

GAZDASÁG & TÁRSADALOM

Journal of Economy & Society

TARTALOM

Schmude, Thorsten

Corporate Strategy in a Disruptive Economic Environment

Lukács, Rita

Main dimensions, initiatives, barriers,
and international best practices of sustainability in the higher education sector

Čiefová, Michaela – Baculáková, Kristína

University Students' Perception of Environmental Issues

Nyikos, Bendegúz Richárd

Public opinion and influencers on social media

Vitéz-Durgula Judit

Egészségipari innovatív vállalkozások jellemzői Magyarországon

Amberg Nóra – Gyenge Balázs – Lehota József

Kozmetikumvásárlók szegmentálása a környezet- és egészségtudatosság tényezői alapján

Kovács Zoltán – Dunay Anna – Vinogradov Szergej – Nagy Katalin – Illés Bálint Csaba

Végzős középiskolások pénzügyi kultúrával
és öngondoskodással kapcsolatos ismeretei Magyarországon

Takáts Alexandra

Az online vásárlási szokások pandémia okozta változásának vizsgálata

Pataki Gábor – Illés Bálint Csaba – Sótónyi Tamás – Dunay Anna

Egy kárpátaljai kistérség társadalmi-gazdasági helyzetértékelése az ukrainai közigazgatási reform után

2021/3-4

Gazdaság & Társadalom

14. ÉVFOLYAM

2021.

3-4. SZÁM

TARTALOM

TANULMÁNYOK/STUDIES.....	3
Economic disruption as a strategic accelerator: the increased importance of Strategic Alignment in the post-Covid-strategy	
<i>Thorsten Schmude.....</i>	<i>5</i>
Main dimensions, initiatives, barriers, and international best practices of sustainability in the higher education sector	
<i>Rita Lukács.....</i>	<i>25</i>
University Students' Perception of Environmental Issues	
<i>Michaela Čieřová – Kristína Baculáková.....</i>	<i>49</i>
Public opinion and influencers on social media: the valuation of their effects by generation Y and Z in Hungary	
Public opinion and influencers on social media	
<i>Bendegúz Richárd Nyikos.....</i>	<i>63</i>
Egészségipari innovatív vállalkozások jellemzői Magyarországon a 2000-es évektől napjainkig	
<i>Vitéz-Durgula Judit.....</i>	<i>82</i>
Kozmetikumvásárlók szegmentálása a környezet- és egészségtudatosság tényezői alapján	
<i>Amberg Nóra – Gyenge Balázs – Lehota József.....</i>	<i>95</i>
Végzős középiskolások pénzügyi kultúrával és öngondoskodással kapcsolatos ismeretei Magyarországon	
<i>Kovács Zoltán – Dunay Anna – Vinogradov Szergej – Nagy Katalin – Illés Bálint Csaba.....</i>	<i>123</i>
Az online vásárlási szokások pandémia okozta változásának vizsgálata és fenntarthatósági aspektusa	
<i>Takáts Alexandra.....</i>	<i>151</i>
Egy kárpátaljai kistérség társadalmi–gazdasági helyzetértékelése az ukrainai közigazgatási reform után	
<i>Pataki Gábor – Illés Bálint Csaba – Sótonyi Tamás – Dunay Anna.....</i>	<i>167</i>
ABSTRACTS IN ENGLISH.....	193

Main dimensions, initiatives, barriers, and international best practices of sustainability in the higher education sector

Rita Lukács¹

ABSTRACT: Higher education institutions can play three different roles in promoting sustainability, which makes the relationship between higher education and sustainability unique. Universities can shape the attitudes of future generations through education and can also act as scientific laboratories to address environmental, social, and economic challenges. Their operations can have a wide range of positive and negative impacts on their environment that are worth addressing.

This paper will explore the role of universities in sustainability, presenting international best practices in the different aspects of sustainability and analysing the impact of COVID-19 on the sustainability of universities.

KEYWORDS: sustainability, higher education, coronavirus

JEL Codes: I23, Q01, Q56

Introduction

Significant environmental, social, and economic impacts are the usual cornerstones of corporate sustainability strategies. But what are the main activities and impacts of universities? At first glance, their impacts are not comparable to those of industries traditionally seen as major polluters, such as oil, energy, or manufacturing. But if we consider the long-term impacts of universities – training the leaders of the future and working on important research projects with a significant impact on the future – we can see that higher education has a major role to play in shaping the state of the environment, society, and the economy.

This is one reason why it is essential to examine the link between higher education and sustainability. Depending on the main profile of the university, higher education institutions can contribute to solving several

¹ Dr. Lukács Rita PhD egyetemi docens, Budapesti Metropolisz Egyetem Üzleti, Kommunikációs és Turisztikai Kar (rlukacs@metropolitan.hu)

environmental, social, or economic challenges through their staff and researchers. Training future leaders is another important task for the sector, which will have significant secondary effects in the long term. Reflecting on the size of university campuses draws attention to the sustainability aspects of university operations.

This paper reviews the relevance of the concept of sustainability in universities. It presents international best practices to draw attention to the diversity of sustainability and the importance of considering key impacts and stakeholder expectations.

Literature review

The literature review summarises the main theoretical concepts related to sustainability in higher education and is divided into five parts: the first part defines the concept of sustainable development; the second part deals with students' awareness of sustainability issues, followed by the dimensions and barriers of sustainability in higher education. The chapter concludes with a presentation of international initiatives and an analysis of the impact of the pandemic COVID-19 on the sector.

The definition of sustainable development

Sustainable development is not a new concept; it was defined by United Nations 35 years ago. According to the definition of the United Nations: "*Sustainable development is development that meets the needs of the present without compromising the ability of future generations to meet their own needs.*" (United Nations World Commission on Environment and Development, 1987:41)

Corporate sustainability tries to balance economic, environmental, and social dimensions. It is also called People-Planet-Profit or the triple-bottom-line concept (Carroll et al., 2018).

