Sportis
Revista Técnico-Científica del Deporte Escolar, Educación Física y Psicomotricidad
Scientific Technical Journal of School Sport, Physical Education and Psychomotricity

Published by: Campus Educa Sportis. Collaborator: University of A Coruña A Coruña. Spain
E-mail: v.arufe@udc.es Web: www.sportisjournal.com
ISSN-e 2386-8333
OPEN ACCESS Creative Commons

Original Article. Perspectives on sport and sustainability values among Spanish and Guatemalan youth.
Vol. 11, n.º 4; p. 1-25, october 2025. https://doi.org/10.17979/sportis.2025.11.4.11681

Perspectives on sport and sustainability values among Spanish and Guatemalan youth

Perspectivas sobre el deporte y valores de sostenibilidad en jóvenes españoles y guatemaltecos

Amapola Arimary[1]; Covadonga Mateos-Padorno[2], Juan Pedro Fuentes-García[3]; María Eugenia García-Sottile [4]

[1] Comité Olímpico Guatemalteco y Confederación Deportiva Autónoma de Guatemala, Guatemala

[2] Univ. de Las Palmas de Gran Canaria, España

[3] Univ. de Extremadura, España

[4] Univ. Católica de Valencia San Vicente Mártir, España

*Autor para correspondencia: Eugenia García-Sottile (eugenia.garcia@ucv.es)

Cronograma editorial: *Artículo recibido 27/01/2025 Aceptado: 14/05/2025 Publicado: 01/10/2025*
https://doi.org/10.17979/sportis.2025.11.4.11681

Para citar este artículo, utilice la siguiente referencia:
Arimary, A.; Mateos-Padorno, C.; Fuentes-García, J.P.; García-Sottile, E. (2025). Perspectives on sport and sustainability values among Spanish and Guatemalan youth *Sportis Sci J*, 11 (4), 1-25 https://doi.org/10.17979/sportis.2025.11.4.11681

Author contribution: All authors contributed equally to the work.

Funding: The study did not obtain funding.

Conflict of interest: The authors declare that they have no conflict of any kind

Ethical aspects: The study declares the ethical aspects.

Sportis
Revista Técnico-Científica del Deporte Escolar, Educación Física y Psicomotricidad
Scientific Technical Journal of School Sport, Physical Education and Psychomotricity
Published by: Campus Educa Sportis. Collaborator: University of A Coruña
A Coruña. Spain
E-mail: v.arufe@udc.es Web: www.sportisjournal.com
ISSN-e 2386-8333
OPEN ACCESS Creative Commons

Original Article. Perspectives on sport and sustainability values among Spanish and Guatemalan youth.
Vol. 11, n.º 4; p. 1-25, october 2025. https://doi.org/10.17979/sportis.2025.11.4.11681

Abstract
The research analysed students' perceptions of sport values and attitudes towards sustainability, aiming to identify possible value variations by age and sex and determine how groups apply and value these principles. The study included a representative sample of 833 youths aged 12-20 from Spain and Guatemala, with a mean age of 15.79 ± 1.91. An online questionnaire assessed the practice and importance of sports and sustainability values, revealing significant differences based on male or female sex. Both sexes showed similar significance in self-realization across all age groups. Age significantly impacted competitiveness and cooperation practices. Older youths tended to practice and value competitiveness, cooperation, and self-realization more than younger ones, though they led less healthy lifestyles but were more committed to combating climate change. Females generally reported higher levels of practice and importance in sustainability factors than males. Older age groups reported higher levels of sustainability practices, but the importance placed on these factors remained consistent across age groups, reflecting a shared value system despite practice differences.
Keywords: olympic movement; sport; SDG, environmental behavior

Resumen
La investigación analizó las percepciones de los estudiantes sobre los valores del deporte y sus actitudes hacia la sostenibilidad, con el objetivo de identificar posibles variaciones en los valores según la edad y el sexo, y determinar cómo los grupos aplican y valoran estos principios. El estudio incluyó una muestra representativa de 833 jóvenes de entre 12 y 20 años de España y Guatemala, con una edad media de 15.79 ± 1.91. Un cuestionario en línea evaluó la práctica y la importancia de los valores del deporte y la sostenibilidad, revelando diferencias significativas según el sexo masculino o femenino. Ambos sexos mostraron una significancia similar en la autorrealización en todos los grupos de edad. La edad impactó significativamente en las prácticas de competitividad y cooperación. Los jóvenes mayores tendían a practicar y valorar más la competitividad, la cooperación y la autorrealización que los más jóvenes, aunque llevaban estilos de vida menos saludables, pero estaban más comprometidos con la lucha contra el cambio climático. Las mujeres generalmente reportaron niveles más altos de práctica e importancia en varios factores de sostenibilidad en comparación con los hombres. Los grupos de mayor edad también informaron niveles más altos de prácticas de sostenibilidad, pero la importancia otorgada a estos factores se mantuvo constante entre los grupos de edad, lo que refleja un sistema de valores compartidos a pesar de las diferencias en las prácticas
Keywords: movimiento olímpico; deporte; ODS, comportamiento ambiental

Introduction

Today´s global world moves within parameters identified with triumph, power, or prestige. The constant social, economic, and political changes impact sports; it needs to

Sportis
Revista Técnico-Científica del Deporte Escolar, Educación Física y Psicomotricidad
Scientific Technical Journal of School Sport, Physical Education and Psychomotricity
Published by: Campus Educa Sportis. Collaborator: University of A Coruña
A Coruña. Spain
E-mail: v.arufe@udc.es Web: www.sportisjournal.com
ISSN-e 2386-8333
Creative Commons

reclaim its role regaining its value system with an educational and humanized vision to restore sportsmanship and the enjoyment beyond just winning (Šarkauskienė, 2020).

Respect for the rules includes fairness between competitors, for the wellbeing and health of the opponent, and for the environment. The sustainability transition (ST) focuses on long-term changes towards more sustainable systems, relevant for analyzing youth sports values (Loorbach, Frantzeskaki, & Avelino, 2017). Sports play a crucial role in sustainable development and support the United Nations' Sustainable Development Goals (SDGs) (UN, 2015). Sports' role is to promote social well-being, development, and peace, particularly in Latin America, where research on sports' social impact and contribution to SDGs is limited. A Colombian study highlights sports' role in achieving SDGs, promoting peace, and good governance, supported by public policies (Tabarquino-Muñoz, Zuluaga-Ocampo, & Alarcón-Muriel, 2022). In this same sense, a study concluded that Physical Education classes can significantly foster students' values by encouraging problem-solving scenarios that promote reflection. Simply attending class is insufficient; Teachers must intentionally design these scenarios and facilitate meaningful dialogue (Kurnatz et al., 2024).

The International Olympic Committee (IOC) Sustainability Strategy outlines efforts to minimize the environmental footprint of the Olympic Games while maximizing positive social and economic impacts. It aligns with the Olympic Agenda 2020+5 and includes initiatives like reducing carbon emissions, promoting sustainable urban development, and advocating for climate action (Comité Olímpico Internacional, 2020). Olympism365 is another (IOC) strategy that integrates sport into sustainable development goals (SDGs). It focuses on community sports programs, gender equality, and using sport as a tool for social change and environmental sustainability (IOC, 2017).

