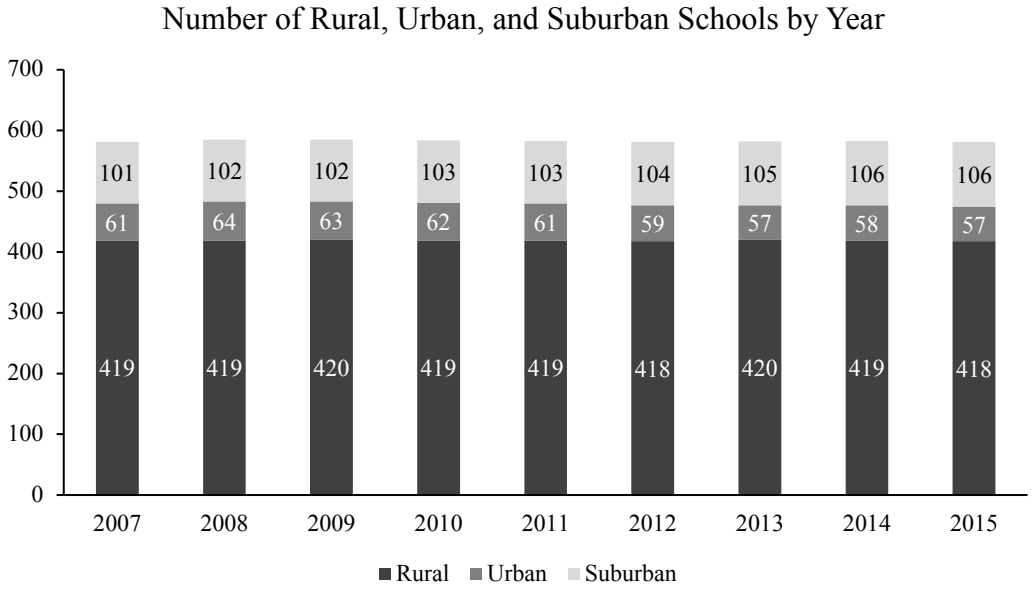

Figure 4. This chart displays the number of MSHSAA rural, urban, and suburban schools by year.

Table 9 Figure 5 shows the number of single sport participants at schools that offer more than ten sports and schools that offer ten or less sports from 2008-2015. The

number of single sport participants that attend schools that offer more than ten sports ranges from 51,663 in 2008 to 55,221 in 2015. The number of single sport participants that attend schools that offer ten or less sports ranges from 11,366 in 2008 to 8826 in 2015.

Table 9

Single Sport Participants at Schools that Offer more than Ten Sports or Ten or less Sports

	More than ten	Ten or less	Total
2008	51,663 (82.0%)	11,366 (18.0%)	63,029 (100.0%)
2009	52,780 (83.0%)	10,761 (17.0%)	63,541 (100.0%)
2010	52,391 (82.6%)	11,071 (17.4%)	63,462 (100.0%)
2011	52,459 (83.0%)	10,719 (17.0%)	63,178 (100.0%)
2012	52,797 (83.8%)	10,213 (16.2%)	63,010 (100.0%)
2013	54,023 (84.5%)	9901 (15.5%)	63,924 (100.0%)
2014	54,498 (85.6%)	9194 (14.4%)	63,692 (100.0%)
2015	55,221 (86.2%)	8826 (13.8%)	64,047 (100.0%)

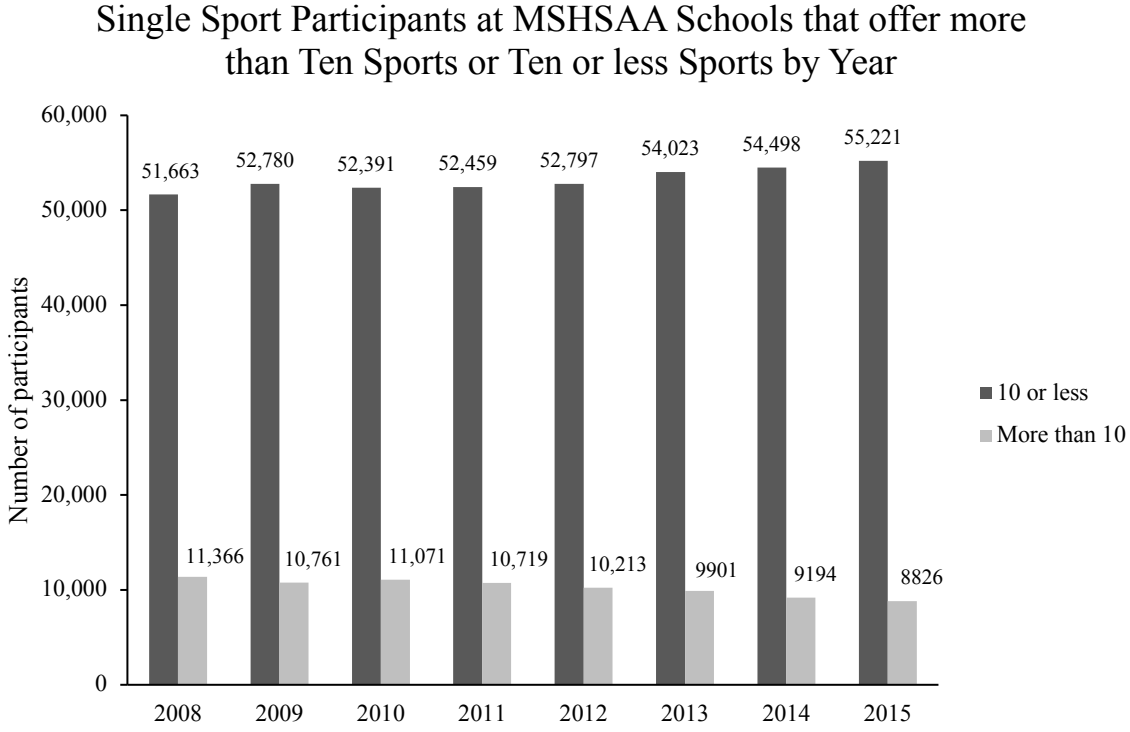

Figure 5. This chart displays the number of single sport participant at schools that offer more than ten sports or ten or less sports.

Table 10 and Figure 6 shows the number of multi-sport participants at schools that offer more than ten sports and schools that offer ten or less sports from 2008-2015. The number of multi-sport participants that attend schools that offer more than ten sports ranges from 31,806 in 2008 to 33,701 in 2015. The number of multi-sport participants that attend schools that offer ten or less sports decreased every year and ranges from 10,401 in 2008 to 8555 in 2015.

Table 10

Multi-Sport Participants at Schools that Offer more than Ten Sports or Ten or less Sports

	More than ten	Ten or less	Total
2008	31,806 (75.4%)	10,401 (24.6%)	42,207 (100.0%)
2009	31,992 (76.0%)	10,093 (24.0%)	42,085 (100.0%)
2010	32,201 (76.4%)	9946 (23.6%)	42,147 (100.0%)
2011	31,911 (76.8%)	9615 (23.2%)	41,526 (100.0%)
2012	32,559 (77.2%)	9607 (22.8%)	42,166 (100.0%)
2013	32,345 (77.2%)	9539 (22.8%)	41,884 (100.0%)
2014	32,538 (78.0%)	9151 (22.0%)	41,734 (100.0%)
2015	33,701 (80.0%)	8555 (20.0%)	42,256 (100.0%)

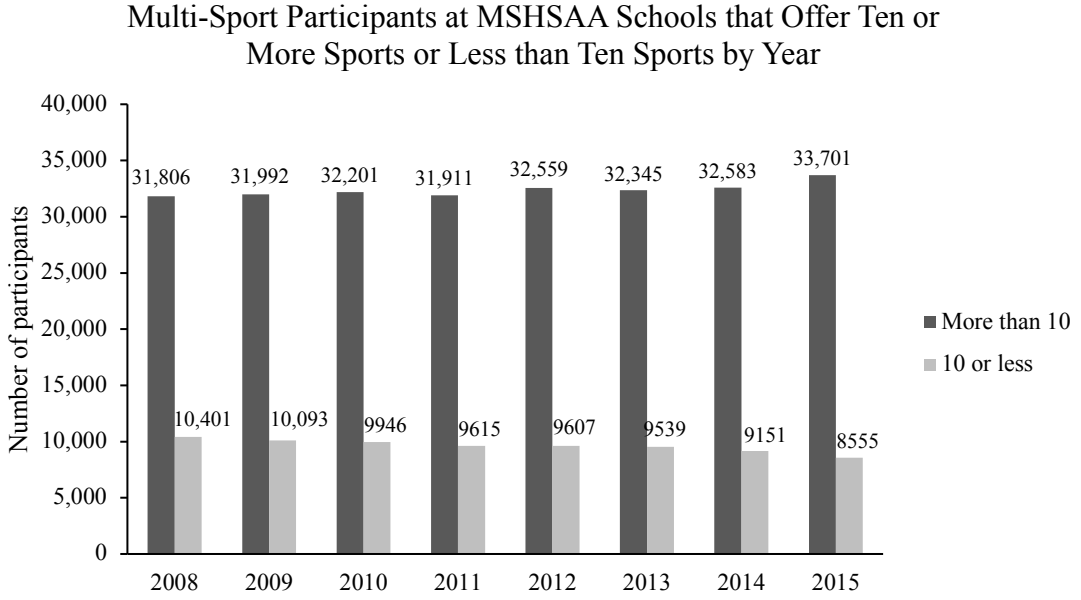

Figure 6. This chart displays the number of multiple sport participant at schools that offer more than ten sports or ten or less sports.

Figure 7 displays the number of schools that offer more than ten and ten or less sports by year from 2008-2015. The graph shows a gradual decline in the number of schools offer 10 or less sports. The number ranges from 294 schools in 2008 to 252 schools in 2015. The graph also shows a gradual increase in the number of schools that offer more than ten sports. This number ranges from 271 schools in 2008 to 312 schools in 2015.

