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School Characteristics and Interscholastic Tournament Success

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Interscholastic sports are part of the educational mission of secondary schools. Parents, athletes, and others prioritize winning. This causes success (or, at least, the possibility of success) to be the target of state policies to promote competitive balance, following from an egalitarian approach to the theory of distributive justice. For example, most states have divided schools into separate class tournaments based on school enrollment. Many have also attempted to counteract perceived advantages held by private (non-boundary) schools by using multipliers to artificially increase private schools' enrollment. Some states compensate for poorer schools' perceived disadvantages by artificially decreasing enrollment for those schools with a high percentage of the student body eligible for the National School Lunch Program (NSLP). To enact effective policies, however, it is helpful to know what school characteristics are linked with winning.

This project is a case study examining high school boys' basketball in Indiana using data collected for a 26-year period. The basic research question is what school characteristics influence tournament success. The literature and many current state policies propose that being private, larger, urban, wealthier, and from certain regions of the state might all improve tournament success. Each characteristic is examined for its effect on winning a state championship and on an expanded measure of success based on how far in the tournament a team progresses.

The relative size of the student body is the most consistently important factor in tournament success across classes. Being a private school or being an urban school are only factors in success for the classes of smaller schools. The region of the state is not shown to be significant to success. Of particular note, though there has been an increase in state policies targeting an imbalance caused by economic factors, there has

not yet been an empirical finding of a link between these economic factors and success. This study does find limited evidence of such a link as schools with a lower percentage of students eligible for NSLP are more successful in the tournament. These results can help refine the knowledge of what does and does not affect tournament success and can guide policy changes aimed at improving competitive balance.

Key words: interscholastic sport, competitive balance, sport policy, Indiana basketball

In the United States, high school athletics are part of a broader educational mission (Whitehead & Blackburn, 2013; Gardner, 2015) and are important to schools. Participating in interscholastic athletics can have long-term benefits for the students in terms of wages (see, e.g., Barron et al., 2000; Gius, 2011) and personal growth (Temel & Akdagcik, 2023). Sports can also help the school's area build a sense of community (Meng, 2000) and perhaps even cause economic growth (Pjesky, 2010).

Parents, students, and other stakeholders prioritize winning over other benefits from sports (Stoffer et al., 2021; Johnson et al., 2017). Some schools are believed to have advantages that allow them to win more often than others. For example, private schools are not restricted to potential students within a specific boundary. This allows them to draw from a larger pool of potential athletes, giving them an advantage over typical boundary schools. Schools in an area with a higher population density will have more choices of competition and the area will likely support more facilities and opportunities for off-season training. Also, schools with poorer students will not have the resources to support athletics at the level of wealthier schools. Many people, however, believe all schools should have a fair chance of winning because of the concept of distributive justice. Thus, it would be useful to know which characteristics translate to more success.

Using a case study of Indiana boys' basketball, this study looks at those school characteristics to see which are linked with success. The success metrics are state championships and also an expanded measure based on how well the team does in the tournament. Different states use different policies to enhance competitive balance, often based on these characteristics, and it would be useful to know which characteristics are relevant. This study empirically tests the effects of the theorized characteristics on tournament success for all competing schools.

Theoretical Framework

Other papers have fruitfully used the Theory of Distributive Justice as a theoretical framework behind discussions of competitive balance in interscholastic athletics. Distributive justice concerns how to allocate scarce resources and goods and services (Roemer, 1996) and is concerned with the outcomes rather than the process (Konow, 2003).

It is useful to categorize the different theoretical constructs of justice into three main ideas (Konow, 2003). One is con-

cerned with equality and need, which is associated with an egalitarian viewpoint. A second is concerned with efficiency and maximizing the total welfare of the group or society, which is associated with the utilitarian viewpoint. The third relies on justice as a result of actions and is more aligned with the libertarian view.

When parents (Stoffer et al., 2021) and administrators (Johnson et al., 2017) discuss fairness, they are usually employing an egalitarian viewpoint, though the libertarian construct also informs their beliefs about justice (Johnson, 2015). There is a belief that schools should be on relatively equal terms and have similar chances of being successful. This would, over a long time, yield relatively equal values for the measure of success being used.

