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Sustainable Growth of The University Of Maribor: Advancing Quality, Innovation, and Competitiveness for a Secure Future

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The University of Maribor, as a prominent higher education institution, recognizes that quality and sustainable development are intrinsically linked and essential for its long-term competitiveness and stability. This chapter provides an overview of the University of Maribor's quality assurance mechanisms, analyses the current state, and highlights key challenges and opportunities within global higher education trends. Special attention is given to the shift from quantity to high-quality research and teaching, digital transformation, internationalization, and the university's integration into the social and economic environment. The analysis compares the University of Maribor with other universities on global rankings and examines how it can strategically respond to growing competition and regional shifts in research. The focus is on developing sustainable models that encompass environmental, economic, social, and ethical aspects. The chapter explores how the University of Maribor, through a holistic approach and systematic quality improvement, can strengthen its role in sustainable development and contribute to a secure, innovative, and competitive society. Based on these findings, it outlines a vision for the University of Maribor's future, emphasizing the integration of academic excellence with societal and economic challenges, interdisciplinarity, breakthrough research, and sustainable innovations as key strategies for enhancing its global recognition.

Key words:
sustainable development, university quality, environmental aspects and climate crisis, security and political stability, global competitiveness, systemic approach, systemic thinking

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1 Introduction

Universities are among the key actors in the development of knowledge, innovation, and social progress. Their role in sustainable development goes beyond merely caring for natural resources and encompasses the complex interdependence of economic, social, and environmental factors. The quality of a university is a fundamental pillar of its long-term success, as it ensures competitiveness in the global academic space and enables a proactive contribution to addressing contemporary societal challenges.

Sustainable development is not merely an environmental concept but a comprehensive strategy that includes the long-term sustainability of economic and human resources, strengthening social cohesion, and adapting to dynamic changes in the educational and research landscape. This holistic approach is based on the principles of systems thinking and continuous improvement, with universities shaping their strategies in line with three key dimensions of sustainability – economic, social, and environmental aspects – often referred to as the triple bottom line.

The development of quality at the University of Maribor is inseparably linked to sustainable development. The University of Maribor recognises that quality is not merely an academic category but a process that transcends the boundaries of educational activity and extends into the broader social and economic environment. Efforts to ensure quality are not focused solely on academic excellence and research achievements but also on creating sustainable strategies that contribute to the holistic development of society.

Over the past decades, the University of Maribor has established a solid foundation in the field of quality assurance and sustainable development. As the first among Slovenian public universities, the University of Maribor established its professional service for quality in March 2006. A key role in shaping the first strategic directions was played by Lučka Lorber, who, as Vice-Rector for Quality Development (2011–2018), led the introduction of the internal quality system, participated in the first institutional evaluations, and contributed to the success of the first institutional accreditation renewal process at the Slovenian Quality Assurance Agency for Higher Education (NAKVIS) (Lorber, 2011). Her work continued with the establishment

of the Department for Quality and Sustainable Development (2015–2017), which strengthened the university's links with industry and local communities and enabled the signing of 24 cooperation agreements (Lorber, 2017). As she herself emphasises, universities today can no longer ignore sustainability principles, as these are already embedded in the accreditation processes of leading global universities (Lorber, 2024).

Her successors, Vice-Rectors for Quality Janja Hojnik and Bojan Dolšak, have built on these foundations. During her term, Janja Hojnik reinforced the focus on the internationalization of quality at the University of Maribor and highlighted the importance of qualitative assessment in evaluating teaching and, in particular, research work, thereby increasing the university's comparability with the international academic environment. She also coordinated the preparation and adoption of the University of Maribor's Code of Ethical Conduct, which is mandatory for all staff and students and through which the university implements its social responsibility and strengthens ethics in teaching, research, and knowledge transfer to society. Bojan Dolšak continues with the development of internal evaluation models and the systematic linking of quality with the long-term development goals of the University of Maribor, emphasising the importance of involving all stakeholders in monitoring and quality assurance processes.

An important role in shaping and implementing internal evaluation mechanisms was also played by Franci Čuš, long-time Chair of the Committee for University Quality Assessment (KOKU). Since the introduction of formal quality monitoring at the University of Maribor in 1997, he has participated in preparing key documents and procedures that laid the foundations for systematic evaluation of pedagogical, research, and artistic work. His professional work had a broader impact, as he chaired the National Commission for Quality in Higher Education of the Republic of Slovenia, served as a member of the Council for Higher Education, and the Council of the National Agency for Quality in Higher Education. By establishing the internal evaluation model, together with Miha Pauko, MSc, he enabled continuous improvement of the university's quality and its alignment with national and European standards, which contributed to strengthening the University of Maribor's competitiveness in the academic sphere. In 2008, KOKU initiated a project of internal institutional evaluations within the University of Maribor. Between 2008 and

2017, 13 internal and 9 so-called follow-up internal evaluations of the university's members were carried out (Pauko, 2011).

In addition to developing internal quality mechanisms, the University of Maribor also integrated broader principles of sustainable development and social responsibility into its strategy. An outstanding contribution in this area was made by Matjaž Mulej, an internationally recognized expert in systems theory (ranked among the top 0.28% of researchers in this field worldwide according to ScholarGDP 2024) and innovation management, whose work significantly influenced the development of the concept of social responsibility as a systemic approach to university governance and its impact on society at large. Through numerous international publications (Mulej et al., 2013, 2015, 2021a, 2021b), he established the link between holistic thinking, innovation, and sustainable development, emphasizing that social responsibility is a necessary condition for the long-term success of universities and the economy. In cooperation with the Institute for the Development of Social Responsibility (IRDO), he organized conferences and prepared several publications on how universities can contribute to an innovative, sustainable, socially responsible society (Mulej et al., 2020a, 2020b, 2024a, 2024b).

From the perspective of long-term quality development and strategic positioning of the university within the broader European and global academic space, a key role was also played by Peter Glavič, who, as one of the leading researchers in higher education policy and scientific metrics, highlighted the importance of linking the university with industry and strategically directing scientific research activities in line with global trends (Glavič, 1998a, 1998b, 2020). Through his work in various professional bodies, including the Slovenian Research Agency (ARRS) and the Research Community of Slovenia, he contributed to the development of criteria for evaluating research excellence and promoted greater international visibility of Slovenian universities. He also actively participated in developing sustainable strategies for the University of Maribor, particularly in the fields of energy, circular economy, and the concept of an "age-friendly university" (Glavič, 2020).