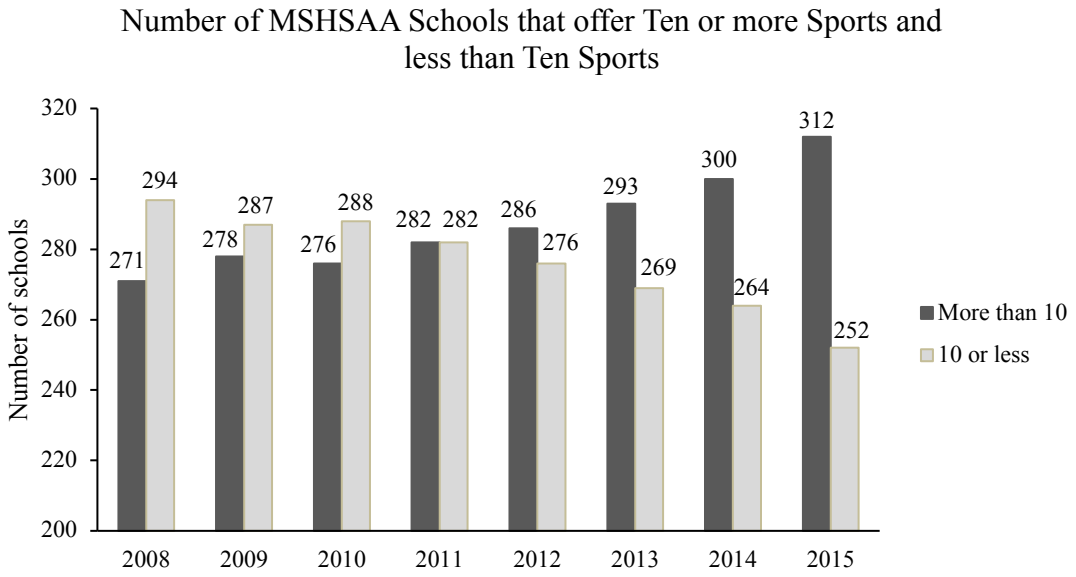

Figure 7. This chart displays the number of schools that offer more than ten sports or ten or less sports for the years 2008-2015.

Table 11 and Figure 8 display the number of participants playing 11-man football in MSHSAA member schools from the years 2008-2016. The table shows the decline in the number of participants with 23,478 participants in 2008 to 20,818 participants in 2016.

Table 11

Number of Participants playing 11-man Football in MSHSAA Member Schools from 2008-2016

	11-man football participants
2008	23,478
2009	23,258
2010	23,189
2011	22,605
2012	22,673
2013	22,823
2014	21,653
2015	21,602
2016	20,818

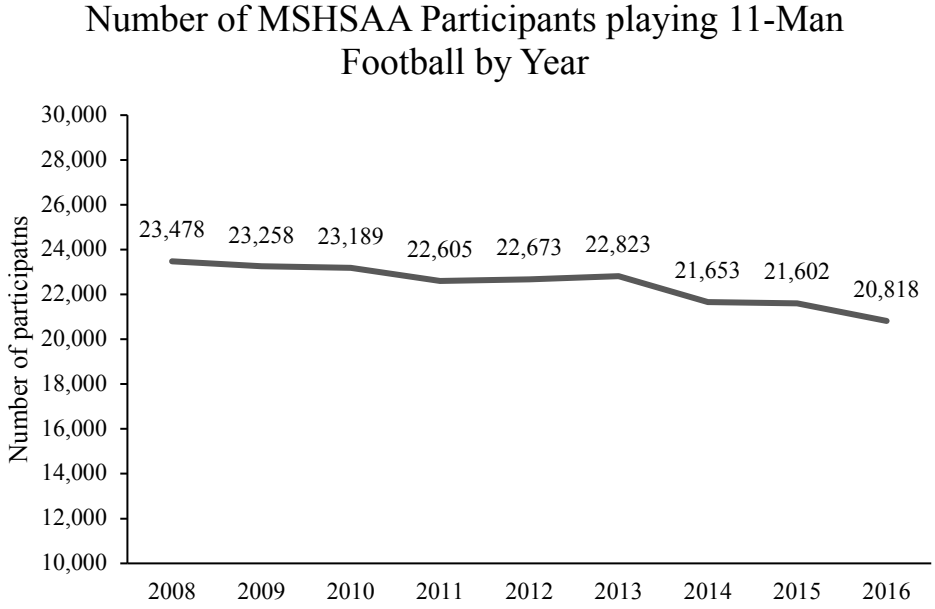

Figure 8. This chart displays the number of MSHSAA Participants playing 11-man football by year.

Table 12 and Figure 9 display the number of 11-man football playing schools. It shows the small increase in schools that offer 11-man football from 2008 to 2015. Concurrently, the table also shows the slight decrease in the number of schools that do not offer 11-man football from 2008-2016.

Table 12

Number of schools that offer 11-man Football by Year

	Yes	No	Total
2008	339 (57.6%)	250 (42.4%)	589 (100.0%)
2009	336 (57.4%)	249 (42.6%)	585 (100.0%)
2010	343 (58.6%)	242 (41.4%)	585 (100.0%)
2011	347 (59.4%)	237 (40.6%)	584 (100.0%)
2012	354 (60.6%)	230 (39.4%)	584 (100.0%)
2013	354 (60.6%)	228 (39.4%)	582 (100.0%)
2014	355 (61.0%)	227 (39.0%)	582 (100.0%)
2015	353 (60.4%)	231 (39.6%)	584 (100.0%)
2016	352 (60.3%)	232 (39.7%)	584 (100.0%)

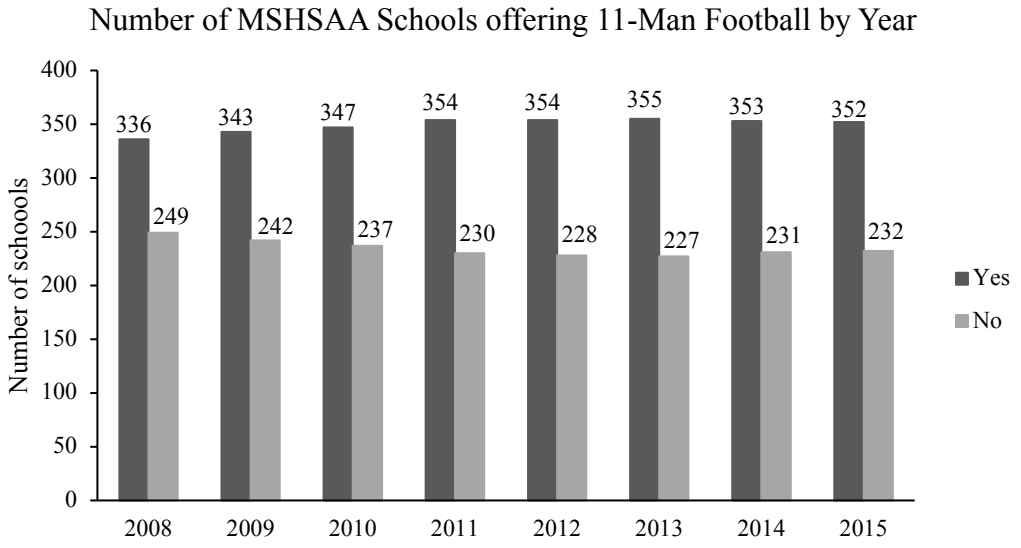

Figure 9. This graph displays the number of schools that offered 11-man football by year from 2008-2015.

Research Question 2

2. Is there a difference in the number of single sport participants and multi-sport participants in MSHSAA member schools since the implementation of MSHSAA Rule 3.15.3 in 2010?

Table 13 and Figure 10 illustrate that there was not a significant association between the number of single sport participants and multi-sport participants since the implementation of the policy in 2010 (χ^2 (1) = 2.758, p < 0.05).

Table 13

Number of Single Sport and Multiple Sport Participants before and after implementation of MSHSAA By-Law 3.15.3.

	Before	After	Chi-square	df	Sig.
Single Sport	193,752 (59.9%)	193,918 (60.1%)			
Multi-Sport	129,648 (40.1%)	128,669 (39.9%)	2.758	1	.097

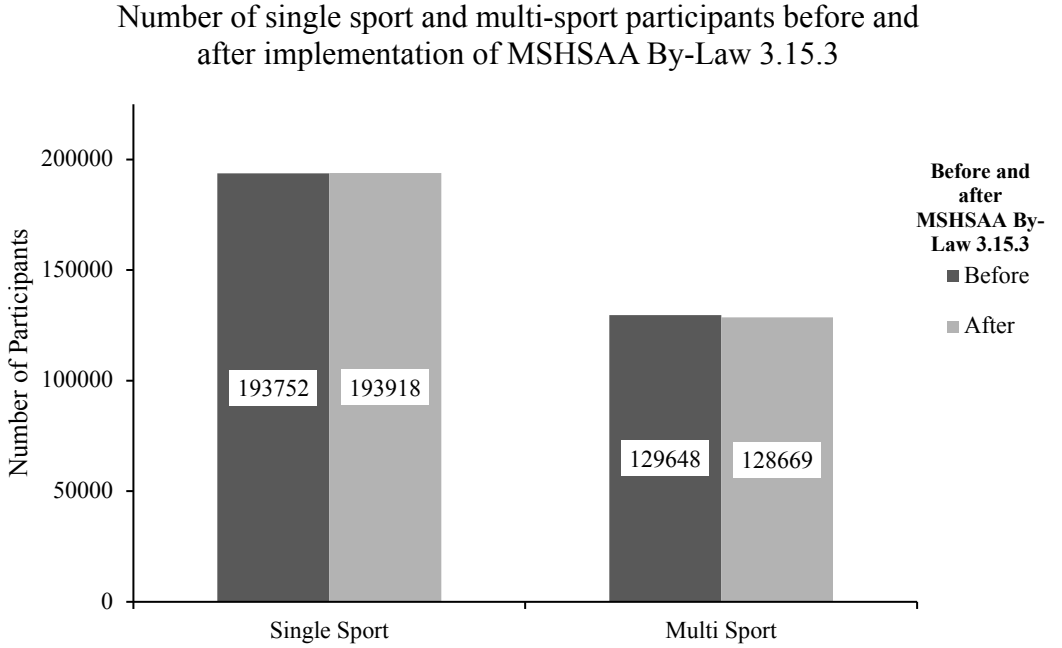

Figure 10. This figure displays the total number of single sport and multi-sport participants before and after MSHSAA By-Law 3.15.3.

This analysis shows that there was no significant difference in the overall number of single sport and multi-sport participants before and after the implementation of MSHSAA By-Law 3.15.3. This data supports the null hypothesis; there is not a significant difference in the number of single sport and multi-sport participants since the implementation of MSHSAA of MSHSAA By-Law 3.15.3. The researcher accepts the null hypothesis as true for RQ2.

