

Global sustainability challenges and the role of Higher Education Institutions

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Abstract. *This study investigates the relationship between the sustainability performance of countries and the commitment of Higher Education Institutions (HEIs) to the Sustainable Development Goals (SDGs). Using data from the Times Higher Education Impact Rankings (THE-IR) from 2020 to 2023 and the Global Sustainable Development Reports (GSDRs) from 2019 and 2023, the analysis encompasses HEIs from 114 countries. The*

methodology combined documentary and quantitative analysis to examine the impact of HEIs' commitment to the SDGs on the sustainability performance of countries. Results show a growing commitment to SDG 4 (Quality Education), SDG 3 (Good Health and Well-being), and SDG 8 (Decent Work and Economic Growth). At the same time, long-term goals such as climate change and biodiversity conservation receive less attention. Africa, Latin America, and Caribbean regions show progress and regressions, indicating ongoing disparities and challenges. Practical implications include the need for HEIs to more robustly integrate the SDGs into their strategies and curricula, promoting an interdisciplinary approach. Theoretically, the study enhances the understanding of the impact of HEIs on global sustainability, suggesting that their role can be maximized through a balanced and collaborative approach. Limitations include the short period of analysis and data variability. Future research should explore the regional impacts of HEIs and collaborative approaches to overcome barriers in implementing the SDGs.

1. Introduction

The climate emergency, over-exploitation of natural resources, global public health issues, and increasing inequality, both between and within countries, are recurring themes that have long demanded a significant and extensive transformation in how these challenges are addressed to ensure a sustainable future for humanity (GUNi, 2022).

Despite the various ongoing actions, the world is facing unprecedented challenges in the three dimensions of sustainability, exacerbated by the aftermath of three years of a global pandemic and multiple conflicts that exacerbate food insecurity and economic difficulties, as well as the dangerous temperature rise that is triggering extreme weather events and causing unprecedented biodiversity loss (Murray et al., 2023; Calvin et al., 2023). Contrary to global expectations, the prevalence of practices prioritizing political and economic interests over the transition toward sustainability has made challenging scenarios extremely complex (Dodman et al., 2023).

The latest Global Sustainable Development Report (GSDR), published by the United Nations in 2023, highlights the urgency of addressing significant sustainability challenges in sectors such as energy, food, and transport, emphasizing the need to promote large-scale practical implementation with emerging innovations, as well as the engagement of multiple stakeholders involved in more comprehensive system transformations (Dodman et al., 2023; Sachs et al., 2023).

Halfway to the end of the implementation period of the 2030 Agenda, all Sustainable Development Goals (SDGs) are seriously off track (Sachs et al., 2023). This scenario underscores the urgent need for transformation in established models, as well as the importance of learning from the lessons of this failure to ensure that future commitments are more effective (Dodman et al., 2023; Leal Filho et al., 2019a; Leal Filho et al., 2019b). Admitting the failure of the 2030 Agenda should not be seen as an end but as an inflection point that reinforces the need to do things differently. The lessons learned from this process are crucial for reformulating strategies that can effectively fulfill global commitments in future agendas (Weiland et al., 2021).

Among the main actors and agents of transformation, Higher Education Institutions (HEIs) stand out for their role in shaping individuals, producing knowledge, and preparing change agents for sustainability (El-Jardali et al., 2018; GUNi, 2022). The importance of education in the fate of humanity has never been more fundamental than now (GUNi, 2022), and HEIs can encourage innovative research, promote interdisciplinarity and critical thinking, and establish strategic partnerships with public and private sectors to apply solutions in real contexts (Bautista-Puig et al., 2022; UiB, 2020). Despite limitations, HEIs have the responsibility and opportunity to lead the implementation of new approaches and practices that ensure the achievement of the SDGs in future agendas. If fully realized, this potential can transform HEIs into key catalysts for advancing the global sustainability agenda.

The relevance of the topic and the commitments of HEIs to sustainability have driven the inclusion of Sustainable Development (SD) in their strategic agendas (Blasco et al., 2020). The role of HEIs in society and in preparing future generations of leaders has made stakeholders more attentive and demanding concrete results. This new positioning has intensified the scrutiny of HEIs' results concerning their commitments to sustainable development (Burmman et al., 2021; Hazelkorn, 2018), increasing the need for clear metrics and highlighting the role of rankings as classifiers and comparators.

