

AUDIT OF THE UNIVERSITY OF LJUBLJANA

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2.2 Research, development and innovation activities as well as artistic activities with impact

- Korkeakoulun itsearviointi

As part of its strategy, UL has undertaken to offer support to researchers in the sciences and the arts in communicating the results of their work. UL promotes cooperation between academia, industry, decision-makers, and the non-governmental sector, which is reflected in a range of national, European and other projects.

Open Science

UL supports open science by incorporating open science principles in UL policy documents and by ensuring conditions that allow research to take place in accordance with open science principles. UL keeps researchers and other open science stakeholders regularly informed via news published on the [UL Open Science](#) website. For detailed information about open science at the UL, [see file](#).

UL Press

Academic publishing at UL members via the UL Press is rich and diverse (more in 2.4). We currently publish [51 open-access scholarly journals](#) covering all research fields. Authors are not subject to an article processing charge for publishing articles. In total UL publishes around 280 publications a year (monographs, textbooks, manuals, conference proceedings, etc.), which places the UL Press among the three biggest publishing companies in Slovenia in terms of

number of publications. More than half of the monographs published by the UL Press are open access, while all other books are available in the [online bookshop](#).

Research and development

With the [UL Researchers' Career Development Strategy 2012–2016](#) (in Slovene) and the adoption of an Implementation Action Plan, UL committed itself to establishing a centralised university-wide system for informing the academic and general public on an ongoing basis about research topics and research achievements. This commitment is realised via the [Research News](#) website (for more, see 2.4).

In 2022, UL participated in 186 long-term research programmes, 331 national research projects and 661 European and other international research and development projects, in the context of which new knowledge is disseminated within the global research community and communicated to various target groups and the general public. UL is the most successful institution in Slovenia when it comes to obtaining [European Research Council \(ERC\)](#) projects. Of the 22 approved ERC projects, UL is implementing 10 and cooperating in a further five. UL is also the member of The [Guild of European Research-Intensive Universities](#) with the largest number of projects in Horizon Europe Cluster 5. Many of UL's European research projects also include citizen science (e.g. [SPRINT - Sustainable Plant Production Transition](#) and [WeCount - Citizens Observing Urban Transport](#)).

The university as a whole implements numerous science communication activities to promote the social impact of research activities. UL was one of the organisers of the [first international conference on science communication](#) (in Slovene). Each year UL selects the 10 most outstanding research achievements and we also take part in [European Researchers' Night](#) (in Slovene) events. In conjunction with AGRFT, we produce a television programme called *(Spre)govori znanost* featuring conversations with UL researchers on some of the most urgent issues facing society. UL researchers also appear regularly on *Ugriznimo znanost*, a science programme broadcast by a national television station, with presentations and interviews. UL Members also carry out a range of activities to promote science and their research work.

The [UL Development Fund](#) (in Slovene) provides funding to help researchers improve the quality of their research and prepare excellent applications for project funding under the European Framework Programme for Research and Innovation.

Ethics and integrity in research

UL adopts a range of approaches to ensure ethics and integrity in research. The [UL Researchers' Code of Ethics](#) lays the foundations of ethical behaviour for teaching staff, researchers and students. By signing a declaration, each individual accepts responsibility to identify ethical issues and obtain guidance or approval from the UL Member Ethics Committee. In the case of

interdisciplinary research, researchers can apply for an assessment of the ethical suitability of planned research involving human subjects to the UL Human Research Ethics Committee.

There is also a regular UL framework programme of regular briefings of researchers on values and ethical principles, which is implemented at the level of UL members and through which researchers are also briefed on the [European Code of Conduct for Research Integrity](#).

Reports of possible breaches of research integrity can be submitted by staff, students, and others to the UL Ethics Committee, which considers reports and oversees procedures to address breaches of research integrity.

