Evaluating gender-based leadership perceptions in youth sport

Evaluación de las percepciones sobre el liderazgo según el género en el deporte juvenil

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Abstract

Introduction and Objective. The study aims to investigate associations between gender, sport type, and perceived coach leadership behaviors among youth athletes, including potential interaction effects across leadership dimensions.
Methodology. Youth athletes aged 13–17 (N = 240, average age = 14.6 years; 50% girls) participated in a cross-sectional survey using the Leadership Scale for Sports (LSS). The LSS measured perceptions across five leadership dimensions: training and instruction, democratic behavior, autocratic behavior, social support, and positive feedback.
Results. Perceptions of leadership varied significantly by gender. Girls reported higher ratings of democratic behavior (M = 4.3 vs. 3.5, $p < 0.001$, $d = 1.91$) and social support (M = 4.4 vs. 3.6, $p < 0.001$, $d = 2.12$), while boys scored higher on autocratic behavior (M = 3.8 vs. 2.7, $p < 0.001$, $d = 2.26$). MANOVA revealed a significant main effect for gender (Wilks' $\lambda = 0.854$, $F(5, 232) = 7.85$, $p < 0.001$, $\eta^2 = 0.145$) and sport type (Wilks' $\lambda = 0.891$, $F(5, 232) = 5.42$, $p = 0.002$, $\eta^2 = 0.105$). No significant interaction was found. Individual sport athletes rated coaches higher in democratic behavior and positive feedback ($p < 0.01$).
Conclusions. These results emphasize the importance of adapting coaching styles to the gender and sport context of young athletes to maximize athlete development, satisfaction, and retention.

Keywords

Youth sport; coach leadership; gender differences; leadership perception; team sports; individual sports.

Resumen

Introducción y Objetivo. Este estudio busca analizar las asociaciones entre el género, el tipo de deporte y las percepciones del liderazgo del entrenador entre atletas jóvenes, incluyendo posibles efectos de interacción en las distintas dimensiones del liderazgo.
Metodología. Participaron 240 atletas juveniles de entre 13 y 17 años (edad promedio = 14.6; 50 % niñas) en una encuesta transversal utilizando la Escala de Liderazgo para el Deporte (LSS). La LSS evaluó cinco dimensiones del liderazgo: entrenamiento e instrucción, comportamiento democrático, comportamiento autocrático, apoyo social y retroalimentación positiva.
Resultados. Las percepciones del liderazgo variaron significativamente según el género. Las niñas calificaron más alto el comportamiento democrático (M = 4.3 vs. 3.5, $p < 0.001$, $d = 1.91$) y el apoyo social (M = 4.4 vs. 3.6, $p < 0.001$, $d = 2.12$), mientras que los niños puntuaron más alto en comportamiento autocrático (M = 3.8 vs. 2.7, $p < 0.001$, $d = 2.26$). El MANOVA mostró un efecto significativo del género (Wilks' $\lambda = 0.854$, $F(5, 232) = 7.85$, $p < 0.001$, $\eta^2 = 0.145$) y del tipo de deporte (Wilks' $\lambda = 0.891$, $F(5, 232) = 5.42$, $p = 0.002$, $\eta^2 = 0.105$), sin interacción significativa. Los atletas de deportes individuales percibieron mayor comportamiento democrático y retroalimentación positiva.
Conclusiones. Estos hallazgos destacan la importancia de adaptar el estilo de liderazgo al género y tipo de deporte para optimizar el desarrollo, la satisfacción y la permanencia de los atletas jóvenes.

Palabras clave

Deporte juvenil; liderazgo del entrenador; diferencias de género; percepción del liderazgo; deportes de equipo; deportes individuales punto.

Introduction

Leadership in youth sport represents a critical element of athlete development (Camiré, M., et al., 2011), motivation (López de Subijana C, et al., 2023) and team dynamics. Coaches play a central role not only in technical and physical performance, but also in shaping psychosocial outcomes such as self-confidence, moral behavior, and group cohesion (Côté & Gilbert, 2009; Horn, 2002). The nature of the coach-athlete relationship is particularly influential during adolescence, a life stage marked by heightened social awareness, emotional variability, and identity formation (Weiss & Williams, 2004; Fraser-Thomas et al., 2005). Consequently, understanding how young athletes perceive the leadership styles of their coaches is essential for fostering optimal developmental environments.

Prior research highlights the complex interplay between athlete perceptions, gender norms, and leadership behaviors in youth sport environments. Horn (2002) noted that athlete perceptions of coaching behavior are influenced by both gender and performance level, with implications for self-esteem and dropout risk. Smoll and Smith (2008) stressed the importance of coach communication styles and their differential impact on boys and girls in team settings. In a more recent contribution, LaVoi (2016) argued that structural and perceptual barriers hinder female athletes' access to leadership roles and highlighted the need for equity-oriented coaching practices. In this context, it is worth noting that coaches who fulfill their performance expectations tend to view their leadership more positively, while frequent coaching changes appear ineffective in enhancing team outcomes (Coma Bau, Baiget Vidal, & Segura Bernal, 2024).

