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Scoreless but still scoring: A population-based observational study of removing league tables and playoffs in children's soccer

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ABSTRACT

Participation in organized sports is generally regarded as a highly valued activity, particularly due to its perceived potential to foster positive youth development, as well as its contribution to psychological and social health benefits. This is primarily attributed to the fact that sports provide opportunities not only for physical activity but also for the development of essential life skills, such as teamwork, goal-setting, managing adversity, conflict resolution, emotional regulation, and the ability to push personal boundaries.

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Competitive engineering; youth sports; league standings; play offs; sport participation

Introduction

Participation in organized sports is generally regarded as a highly valued activity, particularly due to its perceived potential to foster positive youth development, as well as its contribution to psychological and social health benefits (Eime et al., 2013; Fraser-Thomas et al., 2005; Gould & Carson, 2008). This is primarily attributed to the fact that sports provide opportunities not only for physical activity but also for the development of essential life skills, such as teamwork, goal-setting, managing adversity, conflict resolution, emotional regulation, and the ability to push personal boundaries (Mahoney & Stattin, 2000). Moreover, organized sports attract a large proportion of children and youth, primarily because they find it fun and enjoyable, while a lack of enjoyment is one of the main reasons for dropout (Crane & Temple, 2015; Visek et al., 2023). Factors such as the opportunity to do their best, positive team dynamics, and positive coaching are among the most significant contributors to children and youths' fun experiences in sports (Visek et al., 2015). However, scholars have long agreed that participation in organized sports does not automatically lead to positive development, or that youth necessarily have fun. What is crucial is how the sport activities are organized and structured (Coakley, 2011; Coalter, 2016).

Various sports programs have made, and continue to make, efforts to organize and structure athletic environments to promote positive experiences, psychosocial development, and long-term participation among young people (McCalpin et al., 2017). Examples of these program modifications, collectively referred to as competitive engineering (CE), include alterations to league structures, rules, facilities, and equipment scaling to foster an autonomy-supportive competitive climate, intrinsic motivation and to enhance desired cognitive, social, and behavioral outcomes in youth sports (Burton et al., 2011).

Overall, the majority of studies utilizing some form of CE indicate positive changes. In a review by Buszard et al. (2016), it was found that scaling sports equipment and play areas (e.g., smaller balls, shorter pitches) was associated with greater task engagement, improved skill performance, and more desirable movement patterns. Similarly, Harwood et al. (2018) demonstrated that a reduction in cricket pitch length led players to perceive the matches as more engaging and enjoyable to participate in. In another study, Timmerman et al. (2019) demonstrated that manipulating the number of players (three or six per team) and adjusting the playing field characteristics in field-hockey (i.e., number of goals per team) increased the frequency of technical actions and enhanced decision-making skills. Moreover, Jones et al. (2021) demonstrated that players who were guaranteed to play at least half of the rugby match experienced a higher level of enjoyment and a greater intention to continue playing rugby compared to those who played irregularly.

Evidently, the limited research based on the framework of CE has primarily focused on the reduction of field size, the scaling of equipment and rule change (e.g.,

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Buszard et al., 2016; Harwood et al., 2018; Jones et al., 2021; Timmerman et al., 2019), with less emphasis on modification of competitive structures (e.g., removal of league standings and playoffs). Beyond the CE framework, other approaches such as weight classes, biobanding, and Paralympic classification also aim to enhance fairness by adjusting competitive structures according to physical or maturational differences (e.g., Langan-Evans et al., 2011; Malina et al., 2019; Ravensbergen et al., 2016). However, in the current study, we use the concept of CE primarily to refer to structural modifications of the competition format, rather than to classification systems based on individual physical characteristics.

In Sweden, the use of league standings and playoffs (LSPO) in youth sports has sparked intense discussions about the impact on young athletes, particularly within football. On the one side, the Swedish Football Association, argues that the presence of LSPO creates an excessive focus on winning and results at too early age. They claim this competitive pressure increases the risk of early specialization, selection, stress, and anxiety. Factors that in turn raises the likelihood of dropout. Football is by far the most popular organized sport among children and adolescents in Sweden, engaging approximately 40% of all youth participating in organized sports (Swedish Research Council for Sport Science [CIF], 2025), yet between 20% and 50% of players discontinue their participation each year (Carlman et al., 2013; Fraser-Thomas, Falcão, & Wolman, 2018). This trend is particularly pronounced among adolescent girls (CIF, 2025), with approximately 35% dropping out annually before reaching early adulthood (e.g., Balish et al., 2014; CIF, 2025). Although dropout rates are less pronounced among younger age groups, understanding dropout during these formative years (i.e., ages 7–13) remains important, as they coincide with the period in which many children establish, or lose, their patterns of physical activity (Telama, 2009), which can lead to negative consequences for individual well-being and psychosocial development (Eime et al., 2013; Logan et al., 2019).

Aiming to promote long-term athletic development based on intrinsic motivation, enjoyment, and sustained participation, the Swedish Football Association (SFA) decided in 2016 to discontinue the use of LSPO for children under the age of 13, with the policy being implemented in 2017 (Swedish Football Association, 2024).[1] Meanwhile, there is significant opposition from LSPO advocates, particularly expressed in Swedish media (e,g., Aftonbladet, 2017; 2023), who oppose the removal of these competitive components. They argue that competition is an essential part of sport and that league standings and playoffs provide meaningful goals, help children learn to win and lose, and enhance motivation. Without these structures, there is a concern that engagement may actually decrease, as children may find sport less exciting or purposeful without clear outcomes to strive for. Moreover, it has also been recognized that too much alteration of specific CE components may lead to children not recognizing themselves in the sport, and therefore not finding it interesting and fun, increasing the risk to drop-out of sports (Murata et al., 2021). There are thus two clearly opposing views on the significance of removing LSPO. In light of this, the limited number of studies in this area raises important questions about whether the removal of league standings and playoffs affects children's motivation and willingness to participate in football.