Research Question 3

3. Is there a difference in the number of single sport participants in MSHSAA member schools since the implementation of MSHSAA By-Law 3.15.3 in 2010 when considering rural, urban, and suburban schools?

Table 14 and Figure 11 show that there was a significant difference between school location and the number of school sport participants since the implementation of MSHSAA By-Law 3.15.3 (χ^2 (2) = 39.30, p < 0.05).

Table 14

Single Sport Participation by School Location before and after implementation of MSHSAA By-Law 3.15.3

	Before	After	Chi-square	df	Sig.
Rural	82,588 (42.6%)	82,761 (42.7%)			
Urban	22,457 (11.6%)	21,262 (11.0%)			
Suburban	88,707 (45.8%)	89,781 (46.3%)	39.30	2	0.000

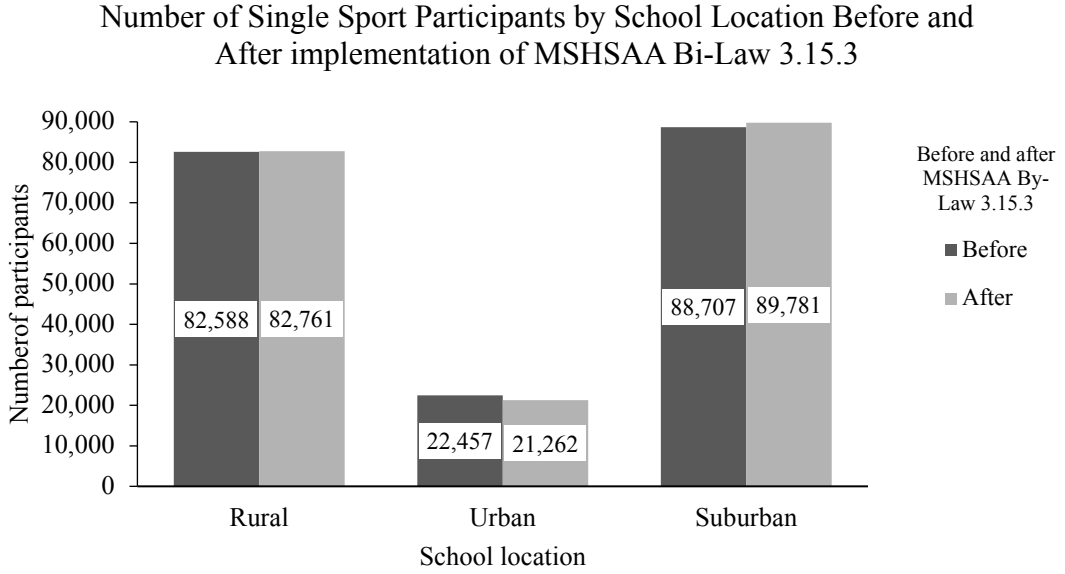

Figure 11. Number of single sport participants by school location before (2008-2010) and after (2011-2013) the implementation of MSHAA By-Law 3.15.3.

The data and statistical analysis for RQ3 shows that there was a significant difference in single sport participation based on school location before and after the implementation of MSHAAA By-Law 3.15.3. This does not support the null hypotheses. The data

shows that there was an impact on single sport participation following the implementation of the MSHSAA By-Law 3.15.3 depending on the location of the school the participant attends. Rural participation increased from 82,588 to 82,761 participants. Suburban participation increased from 88,707 to 89,781 participants following the implementation of the by-law. Urban participation decreased from 22,457 to 21,262 following the implantation of the by-law. In order to understand which school location analyses was considered to be significant, a post hoc test using the Bonferroni adjustment was used.

Table 15 displays the results of the post hoc chi-square analysis. The data shows there was a significant difference in the number of single sport participants when comparing school locations. Using the Bonferroni adjustment, a p-value of .017 was used for this analysis.

Table 15

Post Hoc Chi-Square Analysis Comparing Number of Rural, Urban, and Suburban single sport athletes before and after implementation of MSHSAA By-Law 3.15.3

Comparison	Significance
Rural vs Suburban	.145
Rural vs Urban	.000
Urban vs Suburban	.000

The data shows that there was no significant difference when comparing the number of rural and suburban single sport participants before and after the implementation of the MSHSAA By-Law 3.15.3. However, the data shows that there was a significant difference when comparing urban to rural and urban to suburban single sport participants before and after the implementation of the by-law. The decrease in urban participation from 22,457 to 21,626 was found to be statistically significant. Therefore, the null hypothesis for RQ 3 is rejected.

Research Question 4

1. Is there a difference in the number of single sport participants in MSHSAA member schools since the implementation of MSHSAA Rule 3.15.3 in 2010 when considering the number of sports offered?

Table 16 and Figure 12 illustrate that there was a significant difference in the number of single sport participants in years preceding and the years following the implementation of MSHSAA policy 3.15.3 when considering the number of sports offered (χ^2 (1) = 106.246, $p < 0.05$).

Table 16

Single Sport Participation before and after 2010 implementation of MSHAA By-Law 3.15.3 when considering Number of Sports offered

	Before	After	Chi-square	df	Sig.
10 or less	33,198 (17.5%)	30,833(16.2%)			
More than 10	156,834 (82.5%)	159,279 (83.8%)	106.246	1	.000

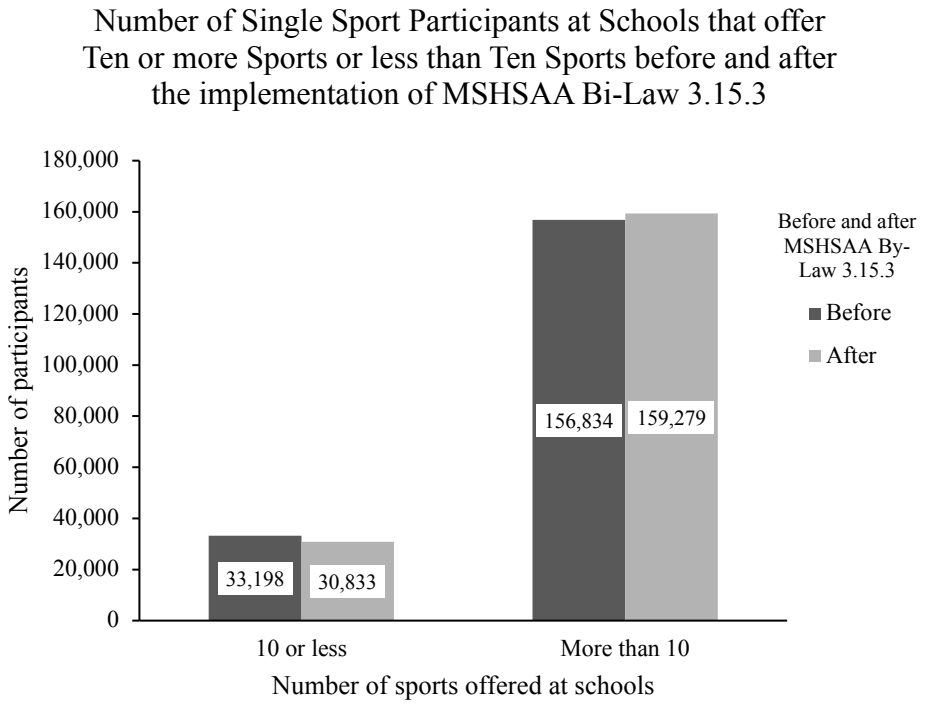

Figure 12. Single sport participation comparison before (2008-2010) and after (2011-

2013) the implementation of MSHSAA By-Law 3.15.3 when considering whether student attend a school that offers ten or fewer sports or more than ten sports.

The previous data and statistical analysis shows that there is a significant difference in the number of participants before and after the implementation of MSHSAA By-Law 3.15.3 in schools that offer ten or fewer sports. The number of students participating in sports with ten or less students decreased from 33,198 to 30,833 participants.

The previous data and statistical analysis also show that there is a significant difference when comparing the number of participants before and after the implementation of MSHSAA By-Law 3.15.3 in schools that offer 11 or more sports. The number of students participating increased from 156,834 to 159,279 participants. Therefore, the null hypothesis for RQ4 is rejected.

Research Question 5

5. Is there a difference in the number of multiple sports participants in MSHSAA member schools since the implementation of MSHSAA Rule 3.15.3, when considering rural, urban, and suburban Missouri High Schools?

Table 17 and Figure 13 show that there was a significant change in the number of multiple sport participants when considering school location since the implementation of MSHSAA By-Law 3.15.3(χ^2 (1) = 17.475, p < 0.05).

Table 17

Number of Multi-Sport Participants by School Location before and after implementation of MSHSAA By-Law 3.15.3

	Before	After	Chi-square	df	Sig.
Rural	68,443 (52.8%)	68,292 (53.1%)			
Urban	12,662 (9.8%)	11,944 (9.3%)			
Suburban	48,453 (37.4%)	48,422 (37.6%)	17.475	2	0.000

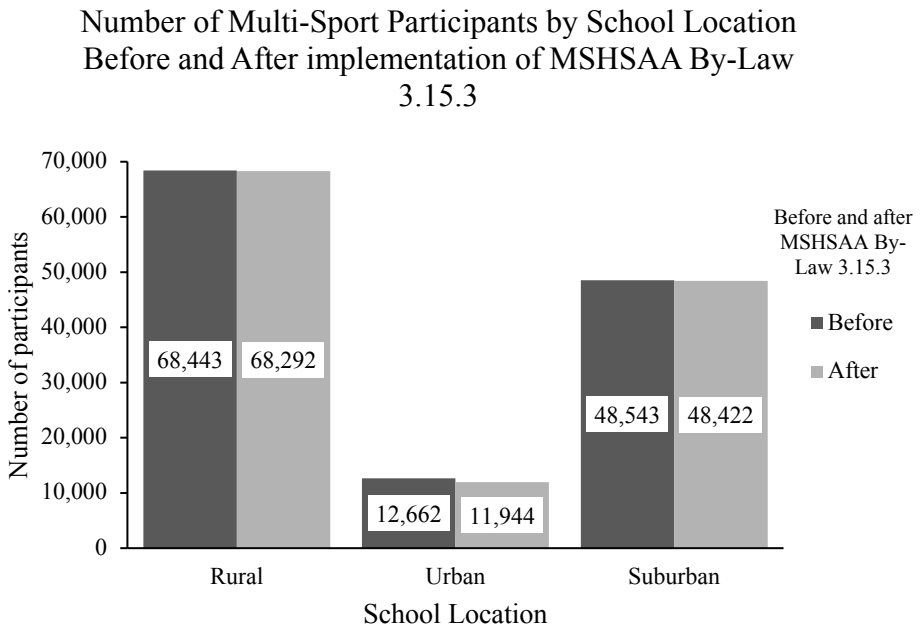

Figure 13. Difference in multi-sport participation before (2008-2010) and after (2011-2013) the implementation of MSHSAA By-Law 3.15.3 when considering school location.

