

Evaluating Financial Support Mechanisms in Higher Education through Performance Indicators and SDG Integration

Luciana DRAGOMIR

Bucharest University of Economic Studies- Doctoral School of Accounting, Bucharest, Romania
ORCID: <https://orcid.org/0009-0008-3239-4127>
e-mail address: dragomirluciana23@stud.ase.ro

Ionut Marius CROITORU*

National University of Science and Technology Politehnica Bucharest, Bucharest, Romania
ORCID: <https://orcid.org/0009-0007-1290-6394>
*Corresponding author e-mail address: ionut.croitoru0208@upb.ro

Paula-Paraschiva DRAGAN (SPIRIDON)

West University of Timisoara, Timisoara, Romania
ORCID: <https://orcid.org/0009-0001-9461-4999>
e-mail address: paula.dragan84@e-uvt.ro

Liviu Mihail MATEESCU

National University of Science and Technology Politehnica Bucharest, Bucharest, Romania
ORCID: <https://orcid.org/0009-0000-7858-4702>
e-mail address: liviu.mateescu@upb.ro

Abstract.

Objectives: Higher education institutions (HEIs) play a pivotal role in advancing sustainable development and are increasingly expected to integrate the United Nations Sustainable Development Goals (SDGs) into their educational, research, and governance activities. This study assesses the degree of SDG integration in academia, identifying key sustainability themes and gaps where implementation remains limited. The findings indicate that certain academic fields integrate the SDGs more effectively than others, reflecting differences in institutional capacities and strategic priorities..

Implications: The results provide valuable insights for researchers, university leaders, and policymakers seeking to strengthen sustainability integration. HEIs are encouraged to adopt systemic, institution-wide approaches embedding the SDGs across curricula, governance, and research agendas. Policymakers and funding agencies can reinforce these efforts through coherent strategies, financial incentives, and targeted programs supporting sustainability in higher education.

Value of originality: This study offers an integrated mapping of SDG-related research in academia, combining bibliometric and qualitative insights. Unlike previous works focused on isolated goals or cases, it identifies system-level patterns, dominant clusters, and underexplored areas, offering an evidence-based framework to advance sustainability across higher education systems.

Keywords: Higher Education; Sustainable Development Goals; Education for Sustainable Development; Sustainability Competencies; Curriculum Integration; Bibliometric Analysis

How to cite: CROITORU, I. M., DRAGOMIR, L., DRAGAN (SPIRIDON), P.-P., & MATEESCU, L. M. Evaluating Financial Support Mechanisms in Higher Education through Performance Indicators and SDG Integration. *International Conference of Management and Industrial Engineering*, 12. <https://doi.org/10.56177/12icmie2025.193>

Introduction

Higher education institutions play a key role in promoting sustainable development. The creation of the Higher Education Sustainability Initiative (HESI) in 2012, an open partnership between United Nations agencies and the higher education community, highlighted the importance of the sector in realizing the 2030 Agenda. Through teaching, research, campus operations and community engagement, universities can cultivate the knowledge and skills needed to meet the Sustainable Development Goals (SDGs). In recent years, an increasing number of higher education institutions have begun to align their strategies and curricula with the SDGs [1]. University networks, league tables and accrediting bodies have also begun to encourage the integration of the SDGs into higher education, reflecting wider societal expectations that academia should contribute to global sustainability.

Despite this momentum, integrating the 17 SDGs into the various functions of a university remains a complex challenge. Many institutions undertake sustainability initiatives that are **fragmented or isolated**, lacking coordination within a unified approach [2]. Studies have found that efforts to 'operationalize' the SDGs in higher education policy, curriculum and practice are often achieved through scattered initiatives that are not supported by effective governance, leading to discrepancies between sustainability policy and actual practice. Moreover, the literature indicates an uneven uptake of ODD mainstreaming: most of the documented progress comes from certain disciplines and high-income regions, while other areas receive relatively little attention [3]. Indeed, there is **little research** on the extent to which HEIs have incorporated the ODD into their programs and operations. This suggests a knowledge gap on how higher education is comprehensively and systematically engaging with the SDG agenda.

