The Status of High School Girls' Sport Participation Phase 2:

A Report Compiled for the State of Michigan Women in Sports Task Force

Submitted by:

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Executive Report: The Status of High School Girls' Sport Participation in Michigan Phase 2

Part 1: Introduction and Key Findings

Introduction

The Michigan Task Force on Women in Sports was enacted by order of Governor Gretchen Whitmer to develop policies, programs, and recommended investments to support and promote opportunities for girls and women in sports in Michigan. This initiative also aims to serve as a potential model for other states and federal government to follow suit. In the current fact finding and research stage of the initiative, the Task Force wants to understand the status of high school sport participation for girls in Michigan. In Phase 1 of our research efforts, researchers from the Michigan State University (MSU) Institute for the Study of Youth Sports (ISYS) used data provided by the Michigan High School Athletic Association (MHSAA) from the 2017-2018 school year and supplemental information from the National Center for Educational Statistics (NCES) database to examine girls' scholastic sport participation in Michigan. The investigators assessed how girls' sport participation varied relative to several contextual factors: school class size, socioeconomic status (SES), and geographic setting.

> ***The overall findings suggest that where a girl lives and the SES of her school have much to do with the likelihood that she will participate in high school sports. Girls living in suburban areas and cities and who attend schools with more students who qualify for a higher percentage of free and reduced lunch (low SES) are <u>less</u> likely to participate in high school sports. In contrast, girls from town and rural areas and who attend higher SES schools are more likely to participate.***

Based on input from Task Force members during their March meeting, ISYS researchers undertook Phase 2 of research on the status of girls' high school sport participation. Phase 2 of this investigation consists of two additional research items: (1) comparison of girls' high school sport participation by geographic region across Michigan and visual mapping of that data; and, (2) gender comparison of the percentage of scholastic sport participants by previously identified contextual factors. Key findings along with possible future considerations are highlighted. The research approach is also described.

Key Findings

Overview

School sport participation data from **482 senior high schools** in Michigan was used in the first part of data analyses. Relevant data included the name of the school, county, and number of participants in each boys and girls sport. As an additional step, researchers coded each county according to its geographic region (or area). *<u>Geograhpic region</u>* is different from *geographic setting* (another contextual factor), which regards schools as located in a city, suburban, town, or rural setting. *Geographic region* consisted of 10 regions, which included, Region 1: Upper

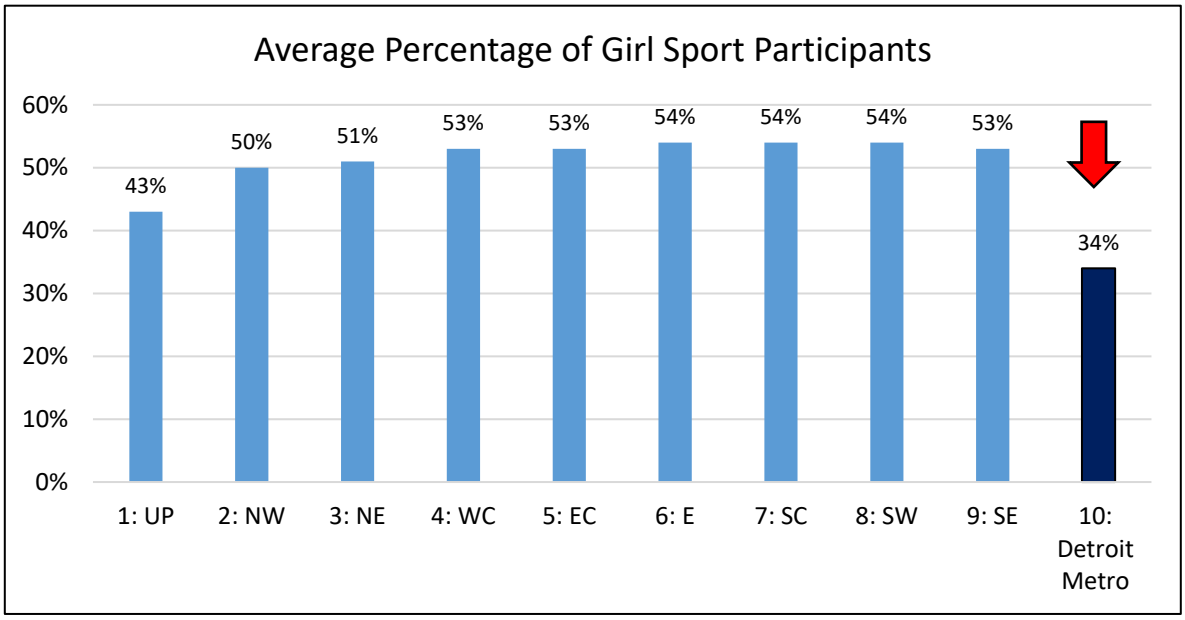
Peninsula (UP); Region 2: Northwest (NW); Region 3: Northeast (NE); Region 4: West Central (WC); Region 5: East Central (EC); Region 6: East (E); Region 7: South Central (SC); Region 8: Southwest (SW); Region 9: Southeast (SE); Region 10: Detroit Metro. Regions were defined by the state's website (i.e., www.Michigan.gov).