Moreover, Sampaio and Teques (2020) emphasize that as emotional intelligence-particularly emotion regulation, emerges as a crucial mediator between perceived coaching leadership and swimmer satisfaction, it becomes evident that integrating psychological skills into coaching not only strengthens athlete-coach relationships but also enhances overall satisfaction and performance outcomes.

Ruiz-Barquín, R., García-Naveira, A., & Núñez, A. (2024) further emphasize the emotional toll of poor leadership by showing that burnout symptoms in young athletes are strongly influenced by coaches' leadership styles, with democratic and instruction-focused approaches linked to lower burnout, while authoritarian styles tend to exacerbate emotional exhaustion—emphasizing the need for supportive and participatory leadership to safeguard athlete well-being.

Furthermore, research shows that leaders who demonstrate attributes such as inspiration, intellectual stimulation, and individualized consideration are more likely to foster satisfaction and extra effort among athletes, regardless of gender (Burton & Welty Peachey, 2009). Although gender stereotypes still influence perceptions, particularly in male-dominated settings, transformational leadership has been consistently associated with enhanced athlete motivation and commitment, thus indicating its practical relevance across diverse sports contexts.

Lestari, A. B., Sukamti, E. R., Fauzi, Tomoliyus, Sriwahyuniati, C. F., Karyono, T. H., & Hartanto, A. (2025) expand on this by demonstrating that transformational coaching and strong coach–athlete bonds significantly boost mental toughness in badminton players, fostering resilience, focus, and confidence, further validating the psychological benefits of supportive leadership.

Jin, H., Kim, S., Love, A., Jin, Y., & Zhao, J. (2022) also highlight this shift, showing that Chinese university football coaches predominantly use democratic and training-focused leadership styles, which athletes perceive as more effective in promoting motivation, satisfaction, and team cohesion—emphasizing the importance of athlete-centered coaching in collegiate sport settings.

Additionally, sport type plays a vital role in how leadership is enacted and perceived. Team sports are typically structured with hierarchical roles and formal captain-coach systems, often promoting directive styles of leadership (Riemer & Toon, 2001; Weiss & Fretwell, 2005). In contrast, individual sports may encourage autonomy, self-regulation, and greater athlete input—conditions that foster more collaborative leadership dynamics (Allen & Shaw, 2009; Fraser-Thomas et al., 2005).

Moreover, adolescence is a sensitive developmental stage where athletes begin to internalize messages about gender roles, authority, and competence (Côté, 1999; Weiss & Williams, 2004). Negative or stereotypical perceptions of leadership during this period can contribute to performance anxiety, social disengagement, or even dropout from sport (Crane & Temple, 2015).

Recent systematic reviews have also emphasized how traditional gender norms in youth sport reinforce differential access to leadership opportunities and influence long-term participation in sports activities (Bailey et al., 2013). Another important moderating factor is sport type. Individual sports (e.g., tennis, athletics) often require self-regulation, technical repetition, and close coach-athlete rapport. As a result, athletes in these contexts may prefer autonomy-supportive coaching that includes individualized feedback and encouragement (Allen & Shaw, 2009). In contrast, team sport athletes may benefit more from structured and directive leadership that emphasizes strategy, role clarity, and cohesion (Burton & Welty Peachey, 2009; Reimer & Toon, 2001).

Recent studies also point to other variables that influence leadership perception, including the athlete's level of competition, the coach's experience, and the cultural norms embedded within sport institutions (Horn, 2008). Despite this, limited attention has been paid to the combined influence of gender and sport type on leadership perceptions, especially in Eastern European sport settings. Much of the existing work has been conducted in North America, Australia, and Western Europe, where sport cultures may differ significantly in terms of coach authority, athlete autonomy, and structural support.

Pires, P., Batista, M., Mesquita, H., & Ibáñez, S. J. (2022) contribute to this discourse by showing that formal training for coaches significantly enhances their leadership behaviors, which in turn promote self-determination, emotional well-being, and life satisfaction among athletes with intellectual disabilities—demonstrating the transformative impact of structured, inclusive coaching.

Given these gaps and considering the increasing professionalization of youth sports across Europe and the growing psychological demands placed on young athletes, understanding how these populations interpret coach behavior is both timely and necessary (Gould et al., 2007). In the end, coaching practices that are both inclusive and effective must respond to the changing needs of diverse youth athletes. Rather than relying solely on tradition or intuition, these approaches should be grounded in evidence-based research that explores how various athlete subgroups perceive and experience leadership within sports contexts.

Lastly, Pérez-Torralba, A., González-García, H., Guijarro, E., & Rocamora, I. (2022) show that transformational leadership applied by physical education teachers in early childhood education fosters greater motivation, engagement, and enjoyment among young learners—highlighting the value of inspirational, individualized, and developmentally appropriate teaching strategies in PE settings.

In addition, shared leadership in team sports has emerged as a powerful framework for developing life skills, promoting collaboration, and instilling a collective mission—skills that extend far beyond athletic contexts (Hartoyo et al., 2024).

Method

Participants

The sample consisted of 240 youth athletes (50% girls), aged 13 to 17 years (M = 14.6, SD = 1.27), recruited from public and private sports academies across multiple regions. Participants represented six different sports, including three team sports: soccer (n = 41), volleyball (n = 39), and handball (n = 36) and three individual sports: athletics (n = 42), swimming (n = 44) and tennis (n = 38).