Due to the fact that there was a decrease in multi-sport participation in all three types of school location following the implementation of MSHSAA By-Law 3.15.3, especially urban schools, the data does not support the null hypothesis. The analysis shows that there was an impact on multi-sport participation after the implementation of MSHAA By-Law 3.15.3 depending on the school location the participant attends. Rural participation increase decreased from 68,443 to 68,292 participations following the implementation of the by-law. Urban participation decreased from 12,662 to 11,944 participations following the implementation of the by-law. Suburban participation decreased from 48,583 to 48,422 participants following the implementation of the by-law. In order to understand which school location analyses was considered to be significant, a post hoc test using the Bonferroni adjustment was used.

Table 18 displays the results of the post hoc chi-square analysis. The data shows there was a significant difference in the number of multiple sport participants when comparing school locations. Using the Bonferroni adjustment, a p-value of .017 was used for this analysis.

Table 18

Post Hoc Chi-Square Analysis Comparing Number of Rural, Urban, and Suburban multiple sport athletes before and after implementation of MSHSAA By-Law 3.15.3

Comparison	Significance
Rural vs Suburban	.973
Rural vs Urban	.000
Urban vs Suburban	.000

The data shows that there was no significant difference when comparing the number of rural and suburban multiple sport participants before and after the implementation of the MSHSAA By-Law 3.15.3. However, the data shows that there was a significant difference when comparing urban to rural and urban to suburban multiple sport participants before and after the implementation of the by-law. Therefore, the null hypothesis for RQ5 is rejected.

Research Question 6

6. Is there a difference in the number of multiple sport participants in MSHSAA member schools since the implementation of MSHSAA Rule 3.15.3 in 2010 when considering the number of sports offered?

Table 19 and Figure 14 illustrate that there was a significant difference in multiple sport participation since the implementation of MSHAA Rule 3.15.3 when considering the number of sports offered (χ^2 (1) = 48.117, $p < 0.05$.

Table 19

Number of Multi-Sport Participants before and after 2010 implementation of MSHAA By-Law 3.15.3 when considering Number of Sports offered.

	Before	After	Chi-square	df	Sig.
10 or less	30,440 (24.1%)	28,761 (22.9%)			
More than 10	95,999 (75.9%)	96,815 (77.1%)	48.117	1	.000

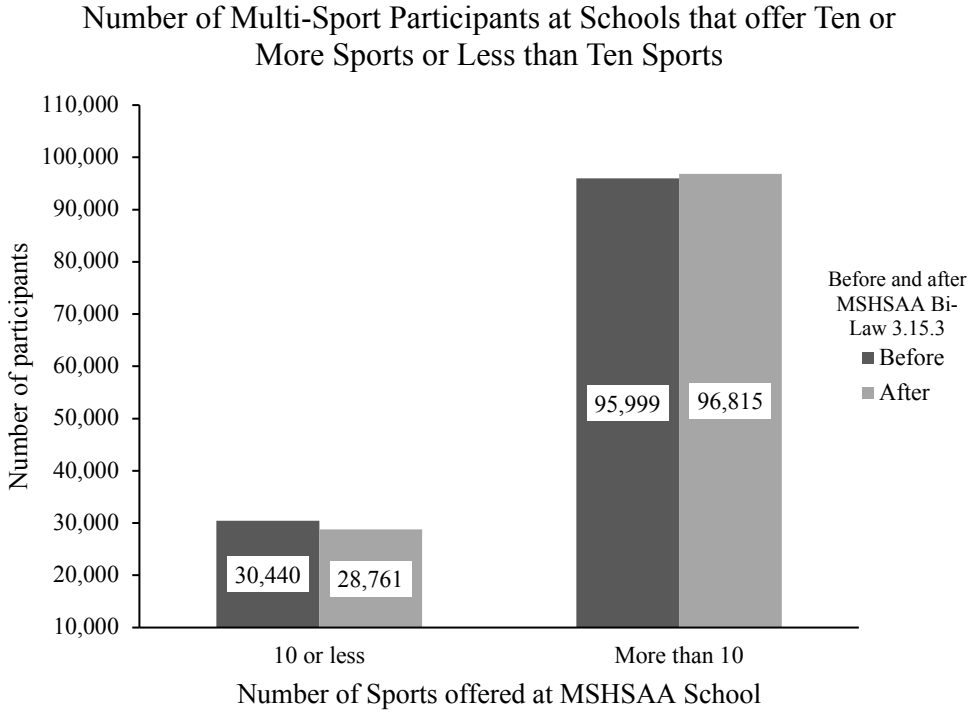

Figure 14. Multi-sport participation comparison before (2008-2010) and after (2011-2013) the implementation of MSHSAA By-Law 3.15.3 when considering whether student attends a school that offers ten or fewer sports or more than 11 sports.

The previous data and statistical analysis show that there is a significant difference in the number of multi-sport participants before and after the implementation of MSHSAA By-Law 3.15.3 in schools that offer ten or fewer sports. The previous data and statistical analysis also show that there is a significant difference when comparing the number of multi-sport participants before and after the implementation of MSHSAA By-Law 3.15.3 in schools that offer 11 or more sports. Therefore, the null hypothesis for RQ6 is rejected.

Research Question 7

7. Is there a difference in the number of multiple sport participants in MSHSAA member schools since the implementation of MSHSAA Rule 3.15.3, when considering schools that do or do not offer 11-man football?

Table 20 and Figure 15 illustrate that there was a significant difference in multiple sport participation since the implementation of MSHAA Rule 3.15.3 when considering schools that do or do not offer 11-man football (χ^2 (1) = 2.758, p < 0.05).

Table 20

Difference in the Number of Multi-Sport Participants before and after implementation of MSHAA By-Law 3.15.3 when considering Schools that do and do not offer 11-man Football.

	Before	After	Chi-square	df	Sig.
No 11-man football	22,958 (17.7%)	22,270 (17.3%)			
Has 11-man football	106,690 (82.3%)	106,399 (82.7%)	7.153	1	.004

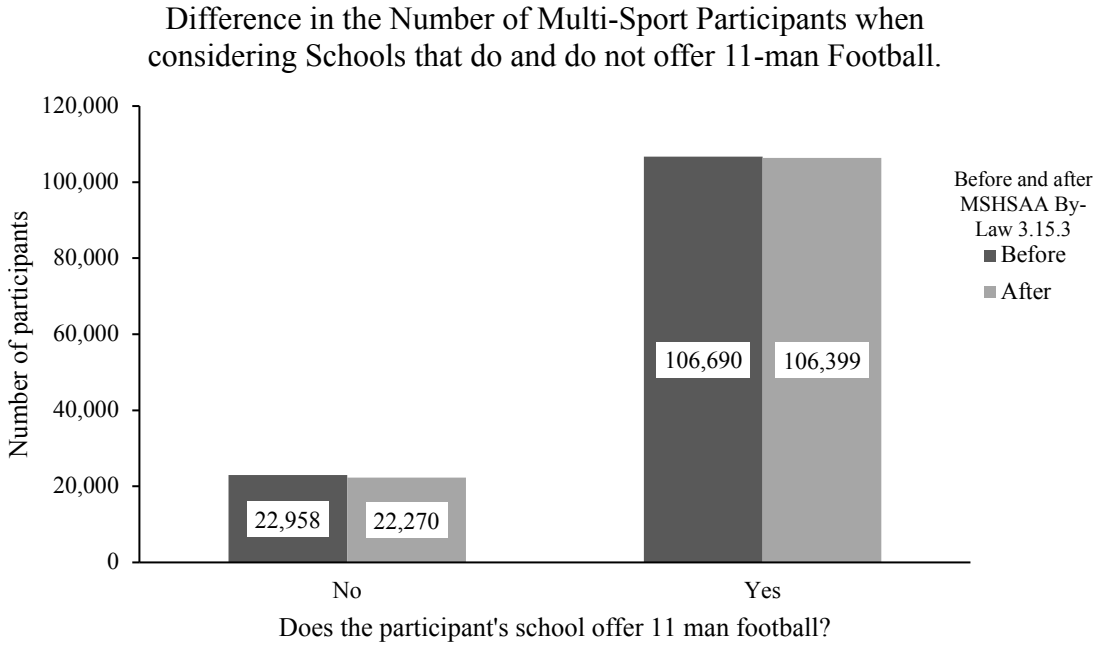

Figure 15. Number of multi-sport participants before (2008-2010) and after (2011-2013) the implementation of MSHSAA By-Law 3.15.3 that attend schools that do or do not offer 11-man football.

The data and statistical analysis for RQ 7 shows that there is a significant statistical difference in the number of multi-sport participants before and after the implementation of MSHAA By-Law 3.15.3 when considering whether they participant's school offers 11-man football. This does not support the null hypothesis for RQ 6. As such, the data shows there is an impact in the years following the implementation of MSHSAA By-Law 3.15.3 on the number of multi-sport participants at schools that do not offer 11-man football.

Summary

Chapter Four explains the analyses of data used to determine the potential impact of MSHSAA Bi-Law 3.15.3 on sport participation in Missouri. Descriptive statistics are displayed in both with tables and figures, where appropriate. The data displayed in the descriptive statistics show the trends in participation and include information concerning the variables of school location, number of sports offered, and 11-man football playing schools.

The data for each research question and the chi square analyses for each research question are also displayed in both table and figure form. The analysis for Research Question Two (RQ2) displays that there was not a significant change in single and multiple sport participation before and after the implementation of the contact day policy. The analyses for Research Questions Three (RQ3) and Five (RQ5) show that there was a significant decrease in the participation of students at urban schools before and after the implementation of MSHSAA By-Law 3.15.3. The analyses for Research Questions Four (RQ4) and Six (RQ6) display that there was a significant decrease in participation for students that attend schools with ten or less sports. Finally, the analysis for Research

Question Seven (RQ7) shows that there was a significant decrease in participation for student that attend schools that do not offer 11-man football after the implementation of MSHSAA By-Law 3.15.3. The researcher will explain these findings and conclusions in the final chapter of this study.