To the best of our knowledge, only one study has indirectly examined the removal of LSPO within the context of broader CE strategies. McCalpin et al. (2017) employed a qualitative approach to investigate how young female Canadian athletes, aged 8–11, experience their modified soccer environment, including changes in the competitive structure, such as keeping no score and eliminating post-season play, reducing the pitch length, utilizing no offside rules, reducing goal and ball size, ensuring fair time distribution in all positions, and adapting the number of players according to field size (e.g., 7 vs 7 players). Based on the reported statements, particularly regarding the absence of scorekeeping and the elimination of post-season play, these changes were predominantly perceived in a positive manner. The alterations neither diminished the players' desire to score nor reduced the joy experienced when scoring a goal. Additionally, they felt that these changes fostered greater team cohesion, contributed more effectively to their development as football players, and increased their overall enjoyment of the game. Factors that previous studies have shown to be associated with sustained participation in sports (see Weiss, 2019). McCalpin et al. (2017) study indicates that the removal of LSPO can have positive effects on young people's motivation to participate in football. However, to date, no studies with a quantitative approach have specifically investigated how the removal of league tables and playoffs affects youth participation in sports, particularly among children in the formative stages of their athletic and psychosocial development. This knowledge gap is significant, as understanding how LSPO affect young athletes' participation patterns in organized sports is

[1] https://aktiva.svenskfotboll.se/tranare/spelarutbildning/fragor-och-svar/

essential for developing evidence-based guidelines that support long-term athletic development and well-being (Eime et al., 2013; Logan et al., 2019). Consequently, this study aims to investigate whether the presence or absence of league standings and playoffs (LSPO) is associated with participation in a children's and youth soccer environment. Based on previous studies (e.g., McCalpin et al., 2017), which have shown positive responses among children following the removal of LSPO, and on the Swedish Football Association's rationale for eliminating league tables and scorekeeping, we hypothesized that there would be significant level or slope increases in participation rates relative to the population after the removal of LSPO.

Material and methods

Participants and study design

To draw reliable conclusions about whether the removal of LSPO is associated with young people's participation in sports, it could be argued that conducting a field experiment involving both an experimental group and a control group would be appropriate (see L. Cohen et al., 2018). The experimental group would participate in games where scorekeeping and post-season play are allowed, while the control group would participate in games without these elements. Over time, the participation rates in each group could be compared to identify any significant differences, providing insight into the potential relationship between LSPO and sustained involvement in sports. However, since the use of scorekeeping and post-season play was discontinued when the Swedish Football Association implemented the removal of league standings and play-offs nationwide in 2016, no unaffected comparison group remained within the country. Moreover, comparable registry data with the same structure and detail were not available for other countries, making cross-national comparisons impractical. At the same time, this nationwide implementation created conditions resembling a natural experiment, although the absence of a control group means that the study is more appropriately interpreted as an observational design, allowing us to examine changes in participation patterns over time in relation to the policy implementation.

Based on the aforementioned, we chose to analyze pre-existing registry data derived from a specific sports context, school class football, which has the great advantage that the conditions in the environment have generally been constant since its inception in 1979. The only substantial modification occurred in 2017, when official scorekeeping, league standings, and playoffs were removed for all age groups (7–12 years; preschool to grade 5), while the oldest age group (13 years; grade 6) continued to play under the original conditions. This approach makes it possible to study participation trends and compare groups (i.e., before, during and after the change as well as between genders) while maintaining reasonable control by using population data for residents of the municipality within the specific age groups to ensure that the change did not result from a change in population.

School class football is a well-established initiative run by a sports club in a mid-sized Swedish city (approximately 100,000 inhabitants), where around 3,000–3,500 children and young people, out of a total of 6,000–7,000 in the municipality, participate each year. In school class football, each team consists of a single class that competes against other classes from different schools within the municipality. Participation is voluntary, both for classes to register and for individual children to join. The schools do not bear responsibility for the participating classes; instead, teams are coached by volunteering parents. School class football incorporates elements of competitive engineering (CE), with rules adapted in various ways to promote inclusivity and accessibility (i.e., playing on smaller pitch, using smaller goals and footballs, having boys and girls play together, and requiring that at least two boys and two girls be on the pitch at all times). Each match lasts 20 minutes and is paused every 5 minutes for player substitutions. Teams consist of approximately 10 to 25 players, with six outfield players and one goalkeeper on the field at a time. There is no limit to the number of substitutes. A total of five matches are played each term. The team leaders, together with the children, decide whether or not they wish to hold training sessions. In general, the school class football reaches a broader spectrum of children than the conventional sports clubs.

Sample size estimation and justification

Due to the nature of this study, our sample was not actively recruited. All available (except for the covid-19 years) registry data from the programme were included, covering six pre-intervention years (2011–2016) and six post-intervention years (2017–2019, 2022–2024). Because the available data were determined by the registry's time span and the timing of the policy change, no a-priori power calculation was conducted. Following Lakens (2022), we explicitly acknowledge that no formal justification for the number of observations exists beyond the constraints of the available data. Consistent with guidance for registry-based observational research, including all available data is

nonetheless considered the appropriate approach in this context (Leatherdale, 2019). To provide some basis for evaluating the study's sensitivity, we specify a smallest effect size of interest (SESOI; Lakens, 2022). Youth sport participation is shaped by multiple competing influences including demographic trends, infrastructure, peer influence, and coaching quality (Weiss, 2019). Given the many competing influences on youth sport participation, only a large effect would carry practical policy relevance. The study was powered to detect effects of $d > 1.79$ at 80% power, which we consider a reasonable threshold for this context.

