



Physical Activity Report Card Indicators and the United Nations Sustainable Development Goals: Insights from Global Matrix 4.0

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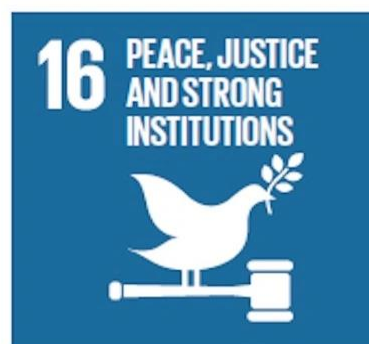
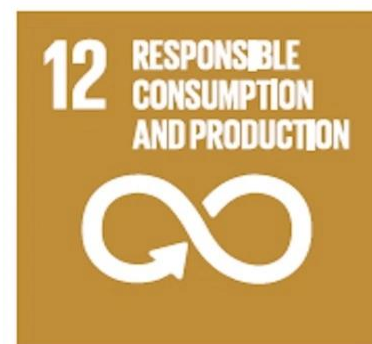


Sports Center

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SUSTAINABLE DEVELOPMENT GOALS



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- **Launch Date:** The UN SDGs were launched in September 2015 during the UN Sustainable Development Summit.
- **Purpose:** The UN SDGs propose a global plan to end poverty, protect the planet, and ensure that all people enjoy peace and prosperity by 2030.
- **Core Principle:** The main principle of the UN SDGs is “leaving no one behind”, aiming to promote sustainable development in an inclusive and equitable way for everyone.



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- **Primary Goal:** The UN SDGs aim to achieve 17 interconnected goals that address global challenges related to poverty, inequality, health, education, climate change, peace, and justice.
- **Global Adoption:** The UN SDGs call for all countries, both developed and developing, to work together in a global agenda that balances economic growth, social inclusion, and environmental protection.

THE BANGKOK DECLARATION ON PHYSICAL ACTIVITY FOR GLOBAL HEALTH AND SUSTAINABLE DEVELOPMENT

- During the ISPAH Congress (2016), delegates and members produced the **Bangkok Declaration**.
- **Purpose:** The declaration emphasizes the critical role of physical activity in global health and the prevention of noncommunicable diseases.
- **Connection to UNSDGs:** It highlights how population-based strategies to promote physical activity can contribute to achieving **eight** of the 2030 SDGs set in 2015.



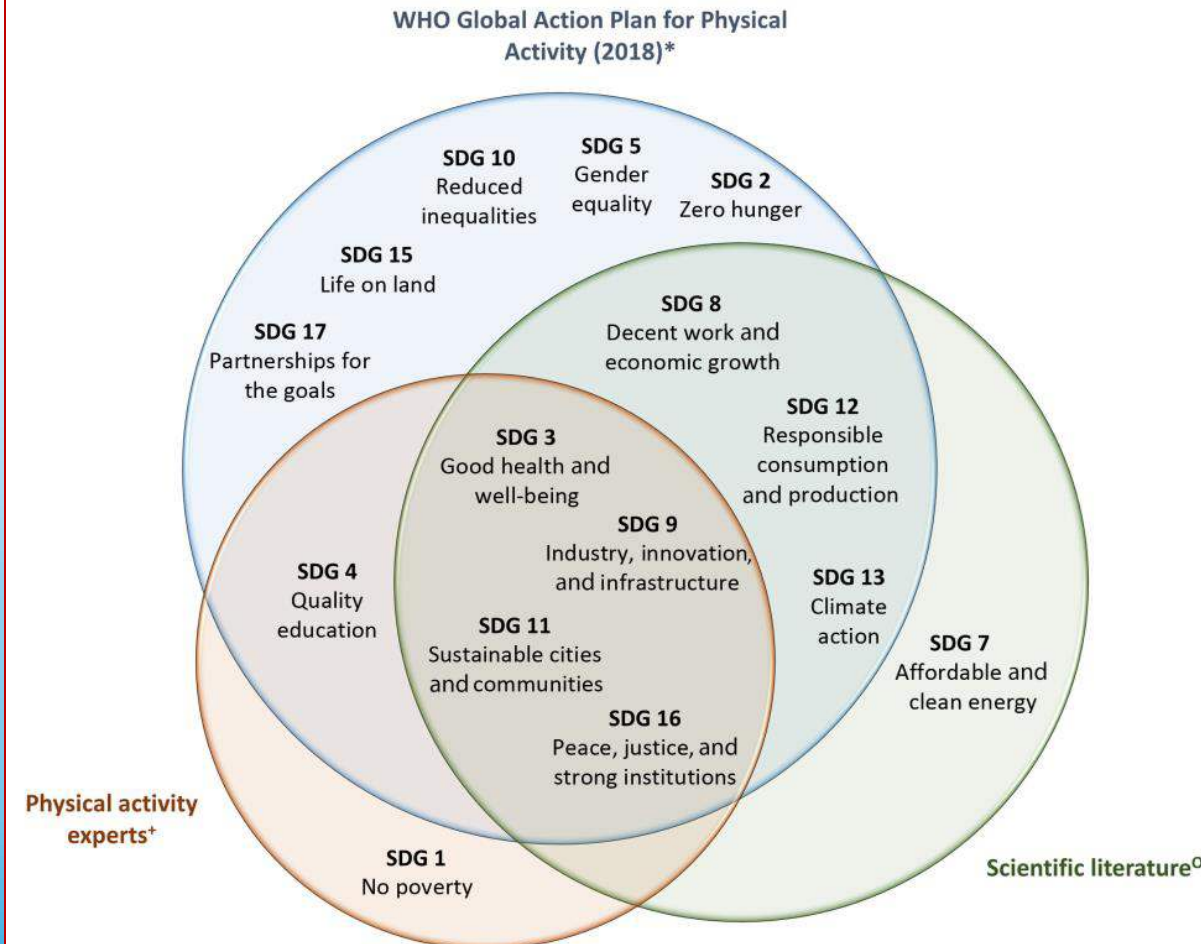


- **The Global Action Plan on Physical Activity 2018-2030** emphasized that physical activity has multiple **health, social** and **economic** benefits, and investing in policies to increase physical activity can contribute to achieving the SDGs.
- There are **multiple** direct and indirect **pathways** by which policies to promote physical activity support **13 SDGs**.