Olympic values remain relevant and can unite communities and overcome social and racial divisions (Bass, 2018). Olympic values can promote justice and equality within both sport and society. In this sense, the need to establish norms and standards for Non-Governmental Organizations (NGOs) providing sport development and peace programs, as well as for training Physical Education (PE) teachers, sports coaches, and instructors

Sportis
Revista Técnico-Científica del Deporte Escolar, Educación Física y Psicomotricidad
Scientific Technical Journal of School Sport, Physical Education and Psychomotricity
Published by: Campus Educa Sportis. Collaborator: University of A Coruña
A Coruña. Spain
E-mail: v.arufe@udc.es Web: www.sportisjournal.com
ISSN-e 2386-8333
OPEN ACCESS Creative Commons

to incorporate values-based approaches, such as the International Olympic Committee's Olympic Values Education Project (OVEP), into their teaching practices stands out (Keim, 2024). Gender equity and environmental sustainability are closely linked, with women uniquely positioned to lead sustainability efforts despite being heavily impacted by the climate crisis (Gloor, Bajet, & Ruigrok, 2022). Gender plays a crucial role in sustainability transitions, addressing major environmental problems such as energy, water, food, and mobility. A long-term study compiled by World Wildlife Fund (WWF) (2024) argued that empowering women in natural resource governance can improve conservation dynamics. Boyer, Meijer & Gilligan (2020) identified a correlation between gender inequality and environmental degradation, as well as between women's empowerment and environmental well-being. Societal expectations of masculinity impact gender equality and conservation efforts, with patriarchal structures linked to conservation attitudes and harmful behaviors when expectations are not met. Pro-environmental behaviors, often associated with femininity, present opportunities for conservation strategies.

Physical Education (PE) teachers play an important role in achieving the SDGs. However, a Spanish study found that PE teachers primarily view sustainability as an environmental issue, often not engaging in sustainable behaviors themselves (Baena-Morales, Merma-Molina, & Gavilán-Marin, 2021). Integrating sustainability into education reinforces the relationship between education and sustainable development, with PE serving as a key tool (Boned-Gómez, Ferriz-Valero, Fröberg, & Baena-Morales, 2024; Biancardi, Colasante, & Dádamo, 2023). Baena et al. (2024) analyzed psychological factors like motivation, attitudes, beliefs, and emotions to present a sustainable development (SD) approach in education, focusing on PE. They used an Intervention Model for SD, combining psychological theories and education strategies. Physical Education integrates sustainability into teaching methods, acknowledging students' cognitive and socio-emotional differences. Tabarquino-Muñoz et al. (2022) supported the idea that sports and physical education contribute to promote peace, good governance, and sustainable communities. It is essential to evaluate whether adolescents' and young people's values foster personal enrichment and positive attitudes.

Sportis
Revista Técnico-Científica del Deporte Escolar, Educación Física y Psicomotricidad
Scientific Technical Journal of School Sport, Physical Education and Psychomotricity
Published by: Campus Educa Sportis. Collaborator: University of A Coruña
A Coruña. Spain
E-mail: v.arufe@udc.es Web: www.sportisjournal.com
ISSN-e 2386-8333
OPEN ACCESS Creative Commons

Global evidence shows that youth is exposed to negative climate change outcomes, and their behavior is key to addressing environmental challenges. Adolescents' developing identities and moral structures are tied to their environmental values. Younger generations are vital for a sustainable future and achieving the SDGs. The United Nations Department of Economic and Social Affairs, UNDESA (2024) engaged youth in global policymaking and improved its internal capabilities to provide better support to Member States. Millennials are socially conscious, with studies indicating higher pro-environmental tendencies (Klimkiewicz & Oltra, 2017; Etezady, Shaw, Mokhtarian, & Circella, 2020). However, climate anxiety affects children and young people's daily lives (Hickman et al., 2021). To explore generational differences in sustainable living, two online surveys in Japan assessed sustainable living and job preferences related to SDG contributions. The results indicate a significant pro-SDG stance among younger generations (Yamane & Kaneko, 2021).

When considering eco transportation, Brand et al. (2021) emphasized the importance of replacing motorized trips with low-carbon options like walking, cycling, and public transit to reduce transportation-related greenhouse gas emissions. Reflecting on young adults' sustainable travel behaviors is essential, though not extensively studied, and may relate to social exclusion, travel choices, and lower car reliance. Built environment attributes, such as street network connectivity, residential density, and the presence of sidewalks and road crossing infrastructure, are also important for active transportation among children (Hasseb & Mitra, 2023).

Competitiveness might vary with age; Cincera, Kroufek & Bogner (2023) found that younger Czech adolescents applied environmental values more than older ones, though our study showed older participants applying them more.

Regarding the relationship between sustainability and Olympic values, the findings of a study suggest the Olympic Value Education Program can effectively support Education for Sustainable Development by fostering sustainability skills, as both share objectives, enabling harmonious development of both (Park & Lim, 2022).

Sportis
Revista Técnico-Científica del Deporte Escolar, Educación Física y Psicomotricidad
Scientific Technical Journal of School Sport, Physical Education and Psychomotricity
Published by: Campus Educa Sportis. Collaborator: University of A Coruña A Coruña. Spain
E-mail: v.arufe@udc.es Web: www.sportisjournal.com
ISSN-e 2386-8333
OPEN ACCESS Creative Commons

This research analyzes students' perceptions of sport values and attitudes towards sustainability, aiming to identify value variations by age and sex and determine how groups apply and value these principles.

Method

The objective of this study was to know the young peoples´ values and whether they vary depending on age and sex, and to determine how they apply and give importance to the proposed values. The variables were analyzed under six factors. Each factor included questions grouped accordingly and inquired about their perception about these issues, consisting in competitive practice, competitive importance, cooperation practice, cooperation importance and self-realization practice and its importance. A Likert scale (0-4) was used.

A transverse, descriptive, and inference study was conducted with a nonstatistical sample of volunteers. The sample included 833 students from Spain and Guatemala, aged 12 to 20 years (Mean =15.79 years, SD=1.91).