The progress of the SDGs by the signatory nations of the 2030 Agenda is monitored through the quadrennial publication of the GSDR. The actions related to SD in HEIs have been evaluated by various global and regional rankings. Since 2019, the Times Higher Education Rankings (THE), a recognized global ranking assessing the quality of HEIs, has incorporated a specific ranking to measure the sustainability of HEIs, the Times Higher Education Impact Rankings (THE-IR) (THE-IR, 2023). This ranking is the only one that individually classifies HEIs based on their commitment to the SDGs.

This study aims to investigate the relationship between the sustainability performance of countries and the commitment of HEIs to the SDGs. The analysis will be based on the THE-IR from 2020 to 2023 and the GSDRs from 2019 and 2023. This study hypothesizes that countries with high levels of sustainability have HEIs that are more engaged and effective in implementing the SDGs.

The justification for this study is based on the urgent need to improve established models to meet sustainability demands, highlighting the role of HEIs in this process. Although the period analyzed by the THE-IR covers only four years and the GSDR data presents two temporal points (constructed over two blocks of four years), this analysis offers a current view of the influences of HEIs on the sustainability performances of countries. The methodology adopted is a mixed approach, which analyses documentary and qualitative data from the THE-IR from 2020 to 2023 and the results of the GSDRs from 2019 and 2023.

The analysis contextualizes the contributions of HEIs to the advancement of the SDGs. It explores the factors influencing these performances, offering an understanding of the dynamics between the actions of HEIs and the sustainability outcomes in their respective countries. The results highlight the impact of HEIs on the global sustainability agenda, especially in light of the challenges amplified by the recent pandemic and economic and climatic crises. This study emphasizes the strategic importance of HEIs in promoting sustainable practices and shaping future leaders committed to global sustainability.

2. The role of Higher Education Institutions in the 2030 Agenda

Established in 2015 by the UN General Assembly, the SDGs form the core of the 2030 Agenda. With 17 goals and 169 targets, this agenda guides the global development strategy until 2030, encompassing economic, social, and

environmental aspects (UN, 2015; Rohrich & Takahashi, 2019). While they expand on the themes of the Millennium Development Goals (MDGs) and Rio+ Sustainable Development (SD), the SDGs require changes in governance strategies (Breuer et al., 2019; Kanie et al., 2019).

The 2030 Agenda underscores the interdependence of the SDGs (UN, 2015; Weiland et al., 2021), whose effective implementation requires policy coherence at vertical and horizontal levels, with the participation of non-state actors (Breuer et al., 2019). Challenges such as the complexity of monitoring indicators, the absence of methods to quantify some indicators, and the lack of a model to address synergies and trade-offs have led to the neglect of these synergies and trade-offs (Breuer et al., 2019; Renaud et al., 2022). Synergies occur when progress in one goal benefits others, while trade-offs arise when one goal hinders others (Breuer et al., 2019; Pradhan et al., 2017).

The need to address synergies and manage trade-offs intensifies due to complex political and economic dynamics (Kanie et al., 2017; Weiland et al., 2021). Analyses of synergies and trade-offs are essential for understanding how to implement SD strategies without compromising environmental and social goals (Pradhan et al., 2017; Renaud et al., 2022). Biocentric views, which value the integrity of all living beings, promote more ethical and inclusive SD (Keitsch, 2018; Spahn, 2018). The transition to biocentric principles implies recognizing all life forms' interdependence and ecosystem health's importance (Dodman et al., 2023).

The urgency of developing approaches that balance human needs with the protection of biodiversity and natural resources is pressing (O'Neill et al., 2018; Wackernagel et al., 2017). According to the 2030 Agenda, this could be the first generation to eradicate poverty and the last to have the chance to save the planet (UN, 2015, p.12). However, global inequalities, reflected in disparities in resources, wealth, and technology between developed and developing countries, amplify the challenges of meeting basic needs, exacerbate ecological damage, and hinder SD. These inequalities affect access to advanced technologies, robust infrastructure, and effective governance, impacting countries' SDG achievement (Renaud et al., 2022). While developed countries progress in goals like Clean Energy (SDG 7) and Quality Education (SDG 4), less developed nations face a lack of basic infrastructure and socioeconomic disparities, hindering progress in SDGs such as 3 (Good Health and Well-being) and 1 (No Poverty) (Weiland et al., 2021).

To implement the SDGs inclusively and equitably, international cooperation must support developing countries through technology transfer, adequate financing, and strengthening local capacities. This path, though promising, remains underexplored (Kanie et al., 2019). Policies addressing internal inequalities must ensure that all population segments have access to opportunities to contribute to and benefit from SD (Mejía-Manzano et al., 2023).