Knowledge transfer

The [UL Knowledge Transfer Office](#) acts as a key intermediary link between academia and the industry, offering students and researchers services such as identifying potential innovations, legal advice, advice on IP protection strategies, liaison with industry partners and providing training. All relevant knowledge transfer processes relating to the transfer of university knowledge into the broader social context that are carried out at UL are presented in the [Knowledge Transfer Guide](#). Intellectual property management procedures at UL are regulated by the [Rules on the management of industrial property rights at the University of Ljubljana](#).

With the [UL Innovation Fund](#), UL directly (financially) promotes and encourages the development of university-based knowledge to levels of development suitable for transfer to society. The funds are intended for researchers who have technology or a solution for already identified challenges but lack sufficient resources for prototype development.

In 2022, UL acquired 20 innovations, filed 11 patent applications, and financed the development of four projects with the help of the Innovation Fund. Based on university knowledge, researchers established four spin-out companies. Compared to the previous year, the number of spin-out companies doubled.

Artistic activity

The recent establishment of the University Office for Artistic Activity follows the development area of the UL strategy by upgrading the support for the transfer of knowledge and arts to all spheres of social life. Through the [UL Arts Fund](#) (in Slovene), UL distributes funds to promote and support additional artistic creation by our students that goes beyond the work done in framework of study programmes. Special emphasis is placed on connecting the arts, sciences and social sciences, cooperation with external partners (public institutions, non-governmental organisations, artistic associations, etc.) and the communicative nature of a project. UL considers the process to be successful, especially from the point of view of involving students in the community and recognising UL's artistic activity within the community.

UL also strengthens the social engagement and influence of artistic activity through cooperation with local and national institutions in the field of the arts and culture (presentation of activities at the [Cultural Bazaar](#), a national cross-sectoral project aimed at promoting arts and cultural education, the [Bobri Festival](#) (in Slovene), a Ljubljana-based festival of cultural and artistic education for children and youth, the [June in Ljubljana](#) (in Slovene) festival. UL has also started publishing [kULturnica](#) (in Slovene) a monthly online magazine dedicated to the arts and culture at UL, and UL has created accounts on social network dedicated to arts at UL. In collaboration with the Bank of Slovenia, UL has launched the [Mala Galerija BS](#) project, which is UL's main exhibition space dedicated to contemporary artistic and cultural practices and the presentation of works by our students.

UL sees opportunities for improvement in monitoring activities, especially through a more systematic overview of the field of artistic activity - in the form of indicators specific for the arts sector.

Strengths

Compliance of the Repository of the University of Ljubljana with international standards (e.g., the OpenAIRE guidelines). Established open science practices.

The publications are issued under the common name UL Press.

Successful engagement of UL researchers in many excellent international research projects.

The Human Research Ethics Committee ensures that interdisciplinary research adheres to ethical standards for research involving human subjects. Committee members include representatives from technical faculties who can review research involving users of new technologies.

UL is becoming increasingly important for knowledge transfer to the private sector and for fostering innovation among researchers, which is one of the key indicators of research impact.

Enhancement areas

Increase the number of publications and amount of research data stored in the Repository of the UL.

Complete integration of publishing activities under the UL Press label. Increasing the international visibility of UL Press publications.

Guided trainings for societal engagement in R&I for researchers. Researchers should be trained to involve societal stakeholders more in their research.

Increase administrative support for research and research projects.

Establish knowledge transfer trainings for doctoral students.