Thus a clear gap emerges between the ambitious role of higher education institutions in sustainable development and the reality of integrating the SDGs on campus. Although education for sustainable development (ESD) has been an established concept for over a decade, the specific framework of the SDGs (adopted in 2015) introduces new areas and more holistic goals that many universities are still grappling with. There is little work that systematically examines how higher education institutions are integrating all 17 SDGs into their curricula, research, outreach activities and institutional governance [4]. A **'systems' perspective** is also lacking in many studies, with previous research focusing on individual case studies or isolated aspects. Consequently, the current state of knowledge does not fully explain the dominant areas of sustainability discourse in higher education and does not identify significant gaps in SDG integration.

To address this gap, the present study reviews recent research at the intersection of higher education and sustainability, with a focus on the integration of the SDGs. The objective is to synthesize current trends and identify areas in need of attention, thereby providing more effective strategies for higher education institutions to contribute to the SDGs. Specifically, the paper is guided by three research questions:

1. **What are the dominant themes in the sustainability discourse in higher education over the last 5 years?**
2. **What gaps exist in the integration of the SDGs in higher education based on keyword and cluster analysis of recent literature?**
3. **How can HEIs strategically address these gaps to better integrate ODD in education, research and operations?**

The paper continues with Section 2 Literature review, Section 3 details the research methodology and explains how the data was collected and analyzed, Section 4 presents the results emerging from the bibliometric analysis and Section 5 concludes with implications, sets an agenda for future research and presents the limitations of the paper.

Literature review

Higher Education for Sustainable Development (HEfSD) has evolved significantly over the last two decades. In 2005, the UN launched the Decade of Education for Sustainable Development, catalyzing numerous university initiatives to integrate sustainability into teaching and learning. Education for Sustainable Development (ESD) broadly refers to equipping students with the knowledge, skills, values and attitudes needed to promote a sustainable future. UNESCO's ESD Roadmap emphasizes that ESD is both a goal in its own right (SDG 4.7 calls for education for sustainable development) and a key factor for all the other SDGs.

A cornerstone of ESD in higher education is the development of **sustainability skills**. Research and international frameworks have agreed on a set of key competences that students need for sustainability, including systems thinking, anticipatory thinking (the future), normative thinking (values), strategic action, collaboration, critical thinking, self-awareness and integrated problem solving [5]. These competences are considered "essential for individuals to contribute to the transformation of society towards sustainability" [6]. Universities have responded by redesigning curricula to target these outcomes - for example, many curricula now include learning objectives related to systems thinking or interdisciplinary problem solving. The importance of competences-based education is

reflected in the literature; indeed, 'key competences' and specific competences, such as systems thinking, frequently appear as focal points in recent studies on sustainability in higher education.

Another important aspect in the literature is the emphasis on **transformative learning and mindset change**. Researchers argue that sustainability in higher education is not only about imparting knowledge but also about transforming worldviews and values. Rimanoczy (2020), for example, introduced the concept of 'sustainability mindset', emphasizing the importance of cultivating in students a mindset and being oriented towards sustainable actions [7]. This aligns with ESD's emphasis on affective and behavioral outcomes, such as developing students' sense of responsibility, self-efficacy, and willingness to act for sustainability. Therefore, many studies assess variables such as student attitudes, environmental values and pro-sustainability behaviors resulting from educational interventions. A significant body of work has focused on **teacher training** in this context: training future teachers in ESD is seen as a fulcrum for wider social change. Teacher training programs have incorporated sustainability content to ensure that new educators can integrate ESD themes into primary and secondary education. Research shows that such training can positively influence teachers' knowledge, attitudes and confidence to teach sustainability [8]. Overall, the literature positions higher education as a driver for propagating sustainability skills and mindsets throughout the education system and society at large.