The UN Sustainable Development Goals (SDGs) serve as a roadmap for sustainable development at the national and international levels. It was adopted by all United Nations Member States seven years ago, in 2015, and built on the foundation of its predecessor, the Millennium Development Goals (MDGs) or Agenda 21, which dates to 1992. The main goal of the MDGs was to reduce extreme poverty by 2015. The SDGs or "The 2030 Agenda for Sustainable Development" framework defines 17 economic,

environmental, and social goals; and summarises 169 global targets until 2030 (United Nations, s.a., a). The 17 goals can be seen in *Figure 1*.



Figure 1: The UN Sustainable Development Goals

Source: United Nations (s.a., a)

The SDG concept does not only serve as a global blueprint for tackling the most important global challenges; companies and other organisations, for example, universities started using the SDG concept as a framework for their sustainability strategy.

Students' sustainability awareness

The level of students' awareness of sustainability-related issues is important as they are universities' key stakeholders. Those individuals, groups, or organisations which can affect an organisation or are affected by it, are considered stakeholders. The most common stakeholder groups are customers, employees, owners, local communities, and suppliers (Carroll et al. 2018). In higher education, students are the customers, using the services of the universities for several years. As customers, they have a significant impact on the future development of universities as service providers (Degtjarjova et al. 2018), which is why it is so important to understand students' awareness and meet their expectations of sustainability.

According to a study by QS (2019), 43% of prospective international students would like a university to teach about reducing their environmental impact. They would like to learn more about solving problems by thinking in terms of whole systems, including different connections and

interactions (59%), understanding how to create change (57%), and how to use resources efficiently to limit the impact on the environment and other people (56%). This suggests that young people have already recognised their responsibilities as future leaders and want to be prepared during their studies. Besides personal motivations, 41% of survey participants considered it very important and 47% essential that universities take action to reduce their environmental impacts. However, they were not satisfied with the current environmental performance of higher education, with 94% agreeing that universities could do more to become environmentally sustainable. Only one-third of respondents found universities very environmentally friendly, while an additional 49% said they meet somewhat this expectation. Based on the responses of more than 3700 prospective international students following primary responsibilities of universities can be identified:

- Protecting the environment (66%),
- Developing sustainable technologies (65%),
- Developing green energy technologies (61%),
- Improving the quality of life in local areas (48%).

According to the prospective students, the five most important environmental activities for universities to engage in are:

- Increasing funding for research into sustainable initiatives.
- Reducing the amount of single-use plastics they use.
- Reducing the amount of waste that goes to landfills.
- Increasing how much energy comes from renewable sources.
- Installing energy-efficient lighting.

The main priorities identified refer to the operations of the universities, except for funding for research. Campus operations appear to be a key priority for sustainable universities.

Nagy and Somosi (2020) analysed Hungarian students' perceptions of sustainable universities. In their research, separate waste collection on campus (4.54) and sustainable buildings focusing on water and energy savings (4.43) emerged as the most important attributes of campus sustainability, while the regular sustainability audits (3.51) were ranked as least relevant on a 5-point scale. This contradicts somewhat previous findings from Latvia, where recycling was less important to students (Dagiliute et al., 2018). The demand for sustainability-related courses and the integration of sustainability research results into the curriculum was rather moderate. Hungarian students were not satisfied with the sustainability performance of their universities, the overall performance rating was only

3.23 on a 5-point-scale. They were most satisfied with the location of university buildings (4.17), as they are usually located in quiet and green areas. Separate waste collection facilities (3.7) also performed above average. On the other side, students were not satisfied with the number of sustainability-related courses (3.0), the lack of environmental student organisations (2.99), and the sustainability audits on campus (2.82) (Nagy–Somosi, 2020).

The combination of importance and performance measures helped the authors to identify the key strengths of Hungarian universities in the field of sustainability: campus location and separate waste collection. The key areas to be developed are sustainable purchasing practices and reusable energy sources. These are important to students, but universities failed to satisfy their key stakeholders in these dimensions (Nagy–Somosi, 2020).

The research shows that awareness of sustainability among university students is growing but they are moderately satisfied with the performance of universities in this area. The following subchapter will identify the three main dimensions of sustainable development in higher education.

Sustainable development in the higher education

One of the seventeen SDGs is quality education (SDG 4), which highlights the importance of education for society and the economy. Education and research are higher education's main responsibilities and commitment to society. As part of the preparation of students for future responsibility in their careers, an increasing number of universities offer CSR modules in the curriculum, not only in the field of business studies (Gerholz–Heinemann, 2015).

From a sustainability perspective, it is essential to note that the relationship between universities and their customers – students – is exceptional. Over the years, they spend a significant amount of time at the organisation's headquarters and campuses. In many cases, they also live there, in the dormitories. The buildings are therefore more significant and specific than the average company, with significant environmental impacts. In many countries, university campuses function as mini-cities, integrating various services. Therefore, campus operations are one out of three dimensions of the university sustainability model created by McMillin and Dyball (2009).

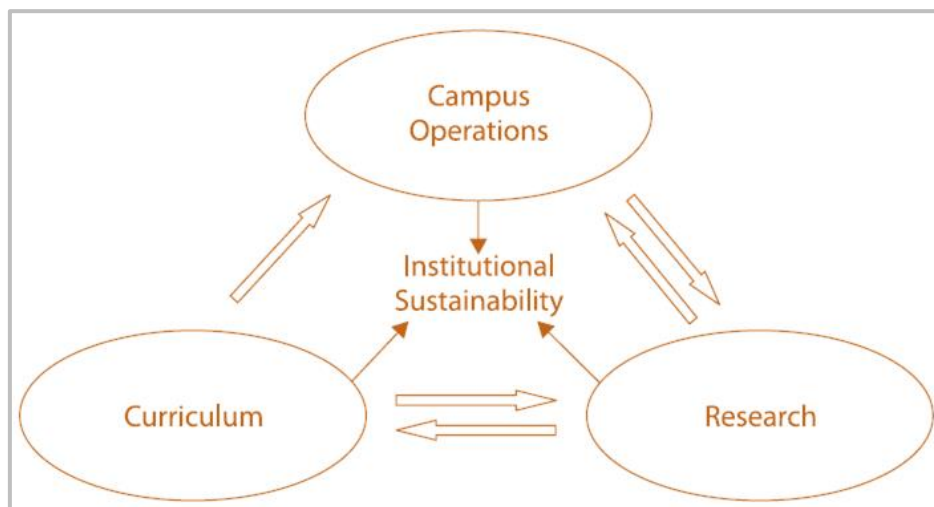


Figure 2: The three-dimensional model of sustainability at universities

Source: Mcmillin–Dyball (2009:57)