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| Establishment of an Innovation and Development Fund to provide financial and administrative support to researchers in the development of innovations. | Introduce support for non-technological innovations. |
| Increasing the number of spin-offs. | Enhancing artistic research. |
| The diversity of artistic fields and subfields, cooperation with local and national institutions in the field of arts and culture. | The indicators of excellence in the arts – modelled on internationally comparable higher education institutions |
| Involving students in the implementation of all artistic activities. | Establishment of the UL Cultural Heritage Register and its digitalisation Strengthening the discourse on the arts (creating a platform for reflection and debate on the arts, critical evaluation, and theoretical reflection, including the publication of student and pedagogical writings). |

2.2 Research, development, and innovation activities and artistic activities with impact

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The University of Ljubljana makes a strong contribution to society with its research and artistic activities

The University of Ljubljana (UL) and its research play a major role in society, in terms of reforming it and promoting research. The impact of university research is based on three pillars: the quality and impact of research, the reporting of the impact, and connection with society. The key goal of the societal impact of research at the UL is to make society better with research, increase the relevance of research knowledge and the role of science in society. The university is advancing its position as a leading research institution and is actively engaged in the fabric of societal development through its strategic initiatives in open science, ethical practices, innovation, and community engagement.

Artistic research, notably the newly accredited PhD programmes in arts, highlight the university's engagement with societal impact through the arts. The formation of the Artistic Council, a

collaborative effort among academies and faculties, is strategically positioned to underscore the societal importance of artistic research. In addition, artistic contributions, exhibitions, research related fairs and public events underline the UL's commitment and contribution to artistic activities.

As the largest research university in Slovenia, the UL has dedicated support structures that provide a robust foundation for research and innovation. The research impact is led by the vice rectors and various committees. The vice rector for research and development meets the vice-deans of research monthly. The vice rector for knowledge transfer also has a working group for knowledge exchange. According to the audit visit, the UL's knowledge transfer office plays a great role in terms of research impact and other research-related topics. The infrastructure serves as a vital resource for both established researchers and emerging scholars.

The university's infrastructure, policies, and programmes collectively support its vision and strategy for 2022-2027, reinforcing its commitment to excellence and societal impact. However, the large set of activities and established support structures are fragmented and rely often on existing initiatives and those developed over time. The critical review and impact evaluation, institutionalised through monitoring of some key performance indicators, do not lead to continuous development or effects in the case of limited performance or not achieved targets. The audit team recommends that the university defines clearer goals for the research impact, as well as indicators to measure the research impact and ways to improve it.

The university should integrate quantitative and qualitative indicators to monitor research

According to the self-assessment report, the university participates in 186 long-term research programmes, 331 national research projects and 661 European and other international research and development projects. There are also many multidisciplinary projects funded by the Slovenian Research and Innovation Agency (ARIS). However, not every faculty has research programmes. The university's introduction of new calls for research programmes for the next six years that incorporate societal impact measures into the evaluation criteria demonstrates the UL's forward-thinking approach. This strategic inclusion ensures that the research outcomes contribute to academic knowledge and will deliver tangible benefits to society. The audit team recommends that the UL refines ongoing research programme evaluations by incorporating a balanced approach of qualitative and quantitative metrics and establishes transparent methods that address both underperformance and overperformance, such as an internal "Label of Excellence". The university should integrate quantitative and qualitative indicators to monitor research, emphasising the societal impact at both university and faculty levels.

The university's strengths are its commitment to innovation and societal impact

The University of Ljubljana is a member of the EUTOPIA University Alliance. EUTOPIA-TRAIN is a research initiative committed to the creation of a challenge-driven knowledge-creation community that capitalises on the joint potential of the EUTOPIA partners' to promote innovation and societal impact. The EUTOPIA TRAIN initiative has led to the formation of the Citizen Science EUTOPIA Community of Practice, further integrating the UL into the international research community. The UL also has a centralised university-wide system for informing academia and the public on dedicated research topics and achievements via a dedicated website.

The UL showcases several core strengths that are critical to its success as a leading institution of higher learning and research in Slovenia. These strengths highlight the UL's commitment to innovation and societal impact as well as the university's strategic position within the European research landscape and its effective engagement with local and global communities. Some interviewees hoped that the university would find a way to achieve science excellence and develop the best research products globally.