CHAPTER FIVE:

FINDINGS, CONCLUSIONS, IMPLICATIONS, AND RECOMMENDATIONS

This chapter provides a summary of the study by reviewing the problem, purpose, research questions, and null hypotheses. In order to support this summary of the study, a brief summary of the literature review is also provided. The next part of the chapter provides a review of the statistical analyses from Chapter Four. Finally, this chapter presents conclusions and implications based on the study, in addition to recommendations for future research.

Summary of the Study

This study set out to determine if the policy known as the "contact day rule", implemented by MSHSAA in 2011, had any impact on single sport and multi-sport participants in MSHSAA championship series sports from 2008-2016. Furthermore, this study compared the number of single sport and multi-sport participants with the location of schools and number of athletic opportunities to provide more context for the potential impact that MSHSAA By-Law 3.15.3 had on sport participation. Finally, this study attempted to determine if there were any changes in multiple sport participants in schools that offered 11-man football.

Problem Statement

There was a lack of information as to whether a policy implemented by high school leaders in Missouri potentially impacted sport participation in Missouri. MSHSAA By-Law 3.15.3 increased the amount of time coaches and athletes could spend participating in summer practices from 14 to 25 days. Numerous studies have shown the

benefits for students that participate in extra-curricular activities (Dworkin, Hanson, and Larkson, 2003, Gould and Hedstrom, 2004, DiFiori, Jayanthi, and Myer, 2015). One concern of Missouri high school leaders was that there may not be enough research being done before the implementation of policy. There was a lack of information as to whethere the increased demand on student athletes' time will increase or decrease the number of students participating in one our multiple sports (Brenner, 2007). The other problem, from the perspective of many Missouri high school coaches, was that there are a very limited number of students at every high school. These coaches believed that in order to properly field a competitive team, high school athletes needed to participate in multiple sports within the school (Gould & Carson, 2004; Jayanthi, Pinkham, Dugas, 2012). Researchers have discussed whether students are experiencing burnout and deciding not to participate in high school sports (Gould & Carson, 2004; Jowett & Cramer 2009). Missouri school leaders wanted to know if the policies are impacted Missouri high school student athlete participation. It was also important to know if MSHSAA By-Law 3.15.3 affected overall student participation based on school location and number of sport playing opportunities. Finally, since this rule was brought forth by the Football Advisory Committee, school leaders sought to understand how it impacted participation in schools that offer 11-man football.

Purpose of the Study

The purpose of this quantitative study was to understand the changes, if any, over time in the number of participants in one and multiple sports prior to and since the implementation of the MSHSAA By-law 3.15.3 rule in 2010. To further clarify the changes, this study considered the school location of Missouri high schools and number

of sports offered in these schools. Since this policy was initiated by the MSHSAA football advisory committee, this study also included the participation changes in schools that offer 11-man football. The data described three years prior to and seven years following the implementation of the MSHSAA contact day rule in 2011. The overall aim was to understand the trends and changes in participation in single sports and multiple sports over time in order to determine the possible impact of the contact day rule. This study will be used to inform the policy makers of Missouri high school sports of the possible impact of MSHSAA By-Law 3.15.3.

Additionally, The Missouri High School Athletic Association Board of Directors and members wanted to know if there has been a significant change in single sport and multiple sport participants in Missouri High School sports since the implementation of rule 3.15.3, the "contact day rule" (MSHSAA, 2011). MSHSAA members wanted to know the type of change that has occurred so that they can revisit the policy if necessary and offer alternative solutions if necessary (Bardach, 2012). Currently, little is known about the effect of this policy on participation in Missouri interscholastic athletics.

Research Questions and Null Hypotheses

This study set out to answer the following research questions and the null hypotheses, where appropriate:

1. What are the descriptive statistics from single sport and multiple sport participants for 9-12 grade students in MSHSAA member schools from 2007-2016?
2. Is there a difference in the number of single sport participants and multi-sport participants in MSHSAA member schools since the implementation of MSHSAA Rule 3.15.3 in 2010?

H_o1: There is not a difference in the number of single sport participants and multi-sport participants since the implementation of MSHSAA Rule 3.15.3 in 2010.

3. Is there a difference in the number of single sport participants in MSHSAA member schools since the implementation of MSHSAA Rule 3.15.3 in 2010 when considering rural, urban, and suburban schools?

   H_o2: There is not a difference in single sport participants in MSHSAA member schools since the implementation of MSHSAA Rule 3.15.3 when considering rural, urban, and suburban schools.

4. Is there a difference in the number of single sport participants in MSHSAA member schools since the implementation of MSHSAA Rule 3.15.3 in 2010 when considering the number of sports offered?

   H_o3: There is not a difference in single sport participants in MSHSAA member schools since the implementation of MSHSAA Rule 3.15.3 in 2010 when considering the number of sports offered.

5. Is there a difference in the number of multiple sports participants in MSHSAA member schools since the implementation of MSHSAA Rule 3.15.3, when considering rural, urban, and suburban Missouri High Schools?

   H_o4: There is not a difference in multiple sport participants in MSHSAA member schools since the implementation of MSHSAA Rule 3.15.3 when considering rural, urban, and suburban schools.

6. Is there a difference in the number of multiple sport participants in MSHSAA member schools since the implementation of MSHSAA Rule 3.15.3 in 2010 when considering the number of sports offered?

   H_o5: There is not a difference in multiple sport participants in MSHSAA member schools since the implementation of MSHSAA Rule 3.15.3 when considering the number of sports offered.

7. Is there a difference in the number of multiple sport participants in MSHSAA member schools since the implementation of MSHSAA Rule 3.15.3, when considering schools that do or do not offer 11-man football?

   H_o6: There is not a difference in multiple sport participants in MSHSAA member schools since the implementation of MSHSAA Rule 3.15.3 when considering schools that do or do not offer 11-man football.

Review of Related Literature

The review of literature for this study provided insight into the three underpinnings that guided this work: policy analysis, as defined by Stone (2012) and Bardach (2012), historical context of national and state policies in interscholastic athletics, and the impact of school location and opportunity on participation.

Policy Analysis. To understand the potential impact of MSHAA By-Law 3.15.3 and form the research framework for this study, it was necessary to identify concepts of policy analysis that directly relate to this study. Deborah Stone, in her book *Policy Paradox* (2012), identified factors that must be assessed when examining the impact of a policy. First, this study, reviewed the "interests" that went into creating contact day policy and the "interest groups" that implemented MSHSAA By-Law 3.15.3 (Stone, 2012).

These were reviewed to understand, as Stone states, "the people and organizations who have a stake in an issue or are affected by it" (Stone, 2012, p. 229). Since promoting participation is the mission of the MSHSAA organization and its member schools it was significant to provide participation data to determine if this policy had any significant impact on the number of participants. The concept of identifying interests supported the researcher in determining that student single and multiple sport participation would be the focus of this study to assess the impact of MSHSAA By-Law 3.15.3. Additionally, since the football coaches and the football advisory committee was a significant "interest group" in the promotion of this by-law as a solution for summer time contact, the study of multiple sport participation in schools that offer 11-man football was an important aspect of this study (Stone, 2012).

Stone's evaluation of "equity" within policy analysis was another important concept for this study. As equity is a goal of the MSHSAA organization, it was important to determine how this policy impacts the students that participate in its member schools. Stone describes the concept of "equity" as whether the item is being "fairly distributed" (Stone, 2012). School location and number of sports offered was used to assess the equity in the implementation of MSHSAA By-law 3.15.3. These independent variables can be linked to the student or family characteristics within those schools that may impact the ability of these students to have increased summer practice time. In theory, each student would be getting the same opportunity, but in practice, that may not be the case (Stone, 2012).

Finally, Bardach's (2012) recommendation was that within any policy analysis, the researcher must "assemble the evidence" in order to make reasonable projections

about the impact of the policy being studied. An investigation of the contact day policy could certainly include other types of evidence, quantitative data is essential in understanding the potential impact of the policy (Bardach, 2012). Bardach's concept supported this investigation as a starting point for determining the impact of MSHSAA By-Law 3.15.3.

Historical context of national policies in high school athletics. A review of the beginnings of interscholastic sports in the United States provided an understanding into the desire for oversight of high school athletics by school leaders (Pruter, 2013). Once schools began to realize that the student-athletes and contests reflected the school itself, there was a desire to exercise control over high school sports (Keller, 1973). As sports became more prominent in American society and a significant part of communities across the country, state associations began to form and increase regulation (Pruter, 2013). Policies soon followed controlling many aspects of the competitions and whom should be allowed to play (Pruter, 2013). Both national and state and national associations, and the policies they implement, have continued to be an important aspect of high school athletics, potentially impacting participation.

Missouri interscholastic policy implementation. The Missouri State High School Activities Association official formed in 1926 and now includes over 500 private and public schools. This organization's mission is to promote the value of participation, sportsmanship, team play, and personal excellence to develop citizens who make positive contributions to the community and support the democratic principles of our state and nation." (MSHSAA Handbook, p.17). MSHSAA accomplishes this goal by "regulating the diverse interscholastic activities…" (MSHSAA Handbook, p. 19). The framework for

policy establishment and implementation is clearly defined in the MSHSAA Constitution. Every policy must go through a specific process and be voted on by the member schools. These policies can be recommended by advisory groups, the MSHSAA Board of Directors, or member school leaders. MSHSAA By-Law 3.15.3 did go through this process and this policy was taken to a vote and implemented in 2010 (MSHSAA Handbook, 2018, MSHSAA Notes).

Opportunities to participate and school location. There has been significant research done to understand how high school athletic participation can be impacted by the number of opportunities students have to participate and the location of the participant's school (Glennie and Stearns, 2009). First, the number of opportunities was not deemed to be a significant factor in the percentage of student that participated in interscholastic athletics (Glennie and Stearns, 2009). Glennie and Stearns (2009) stated, "in larger schools, students may compete for those spots, but small schools recruit students to join because they must have a certain number of students to fill the slots. Thus, participation rates are higher in smaller schools than larger schools (McNeal, 1999; Schoggen and Schoggen, 1988). Since number of opportunities was found not to be an indication of participation rates, this study set to prove or disprove whether that was the case for participation in MSHSAA member schools.