A Spanish-language questionnaire was used to gather data on socio-demographic information, sports, Olympic and other values, and their importance, it was based on a validated questionnaire by Pena-Pérez, Pino, Silva, García-Fuentes, & Martínez-Patiño (2023) and included three sections: socio-demographic information, sports' values, and their importance. The questionnaire was administered online to all participants, it featured 20 items rated using a Likert scale on a numerical range from 0 to 4. The second part consisted of three areas: competitiveness, cooperation, and self-realization. The research complemented the questionnaire sustainability values, including perceptions and applications. This section was based on the Sustainable Development Goals (SDGs) related to sports and physical activity, and also followed the International Olympic Committee's sustainability strategy, which is framed around three spheres of responsibility, IOC as an organisation, IOC as owner of the Olympic games and IOC as leader of the Olympic Movement and five focus areas as a strategic intent for 2030: infrastructure and natural sites, sourcing and resource management, mobility, workforce, and climate (IOC, 2017). The questions of the third part were performed by a group of

Sportis
Revista Técnico-Científica del Deporte Escolar, Educación Física y Psicomotricidad
Scientific Technical Journal of School Sport, Physical Education and Psychomotricity
Published by: Campus Educa Sportis. Collaborator: University of A Coruña
A Coruña. Spain
E-mail: v.arufe@udc.es Web: www.sportisjournal.com
ISSN-e 2386-8333
Creative Commons

experts of four university research professors, who are experts in values and sustainability and are also associated with sports. Following working meetings, they systematically narrowed down the number and format of questions until the final version was finalized. The questions were formed considering the perception of the participants in these five areas, how much they practice them and what level of importance they give to each of them and covers the mentioned five areas of the IOC sustainability strategy.

Participants were included based on the completion of data collection tests. All procedures adhered to the Declaration of Helsinki and were reviewed and approved by the Ethics and Fairplay Commission of the Guatemalan Olympic Committee (REF:0358-21-COG-SA). Informed consent was obtained from all institutions for minors and young participants.

Analysis of data

Analysis of data

SPSS (Statistical Package for Social Sciences version 25 for Windows, IBM Corporation, Armonk, NY, USA) was used for statistical analysis, with significance set at p <0.05. Cronbach's alpha was used for reliability analysis, and one-way ANOVA with Bonferroni's correction was applied to compare differences by sex and age. Pearson's correlation was interpreted as r > 0.70 (high) and r > 0.90 (very high) (Zangaro, 2019). The internal consistency results suggest an adequate level of consistency, with Cronbach's alpha coefficient values above 0.80 for all variables, except for "self-realization, practice, and its importance (Table 1).

Table 1. Descriptive statistics and reliability analysis.

	Variables	M	SD	α
Practice	Competitivity	2.70	.48	.90
Importance		2.76	.88	.90
Practice	Cooperation	3.13	.68	.80
Importance		3.35	.63	.81
Practice	Self-Realization	3.26	.67	.71
Importance		3.49	.63	.75

M: mean; SD: Standard Deviation; α: Cronbach's alpha.

Sportis
Revista Técnico-Científica del Deporte Escolar, Educación Física y Psicomotricidad
Scientific Technical Journal of School Sport, Physical Education and Psychomotricity
Published by: Campus Educa Sportis. Collaborator: University of A Coruña A Coruña. Spain
E-mail: v.arufe@udc.es Web: www.sportisjournal.com
ISSN-e 2386-8333
Creative Commons
Original Article. Perspectives on sport and sustainability values among Spanish and Guatemalan youth. Vol. 11, n.º 4; p. 1-25, october 2025. https://doi.org/10.17979/sportis.2025.11.4.11681

Results

Table 2 include parameters describing the research variable of sex: "competitive practice and its importance," "cooperation practice and its importance", and "self-realization practice and its importance". High significant differences (p = 0.001) were found across all variables when comparing males and females. The dimension "Self-realization Importance" showed higher mean values for both males and females. "Cooperation Importance" had higher mean values in females, while "Competitive practice" displayed lower mean values in women.

The s group “other” refers to participants who did not consider themselves male or female.

Table 2. Sex variable results. Practice and importance of cooperation, practice, and importance of competitiveness, and practice and importance of self-realization.

Factors	Sex	N	M	SD	*p*-value
Competitivity -Practice	Male	403	2.86	0.81	<.001**
	Fem	405	2.56	0.92	
	other	24	2.50	0.89	
Competitivity-Importance	Male	403	2.91	0.81	<.001**
	Fem	405	2.61	0.92	
	other	24	2.65	0.89	
Cooperation-Practice	Male	403	3.03	0.70	<.001**
	Fem	405	3.25	0.64	
	other	24	2.72	0.80	
Cooperation-Importance	Male	403	3.26	0.64	<001**
	Fem	405	3.47	0.58	
	other	24	2.81	0.90	
Self-Realization-Practice	Male	403	3.27	0.67	.021*
	Fem	405	3.27	0.67	
	other	24	2.89	0.67	
Self-Realization-Importance	Male	403	3.47	0.64	.049*
	Fem	405	3.53	0.64	
	other	24	3.23	0.56	

M: mean; SD: Standard Deviation; * *p*-value < 0.05, ** *p*-value < 0.01.

Table 3 presents the differences based on age. It shows that engagement in competitive behaviors increases slightly with age. A statistically significant difference exists between age groups (p = .001), suggesting older individuals (18–20 years) tend to be more competitive in practice. All age groups rate the importance of competitiveness similarly, with no significant differences.

Sportis
Revista Técnico-Científica del Deporte Escolar, Educación Física y Psicomotricidad
Scientific Technical Journal of School Sport, Physical Education and Psychomotricity
Published by: Campus Educa Sportis. Collaborator: University of A Coruña A Coruña. Spain
E-mail: v.arufe@udc.es Web: www.sportisjournal.com
ISSN-e 2386-8333
Creative Commons
Original Article. Perspectives on sport and sustainability values among Spanish and Guatemalan youth. Vol. 11, n.º 4; p. 1-25, october 2025. https://doi.org/10.17979/sportis.2025.11.4.11681

In terms of cooperation levels there are high significant differences (p = .001) also older respondents demonstrate greater cooperative behavior. There are no significant differences between age groups.

Older individuals report greater engagement in self-realization practice. The differences between groups are statistically significant (p=011). While the importance shows no significant differences (p=.323).

Table 3. Age variable results. Practice and importance of cooperation, practice and importance of competitiveness, and practice and importance of self-realization.

Factors	Age (years)	N	M	SD	*p*-value (between groups)
Competitivity -Practice	12-14	248	2.67	0.92	.001**
	15-17	426	2.64	0.87	
	18-20	159	2.92	0.82	
Competitivity-Importance	12-14	248	2.75	0.90	.227
	15-17	426	2.73	0.87	
	18-20	159	2.86	0.87	
Cooperation-Practice	12-14	248	3.10	0.68	.001**
	15-17	426	3.07	0.70	
	18-20	159	3.32	0.63	
Cooperation-Importance	12-14	248	3.35	0.61	.272
	15-17	426	3.33	0.65	
	18-20	159	3.42	0.64	
Self-Realization-Practice	12-14	248	3.25	0.68	.011*
	15-17	426	3.22	0.69	
	18-20	159	3.40	0.61	
Self-Realization-Importance	12-14	248	3.48	0.66	.323
	15-17	426	3.48	0.64	
	18-20	159	3.56	0.59	

M: mean; SD: Standard Deviation; * *p*-value < 0.05, ** *p*-value < 0.01.

Table 4 summarizes responses regarding sustainability values, practice, and perceived importance based on sex. It shows that women actively practice taking care of resources more compared to men, with a high significant difference (p = 0.001). On importance, all genders rate this highly, but no significant differences were found (p = 0.992). This suggests that while all groups value this practice similarly, women engage in it more actively.