In spite of these efforts, recent studies reveal that the integration of the SDGs in higher education is still in its infancy and unevenly implemented. A 2023 stocktaking analysis by Amorós-Molina et al. examined how the SDGs have been integrated into higher education globally and found that substantial progress only started around 2018, with a trend of accelerating publication of studies after this date. This review noted that ODD integration was most common in certain academic disciplines, particularly engineering and technology, business and economics, and social sciences, and often at undergraduate level [9]. In terms of methods, universities mainly used *workshops, stand-alone courses and lecture series* to introduce ODD content, with workshops and lectures being the most common approaches [10]. For example, some institutions organize extra-curricular workshop programs on sustainability innovation, while others have created optional courses on sustainable development. These modes tend to complement rather than revise existing curricula.

Researchers such as Leal Filho et al. (2019, 2023) and Franco et al. (2019) argue that the real integration of sustainable development into higher education requires a shift from ad-hoc initiatives to a coordinated and systemic approach [2], [4]. They emphasize the concept of an '*institution-wide approach*', in which sustainability (and the SDGs) are integrated into all aspects of university operations - from strategy and high-level administration to curriculum design, campus operations, research agendas and stakeholder partnerships. The case studies document cases where universities have adopted strategic sustainability plans or set up sustainability offices to promote this integration. However, the literature also reveals that such comprehensive approaches are still the exception rather than the norm. Many higher education institutions have signed sustainability charters or formulated policies, but without sufficient follow-up and resources, they remain tokenistic. As pointed out by Leal Filho (2011), university sustainability declarations or action plans are "useless unless backed up by concrete actions in curriculum, campus operations, research and outreach". Nearly a decade later, there is still a *lack of systematic explanations* of how SD is embedded in practice and a need for further empirical studies of implementation models. For example, Shawe et al. (2019) observed that despite positive individual cases, few universities have achieved truly systemic integration of SD into their core functions [11]. In particular, the extent to which HEIs incorporate SDGs into their curricula has not been quantified or widely analyzed [4].

In conclusion, the literature suggests that higher education is recognized as a vital arena for promoting sustainability and the SDGs, and numerous efforts are underway, from reorienting curricula to promoting sustainability competencies and forming global networks. However, it also highlights significant **gaps and challenges**: mainstreaming efforts are often fragmented, not all SDGs are addressed equally, many initiatives remain at pilot scale, and comprehensive institutional mainstreaming of the SDGs is still rare [2]. These observations formed the basis of the present study, which aims to delve deeper into the current scientific literature to identify dominant themes and specific gaps, thus contributing evidence to guide next steps in sustainability practice in higher education.

Methodology

The present research used a **mixed-method approach**, combining bibliometric and qualitative content analysis to address the three research questions. The bibliometric component was used to inform the development of recent research on sustainability in higher education, while the qualitative analysis helped to interpret the results and formulate policy recommendations.

Data collection: a search was conducted in the Web of Science (WoS) Core Collection for publications related to financial particularities and sustainable development in higher education using as primary search key "Financial particularities of higher education institutions" resulting in a total of 1,114 scientific articles existing in the WOS database and as secondary key we used the phrase "education for sustainable development" with a base of 3,654 articles. Since we wanted to capture the existing aspects in the specialized literature after the Covid 19 pandemic, we decided to use the WOS filter for the last five years from 2020 to 2025, resulting in a total of **1,568** articles on which we will perform the bibliometric analysis

Bibliometric analysis: author keywords from the collected publications were analyzed to identify high frequency terms and co-occurrence patterns. Using VOSviewer software (version 1.6.18) for text extraction and text mapping, a *co-occurrence network of keywords* was generated. with the condition of occurring at least 25 times The resulting network was divided into clusters using VOSviewer's clustering algorithm, which groups keywords based on their strength of association. The analysis yielded **three major clusters** of keywords, each representing a distinct thematic area in the literature which will be detailed in the Results section).