Physical Activity Promotion and the United Nations Sustainable Development Goals: Building Synergies to Maximize Impact

Deborah Salvo, Leandro Garcia, Rodrigo S. Reis, Ivana Stankov, Rahul Goel, Jasper Schipperijn, Pedro C. Hallal, Ding Ding, and Michael Pratt

- **Extensive Benefits Identified:** By integrating insights from the GAPPA, global experts, and a systematic scoping review, it was found that promoting physical activity could benefit **15 out of the 17 SDGs**.
- **Strongest Evidence:** The most robust evidence supports the benefits of **physical activity** for **SDG 3** (good health and well-being), **SDG 9** (industry, innovation, and infrastructure), **SDG 11** (sustainable cities and communities), **SDG 13** (climate action), and **SDG 16** (peace, justice, and strong institutions).



Physical Activity Report Card Indicators and the United Nations Sustainable Development Goals: Insights from Global Matrix 4.0



- **Body of Evidence:** Based on the available body of evidence in the literature on the relationship between physical activity and the UN SDGs.
- **Primary Goal:** To explore the associations between 10 key indicators of Physical Activity for children and adolescents assessed in the Global Matrix 4.0 project and the UN SDGs.
- **Importance:** This analysis will allow us to verify whether countries/jurisdictions with better physical activity indicators in children and adolescents have better or worse performance in achieving the SDGs.

METHOD

Two Main Databases

- **Active Healthy Kids Global Alliance Global Matrix 4.0**
[<https://www.activehealthykids.org/>]
- **SDG Transformation Center** [<https://sdgtransformationcenter.org/>]

METHOD

Measures

- **Active Healthy Kids Global Alliance Global Matrix 4.0**
Report Card grades on **10 indicators** from **57 countries/jurisdictions**

Interpretation	Prevalence	Grade	Corresponding number for analysis
We are succeeding with a large majority of children and adolescents	94%–100%	A+	15
	87%–93%	A	14
	80%–86%	A-	13
We are succeeding with well over half of children and adolescents	74%–79%	B+	12
	67%–73%	B	11
	60%–66%	B-	10
We are succeeding with about half of children and adolescents	54%–59%	C+	9
	47%–53%	C	8
	40%–46%	C-	7
We are succeeding with less than half but some children and adolescents	34%–39%	D+	6
	27%–33%	D	5
	20%–26%	D-	4
We are succeeding with very few children and adolescents	<20%	F	2
Incomplete—insufficient or inadequate information to assign a grade		INC	No grade*

Note. INC: country without sufficient information to assign a grade; * Information treated as missing in data analysis.

10 Physical Activity indicators

- Overall Physical Activity
- Organized Sport and Physical Activity
- Active Play
- Active Transportation
- Sedentary Behavior
- Physical Fitness
- Family and Peers
- School
- Community and Environment
- Government Investments and Strategies

METHOD

Measures

- **SDG Transformation Center**
[<https://sdgtransformationcenter.org/>]
- **57 countries/jurisdictions**



SDG Index Score

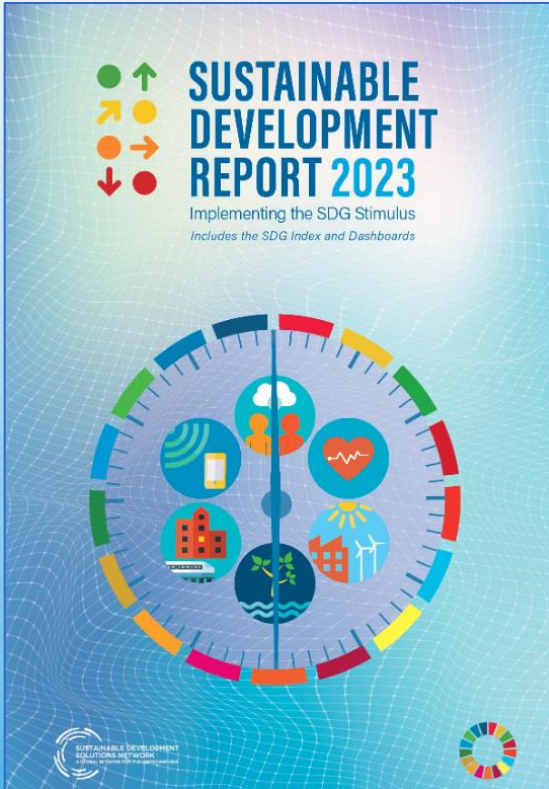
- The SDG Index evaluates the performance of each country/jurisdiction in achieving the set of 17 UN SDGs, as well as the performance in reaching the targets of each SDG individually.

Score Range:

- The score represents a country's performance between **the worst possible outcome (score of 0)** and **the target (score of 100)**.

Purpose of the SDG Index:

- Indicates whether countries are on track or off track to achieve the SDGs by 2030.



METHOD

Data analysis procedure

- Pearson's and Spearman's correlation coefficients were used to explore the relationships between physical activity indicator grades and countries' SDG performance (SDG index).
- Each country/jurisdiction was categorized into three distinct performance tiers—fair, moderate, and good—based on their respective positions within the tertile distribution of the SDG Index scores for each of the 17 UN SDGs.
- To compare the physical activity indicator grades of these three groups of countries/jurisdictions regarding their performance in achieving the SDG targets, we used a one-way ANOVA or Kruskal-Wallis test, with Bonferroni post hoc comparisons.
- We adopted a significance level of 5%.