Data collection

After receiving ethical approval (HS 2022/1036), representatives from the sports club were contacted, and they granted us permission to access their archived register. This register contained a list of all participants from six years prior to the implementation of the LSPO policy (2011–2016) and six years after it came into effect (2017–2024), excluding the years affected by the COVID-19 pandemic (2020–2021), covering over 40,000 participant records. Due to inconsistencies in the original registry data (e.g., duplicate registrations, missing entries, and incorrect gender information), the first author manually verified and cross-checked all annual participant lists. In total, this process required approximately 35–40 hours of detailed review of physical records from all years combined to ensure the accuracy and completeness of the dataset. Following this verification process, the final dataset comprised aggregated counts of participation by year, gender, and age group. Individual-level tracking over time was not possible due to data traceability constraints. Consequently, the analyses describe year-by-year group trends rather than repeated measures on the same individuals.

Measures

Gender

Females, males and the total group are included. They were categorized using information from participation sheets when data was manually collected.

Participation

Participation was measured by dividing the number of participants of a given age and sex in a particular year by the total number of residents of the same age and sex residing in the municipality during that year. In this specific context, participants were registered through their school classes, and each class competed as a team over a predetermined five-week period. As the same participants remained in their respective teams throughout the event, this setup provides a stable and accurate reflection of actual participation during the study period.

Data analysis

All statistical analyses were conducted on aggregated group-level data, as individual trajectories could not be estimated, and were carried out using Jamovi (version 2.3.21; The Jamovi Project, 2023). The dataset was restructured into long format on a yearly basis to accommodate repeated-measures analyses. The final year (6th grade) was omitted because table rankings were consistently implemented during that period, posing a risk of confounding the outcomes.

Participation data were analyzed using Generalized Linear Models (GLMs) with Gaussian distributions and identity link functions, appropriate for repeated-measures designs (Singer & Willett, 2003). Three models were run – total participants, girls, and boys – each assessing both absolute participant numbers and participation rates (proportion of eligible population). Model fit statistics (R-squared, Akaike Information Criterion [AIC], Bayesian Information Criterion [BIC], and deviance) were calculated and presented in Table 2.

Statistical significance of effects was tested using likelihood ratio tests (Table 3), reporting chi-squared values, degrees of freedom, and p-values. Estimated marginal means, standard errors, 95% confidence intervals, z-values, and p-values for each main effect are presented in Table 4.

To evaluate temporal changes in participation, a segmented regression analysis was conducted (Singer & Willett, 2003). This model estimates three parameters: (1) the pre-intervention trend (annual change in participation before LSPO removal), (2) the immediate change in participation at the time of policy introduction, and (3) the post-intervention trend (annual change after LSPO removal). This allows assessment of both abrupt and gradual changes in participation patterns over time following the LSPO intervention, controlling for pre-existing trends. Segmented regression analyses were conducted separately for boys, girls, and all participants, and detailed results appear in Table 5 and Figure 1.

Effect sizes were interpreted according to conventional guidelines (J. Cohen, 1988), with small effects defined as Cohen's $d \approx 0.2$ or a percentage change of <5%, moderate effects as $d \approx 0.5$ or 5–10%, and large effects as $d \geq 0.8$ or >10% change (L. Cohen et al., 2018).

Absolute changes in annual participation of fewer than 5% were considered small, 5–10% moderate, and >10% large in the context of population-level interventions (Bernal et al., 2016).

Results

Number of participants and teams

Table 1 presents the number of participants by sex and the number of teams, illustrating a steady overall increase over the study period for both girls and boys. The upward trend is also mirrored at the team level, with the number of teams expanding roughly in proportion to participant growth. While participation increased markedly across the observation period, the underlying population of 7–13-year-olds in the municipality showed only modest growth. A distinct peak in participation occurred in 2017, followed by a brief downturn in 2018 and subsequent recovery, culminating in the highest recorded participation in 2024. Overall, these descriptive patterns point to a positive trajectory in school-football participation and provide the empirical foundation for the GLM analyses that follow, examining period-specific changes and the potential impact of the rule modification.

Model fit

All models converged successfully, confirming the reliability of the parameter estimates. The model fit statistics are presented in Table 2.

As shown in Table 2, the R-squared values indicate moderate model fit for absolute participant numbers, with values ranging from 0.16 to 0.18, suggesting that the pre – post period accounted for approximately 16–18% of the variance in absolute participation numbers. However, when analyzing participation as a proportion of the eligible population, the models showed low explanatory power, with R-squared values between 0.02 and 0.03. Model fit indices (AIC, BIC, and deviance) showed higher deviance values for absolute participation models and substantially lower values for proportional models.

The likelihood ratio tests, presented in Table 3, indicate that statistically significant differences in participation were found in models analyzing absolute participation numbers ($p < 0.001$ for total, girls, and boys). However, no significant differences were found when participation was analyzed as a proportion of the total population ($p = 0.153$ to 0.257). These findings suggest that while more children participated in school-class football after LSPO removal, their participation rates relative to the population did not significantly change.

Table 1. Number of participants by sex, number of teams, and population size in the same age group in the municipality, with annual percentage change (2011–2024).

Year	Girls	Boys	Total	Teams	Municip.	Δ Girls (%)	Δ Boys (%)	Δ Total (%)	Δ Teams (%	Δ Municip.
2011	1022	1423	2445	161	5 643	–	–	–	–	–
2012	1094	1554	2648	183	5 717	+7,0	+9,2	+8,3	+13,7	+1,3%
2013	1214	1728	2942	208	5 921	+11,0	+11,2	+11,1	+13,7	+3,6%
2014	1272	1767	3039	202	6 075	+4,8	+2,3	+3,3	−2,9	+2,6%
2015	1300	1849	3149	205	6 230	+2,2	+4,6	+3,6	+1,5	+2,6%
2016	1296	1952	3248	214	6 505	−0,3	+5,6	+3,1	+4,4	+4,4%
2017	1513	2152	3665	243	6 726	+16,8	+10,2	+12,8	+13,6	+3,4%
2018	1374	1964	3338	228	6 974	−9,2	−8,7	−8,9	−6,2	+3,7%
2019	1548	2203	3751	244	7 108	+12,7	+12,2	+12,4	+7,0	+1,9%
2020	–	–	–	–	7 255	–	–	–	–	+2,1%
2021	–	–	–	–	7 342	–	–	–	–	+1,2%
2022	1628	2160	3788	255	7 421	–	–	–	–	+1,1%
2023	1671	2354	4025	270	7 342	+2,6	+9,0	+6,3	+5,9	−1,1%
2024	1854	2499	4353	270	7 439	+11,0	+6,2	+8,1	0,0	+1,3%
Total	16 786	23 605	40 391	2683	93 698	+81,4%	+75,6%	+78,1%	+67,7%	+31,8%

Table 2. Model fit statistics for all generalized linear models.