Demographic characteristics indicated that approximately 62% of athletes trained at urban-based institutions, while the remaining 38% were affiliated with rural or regional clubs. Participants reported a mean sport participation experience of 4.8 years (SD = 2.1), with weekly training frequency ranging from 2 to 6 sessions. Most participants (71%) were engaged in competitive-level sport (local, regional, or national), and 29% identified as recreational athletes. Parental educational background was also recorded, with 58% of participants reporting at least one parent with a university degree.

This demographic diversity allowed for a nuanced analysis of leadership perception across training environments, competitive levels, and socioeconomic backgrounds.

Inclusion criteria for participation required that athletes: (1) be actively enrolled in a structured sport training program for at least one year prior to the study; (2) be between the ages of 13 and 17 at the time of data collection; (3) train in one of the selected sports disciplines; and (4) provide informed

consent, along with parental consent for minors. Athletes with injuries that limited full participation in regular training or who failed to complete at least 90% of the survey were excluded from the final sample.

Study design

Data collection was conducted using a cross-sectional design during scheduled training sessions. Participants were informed about the study's objectives and provided informed consent, with parental consent obtained for minors. Surveys were administered on paper and supervised by trained researchers to ensure completeness and consistency

Phase I: Instrument Selection and Theoretical Basis

A comprehensive literature review was conducted across databases including PubMed, Scopus, Web of Science, SPORT Discus, and PsycINFO. The keywords used were: "coach leadership," "sports psychology," "youth athlete leadership perception," and "leadership scale in sport." The LSS originally developed by Chelladurai and Saleh (1980) was identified as the most widely used and validated instrument to measure perceived coach leadership in sports settings. The scale includes five key dimensions: Training and Instruction, Democratic Behavior, Autocratic Behavior, Social Support, and Positive Feedback.

The Leadership Scale for Sports (LSS) is a standardized psychometric instrument designed to assess athletes' perceptions of their coach's leadership behaviors. The LSS comprises 40 items that are divided into five key leadership dimensions:

1. Training and Instruction (Items 1–13)
2. Democratic Behavior (Items 14–22)
3. Autocratic Behavior (Items 23–27)
4. Social Support (Items 28–35)
5. Positive Feedback (Items 36–40)

Each item begins with the stem "My coach..." and is rated on a five-point Likert scale, ranging from 1 = Never, 2 = Seldom (25% of the time), 3 = Occasionally (50%), 4 = Often (75%), to 5 = Always. Respondents are instructed to indicate the frequency with which their coach exhibits leadership behavior. Subscale scores are calculated by summing the relevant items and dividing by the number of items in that subscale, resulting in an average score ranging from 1 to 5 for each leadership dimension.

Higher scores in each subscale reflect a stronger athlete perception of that specific coaching behavior. For example, higher scores on "Democratic Behavior" indicate that the athletes perceive their coach as collaborative and inclusive in decision-making.

Phase II: Cultural and Age Adaptation

Given the age range of our sample (13–17 years), the original items were linguistically simplified for comprehension without altering conceptual meaning. A panel of bilingual sport psychologists translated the instrument using forward and backward translation techniques. The resulting version maintained the original 40 items, with responses rated on a 5-point Likert scale (1 = Never, 5 = Always).

Phase III: Content and Face Validation

The adapted version underwent content and face validation by a panel of five experts in sport psychology, youth development, and psychometrics. Reviewers evaluated each item for clarity, relevance, and age appropriateness. Minor modifications were made based on consensus. All 40 items were retained.

Phase IV: Pilot Testing

A pilot study (n = 30) was conducted with adolescent athletes from both team and individual sports. The primary aim was to identify issues in comprehension, layout, and response patterns. Participants were instructed to flag any confusing terms or statements. The average completion time was 11 minutes. No items exceeded the acceptable threshold of 10% missing or ambiguous responses.

Phase V: Psychometric Validation

The full sample (N = 240) was used to assess the psychometric properties of the instrument. Internal consistency was evaluated via Cronbach's Alpha, with results ranging from α = 0.941 to α = 0.979 across subscales, and an overall α = 0.958. Test-retest reliability was assessed using Cohen's Kappa and linear weighted Kappa on a subsample of 84 participants, yielding moderate to substantial agreement (κ = 0.32 to 0.76). Construct validity was further supported by confirmatory MANOVA and correlation analyses with background variables such as sport type, gender, and years of experience.

This rigorous multi-step process confirmed that the adapted LSS is a reliable and valid tool for assessing youth athlete perceptions of coach leadership behaviors in both individual and team sport settings.

Statistical analysis

All statistical analyses were conducted using IBM SPSS Statistics version 27. Initial descriptive analyses were performed to summarize sample characteristics and responses across the five leadership dimensions: Training and Instruction, Democratic Behavior, Autocratic Behavior, Social Support, and Positive Feedback. These included calculations of means (M), standard deviations (SD), to examine data distribution. Normality was verified through the Shapiro–Wilk test, and Levene's test confirmed homogeneity of variances prior to conducting parametric tests.

To evaluate internal consistency, Cronbach's alpha coefficients were computed for each subscale and the full LSS instrument. Additionally, test-retest reliability was assessed using Cohen's Kappa and linear weighted Kappa on a subsample (n = 84), with most items demonstrating moderate to substantial agreement, supporting the instrument's temporal stability.