Improvements in resource efficiency, although urgent, are insufficient for sustainability in industrialized countries due to high consumption levels (Skobelev, 2021). It is necessary to consider a development model incorporating technological improvements, behavioral changes, and policies promoting reduced resource consumption (Eisenmenger et al., 2020).

Pursuing long-term sustainability requires evaluating the economic growth paradigm and prioritizing GDP over environmental health and social well-being (Eisenmenger et al., 2020). This model conflicts with the planet's ecological limits and does not reflect the interdependence between economic prosperity, social equity, and environmental integrity (O'Neill et al., 2018). The transition to a low-carbon and inclusive economy is imperative to align with the SDGs, challenging the continuous growth paradigm in favor of "prosperity without growth" (Kanie et al., 2017).

Ensuring adequate financial resources requires innovation in financing, public-private partnerships, and international cooperation (Schmitt et al., 2019; Weiland et al., 2021). Among the recommended possibilities, results-based financing, linking payments to the achievement of SDG targets, encourages efficiency and effectiveness (Mejía-Manzano et al., 2023); green bonds and social impact bonds mobilize private capital for sustainable investments, providing financial returns and environmental and social benefits (Leal Filho et al., 2021). Additionally, policies that directly address inequalities are necessary to ensure equitable access to SD (Renaud et al., 2022).

Amid uncertainties, the SDGs represent achievable targets and a call to action to rethink global development deeply. The choices made today will determine whether this generation will be remembered as one that bravely addressed the shortcomings and contradictions of the SDGs or as one that failed to seize the last chance to save the planet and ensure a sustainable and equitable future for all.

HEIs have an immediate and transversal role in implementing the SDGs, facing significant effectiveness and structural commitment challenges. Since the Talloires Declaration of 1990, HEIs have been recognized as centers for

promoting sustainability through education, research, and sustainable practices (Gaitán-Angulo et al., 2022; Leal Filho et al., 2022). Despite efforts during the Decade of Education for Sustainable Development (2005-2014) and the Global Action Programme for ESD (2014-2019), promoted by UNESCO, the integration of SD principles into HEI curricula and administration globally remains uneven and insufficient, facing numerous challenges to achieving effective and comprehensive implementation (Leal Filho, 2018).

HEIs are responsible for training professionals and change agents committed to SD, leading research, innovation, and education of leaders engaged in this theme (Lozano et al., 2015). However, sustainability policies, curriculum updates, and green infrastructure often need more systematic engagement to promote fundamental changes toward the SDGs (De La Poza et al., 2021). Criticisms point to the superficiality of integrating the SDGs into curricula and the theoretical nature of research that rarely translates into practical or political impact (Mejía-Manzano et al., 2023). The lack of adequate organizational structures and investment in SD capacity building are significant barriers (Alghamdi et al., 2017).

To address these challenges, HEIs must increase engagement with applied research, form strategic partnerships, and adopt a pedagogical approach that empowers students as change agents (Leal Filho et al., 2018). Essential measures include incorporating sustainability into strategies and curricula, developing institutional capacities, mobilizing financial resources, and promoting a sustainable culture in all activities (Mejía-Manzano et al., 2023). Collaborative approaches, such as public-private partnerships, can contribute to financing, knowledge, technology, and innovation for SDG implementation (El-Jardali et al., 2018). By integrating the concepts of the Quadruple and Quintuple Helix, HEIs can promote multisectoral collaboration that enhances innovation and sustainability (Carayannis & Campbell, 2021).

Despite having a crucial role in promoting the SDGs, HEIs must face significant challenges to increase their effectiveness. There needs to be a more robust and structured commitment to ensuring that sustainability practices result in concrete practical and political changes. Promoting a culture of sustainability, developing institutional capacities, and mobilizing financial resources are fundamental to the long-term success of global SD strategies (Leal Filho et al., 2021). So far, HEIs have failed more than succeeded, and with substantial change, their efforts will continue to be sufficient to achieve a truly sustainable future.

3. Method

This study adopts a mixed-methods approach, combining documentary and quantitative methods with a longitudinal design, to investigate the relationship between countries' sustainability performance and the commitment of Higher Education Institutions (HEIs) to the SDGs. The research encompasses the analysis of THE-IR results from 2020 to 2023, verifying whether HEIs exert a positive and significant influence on the sustainability performance of the countries where they are located, as reported in the 2019 and 2023 GSDRs. Documentary analysis enabled extracting relevant data from rankings and reports, while quantitative analysis utilized statistical techniques to calculate means and standard deviations and identify trends and variations in SDG performance.