RESULTS

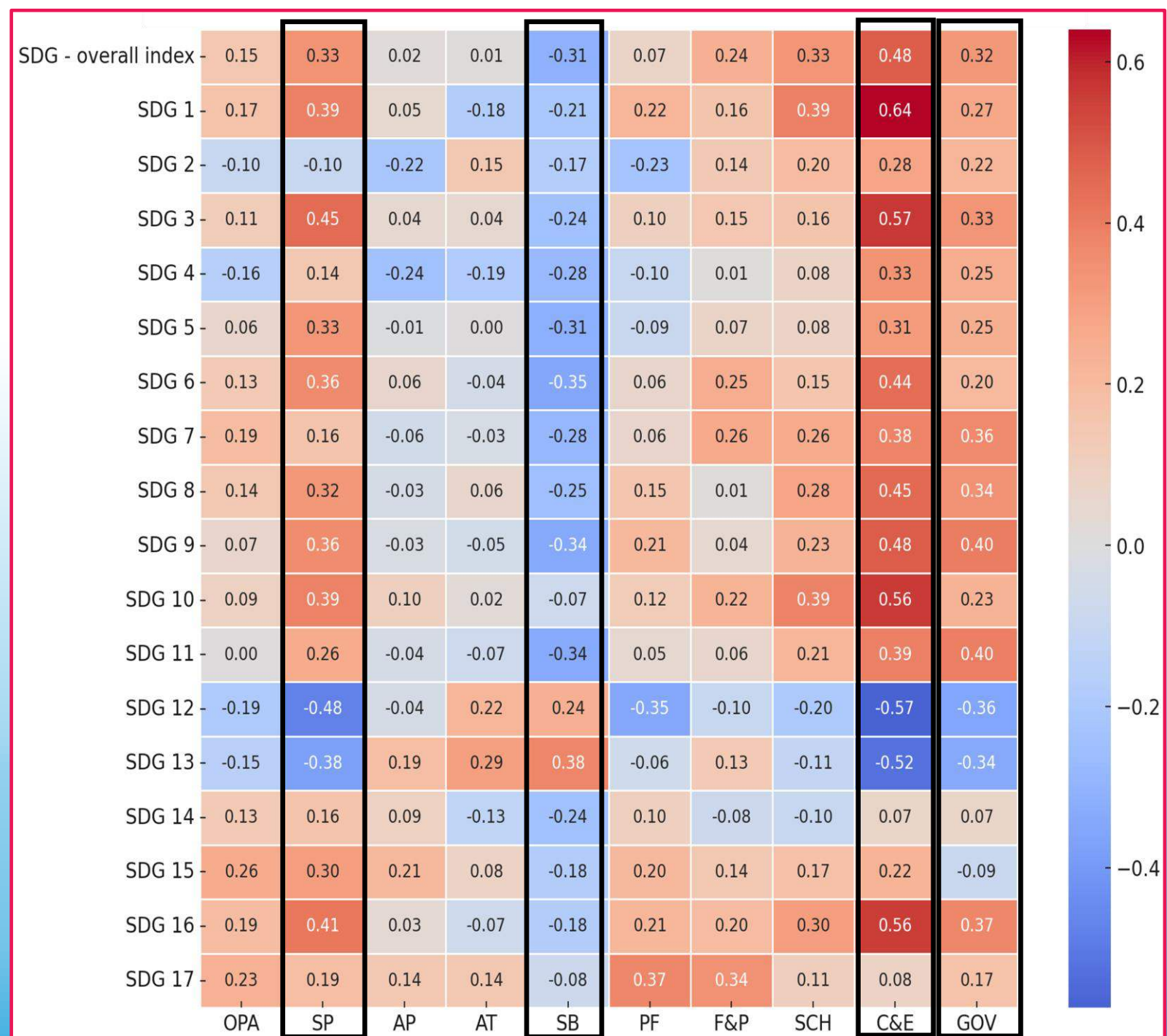
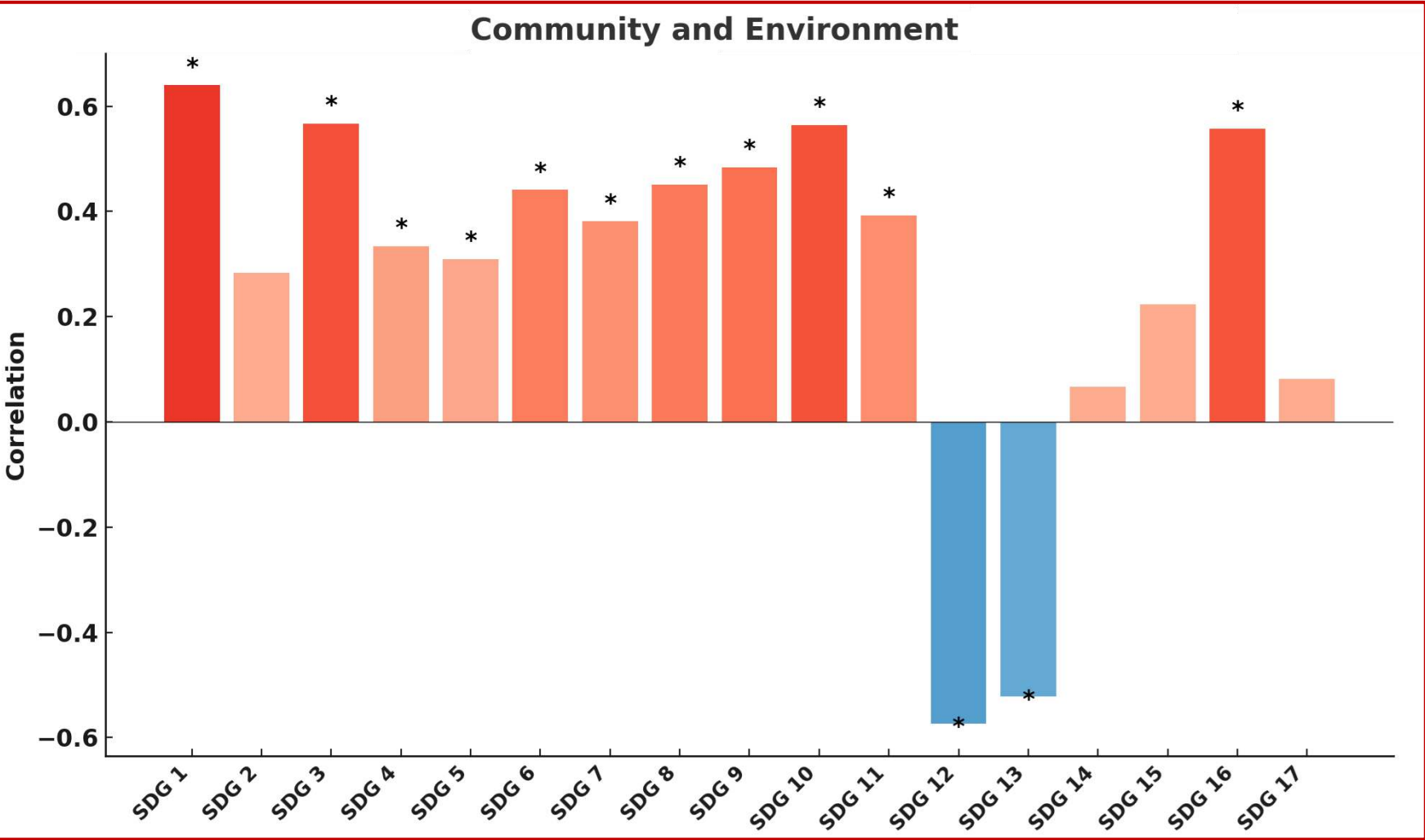