As *Figure 2* illustrates, three main dimensions of university sustainability can be identified based on the core functions of the universities: research, curriculum, and campus operations. The two-way arrows are significant elements of the model as they show the interconnectedness of the three dimensions. Research projects and results can be integrated into the curriculum and sustainable campus operations can become a research area. Students can also examine campus operations for planning and proposing future improvements, as this can increase their awareness and engagement. If they experience sustainability during their university life, they will better understand sustainability through a “shadow” curriculum (Mcmillin–Dyball, 2009).

Stephens and her co-authors (2008) identified a fourth element, community engagement. While research activities and campus operations may include several elements focusing on community engagement, distinguishing the fourth dimension can highlight its importance. However, this article will apply the three-dimensional approach and focus on campus operations, curriculum, and research. *Table 1* lists several examples for these categories, based on the desktop research conducted by the author among websites and sustainability reports of leading universities.

Table 1: Sustainability activities in the higher education

Education	Research	Campus operations
<ul style="list-style-type: none"> • Subjects about sustainability • Integration of sustainability into the curriculum • Integration of sustainability into all subjects • Awareness-raising events • Competitions around sustainability • Individual challenges around sustainability • Gamification of sustainability • Sustainability-related projects • Sustainability-related volunteering opportunities • Sustainability-themed internship • Engagement of alumni 	<ul style="list-style-type: none"> • Researching the sustainability of the university • Sustainability-related innovations and patents • Researching sustainability education practices • Collaborations with governmental bodies on research projects • Co-operation with the business sector on sustainability-related innovations • Contribution to solving local sustainability issues • Joint research activities in partnership with other universities 	<ul style="list-style-type: none"> • Staff engagement • Role as a local employer • Employee rights • Diversity • Wellbeing and mental health of staff • Supporting local suppliers • Environmental audit and management • Ethical investment • Sustainable sourcing • Sustainable buildings • Sustainable energy sources • Water management • Carbon reduction • Waste management • Recycling • Reduce paper use • Sustainable food • Less / alternative travel modes • Engagement of local community

Source: Own research

According to Sharp (2009), another aspect to consider is a systems approach, as in the absence of a multi-dimensional decision-making process, higher education institutes may make significant progress in one area while increasing negative impacts in another. Moreover, the reduction of one significant impact can easily be neutralised by uncontrolled activities in other areas of the organisation. There are also quick wins that allow significant reductions in negative impacts at little or no additional cost. For example, cafeterias can increase the proportion of local or organic options if students agree to less variety in the food offered and can strive to eliminate food waste.

Main barriers to the sustainability of universities

As a recent international exploratory survey conducted on six continents highlighted (Ávila et al., 2019), the lack of support from the university administration is one of the most significant barriers to the integration of

sustainable development in universities. To effectively integrate sustainability into the curriculum, a consensus between professors, management, and students is inevitable. This underlines the importance of participatory processes, as highlighted in the article by Frandoloso and Rebelatto (2019). They explained the importance of planning and decision-making processes involving students, using the example of a university in Brazil.

The lack of appropriate technology is another main barrier to innovation and sustainability. Awareness and concerns emerged as crucial barriers, as well. Raising awareness among stakeholders (faculty, staff, students, management, and external stakeholders) is key to overcoming barriers, and ensuring the success of sustainability initiatives (Ávila et al., 2019).

In Europe, which is considered the “*largest continent with the largest number of universities on the planet*” (Ávila et al., 2019:815), the following main barriers have been identified: the lack of management support, lack of research and development activities, lack of adequate infrastructure, lack of governing organisations, and the lack of awareness (Ávila et al., 2019).

A lack of awareness can be caused by a lack of information. A study in Spain found that the knowledge about SDGs among university students is limited. While there were several initiatives at the universities to disseminate information about sustainable development, students could not remember receiving information about SDGs via e-mail, social networks, or traditional media (Zamora-Polo et al., 2019).

The more intensive use of universities’ websites as the main communication channel could improve students’ awareness of sustainability-related issues. According to Katiliute and Daunoriene (2015), university websites and social media channels are the most relevant channels for disseminating sustainable development information. However, only 40% of analysed Lithuanian universities dedicated a section for sustainability issues on their websites. All universities shared general information about themselves, but only 87 published information about employment and HR issues, and 78% about fair operating practices and external criteria (declarations linked to national and international criteria). Social initiatives (65%) were more frequently described than community involvement (52%), environmental initiatives or economic actions (43%). The researchers found it challenging to find relevant information on university websites.

A similar study in Spain (Vallez et al., 2022) came to similar conclusions. Of the 35 private universities analysed, 63% do not publish any information on SDGs for search engines to find. In contrast, 90% of the 50 public universities analysed had at least one page on the SDGs. Eleven universities were responsible for 70% of all web pages about sustainability. Most universities did not have specific subdomains on sustainable development, which made it difficult for search engines to find related information. According to the authors, the main reasons for the low visibility of the universities analysed on the internet were: universities focus on research rather than on education or outreach and use terminology that is not familiar to the general public.

This subchapter identified the main barriers to universities' communication on sustainability and sustainability-related issues.

International initiatives for sustainable universities

There are several international initiatives to support universities to become more sustainable, and this subchapter presents four of them. Few pioneering universities joined alliances as a response to the UN Agenda 21 and started the initiatives "University Leaders for a Sustainable Future" in 1994 and "Copernicus Alliance" in 1993 (Fischer et al., 2015). European university rectors, presidents and vice-chancellors supported the Charta summarising the ten main principles focusing on sustainable development. 326 European universities signed the Charta. In 2007, the initiative was re-framed and re-launched as the Copernicus Alliance (Copernicus Alliance, s.a.).