3.1 Criteria for identifying data sources data

Sources were meticulously selected based on their relevance and credibility in the context of sustainability assessment. The following primary sources were used:

- a) Times Higher Education Impact Rankings (THE-IR): This global ranking evaluates the contributions of Higher Education Institutions (HEIs) to the SDGs using a variety of quantitative and qualitative indicators. Collected data include academic publications, institutional policies, collaborations, and the direct social impact of HEI activities. THE-IR's methodology is based on a combination of bibliometric and institutional policy metrics, allowing for a comprehensive and multidimensional assessment (THE-IR, 2023). Besides the mandatory SDG17, institutions are evaluated on the three SDGs in which they scored the highest.
- b) Global Sustainable Development Reports (GSDRs) are quadrennial UN publications that assess global progress towards the SDGs, identifying trends, best practices, synergies, and challenges. The 2019 and 2023 reports provided a comprehensive view of trends, best practices, synergies, and challenges in SDG implementation (Sachs et al., 2023).

3.2 Data Collection Methods

Data collection was carried out in two main stages, ensuring the comprehensiveness and accuracy of the data used in the analysis:

THE-IR Data Collection: SDG results from 1 to 16 were extracted for all HEIs listed in the 2020 to 2023 rankings. Collected information included academic publications, institutional policies, collaborations, and the direct social impact of HEI activities. GSDR Data Collection: SDG assessments from 2019 and 2023 were extracted for the 114 countries included in the study.

The GSDR regional classification was used to group countries into regions with similar cultural, economic, and social characteristics, facilitating contextualized and detailed analysis. The GSDR regional classification includes Oceania, Eastern Europe and Central Asia, East Asia and South Asia, Latin America and the Caribbean (LAC), the Middle East and North Africa (MENA), Sub-Saharan Africa, and the Organisation for Economic Co-operation and Development (OECD).

3.3 Data processing and analysis

The collected data were meticulously processed and analyzed to ensure the results' integrity and relevance.

3.3.1 Data processing

Duplicates and inconsistencies in the collected data were eliminated, ensuring the accuracy of subsequent analyses. Means and standard deviations were then calculated to determine the percentage of HEIs that scored in each SDG, providing a clear view of trends and variations in SDG performance.

3.3.2 Quantitative analysis

Using robust statistical software, advanced statistical techniques were applied to identify trends and variations in SDG performance. The 2019 and 2023 GSDR SDG results were compared, assessing progress or regression in each region and identifying significant percentage variations highlighting regional dynamics.

3.3.3 Qualitative analysis

Secondary information was collected from the web pages of HEIs highlighted in the THE-IR ranking, supplemented by academic publications, case studies, and institutional reports, in addition to integrating HEI initiatives and projects related to the SDGs, providing a holistic view of HEIs' contributions to sustainability.

3.4 Data interpretation

Data interpretation focused on demonstrating the significance of the results and the innovative contribution of this study to the global scientific community:

3.4.1 Significance of results

Identification of the SDGs most highly scored by HEIs, through detailed analysis of their implications for global sustainability, highlights areas of significant impact, and identifies critical gaps.

Assessment of regional variations in SDG performance, highlighting specific challenges and progress achieved in different geographic and socio-economic contexts.

3.4.2 Contribution to the scientific community

Broadening the understanding of the impact of HEIs on Global Sustainability, suggesting that their role can be maximized through a balanced and collaborative approach involving multiple stakeholders.

Identification of Priority Areas for Future Research: Particularly in relation to the lowest-scored SDGs, proposing strategic directions to increase the effectiveness of HEIs in promoting global sustainable development.

4. Results and Discussion

Between 2020 and 2023, the THE-IR recorded the participation of HEIs from 114 countries, demonstrating significant global engagement in the context of the SDGs. HEIs were scored on three SDGs of their choice and SDG 17, mandatory for all. The analysis of the score distribution allows the identification of which SDGs received the most attention and effort from the participating institutions, reflecting their priorities and areas of potential more significant impact on global sustainability. Table 1 presents the average distribution of scores obtained by HEIs for each SDG during the analyzed period.