To explore group differences, a Multivariate Analysis of Variance (MANOVA) was conducted with gender and sport type (individual vs. team) as independent variables and the five LSS dimensions as dependent variables. Where significant multivariate effects were observed, Univariate ANOVAs were used to determine which leadership dimensions differed significantly. Tukey's HSD post hoc tests were performed to examine specific group contrasts when applicable.

Furthermore, independent-samples t-tests were employed to assess gender-based differences in perceived leadership behaviors. Effect sizes were calculated using Cohen's d for t-tests and partial eta squared (η^2) for MANOVA and ANOVA, interpreted as follows (Cohen, 1988):

- Small: d = 0.20 or η^2 = 0.01
- Medium: d = 0.50 or η^2 = 0.06
- Large: d = 0.80 or $\eta^2 \geq 0.14$.

Finally, a post hoc G*Power analysis was conducted to verify the statistical power of the study. Assuming α = 0.05, power = 0.95, and observed effect sizes (d = 0.71–1.07), the minimum required sample per group was between 27 and 44. The final sample of 240 athletes confirmed that the study was adequately powered to detect meaningful group differences.

Results

The internal consistency of the Leadership Scale for Sports (LSS) was evaluated using Cronbach's Alpha coefficient for each of the 40 items. Cronbach's Alpha is a commonly used measure to assess the reliability or internal consistency of a psychometric scale, indicating how closely related a set of items are as a group. All five LSS subscales demonstrated excellent internal consistency, with item-level alpha values ranging from 0.941 to 0.979, based on 95% confidence intervals (Table 1). The lowest alpha value was recorded for item 11 (α = 0.941, 95% CI: 0.921–0.961), while the highest was observed for item 35 (α = 0.979, 95% CI: 0.959–0.999), suggesting a high degree of coherence within each leadership behavior dimension. The overall Cronbach's Alpha for the full 40-item LSS was 0.958 (95% CI: 0.955–0.962), confirming a high level of internal consistency across the instrument. These findings reinforce the robustness and reliability of the LSS when administered to adolescent athletes and suggest that the scale effectively captures perceptions of coaching leadership behaviors in sport settings. While Cronbach's Alpha values above 0.9 are typically interpreted as excellent internal consistency, values

approaching 0.95 or higher may suggest redundancy (Tavakol & Dennick, 2011). Although this study did not aim to perform item reduction or dimensionality testing, future research should consider confirmatory factor analysis or item-total correlations to assess the necessity of each item.

Table 1. Cronbach's alpha values and confidence interval (95% CI)

Question	α Cronbach (95% CI)	Question	α Cronbach (95% CI)
1	0.955 (0.935–0.975)	2	0.978 (0.958–0.998)
3	0.969 (0.949–0.989)	4	0.964 (0.944–0.984)
5	0.946 (0.926–0.966)	6	0.946 (0.926–0.966)
7	0.942 (0.922–0.962)	8	0.975 (0.955–0.995)
9	0.964 (0.944–0.984)	10	0.968 (0.948–0.988)
11	0.941 (0.921–0.961)	12	0.979 (0.959–0.999)
13	0.973 (0.953–0.993)	14	0.948 (0.928–0.968)
15	0.947 (0.927–0.967)	16	0.947 (0.927–0.967)
17	0.952 (0.932–0.972)	18	0.961 (0.941–0.981)
19	0.957 (0.937–0.977)	20	0.952 (0.932–0.972)
21	0.964 (0.944–0.984)	22	0.946 (0.926–0.966)
23	0.952 (0.932–0.972)	24	0.955 (0.935–0.975)
25	0.958 (0.938–0.978)	26	0.971 (0.951–0.991)
27	0.948 (0.928–0.968)	28	0.961 (0.941–0.981)
29	0.964 (0.944–0.984)	30	0.942 (0.922–0.962)
31	0.964 (0.944–0.984)	32	0.947 (0.927–0.967)
33	0.943 (0.923–0.963)	34	0.978 (0.958–0.998)
35	0.979 (0.959–0.999)	36	0.972 (0.952–0.992)
37	0.952 (0.932–0.972)	38	0.944 (0.924–0.964)
39	0.967 (0.947–0.987)	40	0.958 (0.938–0.978)

Cronbach's alpha = 0.958 (0.955 – 0.962)

To assess the test–retest reliability of the Leadership Scale for Sports (LSS), Cohen's Kappa and linear weighted Kappa coefficients were calculated for each of the 40 items. According to Landis and Koch's interpretation guidelines, Kappa values between 0.61 and 0.80 indicate substantial agreement, while values above 0.81 reflect almost perfect agreement.

Across the 40 questions, Kappa values ranged from 0.32 to 0.67, while linear weighted Kappa values ranged from 0.38 to 0.73. A total of 15.2% of items demonstrated regular agreement (Kappa < 0.41), 71.7% showed moderate agreement (0.41 ≤ Kappa < 0.61), and 13.0% exhibited substantial agreement (Kappa ≥ 0.61). When using linear weighted Kappa, which accounts for the ordinal nature of Likert-type responses, 13.0% of the items displayed regular agreement, 56.5% moderate agreement, and 30.4% substantial agreement.