The Copernicus Charta 2.0 identifies four main areas of activity for higher education institutions (Copernicus Alliance, 2011):

- Inside higher education institutions: strategy, commitment, ethics and dissemination of knowledge, integrated sustainability actions.
- In relation to the whole of education: processes of lifelong learning for sustainable development.
- In relation to society: acting as partners in regional networks, closer cooperation with local communities as stakeholders.
- In networks of universities: exchange of knowledge among organisations working for sustainability.

The Higher Education Sustainability Initiative (HESI) is a partnership between the United Nations and the higher education community, launched in 2012. *"HESI aims to provide higher education with an interface between higher education, science, and policy-making by raising the*

profile of higher education's sector in supporting sustainable development, convening multi-stakeholder discussions and action, and sharing best practices." (United Nations, s.a., b)

The initiative identified five focus areas of how higher education institutes can engage with the Sustainable Development Goals, with a specific focus on Quality Education (SDG4), Decent Work and Economic Growth (SDG8), and Partnership for the Goals (SDG17) (Heller, 2021):

- Teaching sustainable development.
- Encouraging research and dissemination of sustainable development.
- Green campuses and sustainability efforts.
- Engaging and information-sharing with international networks.
- Engaging universities in local and national development projects.

The international participants of the ISSUE project (Innovative Solutions for Sustainability in Education) teamed up to develop innovative educational tools for promoting sustainable development at universities. They created a manual for the higher education sector on integrated reporting and a sustainability toolbox with creative ideas like a 21-day challenge training program or an escape room based on SDG topics. They also conducted an exploratory study of sustainability-focused curriculum development and organised several events to disseminate project results. The initiative had two Hungarian participants: the Budapest Business School and the Business Council for Sustainable Development in Hungary (ISSUE Project, s.a.). Sharing easy-to-use ideas for integrating sustainability into education and providing guides or toolkits can encourage universities to experiment with the integration of sustainability into the curriculum.

The Green Nudges is an awareness-raising campaign for students initiated by the UN Environment Programme, The Behavioural Insights Team, GRID-Arendal and Youth & Education Alliance. "The Little Book of Green Nudges" introduces 40 ideas to promote sustainable behaviour on campus. The students can choose between four levels of commitment from easy to timely in eight main fields: energy conservation, water conservation, sustainable diets, reduced material consumption, sustainable and reduced travel, reduced food waste, recycling, engagement, and support for change. While there are plenty of options, students can implement them in their own lives, for example, by setting their heating and air-conditioning to more moderate temperatures – offering a higher proportion of

plant-based dishes is something the students can initiate at university administrators or campus catering companies (UNEP & GRID-Arendal, 2020). It is a bottom-up initiative that encourages students to take responsibility for making their lives and the university more sustainable.

The impact of the COVID-19 pandemic on sustainability in higher education

The COVID-19 pandemic has significantly affected higher education in the last two years. A recent empirical study (Rodrigues et al., 2021) identified ten main fields being affected by the pandemic situation:

- Change in priorities: The focus has shifted from productivity to personal and collective well-being, recognising the diversity of needs and vulnerabilities.
- Inequalities: Universities should recognise how the crisis has widened gender, ethnic, and class inequalities, which universities should recognise. Vulnerable groups should receive additional funding and technical support.
- Emergency support: Funding for non-essential costs can be redirected to cover student and faculty emergencies as direct support.
- Remote working: Besides business-focused meetings, online supportive meetings are important during a crisis. After the pandemic, universities should consider teleworking and teleconferencing options if feasible.
- Remote teaching: During the crisis, it should be considered that students and teachers may find it challenging to participate in distance teaching and learning; Therefore, the participation and evaluation criteria should be adjusted. After the pandemic, universities should consider the pros and cons of increased remote education.
- Research: New data collection and dataset-sharing practices are necessary to enable collaborative research and writing.
- Dissemination: Annual conferences could be replaced by smaller online meetings every two years to decrease carbon emissions and support the participation of geographically remote participants.
- Productivity: Productivity measures should be revised and extended by community-related activities, for example, supporting colleagues, and students.
- Evaluation: Timelines for faculty promotion of grand eligibility should be extended by one year.

- **Hiring:** Long-term academic positions should be prioritised over short-term contracts. Adjunct teaching staff and online teachers should receive increased pay compensations.

The list of suggestions includes several ideas for decreasing negative environmental, social, or economic impacts and increasing positive ones. In the long term, these could become the “new norm”, not just a solution to a pandemic situation.

Despite the serious challenges caused by the global pandemic, several innovations have been created by higher education institutions. Reimers and Marmolejo (2021) identified seven types of innovations among universities in collaboration with schools based on their research among 101 universities, summarised in *Table 2*.

Table 2: Innovations in university-school collaborations as a response to the pandemic

Category	Innovation	Example
Products	Research and analysis to support educational continuity	Getulio Vargas University in Brazil organised several meetings for education decision-makers to support formulating strategies for educational continuity.
	Advancing knowledge in the context of pandemic	Massey University in New Zealand modified a research project to explore how families engaged in students' learning of mathematics during the lockdown.
	Highlighting the importance of socio-emotional support for students	Bahçeşehir University in Turkey developed digital resources focusing on resilience and relieving anxiety for students and parents.
Solutions	Instructional and technological resources, online platforms	Al Akhawayn University in Morocco developed online resources to teach middle school math and science.
Processes	Professional development for teachers, administrators, and parents	PUC in Chile supported teachers with professional development in low-income communities.
	Innovations in teaching	Tsinghua University in China created intergenerational blended online learning communities with pre-collegiate and college students.
Managerial improvement	Organisational learning and innovation	Tecnologico de Monterrey in Mexico used its prior experience in online learning to implement a flexible and digital learning model at the university and secondary school levels.