Secondly, school location, was a significant factor in student athletic participation. Rural and schools have the lowest number of athletic opportunities, followed by urban, and then suburban (Cohen, Schuster, Taylor, Vestal & Zonta, 2007; Glennie & Stearns, 2009; Guest, 2018; Roscigno, 2006; Sabo & Veliz, 2011). Rural schools face the issue that over time school districts determine that without the numbers to support the

programs they no longer need to provide those programs (National Endowment for the Arts, 2003). Additionally, urban schools face the issue that there are other factors that urban families have to address that limit athletic interest like caring for younger siblings, need for jobs, lack of transportation, and living in unsafe neighborhoods (Guest, 2018). Since a wide variety of schools exist in Missouri, studying the variables of opportunity and school location were essential when analyzing the potential impact of MSHSAA By-Law 3.15.3 on all participants in MSHSAA member schools.

Study Group

The subjects of this study were all 9-12 grade students in MSHSAA member schools that participated in one or more of the nineteen championship series sports offered by MSHSAA in the state of Missouri from the years 2008-2016. A total of 1,077,684 participants was included in this data set. Research question one (RQ1) used the entire dataset to provide the descriptive statistics for the study. Research questions two (RQ2) examined both single sport and multiple sport participants from 2008-2013. This included 645,987 participants. Research questions three (RQ3) and four (RQ4) examined participants that participated in one sport from 2008-2013. This included 387,670 participants. Research questions five (RQ5), six (RQ6), and seven (RQ7) included multiple sport participants from the years 2008-2013. This included 285,317 participants.

Findings

The statistical tests included the following: descriptive summary statistics for research question one (RQ1); a Pearson chi-square test for research questions two (RQ2), three (RQ3), four (RQ4), five (RQ5), six (RQ6), seven (RQ7), and eight (RQ8). Chi-square post hoc tests were also used in research questions three (RQ3) and five (RQ5).

Research Question 1

The descriptive statistics presented for research one provided the foundational data and trends to better understand the remaining research questions. There was no statistical analysis performed on the descriptive data.

Research Question 2

The Pearson chi-square analysis was used for research question two. Pearson's chi-square test was the appropriate statistical treatment for this question because it is useful in "determining the relationship between two categorical variables" (Field, 2009, p. 289). Furthermore, since the data were nominal, which is a form of categorical data, and there were only two categorical variables in each question, this was the appropriate statistical treatment for this research question.

The results of the Pearson chi-square analysis regarding a comparison between the number of single sport athletes and the number multi-sport athletes before and after the implementation of MSHSAA By-Law 3.15.3 are presented in Chapter Four of the study. A table and chart were presented with the research question analysis. The analysis revealed that the differences were not significant ($p > .05$). Examining the table and chart, it can be determined that the number of single sport and multi-sport participants is similar before and after the implementation of MSHSAA By-Law 3.15.3. Therefore, the null hypothesis (H_o1) for research question two was accepted.

Research Question 3

The Pearson chi-square analysis was used for research question three. Pearson's chi-square test was the appropriate analysis for this question because it is useful in "determining the relationship between two categorical variables" (Field, 2009, p. 289).

Additionally, since the data were nominal, which is a form of categorical data, and there were only two categorical variables in each question, this was the appropriate analysis for this research question.

The results of the Pearson chi-square analysis regarding an examination of the difference in number of single sport participants before and after the implementation of MSHSAA By-Law 3.15.3 when considering the location of the participants school was presented in Chapter Four of the study. A table and chart were presented to support the research analysis. The analysis revealed that the differences were significant ($p < .05$). Examining the table and chart, it can be determined that the number of single sport athletes increased in the rural and suburban schools. It can also be determined that the number of single sport athletes decreased in urban schools following the implementation of MSHSAA By-Law 3.15.3. Examining the post hoc chi-square data in Table 19, it was determined that there was a significant decrease in the number of single sport participants in urban schools when compared to both suburban and rural schools following the implementation of MSHSAA By-Law 3.15.3. Therefore, the null hypothesis (H_o2) for research question three was rejected.

Research Question 4

The Pearson chi-square analysis was used for research question four. Pearson's chi-square test was the appropriate statistical treatment for this question because it is useful in "determining the relationship between two categorical variables" (Field, 2009, p. 289). Also, since the data were nominal, which is a form of categorical data, and there were only two categorical variables in each question, this was the appropriate statistical treatment for this research question.

The results of the Pearson chi-square analysis regarding an examination of the difference in number of single sport participants before and after the implementation of MSHSAA By-Law 3.15.3 when considering the number of sports offered at the participant's school was presented in Chapter Four of the study. A table and chart were presented to support the research analysis. The analysis revealed that the differences were significant ($p < .05$). Examining the table and chart, it can be determined that the number of single sport athletes decreased in schools that offered ten or less sport playing opportunities following the implementation of MSHSAA By-Law 3.15.3. It could also be determined that the number of single sport participants increased in schools that offered more than ten sport playing opportunities following the implementation of MSHSAA By-Law 3.15.3. Therefore, the null hypothesis (H_o3) for research question four was rejected.

Research Question 5

The Pearson chi-square analysis was used for research question five. Pearson's chi-square test was the appropriate statistical treatment for this question because it is useful in "determining the relationship between two categorical variables" (Field, 2009, p. 289). Additionally, since the data were nominal, which is a form of categorical data, and there were only two categorical variables in each question, this was the appropriate statistical treatment for this research question.

The results of the Pearson chi-square analysis regarding an examination of the difference in number of multi-sport participants before and after the implementation of MSHSAA By-Law 3.15.3 when considering the location of the participants school was presented in Chapter Four of the study. A table and chart were presented to support the research analysis. The analysis revealed that the differences were significant ($p < .05$).

Examining the table and chart, it can be determined that the number of multi-sport athletes decreased in suburban, urban, and rural schools following the implementation of MSHSAA By-Law 3.15.3. Examining the post hoc chi-square data in Table 22, it was determined that there was a significant decrease in the number of multi-sport participants in urban schools when compared to both suburban and rural schools following the implementation of MSHSAA By-Law 3.15.3. Therefore, the null hypothesis (H_o4) for research question five was rejected.

Research Question 6

The Pearson chi-square analysis was used for research question six. Pearson's chi-square test was the appropriate analysis for this question because it is useful in "determining the relationship between two categorical variables" (Field, 2009, p. 289). Furthermore, since the data were nominal, which is a form of categorical data, and there were only two categorical variables in each question, this was the appropriate analysis for this research question.

The results of the Pearson chi-square analysis regarding an examination of the difference in number of multi-sport participants before and after the implementation of MSHSAA By-Law 3.15.3 when considering the number of sports offered at the participant's school was presented in Chapter Four of the study. A table and chart were presented to support the research analysis. The analysis revealed that the differences were significant ($p < .05$). Examining the table and chart, one can conlcude that the number of multi-sport athletes slightly increased in schools that offered more than ten sports. However, the number of participants decreased in schools that offered ten or less sports

following the implementation of MSHSAA By-Law 3.15.3. Therefore, the null hypothesis (H_o5) for research question five was rejected.

Research Question 7

The Pearson chi-square analysis was used for research question seven. Pearson's chi-square test was the appropriate statistical treatment for this question because it is useful in "determining the relationship between two categorical variables" (Field, 2009, p. 289). Additionally, since the data were nominal, which is a form of categorical data, and there were only two categorical variables in each question; Pearson chi-square this was the appropriate statistical treatment for this research question.

The results of the Pearson chi-square analysis regarding an examination of the difference in number of multi-sport participants before and after the implementation of MSHSAA By-Law 3.15.3 when considering schools that did or did not offer 11-man football was presented in Chapter Four of the study. A table and chart were presented to support the research analysis. The analysis revealed that the differences were significant ($p < .05$). Examining the table and chart, one can conclude that the number of multi-sport athletes decreased in schools that offer 11-man football. One can also conclude that the number of multi-sport participants decreased in schools that did and did not offer 11-man football following the implementation of MSHSAA By-Law 3.15.3. Therefore, the null hypothesis (H_o6) for research question five was rejected.

Conclusions

The purpose of this quantitative study was to determine if the implementation of MSHAA By-Law 3.15.3 had any impact on the number of sport participants in the nineteen MSHSAA championship series sports. The research concludes, based on the

statistical analyses done in this study, that there was not a significant impact on the number of single and multi-sport participants. However, when analyzing variables of school location, number of participation opportunities offered, and schools that do or do not offer 11-man football, there were significant differences in the number single sport and multi-sport participants. Understanding these variables and the impact that MSHSAA By-Law 3.15.3 had on the number of participants, including the variables studied, is valuable information for school leaders that attempt to implement similar policies. Based on this study, determining how a policy may impact schools in different locations and schools that offer different number of sports, are important factors to consider.

The researcher does not recommend any policy changes at this time because more information is needed. Further studies would be important to support or add to the research completed for this study. The data shows that there was significant change in participation when considering the variables, the research was not able to pinpoint MSHSAA By-Law 3.15.3 as being the determining factor in the change in the number of sport participants during the years studied. Because there is no research done on summer time contact policies and if such impacts participation, this study should serve as groundwork for future qualitative or quantitative policy analyses. Additional conclusions of the study are present below and organized by research question.

Research Question 1

Research question one addressed the descriptive statistics of all participants in the study. Since the statistics presented were descriptive in nature, there are no conclusions to make regarding research question one at this time.

Research Question 2

The statistical analysis for research question two showed that there was not a significant difference in the overall comparison between the number of single sport athletes and the number of multiple sport athletes in MSHSAA member schools. The goal of this question was to determine if there was a shift of athlete participation from single sport to multiple sports or vice versa. This data shows that despite the deemed negative trends expressed in the research for this study, that the number of athletes, both single sport and multiple sport has not changed significantly. This analysis does not show a trend toward students choosing one sport or choosing not to participate in high school sports in Missouri. Though the numbers of multiple sport athletes decreased, and the number of single sport athletes increased, it was not found to be significant.

A number of studies argued that the trend of interscholastic athletics is that students are experiencing burnout, more societal or familial pressure, and moving towards sport specialization (Cumming & Ewing, 2002; Ehrmann & Jordan, 2011; Lipscomb, 2008; Ward 2008,). Additionally, the win-at-all-costs mentality, higher expectations for coaches, and more time required of high school athletes could have played a role in change in the number of sports students participate (Ehrmann & Jordan, 2011). The researcher believes that participation could improve if those factors were mitigated to the extent possible within high school sports. This overall data supported the research that states schools will continue to support and promote interscholastic activities due to the benefits provided to students (Everson & Millsap, 2005; Kleitman, 2002; McCarthy, 2000; Zaff, Moore, Papillo, & Williams, 2003; Zill, Nord, & Loomis, 1995). The data did not display that the number of single sport and multi-sport participants in MSHSAA

member schools was directly impacted by the implementation of MSHSAA By-Law 3.15.3.