Sportis
Revista Técnico-Científica del Deporte Escolar, Educación Física y Psicomotricidad
Scientific Technical Journal of School Sport, Physical Education and Psychomotricity
Published by: Campus Educa Sportis. Collaborator: University of A Coruña A Coruña. Spain
E-mail: v.arufe@udc.es Web: www.sportisjournal.com
ISSN-e 2386-8333
Creative Commons

Considering the protection of the environment, women again report higher engagement versus men, with strong statistical a high significance ($p = 0.001$). Regarding importance, women rate is higher than men, although the differences aren't statistically significant ($p = 0.205$).

While both men and women show limited engagement in the use of ecological transportation, there are no significant differences ($p = 0.299$). However, women place significantly greater importance on this practice compared to men ($p = 0.029$).

Men practice living a healthy lifestyle more actively than women with significant differences ($p = 0.037$). Despite this, all groups value this practice highly, with no significant differences in perceived importance ($p = 0.851$).

Women demonstrate greater practice when respecting differences were analyzed, though the difference isn't significant ($p = 0.963$). Importance ratings reveal significant differences, with women valuing this more highly than men ($p = 0.036$).

Engagement in combating climate change is generally low across all groups, with no significant differences ($p = 0.837$). Importance shows significant differences, with women rating this higher compared to men ($p = 0.033$).

Across nearly all factors, the group of others consistently reports lower engagement and perceived importance than men and women. The smaller sample size ($N = 24$) may contribute to this trend and variability.

Sportis
Revista Técnico-Científica del Deporte Escolar, Educación Física y Psicomotricidad
Scientific Technical Journal of School Sport, Physical Education and Psychomotricity
Published by: Campus Educa Sportis. Collaborator: University of A Coruña A Coruña. Spain
E-mail: v.arufe@udc.es Web: www.sportisjournal.com
ISSN-e 2386-8333
OPEN ACCESS Creative Commons

Original Article. Perspectives on sport and sustainability values among Spanish and Guatemalan youth.
Vol. 11, n.º 4; p. 1-25, october 2025. https://doi.org/10.17979/sportis.2025.11.4.11681

Table 4. Results of sustainability values, practice, and importance according to sex

Factor	Sex	N	M	SD	Sig. between groups
1. To what extent do I actively practice to: Take care of material resources, natural and sports spaces	Male	403	3.27	0.85	.001**
	Fem	405	3.43	0.80	
	Others	24	2.92	1.21	
	Total	832	3.34	0.85	
1. What importance do I give to: Taking care of material resources, natural and sports spaces	Male	403	3.51	0.82	.992
	Fem	405	3.69	0.65	
	Others	24	3.21	1.06	
	Total	832	3.59	0.76	
2. To what extent do I actively practice to: Protect and improve the environment	Male	403	2.85	1.01	.001**
	Fem	405	3.11	0.92	
	Others	24	2.21	1.38	
	Total	832	2.96	1.00	
2. What importance do I give to: Protect and improve the environment	Male	403	3.30	0.98	.205
	Fem	405	3.59	0.76	
	Others	24	2.79	1.41	
	Total	832	3.43	0.91	
3. To what extent do I actively practice to: Using ecological transportation	Male	403	2.67	1.21	.299
	Fem	405	2.73	1.20	
	Others	24	2.50	1.38	
	Total	832	2.69	1.21	
3. What importance do I give to: Using ecological transportation	Male	403	2.95	1.12	.029*
	Fem	405	3.28	0.97	
	Others	24	2.71	1.43	
	Total	832	3.10	1.08	
4. To what extent do I actively practice to: Live a healthy lifestyle	Male	403	3.05	0.97	.037*
	Fem	405	2.95	1.05	
	Others	24	2.63	1.47	
	Total	832	2.99	1.03	
4. What importance do I give to: Live a healthy lifestyle	Male	403	3.36	0.93	.851
	Fem	405	3.47	0.89	
	Others	24	3.25	1.26	
	Total	832	3.41	0.92	
5. To what extent do I actively practice to: Respect differences	Male	403	3.39	0.86	.963
	Fem	405	3.73	0.65	
	Others	24	3.21	1.38	
	Total	832	3.55	0.81	
5. What importance do I give to: Respect differences	Male	403	3.46	0.90	.036*
	Fem	405	3.76	0.60	
	Others	24	3.04	1.49	
	Total	832	3.59	0.81	
	Male	403	2.62	1.14	.837

Sportis
Revista Técnico-Científica del Deporte Escolar, Educación Física y Psicomotricidad
Scientific Technical Journal of School Sport, Physical Education and Psychomotricity
Published by: Campus Educa Sportis. Collaborator: University of A Coruña
A Coruña. Spain
E-mail: v.arufe@udc.es Web: www.sportisjournal.com
ISSN-e 2386-8333
Creative Commons

6. To what extent do I actively practice to: Commit to combating climate change	Fem	405	2.84	1.04	
	Others	24	2.71	1.27	
	Total	832	2.73	1.10	
6. What importance do I give to: Commit to combating climate change	Male	403	3.10	1.11	033*
	Fem	405	3.44	0.91	
	Others	24	2.92	1.25	
	Total	832	3.26	1.04	

M: mean; SD: Standard Deviation; * p-value < 0.05, ** p-value < 0.01.

Table 5 reveals highly significant differences in sustainability practices and values across age groups. Ages 18-20 reported higher practice in taking care of material resources, natural and sports spaces (p=0.001) compared to ages 12-14 and 15-17, with consistent mean scores across age groups. No significant difference in the importance given to this topic was reported.

A highly significant difference in the practice of protecting and improving the environment (p=0.001) was found, with the 18-20 age group practicing it more than younger groups. All age groups equally valued the importance of this practice.

In using eco-transportation, no significant differences in practice or importance were found. A significant difference (p=0.029) was reported in having a healthy lifestyle, with ages 12-14 practicing it more than ages 15-17 and 18-20. The importance placed on this practice also showed significant differences (p=0.037), with younger age groups assigning more importance than the 18-20 age group. Ages 12-14 reported higher importance than ages 15-17 and 18-20.

Respect for people's differences showed no significant differences in practice or importance across age groups.

Commitment to combating climate change revealed a significant difference in practice (p=0.036), with ages 18-20 showing higher commitment levels compared to ages 12-14 and 15-17, but no significant difference in the importance given to this factor.