Source: Reimers – Marmolejo (2021)

To illustrate the impacts of COVID-19 on higher education, the case of the University of Szeged will be reviewed, which is the most sustainable university in Hungary. In response to the pandemic situation, the University of Szeged made several changes to its operations to adapt to the circumstances. They switched to online education, and many employees started to work remotely. Several work activities had to be re-arranged, for example, the researchers had to modify their publication activities as they could not use the university laboratories. At the same time, the university participated in 30 research projects on COVID-19. Students were supported with additional e-resources and access to e-learning platforms. As a result, several positive impacts have been identified: the university enhanced its digital capacities and online library use and introduced new ways of teaching and new tools for communication and collaboration. The university considers how to translate temporary changes into long-term improvements, as digital transformation offers a good opportunity to further improve the sustainability of the institution (Mátyás et al., 2021).

Research: Sustainable university best practices

This chapter will introduce the research questions and the research method, as well as analyse the two sustainability rankings for universities and three international best practices.

The Times Higher Education Impact Ranking is the only SDG-based university sustainability ranking and the UI Green Metric World University Ranking. The sustainability initiatives of the top3 universities of The Times Higher Education Impact Ranking will be analysed: the University of Manchester, the University of Sydney, and RMIT University.

Research questions and research method

In this chapter, the following research questions will be analysed:

- RQ1: What are the main dimensions of the two sustainability rankings for higher education institutes?
- RQ2: Which universities are the leaders of the two sustainability rankings and which countries are overrepresented among the leaders?
- RQ3: How do Hungarian universities perform in the two sustainability rankings for higher education institutes?

- RQ4: What are the main priorities of sustainability strategies at the top3 universities of the SDG-based Times Higher Education Impact Ranking?
- RQ5: What are the main sustainability initiatives of the top3 universities of the SDG-based Times Higher Education Impact Ranking in the three main fields (campus operations, curriculum, research) of university sustainability?

To answer RQ1, RQ2, and RQ3 regarding the sustainability ratings, the results, methods, and main dimensions were analysed using the websites of the rankings.

To answer RQ3 and RQ4, the official websites and sustainability reports of the top3 universities have been analysed to identify sustainability initiatives in the three main fields of university sustainability.

The Times Higher Education Impact Ranking

The Times Higher Education Impact ranking's third edition was published with 1115 universities from 94 countries in 2021 (Times Higher Education, 2021a). This is the only ranking that assesses universities against the UN Sustainable Development Goals, based on the data provided. Among the sustainability goals, SDG Nr. 17, partnerships have the highest weight. The methodology focuses on the following four main areas (Times Higher Education, 2021b):

- Research (research about sustainability-related issues).
- Stewardship (resource management, treatment of employees, faculty, and students).
- Outreach (local, regional, national, and international community relations).
- Teaching (developing skilled practitioners and alumni).

Table 3 lists the top ten universities with the highest total score. Four of the top 10 universities are in Australia, and only three European higher education institutes are among the best. Considering the whole list, Russia and Japan are the most-represented countries, with 75 and 73 institutions (Times Higher Education, 2021a).

Table 3: The Times Higher Education Impact Ranking top list (2021)

Rank	Name of the university	Country	Total score
1	University of Manchester	United Kingdom	98.8
2	University of Sydney	Australia	97.9
3	RMIT University	Australia	97.8
4	La Trobe University	Australia	97.3
5	Queen's University	Canada	97.0
6	University of Wollongong	Australia	96.1
6	Aalborg University	Denmark	96.1
8	University College Cork	Ireland	96.0
9	Arizona State University	USA	95.8
9	University of Auckland	New Zealand	95.8

Source: Times Higher Education (2021a)

There are six Hungarian universities listed in the ranking (Times Higher Education, 2021a), but unfortunately, there are no universities among the leaders from this region.

- Rank 201-300: University of Pécs.
- Rank 301-400: University of Debrecen, University of Szeged.
- Rank 401-600: Semmelweis University.
- Rank 601-800: Eötvös Loránd University, Széchenyi István University.

The UI Green Metric World University Ranking

The UI Green Metric World University Ranking was launched by Universitas Indonesia in 2010. The main objective of the initiative was to conduct online research on green and sustainable universities. The ranking is based on the information and numeric data shared by universities, and the performance is assessed against six main criteria and 39 indicators (UI Green Metric, s.a.). The main dimensions are the following (UI Green Metric, s.a.):

- Setting & infrastructure (sustainable and green campus).
- Energy & climate change (energy efficiency, renewable energy).
- Waste (waste recycling and selective waste collection).
- Water (water usage and conservation).
- Transportation (transportation policy).
- Education & Research (courses, research, publication, website, report about green and sustainability issues).

Table 4 lists the top ten universities with the highest total score. There are altogether 7 European higher education institutes among the best ones, with three universities from the Netherlands, two from the United Kingdom, 1-1 from Germany and Ireland (UI Green Metric, 2021).

Table 4: The UI Green Metric World University Ranking top list (2021)

Rank	Name of the university	Country	Total score
1	Wageningen University & Research	Netherlands	9300
2	University of Nottingham	United Kingdom	8850
3	University of Groningen	Netherlands	8800
4	Nottingham Trent University	United Kingdom	8750
5	University of California, Davis	USA	8750
6	Umwelt-Campus Birkenfeld (Trier University of Applied Sciences)	Germany	8725
7	Leiden University	Netherlands	8700
8	University College Cork	Ireland	8700
9	University of Connecticut	USA	8700
10	Universidade de Sao Paulo USP	Brazil	8700

Source: UI Green Metric (2021)

There are eleven Hungarian universities listed in the ranking (UI Green Metric, 2021), where we can find two Hungarian higher education institutes among the top100.

- Rank 42: University of Pécs;
- Rank 85: University of Szeged;
- Rank 206: University of Debrecen;
- Rank 238: Eötvös Loránd University Budapest;
- Rank 282: University of Sopron;
- Rank 476: Semmelweis University;
- Rank 548: Budapest Business School;
- Rank 610: University of Pannonia;
- Rank 755: University of Miskolc;
- Rank 811: Budapest Metropolitan University;
- Rank 869: Corvinus University of Budapest.