Model	R^2	AIC	BIC	Deviance
Total Participants	0.18	942.04	948.95	1,349,645.93
Total Proportion	0.03	594.69	601.60	12,350.69
Girls' Participation	0.16	828.17	835.08	289,703.84
Girls' Proportion	0.02	582.43	589.34	10,464.87
Boys' Participation	0.17	850.54	857.45	391,944.24
Boys' Proportion	0.03	605.09	612.00	14,213.71

Note. R^2 = R-squared; AIC = Akaike Information Criterion; BIC = Bayesian Information Criterion.

Table 3. Likelihood ratio tests for all generalized linear models.

Model	Chi-squared (χ^2)	df	*p*-value
Total Participants	15.67	1	<0.001
Total Proportion	2.04	1	0.153
Girls' Participation	13.51	1	<0.001
Girls' Proportion	1.28	1	0.257
Boys' Participation	14.97	1	<0.001
Boys' Proportion	2.17	1	0.141

Table 4. Model results for generalized linear models.

Model	Estimate	SE	95% CI Lower	95% CI Upper	z-value	p-value
Total Participants	126.04	31.84	63.63	188.45	3.96	<0.001
Total Proportion	4.35	3.05	−1.62	10.32	1.43	0.157
Girls' Participation	54.24	14.75	25.32	83.15	3.68	<0.001
Girls' Proportion	3.18	2.8	−2.32	8.67	1.13	0.261
Boys' Participation	66.39	17.16	32.76	100.03	3.87	<0.001
Boys' Proportion	4.82	3.27	−1.59	11.22	1.47	0.145

Table 5. Segmented regression analysis for trends of participants before, during and after rule change.

	Girls			Boys			All		
Statistic	Est	SE	p	Est	SE	p	Est	SE	p
Intercept	218.38	7.30	<.001	306.12	8.37	<.001	524.50	15.61	<.001
Pre trend	8.99	6.12	0.147	15.76	7.03	0.028	25.22	13.10	0.058
Rule change	6.10	29.53	0.837	−1.10	33.87	0.974	5.39	63.17	0.932
Post trend	−4.36	7.27	0.551	−12.33	8.34	0.144	−16.24	15.55	0.300

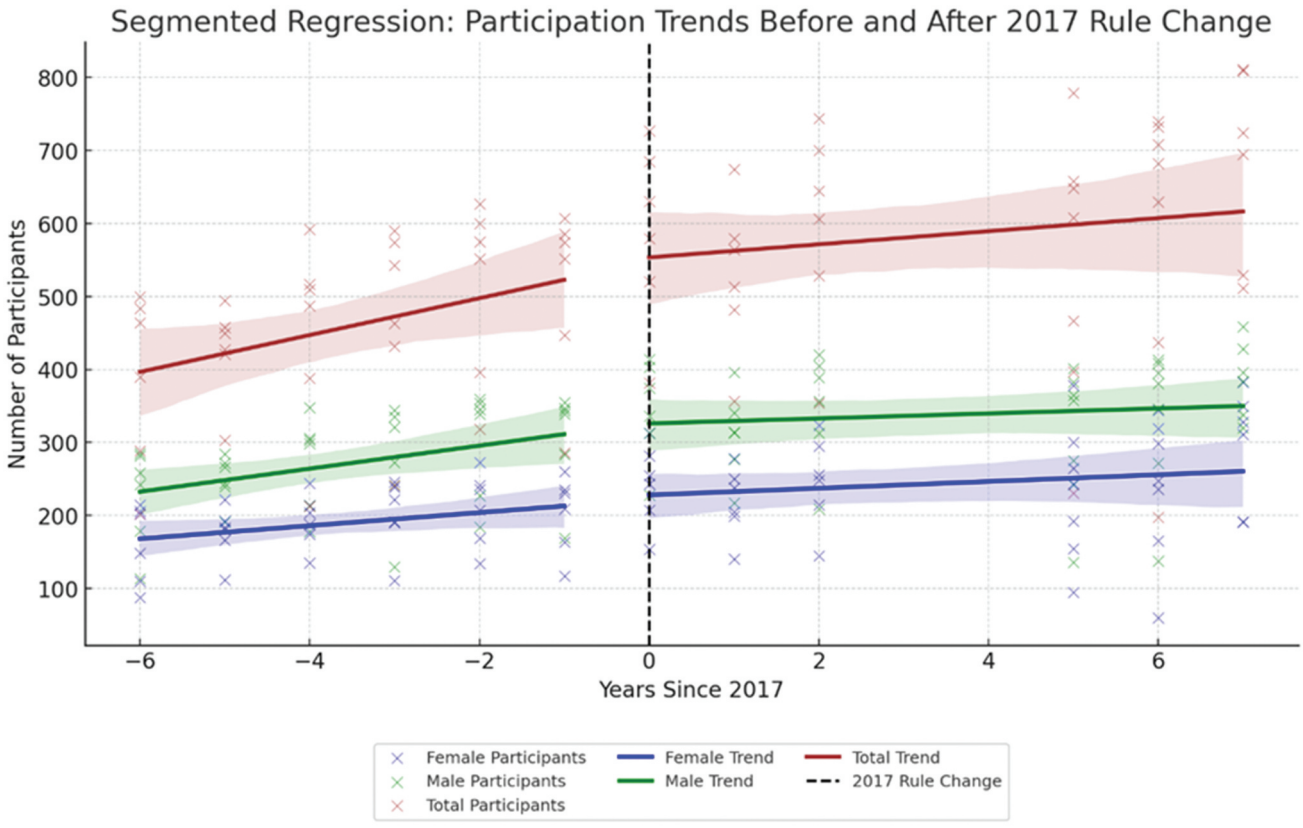

Figure 1. Participation pattern trends from segmented regression analysis before and after 2017 rule Change.