Table 5. Age and sustainability values, practice, and importance results

Sportis
Revista Técnico-Científica del Deporte Escolar, Educación Física y Psicomotricidad
Scientific Technical Journal of School Sport, Physical Education and Psychomotricity
Published by: Campus Educa Sportis. Collaborator: University of A Coruña
A Coruña. Spain
E-mail: v.arufe@udc.es Web: www.sportisjournal.com
ISSN-e 2386-8333
Creative Commons

Original Article. Perspectives on sport and sustainability values among Spanish and Guatemalan youth.
Vol. 11, n.º 4; p. 1-25, october 2025. https://doi.org/10.17979/sportis.2025.11.4.11681

Factors	Age	N	Mean	SD	Sig. Between groups
1.To what extent do I actively practice to: Take care of material resources, natural and sports spaces	12-14	248	3.34	0.87	
	15-17	426	3.27	0.89	
	18-20	159	3.55	0.61	
	Total	833	3.34	0.84	.001**
1. What importance do I give to: Taking care of material resources, natural and sports spaces	12-14	248	3.58	0.80	
	15-17	426	3.59	0.77	
	18-20	159	3.58	0.69	
	Total	833	3.59	0.76	.992
2. To what extent do I actively practice to: Protect and improve the environment	12-14	248	2.97	1.01	
	15-17	426	2.85	1.02	
	18-20	159	3.23	0.86	
	Total	833	2.96	1.00	.001**
2. What importance do I give to: Protect and improve the environment	12-14	248	3.46	0.91	
	15-17	426	3.37	0.97	
	18-20	159	3.51	0.75	
	Total	833	3.43	0.91	.205
3. To what extent do I actively practice to: Using ecological transportation	12-14	248	2.67	1.24	
	15-17	426	2.66	1.17	
	18-20	159	2.83	1.24	
	Total	833	2.70	1.21	.299
3. What importance do I give to: Using ecological transportation	12-14	248	3.12	1.15	
	15-17	426	3.10	1.06	
	18-20	159	3.11	1.02	
	Total	833	3.10	1.08	.971
4. To what extent do I actively practice to: Live a healthy lifestyle	12-14	248	3.13	1.04	
	15-17	426	2.93	1.02	
	18-20	159	2.91	1.02	
	Total	833	2.99	1.03	.029*
4. What importance do I give to: Live a healthy lifestyle	12-14	248	3.52	0.91	
	15-17	426	3.38	0.92	
	18-20	159	3.30	0.92	
	Total	833	3.41	0.92	.037*
5. To what extent do I actively practice to: Respect differences	12-14	248	3.53	0.87	
	15-17	426	3.55	0.81	
	18-20	159	3.58	0.69	
	Total	833	3.55	0.80	.851
5. What importance do I give to: Respect differences	12-14	248	3.58	0.88	
	15-17	426	3.60	0.80	
	18-20	159	3.59	0.76	
	Total	833	3.59	0.81	.963
6. To what extent do I actively practice to: Commit to combating climate change	12-14	248	2.76	1.08	
	15-17	426	2.64	1.14	
	18-20	159	2.90	1.00	
	Total	833	2.73	1.10	.036*
6. What importance do I give to: Commit to combating climate change	12-14	248	3.28	1.01	
	15-17	426	3.23	1.09	
	18-20	159	3.28	0.94	
	Total	833	3.26	1.04	.837

M: mean; SD: Standard Deviation; * p-value < 0.05, ** p-value < 0.01.

Sportis
Revista Técnico-Científica del Deporte Escolar, Educación Física y Psicomotricidad
Scientific Technical Journal of School Sport, Physical Education and Psychomotricity
Published by: Campus Educa Sportis. Collaborator: University of A Coruña
A Coruña. Spain
E-mail: v.arufe@udc.es Web: www.sportisjournal.com
ISSN-e 2386-8333
OPEN ACCESS Creative Commons

Discussion

Gender, cooperation, self-realization, and competition

The results show high significance in gender differences in cooperation, competitiveness, and self-realization. Women scored higher in cooperation, both in importance and practice, while men had higher means in competitiveness. Self-realization averages were similar for both sexes. Studies point to women's fundamental economic role and contribution to societal development through work, care, and active participation in various organizations, prioritizing human aspects over skills (Castellanos-Llanos, 2018).

The outcomes of the present investigation are also consistent with Navarro-Patón, Cons-Ferreiro, Díaz-Liz & Gili-Roig (2019), who state that men exhibit greater competitiveness and individualism, while women show higher cooperation and affiliation ($p < .001$). This study also aligns with Cassar & Rigdon's results (2023); their theory states that women are less competitive and are less willing to take risks but often convert competitiveness into cooperation, especially in parenting. Lackner (2021) supports that women's competitive attitudes form early and persist over time. The gender gap in competitiveness is fluid and can be influenced by various interventions, essential for addressing disparities in education and labor markets. Men tend to be overconfident and highly competitive, and females react more to the social conditions. UN Women (2018) also report that cooperation between men and women is critical today, as women exhibit different cooperative behaviors. Women often convert competitiveness into cooperation, particularly in social and parenting contexts.

A Czech study on environmental and sustainable education (ESE) in teenagers found boys have more environmental knowledge, but girls hold stronger bio-centric values and apply them more (Cincera et al., 2023). Travers (2021) suggests men display more selfish or altruistic behaviors, while women show conditional cooperation. In this same sense, a meta-analysis of 126 studies found that women tend to cooperate more than men in social dilemmas, such as Prisoner's Dilemma and public goods games, aligning

Sportis
Revista Técnico-Científica del Deporte Escolar, Educación Física y Psicomotricidad
Scientific Technical Journal of School Sport, Physical Education and Psychomotricity
Published by: Campus Educa Sportis. Collaborator: University of A Coruña
A Coruña. Spain
E-mail: v.arufe@udc.es Web: www.sportisjournal.com
ISSN-e 2386-8333
Creative Commons

with evolutionary theories suggesting women exhibit a "tend and befriend" pattern (Balliet et al., 2011). Similarly, experimental research with high school students showed that male students had a 4–8 percentage point lower probability of cooperating compared to female students, even after controlling for risk and social preferences (Martin-Albo et al., 2013). Another meta-analysis across 20 societies confirmed women's higher cooperation in high-conflict settings (D'Exelle et al., 2020).

These differences highlight the varied expressions of cooperative and competitive behaviors across genders.

Competitiveness and age

Webber, Wong, Du Plessis, & Garcia-Barrera (2020) found a small positive association between age and competitiveness, older athletes showed higher levels of general competitiveness and achievement motivation which aligns with the current study´s significant differences in "competitivity-practice" and "competitive importance" across age groups, with the highest means in the 18-20 age range compared to younger groups. A study on youth athletes found that achievement motivation increases with age, particularly in late adolescence (18-20 years), due to greater goal clarity and competitive experience (Wigfield et al., 2006). Similarly, research with college athletes showed that those aged 18-22 reported higher competitiveness than younger peers, linked to psychological maturity (Fortes et al., 2017).

Practice and importance of sustainability factors

Gender and sustainability values

The results around the issue indicate the variation in the importance of perception. Females' perception of importance is consistent with their higher practice level. The "others" group's results suggest some variability in their views, probably because it´s a small number of participants (24), smaller sample size can lead to greater variability in the reported practice levels and wider confidence intervals, so the differences may be less stable. While the group is smaller, their views matter.