Qualitative content analysis: To enrich and explain the bibliometric results, a literature review was carried out targeting the key publications identified by the above search and additional sources. We reviewed the full texts of representative articles from each identified cluster to understand the context of those keywords and themes. We incorporated relevant **initiatives** to capture real-world challenges and successful strategies beyond academic publications. This qualitative synthesis helped to interpret the **gaps** (RQ2) and formulate **strategic responses** (RQ3) based on both scholarly evidence and practitioner experience.

Data presentation and validation: The results of the bibliometric analysis are presented both in tabular and graphical form. We compiled a table of the identified keyword clusters and their representative terms, as well as a graph of the most frequently occurring keywords, to answer RQ1. In interpreting these results, literature cross-references were made to confirm that quantitative patterns align with or are explained by previous research.

Results and further discussions

The review of recent literature on sustainability in higher education reveals clear **dominant themes** as well as notable **gaps** in the integration of the SDGs. These findings are organized around the research questions: first, major themes in the discourse are described (RQ1); second, gaps or areas insufficiently addressed in ODD mainstreaming are identified (RQ2); and, third, strategic measures to address these gaps are discussed (RQ3). The results of the bibliometric mapping are presented to illustrate the importance of the various themes and are interpreted in light of the broader literature.

The representation of the words/phrases with the highest co-occurrence of keywords extracted from publications between 2020-2025 is presented in **Table 1**. These clusters represent groups of topics that frequently appear together in the literature, suggesting that they form coherent discourse domains. In addition, the high frequency keywords corroborate these themes, showing which topics are most frequently studied.

Table 1 Keyword analysis

Keyword	Occurrences	Total link strength
education for sustainable development	812	1,757
sustainability	260	790
sustainable development	272	762
education	261	714
higher education	168	551
key competences	114	436
sustainable development goals	149	398
students	99	376
competences	100	369
framework	81	339
higher-education	81	339
environmental education	127	338
knowledge	98	337
education for sustainable development (esd)	156	329

Source: Authors' own research, based on Web of Science data using the VOSviewer program

Beyond these individual terms, by means of the VOSviewer program, we made a map of the co-occurrence network presented in figure 1 where 3 clusters can be distinguished:

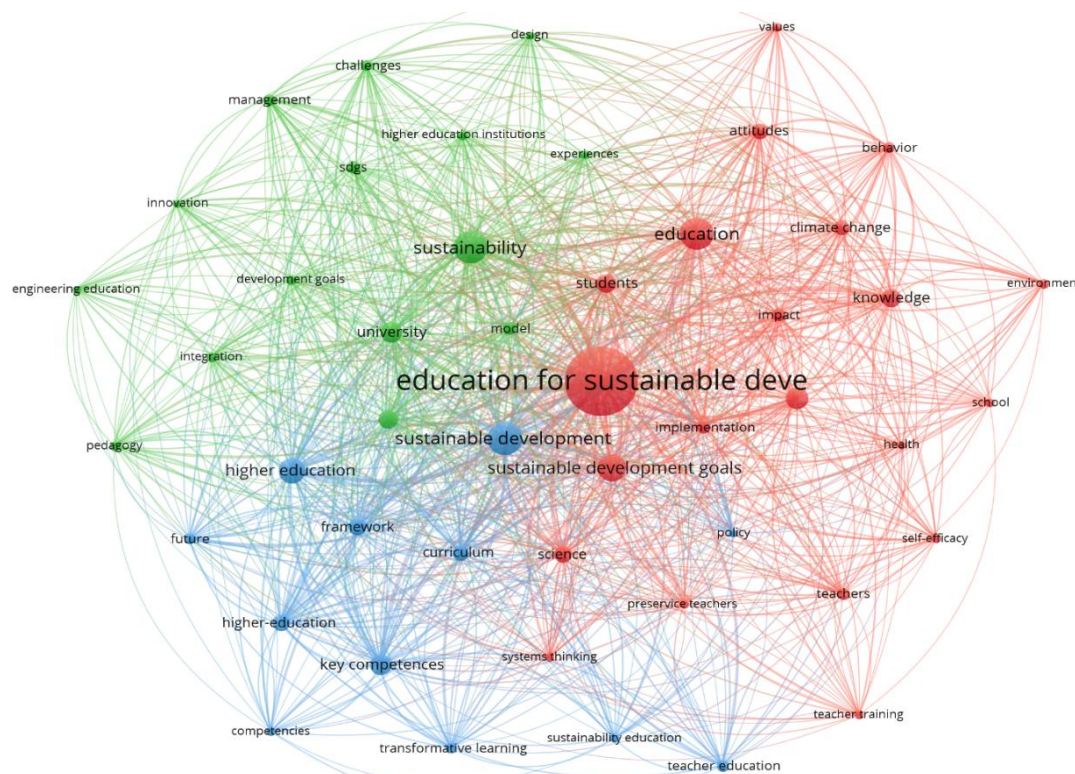


Figure 1: Keyword co-occurrence clusters

Source: Authors' own contribution (VOSviewer analysis).

The clusters have the following content:

Cluster 1 (21 Items): attitudes, behavior, climate change, education, education for sustainable, environment, environmental education, health, impact, implementation, knowledge, preservice, teachers, school, science, self-efficacy, students, sustainable developer, systems thinking, teacher training, teachers, values

Cluster 2 (15 Items): challenges, competences, design, development goals, engineering education, experiences, higher education institution, innovation, integration, management, model, pedagogy, sdgs, sustainability, university

Cluster 3 (11 Items): competencies, curriculum, framework, future, higher education, key competences, policy, sustainability education, sustainable developer, teacher education, transformative learning

The first group (Group 1) focuses on the **pedagogy of Education for Sustainable Development (ESD) and its influence on students' attitudes and behaviors**. This theme includes research on how sustainability content is taught and the effects it has on students and educators. Key words such as 'attitudes', 'behavior', 'knowledge', 'values' and 'self-efficacy' indicate a focus on learning outcomes - for example, studies measuring changes in students' attitudes towards sustainability or increases in sustainability knowledge following curriculum interventions. The presence of the terms 'teacher trainees', 'teacher education' and 'school' in this group suggests a strong sub-theme of integrating sustainability into teacher education programs. Indeed, a considerable body of recent literature examines how future teachers can be prepared to teach ESD in primary and secondary education, reflecting the idea that empowering educators multiplies the impact of sustainability throughout the education system. This group also includes terms related to environmental themes ('climate change', 'environmental education', 'health'), implying that ESD in higher education often uses environmental issues as contexts for teaching sustainability concepts (e.g. using climate change as a case study to develop students' systems thinking). The inclusion of 'systems thinking' and other skills in cluster 1 shows the link between **pedagogical approaches and skills development**. Overall, cluster 1 denotes a rich academic tradition on **how to educate for sustainability**, focusing on pedagogy, psychology. This is consistent with the long-standing emphasis on ESD: as reflected in the frequency analysis, "education for sustainability" is the most frequent keyword in the corpus (812 occurrences), underlining its central importance in the discourse. The importance of ESD-related outcomes also resonates with global frameworks; for example, UNESCO has identified the promotion of sustainable values and mindsets as crucial ESD goals [13].

The second group (Group 2) focuses on **sustainability competences and the practical integration of sustainability/SDGs in higher education institutions**. Key terms here include 'competences' (occurring in both singular and plural), 'challenges', 'integration', 'management', 'innovation', and explicitly '**Sustainable Development Goals (SDGs)**' (together with the synonym 'development goals' and the acronym 'SDGs'). This group comprises literature that addresses the capacities needed for sustainable development and how universities implement or integrate sustainability at the organizational level. A significant portion is devoted to defining and inculcating **sustainability competencies** in higher education curricula - for example, papers that discuss the curricular reforms needed to ensure that students graduate with systems thinking, collaboration and other key competencies. The high position occupied by "key skills" (114 occurrences) and "competencies" (100 occurrences) in our dataset reflects this priority. These studies often build on frameworks such as UNESCO's eight key competences for sustainability [5], looking for ways to translate them into learning outcomes and assessment across disciplines.