The results reveal different levels of attention dedicated to the goals. Among the most highly scored SDGs, with 12.81%, 12.62%, and 11.09%, are SDGs 4, 3, and 8, respectively. These SDGs are directly linked to the primary mission of HEIs in teaching, research, and community engagement. The high score in SDG 4 reflects the commitment of HEIs to quality education. The prominence of SDG 3 is due to the presence of health related HEIs, which positively impact communities. SDG 8 reflects the role of HEIs in promoting economic development and professional training. Prioritizing health, education, and economic growth improves the quality of life and promotes socioeconomic development, attracting funding and partnerships that facilitate the implementation of these projects.

Table 1. Distribution of scores by SDG from 2020 to 2023

Sustainable Development Goals (SDGs)	Average
1. Eradication of Poverty	5.63%
2. Zero Hunger and Sustainable Agriculture	3.19%
3. Health and wellness	12.62%
4. Quality education	12.81%
5. Gender equality	9.27%
6. Clean water and sanitation	3.08%
7. Clean and Affordable Energy	6.23%
8. Decent Work and Economic Growth	11.09%
9. Industry, Innovation and Infrastructure	6.59%
10. Reducing Inequalities	4.83%
11. Sustainable Cities and Communities	6.19%
12. Responsible Consumption and Production	4.52%
13. Action Against Global Climate Change	2.76%
14. Life in the Water	1.45%
15. Earth Life	2.06%
16. Peace, Justice, and Effective Institutions	7.68%

Source: Adapted from THE-IR (2020, 2021, 2022, 2023).

The SDGs that received moderate attention, ranging from 6.19% to 9.27%, include SDGs 5, 7, 9, 16, and 11. These goals reflect areas where HEIs have expertise and established resources. The availability of financial and human resources influences the capacity of HEIs to engage in these SDGs actively. The complexity of some goals requires interdisciplinary approaches, which are only possible with robust support structures.

The least scored SDGs, ranging from 1.45% to 5.63%, include SDGs 1, 2, 10, 12, 13, 14, and 15. These goals face more significant challenges and require more resources and expertise, making prioritization difficult for many HEIs. The complexity and global scope of these SDGs also contribute to less attention, as addressing issues such as poverty eradication and climate change requires multifaceted solutions beyond the typical reach of HEIs.

HEIs tend to prioritize goals with immediate and visible impact on local communities. In contrast, SDGs related to poverty, hunger, climate change, and biodiversity are perceived as global challenges with less tangible short-term benefits. Funding and partnerships for these areas face obstacles, as funders and partners prefer areas with direct and measurable impact, such as health and education (El-Jardali et al., 2018). Success in sectors like education and health is

more easily quantifiable and communicable, while the impacts of SDGs related to environmental and social sustainability are more diffuse and long-term.

The analysis reveals that HEIs strongly focus on areas directly linked to their primary mission and have an immediate and measurable impact on local communities, such as education and health. However, it is imperative to intensify efforts and resources in more challenging and long-term global goals, such as climate change and biodiversity preservation. Striving for a more effective balance in addressing various SDGs can enhance the contribution of HEIs to promoting sustainability on a global scale.

Considering that SDG 4, directly interconnected with the other SDGs, highlights quality education as central to empowering society to face economic, social, and environmental challenges (Weiland et al., 2021), the results of SDG 4 in the GSDR of 2019 and 2023 were compared for the countries whose HEIs participated in the THE-IR. The results, by region, are presented in Table 2.

Table 2. Comparison between SDG4 results in SGDR 2019 and 2023

SGDR Regions	Average		Standard deviation		Percentage Change
	2019	2023	2019	2023	
Africa	2.67	2.67	0.58	1.15	0.0%
LAC	3.33	3.67	0.58	1.15	10.0%
East and South Asia	3.00	3.00	NaN	NaN	0.0%
Eastern Europe and Central Asia	3.33	3.00	1.15	1.00	-10%
MENA	4.00	4.00	0.00	1.41	0.0%
OECD	3.33	3.67	1.00	0.71	10.0%

Source: Adapted from United Nations (2019, 2023).

In Africa, the average performance in SDG 4 remained constant from 2019 to 2023, while the standard deviation increased from 0.58 to 1.15, indicating greater inequality among the countries. Although the average remained the same, there was a more excellent dispersion in the data in 2023, reflecting increased variation in educational performance among the countries in the region. This disparity results from the unequal distribution of educational resources and political instability in various regions. Gaitán-Angulo et al. (2022) highlight that

inadequate funding for HEIs limits the expansion of effective educational programs.