Findings suggest that where a girl lives in terms of her geographic region impacts her likelihood of sport participation. Girls in Region 10: Metro Detroit are less likely (by at least 11%) to play scholastic athletics relative to girls in other regions. This difference in percentage of participation was significantly different from all other regions. Likewise, boys in Region 10: Metro Detroit are also (by at least 12%) less likely to participate in sports, though their participation rate was not significantly different from all other regions.

For the second research item, potential gender disparities were examined by comparing the percentage of girls and boys' sport participation relative to various contextual factors (i.e., school class size, SES, and geographic setting). Overall, the findings suggest that girls in more underresourced communities such as those situated in city settings, in low SES schools, and certain regions (Metro Detroit and Upper Penninsula) may experience a more significant, compounding disadvantage in terms of quantity and quality of participation.

Descriptive Trends and Group Comparisons by Geographic Region

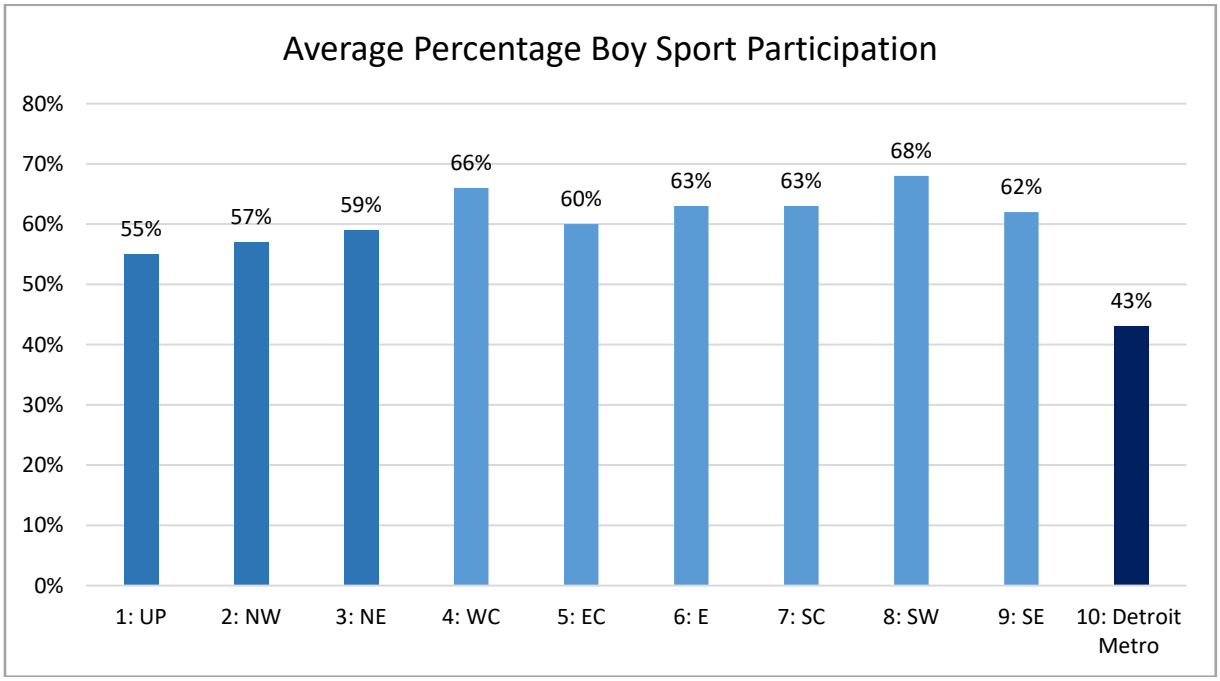
Girls sport participation by geographic region