If we compare the two top lists of the two rankings, we can find only one university participating and performing well in both: University College Cork in Ireland. Five Hungarian universities are participating in both

evaluations: the University of Pécs, the University of Debrecen, the University of Szeged, Semmelweis University, and Eötvös Loránd University. It is interesting to note that the University of Szeged significantly outperformed the University of Debrecen in the UI Green Metric, but Eötvös Loránd University Budapest outperformed Semmelweis University in this ranking.

The following subchapters will introduce several international best practices.

University of Manchester

The University of Manchester was the first university in the United Kingdom to make social responsibility a core objective. The sustainability strategy has four main areas: research, learning and students, public engagement activity, and operations (University of Manchester, 2021). The latest sustainability report summarises the performance of these four areas under the 17 SDGs, providing a clear and understandable overview and a data- and initiative-rich summary.

The university conducted 4% of the United Kingdom's research on the 17 Sustainable Development Goals and delivered 5625 study units linked to them. The main research focus was on good health and well-being (SDG 3), with over 15,000 publications, the student engagement was highest in industry, innovation, and infrastructure (SDG 9), with a total of more than 83,000 units delivered on this topic. The institution is an active member of the local community and works in partnership with other organisations, authorities, and health experts on the Health Innovation Manchester. They aim to solve healthcare challenges in the Greater Manchester region and improve the health and well-being of its 2.8 million residents (University of Manchester, 2021).

The university is an accredited employer for Living Wage, Race, Gender, and LGBTQ+ equality. It is committed to becoming a zero-carbon campus by 2038. To reduce the environmental impacts of operations, 232 tonnes of food waste was sent for anaerobic digestion instead of disposal. The university purchased vegetables from a local, organic, and ecological farm, Kindling Trust. Want Not Waste, a student-run zero-waste shop on campus maintains a community fridge with unsold meals offered by local businesses and surplus raw materials from catering outlets (University of Manchester, 2021).

In the Times Higher Education Impact Ranking, the university received the highest scores at the following SDGs: Industry, innovation, and

infrastructure (SDG 9), Sustainable cities and communities (SDG 11), Responsible consumption and production (SDG 12), Partnerships for the goals (SDG 17) (Times Higher Education, 2021a).

University of Sydney

The University of Sydney is Australia's first university with a rich tradition of developing leadership for good. The main sustainability priorities of the University of Sydney are the following (University of Sydney, 2020a):

- Establishing campuses as sustainability living labs.
- Foregrounding Indigenous knowledge and histories in sustainability work.
- Decreasing the ratio of staff and students travelling to campus by private motor vehicle by 10% and 5%.
- Sourcing 100% of electricity from renewable sources.
- Becoming “single-use plastic-free” campuses.
- Reducing potable water use by 30% per person.
- Sending zero waste to landfill.
- Expanding the multidisciplinary sustainability education offerings.

Most objectives focus on more sustainable campus operations, but several goals for research and educational activities are set. The “Caring for Country” provides the framework for the sustainability strategy with its three main pillars: enriching lives through research and education, enabling resilient places and a responsible footprint, and empowering good governance and coordination (University of Sydney, 2020a). The first pillar can be translated into two main dimensions of university sustainability: curriculum and research, while the second and third pillars correspond to campus operations.

The sustainability report of the university summarises sustainability performance against the 17 SDGs, focusing on education, research activities and operations. To support implementing SDG 6 (Clean water and sanitation), the institution offers a degree program in Humanitarian Engineering, focusing on the needs of global communities and sustainability. The own community garden of the university, “Ground Up”, open to both staff and students, was created in 2014. People can learn how to grow and harvest organic fruits and vegetables, but it serves as a good tool for teaching urban agriculture to students and the wider community, too (University of Sydney, 2020b).

The latest sustainability strategy also addressed the new challenges caused by the pandemic COVID-19. Due to financial losses, several infrastructure developments foreseen by the sustainability strategy in 2019 had to be cancelled. Based on the understanding of the university, this crisis reinforces the need for a sustainability strategy that aligns research, education, and operations and aims to bring cultural and behavioural change. The university plans to develop and monitor ways to improve sustainability-related education and translate academic research results into sustainable operational practices. As a gesture of solidarity, a “Solidarity Tree” initiative was started, where community members could show their support to the students whose studies were affected by the travel ban (University of Sydney, 2020a).

The university received the best scores in the Times Higher Education Impact Ranking for its performance in the dimensions of Clean water and sanitation (SDG 6), Sustainable cities and communities (SDG 11), Life on land (SDG 15), and Partnerships for the goals (SDG 17) (Times Higher Education, 2021a).

RMIT University

The Royal Melbourne Institute of Technology (RMIT) has had a Sustainable Committee since 2018, which is responsible for planning and implementing a university-wide sustainability strategy, focusing on research, learning and teaching, operations, and governance. The project started with an awareness-raising phase and continued by identifying capacities, looking for internal and external collaboration opportunities, and designing and implementing the sustainability measurement process. The latest sustainability report provides several examples of RMIT’s contributions to the SDGs framework. The “Propeller” Model of participatory, place-based, sustainable development emerged from a research project of RMIT European Union Centre’s Jean Monnet Sustainable Development Goals Network. The propeller has three main elements: relating, learning, and measuring; it portrays the forward movement through the interactions of these elements. The white paper “Towards a Sustainable Development Goals Transformation Platform at RMIT” has been published by two RMIT professors. It has supported the university in embedding the SDGs in the strategic agenda of the institution and stimulated reflection and ambition on the SDGs in specific areas like the education portfolio. Another project focused on mapping the SDGs and sustainability education, intending to report on teaching and learning practices related to the SDGs.

The United Nations Association of Australia published a research report with RMIT professors on sustainability reporting trends among the top 150 Australian public-listed companies. This research has contributed to the continued use of SDGs as a framework for sustainability reporting and sustainability performance management (RMIT, 2020).