Danijel Rebolj also played an important role in promoting sustainable development at the University of Maribor. As rector, he actively supported the integration of sustainability principles into the university's daily operations, especially in the area of sustainable mobility. By personal example, he encouraged the efficient use of

natural resources and emphasized individual responsibility in shaping a sustainable future. His efforts were reflected in various initiatives that raised awareness within the academic community about the importance of sustainable practices. As moderator of the sustainability conference at the University of Maribor (January 15, 2025), he particularly emphasized the role of science in the transition to a sustainable society and the importance of responsible application of sustainability principles (Rebolj et al., 2013).

The University of Maribor recognizes that long-term competitiveness is based on continuous quality improvement, systematic integration of sustainability principles, and proactive adaptation to global challenges. Sustainable development is not merely a final goal but a dynamic process requiring a strategic approach, interdisciplinary cooperation, and innovative solutions. The concept of sustainability goes beyond environmental aspects and includes economic, social, and ethical dimensions. The key challenge of modern development is finding a balance between resource exploitation, environmental responsibility, and the long-term consequences of today's decisions for future generations (Vovk, 2020; Vovk & Davidović, 2023). Thus, sustainability is not only an ecological issue but also encompasses social justice, economic stability, and ethical responsibility in shaping the future.

In this context, sustainable business becomes a key factor for the long-term success of organizations, including universities. Public institutions and companies increasingly realize that business cannot be separated from the environmental, social, and ethical context in which they operate (Vovk, 2020). Therefore, it is essential for universities to actively respond to the needs and changes of the broader environment. Intergenerational cooperation plays a crucial role in this, as only through the transfer of knowledge and experience between generations can we achieve sustainable development in the broadest sense of the word. To this end, the University of Maribor established the Centre for Professors Emeriti and Retired Higher Education Teachers in 2019 and joined the global network of age-friendly universities in 2020, thereby actively implementing guidelines and principles that promote intergenerational connectivity and sustainable knowledge development. As Rector Zdravko Kačič emphasized: "Recognizing the importance of strengthening good interpersonal relationships, a culture of dialogue, and intergenerational connectivity, we wanted to bridge a certain generational gap and join those worldwide who are 'breaking new ground' in this area." (Kačič, 2023)

Sustainable business is based on several key aspects (Vovk, 2022; Vovk et al., 2023). Environmental sustainability means a responsible attitude toward nature, rational resource management, and reducing emissions, waste, and climate change impacts. Economic sustainability ensures long-term organizational stability and fosters innovation, taking into account the impacts of digitalization, crisis response, and geopolitical changes. In the current situation, with 57 armed conflicts worldwide, geopolitical risks are becoming a key factor of economic and social uncertainty. Social sustainability focuses on fairness and an inclusive work environment that respects human rights and reduces social inequalities, especially in light of rising poverty and unequal resource distribution. Ethical sustainability requires long-term responsible planning in economic and political spheres.

Universities play an important role in the transition to a sustainable society, as they are generators of knowledge and innovation that can contribute to optimal resource use and the development of advanced sustainable technologies. This enables sustainable development to be based not only on consumption reduction and savings but also on transforming the economy through innovative technological and organizational solutions. In this context, organizations and companies increasingly invest in reducing energy consumption, optimizing logistics processes, using recycled materials, and developing a circular economy. A key strategy is also building partnerships with various stakeholders – NGOs, local communities, and industry – to co-create innovative sustainable solutions (Vovk, 2014).

Sustainable development is not merely a choice but a necessity for the long-term stability of organizations, the economy, and society as a whole. Without respecting natural cycles and resource limitations, a sustainable economy is impossible, as natural resources, human capital, and social stability form the foundation of all societal progress. Universities bear a particularly great responsibility in this regard, as their research activities and educational programmes shape new development models that contribute to the long-term stability and prosperity of society.

This paper analyses the sustainability and quality of the University of Maribor and highlights key strategic challenges and opportunities for strengthening its position in the global academic space. First, we present the broader context of sustainable development and university quality, then assess the current state of quality at the University of Maribor and outline its strengths and challenges. This is followed by

an analysis of global trends affecting university development and an overview of strategic directions through which the University of Maribor can enhance its competitiveness and sustainability orientation. The central thesis of this paper is that sustainability is not merely a goal but an ongoing process that can only be achieved through a focus on quality, systematic improvements, and proactive adaptation to global changes.

2 National Strategy and Quality Development at the University of Maribor

The development of quality in higher education is defined in both national strategic documents and the strategic documents of the University of Maribor primarily through the concept of continuous improvement, or building a so-called culture of quality, which ensures the institution's developmental orientation across all areas of its activities.

2.1 National Framework and Strategic Directions

Quality and the processes that must be established and implemented to ensure planning, implementation, evaluation, and action toward progress have been included as key aspects of higher education development in the strategic documents and acts of the Republic of Slovenia and the University of Maribor since the first definitions of higher education in Slovenia and Maribor. These aspects were more explicitly defined by the Republic of Slovenia in the Resolution on the National Higher Education Programme 2011–2020 ("Resolucija o Nacionalnem programu visokega šolstva 2011–2020 (ReNPVŠ11-20)", 2011) and later in the Resolution on the National Higher Education Programme until 2030 ("Resolucija o nacionalnem programu visokega šolstva do 2030 (RENPVŠ30)", 2022). In the latter, one of the key strategic objectives is defined as upgrading the quality and efficiency of the higher education system in line with the principles of the Bologna Process. "RENPVŠ30" (2022) explains this goal as ensuring higher education that will function as a sustainability-oriented, internally diverse, self-renewing, and resilient ecosystem, responsive to external and internal changes, capable of adapting to the rapidly changing needs of society, offering attractive and up-to-date study programmes, and recognizing the potential of a broad student population as active co-creators of modern society (Vovk, 2023). Higher education will adhere to the

principles of the Bologna Process, such as coherence, mobility, quality, employability, competitiveness, and relevance, so that it will be comparable with European development directions and will promote knowledge exchange and the internationalization of higher education. Higher education institutions will actively contribute to societal progress in their core missions: education, research, art, professional work, knowledge transfer to the environment, and contributions to social and economic innovation. They will provide student-centred, high-quality education based on research, professional, or artistic work; achieve internationally comparable excellence and target quality levels in research; and, together with independent research institutions, act as key carriers of fundamental research in Slovenia. In the field of art, they will achieve internationally comparable excellence. A comprehensive knowledge transfer system will significantly contribute to strengthening society as a whole and increasing the competitiveness of the Slovenian economy. Undergraduate study programmes will include sufficient practical training, comparable to other European countries, providing appropriate practical knowledge to facilitate young people's transition to the labour market after graduation.