Interconnected with the focus on competencies is the theme of **integrating the SDGs into university policy and practice**. The presence of the terms 'management', 'university', 'higher education institution', 'mainstreaming' and 'challenges' indicates research investigating how institutions are incorporating sustainability principles (particularly the SDGs) into their governance, strategy and operations. Some papers discuss the role of leadership and interdepartmental collaboration in mainstreaming sustainability, highlighting the 'innovation' in management practices needed to overcome compartmentalized structures. The cluster also contains "engineering education" and implicitly refers to other professional fields, suggesting that integration efforts are being studied in specific contexts (such as how engineering programs incorporate sustainability or how business schools adopt responsible management principles). Remarkably, '**sustainability**' per se and '**SDGs**' are prominent in this cluster, indicating that much of the discourse explicitly falls within the SDG framework. This theme is consistent with the findings of recent reviews that universities are under pressure to integrate the SDGs into their core functions [14], but face challenges in doing so systematically [2]. The group's focus on 'challenges' and 'integration' echoes the literature on organizational barriers and the need for coherent strategies (or governance) for sustainability in HEIs.

The third group (Group 3) emphasizes **curriculum development, policies and transformative learning frameworks for sustainability**. Dominant terms include 'curriculum', 'framework', 'policy', 'education for sustainability' and 'transformative learning'. This group can be interpreted as focusing on *macro-level and future-oriented approaches* to mainstreaming sustainability - how curriculum is rethought or restructured, the role of education policy and governance, and the search for deep learning experiences that transform students' perspectives. The presence of the terms 'future' and 'transformative learning' suggest an orientation towards innovation in education that prepares students for **future sustainability challenges**. "Policy" in this context can refer to both internal academic policies, and external educational policies that promote ESD. The cluster also contains 'teacher education' (which overlaps with the theme of cluster 1, but probably focuses on teacher education frameworks and policy) and again 'competences'. This indicates a convergence between high-level curriculum design and the competences agenda, with many papers in this cluster proposing *frameworks* for embedding sustainability competences in the curriculum or across the institution.

Cluster 3 represents a more conceptual and strategic discussion: rather than focusing on a single course or competency, it expands to consider the **systemic transformation of education**. This includes the literature on the theory of change in higher education (how institutional change for sustainability can be achieved), on **interdisciplinary curricular models**, and on the link between educational practice and the broader goals of social transformation. The grouping of 'policy' with 'curriculum' and 'framework' underlines the argument of some researchers that top-down support (policy frameworks) is needed to infuse sustainability into the curriculum, and that piecemeal changes will not be sufficient.

In all three groups, **the SDGs are a unifying thread**, although they are emphasized differently. Group 2 explicitly mentions the SDGs, but Groups 1 and 3 implicitly support the SDG agenda through ESD and transformative pedagogy (which are central to SDG 4.7 and to the realization of all the goals). For example, 'students' (which appears 99 times) emphasizes the focus on learning outcomes (Cluster 1), and 'framework' (81 times) refers to discussions on curriculum frameworks (Cluster 3). The dominance of these keywords is in line with global academic and policy trends. It shows that **competency-based education, action towards the SDGs and curricular innovation are at the forefront of the higher education sustainability discourse** over the last five years.