Research Question 3 and 5

The statistical analysis for research questions three and five concluded that there was a statistically significant difference for both single sport and multi-sport athletes when considering school location before and after the implementation of the contact day policy. Specifically, it was found that the number of urban single sport and multiple sport participants decreased significantly following the 2011, the year that MSHSAA By-Law 3.15.3 was implemented. The data analysis supports Stone's political analysis concept of measuring the equity and equality in policy implementation (2012). The data analysis for research questions three and five supports that there was not an equal impact on all student athletic participants following the implementation of MSHSAA By-Law 3.15.3.

Though there was not research for this study concerning the characteristics of each school by location, there was research suggesting that urban schools typically had less participation due to factors that exists as obstacles for student athletic participation (Guest, 2018; Pederson & Seidman, 2004; Roscigno, 2006). These factors include, but are not limited to, supervision of family members, job requirements, transportation limitations (Guest, 2018). Therefore, the conclusion could be drawn that an increased number of practices and demand on urban student athletes time in the summer could negatively impact the ability of students in urban schools to participate in interscholastic sports. It was not known if each of the urban coaches are using all of the 25 contact days or if they are requiring student to attend the summer practices in order to participate in the sport during the school year. More research would be necessary to pinpoint why urban student

participation decreased, but the data does support a difference in urban student athlete participation following the implementation of the contact day policy.

Consequently, there was not a significant change in the number of rural and suburban participants before and after the implementation of the MSHSAA By-Law 3.15.3 in 2011. This supports the research that states that rural and suburban students have a greater access to sporting opportunities within the schools they attend (Sabo & Veliz, 2011). The increased demand on time in the summer and other factors potentially inhibiting the ability of these students to participate are overcome by the opportunity and support to participate in extracurricular activities (Glennie & Stearns, 2009). However, there is a lack of information about how many of these coaches are using all 25 days for each sport allotted to them. This is also a lack of information about whether coaches require students to attend all summer practices in order to participate in the team during the school year. Finally, there is insufficient information about whether there is support and pressure for students from parents and coaches to participate in interscholastic sports (Brenner, 2007; Cummings & Ewing, 2002; Forneris, Camiera, & Trudel 2010). It can be assumed with the data the added summer time requirements are not enough of an obstacle for students to not participate in interscholastic athletics.

Student participation was significantly impacted in the years following the implementation of MSHSAA By-Law 3.15.3 when considering school location. The data supported that urban student participation was impacted negatively, while rural and suburban participation was not significantly impacted. Through the analysis of the data the researcher determined that this policy did not have an equitable impact on student participation when considering location of schools. Urban schools saw a greater decrease in the

number of student participants, while suburban and rural schools saw slight decrease in multiple sport participants and a slight increase in single sport participants.

Research Question 4 and 6

Research questions four (RQ4) and six (RQ6) had similar results as well. The data presented in Chapter Four of this study showed there was a significant difference in the number of student participants in schools that offered less than ten sports when comparing the three years prior to the three years following implementation of MSHSAA By-Law 3.15.3. This research question was used to eliminate school characteristic as a variable and the assumed differences in students within those schools. This was done in order to get an objective view of how this policy impacted the number of student participants at schools that have more than ten options for athletic opportunities and those that have ten or less athletic opportunities. Once again, the results of the data can be linked to Stone's discussion about whether a policy has an equitable impact on the community (2012). Through the analysis of the data it was determined that there was a significant change in the number of students participating on both single and multiple sports before and after the implementation of MSHSAA By-Law 3.15.3. The data suggests that there was not an equal impact on all athletic participants since there was a significant decrease in the number of student participants at schools that offered ten or less sports. Since according to the descriptive statistics, rural and urban schools offer less sports on average than suburban schools, this data can be interpreted by the researcher to mean that students at those schools were impacted more than students at suburban or larger schools. Additionally, research suggests that even though school size was positively associated with numbers of sports, it was negatively associated with sports participation (Glennie & Stearns, 2009).

Previous research suggested that the number of sport playing opportunities did not impact the participation rates, and, in fact, schools that offered less sports typically had high participation rates than those schools that offered more sports (Glennie & Stearns, 2009; McNeal, 1999; Sabo & Veliz, 2011; Schoggen & Schoggen, 1988). The previous research combined with the data from this study suggest that there was a variable in schools that offer less sports that was negatively impacting participation for the years prior to and the years following the implementation of MSHSAA By-Law 3.15.3. Further research would be necessary to confirmed that this policy was the reason for this decrease in participation. However, the researcher concludes that the implementation of MSHSAA By-Law 3.15.3 did not have a positive impact on participation in schools that offer ten or less participation opportunities.

This research question and analysis of data also addresses the interests of MSHSAA school leaders and the interest groups that are the policy decision makers (Stone, 2012). The interests investigated with this question was whether schools with a large number of opportunities, which was a direct correlation to the size according to the descriptive statistics of this study, were supportive of increased time since more students were participating in sports at those schools. Though there was a larger number of schools with fewer than ten sports, this could be an example of Stone's description of the interest group's ability to mobilize the community to create a policy that would benefit them (2012). The researcher understands that more practice time with single sport participants would be beneficial to the competitive success of the athletic teams in those schools. Since the descriptive statistics suggest that suburban and urban schools provided more sports opportunities than urban schools, athletic programs at those schools could

benefit greatly from a competitive standpoint with an additional 25 practices in the summer. Previous research aligns with schools attempts to improve the school programs, without the consideration of impact on participants and all types of schools (Ehrmann & Jordan, 2011; Lipscomb, 2008). The improved performance of the athletic teams could provide motivation to those school leaders to implement a policy like MSHSAA By-Law 3.15.3. More research would need to be conducted to confirm that the contact day policy directly impacted the number of sport participants, but this analysis could provide a starting point for further quantitative and qualitative research.

Research Question 7

The statistical analysis of research question seven determined that there was a difference in the number of participants before and after the implementation of MSHSAA By-Law 3.15.3 when considering whether a school offered 11-man football. This question was designed to assess potential impact on multi-sport participation in these schools because the football advisory committee was a proponent of the passage of this policy. Football, according to the descriptive statistics in this study, has the second highest number of participants each year. It can be assumed that many of the students that are multi-sport participants at schools that offer 11-man football, participate in football. It is also apparent from the descriptive statistics that there are more schools that offer 11-man football than do not.

RQ7 was important in understanding if this policy had a direct or indirect impact on football participation. The results of the data analysis show that there was a slight increase in multiple sport participation in schools that offer 11-man football. This slight increase though was not deemed by this study to be significant. However, there was a

significant decrease in multiple sport students at schools that did not offer 11-man football. The explanation for the significant decrease in participation in schools that do not offer 11-man football is assumed to be related to the previous results in the other research questions. The common variable is not identifiable within this study, but it is apparent that schools with less opportunities, urban areas, and do not offer 11-man football consistently had a significant decrease in the number of sport participants.

Stone's (2012) theories on the ability of interests and interest groups to mobilize and implement a policy that is advantageous to the interests of the group supports the results of the data analysis for this question. The researcher assumed that the Football Advisory Committee would not promote a policy that could potentially decrease participation in football. The assumption however, was that the motivation for this policy was the potential competitive advantage of having 11 additional practices in the summer. The researcher wanted to know if there were, as Bardach (2012) describes, "undesirable side effects" (p.56). Though the increase was not considered significant, it is meaningful to know that this policy did not have a negative impact on the number of multiple sport participants (Bardach, 2012).

Implications

The findings and conclusions of this study presented implications for MSHSAA member school leaders, coaches, and student participants. The main purpose of this study was to determine if there as a significant impact on the number of sports participants in Missouri following the implementation of MSHSAA By-Law 3.15.3. Though there are limitations in this quantitative policy analysis, it still provided important information for further research and studies (Bardach, 2012). This policy analysis was effective because

the researcher was able to utilize existing data to analyze the potential impact of MSHSAA By-Law 3.15.3. Using Bardach's method of problem solving would benefit MSHSAA members when attempting to determine future policies (Bardach, 2012). Additionally, the potential impact using the variables of school location, number of sports offered, and whether a school offers 11-man football was examined in this study. The results of this study are of interest to MSHSAA school leaders.

The researcher considered the purposes of this study, but then was able to identify important variables after reviewing literature and organizing a conceptual framework. As outlined in Chapter One of this study, the conceptual framework for this study is the policy analysis work of Deborah Stone and Eugene Bardach. Stone's work in *Policy Paradox* (2012) highlighted to significant factors that were used for this study, "interests" and "equity". Stone's explanation of how interests and interest groups form helped the researched narrow this study to athletic participation in order to analyze MSHSAA By-Law 3.15.3. Though this policy is possibly a result of a number of interests that exist within the MSHSAA community, the impact on participation was the most significant investigation to determine if the policy was beneficial for students and aligned to mission of the MSHSAA organization (Stone, 2012). Secondly, Stone's explanation of equity within policy analysis supported the researcher's additional study of the independent variables of school location and number of opportunities offered (Stone, 2012). School leaders will benefit from understanding how similar policies could impact schools differently is useful information. Since different types of schools were examined, school leaders can compare the results of this study with the participation at their own schools. Finally, Bardach's (2012) explanation of why assembling the right kind evidence, specifically the

best questions to ask, was essential in this policy analysis. This literature supported the researcher in attempting to provide the most appropriate data to the MSHSAA Executive Board and MSHSAA member schools.

At the onset of this study, it was apparent that the data gathered did not exist and would be beneficial regardless of whether a significant impact was found when considering the implementation of the contact day policy. A review of literature concerning the history of policy in interscholastic athletics, both nationally and in Missouri, as well as school variables that impact participation were are also considerations that supported this study. Using this information, in addition to the findings and conclusions of the study, policy analysis and student considerations are presented as implications.