Percentage agreement values ranged from 48.8% (95% CI: 37.8–59.8) for item 20 to 84.5% (95% CI: 74.6–91.1) for item 33, with most items clustering around the 60–75% range. Items with the highest reliability included question 33 (Kappa = 0.49; 84.5%) and question 34 (Kappa = 0.67; 81.0%). These results confirm that the LSS items demonstrate an acceptable level of stability over time when administered to adolescent athletes.

Taken together, these findings support the temporal stability, internal reliability, and construct validity of the LSS when applied to diverse youth populations across both team and individual sport contexts.

Table 2. Kappa index and percentage agreement values (%) between test and retest

Question (n)	Kappa	K Linear	% (95% CI)	Question (n)	Kappa	K Linear	% (95% CI)
1	0.33	0.38	71.4 (60.4–80.5)	21	0.50	0.59	61.7 (49.3–71.0)
2	0.46	0.50	67.5 (56.1–77.1)	22	0.52	0.55	68.6 (57.4–78.1)
3	0.57	0.62	78.6 (68.0–84.6)	23	0.42	0.54	57.1 (45.8–67.7)
4	0.55	0.60	65.4 (54.0–75.4)	24	0.60	0.70	72.6 (61.6–81.5)
5	0.54	0.55	72.6 (61.6–81.5)	25	0.66	0.67	78.3 (67.6–86.3)
6	0.41	0.54	60.7 (49.4–71.0)	26	0.49	0.58	65.8 (54.4–75.7)
7	0.38	0.53	57.8 (46.5–68.4)	27	0.44	0.50	62.0 (50.6–72.0)
8	0.44	0.53	62.6 (51.3–72.8)	28	0.37	0.54	53.7 (42.3–64.8)
9	0.38	0.40	60.2 (48.8–70.6)	29	0.45	0.41	58.3 (47.0–68.8)
10	0.57	0.63	73.8 (62.8–82.5)	30	0.32	0.42	54.7 (43.5–65.5)
11	0.42	0.55	53.0 (41.8–63.9)	31	0.53	0.54	81.0 (70.6–88.4)
12	0.36	0.45	56.0 (44.7–66.6)	32	0.56	0.51	77.3 (66.7–85.5)
13	0.60	0.72	79.5 (68.9–87.2)	33	0.49	0.39	84.5 (74.6–91.1)
14	0.60	0.65	77.3 (66.7–85.5)	34	0.67	0.73	81.0 (70.6–88.4)
15	0.48	0.56	59.5 (48.2–69.9)	35	0.55	0.35	69.8 (58.6–79.2)

16	0.46	0.53	60.2 (48.8–70.6)	36	0.59	0.61	69.0 (57.8–78.4)
17	0.46	0.53	63.1 (51.8–73.1)	37	0.50	0.61	66.6 (55.4–76.3)
18	0.43	0.54	56.6 (45.3–67.3)	38	0.63	0.68	76.1 (65.4–84.5)
19	0.41	0.53	56.0 (44.7–66.6)	39	0.66	0.65	75.6 (64.6–84.1)
20	0.38	0.52	48.8 (37.8–59.8)	40	0.54	0.48	69.5 (58.2–78.9)

Follow-up independent t-tests (Table 3) showed that girls scored significantly higher in Democratic Behavior (t (238) = 3.78, p < .001), Social Support (t (238) = 3.22, p = .001), and Positive Feedback (t (238) = 2.91, p = .004), while boys rated coaches significantly higher in Autocratic Behavior (t (238) = -4.12, p < .001). Training & Instruction also showed significant group differences (t (238) = 2.54, p = .012). Effect size interpretations based on Cohen's d were as follows: Democratic Behavior (d = 0.95, large), Social Support (d = 0.88, large), Autocratic Behavior (d = 1.07, large), Positive Feedback (d = 0.71, moderate to large), and Training & Instruction (d = 0.72, moderate to large). These values suggest meaningful practical differences between groups.

Table 3. T-Test Results for LSS Dimensions by Gender

LSS Dimension	Girls Mean (SD)	Boys Mean (SD)	T (238)	p-value	Cohen's d (Effect Size)
Democratic Behavior	4.3 (0.37)	3.5 (0.38)	3.78	< .001	0.95 (large)
Social Support	4.2 (0.30)	3.6 (0.42)	3.22	.001	0.88 (large)
Positive Feedback	4.0 (0.33)	3.4 (0.40)	2.91	.004	0.71 (mod-large)
Autocratic Behavior	2.9 (0.38)	3.8 (0.41)	-4.12	< .001	1.07 (large)
Training & Instruction	4.1 (0.35)	3.5 (0.40)	2.54	.012	0.72 (mod-large)

Table 4. MANOVA Between Gender and Sports Type

Source	Wilks' λ	F	df	p-value	Partial η^2
Gender	0.854	7.85	(5, 232)	<.001	0.145
Sport Type	0.891	5.42	(5, 232)	0.002	0.105
Gender × Sport	0.963	0.83	(5, 232)	0.604	0.019

Multivariate Analysis of Variance (MANOVA) was conducted to assess the influence of gender and sport type on the five dimensions of leadership as measured by the LSS. The multivariate test (Table 3) revealed significant main effects for both gender (Wilks' $\lambda = 0.854$, $F (5, 232) = 7.85$, $p < .001$, $\eta^2 = .145$) and sport type (Wilks' $\lambda = 0.891$, $F (5, 232) = 5.42$, $p = .002$, $\eta^2 = .105$), indicating that both factors influenced perceptions of coaching leadership. However, no significant interaction was found between gender and sport type (Wilks' $\lambda = 0.963$, $F (5, 232) = 0.83$, $p = 0.604$, $\eta^2 = .019$).