Sportis
Revista Técnico-Científica del Deporte Escolar, Educación Física y Psicomotricidad
Scientific Technical Journal of School Sport, Physical Education and Psychomotricity
Published by: Campus Educa Sportis. Collaborator: University of A Coruña
A Coruña. Spain
E-mail: v.arufe@udc.es Web: www.sportisjournal.com
ISSN-e 2386-8333
Creative Commons

In this investigation, men and women show similar levels of taking care of natural resources and sports facilities, slightly higher in women. Climate change affects genders differently, with distinct needs, priorities, and possibilities. Gender equality and environmental goals are interdependent, though slow progress on environmental actions impacts gender equality and vice versa (WWF, 2024). Women's voices are often underrepresented. Sports organizations still have a gender imbalance in executive positions, but sustainable interventions and educational programs are closing the gap (European Institute for Gender Equality, 2023; ERASMUS & European Union, 2023; Miragaia, 2022; Megheirkouni & Roomi, 2017).

Despite advancements in gender policies, the sports industry still falls behind. A study on diversity and sustainability in sports underscores the urgent need for comprehensive gender strategies to address discrimination and foster equality (Brazzale, 2023).

Women are disproportionately affected by climate change, deforestation, land degradation, desertification, water scarcity, and inadequate sanitation. Gender equality and women's empowerment are essential goals in the UN's Agenda 2030 for Sustainable Development (SDG 5). Achieving Sustainable Development Goals (SDGs) require targeted, coherent actions and integrated policy frameworks recognizing the link between gender equality and the environment (OECD, 2021; UN Environmental Program, 2018).

Age and sustainability values

Overall, while there are differences in practice and importance across age groups for certain factors, there is a consistent level of concern for sustainability among respondents, with variations based on age. Barbarossa & Pelsmacker (2016) found similar results, noting adolescents' personal norms to protect the environment relate to actions like using green energy and reducing car use.

In this study, a significant difference in practicing the combat of climate change was found; older participants (18-20) show higher commitment than younger ones. Krettenauer (2017) and Anderson & Krettenauer (2021) state that adolescents, though

Sportis
Revista Técnico-Científica del Deporte Escolar, Educación Física y Psicomotricidad
Scientific Technical Journal of School Sport, Physical Education and Psychomotricity
Published by: Campus Educa Sportis. Collaborator: University of A Coruña
A Coruña. Spain
E-mail: v.arufe@udc.es Web: www.sportisjournal.com
ISSN-e 2386-8333
Creative Commons

concerned, are less active in pro-environmental behavior and less capable of holding environmental values than children and adults. Their sustainability engagement often lags, which may be an "adolescent dip" (Olsson, 2017). Adolescents are in a developmental period associated with higher moral sensitivity, abstract thoughts, and awareness of societal issues. Pillemer et al. (2017) found younger consumers more interested in environmental actions than older ones.

Environmental consumption patterns changed after COVID-19, likely due to increased awareness of vulnerability and pollution (Cohen, 2020). Older individuals also increased sustainable purchases, showing more optimistic views and pro-environmental attitudes (Mende, 2020). This study aligns with the 18-20 age group practicing environmental protection more than younger groups. Globally, young people view themselves as part of the climate change solution, engaging actively in social media, civic activities, and protests like "Fridays for Future" (UNICEF Office of Research, 2019). This investigation shows significant differences in environmental protection activities between age groups.

A meta-analysis found a high correlation between connectedness with nature, environmental identity, and pro-environment outcomes (Balundé, Jovarauskaitié, & Simas, 2019). A study in 32 countries reported a decrease in healthy lifestyle behaviors in older boys and girls (Marconcin et al., 2021).

Reviewing young people's eco-transportation practices is essential for promoting sustainable mobility. A Canadian study found transportation choices relate to travel needs and participation in activities, with better street connectivity promoting sustainable travel patterns (Hasseb & Mitra, 2023). This study found participants did not consider transportation important or practice it, likely due to travel needs and surroundings. Better urban planning and design policies can encourage eco-transportation (Sarjala & Broberg, 2015).

Sportis
Revista Técnico-Científica del Deporte Escolar, Educación Física y Psicomotricidad
Scientific Technical Journal of School Sport, Physical Education and Psychomotricity
Published by: Campus Educa Sportis. Collaborator: University of A Coruña
A Coruña. Spain
E-mail: v.arufe@udc.es Web: www.sportisjournal.com
ISSN-e 2386-8333
Creative Commons

Conclusions

The study found significant differences in sport and sustainability values based on sex. Men were more competitive, women more cooperative, and both had similar self-realization scores. The "others" group showed similar patterns to males and females in competitiveness, but lower in cooperation and higher in self-realization.

Age significantly affected competitiveness and cooperation practices across all age groups (12-14, 15-17, 18-20). Older participants (18-20) showed higher practice and importance in these areas compared to younger groups, with less healthy lifestyles but stronger commitment to combating climate change.

Sustainability practices and their importance varied by sex. Females reported higher practice and importance in various sustainability factors compared to males. The "others" group showed more variability due to its smaller sample size. Age group differences were significant in several sustainability practices, with older age groups (18-20) reporting higher levels of practice in caring for material resources, improving the environment, living a healthy lifestyle, and combating climate change. The importance of sustainability factors did not differ significantly between age groups, indicating shared values despite differences in practices.

Grasping sustainability value dynamics is crucial for crafting inclusive policies that promote equality and leverage the strengths of all ages and genders. Continuing these studies globally is recommended to enhance shared knowledge, improve education, and foster cultural agreements.

Acknowledgements

The research was supported by the Guatemalan Autonomous Sport Confederation (CDAG) and the Guatemalan Olympic Committee (COG) (O-CDAg-DFAD-51-2022); International Network of Sport and Health Sciences (INSHS); University of Las Palmas

Sportis
Revista Técnico-Científica del Deporte Escolar, Educación Física y Psicomotricidad
Scientific Technical Journal of School Sport, Physical Education and Psychomotricity
Published by: Campus Educa Sportis. Collaborator: University of A Coruña
A Coruña. Spain
E-mail: v.arufe@udc.es Web: www.sportisjournal.com
ISSN-e 2386-8333
Creative Commons
Original Article. Perspectives on sport and sustainability values among Spanish and Guatemalan youth.
Vol. 11, n.º 4; p. 1-25, october 2025. https://doi.org/10.17979/sportis.2025.11.4.11681

de Gran Canaria, Spain; University of Extremadura, Spain; and the San Vicente Mártir Catholic University of Valencia, Spain.