2.2 Development of Quality at the University of Maribor

The University of Maribor has consistently followed the strategic integration of concepts and related processes for monitoring and ensuring quality at the national and European levels, and in certain areas, it has even led related national discussions. While presiding over the Rectors' Conference of the Republic of Slovenia (RKRS), the University of Maribor organized a conference on March 29, 2012, titled Commitment of Slovenian Universities to Developing a Culture of Quality, which resulted in an RKRS resolution emphasizing the importance of promoting university internationalization, strengthening visibility in the international arena, social responsibility, and ensuring material conditions that enable development and competitiveness. Similarly, both in the University of Maribor Development Strategy 2013–2020 (Univerza v Mariboru, 2014) and the University of Maribor Strategy 2021–2030 (Univerza v Mariboru, 2021), a dedicated chapter and significant attention are given to quality development, even though continuous improvement goals are embedded in practically all areas defined by these strategic documents. By 2030, the University of Maribor has focused its objectives in the chapter Development through the Quality System on developing an internal quality system that primarily supports the implementation of strategic development priorities,

fosters and advances a culture of quality based on responsibility, ethics, transparency, and stakeholder inclusion, and emphasizes effective completion of the quality cycle at all levels (Univerza v Mariboru, 2021).

It can be concluded that the University of Maribor's goals and planned measures align with the guidelines and policies of Slovenia and the European Union, which, for example, in the Council Resolution on a Strategic Framework for European Cooperation in Education and Training toward the European Education Area and Beyond (2021–2030) ("Resolucija Sveta o strateškem okviru za evropsko sodelovanje v izobraževanju in usposabljanju pri uresničevanju evropskega izobraževalnega prostora in širše (2021–2030)", 2021), identifies as Strategic Priority 1 the Improvement of Quality, Equity, Inclusion, and Overall Success in Education and Training, viewing this as a key lever for reducing social, economic, and cultural inequalities. Similarly, the quality of education and research, as well as the processes that ensure it, are defined as key elements of higher education development in the Standards and Guidelines for Quality Assurance in the European Higher Education Area, which serve as a reference document for guidelines issued by the European University Association (EUA) and for criteria prescribed by NAKVIS.

Summarizing the current state of quality at the University of Maribor, based on the latest external evaluation by an international expert group during the university's accreditation renewal in 2022 and findings from the annual self-evaluation of its members (most recently in 2024), the main strengths include: a comprehensive and well-functioning internal quality monitoring and management system that clearly defines processes for completing the quality cycle; historically effective integration of the university and its members into the local environment and strong connections and cooperation with industry; activities and measures aimed at creating an inclusive, innovative, and collaborative academic environment; care for the well-being of staff and students; a diverse range of educational programmes and international mobility opportunities; numerous services supporting students' holistic growth and development, based on a partnership approach that respects diverse needs and emphasizes a student-centred educational process; a well-developed tutoring system; a rich offering of extracurricular activities and active student involvement in project work. Among the university's strengths is also its orientation toward innovative, sustainable, and socially responsible societal development, reflected in numerous projects and the integration of such content into study programmes, as well as

growth in artistic and project achievements. Positive trends continue in scientific research activities, particularly in securing basic and applied projects, including international ones. However, this latter observation must be viewed in the broader context of the competitive international research space, where competitiveness and relevance depend not only on stable growth of an individual institution but also on the relative speed of this growth compared to others – a topic discussed in the next chapter.

3 Challenges and Opportunities for Improving Quality at the University of Maribor

Despite positive trends in quality development, the University of Maribor still recognizes numerous opportunities for improvement and challenges dictated by the global competitiveness of the higher education space. The key question is how to ensure long-term growth of scientific research activities, strengthen the university's integration into international flows, and at the same time remain responsive to changes in the regional and global academic environment.

3.1 Opportunities for Further Quality Development at the University of Maribor

Particularly in the field of scientific research, there are still untapped capacities that offer possibilities for improvement. Both the external evaluation by NAKVIS and the university's internal self-evaluation highlight the need to establish even more effective mechanisms to encourage researchers to publish in the highest-quality scientific journals, especially internationally, and to shift from quantity of publications to quality and impact. Further opportunities lie in more active and interdisciplinary collaboration among researchers and in creating a reward system for breakthrough and exceptional scientific and professional achievements. Recognition of the importance of research still varies among individual researchers and faculties, with significant discrepancies indicating untapped potential. Evaluations also emphasize that maintaining competitiveness will require additional investments in research infrastructure and greater efforts to promote and popularize scientific research work within the broader society.

Findings further suggest the need for innovative approaches to involve a wider circle of students – who are increasingly disengaged – in university governance and in developing a comprehensive lifelong learning offering, which the University of Maribor is addressing through the development of a micro-credential system. Finally, opportunities for improvement also appear in two areas highlighted as priorities by virtually all EU higher education policies and guidelines – digitalization and internationalization. While the University of Maribor began digitalizing its activities and operations in 2023 through projects under the Recovery and Resilience Plan (RRP), a national reform and investment programme for the green and digital transition aimed at creating a more sustainable, resilient, and future-ready society, internationalization, particularly in terms of international recruitment and offering study programmes oriented toward the global environment, also depends on national policies and legal frameworks. Although the Republic of Slovenia is committed in its strategic higher education documents to opening up to the international space, the legal frameworks remain quite rigid and do not allow universities to fully develop their potential. On this topic, the Rector of the University of Maribor, Zdravko Kačič, stated in the newspaper Večer that "universities have lost a decade because they were unable to develop study programmes in foreign languages, which would have allowed them to participate equally in European integration processes" (Žišt, 2024).

3.2 Challenges of Global Competitiveness and Regional Shifts

Not only the University of Maribor and its local environment, but also the broader European higher education and research space has recently been facing increasing challenges in terms of competitiveness. Europe is falling further behind other regions of the world in technological development and innovation, which is becoming particularly evident in the field of new technologies. An analysis of data from the Academic Ranking of World Universities (ARWU) and others, such as U.S. News & World Report, shows that Europe remains a leader only in certain areas, such as ecology, geography, and administration. Since 2017, almost all key fields of engineering and technology have shifted to China, which is now the global leader in this area, while the United States still dominates most other scientific disciplines. Other countries and regions play no significant role in the global academic and research space (Marhl et al., 2025).

Although this study has only recently been published, the data have already been used for a normalized analysis comparing results based on countries' GDP and population size (Prathap, 2025). The results are both encouraging and concerning. On the positive side, some European countries still rank high when normalized by the ratio of invested resources and the share of highly educated population, confirming that much can be achieved with relatively modest resources. However, this is not a sustainable long-term advantage, as similar standards, if applied in China, India, or other countries with large (currently underutilized or at least not comparable to European) potentials, could lead to an even greater redistribution of global scientific and academic power.