While the above themes demonstrate a rich engagement with sustainability, the analysis also reveals some **significant gaps and under-explored areas** in the integration of the SDGs in higher education. These gaps emerge both from bibliometric data, in terms of relatively absent or rare topics, and from the qualitative findings of recent

studies that criticize current practices. Identifying these gaps is essential as they represent opportunities for improvement and areas to which higher education institutions should pay more attention. Higher education thus needs to undergo its own sustainable transformation in order to contribute fully to the SDGs. With a deliberate strategy and commitment, universities can move from incremental and piecemeal actions to comprehensive and systemic integration of the SDGs, fulfilling their role as key enablers of a sustainable future [15], [16].

Conclusion

Higher education institutions are increasingly recognized as crucial actors in the pursuit of sustainable development. This paper aims to analyze how the Sustainable Development Goals have been integrated into higher education, what gaps persist and how these can be addressed. Through a bibliometric and content analysis of recent literature, we have identified dominant themes that have a strong focus on ESD pedagogy and skills development, efforts to integrate sustainability and the SDGs into university curricula and management, and the emergence of frameworks for transformative, system-wide educational change. At the same time, we found significant gaps: many higher education institutions have not yet integrated the SDGs in a comprehensive way, with particular shortcomings in terms of attention to specific goals, coordinated governance and policy support, and the inclusion of all disciplines and global contexts. These findings point to a **research-practice gap** between the ambitious role of universities in sustainable development and the current degree of integration of the SDGs.

Over the last five years, the literature on sustainability in higher education has been dominated by topics related to teaching and learning, the internal process of aligning academic programs with sustainability competences and goals. 'Education for sustainable development' remains a central concept, reflecting continuity with previous efforts, while the terminology 'SDGs' has rapidly entered the lexicon, indicating a shift towards explicitly framing sustainability in the UN 2030 Agenda. The analysis confirms that higher education institutions are engaging in the realization of the SDGs through initiatives such as new curricula, campus projects and research priorities, but this engagement is **partial and fragmented** in many cases. Importantly, data and literature highlight that progress is uneven: most of the documented integration has taken place in certain fields (engineering, business, environmental studies) and in more affluent regions, with other fields lagging behind. In addition, while student-centered outcomes (knowledge, skills, attitudes) are frequently studied, less attention is paid to institutional change mechanisms such as policy reform, financing strategies or cross-sectoral partnerships that enable SDG integration.

The findings of this study have several implications for university leaders, academics and policy makers. First, a **more systemic approach** is needed so that universities should develop integrated strategies that incorporate the SDGs into all aspects of their work. Second, curricular innovation needs to be intensified and broadened: every discipline has relevant contributions to make to sustainable development, and curricula should be updated to reflect these contributions, ensuring that graduates in all fields are familiar with the SDGs. Third, universities should strengthen **collaboration and knowledge exchange**. Either through international networks such as HESI or through partnerships with local communities, sharing best practices and resources can help institutions overcome capacity limitations and avoid "reinventing the wheel". For policy makers and funding bodies, the findings indicate that supporting higher education in sustainability is a high-impact investment. Initiatives such as grant programs for curriculum development on the SDGs or national incentives for universities to report on SDG performance could accelerate the mainstreaming process.

Building on this work, future research could pursue in-depth case studies of universities that have successfully mainstreamed the SDGs to draw detailed lessons about implementation processes. Comparative studies across regions would be particularly valuable to understand context-specific barriers and enabling factors.

In conclusion, higher education has enormous potential to promote sustainable development by educating future leaders, generating solutions through research, and exemplifying sustainability in its own practices. **The Higher Education Sustainability Initiative (HESI)** and similar movements recognize this potential and have catalyzed important conversations and commitments [17].

Limitations

It should be noted that bibliometric analysis has some limitations inherent to the method; the results depend on the selected database (WoS), keywords and the fact that some relevant papers (not indexed in WoS) might be omitted. In addition, the clustering algorithm may split or combine topics in ways that require manual interpretation. Still the methodology provides a systematic overview of recent research themes and gaps, forming a basis for discussing how HEIs can strengthen ODD mainstreaming.