Fig. 1. Correlation matrix between the performance index for achieving the SDG targets and the grades of physical activity indicators.

PA indicators that stood out in relation to the **performance index of countries/jurisdictions** in achieving the SDGs were:

- **Community and Environment**
- **Government**
- **Organized Sport and Physical Activity**
- **Sedentary Behavior**

Fig. 2. Correlation coefficient values between the Community and Environment indicator grades and SDG achievement index.



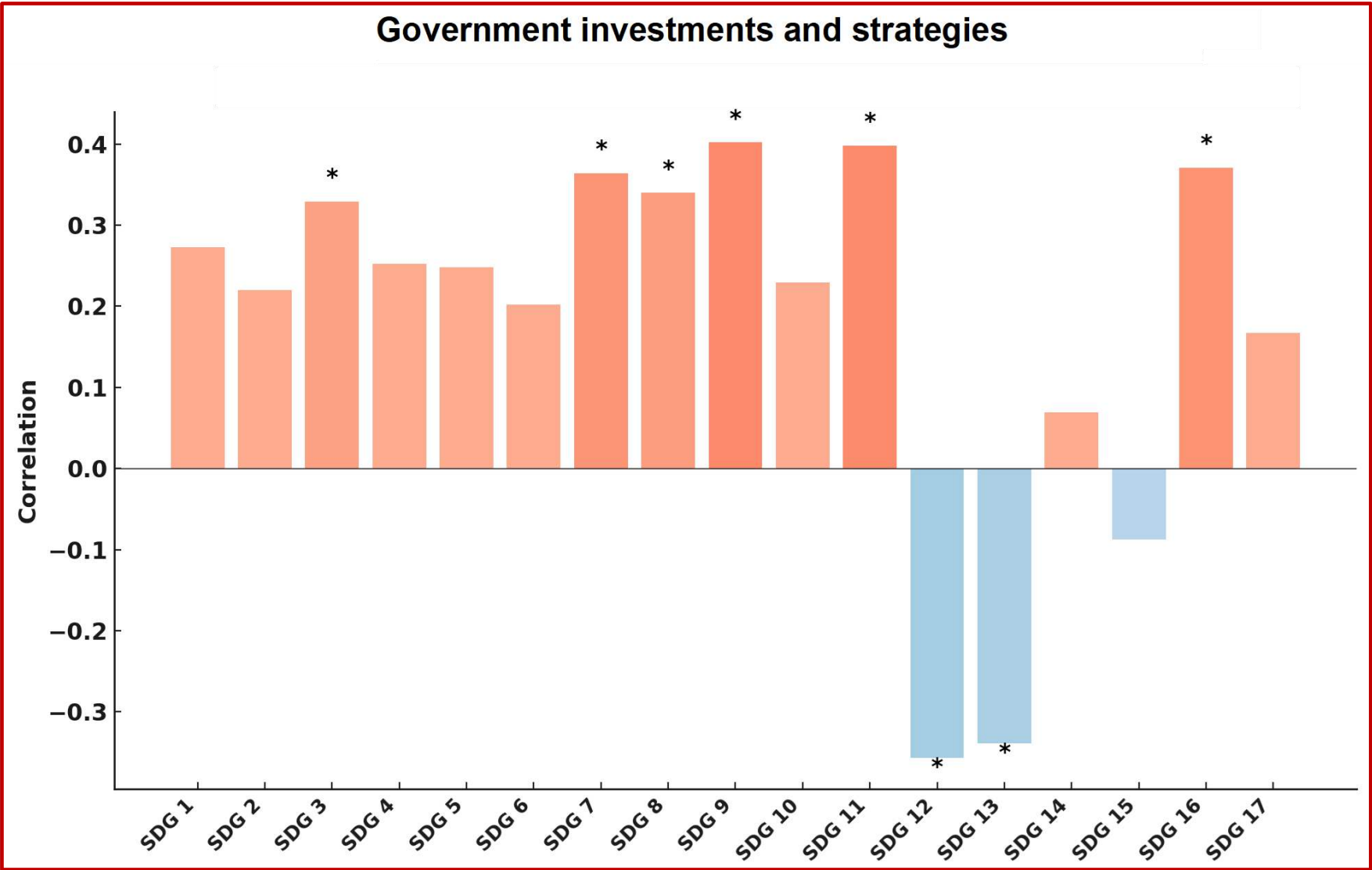
Positive correlations

- SDG 1 (No Poverty)
- SDG 3 (Good health and well-being)
- SDG 4 (Quality Education)
- SDG 5 (Gender Equality)
- SDG 6 (Clean Water and Sanitation)
- SDG 7 (Affordable and Clean Energy)
- SDG 8 (Decent Work and Economic Growth)
- SDG 9 (Industry, innovation and infrastructure)