The UL has created an innovation fund, which is a significant step toward bridging the gap between research and innovation. Complementing this, the UL offers support for patenting and business development through specialised support structures and services. The UL provides a 40% share to inventors, a rate that is notably higher than the national legislation requirement, demonstrating the UL's dedication to incentivising innovation. The existence of the innovation fund and an office for the transfer of knowledge highlights the university's dedication to encouraging and supporting innovative endeavours. These resources provide financial and logistical support for experimental activities. The commitment to innovation is apparent in the encouragement provided by university management and is reflected by grass-root initiatives for the exploration of novel approaches and practice improvement.

According to the audit visit, the UL has established a tradition of celebrating and incentivising innovation through various awards. These accolades recognise the achievements of students and researchers across all disciplines, including the social sciences and humanities, thereby making innovation activities more visible and appreciated within the university community. The UL could establish even stronger links between research and societal engagement in particular innovation activities. The UL should have clearly defined approaches between research and innovation management to identify innovation capacity and potential at an early stage.

The University of Ljubljana enhances an open science infrastructure and initiatives

The strategy of the UL articulates a clear vision for the university to engage in open science

practices, with a comprehensive plan to perform and disseminate research in a manner that is consistent with the principles of open science by the end of 2027. This commitment extends to the responsible and collaborative management of research data and results.

The UL has established a broad array of tools and practices to foster open science and citizen science, and they are supported by university library. The infrastructure includes the UL Repository, Social Science Data Archives, and Common Language Resources and Technology Infrastructure. Additionally, the UL's partnership in the OPERAS research infrastructure underscores its dedication to supporting open access scientific communication, particularly within the social sciences and humanities across the European Research Area. UL has signed the Coalition for Advancing Research Assessment (CoARA) declaration. The commitment to open science is further enhanced by the UL's policy of covering article processing charges (APC), enabling academics to publish in open-access journals without incurring additional costs. This approach promotes the dissemination of knowledge and aligns with the principles of open science. Strategic agreements with municipalities and regional businesses highlight the UL's role as a keystone institution in fostering innovation and the adoption of open science practices within the region. The audit team recommends that the UL encourages researchers to adopt the Findable, Accessible, Interoperable, Reusable (FAIR) data principles and open science practices, supported by data management across all faculties.

The university is keen to improve training and support for researchers

The UL provides its staff with access to training activities linked to research and open science. According to the audit visit, the university library and the National Library offer open science courses for doctoral students and staff. Doctoral students also actively participate in the courses. While the offers related to staff development in open science practices are in place, the participation in training activities especially regarding more senior academic staff is not very high. The audit team also recommends improving the participation rate of senior academic staff in training, such as training in open science and other key skills related to the implementation of the UL strategy. Information concerning these opportunities is disseminated regularly, ensuring that both students and academic staff members are informed and can participate actively.

As a topic, societal engagement should be systematically included in doctoral programmes and the training should be integrated into the monitoring of doctoral students' progress. Doctoral programmes could include training in science communication or assistance in continuous education programmes. Courses on scientific publishing and communications are now available on the university portal.

The university ensures the responsible conduct of research

The establishment of the UL senate committees on innovation and ethics reflects the strategic

emphasis placed on these areas, indicating a robust governance framework that supports these objectives. According to the self-assessment report, the UL Researchers' Code of Ethics provides the basis for ethical behaviour for teaching staff, researchers, and students. The UL has a framework programme of information sessions on values and ethical principles for researchers, which is implemented in the faculties and academies.

According to the self-assessment, researchers also know the European Code of Conduct on Research Integrity. The UL's Human Resources (HR) strategy for researchers, accompanied by a code of conduct for researchers, demonstrates a commitment to upholding ethical standards and fostering a supportive environment for scholarly inquiry. Staff, students, and others may report potential research ethics violations to the UL Ethics Committee, which will process the reports and oversee procedures for dealing with research ethics violations. There is also a student information system, which checks final thesis for plagiarism.