- Average percentage of girl sport participants varied by geographic region.
- Percentage of girl sport participants ranged from 34% to 54.3%. Detroit Metro had the lowest (34%) and Southwest (SW) region had the highest percentage (54.3%) of girl sport participants.

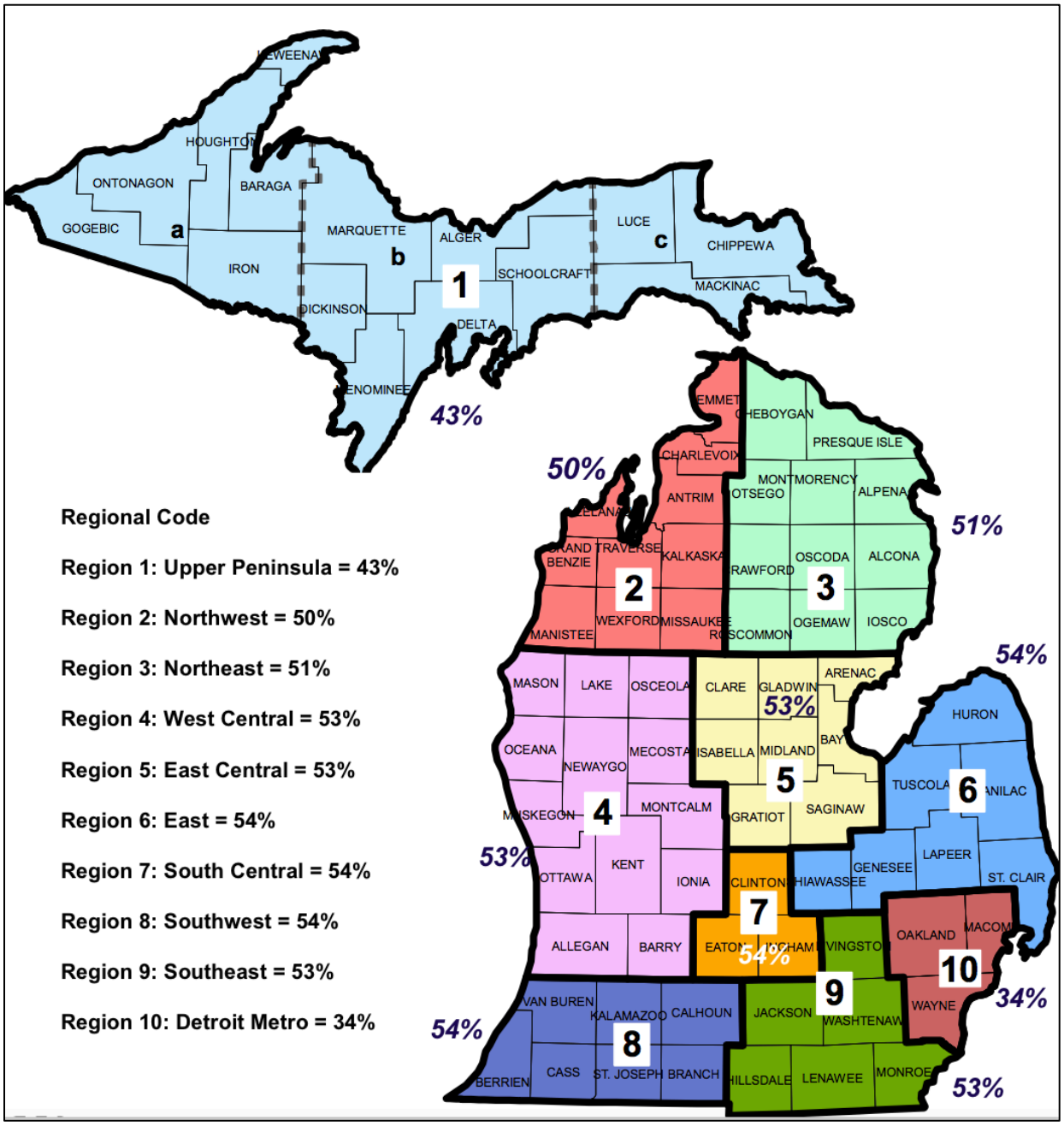
- Only Metro Detroit (34%) *significantly* differed in percentage of girl sport partiicpants compared to all other regions.