- SDG 10 (Reduced Inequalities)
- SDG 11 (Sustainable cities and communities)
- SDG 16 (Peace, Justice and Strong Institutions)

Negative correlations

- SDG 12 (Responsible Consumption and Production)
- SDG 13 (Climate Action)

Fig. 3. Correlation coefficient values between the Government indicator grades and SDG achievement index.



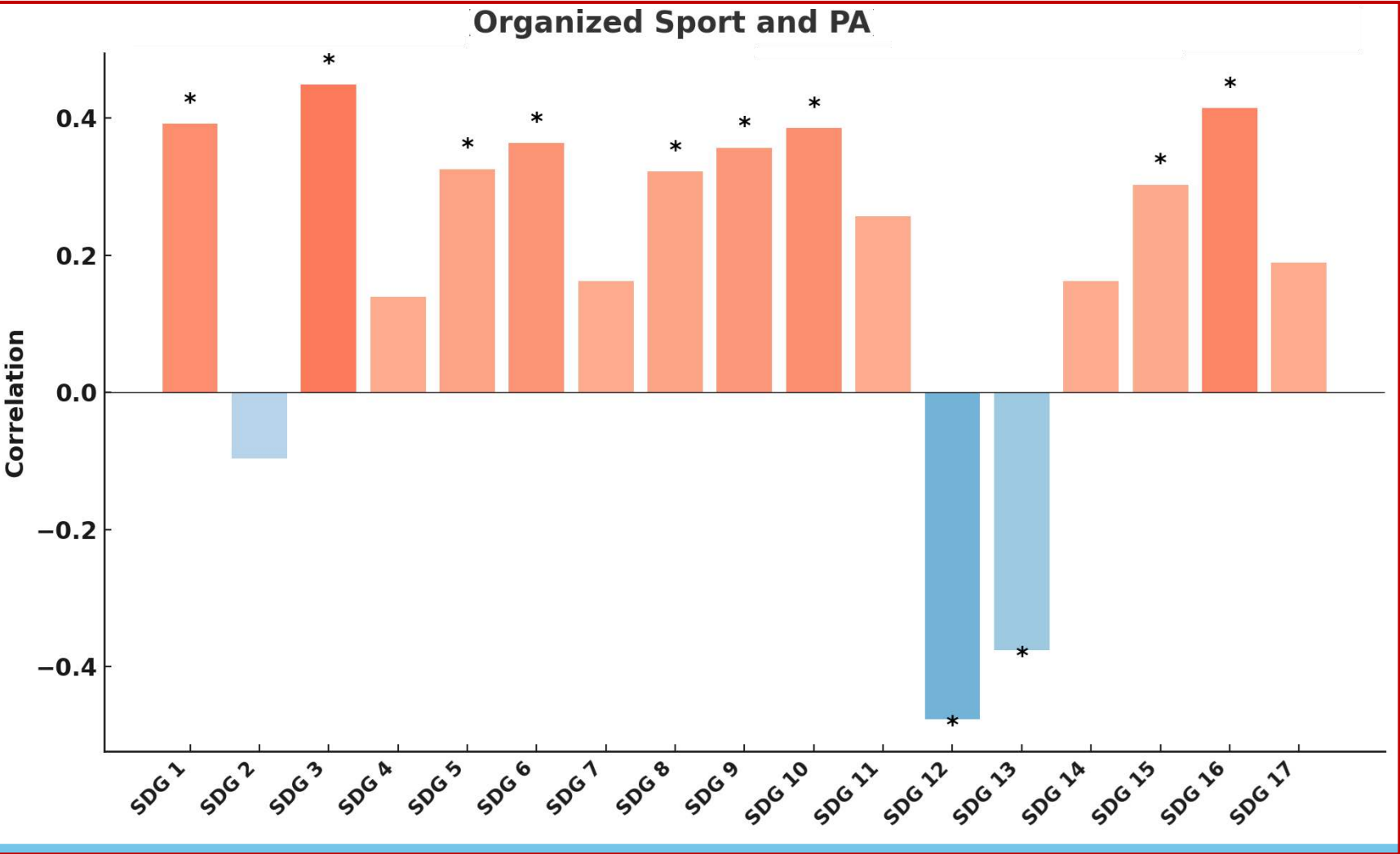
Positive correlations

- SDG 3 (Good health and well-being)
- SDG 7 (Affordable and Clean Energy)
- SDG 8 (Decent Work and Economic Growth)
- SDG 9 (Industry, innovation and infrastructure)
- SDG 11 (Sustainable cities and communities)
- SDG 16 (Peace, Justice and Strong Institutions)

Negative correlations

- SDG 12 (Responsible Consumption and Production)
- SDG 13 (Climate Action)

Fig. 4. Correlation coefficient values between the Organized Sport and PA grades and SDG achievement index.