Most states have policies to promote fairness and equity. As discussed below, states typically divide school teams into classes based primarily on the size of the student body. In addition, some have enacted policies to counteract advantages some schools have by being private (or, non-boundary) or by being relatively wealthy. By counteracting some schools' advantages, this implies an egalitarian goal. Smaller schools will have a smaller talent pool, and so are disadvantaged. Wealthier schools will likely have better facilities and coaching.

If a policy were designed to promote utilitarianism, it would look very different. Utilitarianism considers justice from the viewpoint of the group instead of the individual. With that approach, states might instead try to find policies that increase the success of larger, urban schools. If larger schools win, more students (and their parents, teachers, staff, etc.) benefit. Also, if winning a state championship does have (at least in the short run) a positive economic impact on the school's city (Pjesky, 2010), then more people benefit when a school in a large urban area wins the championship.

A libertarian approach would not use policies to promote balance, but all states use at least some policies (Johnson, 2015). Parents and administrators seem to feel it is inherently unfair when some schools win proportionally more than others. In addition, there is evidence that, without these policies, the benefits of success accrue mostly to already wealthier families (Stevenson, 2007; Mingo 2020).

Review of Literature

Competitive Balance

Competitive balance means that there is a relatively even probability of success among the teams in a league or group. There has been a great deal of work on competitive balance overall, going back to Rottenberg (1956) and Neale (1964). Generally, that work has focused on the economic effects (Competitive Balance, 2011), what has been called the Uncertainty of Outcome Hypothesis (UOH). UOH posits that fans are more interested in sports (and, therefore, more willing to spend money on those sports) when there is competitive balance. Thus, UOH is concerned with fans' reactions to competitive balance.

Fort and Maxcy (2003), however, pointed out that studying competitive balance on its own is worthwhile. They termed this analysis of competitive balance (ACB). ACB is less concerned with

the economic impact of competitive balance and more concerned with competitive balance itself – how it changes as a result of policy, for example. Evans (2014) reviewed the research done as part of ACB. This study falls into the ACB line of research. Indiana interscholastic sports are primarily educational, and so the economic results are less important. When considering a change in state policy to its classification system, the commissioner of the Indiana High School Athletic Association (IHSAA), Bobby Cox, said "We didn't make the change because we're worried about attendance, but we made the change because we're worried about competition. But I think a byproduct is that it'll impact attendance, too." (Neddenriep, 2012) UOH is a byproduct of the change in policy, but not the main driver of it.

Interscholastic Competitive Balance

Much of the work on interscholastic competitive balance seems to be an outgrowth of the concern that private schools have an advantage over public schools (Epstein, 2008; Monahan, 2012; Johnson et al., 2014; Johnson et al., 2015; Johnson et al., 2019; Scott et al., 2019; Stoffer et al., 2021). While it might be more precise to discuss the difference between boundary and non-boundary schools (Johnson et al., 2015), it has come to be called the public/private debate. Private schools might be able to recruit, though that is prohibited when done for athletic reasons (Johnson et al. 2015). Moreover, a private school does not admit all students in a geographic area. This will allow it to keep smaller, decreasing the level of competition by playing in a lower class. Essentially, then, the pool of talent the players will be drawn from will be equivalent to a much larger school's talent pool. In addition, private schools are likely to have wealthier, more-involved parents. This might lead to more resources for coaches, better facilities, and better opportunities for out-of-season training and coaching (Epstein, 2008). The public/private debate also seems to be an overarching concern of parents (Stoffer et al., 2021). Within that debate, parents were concerned with issues of location and financial resources.

Johnson et al. (2017) surveyed state athletic administrators to see their concerns and perceptions of competitive balance. While these administrators were concerned with the distributive justice issues of equity and fairness, they were also aware that the focus for athletes, parents, and communities was winning. Also, these administrators are aware that the remedies for imbalance are not uniform. For example, an urban non-boundary school has advantages that a rural non-boundary school does not, implying that a policy targeting non-boundary schools would have different effects on different schools.