Model results

Total participation

The analysis of absolute participation numbers (Table 4) showed a significant increase in the total number of participants after LSPO removal (χ^2 (1) = 15.67, p < 0.001), with an estimated mean difference of 126.04 additional participants (95% CI: 63.63, 188.45). The estimated marginal means indicate that participation increased from 459.78 (SE = 22.82) before the rule change to 585.82 (SE = 22.21) after. However, when considering participation as a proportion of the eligible population, no statistically significant effect was found (χ^2 (1) = 2.04, p = 0.153). The estimated marginal means suggest that the participation rate increased slightly, from 52.81% (95% CI: 48.45, 57.16) before to 57.16% (95% CI: 52.92, 61.39) after LSPO removal, but the wide confidence intervals indicate uncertainty in this estimate. This suggests that while the absolute number of participants increased, this may reflect broader population trends rather than a direct rather than a pattern directly attributable to LSPO removal.

Girls' participation

Results for girls (Table 4), the absolute number of participants also increased significantly (χ^2 (1) = 13.51, p < 0.001), with an estimated mean difference of 54.24 additional participants (95% CI: 25.32, 83.15). The estimated marginal means indicate that participation rose from 190.53 (95% CI: 169.45, 211.60) before LSPO removal to 244.76 (95% CI: 224.25, 265.28) after. However, when looking at girls' participation as a proportion of the eligible population, no significant difference was found (χ^2 (1) = 1.28, p = 0.257). The estimated marginal means suggest that the proportion increased only slightly, from 45.61% (95% CI: 41.61, 49.62) before to 48.79% (95% CI: 44.89, 52.69) after LSPO removal, but the lack of statistical significance suggests that the observed change could be due to natural fluctuations rather than a pattern directly attributable to the policy change.

Boys' participation

The pattern for boys (Table 4) mirrored that of the total group and girls. The absolute number of boys participating increased significantly (χ^2 (1) = 14.97, p < 0.001), with an estimated mean difference of 66.39 additional participants (95% CI: 32.76, 100.03). The estimated marginal means indicate that participation increased from 272.03 (95% CI: 247.51, 296.54) before LSPO removal to 338.42 (95% CI: 314.56, 362.28) after. However, when considering boys' participation as a proportion of the eligible population, the model did not show a significant effect (χ^2 (1) = 2.17, p = 0.141). The estimated marginal means indicate that the proportion increased from 60.00% (95% CI: 55.33, 64.67) before to 64.82% (95% CI: 60.27, 69.36) after, but as with the girls' results, the wide confidence intervals suggest that this change may not be directly linked to LSPO removal.

Segmented regression analysis

All results from the segmented regression analysis for participation trends with participation numbers are presented in Table 5 and visualized in Figure 1.

Total participation

The overall participation trend followed showed pre-trend was not statistically significant (β = 25.22, p = 0.058), indicating an increasing trend before 2017. Further, neither the immediate effect (β = 5.39, p = 0.932) nor the post-trend (β = −16.24, p = 0.300) were statistically significant.

Girls' participation

The pre-rule change trend was not statistically significant (β = 8.99, p = 0.147), suggesting that girls' participation remained relatively stable before the rule change. The immediate effect was also not significant (β = 6.10, p = 0.837), indicating that participation did not suddenly increase or decrease after the rule change. Similarly, the post trend was not significant (β = −4.36, p = 0.551), meaning that participation growth continued at a similar rate after 2017.

Boys' participation

Unlike girls' participation, the pre-rule change trend for boys was statistically significant (β = 15.76, p = 0.028), indicating an increase in participation before the rule change. However, the immediate effect was not significant (β = −1.10, p = 0.974), showing no sudden shift in participation numbers. The post-change trend was also not significant (β = −12.33, p = 0.144), suggesting that participation growth evened out after the intervention.

Discussion

The aim of this study was to examine whether participation levels were related to the presence or absence of league standings and playoffs (LSPO). Building on previous research showing positive child responses to the removal of competitive structures (e.g., McCalpin et al., 2017), and on the Swedish Football Association's rationale for eliminating league tables and scorekeeping, we hypothesized that participation rates relative to the

population would increase following LSPO removal. However, the results did not support our hypothesis, indicating that the removal of LSPO in children's soccer is not associated with substantial changes in participation rates. While the absolute number of participants increased significantly following the rule change, likely reflecting an overall rise in children's interest in playing soccer (see CIF, 2025), the proportion of eligible youth participating remained largely unchanged across girls, boys, and the total sample. Furthermore, segmented regression analysis did not reveal any significant immediate or long-term shifts in participation trends following LSPO removal. Among girls, participation levels were relatively stable before the rule change, with no significant increase or decrease coinciding with the policy. Among boys, there was a statistically significant upward trend in participation before LSPO removal, but this growth did not accelerate or decline after the rule change, suggesting that existing trends persisted regardless of the competitive structure. Furthermore, the observed increase in participation rates among boys prior to LSPO removal underscores the importance of considering pre-existing trends when evaluating policy interventions. Although the visual pattern in Figure 1 may suggest a flattening of the upward trajectory after the rule change, this apparent shift was not supported by the inferential analyses, indicating that the observed fluctuation likely reflects normal year-to-year variation rather than a true change in trend. Given this, and the modest size of the yearly series, it is also important to interpret any visual deviations cautiously, as they may create the impression of effects that are not statistically verified.