Students at the university can use the “Know Your Money Mindset Credential” to learn more about their personal values and mindset, which can influence their money-related habits and affect personal financial decisions. The credential provides them with valuable tools and resources to move forward. During the pandemic, the university was forced to relocate learning and teaching activities to the online environment, enabling the development of digital campuses, and focusing on optimising the digital learning environment. After the pandemic, this could offer future opportunities, as students can choose where and how they want to study. For example, in the future, students may not have to travel to campus for lectures. The university has incorporated sustainability considerations into its procurement practices with a view to sustainable campus operations. The sustainable procurement plan expects suppliers to meet minimum requirements (RMIT, 2020).

The university collected the highest scores in the following Sustainable Development Goals: Decent work and economic growth (SDG 8), Industry, innovation, and infrastructure (SDG 9), Reducing inequalities (SDG 10), and Partnerships for the goals (SDG 17) (Times Higher Education, 2021a).

Conclusions

The higher education sector has several specialities in the field of sustainability, considering its main activities, impacts, and stakeholders. The paper presented the concept of sustainable development, the three main dimensions of university sustainability, the most relevant international initiatives for making higher education more sustainable, and the impact of COVID-19.

Previous research shows that students are aware of sustainability but do not have enough information about universities’ strategies and performance in this area. Lack of information is one of the most significant barriers to universities’ sustainability. Engaging students and communicating

more intensively about plans and achievements would be key to improving sustainability strategies and increasing students' awareness and satisfaction.

Although COVID-19 brought many challenges to universities, it has also enabled many innovations, especially in the digitalisation of education. The temporary solutions may have a long-term impact on the higher education sector, redefining the role of universities, university campuses, and learning and teaching methods.

Methodology, main dimensions, and the results of the two international sustainability rankings of higher education have been analysed. The examination of leading universities' initiatives and communication highlighted relevant examples and drew attention to the need to focus on local challenges and stakeholders' expectations.

The answer to RQ1 is that while The Times Higher Education Impact Ranking focuses on impacts created in all three dimensions of university sustainability, the UI Green Metric World University Ranking places the greatest emphasis on campus operations.

RQ2 focused on leading universities and countries of the two rankings. The Times Higher Education Impact Ranking was dominated by Australian universities, but the winner came from the United Kingdom. The UI Green Metric World University Ranking listed seven European higher education institutes among the top10.

The examination of RQ3 highlighted methodological differences between the two rankings, too. Six Hungarian universities were ranked by the former and eleven by the latter evaluation. A total of five competitors took part in both rankings. While the University of Szeged significantly overperformed the University of Debrecen in the UI Green Metric, they are in the same range in The Times Higher Education Impact Ranking. The performance of Eötvös Loránd University Budapest proved to be better than that of Semmelweis University in the UI Green Metric, while Semmelweis performed better in the SDG-based ranking.

While answering RQ4 and RQ5, the main priorities and initiatives of the top3 higher education institutes have been introduced and analysed. All three universities examined successfully identified the most relevant sustainability areas and developed their sustainability strategies based on the strengths and capacities of the university, considering local challenges and the expectations of local stakeholders. The analysed best practices illustrate that there is no "one best way" in the field of sustainability; each

organisation must define and regularly review its path, using international initiatives like the SDGs as frameworks. Despite facing individual challenges, the global problems are the same for the representatives from different sectors, allowing initiatives to measure and compare performance on sustainability. This could become part of the fight for consumers, the prospective university students.

Bibliography

- Ávila, L. V. – Beuron, T. A. – Brandli, L. L. – Damke, L. I. – Pereira, R. S. – Klein, L. L. (2019): Barriers to innovation and sustainability in universities: an international comparison. *International Journal of Sustainability in Higher Education*. 20(5):805–821. DOI: <https://doi.org/10.1108/IJSHE-02-2019-0067>.
- Carroll, A. B. – Brown, J. A. – Buchholtz, A. K. (2018): *Business & Society. Ethics, Sustainability, and Stakeholder Management*. 10th edition. Boston: Cengage Learning. ISBN: 978-1-305-95982-8
- Copernicus Alliance (s.a.): *Background*.
<https://www.copernicus-alliance.org/background>
- Copernicus Alliance (2011): *Copernicus Charta 2.0/2011. European Commitment to Higher Education for Sustainable Development*.
https://www.copernicus-alliance.org/images/Downloads/COPERNICUSCharta_2.0.pdf
- Dagiliūtė, R. – Liobikienė, G. – Minelgaitė, A. (2018): Sustainability at universities: Students' perceptions from Green and Non-Green universities. *Journal of Cleaner Production*, 181(6):473–482. DOI: <https://doi.org/10.1016/j.jclepro.2018.01.213>.
- Degtjarjova, I. – Lapina, I. – Freidenfels, D. (2018): Student as stakeholder: “Voice of customer” in higher education quality development. *Marketing and Management of Innovations*, (2):388–398. DOI: <https://doi.org/10.21272/mmi.2018.2-30>
- Fischer, D. – Jossen, S. – Tappeser, V. (2015): Getting an empirical hold of the sustainable university: a comparative analysis of evaluation frameworks across 12 contemporary sustainability assessment tools. *Assessment & Evaluation in Higher Education*, 40(6):758–800. DOI: <https://doi.org/10.1080/02602938.2015.1043234>.
- Frاندoloso, M. A. – Rebelatto, B. G. (2019): The participatory process of planning social and environmental responsibility at a Brazilian university. *International Journal of Sustainability in Higher Education*, 20(5):917–931.
DOI: <https://doi.org/10.1108/IJSHE-01-2019-0017>.
- Gerholz, K.-H. – Heinemann, S. (2015): CSR – A New Challenge for Universities? A Theoretical and Empirical Analysis of German Universities. In: O’Riordan et al. (eds.): *New Perspectives on Corporate Social Responsibility*. (507–526). Wiesbaden: Springer. ISBN: 978-3-658-06793-9.
DOI: https://doi.org/10.1007/978-3-658-06794-6_25.