Besides the public/private debate, other factors have been shown to affect competitive balance. Johnson et al. (2014) found outsized success for schools in Indiana's Central district (which includes the large city of Indianapolis), and Johnson et al. (2019) found urban schools were more successful in football.

State athletic associations have enacted policies to enhance competitive balance, and Johnson et al. (2015) reviewed

the policies different states employ. Most states have divided schools into classes based on enrollment. Some states apply a multiplier to enrollment for private schools to help compensate for their perceived advantage. Others separate public and private schools into separate tournaments. Some states have used economic factors. If a higher percentage of students are eligible for the National School Lunch Program (NSLP) (USDA, n.d.), this can cause the school to be placed in a class with smaller schools. Finally, some states (including Indiana, see below) have policies that place particularly successful programs into a class with larger schools. While having successful programs compete against larger schools is often seen as punishing schools for success (James, 2007; Johnson et al., 2023), it is also a way to compensate for the advantages smaller, private schools are thought to enjoy.

Research Questions and Hypotheses

The basic research question is which school characteristics influence success in Indiana boys' basketball. The literature proposes that being private (non-boundary), larger, urban, wealthier, and from certain regions might all improve tournament success. These will each be examined, yielding five hypotheses.

H1: Boys' basketball teams from private schools will have significantly greater success than public schools in the boys' basketball tournament.

H2: A school's larger enrollment will be positively linked with more success in the boys' basketball tournament.

H3: Schools located in urban areas will be significantly more successful in the boys' basketball tournament than schools outside the urban areas.

H4: Less wealthy schools, as evidenced by having a higher percentage of the student body eligible for the National School Lunch Program, will be significantly less successful in the boys' basketball tournament.

H5: Schools located in the Central district of the state will be significantly more successful in the boys' basketball tournament than schools in the north or south.

Method

Design and Procedures

In Indiana, the boys' basketball tournament is a set of four tournaments. The member schools of the Indiana High School Athletic Association (IHSAA) are divided into four classes, divided primarily by enrollment. The smallest schools are placed in the 1A tournament. The next biggest are in the 2A tournament, followed by the 3A and finally the 4A. Each class has a four-week tournament. Each round is a sub-tournament comprised of schools based on geography. The first week is called the Sectional and is comprised, on average, of around six schools. There are sixteen Sectional tournaments in each class. The next week, the field of remaining teams is narrowed in what are called the Regional tournaments.

The winning teams are then entered in a Semi-State in the third week. Finally, the remaining two teams play in the fourth week for the State championship in their class.

As part of its attempt to enhance competitive balance, the IHSAA created what it calls the Tournament Success Factor (TSF), a measure of tournament success based on these four sub-tournaments a school must win in order to be state champion. Each school earns a number of points based on how many of these sub-tournaments it wins. Most schools earn no points, but the Sectional winners earn one TSF point. If it wins the Regional, it earns a second TSF point. A Semi-State championship yields a third point, and the State champion earns four total points. The IHSAA then uses the points earned every two years to adjust the class membership of the schools, moving particularly successful schools into a higher class (for a summary and history of the policy, see Johnson et al. (2014) or Johnson et al. (2023)).

Each school participating in the IHSAA boys' basketball tournament is included in the data. From the literature, the desired variables include the type of school (boundary v. non-boundary), the location (urban v. non-urban, but also the North, Central, or South districts of the state), characteristics (average enrollment and the percentage of students eligible for NSLP), and tournament success (Sectional, Regional, Semi-State, and State championships and the accompanying Tournament Success Factor points earned).

Data were collected from John Harrell's website (Harrell, n.d.) for records and tournament results. The Indiana High School Athletic Association (IHSAA, n.d.) website gave enrollment and location data. The Indiana Department of Education's INview website (INview, n.d.) yielded the type of location (urban v. rural, e.g.) and the type of school (public v. private). Finally, a few schools have closed or changed status during the time period in question, and their locations and whether they were public were ascertained from various internet sources.