Taken together, these results imply that league tables and playoffs may not be as influential in shaping participation trends as some proponents have previously assumed. More specifically, the removal of LSPO does not appear to be associated with any clear additional motivational change among school-aged football participants, contrary to indications from earlier studies (e.g., Buszard et al., 2016; Harwood et al., 2018; McCalpin et al., 2017) and the intentions of the Swedish Football Association. The absence of a clear increase or decrease in participation following LSPO removal suggests that other factors, such as coaching quality, peer influence, access to sports infrastructure (e.g., Atkins et al., 2015; Erikstad et al., 2021), may be more strongly associated with participation patterns in youth soccer involvement.

Notably, our method did not allow for an analysis of changes in participant composition. It is possible that there was an increase in new participants in school class football, that is, individuals who had previously chosen not to take part due to an excessive emphasis on winning and the use of LSPO. At the same time, a corresponding proportion may have discontinued participation because they found the game less enjoyable without LSPO. Hence, it is important that future research conducts longitudinal studies in which participants are followed over time, and their perspectives are recorded both before and after the implementation or removal of LSPO. Moreover, future research should explore other dimensions of youth sport experiences, such as perceived motivational climate, perceived football competence, enjoyment to play and intentions to drop-out, to better understand the factors that influence the use or non-use of LSPO in organized sports. These aspects are particularly noteworthy since for instance an autonomy supportive motivational climate (e.g., being supportive, having a permissive attitude, children's preferences and perspectives are considered), have been positively linked to children's intrinsic motivation, enjoyment, well-being, and prolonged participation in sports (Atkins et al., 2015; Gagne, 2003). Furthermore, there is a need for studies that explore children's perspectives in their own words. We have identified only one qualitative study (McCalpin et al., 2017) that indirectly addresses children's attitudes and intentions toward LSPO. Since adaptations such as no goal counting, reduced pitch size, and smaller ball size differ from the removal of LSPO, further research is needed to understand LSPO's specific impact on participation, motivation, enjoyment, and prolonged participation in sports.

Limitations and future directions

While the ability to examine changes observed following a specific modification over time represents a clear methodological strength, it is important to acknowledge that one possible reason for the absence of significant changes in participation patterns following the removal of LSPO may be the prior implementation of several other modifications to the competitive structure within the school-class football context including playing on smaller pitches, using smaller goals and balls, allowing mixed-gender teams, and requiring that at least two boys and two girls be on the field at all times. As a result, many children may already perceive this environment as less competitive, particularly when compared to football activities organized in sports clubs. This context may therefore function as an alternative sporting environment in which results and competition are not central concerns. This reduced-competition setting may therefore limit the extent to which removing league standings and playoffs can influence participation patterns. Future research should therefore investigate the effects of LSPO removal in more traditional club-based

football systems where competitive structures are more pronounced. A promising design for future research would be to follow a cohort of players across the transition to age 13, when league tables and playoffs are introduced. By collecting data one season before and one season after this age threshold (e.g., from ages 12 to 13), researchers could more precisely assess whether the onset of LSPO is associated with changes in motivation, skill development, enjoyment, or intentions to dropout from football. It would also be valuable to expand this line of inquiry to international contexts where similar restrictions on league tables and scorekeeping exist, such as Norway and Finland (see Football Association of Finland, 2025; Norwegian Football Federation, 2025) to assess whether participation patterns following LSPO-like regulations show comparable developments. Another promising avenue would be to conduct other forms of quasi-experimental studies or natural experiments that leverage existing differences across sports. For instance, some team sports introduce league tables at earlier ages than others, thereby creating potential 'intervention' groups (where tables are introduced early) and 'comparison' groups (where tables are delayed). By systematically comparing outcomes such as dropout rates, skill development, and enjoyment across these formats, researchers may begin to isolate the effects of LSPO.

Like several other studies based on data from the period during which the COVID-19 pandemic was ongoing, we lack data from two years that were heavily impacted by the pandemic (i.e., year 2020 and 2021). These data would have been important to include in order to clearly identify any possible significant trends. However, this limitation is partially mitigated by the fact that we have data covering a relatively long period both before and after the removal of LSPO. At the same time, it should be acknowledged that lingering effects of COVID-19 on children's and youths' sport participation, such as altered routines or reduced engagement, may still have influenced participation patterns after organized activities resumed.

Another important limitation of this study is the absence of a control group. Given this, and the observational nature of the study, causal inferences cannot be drawn, and the findings should therefore be interpreted as temporal associations rather than effects of the policy change. While a controlled design would better support causal inferences, the universal implementation of the LSPO policy and the lack of access to comparable youth football initiatives made the establishment of such a group infeasible. As a result, the current approach relies on pre-post comparisons over time, which, although informative, do not allow for disentangling changes associated with the policy from broader contextual developments or pre-existing participation trends (L. Cohen et al., 2018; Singer & Willett, 2003). Future research should therefore seek opportunities for quasi-experimental designs or exploit variation across regions and sports to strengthen causal claims. A further limitation of this study is that only aggregated participation data were available. The absence of individual-level follow-up restricts the ability to analyze within-person changes or heterogeneity in response to the policy. Future studies incorporating longitudinal individual-level data would provide a more nuanced understanding of how participation patterns evolve.

Finally, a retrospective sensitivity analysis indicated that the study was well-powered to detect large effects on absolute participant numbers (post-hoc power > 0.987, $d = 2.81–2.92$) but had limited power to detect moderate effects on participation rates (power = 0.30–0.41, $d = 0.97–1.15$). We cannot rule out that small or moderate effects on participation rates exist. However, given the multiple determinants of youth sport participation, we argue that only large effects would carry practical policy relevance, and the study was adequately powered to detect those.