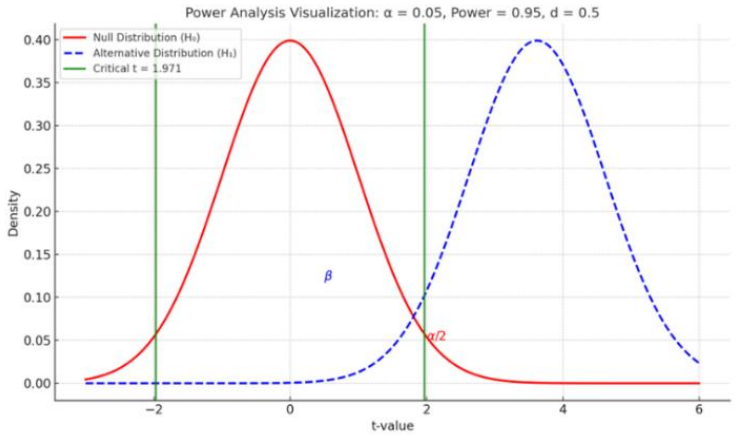
Table 5. Univariate ANOVA

LSS Dimension	F (Gender)	p	η^2	F (Sport Type)	p
Training & Instruction	12.48	<.001	0.054	6.23	0.013
Democratic Behavior	19.25	<.001	0.079	9.31	0.003
Autocratic Behavior	22.67	<.001	0.089	11.15	0.001
Social Support	17.84	<.001	0.072	8.49	0.004
Positive Feedback	13.76	<.001	0.058	7.42	0.007

Univariate ANOVA (Table 5) showed that gender significantly impacted all five LSS dimensions. Girls scored significantly higher in Democratic Behavior, Social Support, and Positive Feedback, while boys perceived higher levels of Autocratic Behavior. Training & Instruction scores also showed gender-based differences. Similarly, sport type (individual vs. team) significantly affected all dimensions, with individual sport athletes perceiving higher Democratic Behavior and Positive Feedback than those in team sports. Effect sizes (partial eta squared) indicated moderate practical significance across most variables, ranging from .036 to .089. These findings reinforce the importance of tailoring coaching approaches to athlete gender and sport context, ensuring leadership behaviors are perceived as supportive and motivating. To visually represent the statistical power of the study design, the figure below illustrates the overlap between the null and alternative distributions based on G*Power parameters. The analysis was conducted for a two-tailed t-test comparing independent means, with an alpha level (α) of 0.05 and power ($1 - \beta$) of 0.95. An assumed medium effect size (Cohen's d = 0.5) was used, aligning with empirical findings. The noncentrality parameter ($\delta = 3.62$) and the critical t-value (± 1.971) define the decision threshold. The red curve shows the null hypothesis distribution, while the

dashed blue curve represents the alternative hypothesis. The shaded regions around the critical values represent the Type I error rate (α), while the overlap area under the red curve to the left of the blue curve indicates the Type II error (β). This visualization confirms that with the required total sample size of 210 (105 per group), the study design maintains adequate statistical power to detect meaningful group differences.

Figure 1. GPower analysis of sample size.



Discussion

This study advances the discourse on youth sport leadership by demonstrating that both athlete gender and sport type independently and interactively influence perceptions of coaching behaviors across multiple leadership dimensions. The data reveal a stratified landscape in which female athletes systematically favor democratic leadership, emotional support, and affirmational feedback, while male athletes demonstrate a greater tolerance for autocratic leadership traits. This divergence potentially reflects entrenched sociocultural scripts that link authority and masculinity within competitive sport ecosystems. This dichotomy is not merely descriptive but diagnostic of deeper psychosocial mechanisms: it suggests that adolescent athletes interpret leadership not only through behavioral observation but also through the lens of gendered identity development, relational trust expectations, and internalized leadership archetypes.

These findings affirm prior theoretical frameworks—such as transformational leadership theory (Bass & Riggio, 2006) and the coach–athlete relationship model (Jowett & Cockerill, 2003)—while offering new insight into their practical applicability in youth sport domains. Equally noteworthy is the impact of sport structure—specifically, the distinction between team-based and individual sports—on leadership perception. Athletes in individual sports consistently rated democratic and feedback-centered coaching more positively, supporting the argument that the cognitive-emotional load borne by solo athletes necessitates a leadership style emphasizing autonomy, precision communication, and individualized recognition.