Boys' sport participation by geographic region



- Average percentage of boy sport participants varied by geographic region.
- Percentage of boy sport participants ranged from 43% to 68%. Detroit Metro had the lowest (43%) and Southwest region (68%) had the highest average percentage of boy sport participants.
- Only Metro Detroit significantly differed in average percentage of boy sport participants compared to several regions except for regions 1, 2, and 3, which also showed a lower rate. Regions 1, 2, and 3 did not significantly differ from each other or other geographic regions.

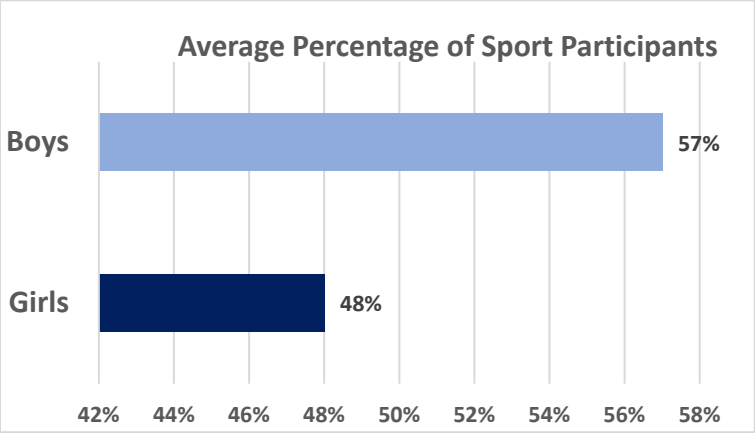
Visual Map of Average Percentage of Girl Sport Partiicpants by Geographic Region



Descriptive Trends

General Comparison of Girls' and Boys' Sport Participation

Looking across all the data, several data points can offer *general* comparison of girls' and boys' sport participation:



- Average percentage of female athletes relative to female students was **47%,** ranging from 3%-93%.

- Average percentage of male athletes relative to male students was **57%,** ranging from 5%-99%.