Conclusions

While previous debates around LSPO have often centered on concerns that league tables discourage youth participation, the present study provides empirical evidence that participation trends remained largely stable regardless of their presence or absence. Rather, it appears that the observed growth in absolute numbers may have been influenced by broader demographic trends and/or other intra- or interpersonal factors, rather than being directly attributable to LSPO removal. These findings should also be interpreted in light of the school-based football environment examined, which is relatively low in competitive intensity and may therefore limit the extent to which changes in competitive structure can influence participation. Moreover, the nationwide implementation of LSPO in Sweden precludes the use of internal control groups, and the absence of individual-level data restricts the ability to examine heterogeneity in children's responses.

Given these findings, future research would benefit from expanding the scope to more traditional club-based settings, other regions in Sweden, and international contexts where similar restrictions exist. Methodologically, following a cohort across the transition to age 13, when LSPO is introduced, may offer a design for identifying potential causal effects on

motivation, enjoyment, skill development, and drop-out. Longitudinal studies tracking individual participation over time would also offer deeper insights into whether certain groups of children are more affected by LSPO changes than others. Additionally, investigating the perceived motivational climate, children's enjoyment, and their intrinsic motivation in response to competitive structure modifications would be crucial in refining youth sports policies.

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Author contributions

CRediT: **Stefan Wagnsson:** Conceptualization, Formal analysis, Funding acquisition, Investigation, Methodology, Project administration, Resources, Supervision, Validation, Writing – original draft, Writing – review & editing; **Erik Lundkvist:** Conceptualization, Data curation, Formal analysis, Funding acquisition, Methodology, Validation, Visualization, Writing – review & editing.

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References

Aftonbladet. (2017, November 30). *Gemensamma kravet: "Bort med skitregeln!"* ["The common demand: 'scrap the stupid rule!'"]. Aftonbladet Sportbladet. Retrieved 14 November, 2025, from https://www.aftonbladet.se/sportbladet/fotboll/a/oX2PB/gemensamma-kravet-bort-med-skitregeln

Atkins, M. R., Johnson, D. M., Force, E. C., & Petrie, T. A. (2015). Peers, parents, and coaches, oh my! The relation of the motivational climate to boys' intention to continue in sport. *Psychology of Sport & Exercise*, *16*, 170–180. https://doi.org/10.1016/j.psychsport.2014.10.008

Balish, S. M., McLaren, C., Rainham, D., & Blanchard, C. (2014). Correlates of youth sport attrition: A review and future directions. *Psychology of Sport & Exercise*, *15*(4), 429–439.

Bernal, J. L., Cummins, S., & Gasparrini, A. (2016). Interrupted time series regression for the evaluation of public health interventions: A tutorial. *International Journal of Epidemiology*, *46*(1), 348–355.

Burton, D., Gillham, A. D., & Hammermeister, J. (2011). Competitive engineering: Structural climate modifications to enhance youth athletes' competitive experience. *International Journal of Sports Science and Coaching*, *6*(2), 201–217. https://doi.org/10.1260/1747-9541.6.2.201

Buszard, T., Reid, M., Masters, R., & Farrow, D. (2016). Scaling the equipment and play area in children's sport to improve motor skill acquisition: A systematic review. *Sports Medicine*, *46*, 829–843. https://doi.org/10.1007/s40279-015-0452-2

Carlman, P., Wagnsson, S., & Patriksson, G. (2013). Causes and consequences of dropping out from organized youth sports. *Swedish Journal of Sport Research*, *2*(1), 26–54.

Coakley, J. (2011). Youth sports: What counts as "positive development?". *Journal of Sport & Social Issues*, *35*(3), 306–324. https://doi.org/10.1177/0193723511417311

Coalter, F. (2016). Youth and sport-for-change programmes: What can you expect? In K. Green & A. Smith (Eds.), *Routledge handbook of youth sport* (pp. 543–558). Routledge.

Cohen, J. (1988). *Statistical power analysis for the behavioral sciences* (2nd ed.). Routledge.

Cohen, L., Manion, L., & Morrison, K. (2018). *Research methods in education*. Routledge.

Crane, J., & Temple, V. (2015). A systematic review of dropout from organized sport among children and youth. *European Physical Education Review*, *21*(1), 114–131. https://doi.org/10.1177/1356336X14555294

Eime, R. M., Young, J. A., Harvey, J. T., Charity, M. J., & Payne, W. R. (2013). A systematic review of the psychological and social benefits of participation in sport for children and adolescents: Informing development of a conceptual model of health through sport. *International Journal of Behavioral Nutrition and Physical Activity*, *10*(1), 1–21. https://doi.org/10.1186/1479-5868-10-98

Erikstad, M. K., Johansen, B. T., Johnsen, M., Haugen, T., & Côté, J. (2021). "As many as possible for as long as possible"-a case study of a soccer team that fosters multiple outcomes. *Sport Psychologist*, *35*(2), 131–141. https://doi.org/10.1123/tsp.2020-0107

Football Association of Finland. (2025). *Jalkapallon kilpailumääräykset* [Football competition regulations]. Hämtad från. Retrieved 14 November, 2025, from https://www.palloliitto.fi

Fraser-Thomas, J., Falcão, W., & Wolman, L. (2018). Understanding take-up, drop-out and drop-off in youth sport. In K. Green & A. Smith (Eds.), *Routledge handbook of youth sport* (pp. 227–242). Routledge.