- Heller, R. F. (2021): *The Distributed University for Sustainable Higher Education*. Springer Briefs in Education. Singapore: Springer Singapore. ISBN: 978-981-16-6505-9. DOI: <https://doi.org/10.1007/978-981-16-6506-6>.
- ISSUE Project (s.a.) *The Project*.
<https://www.issue-project.eu/the-project>
- Katiliute, E. – Daunoriene, A. (2015): Dissemination of Sustainable Development on University Websites. *Procedia – Social and Behavioral Sciences*, (191):865–871. DOI: <https://doi.org/10.1016/j.sbspro.2015.04.337>.
- Mátyás, D. – Gyarmati, L. – Csóka, I. (2021): The University of Szeged and the Impacts of the COVID-19 Pandemic. In: Riri, F. S. – Nyoman, S. – Jun, J. (eds.): *Managing Sustainable Universities During COVID-19 Pandemic*. (35–45). UNIP Press. ISBN: 978-979-097-790-7.
- McMillin, J. – Dyball, R. (2009): Developing a Whole-of-University Approach to Educating for Sustainability: Linking Curriculum, Research and Sustainable Campus Operations. *Journal of Education for Sustainable Development*, 3(55):55–64. DOI: <https://doi.org/10.1177/097340820900300113>.
- Nagy, S. – Somosi, M. V. (2020): Students' Perceptions of Sustainable Universities in Hungary: An Importance-Performance Analysis. *Amfiteatru Economic*, 22(54):496–515. DOI: <http://doi.org/10.24818/EA/2020/54/496>.
- QS (2019): *Sustainability in Higher Education: What More Can Universities Do? How prospective international students feel about the higher education sector's sustainability efforts*.
<https://www.qs.com/portfolio-items/sustainability-in-higher-education-what-more-can-universities-do/>
- Reimers, F. M. – Marmolejo, F. (2021): Conclusions: What innovations resulted from university-school collaborations during the COVID-19 pandemic? In: Reimers, F. M. – Marmolejo, F. (eds.): *University and School Collaborations During a Pandemic: Sustaining Educational Opportunity and Reinventing Education*. Knowledge Studies in Higher Education Series (8). Cham: Springer International Publishing AG. 333–357. ISBN: 978-3-030-82158-6. DOI: <https://doi.org/10.1007/978-3-030-82159-3>.
- RMIT (2020) *Sustainable Development Goals Impact Report 2020*.
<https://www.rmit.edu.au/content/dam/rmit/rmit-images/Sustainability-Images/sdgs/sdgs-impact-report-2020.pdf>
- Rodrigues, M. – Silva, R. – Franco, M. (2021): Teaching and Researching in the Context of COVID-19: An Empirical Study in Higher Education. *Sustainability*, 13(16):8718. DOI: <https://doi.org/10.3390/su13168718>.
- Sharp, L. (2009): Higher education: the quest for the sustainable campus. *Sustainability: Science, Practice and Policy*. 5(1):1–8. DOI: <https://doi.org/10.1080/15487733.2009.11908023>.

- Stephens, J. C. – Hernandez, M. E. – Román, M. – Graham, A. C. – Scholz, R. W. (2008): Higher Education as a Change Agent for Sustainability in Different Cultures and Contexts. *International Journal of Sustainability in Higher Education* 9(3):317–338. DOI: <https://doi.org/10.1108/14676370810885916>.
- Times Higher Education (2021a): *Times Higher Education Impact Ranking 2021*. https://www.timeshighereducation.com/impactrankings#!/page/0/length/25/sort_by/rank/sort_order/asc/cols/undefined
- Times Higher Education (2021b): *Impact Rankings 2021: methodology*. <https://www.timeshighereducation.com/world-university-rankings/impact-rankings-2021-methodology>
- UI Green Metric (s.a.): *UI Green Metric World University Rankings: Background of the Ranking*. <https://greenmetric.ui.ac.id/about/welcome>
- UI Green Metric (2021): Overall Rankings 2021. <https://greenmetric.ui.ac.id/rankings/overall-rankings-2021>
- United Nations (s.a., a): *The 17 Goals*. <https://sdgs.un.org/goals>
- United Nations (s.a., b): Higher Education Sustainability Initiative. <https://sdgs.un.org/HESI>
- United Nations Environment Programme; GRID-Arendal (2020): *The Little Book of Green Nudges*. ISBN: 978-82-7701-198-1.
- United Nations World Commission on Environment and Development (1987): *Report of the World Commission on Environmental and Development: Our Common Future*. https://www.google.com/url?sa=t&rct=j&q=&esrc=s&source=web&cd=&ved=2ahUKEwjLwsKn8OD0AhUfgv0HHaftAPQQFnoECAYQAQ&url=https%3A%2F%2Fsustainabledevelopment.un.org%2Fcontent%2Fdocuments%2F5987our-common-future.pdf&usg=AOvVaw293_rr5E8NxHdKDKPVja0e
- University of Manchester (2021): *The University of Manchester Sustainable Development Goals. 2021/22 report*. <https://documents.manchester.ac.uk/display.aspx?DocID=57219>
- University of Sydney (2020a): *Sustainability Strategy 2020*. https://www.sydney.edu.au/content/dam/corporate/documents/about-us/values-and-visions/sustainability/sustainability_strategy_2020.pdf
- University of Sydney (2020b): *Sustainable Development Goals Update*. <https://www.sydney.edu.au/content/dam/corporate/documents/about-us/values-and-visions/sdg-2020.pdf>
- Vallez, M. – Lopezosa, C. – Pedraza-Jiménez, R. (2022): A study of the Web visibility of the SDGs and the 2030 Agenda on university websites. *International Journal of Sustainability of Higher Education*, 23(8):41–59. DOI: <https://doi.org/10.1108/IJSHE-09-2021-0361>.
- Zamora-Polo, F. – Sánchez-Martín, J. – Corrales-Serrano, M. – Espejo-Antúnez, L. (2019): What do university students know about Sustainable Development Goals? A realistic approach to the reception of this UN program amongst the youth population. *Sustainability*, 11(13):3533. DOI: <https://doi.org/10.3390/su11133533>.