Group Comparisons of Girls' and Boys' Sport Participation by Contextual Factors

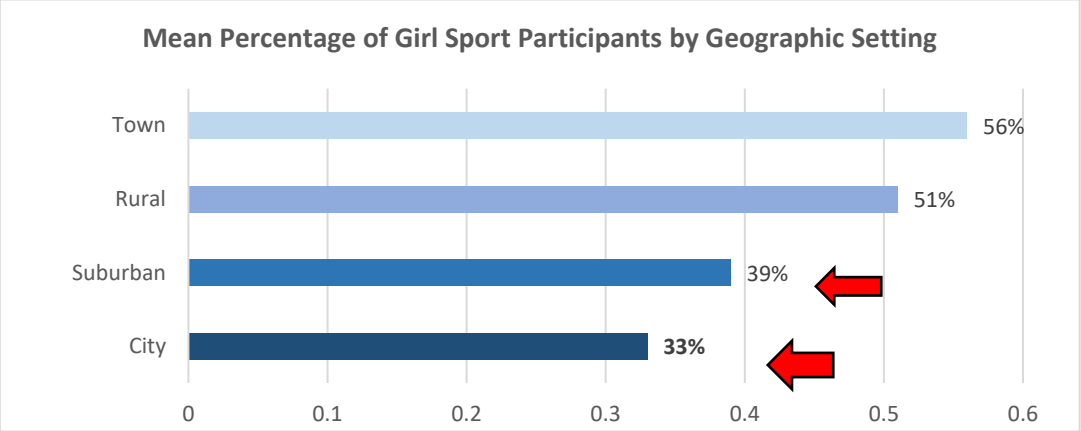
- Geographic region contributed **most** to differences in the mean percentage of girl **but not** boy sports participants. In contrast, socioeconomic status **most** contributed to differences in percentage of boy sport participants.
- Geographic region contributed to differences in the mean percentage of girl sport participants when also accounting for varying socioeconomic status along with socioeconomic status **and** school class category.
- Accounting for varying socioeconomic status and/or school class category **did not** contribute to any additional differences when comparing variation in the mean percentage of boy sport participants across geographic region.

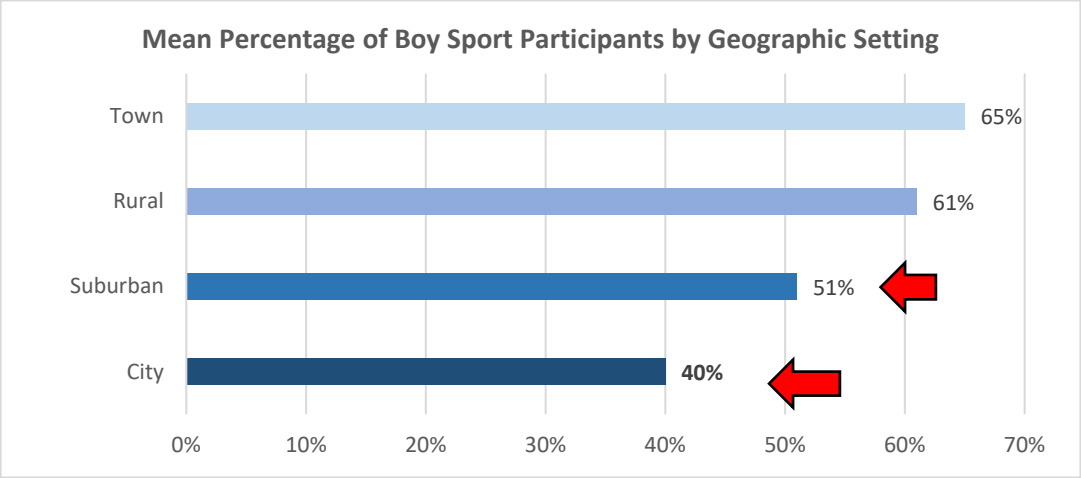
General Comparisons of Girls' and Boys' Sport Participation By School Class Size

- School class size contributed to small, significant differences in percentage of girl and boy sport participants.
- Differences in the percentage of girl sport participants included:
    - Class B and C schools did not significantly differ (50% and 57% respectively)
    - Class A schools (at 41%) significantly different from B, C, and D schools
    - Class D schools significantly differed from all other schools (73%)
- Differences in the percentage of boy sport participants included:
    - Class A schools (50%), Class B schools (61%), Class C schools (58%), and Class D schools (45%)

General Comparisons of Girls' and Boys' Sport Participation by Geographic Setting

Geographic region contributed to differences in the mean percentage of girl **and** boy sport participants. For all geographic setting categories, girls' mean percentage of sport participation was less than boys' sport participation. City refers to a territory inside an Urbanized Area and inside a Principal City; Suburb is defined as territory outside a Principal City and inside an Urbanized Area; Town is characterized as territory inside an Urban Cluster; and Rural regards census-defined rural territory that is on the fringe, distant, or remote from an Urbanized Area or Cluster.