In LAC, the average performance in SDG 4 increased from 3.33 to 3.67, but the standard deviation also grew, indicating uneven improvements. Some HEIs promote social inclusion and expand access to higher education, improving average indicators (De La Poza et al., 2021). However, economic instability in countries such as Venezuela and Brazil hampers education funding (Parr, 2022; Pradhan et al., 2017). In East and South Asia, the average of 3.00 remained unchanged from 2019 to 2023. The absence of a standard deviation (NaN) is due to uniform and insufficient data to calculate dispersion, preventing the calculation of variation and suggesting stability and possible stagnation in educational progress.

In Eastern Europe and Central Asia, the average fell from 3.33 to 3.00, a variation of -10%, while the standard deviation decreased from 1.15 to 1.00. Malinovskiy and Shibanova (2023) state that the post-Soviet economic transition still affects the allocation of educational resources, prioritizing traditional economic areas over educational innovation. The average remained stable at 4.00 in the MENA region, but the standard deviation increased from 0.00 to 1.41, indicating a growing disparity. Conflicts in countries like Syria and Libya harm education, while the UAE maintains high standards with proactive policies and significant investments (Alkhalidi et al., 2023).

In the OECD region, the average increased from 3.33 to 3.67, a variation of 10%, while the standard deviation fell from 1.00 to 0.71, indicating less dispersion. Authors such as Galleli et al. (2022) and Bautista-Puig et al. (2022) warn that the pressure to maintain high standards can increase inequality between elite HEIs and others. Long-term policies, consistent investments, and a stable political context have allowed OECD HEIs to improve the quality of education.

The analysis reveals that some regions maintained stability in average scores while others showed significant variations, reflecting different SDG progress and challenges. The variations in SDG 4 between countries and within the same regions highlight global inequalities in access to and quality of education. HEIs focus on areas like education and health but need to increase efforts on complex and long-term global goals, such as climate change and biodiversity conservation. A better balance among the SDGs can maximize the impact of HEIs in promoting global sustainability.

Each region faces challenges and achievements regarding the SDGs, reflecting the complexity and diversity of global socioeconomic and environmental

conditions. This highlights how far humanity is from achieving a sustainable balance that "leaves no one behind." While Table 2 illustrates the variation in SDG 4 results between 2019 and 2023, evidencing both progress and setbacks in different regions, Table 3, located in the [Appendix A](#), provides a comparison of the results of the other SDGs for the countries whose HEIs participated in the THE-IR, offering a comprehensive view of the changes in SDG performance over the analyzed years.

The results in Table 3 show a mixed performance in Africa regarding the SDGs, with increases of 16.67% in SDGs 2 (Zero Hunger) and 7 (Affordable and Clean Energy), reflecting improvements in agricultural and energy policies. Recent studies indicate increased agricultural productivity and access to renewable energy (Li et al., 2024; Rehman et al., 2024). Conversely, there were regressions in SDGs 14 (Life Below Water) with a 28.57% decrease and 15 (Life on Land) with a 10% decrease, indicating challenges in environmental conservation. Stability in SDGs 3 (Good Health and Well-being), 5 (Gender Equality), and 6 (Clean Water and Sanitation) suggest that while conditions have not worsened, the improvements are insufficient for robust, sustainable development. Studies highlight the need for more effective policies and targeted investments to boost progress in these sectors (Blanco-Portela et al., 2017; Breuer et al., 2019; De La Poza et al., 2021).

Eastern Europe and Central Asia showed mixed performance. Reduced inequalities (SDG 10) improved by 83.33%, attributed to income redistribution policies, investments in education and health, and a favorable geopolitical context (Breuer et al., 2019). SDGs 1 (No Poverty), 2 (Zero Hunger), 5 (Gender Equality), and 13 (Climate Action) also showed significant improvements. However, SDG 15 (Life on Land) fell by 33.33%, highlighting challenges in environmental conservation due to intensive industrial practices (Li et al., 2020). SDGs 9 (Industry, Innovation, and Infrastructure) and 7 (Affordable and Clean Energy) also regressed, indicating the need for more effective policies and technological innovation. Stability in SDGs 3 (Good Health and Well-being) and 6 (Clean Water and Sanitation) suggests that while policies maintain current levels, innovation is needed for further advancements.

East and South Asia excelled in SDG 13 (Climate Action) with a 25% increase, reflecting effective environmental policies. SDGs 2 (Zero Hunger) and 11 (Sustainable Cities and Communities) also recorded significant improvements, evidencing social progress. In contrast, the region had a 75% decline in reduced inequalities (SDG 10), indicating increasing socioeconomic disparities. This decline underscores the need for more inclusive policies. SDG 15 (Life on Land)

also regressed significantly, highlighting challenges in environmental conservation and sustainable resource management. Stability in SDGs 3 (Good Health and Well-being) and 5 (Gender Equality) suggests maintenance of current conditions without progress. Weiland et al. (2021) emphasize the importance of consistent public policies to avoid regression in critical socioeconomic indicators.