This is particularly important for the University of Maribor, which achieves high productivity with relatively modest investments but will face the challenge of maintaining competitiveness in the future. Although the University of Maribor continuously advances and improves its research and pedagogical excellence, global competition is becoming increasingly fierce. Many universities, especially in rapidly developing academic and research environments, are growing even faster, investing more resources, and achieving better results. This means that the University of Maribor is slipping downward on some rankings – not because it is performing worse, but because other institutions are advancing even faster. These shifts, which clearly reflect the intensity of global academic competitiveness and the importance of strategic investments in quality, innovation, and development, are highlighted in a comprehensive analysis of current conditions on international ranking lists, which examines Slovenia's and the University of Maribor's position by scientific fields (Glavič et al., 2025).

Since global and regional shifts in rankings have been evident for several years, a Working Group for Developing a Policy on Monitoring the University of Maribor's Ranking Results was established in 2020. Its findings showed that globalization of the higher education space has intensified significantly in recent years and that more and more universities worldwide are competing for experts, students, and financial resources. The working group examined four well-known rankings (*Times Higher Education World University Rankings (THE Rankings), Webometrics, QS World University Rankings*, and *ARWU*) and concluded that the final score and ranking of a university are most heavily influenced by scientific research performance (while teaching quality is second), which is one reason universities strive for the best possible

scientific research results and pay special attention to the impact of their scientific publications.

The report also highlighted that the number of scientific publications worldwide doubles every nine years (Van Noorden, 2014), meaning that for the University of Maribor to rise in the studied rankings, it is not enough to gradually increase publications and citations – the growth must occur faster than at competing institutions. Rapidly rising trends are particularly evident in Eastern regions, especially China.

In addition to the quantity of articles and citations, the quality of contributions must also be emphasized. The working group concluded that publications, their quality, and impact are a dynamic process that constantly changes, and to remain comparable with the best universities in the world, we must keep pace with this development. They stressed that this is not only about ranking positions but also about the fact that societal changes and regional shifts are happening increasingly quickly, forcing science to adapt (Poročilo delovne skupine za pripravo politike spremljanja rezultatov razvrščanja Univerze v Mariboru, 2021).

3.3 Future Directions

Based on these studies, it is evident that many European systems, including the education and research sectors, are failing to achieve the necessary flexibility and responsiveness to global trends. In this context, the University of Maribor must direct its development toward strategic sustainability goals that focus not merely on expansion but primarily on improving the quality of education, research, and engagement with industry and society. Instead of quantity, the key orientation should be toward excellence – smaller study groups, individualized approaches, and the development of top potential while maintaining diversity and the university's integrity. The competitiveness of the University of Maribor in the European and global space will depend on systematically promoting breakthrough research, digitalization, sustainable innovations, and smart technologies that contribute to energy efficiency, sustainable mobility, and the circular economy. At the same time, we must not overlook the security aspect of sustainable development, as a stable and secure environment is the foundation for successful and long-term development of the university and society as a whole.

At the University of Maribor, we recognize that sustainable development is not merely an academic concept but a strategic necessity that includes ensuring security at local, national, and global levels. Security is a key component of the university's stability and competitiveness and of society at large; therefore, quality development at the University of Maribor must be closely linked to security aspects.

The United Nations Sustainable Development Goals (Meško et al., 2024; United Nations, n.d.) – in addition to ending poverty and hunger, ensuring health and well-being, quality education, gender equality, clean water and sanitation, affordable and clean energy, decent work and economic growth, industry, innovation and infrastructure, reducing inequalities, sustainable cities and communities, responsible consumption and production, climate action, life below water, life on land, peace, justice and strong institutions, and partnerships – also emphasize the importance of responding to crime and security threats and establishing fair criminal justice systems. The University of Maribor has actively participated for decades in research on security challenges within national and international projects and contributes to shaping policies in the field of security and crime prevention (e.g., environmental crime and protection, care for minors, urban and rural safety, water-related crime, social inclusion of marginalized groups, peace efforts in post-conflict societies, strengthening formal social control institutions). Research by the Faculty of Criminal Justice and Security, which includes cooperation with European institutions such as the European Union Agency for Law Enforcement Training (CEPOL) and the European Crime Prevention Network (EUCPN), highlights the importance of an interdisciplinary approach to ensuring security in local communities at the national level and within the EU (Meško, 2023). Best practices (Meško et al., 2024) show that key elements of successful security provision include trained professionals, the use of advanced technology, and respect for the rule of law, dignity, and human rights. Through its research and pedagogical activities, the University of Maribor contributes to the continuous development of these areas and strengthens cooperation with stakeholders at national and international levels.

The role of the University of Maribor in ensuring the quality of teaching and research is crucial for the long-term enhancement of security and competitiveness of the university and the broader social environment. Continuous improvement of research quality, development of top-level personnel, and interdisciplinary

collaboration contribute to creating comprehensive solutions for sustainable development and security in the European and global space.

4 The Need for the University of Maribor's Contribution to a Responsible Future for Society

At the University of Maribor, most faculties are successfully adopting and implementing sustainability measures in communication and administration as part of the green transition, as most employees have electronic signatures and parts of administrative procedures can be completed online without printing. In the area of handling discarded furniture and IT equipment, the university is approaching best practices seen at foreign green universities. It is encouraging that both faculty leadership and staff are interested in taking action toward the green transition. However, additional measures are urgently needed in water conservation and reducing energy consumption in buildings, as identified through questionnaire analysis.

4.1 Sustainable Management

Sustainable management includes developing a plan for climate neutrality and applying international recommendations and standards for sustainability reporting, which are essential for ensuring transparency, consistency, and comparability of information on sustainability practices in companies and organizations. Examples of some well-known and frequently used standards and recommendations are presented in Table 1:

Universities worldwide increasingly take a leading role in achieving sustainable development goals, particularly in climate neutrality and reducing carbon footprints. To achieve these goals, they develop comprehensive strategies, action plans, and reports based on international sustainability reporting standards, such as Global Reporting Initiative (GRI) guidelines. They also participate in international initiatives like UI GreenMetric, which evaluates the sustainability orientation of universities and campuses.

Examples of good practice include Wageningen University & Research (WUR), which operates a Green Office, and University of São Paulo (USP), which has advisory boards for areas such as mobility, green spaces, water resources, and environmental ethics. These bodies collect data, propose measures, and monitor progress in sustainability.

Table 1: International recommendations and standards for sustainability reporting

International recommendations and standards for sustainability reporting	Description
Global Reporting Initiative (GRI)	Provides a comprehensive framework for reporting on economic, environmental, and social impacts of organizations (Brightest, n.d.).
Carbon Disclosure Project (CDP)	A non-profit organization that enables companies to disclose their environmental impacts. It collects data on greenhouse gas emissions, water consumption, and forest management, helping organizations transition to sustainable business practices (Brightest, n.d.).
ISO 26000	An international standard offering guidelines for social responsibility in organizations, summarized in seven key areas: human rights, labour practices, environment, fair operating practices, consumer issues, community involvement, and development (ASQ, American Society for Quality, n.d.). It is supported by seven principles/values: accountability, transparency, ethical behaviour, respect for stakeholder interests, rule of law, international norms, and human rights. In this way, responsibility for impacts on society, interdependence and integrity are realized (ISO, 2010).