Policy analysis on participation in Missouri

The first implication is that a formal policy analysis is an appropriate way to analyze data and determine the impact of policy. This study, combined with further qualitative and quantitative investigation, could lead to changes in the policy. The compilation and analysis of this data provided a starting point to determine if changes to the policy would be appropriate and if additional outcomes could be predicted (Bardach, 2012). In addition to providing a template for future policy analysis, this study informs MSHSAA school leaders about participation trends and changes in Missouri high school athletics from 2008-2016. School leaders will have the opportunity to examine the descriptive statistics and determine if additional studies should be completed to inform future policy implementation. Because the data is disaggregated and analyzed, school leaders and the MSHSAA Executive Board can use this information to understand how the contact day policy potentially impacted each kind of school, based on school location and number of

opportunities offered. That information will help policy makers support schools that are most impacted. The study also sought to understand if changes have taken place in schools that offer and do not offer 11-man football. This will be important information for the MSHSAA Football Advisory Committee to consider as they analyze way to improve and increase participation numbers in football in MSHSAA member schools. It should be the work of MSHSAA member schools' leaders to limit interest groups that do not have the data to support policy recommendations or have motives that may not benefit the organization (Stone, 2012). Finally, school leaders could use this information to work within their own schools and school districts to provide support for students and coaches in order to maximize athletic participation in those schools.

Student considerations

This data analysis guides future research and policy makers to consider the students that are impacted from further policy. Considering implications for this study, the impact on students that attend specific types of schools should be an important concern for MSHSAA policy makers. Based on this study's statistical analyses, MSHSAA member schools and policy makers should consider the following schools that students attend when developing and implementing policy:

- **Students at urban schools.** The number of urban school single sport and multiple sport participants have decreased since the implementation of the policy. This is a concern as research has shown that many schools stop offering athletic programs due to low number or cost effectiveness (Guest, 2018, Pederson & Seidman, 2004). Due to the importance of these opportunities for all youth, but specifically

urban youth, every effort should be made to ensure that obstacles are not created that inhibit participation (Marsh & Kleitman, 2002).

- **Student at schools that offer 10 or less sports.** The results of this study contradicted previous research that showed that student participation was not related to the number of opportunities offered (Glennie & Stearns, 2009). Additionally, research that was contradicted explained that participation rates are higher in smaller schools (McNeal, 1999; Schoggen & Schoggen 1988). The descriptive statistics show that smaller schools consistently offer less sports. Therefore, the students at these schools are not participating at the level consistent with previous research. Policy makers need to consider how to promote participation at these schools.

In light of these student considerations, additional implications directly related to equity and equality were findings of this study. Using Stone's (2012) work in policy analysis as a foundation for the study, the researcher was able to determine that inequities exist in sport participation in MSHSAA member schools. There may be other variables attributing to the consistencies in the data for students that participate in urban schools. It is evident that this policy, though, it did not impact the number of sport participants overall, it did impact sport participants from specific types of schools. Specifically, when studying the data concerning single sport and multiple sport participants at schools that offer ten or less sports, it is apparent that there is an inequality in the MSHSAA community (Stone, p. 59). There is a lack of information about whether students were getting the same opportunity, but the data does show that students at those schools were not taking advantage of the opportunity to participate in sports at the same rate as other students in

this study. Both equity and equality could be at stake when considering the results of the study.

Recommendations for Future Research

The main purpose of this study was to determine if there was a significant change in the number of single and multiple sport participants in MSHSAA member schools following the implementation of MSHSAA By-Law 3.15.3. Though causation was not the goal of this study, it was a goal to assemble the evidence to determine if there was a noticeable difference in participation following the implementation of the contact day policy. Following the gathering and analysis of the research, it was the hope of the researcher to determine if a relationship between the implementation of the by-law and changes in participation could be identified. The researcher assumed that participation would be similar each year in the years 2008-2016 as there is not any data or research to suggest significant factors that would impact participation. Additionally, this study set out to determine if a significant change in participation is identifiable in schools in different locations, schools that offer a different number of sports, and school that offer 11-man football. These variables were identified as being of importance to MSHSAA school leaders. Following this investigation, the researcher proposes the following recommendations for future research based on the study's data collection, review of literature, findings, and conclusions.

- Numerous studies identify factors that support or inhibit participation in interscholastic athletics and other extracurricular activities (Ebie, 2005; Hanson, Larkson, & Dworkin, 2003). This study was limited to the variables recommended by MSHSAA school leaders. Additional studies should focus on other factors that

may impact the number of participants. Factors that were not addressed in this study that could be contributing factors.

  - Economic recession (Peddle, 2011; Taks, 2010)
  - Fear of sports injury (Arden, Taylor, Feller, & Webster, 2011; Feudtner & Miles, 2018; Malisoux, Frisch, Urhausen, Seil, & Theisen, 2013)
  - Increase in sport specialization (Ehrmann & Jordan 2011; Gould & Carson, 2004; Jayanth, Pinkham & Dugas 2012)

- This study focused on sport participation in Missouri. Most states have summer time contact day policies. Since this study was limited in scope on one state. It would be beneficial to investigate if participation has been impacted in other states by summer contact day policies. It would also be beneficial to see participation trends in other states and how they compare to Missouri trends. This would provide Missouri school leaders more data to understand if a relationship exists between contact day policies and participation. Additionally, it would provide more information to potentially link other factors to sport participation.
- A survey of coaches could be a beneficial addition to the research provided in this study or order to gain more knowledge on how the contact days are being used. A survey could provide insight into the number of contact days coaches are using, specific sports use of contact days, school location use of contact days, and gain coach insight into their beliefs about summer contact days. This information could be coupled with the information in this study to determine if there are particular sports or sport coaches that are impacted by the contact day policy. It is the belief

of the researcher that this data, if presented, would have an impact on the interpretation and understanding of MSHSAA By-Law 3.15.3

- Researchers should further study student characteristics that lead to sport participation (Kanters, Bocarro, Edwards, Casper, & Floyd, 2012). While this study showed that students from specific schools have seen a significant decrease in participation, it did not research student characteristics. These variables that could be researched to include socio-economic status, peer and social support, family support, academic achievement, sense of belonging, and college aspirations (Chan, 2016; Gibbs, Erickson, Dufur, & Miles,2015; Ivaniushinea & Alesandrov, 2015).
- Studying whether demands on student's time in the summer supports a healthy environment for adolescent social and emotional growth through participation in interscholastic athletics would be beneficial. This may require a student or parent survey to better understand the student high school athletic experience. Participation data is certainly an indication of student perception of high school sports, but more qualitative data could help provide a more in-depth understanding of the participation trends.
- The researcher believes an in-depth examination of urban and rural school participation in Missouri would be valuable. There is research that exists that discusses the participation habits and obstacles inhibiting urban school student participation (Guest, 2018; Sabo & Veliz, 2011). Coalescing the results of this study with further research in Missouri schools to determine if there are supports necessary to support schools and students in rural and urban locations would be beneficial

research. Furthermore, determining if there are policies that are creating inequities for those schools in regard to participation would support this research.

- An investigation into the descriptive statistics presented in this study provide insight into specific sport participation. Further research into trends within specific sports and cultural opinions on specific sports could help policy makers identify areas that could be addressed in order to increase sport participation. This investigation should look at national trends in sport participation and other factors that may impact participation in specific sports (Cummings & Ewing, 2002; Light, 2016).

Summary

Due to the growth of sports in American culture, specifically at the high school level, interscholastic athletics have become an important part of the high school experience. The benefits of participation in extracurricular activities, specifically interscholastic athletics have been researched for many years (Hanson, Larkson, & Dworkin, 2003; Myer, Jayanthi, DiFiori, 2015; Zaff, Moore, Papillo, & Williams, 2003). School leaders have invested significant resources and time to ensure that this experience is beneficial for the student athletes while trying to meet the demands and expectations of parents, including the emphasis success in youth sports. This balancing act has been difficult for school leaders and high school coaches and is frequently discussed among high school leaders in Missouri. MSHSAA, the organization created to oversee and regulate high school interscholastic athletics in Missouri, seeks to "promote the value of participation, sportsmanship, team play, and personal excellence to develop citizens who make positive contributions to their community and support the democratic principles of our state and

nation" (MSHSAA Handbook, 2018). In addition, MSHSAA members are fielded the task of making high school sports in Missouri as equitable, fair, and safe as possible (MSHSAA Handbook, 2018). Each year policies, otherwise known as "by-laws", are created, removed, or changed to support this mission. This study sought to investigate a specific policy, MSHSAA By-Law 3.15.3, to determine if there was a relationship between the contact day policy and single and multi-sport participation. Since this policy increased the number of times a coach could have practice with athletes in the summer from 14 to 25 days, it was not known whether a potential increase on student's summer requirements would impact single and multi-sport participation. If this policy could be linked to a change in participation, the policy could be reviewed, and alternatives could be presented based on this research to improved single and multi-sport participation in Missouri.

This quantitative policy analysis revealed a significant difference in single sport and multiple sport participation for the years prior to and following the implementation of MSHSAA By-Law 3.15.3. The descriptive statistics provided information on trends from the years 2008-2016 that could be useful for MSHSAA school leaders to understand the changes that have taken place. Research questions two through seven analyzed participation for the three years prior to the implementation of the policy and the three years following the implementation of the policy using the variables of school location, number of sports offered, and whether a school offered 11-man football. Research question two revealed that there has not been a significant change in the overall number of single sport and multi-sport participants. Research questions three and five revealed that urban school participation has significantly decreased following the implementation of the by-law.

Research questions four and six revealed that students that attend schools that offer ten or fewer sports have also seen a decrease in single and multi-sport participation. Finally, research question number seven revealed that multi-sport participation has decreased significantly in schools that do not offer 11-man football and has increased in schools that do offer 11-man football.

Based on the final conclusions of this study, the researcher recommends that additional qualitative and quantitative studies be conducted to investigate more variables related to sport participation in Missouri. These variables should include the impact of economic recession (Peddle, 2011; Taks, 2010), fear of sports injury (Arden, Taylor, Feller, & Webster, 2011; Feudtner & Miles, 2018; Malisoux, Frisch, Urhausen, Seil, & Theisen, 2013), and an increase in sport specialization (Ehrmann & Jordan 2011; Gould & Carson, 2004; Jayanth, Pinkham & Dugas 2012). Studying these variables could support the analyses in this study and provide further evidence as to why specific student populations and schools have been impacted more than others. Additional quantitative and qualitative studies could isolate the factors and then support in the creation of policies that would promote participation in Missouri. The researcher also recommends that MSHSAA policy makers consider using a policy analysis template in order to assemble all of the valuable information before implementing further policies.

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