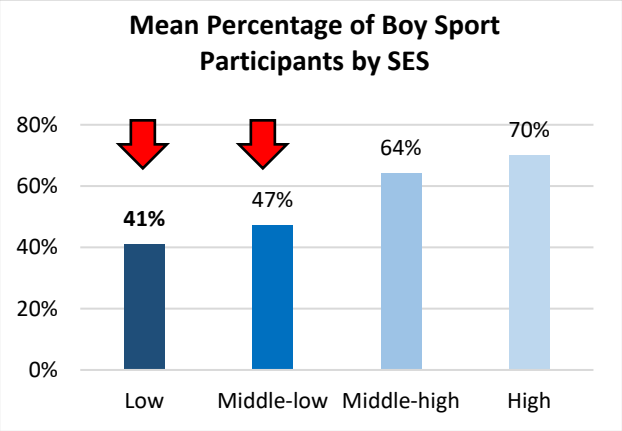


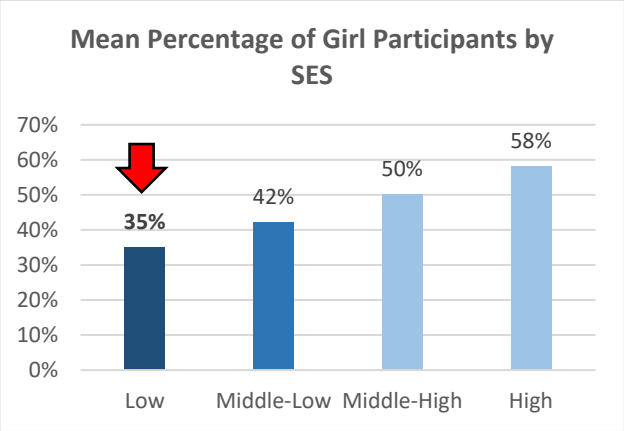


- The range of mean percentage of sport participants by geographic setting differed relative to gender: Girl sport participants from city schools showed the lowest average percentage (33%) when compared to boys participation (40%) by a margin of 7%. There was also a disparity in this percentage in town schools, which had the highest mean value with girls' average percentage (56%) being lower than boys participation (65%) by a margin of 11%.
- Only schools in city and suburban geographic settings significantly differed from other groups on mean percentage of girl **and** boy sport participants. Rural and town settings did not significantly differ from one another.

General Comparisons of Girls' and Boys' Sport Participation by Socioeconomic Status

- Percentage of girl **and** boy participants increased with socioeconomic status (SES) as inferred via the number of students in a school qualifying for free and reduced lunch. For all SES categories, girls' average percentage of sport participation was less than boys' sport participation.





- The range of mean percentage of sport participants by socioeconomic status differed relative to gender: Girl sport participants from low SES schools showed the lowest average percentage (35%) compared to boys (41%) by a margin of 6%, and there was also a disparity in percentage in high SES schools with girls average percentage (58%) while boys averaging (70%) being lower by a margin of 12%.
- Only low SES schools significantly differed from other SES groups among girls whereas both low (41%) and middle-low (47%) SES schools significantly differed from other SES groups (but not themselves) among boys (including middle-high schools at 64%, and high SES schools, at 70%).

Part 2: Possible Future Considerations

Follow-up Research

1. Carry out research within the Detroit Metro area, identifying particular schools in need (drawn from Phase 1). Conduct observations, surveys and individual and/or group interviews with key stakeholders (e.g., athletic directors, coaches, administrators, and community members, student athletes and nonathletes) of schools in need, with lowest percentages of girls' sport participation, to better understand factors inhibiting participation and barriers to involvement.