A study involving University of Maribor members found that 45% have established laboratories, departments, or centres focused on the green transition. All members (100%) include green transition measures in their work plans or strategies. However, 40% lack time-bound goals, reducing effectiveness and commitment to achieving these objectives. Time-bound goals are crucial for accountability, progress monitoring, and achieving tangible results.

Additionally, existing units dealing with the green transition often fail to develop innovative solutions for improving sustainability at the level of the university member or the university as a whole. Effective implementation of the green transition requires fostering innovation, interdisciplinary collaboration, and the engagement of all stakeholders in the sustainability transformation process.

4.2 Energy, Buildings, Waste, and Water Consumption

The use of renewable energy sources is often the first step toward achieving climate neutrality, as demonstrated by numerous global universities. These institutions not only use but often produce energy from renewable sources such as solar and wind power. For example, Wageningen University & Research (Netherlands) and University of California, Davis (USA), as highlighted in the third chapter of Ana Murko's contribution (2024), operate extensive systems for sustainable energy production. Efforts include ensuring new buildings are energy-efficient and implementing measures for older structures, such as maximizing daylight use, natural ventilation and cooling, smart controllers for precise energy monitoring and adjustment, LED lighting, installing efficient windows, green roofs and façades for better insulation. Measures for reducing drinking water consumption, such as reusing greywater or utilizing natural springs, were not observed at the University of Maribor; these are common at institutions like the Czech University of Life Sciences in Prague (2023). Other measures include replacing old toilets and faucets with water-saving fixtures. The University of California even operates its own waste water treatment plant. According to the results of our research, waste reduction is a priority everywhere, including at the University of Maribor, which promotes reduction, reuse, separation, and recycling.

Greater energy self-sufficiency through solar power would require short-term investment but would reduce electricity costs and environmental impact in the long term. Roof space on university buildings could be utilized for solar panels, while green roofs and façades could be implemented elsewhere. In the buildings of six university members (30%), informational signs encouraging climate-friendly behaviour (such as turning off lights and reducing elevator use) have already been installed, although awareness efforts could still be increased. It is positive that eleven university members (55%) already use eco-friendly cleaning products, and nine (45%) use recycled, unbleached toilet paper. At least part of the building has already been renovated at nine university members (45%). Students as well are aware of waste separation bins and see this as a reason to consider the university "green." Interviews revealed students appreciate reduced electricity use, coffee machines allowing reusable cups, and progress in reducing paper consumption through greater use of tablets by both employees and students.

To achieve climate neutrality and sustainable development, universities worldwide implement numerous measures in energy efficiency, waste reduction, and water conservation. These actions not only reduce environmental footprints but also serve as educational tools for students and staff. Universities are implementing various measures for reducing energy use, including:

- motion-sensor lighting in unused spaces,
- maximizing natural light by opening the blinds,
- installing energy-efficient LED lighting,
- optimizing heating and cooling schedules,
- using thermostatic valves and setting temperature limits in individual spaces,
- switching off devices when not in use or using energy-saving modes (e.g., sleeping),
- encouraging shared use of devices and considering energy efficiency in purchases of new equipment,
- regular equipment maintenance, including cleaning or replacing filters in air conditioning and heating systems,
- inspection of buildings with IR cameras to detect temperature points and uncontrolled heat leakage.

In addition to these measures, some universities, such as Wageningen University and Research (WUR), use heat and cold storage systems (ATES), which enable seasonal energy storage and reduce natural gas consumption.

From the perspective of security studies and criminology, numerous activities are also carried out in this area in connection with the United Nations, international research collaboration, and public awareness through the media. The importance of environmental protection is reflected also in the monograph on environmental crime and green criminology, translated into eight languages in addition to English (Eman & Meško, 2014).

4.3 IT Equipment and Other Materials

When reviewing practices at global universities, we identified one of the few systematic measures as the separate collection of electronic waste and batteries at Nottingham Trent University in the United Kingdom. The University of São Paulo

in Brazil stands out with its own laboratory for processing and recycling chemical waste and a special system for collecting and recycling used cooking oil. Several universities actively promote the reuse of old furniture, primarily through donation systems or second-hand stores with used equipment.

A positive trend is also evident among the members of the University of Maribor. In a study (Murko, 2024), respondents reported that 15 members (75%) reuse parts of discarded IT equipment as spare parts, while 12 members (60%) store decommissioned equipment for future internal use. Similar patterns were observed in furniture management. The frequent claim that donating decommissioned equipment is prohibited by law is not entirely accurate, such practices could be regulated through appropriate internal policies.

To ensure effective and sustainable management of discarded IT equipment, furniture, and other materials at universities, a comprehensive approach should include the following measures: instead of routine replacement of IT equipment, establishing programmes for maintenance and upgrading existing devices to extend their usability. Storing usable components from decommissioned equipment for use as spare parts, reducing the need for new purchases. Developing internal policies aligned with current legislation to enable responsible handling of decommissioned equipment. Allowing donation of decommissioned but still usable equipment to various institutions or charitable organizations, contributing to the university's social responsibility. Ensuring electronic and electrical waste is processed in compliance with legislation to prevent illegal trade and reduce environmental harm. Implementing educational programmes for students and staff on proper e-waste management to encourage responsible behaviour. In this context, Andreja Rožnik's (2020) doctoral dissertation is significant, as it addresses situational prevention of illegal trade in electrical and electronic waste. Her study emphasizes preventing the illegal export of e-waste from developed countries to developing nations, where improper dismantling of this waste often occurs, causing negative environmental and health impacts.

4.4 Mobility

Environmentally responsible universities worldwide systematically monitor staff and student mobility and publish this data on their official websites. Such practices were observed at the previously mentioned Dutch and American universities. The purpose of this monitoring is to reduce CO_2 emissions associated with transportation. Measures introduced include remote work and meetings, use of video conferencing to reduce travel needs, installation of electric charging stations for cars and e-bikes, bicycle-sharing systems for students and staff, construction of additional bike lanes and parking spaces for bikes, discounts for public transport tickets and car-sharing apps for employees.

At the University of Maribor, there is currently no unified system for collecting mobility data for students and staff. According to research (Murko, 2024), 16 university members (80%) monitor staff mobility, and 14 members (70%) monitor student mobility as well. It is important to note that mobility can refer to daily commuting as well as travel for study or work purposes.