References

Anderson, D., & Krettenauer, T. (2021). Connectedness to Nature and Pro-environmental Behavior from Early Adolescence to Adulthood: A Comparison of Urban and Rural Canada. *Sustainability, 7*(13), 3655. https://doi.org/10.3390/su13073655

Baena-Morales, S., Merma-Molina, G., & Gavilán-Marín, D. (2021). ¿Qué conocen los profesores de Educación Física sobre los Objetivos de Desarrollo Sostenible? Un estudio cualitativo-exploratorio. *Retos, 42*, 452–463. https://doi.org/10.47197/retos.v42i0.87724

Baena-Morales, S., Vásquez-Echeverría, A., Gavilán-Martín, D., & González-Villora, S. (2024). Psychological approaches to sustainability: Implementing intervention model for sustainable development in physical education. *Sustainable Development.* https://doi.org/10.1002/sd.2986

Balliet, D., Li, N. P., Macfarlan, S. J., & Van Vugt, M. (2011). Sex differences in cooperation: A meta-analytic review of social dilemmas. *Psychological Bulletin, 137*(6), 881–909. https://doi.org/10.1037/a0025354

Balundė, A., Jovarauskaitė, L., & Šimienė, M. (2019). Exploring the relationship between connectedness with nature, environmental identity, and engagement: A systematic review and meta-analysis. *SAGE Open, 9*(2), Article 215824401984192. https://doi.org/10.1177/2158244019841925

Barbarossa, C., & Pelsmacker, P. (2016). Positive and negative antecedents of purchasing eco-friendly products: A comparison between green and non-green consumers. *Journal of Business Ethics, 134*(2), 229–247. https://doi.org/10.1007/s10551-014-2425-z

Sportis
Revista Técnico-Científica del Deporte Escolar, Educación Física y Psicomotricidad
Scientific Technical Journal of School Sport, Physical Education and Psychomotricity
Published by: Campus Educa Sportis. Collaborator: University of A Coruña A Coruña. Spain
E-mail: v.arufe@udc.es Web: www.sportisjournal.com
ISSN-e 2386-8333
Creative Commons

Bass, A. (2018, February 13). Athletes don't have to win gold to make a statement. *CNN Opinion*. https://edition.cnn.com/2018/02/07/opinions/olympics-pyeongchang-athlete-activism-amy-bass-opinion/index.html

Biancardi, A., Colasante, A., & Dádamo, I. (2023). Sustainable education and youth confidence as pillars of future civil society. *Scientific reports, 13*, 1-11. https://doi.org/10.1038/s41598-023-28143-9

Boned-Gómez, S., Ferriz-Valero, A., Fröberg, A., & Baena-Morales, S. (2024). Unveiling Connections: A Thorough Analysis of Sustainable Development Goals Integration within the Spanish Physical Education Curriculum. *Education Sciences, 14*(17), 1-15. https://doi.org/10.3390/educsci14010017

Boyer, A. E., Meijer, S. S., & Gilligan, M. (2020). *Advancing gender in the environment: Exploring the triple nexus of gender inequality, state fragility, and climate vulnerability*. International Union for Conservation of Nature; United States Agency for International Development. https://portals.iucn.org/library/sites/library/files/documents/2020-022-En.pdf

Brand, C., Dons, E., Anaya-Boig, E., Avila-Palencia, I., Clark, A., & Laeremans, M. (2021). Climate change mitigation effects of daily active travel in cities. *Transportation Research Part D: Transport and Environment, 93*, Article 102764. https://doi.org/10.1016/j.trd.2021.102764

Brazzale, D. (2023). *Gender strategies in sports and eSports: The potential of diversity programs for the sustainability and the growth of the sports industry* [Master's thesis, Ca' Foscari University of Venice]. Ca' Foscari University Institutional Repository. https://hdl.handle.net/20.500.12608/50057

Cassar, A., & Rigdon, M. (2023). Sustaining the potential for cooperation as female competitive strategy. Phil. Trans. R. Soc. B 378 :20210440. http://doi.org/10.1098/rstb.2021.0440

Sportis
Revista Técnico-Científica del Deporte Escolar, Educación Física y Psicomotricidad
Scientific Technical Journal of School Sport, Physical Education and Psychomotricity
Published by: Campus Educa Sportis. Collaborator: University of A Coruña A Coruña. Spain
E-mail: v.arufe@udc.es Web: www.sportisjournal.com
ISSN-e 2386-8333
Creative Commons

Castellanos-Llanos, G. (2018). Un paso más: Evaluación del impacto de género. Guía para evaluar el impacto de género de los proyectos de cooperación para el desarrollo. *La Manzana de la Discordia, 13*(1), 100–109.

Cincera, J., Kroufek, R., & Bogner, F. (2023). The perceived effect of environmental and sustainability education on environmental literacy of Czech teenagers. Environmental Education Research, 29(9), 1276-1293. https://doi.org/10.1080/13504622.2022.2107618

Cohen, M. J. (2020). Does the COVID-19 outbreak mark the onset of a sustainable consumption transition? Sustainability: Science, Practice and Policy, 16(1), 1–3. https://doi.org/10.1080/15487733.2020.1740472

D'Exelle, B., Gutekunst, M., & Riedl, A. (2020). Gender differences in cooperation across 20 societies: A meta-analysis. *Philosophical Transactions of the Royal Society B: Biological Sciences, 375*(1807), 20190824. https://doi.org/10.1098/rstb.2021.0438

Erasmus & European Union (2023). Women's empowerment in the sport and physical education industry. New Miracle Project. https://newmiracle.eu/new-miracle-a-unique-project-of-womens-leadership-in-sport-initiated-by-the-lnoc-closes/

Etezady, A., Shaw, F., Mokhtarian, P., & Circella, G. (2021). What drives the gap? Applying the Blinder–Oaxaca decomposition method to examine generational differences in transportation-related attitudes. Transportation 48, 857–883 https://doi.org/10.1007/s11116-020-10080-5

European Union. (2023). *Women's empowerment in the sport and physical education industry*. New Miracle Project. https://newmiracle.eu/new-miracle-a-unique-project-of-womens-leadership-in-sport-initiated-by-the-lnoc-closes/

Fortes, L. S., Lima-Júnior, D., Fiorese, L., Nascimento-Júnior, J. R. A., Mortatti, A. L., & Ferreira, M. E. C. (2017). The effect of competitive anxiety on motivation and

Sportis
Revista Técnico-Científica del Deporte Escolar, Educación Física y Psicomotricidad
Scientific Technical Journal of School Sport, Physical Education and Psychomotricity
Published by: Campus Educa Sportis. Collaborator: University of A Coruña
A Coruña. Spain
E-mail: v.arufe@udc.es Web: www.sportisjournal.com
ISSN-e 2386-8333
Creative Commons

self-confidence in young male and female swimmers. *Journal of Physical Education and Sport, 17*(1), 258–263. https://doi.org/10.7752/jpes.2017.01039

Gloor, J., Bajet, M. P., Post, C. & Ruigrok, W. (2022). We Can't Fight Climate Change Without Fighting for Gender Equity. Harvard Business Review. https://hbr.org/2022/07/we-cant-fight-climate-change-without-fighting-for-gender-equity

Haseeb, A., & Mitra, R. (2023). Do environmentally sustainable travel behaviors contribute to transportation related social exclusion? Journal of Transport Geography, 113. https://doi.org/10.1016/j.jtrangeo.2023.103734

Hickman, C., Marks, E., Pohkala, P., Clayton, S., Lewandowski, E., & Mayall, E. (2021). Climate anxiety in children and young people and their beliefs about government responses to climate change: a global survey. The Lancet, Planetary Health, 5(12), 863-873. https://www.thelancet.com/journals/lanplh/article/PIIS25425196(21)00278-3