The data include all schools participating in the IHSAA boys' basketball tournament from the 1993-94 school year through the 2022-23 school year. The initial year for the data was chosen because that is the year the IHSAA switched from a single-class tournament to a 4-class tournament based on enrollment. This gives 26 years of data. When looking at state championships, the year 2019-20 is not included since the Covid pandemic caused the cancellation of the last three weekends of the tournament. The Tournament Success Factor (TSF) points were calculated for the years starting with the 2005-06 school year (not including the Covid year). The IHSAA has changed the number of games in the second and third weekends of the tournament, and this changes how many games are needed to earn TSF points. For consistency, years with the altered tournament setup are omitted. Variable definitions and descriptive statistics are provided in Table 1.

Table 1
Variable Definitions and Descriptive Statistics

Variable		Obs	Mean	Std. Dev.	Min	Max
YEARS	Years in Tourney	434	23.64977	5.741701	1	26
PUBLIC	1 if a Boundary school	434	0.813364		0	1
URBAN	1 if Urban	434	0.248848		0	1
FREEREDUCED	% eligible, National School Lunch Program	408	42.10809	19.44283	0	100
NORTH	1 if in North	434	0.343318		0	1
SOUTH	1 if in South	434	0.315668		0	1
ENROLL	Avg. Enrollment	421	794.6628	744.849	35.66667	4968.909
SECTSIZE	Avg. Sectional Size	434	6.265762	0.367303	5.230769	8.142857
SECTIONAL	Number of First-Weekend Championships	434	3.834101	3.372917	0	22
REGIONAL	Number of Second-Weekend Championships	434	1.105991	1.607664	0	11
SEMISTATE	Number of Third-Weekend Championships	434	0.46083	1.000963	0	7
STATE	Number of Titles	434	0.230415	0.617225	0	4
MOVEUP	Years Moved up in Class due to TSF	434	0.046083	0.405158	0	6

Data Analysis

The literature and state administrators have identified several factors that are thought to influence competitive balance in boys' basketball. The public/private debate implies that private schools might have an advantage. Urban schools, schools in the Central region of the state, and schools with large enrollment might also have an advantage. Better socioeconomic standing, as evidenced by having fewer students eligible for NSLP, might also give a school an advantage.

Until 2023, Indiana's boys' basketball tournaments classified about one hundred schools in each of the four classes. If the tournaments were perfectly balanced, each school would have a 1% chance of winning a state championship each year. Put another way, each school would expect to win a state championship once every one hundred years or so. This suggests the measure of success should include more than just an extremely rare event. Scott, et al. (2019) is one of the few works that looked at competitive balance as more than just winning a state title (or, at best, playing in the title game). In addition to state titles, this paper also uses their measure (Indiana's Tournament Success Factor points). This is a broader measure of success and might be a more realistic measure of success for many schools. However, Scott et al. (2019) look only at the schools that make the final sixteen for their respective class tournament, which in Indiana is a Sectional championship. Here, all eligible schools are included.

Consequently, two related—but slightly different—models were used to test the hypotheses. For one, the effects of these factors on state championships won over the relevant time period is tested, and for the other, the dependent variable is TSF points. Thus, these models are given by:

$$STATE = f(PUBLIC, URBAN, NORTH, SOUTH, FREE\text{-}REDUCED, ENROLL) \quad (1)$$

and

$$TSF = f(PUBLIC, URBAN, NORTH, SOUTH, FREE\text{-}REDUCED, ENROLL). \quad (2)$$

Because STATE and TSF are both constrained by being in a range from zero to some maximum value (25 for STATE and 64 for TSF), a Tobit regression is used in Stata (Amemiya, 1984).