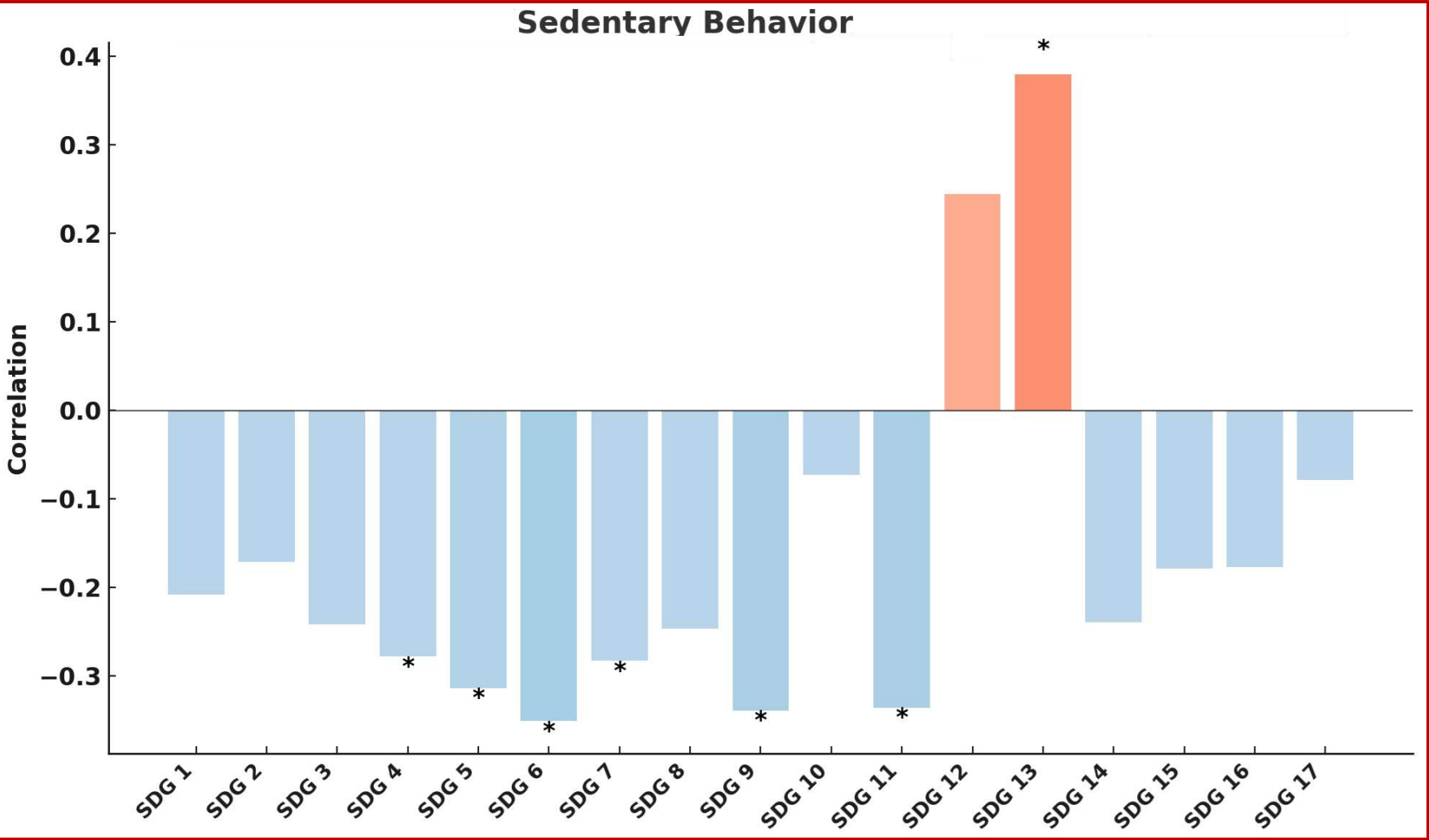
Positive correlations

- SDG 1 (No Poverty)
- SDG 3 (Good health and well-being)
- SDG 5 (Gender Equality)
- SDG 6 (Clean Water and Sanitation)
- SDG 7 (Affordable and Clean Energy)
- SDG 8 (Decent Work and Economic Growth)
- SDG 9 (Industry, innovation and infrastructure)
- SDG 10 (Reduced Inequalities)
- SDG 15 (Life on Land)
- SDG 16 (Peace, Justice and Strong Institutions)

Negative correlations

- SDG 12 (Responsible Consumption and Production)
- SDG 13 (Climate Action)

Fig. 5. Correlation coefficient values between the Sedentary behavior grades and SDG achievement index.



