

BE-OPEN

(Boosting Engagement of Serbian Universities in Open Science)

Work Package P.1.

Report on the existing open science legislative and incentives

Aim of the task P.1

The aim of this task was to provide a comprehensive overview of the existing strategies, recommendations, policies, and incentives aiming at fostering OSP at Serbian universities. This report analyzes the scope, coverage, and mutual compliance of the existing institutional regulations as well as their integration within the national legislation. In these terms the report covers policies, rules, and recommendations defined by universities and research institutions, but also related government regulations, such as licensing and copyright laws, research funding guidelines, performance evaluation indicators and promotion and tenure criteria. Comprehensive analysis was required in order to understand all user profiles and task flows of the future open science information system aimed to satisfy the needs of various stakeholders (e.g. students, researchers, tenure committees, funding bodies, government officials, and general public).

In respect to the above, the Report is divided into three parts. The first one refers to national legislation, while the second one covers internal rules of each university. Within the last part results of Serbian universities in Open Science are being incorporated, so as to get a comprehensive review on this issue.

PART I – NATIONAL LEGISLATION OF RELEVANCE FOR OPEN SCIENCE

Regarding the government regulations of importance for universities and researchers having the impact on open science framework, the most significant is the *Law on Higher Education*¹. Aims and principles of this Law (Articles 3, 4) highlight objectives of scientific and artistic research. These articles promote open principles of science, interdisciplinarity and open approach towards scientific and artistic research as well as knowledge transfer and technology and innovation centres within universities.

However, the Higher Education Law does not contain provisions which would directly edit the policy of open access to scientific publications and research results. The only provision which is binding refers to the obligation of universities to provide public access to defended doctoral dissertations via Internet. The relevant Article 31 (9) and 10 of the *Law on Higher Education* states:

¹ Amendments published in the "Official Gazette of RS", no. 99/2014 of 09/11/2014. and entered into force on 19.9.2014. Available at:

<http://www.erisee.org/downloads/2012/libraries/rs/Law%20on%20Higher%20Education%20EN.pdf>

"The University is obliged to establish a digital repository which permanently stores electronic versions of defended doctoral dissertation, together with the report of the Commission for evaluation of the dissertation, data on mentor and other Commission members, and information about copyright protection, and all other publicly available information."

Moreover, University has to submit to the central repository managed by the Ministry of Education a copy of the content that is stored in the university repository within the three months period starting from the date of the thesis defence.

In accordance with this Law, Serbian Universities are authorized to bring their own regulation, that would be considered in relevant details in Part II.

Taking into account the fact that research results are mainly subjects to intellectual property, relevant provisions could be found in laws with this subject matter. As copyrighted works are also intellectual property objects, the easiest and the cheapest way to make them publicly available is via Internet, and the relevant act regulating this is *Law on Copyright and Related Rights*². The Law on Copyright and Related Rights regulates the following rights: right of the authors of literary, scientific, artistic and other works of authorship, right of performers, right of the first publisher of a free work, rights of producers of phonograms, videograms, broadcasts and databases, and rights of the editors of printed editions, as rights related to the copyright, the way of exercising the copyright and related rights and the judicial protection of such rights. The scope of authors' exclusive rights is wide and extends to almost all ways of exploitation of a piece of a work. In the context of Open Science, the right to public communication is considered to be the most important one, including the interactive communication of the work to the public, adjusted in Article 30:

„The author shall have the exclusive right to give permission or prohibit communication of his/ her work to the public by wire or wireless means including the possibility of making the work available in such a way that member of the public may individually access it from a place and at a time he/she chooses.“

Similar relevance has *Law on Scientific Research Activity*³. The Law regulates the system of scientific research in the Republic of Serbia, such as planning and realization of general interest in scientific research, quality assurance and the development of scientific research. The Law considers the issues related to the elections for researchers' titles,⁴ similar to teachers' positions.