Results and Discussion

In Tables 2 and 3, the variable for public (boundary) schools, PUBLIC, is not significant for state titles or for Tournament Success Factor points. The proportion of public schools in each class is used to predict the number of state titles and TSF points won by public schools. These predictions are then compared to the actual results (see Table 4). It appears that the issue shows up mostly in the second-smallest class (2A). In 2A, fewer than half the predicted state titles were won by public schools. That makes the overall number of state titles won by public schools in all classes 15% lower than predicted. 2A is the only class where the total number of TSF points won by boundary schools is 10% below what would be predicted. Consequently, we cannot confirm H1 that a public/private issue exists in Indiana boys' basketball. Not surprisingly,

Table 2
State Championship

Variable	Coef.	Std. Err.	P>|t|
PUBLIC	-0.72179	0.590212	0.222
URBAN	0.369491	0.538718	0.493
NORTH*	-0.80377	0.420668	0.057
SOUTH	-0.44745	0.422321	0.29
FREE-REDUCED	-0.01103	0.009131	0.228
ENROLL**	0.000505	0.000239	0.035
_cons	-1.74455	0.622837	0.005

n =404
LR $chi^2(6)=18.67$
Prob > $chi^2=0.0048$
Log likelihood=-251.662
Pseudo $R^2=0.0358$
** - significant at 5% level
* - significant at 10% level

Table 3
Tournament Success Factor (TSF) -- Overall

Variable	Coef.	Std. Err.	P>|t|
PUBLIC	0.547693	0.966248	0.571
URBAN**	2.129777	0.876513	0.016
NORTH	-0.10024	0.652353	0.878
SOUTH	-0.71179	0.667884	0.287
FREE-REDUCED**	-0.04913	0.015207	0.001
ENROLL**	0.001031	0.000411	0.012
_cons	3.379398	0.965396	0.001

n =402
LR $chi^2(6)=29.35$
Prob > $chi^2=0.0001$
Log likelihood=-988.043
Pseudo $R^2=0.0146$
** - significant at 5% level
* - significant at 10% level

these results coincide with the findings of Johnson et al. (2014), who found that the public/private imbalance does not exist equally over all sports and classes, being less pronounced in boys' basketball and for larger classes.

Scott et al. (2019) concluded that private schools have more relative success with smaller classes. This is especially true if private schools intentionally keep their enrollment low in order to decrease the level of competition (Epstein, 2008; Indianapolis Star, 2023). Notice, however, that there appears to be no public/private issue with the class of smallest schools (1A). Since Scott et al. (2019) looked only at the schools that made the final sixteen in the tournament, they were omitting a large number of private schools that do not necessarily do well in sports. Thus, it is possible that being private does not automatically imply an advantage, but that some private schools can choose to gain an advantage. Thus, a policy against all private schools would be seen as unfair for a large number of schools and would not promote an egalitarian outcome. The IHSAA's TSF policy does target only the successful schools, but the policy might be improved. Johnson et al. (2023) suggested increasing the number of TSF points to trigger moving a school into a higher

Table 4
Predicted v. Actual Public Success

Class		State Titles	TSF Points
1A	Predicted	9.67	222.39
60.43% Public	Actual	10	236
	% difference	3%	6%
2A	Predicted	13.59	312.68
84.97% Public	Actual	6	271
	% difference	-56%	-13%
3A	Predicted	13.71	315.43
85.71% Public	Actual	13	295
	% difference	-5%	-6%
4A	Predicted	15.19	349.29
94.92% Public	Actual	15	361
	% difference	-1%	3%
Overall	Predicted	51.94	1194.51
81.15% Public	Actual	44	1163
	% difference	-15%	-3%

class and adding a longer time frame of sustained success necessary before reclassifying a school.

Enrollment is an important factor in winning state championships and in success more generally, as evidenced by its effect on TSF points. Thus, hypothesis H2 is supported. However, when the data are separated into the four classes (as in Tables 5-8 for TSF points), ENROLL is only positive and significant with the largest class (4A). As seen in Table 9, the largest schools are roughly three times the size of the average school in each of the four classes, but this is a much bigger difference in the class with the largest average. In the past, the four classes had roughly the same number of schools (about 100 each). However, a new policy by the Indiana High School Athletic Association (IHSAA) beginning in the 2024-25 season will have 20% of the schools placed in 4A, 25% each in 3A and 2A, and 30% of the schools in 1A (Indianapolis Star, 2023). This should decrease the effect of enrollment on tournament success.