In contrast, the hierarchically organized nature of team sports, often characterized by explicit role demarcation and strategy standardization, may normalize directive and performance-driven leadership, particularly for male athletes who are socialized to value hierarchy and competition. These patterns mirror, but also refine, earlier findings by Smoll and Smith (2008), Reimer and Toon (2001), and Allen and Shaw (2009), extending their applicability to Eastern European sport contexts, which have historically operated under centralized, top-down coaching systems. The current data suggest that while some leadership norms may be universal in function (e.g., positive feedback supporting motivation), others are culturally modulated and developmentally contingent, particularly in settings where obedience, discipline, and collectivism have traditionally dominated sport pedagogy.

Interestingly, the robust preference among athletes for democratic leadership, even in cultures that historically favor authoritarian control, raises important questions about the evolution of leadership

expectations in youth sport. Is this a reflection of globalizing sport ideologies influenced by Western psychological models, or an emergent generational shift in how authority is internalized by adolescents in competitive environments? This tension invites a re-examination of assumptions regarding coach efficacy and authority legitimacy within transitional sport systems navigating between tradition and innovation.

Taken together, the study's findings foreground the necessity of situational, athlete-responsive leadership, especially during adolescence, a critical phase where psychosocial scaffolding, peer dynamics, and identity formation converge to shape long-term sport engagement and well-being. Coaches who fail to adapt their leadership to these intersecting dimensions risk undermining athlete motivation, relational trust, and performance sustainability.

Despite the richness of the data, several limitations warrant acknowledgment. The study employed a cross-sectional, perception-based design which—while effective in capturing immediate evaluative states—lacks temporal depth and contextual richness. Self-reports from adolescent athletes may have been influenced by peer dynamics, transient satisfaction with performance, or limited understanding of leadership concepts, all of which could affect the accuracy of their evaluations. Furthermore, the study excluded the coach's voice, rendering invisible the potential disjunction between intended leadership delivery and athlete reception. Also absent is a multilevel analysis of institutional influences (e.g., school culture, coach education systems), which may invisibly scaffold or constrain both coach behavior and athlete expectations.

Future research should pursue longitudinal, multi-perspective designs that trace the dynamic evolution of leadership perception across sport seasons, coaching transitions, and psychological milestones. Incorporating coach interviews, observational fieldwork, and athlete developmental profiling would allow for a more holistic understanding of the relational and systemic variables at play. Moreover, expanding the research into cross-cultural comparative frameworks, especially between post-socialist and neoliberal sport models, could reveal whether observed patterns are idiosyncratic, regional adaptations or evidence of a broader ideological shift in sport leadership expectations.

Ultimately, this study challenges the reductionist view of sport leadership as a static behavioral repertoire. Instead, it conceptualizes leadership as a relational, developmental, and culturally entangled construct—one that must be carefully attuned to athlete identity, sport structure, and social context. By offering empirical clarity and interpretive depth on how gender and sport type contour leadership perception, this work contributes not only to academic literature but also to the applied transformation of coaching education toward equity, personalization, and developmental integrity.

Conclusions

In conclusion, this study confirms that both gender and sport type significantly shape youth athletes' perceptions of coaching leadership. Specifically, female athletes and participants in individual sports tend to favor democratic, supportive, and feedback-oriented leadership styles. These findings extend the existing literature by validating these patterns within an Eastern European context and by emphasizing the independent—rather than interactive—effects of gender and sport type.

Our results underscore the importance of equipping coaches with the skills necessary to recognize and adapt to the diverse needs of athletes. Leadership in youth sport should not be monolithic; rather, it must reflect the psychological and contextual realities of the athletes it serves. Future research and policy should advance evidence-based, context-sensitive approaches to coach education, ensuring that all young athletes are supported in environments that promote both development and well-being.

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References

Allen, J. B., & Shaw, S. (2009). Women coaches' perceptions of their sport organizations' social environment: Supporting coaches' psychological well-being. The Sport Psychologist, 23(3), 346–366. https://doi.org/10.1123/tsp.23.3.346

Bailey, R., Hillman, C., Arent, S., & Petitpas, A. (2013). Physical activity: An underestimated investment in human capital? Journal of Physical Activity and Health, 10(3), 289–308. https://doi.org/10.1123/jpah.10.3.289

Bass, B. M., & Riggio, R. E. (2006). *Transformational leadership* (2nd ed.). Lawrence Erlbaum Associates Publishers. https://doi.org/10.4324/9781410617095

Burton, L. J., & Welty Peachey, J. (2009). Transactional or transformational? Leadership preferences of Division III athletic administrators. Journal for the Study of Sports and Athletes in Education, 3(3), 248–273. https://doi.org/10.1123/jis.2.2.245

Camiré, M., Forneris, T., Trudel, P., & Bernard, D. (2011). Strategies for Helping Coaches Facilitate Positive Youth Development Through Sport. Journal of Sport Psychology in Action, 2(2), 92–99. https://doi.org/10.1080/21520704.2011.584246

Chelladurai, P., & Saleh, S. D. (1980). Dimensions of leader behavior in sports: Development of a leadership scale. Journal of Sport Psychology, 2(1), 34–45. https://doi.org/10.1123/jsp.2.1.34

Coma Bau, J., Baiget Vidal, E., & Segura Bernal, J. (2024). Analysis of the self-perceptions of leadership behavior and changes in the position in basketball coaches of the League (ACB). *Retos*, *60*, 490–497. https://doi.org/10.47197/retos.v60.105154