Rulebook on Standards and Process of External Quality Control.⁵ These rules regulate the procedure of external quality checking of the university that involves the assessment of

² Official gazette of RS 119/2012 and 29/16. Available at:

http://www.paragraf.rs/propisi/zakon_o_autorskom_i_srodnim_pravima.html

³ Official Gazette RS, No. 110/2005, 50/2006, 18/2010 and 112/2015. Available at: <http://www.mpn.gov.rs/wp-content/uploads/2015/09/Zakon-o-NID-iz-Paragrafa-sl-gl.-112-iz-2015-preciscen-tekst.pdf>

⁴ Art. 69-85

⁵ Official Gazette RS, No. 106/2006, 73/2011, 101/2012, 103/2012 and 13/2014. Available at:

<http://www.mpn.gov.rs/wp-content/uploads/2015/09/Pravilnik-o-standardima-i-postupku-za-spoljasnju-proveru-kvaliteta.pdf>

standard required to preserve the status of accredited institutions and programs within institutions. In these terms, the Rulebook sets standards that must be met. None of its' provision requires open access to scientific publications and research results, but sets the standard (Standard 3) - "public work", which marginally could be concerned to issues of open access.

In addition to this, there is also a *Strategy of Scientific and Technological Development of Republic of Serbia for the Period of 2016-2020*.⁶ This document regulates measures and programs for improving excellence in science and targeted research in order to develop economy and society as a whole. In recent years, Serbian researchers have significantly increased the number of scientific papers published in prestigious international scientific magazines, and have got numerous international projects; still, the interest of the economy in scientists and scientific results has mostly remained at a low level. This strategy insists upon innovation as a significant part of the research process.

Hence the roadmap of research infrastructure will define and enable construction of necessary infrastructure installations which would be opened to both domestic and foreign researchers, but also to companies that would be in line with the roadmap of the European Strategy Forum on Research Infrastructures, ESFRI.

Finally, *Categorization and Ranking of Scientific Journals* could be indirectly regarded as a frame for open science. Namely, the Ministry of Education and Science annually performs categorization of scientific journals, however the last one was carried out in 2014. In the following years, in 2015 and 2016 the *Rulebook on the Categorization of Scientific Journals*⁷ was prepared which has been still in its draft version. Although it does not contain an explicit requirement of open access to scientific journals, criteria of categorization assume the availability of electronic journals aspire to the high category.

In that sense, Art. 4 (2)(3) of the Draft sets that: indicators for ranking scientific journals of local publishers are selected in such a way to encourage the evaluation in order to increase international involvement, relevance and the impact of these journals and scientific results. Scientific journals of domestic publishers undergo bibliometric analysis, which is the basis for ranking journals and which includes the following bibliometric quality indicators: total number of citations in WoS (or impact factor), the share of works published in the world languages, the share of foreign authors, the share of newspaper references, the share of references in foreign languages, the share of foreign reviewers, and other indicators of bibliometric quality relating to equipment, scientific and ethical integrity, transparency, editing etc.

PART II – INSTITUTIONAL DOCUMENTS OF RELEVANCE FOR OPEN SCIENCE

Explanation: In this part, relevant documents are being identified that could be incentive for Open Science Principles, legally binding, as well as legally not binding. Since national

⁶ <http://www.mpn.gov.rs/wp-content/uploads/2015/08/Strategija-engleski-jezik.pdf>

⁷ <http://www.mpn.gov.rs/wp-content/uploads/2015/09/kategorizacija-%C4%8Dasopisa.pdf>

documents do not predict obligation on open access, this part would present at what level universities have applied it on their own.

1. University of Novi Sad (UNS)

University of Novi Sad (UNS) consists of 14 faculties and 2 research institutes, with 50897 students. Teaching staff and researchers count 3758 persons, and non-academic staff include 1289 employees.

Academic studies are divided into the following categories:

1. Undergraduate academic studies, lasting three to four years and awarding, upon their completion, 180 to 240 ECTS points. A student who completes the first degree of academic studies with at least 180 ECTS points, acquires the professional title of Bachelor in a certain field.
2. Master academic studies, lasting from one to two years and awarding, upon their completion, 60 to 120 ECTS points. A student who completes the second degree of academic studies, acquires the academic title of Master.
3. Specialised academic studies, lasting at least one year and awarding, upon their completion, at least 60 ECTS points. A student who completes the second degree of specialised academic studies, acquires the professional title of a Specialist.
4. Doctoral academic studies, lasting at least three years and awarding, upon their completion, at least 180 ECTS points.
5. University of Novi Sad also offer Interdisciplinary studies within the second and the third cycle of studies. These studies are organized within the Association of Centres for Interdisciplinary and Multidisciplinary Studies and Research - ACIMSI, UNESCO Chair for Entrepreneurial Studies - UCES, University Centre for Applied Statistics - UCPS and the University Centre for Education Development - UCRO and Center for Strategic and Advanced Studies.