LAC experienced significant regressions in Life Below Water (SDG 14) and Life on Land (SDG 15), with decreases of 37.50% and 30%, respectively, revealing ongoing problems in environmental conservation. In contrast, there was stability in Peace, Justice, and Strong Institutions (SDG 16) and progress in Responsible Consumption and Production (SDG 12), with an 11.11% increase. Stability in Good Health and Well-being (SDG 3) and Gender Equality (SDG 5) indicate maintenance of current conditions without significant advances. Zapata-Cantu & González (2021) point out that economic instability in countries like Venezuela and Brazil affects the necessary investments for environmental conservation and sustainable development. SDGs 1, 7, 9, and 10 also regressed, highlighting the need for more integrated strategies to address these challenges.

In the MENA region, SDGs 14 (Life Below Water) and 15 (Life on Land) saw decreases of 42.86% and 33.33%, respectively, due to severe environmental challenges such as poor waste management and pollution. Stability in SDG 12 (Responsible Consumption and Production) indicates the need for more effective sustainability actions. On the other hand, SDGs 5 and 3 improved, showing the effectiveness of social policies. SDGs 1 (No Poverty), 8 (Decent Work and Economic Growth), 9 (Industry, Innovation, and Infrastructure), 10 (Reduced Inequalities), and 11 (Sustainable Cities and Communities) also advanced. However, SDGs 7 (Affordable and Clean Energy) and 16 (Peace, Justice, and Strong Institutions) regressed. The 25% decline in SDG 7 reflects difficulties transitioning to clean energy, crucial for sustainable development, while the reduction in SDG 16 highlights governance and political stability issues. Structural reforms are necessary to promote transparency, strengthen institutions, and ensure equitable resource access. Weiland et al. (2021) highlight that investments in civic education and civil society participation are essential for inclusive and resilient governance, advancing the sustainable development agenda, and contributing to more just, transparent, and participative societies.

OECD countries demonstrated stability in most SDGs, with some areas of regression. There were declines in SDG 12 (Responsible Consumption and Production) and SDG 13 (Climate Action) by 5% and 4.76%, respectively, reflecting persistent challenges in sustainable development. Significant regressions occurred in SDGs 3 (Good Health and Well-being), 6 (Clean Water

and Sanitation), 7 (Affordable and Clean Energy), 8 (Decent Work and Economic Growth), and 15 (Life on Land). These setbacks highlight the need to strengthen policies and investments in public health, water infrastructure, clean energy, and environmental preservation. Despite its economic and technological advantages, this region remains one of the most polluting, failing to present itself as a sustainable model (Wolf et al., 2022). SDG 5 (Gender Equality) improved by 25.93%, reflecting efforts in equity policies. Innovation and Infrastructure (SDG 9) slightly improved by 8%. Sustainable Cities and Communities (SDG 11) and Life Below Water (SDG 14) also improved, with increases of 3.13% and 9.52%, respectively.

In light of regional analyses and variations in SDG performance, it is evident that the 2030 Agenda represented a significant advance in global sustainability discussions, establishing the SDGs as a central framework for action. However, despite the progress, the integrated and collaborative implementation of the goals still needs to be improved. The excessive emphasis on economic growth (SDG 8) often undermines the essence of sustainability, neglecting social justice and environmental preservation. Rebalancing efforts to promote more equitable and resilient systems harmoniously with planetary boundaries is imperative.

The strategic pyramid of the SDGs (Figure 1), based on the environmental goals SDG 6 (Clean Water and Sanitation), SDG 13 (Climate Action), SDG 14 (Life Below Water), and SDG 15 (Life on Land), reflects the interdependence between ecosystem health and the success of the other goals. However, these SDGs are often neglected, both by HEIs and other stakeholders.

The social and economic goals, structured at intermediate levels of the pyramid, also require an approach that values the synergies and interdependencies between them. Effective implementation of the SDGs must be adaptive and contextually relevant, integrating local complexities with the global vision of sustainability.

Global collaboration, highlighted by SDG 17 (Partnerships for the Goals), is essential to overcome sustainability challenges. HEIs, by promoting partnerships and collaborative research, play a vital role in the transition to sustainable development. Addressing the contradictions and complexities of sustainable development requires a holistic and integrated approach, where SDG 17 can turn utopia into reality.