Table 5
Tournament Success Factor (TSF) – 1A

Variable	Coef.	Std. Err.	P>|t|
PUBLIC	2.998603	2.017789	0.140
URBAN*	3.930459	2.302082	0.090
NORTH	0.775288	1.468644	0.599
SOUTH**	3.18552	1.49377	0.035
FREEREDUCED**	-0.07242	0.029345	0.015
ENROLL**	-0.0025	0.00715	0.727
_cons	3.618033	1.969827	0.069

n =124
LR $chi^2(6)$=12.54
Prob > chi^2=0.051
Log likelihood=-271.559
Pseudo R^2=0.0226

** - significant at 5% level
* - significant at 10% level

Table 6
Tournament Success Factor (TSF) – 2A

Variable	Coef.	Std. Err.	P>|t|
PUBLIC	-2.23203	1.569429	0.157
URBAN	-0.83476	1.756492	0.635
NORTH	-0.08805	0.867983	0.919
SOUTH	0.09326	0.919793	0.919
FREEREDUCED	-0.03587	0.027354	0.192
ENROLL	-0.00053	0.003692	0.887
_cons	5.123043	2.326237	0.029

n =146
LR $chi^2(6)$=7.23
Prob > chi^2=0.2998
Log likelihood=-306.147
Pseudo R^2=0.0117

** - significant at 5% level
* - significant at 10% level

Table 7
Tournament Success Factor (TSF) – 3A

Variable	Coef.	Std. Err.	P>|t|
PUBLIC	-1.00045	1.80449	0.580
URBAN	0.893662	1.621823	0.583
NORTH	-0.15347	1.051886	0.884
SOUTH	1.18726	1.082527	0.275
FREEREDUCED	-0.02554	0.023923	0.288
ENROLL	0.002819	0.001932	0.147
_cons	1.873334	2.203168	0.397

n =136

LR $chi^2(6)=6.84$

Prob > $chi^2=0.336$

Log likelihood=-294.906

Pseudo $R^2=0.0115$

** - significant at 5% level
* - significant at 10% level

Table 8
Tournament Success Factor (TSF) – 4A

Variable	Coef.	Std. Err.	P>|t|
PUBLIC	0.072218	3.283311	0.982
URBAN	-0.40228	1.011687	0.692
NORTH	-0.04778	1.161688	0.967
SOUTH	1.27083	1.32566	0.340
FREEREDUCED	0.005775	0.026375	0.827
ENROLL**	0.00413	0.000709	0.000
_cons	-4.35218	3.208206	0.178

n =109

LR $chi^2(6)=36.68$

Prob > $chi^2=0$

Log likelihood=-246.773

Pseudo $R^2=0.0692$

** - significant at 5% level
* - significant at 10% level

Table 9
Relative Enrollments

	1A	2A	3A	4A
Max.	763.1	929.30	2233.55	4968.91
Min.	35.67	212.45	277.00	277.00
Mean	241.16	443.80	772.51	1716.15
Median	251.55	428.70	696.65	1583.10

From Tables 2 and 3, being an urban school (URBAN) is a positive and significant predictor of TSF points, but not of state championships. As seen in Tables 5-8 for TSF, this effect shows up mainly in the smallest class (1A). The arguments given elsewhere (Johnson et al., 2017) of the disadvantages of rural schools would seem to be especially pronounced for smaller schools. Rural schools tend to be smaller since the low population density makes it difficult to draw a large number of students. Additionally, rural schools have less access to training and close competitors. The hypothesis that urban schools are more successful is only partially accepted.

In Indiana, the schools are placed into the first level of the tournament based on geography, and this can be used to affect the relative success of urban schools. A large urban area will have many schools, and the IHSAA does have the ability to decide how to divide those schools. To promote an egalitarian outcome, urban schools can be placed into Sectionals and Regionals with other urban schools, increasing the success of the rural schools in the other parts of the tournament draw.