Fraser-Thomas, J. L., Côté, J., & Deakin, J. (2005). Youth sport programs: An avenue to foster positive youth development. *Physical Education & Sport Pedagogy*, *10*(1), 19–40. https://doi.org/10.1080/1740898042000334890

Gagne, M. (2003). Autonomy support and need satisfaction in the motivation and well-being of gymnasts. *The Journal of Applied Sport Psychology*, *15*(4), 372–390. https://doi.org/10.1080/714044203

Gould, D., & Carson, S. (2008). Life skills development through sport: Current status and future directions. *International Review of Sport & Exercise Psychology*, *1*(1), 58–78. https://doi.org/10.1080/17509840701834573

Harwood, M. J., Yeadon, M. R., & King, M. A. (2018). Reducing the pitch length: Effects on junior cricket. *International Journal of Sports Science and Coaching*, *13*(6), 1031–1039. https://doi.org/10.1177/1747954118772482

The Jamovi Project. (2023). *Jamovi (Version 2.3.21)* [Computer software]. https://www.jamovi.org

Jones, B., Hope, E., Hammond, A., Moran, J., Leeder, T., Mills, J., & Sandercock, G. (2021). Play more, enjoy more, keep playing; rugby is a simple game. *International Journal of Sports Science and Coaching*, *16*(3), 636–645. https://doi.org/10.1177/1747954121991444

Lakens, D. (2022). Sample size justification. *Collabra: Psychology*, *8*(1), 33267. https://doi.org/10.1525/collabra.33267

Langan-Evans, C., Close, G. L., & Morton, J. P. (2011). Making weight in combat sports. *Strength & Conditioning Journal*, *33*(6), 25–39. https://doi.org/10.1519/SSC.0b013e318231bb64

Leatherdale, S. T. (2019). Natural experiment methodology for research: A review of how different methods can support real-world research. *International Journal of Social Research Methodology*, *22*(1), 19–35. https://doi.org/10.1080/13645579.2018.1488449

Logan, K., Cuff, S., Council on Sports Medicine and Fitness, LaBella, C. R., Brooks, M. A., Canty, G., & Stricker, P. R. (2019). Organized sports for children, preadolescents, and adolescents. *Pediatrics*, *143*(6), e20190997. https://doi.org/10.1542/peds.2019-0997

Mahoney, J. L., & Stattin, H. (2000). Leisure activities and adolescent antisocial behavior: The role of structure and social context. *Journal of Adolescence*, *23*(2), 113–127. https://doi.org/10.1006/jado.2000.0302

Malina, R. M., Cumming, S. P., Rogol, A. D., Coelho-E-Silva, M. J., Figueiredo, A. J., Konarski, J. M., & Kozieł, S. M. (2019). Bio-banding in youth sports: Background, concept, and application. *Sports Medicine*, *49*(11), 1671–1685. https://doi.org/10.1007/s40279-019-01166-x

McCalpin, M., Evans, B., & Côté, J. (2017). Young female football players' perceptions of their modified sport environment. *Sport Psychologist*, *31*(1), 65–77. https://doi.org/10.1123/tsp.2015-0073

Murata, A., Herbison, J. D., Côté, J., Turnnidge, J., & Kelly, A. L. (2021). Competitive engineering in the youth sport context: Theory, practice, and future directions. In A. L. Kelly, J. Côté, M. Jeffreys, & J. Turnnidge (Eds.), *Birth advantages and relative age effects in sport* (pp. 222–235). Routledge.

Norwegian Football Federation. (2025). *Retningslinjer for barne- og ungdomsfotball* [Guidelines for children's and youth football]. Retrieved 14 November, 2025, from https://www.fotball.no/barn-og-ungdom/retningslinjer-for-barne–og-ungdomsfotball/

Ravensbergen, H. R., Mann, D. L., & Kamper, S. J. (2016). Expert consensus statement to guide the evidence-based classification of Paralympic athletes with vision impairment: A Delphi study. *British Journal of Sports Medicine*, *50*(7), 386–391. https://doi.org/10.1136/bjsports-2015-095434

Singer, J. D., & Willett, J. B. (2003). *Applied longitudinal data analysis: Modeling change and event occurrence*. Oxford University Press.

Swedish Football Association. (2024). *Varför inte kora segrare inom barnfotbollen?* [Why Not Crown Winners in Youth Football?]. Retrieved 28 October, 2024, from https://aktiva.svenskfotboll.se/tranare/spelarutbildning/fragor-och-svar/

The Swedish Research Council for Sport Science [Centrum för idrottsforskning, CIF]. (2025). *Fotboll driver hela uppgången i barn- och ungdomsidrotten* [Football is the primary driver of the overall increase in children's and youth sports participation]. Retrieved 14 November, 2025, from https://www.idrottsforskning.se/fotboll-driver-hela-uppgangen-i-barn-och-ungdomsidrotten/

Telama, R. (2009). Tracking of physical activity from childhood to adulthood: A review. *Obesity Facts*, *2*(3), 187–195. https://doi.org/10.1159/000222244

Timmerman, E. A., Savelsbergh, G. J., & Farrow, D. (2019). Creating appropriate training environments to improve technical, decision-making, and physical skills in field hockey. *Research Quarterly for Exercise and Sport*, *90*(2), 180–189. https://doi.org/10.1080/02701367.2019.1571678

TV4 Sporten. (2023, January 31). *Debatt om tabeller inom barnidrott - bra eller dåligt?* [Debate on League Tables in Youth Sports - Good or Bad?] [Video]. TV4 Play. https://www.tv4play.se/klipp/1fb4fe9437ebeacc9f64

Visek, A. J., Achrati, S. M., Mannix, H. M., McDonnell, K., Harris, B. S., & DiPietro, L. (2015). The fun integration theory: Toward sustaining children and adolescents sport participation. *Journal of Physical Activity and Health*, *12*(3), 424–433. https://doi.org/10.1123/jpah.2013-0180

Visek, A. J., Ivarsson, A., Putt, G., & Learner, J. L. (2023). To have fun: What it means and its significance in sport. In M. Toms & R. Jeanes (Eds.), *Routledge handbook of coaching children in sport* (pp. 51–61). Routledge.

Weiss, M. R. (2019). Youth sport motivation and participation: Paradigms, perspectives, and practicalities. *Kinesiology Review*, *8*(3), 162–170. https://doi.org/10.1123/kr.2019-0014