Encouragingly, 17 members (85%) provide adequate bicycle parking, and 12 members (60%) actively promote the use of bicycles and e-bikes. On the other hand, only three members (15%) conduct more than 20% of activities (such as conferences, meetings, lectures) remotely – either fully or in hybrid form. In interviews, students highlighted the importance of public transport as a key element of environmental responsibility and suggested increasing opportunities for bike-sharing.

To more effectively promote sustainable mobility at the University of Maribor, we propose introducing a bicycle-sharing system for students and staff at all university members, thereby increasing access to environmentally friendly transportation. In addition, restrictions could be introduced on short-distance air travel for official purposes, and the use of video conferencing for meetings and consultations could be further encouraged. Remote work, where the nature of the job allows, could also significantly contribute to reducing traffic and emissions. Finally, organizing a car-sharing system among employees would enable better utilization of vehicles and reduce the number of cars on the roads.

4.5 Food

Examples of exemplary sustainable practices in the field of food at universities include providing sustainably produced food in cafeterias, reducing food waste, and offering plant-based food and beverages that are seasonal and locally sourced. An important element is also the availability of tap water or drinking fountains. Such practices are present, for example, at Wageningen University & Research in the Netherlands and Nottingham Trent University in the United Kingdom (Murko, 2024).

The University of Maribor does not manage cafeterias or restaurants itself and therefore cannot directly influence the food offered there. Nevertheless, it can make a significant contribution by promoting sustainable dietary practices and developing guidelines. Research (Murko, 2024) showed that 17 university members (85%) already ensure the inclusion of locally produced food when organizing events and conferences, while eight members (40%) also provide healthy snacks for students and staff. Students often prepare food themselves for events and strive to avoid using single-use plastic packaging.

In the field of food, the University of Maribor still has opportunities for additional sustainable measures. Offering healthy snacks, such as seasonal and locally grown fruit in common areas, encourages healthy eating habits. Installing vending machines and drinking fountains that allow refilling of personal cups or bottles reduces the use of single-use packaging. Guidelines for sustainable and plant-based diets aimed at external food providers can help reduce the carbon footprint of food. Furthermore, establishing community gardens, such as raised beds on degraded areas near faculties, offers a valuable opportunity to involve students in sustainable food production. Such gardens not only contribute to greater food security but also serve as learning environments for acquiring practical knowledge in local and environmentally friendly food cultivation.

4.6 Students and Education

Research and education on the green transition and climate neutrality are already firmly embedded in the academic and research space at many global universities. For example, RUDN University in Moscow (People's Friendship University of Russia) develops content related to biodiversity, climate change, circular economy, nutrition

and health, artificial intelligence, remediation of agricultural and industrial landscapes, and the preservation of marine and terrestrial environments. In addition to undergraduate and postgraduate programmes focused on sustainable development, numerous additional projects aim to develop models and implement best practices.

At the University of Maribor, interest in green topics is also growing. According to research (Murko, 2024), 15 university members (75%) expressed interest in integrating content related to sustainable development, highlighting themes such as climate change, green innovations, and circular economy. Between 2022 and 2025, the university is implementing 23 pilot projects under the national Recovery and Resilience Plan (RRP), aimed at curriculum renewal, digital transformation, and strengthening sustainability competences. All university members engaged in educational activities have expressed willingness to participate, and 19 members (95%) reported that their leadership is interested or highly motivated to introduce green content. Most interviewed students recognized the presence of these topics in regular or elective courses. Some emphasized that they have gained enough knowledge to contribute to responsible behaviour themselves. They also highlighted the importance of role models among staff and the institution, as well as the need to encourage innovation and creativity.

The University of Maribor actively strives to involve students in sustainability activities and educate them about environmental responsibility. Students participate in pilot projects for the green transition, which promote curriculum renewal and the adoption of sustainability-oriented practices. In addition, the university organizes workshops and extracurricular activities to raise awareness about reducing carbon footprints and adopting eco-friendly habits. To foster innovation, the university awards prizes for student contributions to innovation activities. In cooperation with local companies and organizations, it offers opportunities for internships and research related to sustainable solutions, significantly contributing to students' personal and professional development. Green-themed bachelor's and master's theses are also supported, guiding students toward exploring topics in sustainable development. Furthermore, the university enables the establishment of community gardens where students can grow vegetables and herbs themselves. These gardens contribute to greater food security and serve as learning environments for acquiring practical knowledge about sustainable food production.

4.7 Administration

Based on the findings of Murko's research (2024), it can be concluded that the members of the University of Maribor are already actively engaging in sustainable administrative practices, similar to many leading global universities. At 15 members (75%), environmentally friendly printing settings, such as double-sided printing, have already been introduced, while 14 members (70%) carry out part of their administrative procedures digitally, without printing. At five faculties (25%), most students already use electronic signatures, enabling a transition to paperless operations even for more complex administrative processes. In the spirit of sustainable transformation, additional measures are recommended, such as comprehensive document digitization, expanded use of e-signatures, rationalization of schedules, optimization of ventilation and energy consumption in premises, and awareness-raising about the efficient use of electronic devices. Encouraging the use of digital tools instead of paper notebooks and replacing office supplies with those from sustainable sources is also advisable. Digital educational infrastructure plays an important role, enabling the use of online classrooms, uploading materials, conducting assessments, and communication within the learning process. Furthermore, university faculties already incorporate environmental elements into public procurement and promote cooperation with local organizations and external stakeholders to reduce energy and water consumption – similar to practices at the Czech University of Life Sciences Prague.

Leading global universities, such as Nottingham Trent University, University of California, Davis, and the Prague University of Life Sciences, publish annual sustainability reports on their official websites. These reports include a sustainability strategy (goals) set for a multi-year period, an overview of progress across various areas (knowledge and education, research, campus/university operations), expressed in comparison with previous years, presented numerically and often graphically.

4.8 Looking Ahead

We analysed the current state of the green transition and carbon footprint reduction at the university members and proposed a set of sustainability measures in various areas, such as energy and water consumption, waste management, education, and

administration. Now we ask ourselves where are the limits of change, and what are the real challenges in achieving progress in sustainability.