2. Conduct more targeted, indepth-research efforts to better understand the potential disadvantage that girls may experience related to sport participation (e.g., quantity and quality of participation opportunities) within underresourced communities such as those low in SES and in city or rural settings given observed interaction effects between geographic setting **and** socioeconomic status specific to girls' participation. This might include case research efforts to better understand the needs of under-resourced high school communities situated in different geographic settings (e.g., city and rural) and regions (e.g., Detroit Metro and Upper Peninsula regions)

3. Explore potential reasons for the observed widening in the gender differences (or disparity) in the percentage of sport participation among schools with higher rates of participation for a given contextual factors, such as socioeconomic status and geographic setting. For example, within low SES schools girls' sport participation was less than that of boys by 6 percent whereas within high SES schools the disparity was 12 percent. Further inquiry is necessary to consider possible compounding effects for girls in communities that are especially marginalized (e.g., low SES and city setting) and why increasing gender disparities also appear in more resourced contexts (e.g., towns).

Programming Implications

1. Consider targeting a campaign to increase participation once the specific reasons for the lower girls' participation in cities and suburban areas, lower SES schools, and specific geographic regions (e.g., Detroit Metro and Upper Peninsula), are identified.

Part 3: Research Approach

To offer a richer analysis of the status of high school girls' sport participation in Michigan, this second research phase extends analyses and key findings from research Phase 1 (See previous report). Specifically, this report summarizes results relative to two additional research items: (1) comparison of girls' high school sport participation by geographic region including visual depiction of the data; and, (2) gender comparison of high school sport participation across relevant contextual factors (i.e., class size, SES, and geographic setting). First, researchers coded high school's county (provided by the MHSAA data set) with its corresponding geographic region and examined group differences. Second, investigators analyzed boys' high school sport participation and compared those rates relative to girls' participation rates. It is important to remember that data provided by the Michigan High School Athletic Association (MHSAA) from the 2017-2018 school year **represent participation in each sport and not a count of each individual athlete: multi-sport athletes are duplicated and counted for each sport played. Thus, data may overestimate total participation.**

Appendix: Additional Information on Data Items and Analyses

Description of Data Items

New Contextual Factor – Research Phase 2

Geographic Region

Geographic region regards areas within Michgan that correspond to a school's county location. County location information was provided by the MHSAA data set and geographic region was defined using information from state's website (Michigan.gov) following the State of Michigan Prosperity Regions Map. This organizational structure designates 10 regions: Region 1: Upper Peninsula; Region 2: Northwest; Region 3: Northeast; Region 4: West Central ; Region 5: East Central; Region 6: East; Region 7: South Central; Region 8: Southwest; Region 9: Southeast; Region 10: Detroit Metro. Below is a list of (83) counties and corresponding geographic region:

Region 1 (15)
- Alger; Baraga; Chippewa; Delta; Dickinson; Gogebic; Houghton; Iron; Luce; Mackinac; Marquette; Menominee; Keweenaw; Ontonagon; Schoolcraft

Region 2 (10)
- Charlevoix; Emmet; Atrim; Kalkaska; Traverse; Benzie; Manistee; Missaukee; Wexford; Leelanau

Region 3 (11)
- Alcona; Alpena; Cheboygan; Crawford; Iosco; Montmorency; Ogemaw; Oscoda; Otsego; Presque Isle; Roscommon

Region 4 (13)
- Allegan; Barry; Ionia; Lake; Mason; Mecosta; Montcalm; Newaygo; Oceana; Osceola; Kent; Muskegon; Ottawa

Region 5 (8)
- Arenac; Bay ; Clare ; Gladwin ; Gratiot ; Isabella ; Midland ; Saginaw

Region 6 (7)
- Huron; Lapeer; Sanilac; Shiawassee; St. Clair; Tuscola; Genesee

Region 7 (3)
- Clinton; Ingham; Eaton

Region 8 (7)
- Van Buren; Kalamazoo; St. Joseph; Cass; Branch; Berrien; Calhoun

Region 9 (6)
- Hillsdale; Livingston; Jackson; Washtenaw; Lenawee; Monroe

Region 10 (3)
- Oakland; Macomb; Wayne

Previously Defined Contextual Fators (See Report from Phase 1 for additional detail)

Geographic Setting Criteria

Geographic setting was determined using the NCES locale framework. This framework is composed of four basic types (i.e., city, suburb, town, and rural). It relies on standard urban and rural definitions developed by the U.S. Census Bureau. The NCES locales can be fully collapsed into a basic urban–rural dichotomy, or expanded into a collection of 12 distinct categories.