Similarly, the percentage of students eligible for the National School Lunch Program (FREEREDUCED) is a negative and significant predictor of TSF points, but not significant for state championships. From Tables 5-8, this, too, is driven by its effect on the class containing the smallest schools. The hypothesis that relative affluence is linked with tournament success is partially accepted.

The IHSAA places its member schools into three geographic districts: North, Central, or South. The boundaries of the three districts are such that they contain roughly the same number of schools. However, the Central district contains the Indianapolis metropolitan area, and Johnson et al. (2014) find that schools in the Central district are more likely to win state championships.

From Tables 2 and 3, there is not a strong indication that being in the Central district is linked to tournament success. NORTH is significant (at the 10% level) and negative, indicating being in the Central district is linked to an increased likelihood of winning a state championship when compared to being in the North district. However, there is not a significant difference between being in the Central and being in the South district. When looking at TSF points, neither of the other districts is significantly different from the Central district. Because the participants in the early rounds are grouped by location, this is not surprising – roughly one third of Sectional champions would be expected to be from each district. Interestingly, being in the South district instead of the Central is linked with an increase in TSF points for the class of smallest schools instead of the anticipated decrease (see Table 5). Consequently, H5 is not supported.

Limitations and Future Research

This study looks at a single sport within a single state. Some of the results are at least partially a result of the unique circumstances of boys' basketball in Indiana. Thus, care should be taken to gener-

alize the results more broadly. Each sport is different (Johnson et al., 2014), and each state is different (Scott et al., 2019). However, Scott et al. (2019) suggest single-state studies might be more useful for crafting relevant policies.

This study has data for 26 years of the boys' basketball tournament. This is much longer than some of the other studies in the literature. An even longer time frame would improve confidence in the results even more. Perfect competitive balance would imply that a single school in a class containing 100 schools would win a state championship every 100 years, on average.

A sports tradition or sports culture is not included since that is difficult to measure. However, as pointed out by Stoffer et al. (2021), parents are convinced that a sports culture leads to sport success. This is part of the argument for a policy ameliorating the private schools' advantage in hiring and facilities. However, it could well extend to public schools as children grow up participating in the sports favored by their local cultures. Johnson et al. (2019) discuss how a geographic region might account for sports culture very broadly, but that is different from the three districts found within a single state.

Future research can address these limitations by expanding the scope to look at multiple states and multiple sports. In addition, a suitable measure of tradition and sports culture would be an important next step.

Conclusion

Parents, athletes, and others seem to emphasize winning in interscholastic sports (Stoffer et al., 2021; Johnson et al., 2017). State high school athletics administrators, however, are aware that winning is not the only goal of athletics (Johnson et al., 2017). Interscholastic sports are part of the educational mission of the schools (Whitehead & Blackburn, 2013; Gardner, 2015). Often, simply participating is what yields lifetime benefits (see Troutman, 2022, for a summary).

As Johnson et al. (2017) point out, however, the emphasis on winning causes winning to be what is considered for competitive balance. Winning (or, at least, the possibility of winning) is what is to be equitably distributed for distributive justice. This should not greatly influence the value of participation, *ceteris paribus*. When state athletic associations enact policies to promote equity, they are following an egalitarian approach to distributive justice. To enact effective policies, it is helpful to know what school characteristics are linked with winning. While a national policy is not practical (Scott et al., 2019), it might help each state to know its particular situation so it can tailor the policies.

This study adds to the literature by refining the knowledge of what does and does not seem to affect tournament success using a much longer time period than other studies. The relative size of the student body seems to be the most consistently important factor in continued success. The public/private divide might not be as important to competitive balance as some believe. It is likely only a factor for the classes of smaller schools, if any. Similarly, being urban and wealthier can be linked to success, but primarily for the smaller schools. This reinforces the re-

sults of Scott et al. (2019).

Of particular note, Stoffer et al. (2021) identify an increase in state policies targeting an imbalance caused by economic factors. However, they also point out (p. 35) that there has not yet been an empirical finding of a link between these economic factors and success. When using a more expansive definition of tournament success, this study does find evidence of such a link.

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