The University of Maribor is already implementing numerous sustainability initiatives, including 23 pilot projects for a green and resilient transition to Society 5.0, which are part of the national Recovery and Resilience Plan (RRP). These projects focus on curriculum renewal, digital transformation, and strengthening students' sustainability competences. To further strengthen sustainable development, the University could consider the following measures: establishing a Green Office, a central unit that would coordinate sustainability initiatives, monitor progress, and promote collaboration among faculties. It would also be reasonable to expand renewable energy sources by installing additional solar panels on university buildings' rooftops to increase energy self-sufficiency. Promoting sustainable mobility is becoming increasingly important, and the introduction of a bicycle-sharing system for students and staff, along with the promotion of public transport, is already functioning in Maribor. Sustainable food practices are still insufficiently represented, and it would be necessary to introduce locally produced food in cafeterias and encourage plant-based diets. Education and awareness-raising in the direction of sustainability are already underway, including organizing workshops and seminars on sustainable practices and integrating these topics into curricula. Green student initiatives are welcome, as is support for student projects focused on sustainable solutions and the introduction of awards for innovative ideas. Cooperation with the local community could be stronger, although partnerships with local businesses and organizations for joint sustainability projects are already partially in place.

Achieving sustainable living goals requires continued collaboration among all stakeholders, including university leadership, staff, students, and the local community. The University must develop comprehensive strategies and action plans that encompass all aspects of sustainable living, including clear timelines. It is also important to integrate sustainability practices into study programmes and research activities so that students acquire the knowledge and skills needed to address environmental challenges in academic, professional, and everyday contexts.

4.9 Working Group for a Green Future

At the University of Maribor, we have been striving for sustainable operations across all areas of our work for decades. In 2010, Peter Glavič once again proposed the development of a project for a sustainable and socially responsible university (TDOU). The initiative was supported in 2012 by seven distinguished professors, including the then Rector of the University of Maribor, Danijel Rebolj (Glavič et al., 2022). A concrete programme on how to become an "Out of the Box" university was approved in 2013 (Rebolj et al., 2013). The Council and the Committee for TDOU began operating. The University of Maribor amended its statute to define the university as a sustainable and socially responsible institution. The governing bodies of the University of Maribor approved the TDOU strategy and policy, the activity plan until 2020, and set TDOU priorities for preparing the university's work programmes. The TDOU Committee ceased operations in 2019.

At the end of 2021, Rector Zdravko Kačič established a working group for a carbon-neutral university. At its first meeting, the group proposed renaming it to the Working Group for a Green Future. Its goal is to achieve better environmental efficiency, greater public awareness, reduced operating costs for university members, and improved well-being of staff and students. Until now, "green" activities have mainly resulted from the efforts of individual faculties, so achievements have been fragmented and not recorded at the university level. It has become clear that comprehensive sustainable operations require monitoring the implementation of planned goals. Continuous communication and so-called green education are also essential to encourage staff and students to adopt new values. Excessive consumerism, high consumption of natural resources, unnecessary energy losses in buildings, and unsustainable mobility patterns are opportunities that can be quickly integrated into a changed way of operating at the University of Maribor.

Experiences from abroad show that transitioning to a green university requires focusing on three main aspects. The first is orienting education and curricula toward social responsibility and, consequently, toward environmental protection, sustainability, and the use of clean energy. The second point relates to the practical applicability of content and approaches to study, ensuring that students acquire knowledge useful in various everyday situations, both at the university and in society. Education plays a decisive role in the development of society and the preservation

of humankind. The third point focuses on the idea that through our behaviour, we can all positively influence nature and the environment.

A green university refers to institutions capable of meeting the requirements of sustainable operations. These are environmentally friendly universities that ensure campuses remain clean and maintain environmental standards and a "green identity" by achieving environmental sustainability, reducing energy consumption, supporting education and environmental research, using waste recycling systems (reuse of raw materials), offering bike and car-sharing, and providing access to food produced in an environmentally responsible manner. Such universities invest heavily in raising public awareness of environmental issues.

The term "green university" also describes the work universities do to promote sustainable activities that reduce unacceptable environmental impacts on universities and local communities. Higher education institutions are also greening curricula by introducing new study programmes and expanding e-learning. E-learning reduces the need for infrastructure (number of classrooms, student dormitories, libraries, laboratories) and activities associated with traditional pedagogical processes. Energy consumption is lower because students and staff do not need to travel to faculties.

Slovenia does not yet have a modern green university, which is why the University of Maribor decided to record activities and processes already implemented at its members and identify which processes still need to be introduced into university operations. For this purpose, a pilot project – a master's thesis titled Green University Maribor – is being developed, which will present international criteria for green universities. Using a multi-method approach, we will obtain an overview of the University of Maribor's compliance with green university criteria and its carbon footprint, revealing additional opportunities for environmentally friendly and sustainable operations.

Below are measures and activities already implemented by some members of the University of Maribor to achieve a green university, which can serve as a basis for improving green practices across all members.

4.10 The Need for Transition to New Values and Performance Indicators

For real progress in sustainability, strategies must include clear goals based on ISO 26000 and related EU directives and guidelines; therefore, it is essential to adhere to sustainability values. This includes areas such as carbon neutrality, meaning the implementation of measures to reduce greenhouse gas emissions and the transition to renewable energy sources. Social inclusion is also important, with special support for students from vulnerable groups, promoting equality and accessibility of education. Environmental responsibility means sustainable management of facilities, waste reduction, and the use of environmentally friendly materials.

Performance indicators must reflect sustainable and socially responsible objectives, such as environmental indicators for measuring carbon footprint, energy efficiency, and reduction of natural resource consumption, as well as social indicators for measuring the share of students and research contributing to sustainable solutions and community engagement. Research quality includes monitoring the impact of research projects on sustainability and improving quality of life. It is crucial to introduce sustainable practices into everyday operations. The University can act as a model of responsible resource management. This includes promoting sustainable mobility (use of bicycles, public transport, car-sharing), introducing green and energy-efficient buildings, and reducing energy and water consumption. Digitalization of processes to reduce paper use and administrative costs is already well established.

An important goal of the University of Maribor is to educate innovative, socially responsible, and therefore sustainability-oriented generations. Students are a key driver of societal change. The University should integrate sustainability content into all study programmes, regardless of the field of study, which is supported by RRP projects. The University of Maribor should encourage interdisciplinary collaboration, connecting natural sciences, technical disciplines, and social sciences to address global challenges. Students emphasize the importance of practical projects where they collaborate with the local community on sustainability initiatives.

The University should act as a connector in sustainability between researchers, industry, policymakers, and civil society at all levels – from local, supporting projects such as renewable energy and water conservation, to international, through

participation in networks of universities for sustainable exchange of practices. An important role of the University of Maribor is also public engagement through organizing events and lectures to raise awareness among the wider public about the importance of sustainability values.

5 The Future of the University of Maribor as a Co-Creator of Sustainability, Security, and Competitiveness

In the future, the University of Maribor aims to strengthen its role in shaping an innovative, socially responsible, and therefore sustainable and secure society that will be competitive in the European and global space. This requires integrating the concepts of sustainable development with strategies for ensuring security and stability in social, economic, and ecosystem contexts.