References

- [1] United Nations Department of Economic and Social Affairs (UN DESA). (2022, June 15). The Higher Education Sustainability Initiative discusses integrating the Sustainable Development Goals into Higher Education. UN DESA News. Available at: sdgs.un.org/news/higher-education-sustainability-initiative-discusses-integrating-sustainable-development-goals (accessed 01 Sep 2025).
- [2] Franco, I., Saito, O., Vaughter, P., Whereat, J., Kanie, N., & Takemoto, K. (2019). Higher education for sustainable development: actioning the global goals in policy, curriculum and practice. *Sustainability Science*, 14(2), 1621–1642. DOI: 10.1007/s11625-018-0628-4
- [3] Amorós-Molina, Á., Helldén, D., Alfvén, T., Niemi, M., Leander, K., Nordenstedt, H., Biermann, O. (2023). Integrating the United Nations sustainable development goals into higher education globally: a scoping review. *Global Health Action*, 16(1), 2190649. DOI: 10.1080/16549716.2023.2190649
- [4] Leal Filho, W., Simaens, A., do Paço, A., Hernandez-Diaz, P. M., Vasconcelos, C. R. P., Fritzen, B., & Mac-Lean, C. (2023). Integrating the Sustainable Development Goals into the strategy of higher education institutions. *International Journal of Sustainable Development & World Ecology*. Published online 19 Jan 2023. DOI: 10.1080/13504509.2023.2167884
- [5] UNESCO. (2017). Education for Sustainable Development Goals: Learning Objectives. Paris: United Nations Educational, Scientific and Cultural Organization. ISBN: 978-92-3-100209-0
- [6] Potter, R., Hiser, K., Evans, T., & Feldman, I. (2023). Key Competencies: Practical Approaches to Teaching Sustainability. Association for the Advancement of Sustainability in Higher Education.
- [7] Bodislav, D. A., Moraru, L. C., Georgescu, R. I., Grigore, G. E., Vlăduț, O., Staicu, G. I., & Chenic, A. Ș. (2025). Recyclable Consumption and Its Implications for Sustainable Development in the EU. *Sustainability*, 17(7), 3110.
- [8] Ignat, N. D. (2019). Stimulation and Development of the Creativity of Engineers through Education Platforms. *Annals of the University Dunarea de Jos of Galati: Fascicle: I, Economics & Applied Informatics*, 25(1).
- [9] Nicolae, S. (2015). The Profile of users of educational services in the field of entrepreneurship. In *The international conference in economics and administration, ICEA-FAA 2015*.
- [10] Dumitrescu, C., Leuștean, B., Lie, I. R., Dobrescu, R. M., & Vulturescu, V. (2019). Quality of Life in University POLITEHNICA of Bucharest Campus: Professors' Perception (pp. 213-228). Springer.
- [11] Shawe, R., Horan, D., Moles, R., & O'Regan, B. (2019). Mapping of sustainability policies and initiatives in higher education institutes. *Environmental Education Research*, 25(12), 1694–1714. (Discusses lack of systemic approach in HEIs).
- [13] Tabirca, Alina Iuliana, and Valentin Radu. Efficiency vs Effectiveness in Romanian Public Institutions. In *The 16th Economic International Conference*. 2020.
- [14] Rieckmann, M. (2012). Future-oriented higher education: Which key competencies should be fostered through university teaching and learning? *Futures*, 44(2), 127–135. (Referenced by UNESCO 2017 for key sustainability competencies).
- [15] SDSN Australia/Pacific. (2017). Getting started with the SDGs in universities: A guide for universities, higher education institutions, and the academic sector. (Provides practical guidance for integrating SDGs into HEIs).
- [16] Times Higher Education. (2021). THE Impact Rankings Methodology 2021. (Explains how university contributions to each SDG are measured, encouraging SDG integration in HEIs).
- [17] HESI (Higher Education Sustainability Initiative). (2012). Higher Education Sustainability Initiative Declaration (Rio+20). (The 2012 founding declaration of HESI, emphasizing the role of HEIs in sustainable development).