International Olympic Committee. (2017). *IOC sustainability strategy*. https://stillmed.olympics.com/media/Document%20Library/IOC/IOC-Sustainability/IOC-Sustainability-Strategy.pdf

Keim, M. (2024). Physical Education, School Sport and Olympic Values As fundamental rights iIn South Africa. *Movimento*, *30*, Article e30059. https://doi.org/10.22456/1982-8918.143567

Klimkiewicz, K., & Oltra, V. (2017). Does CSR Enhance Employer Attractiveness? The role of Millennial Job Seekers' Attitudes. Corporate Social Responsibility and Environmental Management. Corporate Social Responsibility and Environmental Management, 24(2) https://doi.org/10.1002/csr.1419

Krettenauer, T. (2017). Pro-environmental behavior and adolescent moral development. *Journal of Research on Adolescence, 27*(3), 581–593. https://doi.org/10.1111/jora.12300

Sportis
Revista Técnico-Científica del Deporte Escolar, Educación Física y Psicomotricidad
Scientific Technical Journal of School Sport, Physical Education and Psychomotricity
Published by: Campus Educa Sportis. Collaborator: University of A Coruña A Coruña. Spain
E-mail: v.arufe@udc.es Web: www.sportisjournal.com
ISSN-e 2386-8333
Creative Commons

Kurnaz, M., Silva, A. F., Matos, S., & Flôres, F. (2024). The value levels of high school students regarding physical education and sports activities. *Sportis-Scientific Technical Journal of School Sport Physical Education and Psychomotricity*, *10*(3), 530-546. https://doi.org/10.17979/sportis.2024.10.3.10710

Lackner, M. (2021). Gender differences in competitiveness. *IZA World of Labor, 2021*(236). https://doi.org/10.15185/izawol.236

Loorbach, D., Frantzeskaki, N., & Avelino, F. (October 2017). Sustainability Transitions Research: Transforming Science and Practice for Societal Change. *Annual review of environment and resources*, 42, 599-626. https://doi.org/10.1146/annurev-environ-102014-021340

Marconcin, P. M., Ihle, A., Ferrari, G., Gouveia, E., López-Flores, M., Peralta, M., & Marques, A. (2021). Trends of Healthy Lifestyles Among Adolescents: An Analysis of More Than Half a Million Participants From 32 Countries Between 2006 and 2014. *Frontiers in Pediatrics*, 9. https://doi.org/10.3389/fped.2021.645074

Martin-Albo, J., Núñez, J. L., Navarro, J. G., & Grijalvo, F. (2013). Gender differences in cooperation: Experimental evidence on high school students. *PLoS ONE, 8*(12), e83700. https://doi.org/10.1371/journal.pone.0083700

Megheirkouni, M., & Roomi, M. A. (2017). Women's leadership development in sport settings: Factors influencing the transformational learning experience of female managers. *European Journal of Training and Development, 41*(5), 467–484. https://doi.org/10.1108/EJTD-12-2016-0085

Mende, M. M. (2020). Time to flatten the curves of COVID-19 and climate change. Marketing can help. *Journal of Public Policy & Marketing, 40*(1), 94-96. https://doi.org/10.1177/0743915620930695

Sportis
Revista Técnico-Científica del Deporte Escolar, Educación Física y Psicomotricidad
Scientific Technical Journal of School Sport, Physical Education and Psychomotricity
Published by: Campus Educa Sportis. Collaborator: University of A Coruña
A Coruña. Spain
E-mail: v.arufe@udc.es Web: www.sportisjournal.com
ISSN-e 2386-8333
Creative Commons

Miragaia, D. A. M. (2022). A systematic review of women's entrepreneurship in the sports industry. *International Journal of Sports Marketing and Sponsorship, 23*(5), 988–1008. https://doi.org/10.1108/GM-04-2021-0101

Navarro-Patón, R., Cons-Ferreiro, M., Díaz-Liz, C., & Gili-Roig, C. (2019). Análisis de las preferencias de interacción social en educación física del alumnado gallego en función de la edad, género y etapa educativa. *Revista Iberoamericana de Psicología del Ejercicio y el Deporte, 14*(2), 160–165. https://www.redalyc.org/articulo.oa?id=311262211008

Organization for Economic Co-operation and Development (OECD). (2021). Gender and the Environment: building Evidence and Policies to Achieve the SDG's. Paris: OECD Publications. https://doi.org/10.1787/3d32ca39-en

Olsson, D., & Gericke, N. (2017). The effect of gender on students 'sustainability consciousness: A nationwide Swedish study. *The Journal of Environmental Education, 48*(5), 357–370. https://doi.org/10.1080/00958964.2017.1310083

Park, S., & Lim, D. (2022). Applicability of Olympic Values in Sustainable Development. *Sustainability*, *14*(10), Article 5921. https://doi.org/10.3390/su14105921

Pena-Pérez, X., Portelas-Pino, I., González-Silva, J., Fuentes-García, J. P., & Martínez-Patiño, M. J. (2023). Diseño y validación de un cuestionario en español de valores deportivos y olímpicos (Design and validation of a questionnaire in Spanish on Sports and Olympic values). *Retos*, 47, 408–418. https://doi.org/10.47197/retos.v47.93726

Pillemer, K., Wells, N., Meador, R., Schultz, L., Henderson, C., & Cope, M. (2017). Engaging older adults in environmental volunteerism: The retirees in service to the environment program. *The Gerontologist, 57*(2), 367-375. https://doi.org/10.1093/geront/gnv693

Sportis
Revista Técnico-Científica del Deporte Escolar, Educación Física y Psicomotricidad
Scientific Technical Journal of School Sport, Physical Education and Psychomotricity
Published by: Campus Educa Sportis. Collaborator: University of A Coruña A Coruña. Spain
E-mail: v.arufe@udc.es Web: www.sportisjournal.com
ISSN-e 2386-8333
OPEN ACCESS Creative Commons

Sarjala, S.-M., Broberg, A., & Hynynen, A. (2015). Children and youth transport in different urban morphological types. *Journal of Transport and Land Use, 9*(2). https://doi.org/10.5198/jtlu.2015.803

Šarkauskiené, A. (2020). The development of Pupils' Olympic Values: Knowledge, Skills, Attitudes. Proceedings of the International Scientific Conference, 6, 401-410. https://doi.org/10.17770/sie2020vol6.5073

Tabarquino-Muñoz, R., Zuluaga-Ocampo, I., & Alarcón-Muriel, J. (2022). El potencial del deporte para alcanzar los Objetivos de Desarrollo Sostenible (ODS) en Colombia: un análisis desde el enfoque de redes de política pública. Entramado, *19*(1), 1-22. https://www.redalyc.org/articulo.oa?id=265475272004

Travers, M. (2021, January 25). The key difference in how men and women cooperate. *Psychology Today*. https://www.psychologytoday.com/us/blog/social-instincts/202101/the-key-difference-in-how-men-and-women-cooperate