Côté, J. (1999). The influence of the family in the development of talent in sport. The Sport Psychologist, 13(4), 395–417. https://doi.org/10.1123/tsp.13.4.395

Côté, J., & Gilbert, W. (2009). An integrative definition of coaching effectiveness and expertise. International Journal of Sports Science & Coaching, 4(3), 307–323. https://doi.org/10.1260/174795409789623892

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

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

Gould, D., Collins, K., Lauer, L., & Chung, Y. (2007). Coaching Life Skills through Football: A Study of Award Winning High School Coaches. Journal of Applied Sport Psychology, 19(1), 16–37. https://doi.org/10.1080/10413200601113786

Hartanto, A, Lestari, A. B., Sukamti, E. R., Fauzi, F., Tomoliyus, T., Sriwahyuniati, C. F. ., & Karyono, T. H. (2025). Mental toughness of badminton athletes: the role of coach leadership type and coach-athlete relationship. *Retos*, *62*, 1137–1147. https://doi.org/10.47197/retos.v62.111181

Hartoyo, A., Samodra, Y. T. J., Suryadi, D., Hidayat, S., Syam, A., & Sinulingga, A. (2024). What are the trends in shared leadership development and leadership life skills formation through sport activities: a literature review. *Retos*, *58*, 450–461. https://doi.org/10.47197/retos.v58.107445

Horn, T. S. (2002). Coaching effectiveness in the sport domain. In T. S. Horn (Ed.), *Advances in sport psychology* (2nd ed., pp. 309–354). Human Kinetics.

Horn, T. S. (2008). Coaching effectiveness. In T. S. Horn (Ed.), *Advances in sport psychology* (3rd ed., pp. 239–267). Human Kinetics.

Jin H, Kim S, Love A, Jin Y, Zhao J. Effects of leadership style on coach-athlete relationship, athletes' motivations, and athlete satisfaction. Front Psychol. 2022 Dec 12; 13:1012953. doi: 10.3389/fpsyg.2022.1012953.

Jowett, S., & Cockerill, I.M. (2003). Olympic medallists' perspective of the athlete-coach relationship. *Psychology of Sport and Exercise, 4*(4), 313–331. https://doi.org/10.1016/S1469-0292(02)00011-0

LaVoi, N. M. (2016). *Women in sports coaching*. Routledge. https://doi.org/10.4324/9781315734651.

López de Subijana C, Martin LJ, McGuire CS, Côté J. Moderators of the coach leadership and athlete motivation relationship. Eur J Sport Sci. 2023 Mar;23(3):404-414. doi: 10.1080/17461391.2022.2041101.

Norman, L. (2010). Feeling second best: Elite women coaches' experiences. *Sociology of Sport Journal, 27*(1), 89–104. https://doi.org/10.1123/ssj.27.1.89

Pérez-Torralba, A., González-García, H., Guijarro, E., & Rocamora, I. (2022). Transformational leadership of the physical education teacher in Early Childhood Education: A didactic proposal: Una propuesta didáctica (A didactic proposal). *Retos*, *44*, 864–875. https://doi.org/10.47197/retos.v44i0.90889

Pires, P. R. I., Batista, M., Mesquita, H., & Ibáñez, S. J. (2022). Relationship of formal training on coaches' leadership and self-determination and well-being of athletes with intellectual disabilities. *Retos*, *46*, 480–489. https://doi.org/10.47197/retos.v46.93064

Reimer, H. A., & Toon, K. (2001). Leadership and satisfaction in tennis: Examination of congruence, gender, and ability. Journal of Sport Behavior, 24(2), 173–187. https://doi.org/10.1080/02701367.2001.10608957

Ruiz-Barquín, R., García-Naveira Vaamonde, A., & Núñez Prats, A. (2024). Description of Burnout levels in a sample of young athletes and its relationship with leadership perception and preferences. *Retos*, *61*, 832–852. https://doi.org/10.47197/retos.v61.104784

Sampaio, C., & Teques, P. (2020). Perceção de liderança e satisfação em nadadores: os efeitos de mediação da inteligência emocional (Leadership perception and satisfaction in swimmers: the mediation effects of emotional intelligence) (Percepción de liderazgo y satisfacción en nadadores: l. *Retos*, *37*, 660–665. https://doi.org/10.47197/retos.v37i37.74347

Smoll, F. L., & Smith, R. E. (2008). Coaches who never lose: Making sure athletes win, no matter what the score. (3rd. Ed.). Palo Alto, CA: Warde.

Tavakol M, Dennick R. Making sense of Cronbach's alpha. Int J Med Educ. 2011 Jun 27;2:53-55. doi: 10.5116/ijme.4dfb.8dfd.

Weiss, M. R., & Fretwell, S. D. (2005). The Parent-Coach/Child-Athlete Relationship in Youth Sport: Cordial, Contentious, or Conundrum? Research Quarterly for Exercise and Sport, 76(3), 286–305. https://doi.org/10.1080/02701367.2005.10599300

Weiss, M. R., & Williams, L. (2004). The why of youth sport involvement: A developmental perspective on motivational processes. In M. R. Weiss (Ed.), Developmental sport and exercise psychology: A lifespan perspective (pp. 223–268). Fitness Information Technology.

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