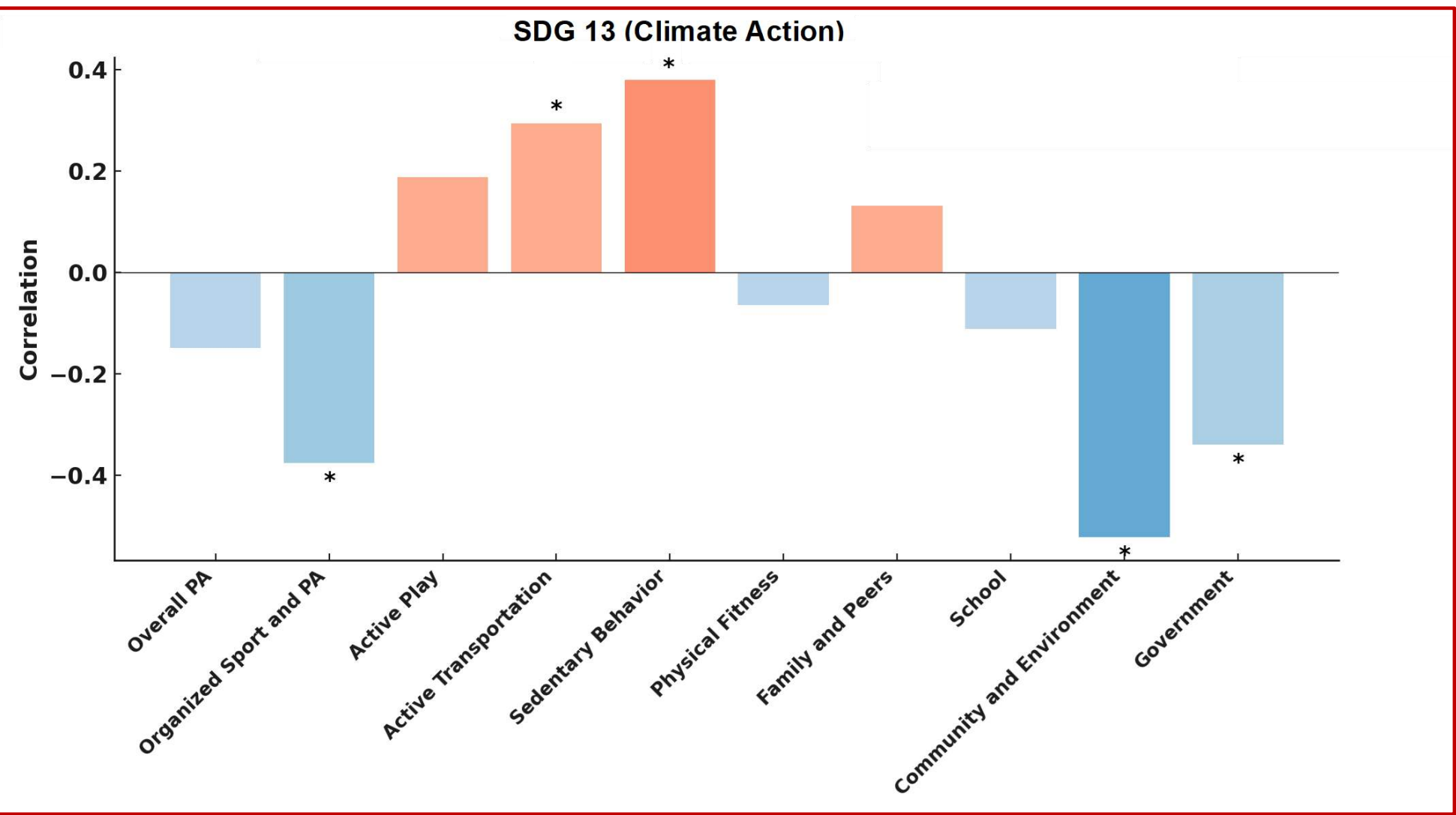
Positive correlations

- SDG 13 (Climate Action)

Negative correlations

- SDG 4 (Quality Education)
- SDG 5 (Gender Equality)
- SDG 6 (Clean Water and Sanitation)
- SDG 7 (Affordable and Clean Energy)
- SDG 9 (Industry, innovation and infrastructure)
- SDG 11 (Sustainable cities and communities)

Fig. 6. Correlation coefficient values between the **SDG 13 (Climate Action)** achievement index and PA indicators.



- **Positive correlation** with the indicators **Active Transportation** and **Sedentary Behavior**;
- **Negative correlation** with the indicators **Organized Sport and PA**, **Community and Environment**, **Government**.