In line with the United Nations Sustainable Development Goals (Meško et al., 2024), the academic environment must actively contribute to developing knowledge that enables a stable and secure society. The implementation of these goals is also monitored by the Statistical Office of the Republic of Slovenia (Statistični urad Republike Slovenije, n.d.). This includes developing fair institutions, effective responses to security threats, and designing policies for social and economic stability while considering environmental protection for future generations. The University of Maribor, through its research and educational activities, contributes to achieving these goals via interdisciplinary projects that connect science, industry, and the broader social community.

5.1 The University of Maribor's Connection with International Initiatives for Sustainable Action and Security

The University of Maribor is active in numerous initiatives of the United Nations (UN), the Council of Europe (Meško, 2003), and the European Commission that promote knowledge-based policies and practices. Since 2010, the Faculty of Criminal Justice and Security has been a member of the United Nations Academic Impact (UNAI) and regularly reports on its activities related to preventing organized crime, corruption, and ecological threats. Participation in UN sessions and in drafting policy documents confirms the University of Maribor's integration into global sustainability strategies.

The Council of Europe and the European Commission have implemented UN principles into European policies, with researchers from the University of Maribor actively contributing to the development of guidelines in the areas of peace, justice, and strong institutions (Meško et al., 2024). Particularly emphasized are programmes and research focusing on ensuring adequate quality of life, preventive activities for responding to law violations, security threats, and fair criminal justice systems (Eman & Meško, 2014; Meško et al., 2024), through which the University of Maribor contributes to shaping stable and secure social structures.

5.2 Connecting the Research and Educational Environment to Strengthen Security and Competitiveness

Researchers at the University of Maribor have been studying key security challenges at the national, European, and international levels for more than two decades. Their findings have influenced the development of institutions and practices, as evidenced by numerous publications addressing ecological criminology, policing, domestic violence, cybercrime, rural security, and other current topics (Bernik, 2014; Bowden & Meško, 2025; Eman & Meško, 2014; Meško, 2018, 2023; Meško et al., 2011; Meško et al., 2018; Meško et al., 2024). The importance of the academic environment in shaping security policies is also reflected in participation in projects funded by the Slovenian Research and Innovation Agency (ARIS) and various ministries, as well as in the development of national and European strategies. A key factor in connecting academia, politics, and local communities are national conferences on security in local communities. Since 2015, the University of Maribor has organized ten such conferences. An important fact is that the topics discussed at these conferences have become a permanent part of national crime prevention and suppression policies.

Special emphasis is placed on transferring knowledge from academia to the broader social environment. The University of Maribor participates in discussions in the National Assembly, in European working groups (CEPOL, EUROPOL, EUCPN), and in projects supporting crime prevention, environmental protection, and strengthening digital security. Membership of researchers in international professional associations such as the European Society of Criminology (ESC), the American Society of Criminology (ASC), and the Academy of Criminal Justice Sciences (ACJS) enables the University of Maribor to be included in global research flows and to develop comparative studies that contribute to the creation of high-quality policies in all areas of security (Meško, 2023; Meško et al., 2024).

5.3 The Role of the University of Maribor in Shaping a Future Competitive and Secure Society

For the future of the University of Maribor, a key task remains ensuring the quality of teaching and research, thereby strengthening its competitiveness and contributing to the stability of the broader social community. Continuous linking of research with the practical needs of society enables the development of evidence-based policies and the training of professionals capable of addressing increasingly frequent and complex security challenges that transcend national borders (Meško, 2023; Meško et al., 2024).

Science and education are the foundation of sustainable development, which means that the University of Maribor must continue to invest in research, international collaboration, and strengthening cooperation with industry and state institutions. This includes developing new study programmes that address current security and social challenges and promoting an interdisciplinary approach to solving complex problems.

Through its work, the University of Maribor demonstrates that sustainable development is not possible without research, scientific excellence, and quality collaboration with stakeholders at local, national, and international levels. Strengthening the university's role as a co-creator of a secure and competitive society will therefore remain one of its key priorities in the coming years.

6 Conclusion

The University of Maribor recognizes that quality and sustainable development are not separate concepts but interwoven processes that form the foundation for the long-term competitiveness and stability of the higher education space. The analysis of the current state of quality and sustainability aspects of the university shows that the University of Maribor has systematically upgraded quality assurance mechanisms across all areas of its operations over the past decades. These efforts are reflected in numerous reforms, institutional adjustments, and strategic orientations, ranging from internal evaluations to international accreditations and active engagement with the broader social and economic environment.

The key finding of the research is that there is no sustainable development without high quality. Sustainable development is not merely an environmental concept but a broader strategic approach that includes economic, social, and security dimensions and is based on high-quality research, innovation, and education. Only through continuous improvement of teaching, research, and management quality can the university create new knowledge, technologies, and behavioural patterns that will reduce the burden on the natural environment while maintaining and raising the level of development and quality of life, as well as the high standard of society.

The European higher education space today faces challenges of global competitiveness, with data showing that Europe's technological development and innovation potential lag behind other regions of the world in some segments. The University of Maribor must therefore focus even more on strengthening research excellence, interdisciplinarity, and integration into international research flows. This requires a shift from quantity to high-quality research and publications and systematic promotion of breakthrough research potential, especially those that impact sustainable development and the quality of life for people, society, work, and the natural environment.

Mechanisms of digitalization play a special role in ensuring quality and sustainable development, as they enable process optimization, increase efficiency, and contribute to sustainable practices. The digital transformation of the University of Maribor is therefore one of its key strategic priorities, as it not only enhances the university's performance but also reduces administrative burdens, improves access to knowledge, and strengthens connections with global trends in education and research.

Collaboration with industry and the broader social environment remains crucial for the sustainable future of the University of Maribor. Strengthening cooperation in areas such as the circular economy, smart technologies, energy efficiency, and sustainable mobility will enable better knowledge exchange and faster transfer of research results into practice. At the same time, it has become evident that the university must take an even more active role in shaping security strategies, as a stable and secure environment is the foundation for long-term competitiveness and social well-being.

Based on these findings, the following strategic directions are outlined for the future of the University of Maribor: emphasis on the quality of the educational process with smaller study groups and individualized approaches; systematic identification and development of breakthrough research potential; alignment of research with European and global sustainability orientations; accelerated digitalization and strengthening of digital security; and enhanced cooperation with economic and social stakeholders.

The University of Maribor remains firmly committed to a holistic understanding of sustainable development as a process that cannot be achieved without quality and continuous progress. Through ongoing improvements, systematic evaluation, and adaptation to global trends, the university can strengthen its role as a central actor in the sustainable development of society and contribute to shaping a secure and competitive future.

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