Therefore, HEIs and other stakeholders must strengthen their efforts across all SDGs, especially those linked to social justice and environmental preservation, to ensure a lasting positive impact on a global scale. Promoting sustainable

development requires a careful balance between environmental, social, and economic dimensions, strongly emphasizing collaboration and innovation.

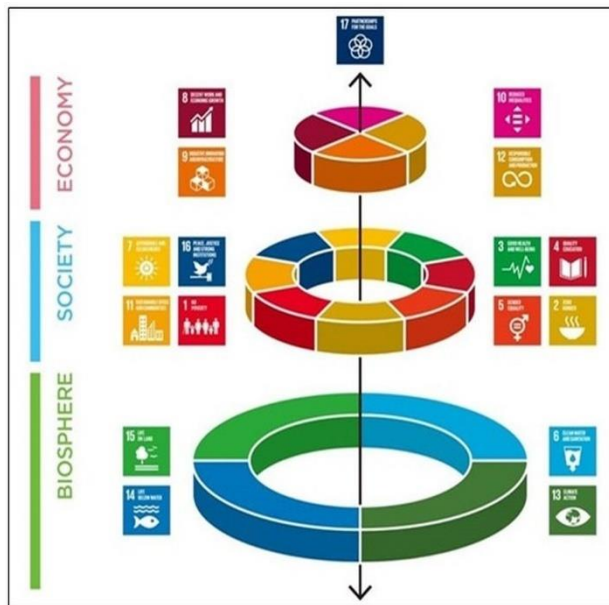


Figure 1. Strategic pyramid of the Sustainable Development Goals.
Source: Rockström & Sukhdev (2016).

5. Conclusions

This study has highlighted the significant role of Higher Education Institutions (HEIs) in promoting global sustainability, particularly in the context of the Sustainable Development Goals (SDGs). Through data analysis, it was observed that among HEIs in the 114 countries participating in the THE Impact Rankings (THE-IR), SDGs 4 (Quality Education), 3 (Good Health and Well-being), and 8 (Decent Work and Economic Growth) are the most highly scored, indicating that HEIs are intensely engaged in areas directly linked to their primary mission. However, more complex and long-term global objectives, such as climate change and biodiversity conservation, have received less attention. This proximity to and

distance from different SDGs underscores the need for a better balance among the various SDGs to maximize the impact of HEIs in promoting sustainability.

Regions exhibit progress and setbacks, with varying levels of attention dedicated to the SDGs. While some regions maintain stability, others display significant variations, reflecting different levels of progress and challenges. The findings indicate a growing commitment of HEIs to the SDGs across various regions but also highlight ongoing inequalities and challenges. Regions such as Africa and Latin America and the Caribbean (LAC) have shown progress and regressions in various SDGs, indicating disparities and ongoing challenges in implementing sustainable policies. Conversely, the OECD exhibited slight stability in most SDGs, though with some areas of regression that require more robust policies and sustainable investments.

The results of this study suggest that the hypothesis that countries with high levels of sustainability have more engaged and effective HEIs in implementing the SDGs was partially confirmed. A positive correlation was observed in some regions between the sustainability performance of countries and the commitment of HEIs to the SDGs. However, this relationship is not uniform across all regions, suggesting that other factors may significantly influence the engagement and effectiveness of universities in implementing the SDGs.

Despite efforts, the necessary transformation to address global challenges remains distant. Promoting sustainable development requires a careful balance among environmental, social, and economic dimensions, strongly emphasizing collaboration and innovation. HEIs can become essential catalysts for achieving a sustainable future through strategic partnerships and integrated approaches.

Changes in development paradigms demand new knowledge and skills that HEIs can provide. However, they must also reinvent themselves to lead this transformation effectively, adopting innovative leadership, rethinking their actions, and broadly integrating capacity-building for sustainable development into their curricula, promoting research and practical engagement. This will strengthen the role of the IES in training professionals capable of reconfiguring the human presence on the planet, contributing to a more sustainable and equitable future.

This study is limited by the relatively short analysis period and the variability in available data, which may restrict the generalization of the results. Additionally, the intrinsic complexity of the SDGs and regional disparities complicate the formulation of universal conclusions. Future research should focus on studies that analyze the impact of HEIs by region and explore interdisciplinary and

collaborative approaches involving multiple stakeholders. Further investigation is necessary to better understand the barriers and facilitators to implementing the SDGs across different regions.

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