- *City* refers to a territory inside an Urbanized Area and inside a Principal City with population of 250,000 or more (large), less than 250,000 and greater than or equal to 100,000 (mid-size) with population less than 100,000 (small).
- *Suburban* refers to territory outside a Principal City and inside an Urbanized Area with population of 250,000 or more (large), 250,000 and greater than or equal to 100,000 (mid-size), or with population less than 100,000.
- *Town* refers to territory inside an Urban Cluster that is less than or equal to 10 miles (fringe), more than 10 miles and less than or equal to 35 miles (distant), or more than 35 miles (remote) from an Urbanized Area.
- *Rural* refers to census-defined rural territory that is less than or equal to 5 miles from an Urbanized Area (fringe), more than 5 miles but less than or equal to 25 miles from an Urbanized Area (distant), more than 25 miles from an Urbanized Area and also more than 10 miles (remote) from an Urban Cluster.

Class Criteria

Procedures for determining classification of high schools were taken from the 2017-2018 MHSAA guidelines. The MHSAA classifies schools according to one of four classes based on school enrollment size: A, B, C, and D. Class A schools are comprised of 881 students and above; Class B schools enroll between 406-880 students; Class C schools enroll 204-405 students; and, Class D schools enroll 203 and below.

Socioeconomic Status (SES)

Socioeconomic status (SES) was estimated based on the percentage of students receiving free or reduced lunch. Schools were categorized into quartiles for the purposes of data analyses: high SES, middle-high SES, middle-low SES, and low SES categories. Roughly 25 percent of the data was less than the first quartile, 25 percent was between the first and second quartile and also between the second and third quartile, and 25 percent was greater than the third quartile.

Data Omitted

In order to conduct analyses that were accurate **and** practically meaningful, we had to perform several steps to organize and "clean" the data as outlined in the Phase 1 report. In in this second phase of the research, we had to omit additional data points to conduct analyses on

boys' sport participation and make comparisons relative to gender. Below is a description of the additional omitted data points:

- Schools that showed a percentage of boy sport participants greater than 100. Omission of schools with a greater than 100 percentage of boy sport participants decreased the total number of schools (n=482) in our final analysis. *Note:* Data on the number of girl and boy sport participants represents a count of participation not individual athlete. Data may overestimate the percentage of girls and boys actually participating in sport relative to the girls or boys in the student body.

Data Analysis

Research Item 1

Descriptive statistics along with between group comparisons (i.e., analysis of variance) were calculated to explore how, if at all, girls' sport participation (i.e., percentage of girl sport participants relative to females in the student body) varies relative to geographic region. Based on these analyses we depicted differences across regions in Michigan using a visual map, and highlight those that are significant.

Research Item 2

Descriptive statistics along with between group comparisons (i.e., three-way analyses of variance) were calculated to explore how, if at all, boys' sport participation and girls' sport participation using the new high school sample (n=482) varies relative to school class size, geographic setting, and socioeconomic status. As in research Phase 1, sport participation was defined as the number of girl or boy sport participants out of the total number of girls or boys high school students enrolled. As a last step we descriptively compared boys' relative to girls' percentage of participation to assess potential disparities in participation rates relative to select contextual factors.

Data Considerations and Limitations

- When group sample sizes differ greatly, analyses of variation between groups is less robust and can increase the likelihood of statistic error (e.g., a false positive). That is, for a given contextual factor (e.g., geographic region), specific groups within the factor (e.g., Detroit Metro, n=138) may have a substantial larger small size than others and are likely more accurate estimations of sport participation. Given the differences in sample size across the selected groups analyzed, we note that our findings should be interpreted with some caution. We have accounted for these limitations, however, by using a more stringent test to indicate significant differences between groups.

- Along with planned group comparisons, we examined all possible differences in girls' and boys' sport participation. Doing a large number of tests to look at all possible comparisons can increase error. In order to adjust for this, we have used a more stringent threshold to indicate significant differences between groups.