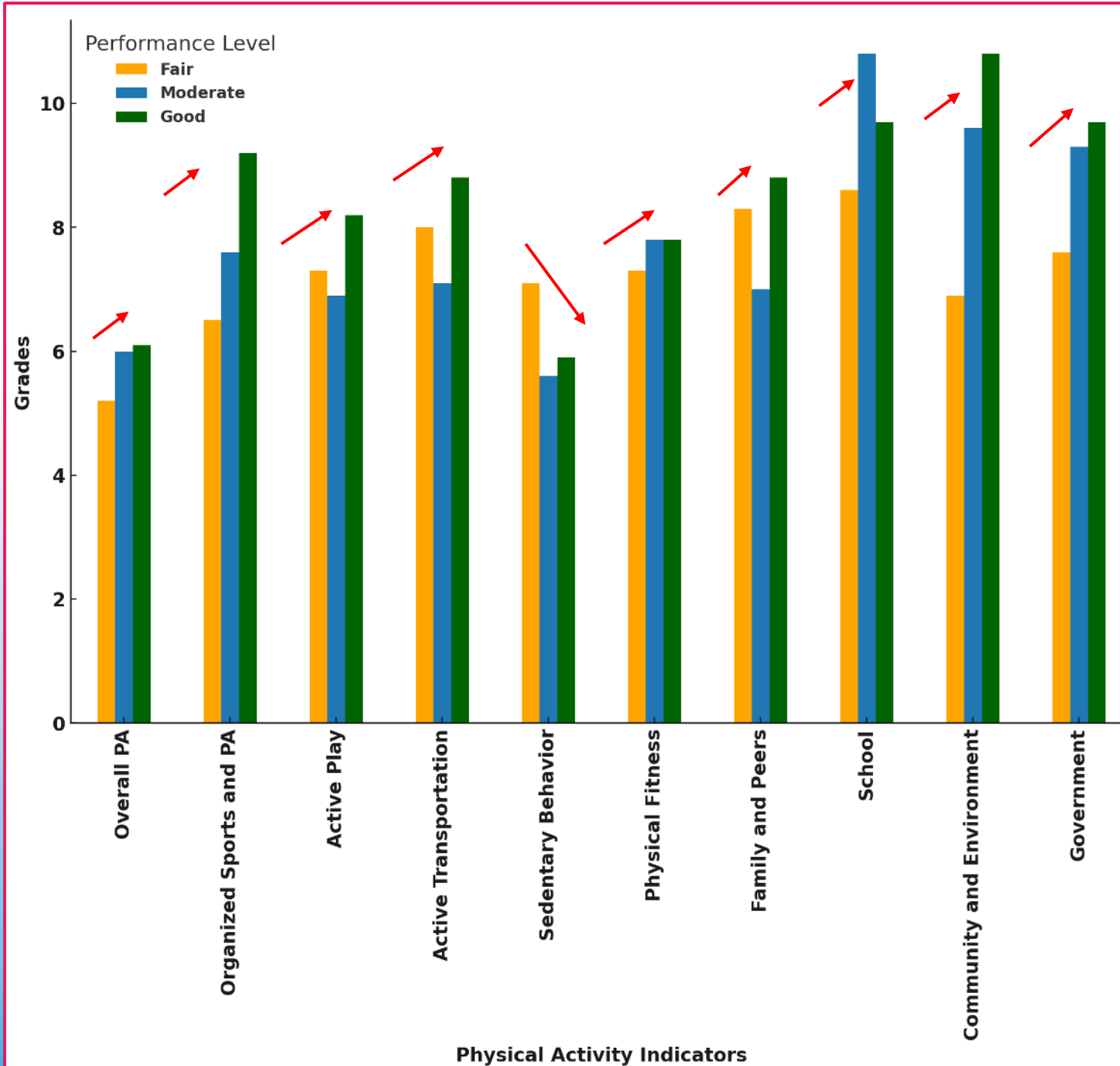


Fig. 7. Grades of PA indicators according to the countries/jurisdictions' performance in achieving the targets of all SDGs.

- Overall, the highest grades for the PA indicators were observed in countries/jurisdictions with good performance in achieving the targets of all SDGs.
- The exception was for the Sedentary Behavior indicator, where the highest grades were found in countries/jurisdictions with fair performance in achieving the SDG targets.

Community and Environment indicator of PA and SDGs

- Communities with well-designed environments that support physical activity tend to adopt healthier, more active lifestyles, improving health outcomes and lowering healthcare costs.
- These spaces also drive investment, foster innovation, and promote community engagement, contributing to sustainability.
- Additionally, providing safe, activity-friendly environments for children leads to safer communities and plays a vital role in building healthier, more sustainable societies.



Government indicator of PA and SDGs

- Countries/jurisdictions with strong governmental leadership in policies, actions, professional training, and advocacy for physical activity tend to have better physical activity levels among children and adolescents.
- This leadership also drives innovation and supports the economic sector through investments in physical activity initiatives. By promoting access to public and green spaces for leisure and physical activity, governments enhance community interaction, improve city sustainability, and contribute to safer environments.
- These efforts not only promote physical health but also support broader social and economic well-being.



Organized Sport and Physical Activity indicator of PA and SDGs

- Engaging children and youth in sports can be a powerful strategy for reducing mortality, as active lifestyles adopted in childhood often persist into adulthood.
- Additionally, involvement in organized sports drives economic growth by fostering innovation in the sports industry.
- Beyond the physical benefits, sports also promote values like inclusion, respect, and social integration, with evidence showing that youth involved in sports demonstrate greater respect for others and social conventions.



Salvo D, et al. *J Phys Act Health*. 2021;18(10):1163-1180.
Reilly JJ, et al. *Bull World Health Organ*. 2022;100(12):815-824.
Abad Robles MT, et al. *PLoS One*. 2021;16(6):e0252643.

***Sedentary Behavior* indicator and SDGs**

We identified a paradox in the relationship between countries/jurisdictions' grades for the Sedentary Behavior indicator and their performance in achieving the SDGs. The reasons for this could be:



- Countries/jurisdictions with low and medium Human Development Index (HDI) performed worse in achieving the SDG targets and had less sedentary children compared to countries/jurisdictions with high and very high HDI.
- Economically developed countries, which perform better in achieving most SDGs, have advanced technologies and industries that facilitate the creation of recreational and leisure spaces for children. On the other hand, children in these places have more access to screens.

Performance in achieving SDG 13 (Climate Action) targets and PA indicators

We identified a paradox in the relationship between countries/jurisdictions' grades for the *Organized Sport and Physical Activity, Community and Environment, Government indicators* and their performance in achieving the SDG 13. The reasons for this could be:

- Most high-income countries/jurisdictions follow a neoliberal economic model, characterized by consumerism and higher atmospheric pollutant emissions for economic gain. While these countries/jurisdictions scored better on PA indicators, they demonstrated less responsibility toward climate issues.
- Although sports have numerous benefits, their relationship with the environment is complex. Sports can raise awareness about climate issues, but they also contribute to pollution through the sports equipment industry, motorized transportation, and the energy consumption of events.



Final remarks



- These findings suggest that promoting physical activity among children and adolescents can play a key role in advancing the SDGs.
- The study emphasizes the need for interdisciplinary approaches and integrated policies to address global health and sustainable development challenges.
- Future research should further explore these relationships, considering socioeconomic and environmental factors, to guide effective policies that promote health and well-being in alignment with the SDGs.

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Congress
2024

Symposium

Striving for global equity in physical activity: insights from the Active Healthy Kids Global Alliance



Dr Salomé Aubert



Dr Mark Tremblay



Dr Taru Manyanga



Dr Diego Augusto Santo Silva