Institutional strategies and policies that govern the implementation of open science principles in research and education

On February 14, 2017, University of Novi Sad signed *Berlin Declaration on Open Access to the Knowledge in the Science and Humanities*, which expresses willingness of the institution to participate in achieving the objectives promoted in the Declaration. The Declaration has the aim to take advantage of new possibilities of

knowledge dissemination. In the information society, the classical form of dissemination should not be the only form, but it should also be demonstrated through the open access paradigm via the Internet. The Declaration defined open access as a comprehensive source of human knowledge and cultural heritage that has been approved by the scientific community.

In order to realize the vision of a global and accessible representation of knowledge, the future Web has to be sustainable, interactive, and transparent. Content and software tools must be openly accessible and compatible.⁸

Rulebook on Terms and Conditions for Promotion to the Academic Titles, from March 3, 2016.⁹ sets minimum requirements that a candidate should fulfil for the position of teacher and includes, in addition to general conditions, compulsory and optional elements that support assesment of candidates. In terms of the open science principles, optional elements stipulated in art. 2, (2) - Contribution to the academic and wider community, are relevant. While the Rules do not contain an expressive provision of open access, giving this election determinant element in art. 4 there may be room for the inclusion of the principle of open access. The contribution under the academic and wider community means: (1) membership in scientific, professional or artistic associations, (2) volunteering program (within the faculty or university centres', and centres' for assistance to different vulnerable groups), (3) work on the popularization of science and art (participation in festivals of science or art, the work of Petnica and other research centres etc.) (4) participation in the implementation of programs for the wider community (education, prevention, research ...), which certainly requires communication with the environment, realized mainly via the Internet.

In accordance to above mentioned national legislation, UNS has Repository of defended doctoral thesis.¹⁰

Additional comments regarding publishing activities

University of Novi Sad consists of 14 faculties and 2 research institutes, within which publishing has been organized. In terms of open access, searching on the Internet has been considered predominantly to be publishing and relates to publishing magazines, textbooks and monographs. By accessing the University faculties' websites, as well as via electronic search for journals, it was found that 29 journals published by the faculties of the University of Novi Sad are available via the Internet. In terms of textbooks and monographs that number is significantly lower. Only the Faculty of

⁸ <https://openaccess.mpg.de/Berlin-Declaration>

⁹ <http://www.uns.ac.rs/index.php/univerzitet/dokumenti/send/35-pravilnici-2/236-pr-vilni-blizi-ini-lni-usl-vi-z-izb-r-u-zv-nj-n-s-vni>

¹⁰ <http://www.cris.uns.ac.rs/etheses.jsf>

Science has individual textbook editions available via the Internet. As the downside of internet access to journals, it may be noted that searching them on each faculty website is additionally hindered by the fact that they are located within different sections of the website, in some cases, at even unexpected ones (under the heading "News" at the Academy of Art).¹¹

2. University of Belgrade (UoB)

University of Belgrade (UoB) consists of 31 faculties and 11 institutes. According to official source of information, there are currently 100459 enrolled students. Teaching staff and researchers count 5354 persons, and non-academic staff includes 3230 employees. As such, UoB is the biggest university in Serbia.

The University of Belgrade and faculties within it organize academic and professional studies based on accredited higher education study programmes.

Academic study programme provide students with the opportunity to develop and apply their scientific, professional and artistic achievements, while professional study programme enables them to apply the knowledge and skills necessary for their later work.

Academic studies are divided into the following categories:

1. Undergraduate academic studies, lasting three to four years and granting, upon their completion, 180 to 240 ECTS points. A student who completes first degree academic studies with at least 180 ECTS points acquires the professional title of Bachelor in a certain field. A student who completes first degree academic studies with at least 240 ECTS acquires the professional title of Bachelor with Honours.
2. Master academic studies, lasting from one to two years and granting, upon their completion, 60 to 120 ECTS points. A student who completes these second degree academic studies acquires the academic title of Master.
3. Specialised academic studies, lasting at least one year and granting, upon their completion, at least 60 ECTS points. A student who completes these second degree specialised academic studies acquires the professional title of a Specialist.
4. Doctoral academic studies, lasting at least three years and granting, upon their completion, at least 180 ECTS points. A student who completes doctoral academic studies of third degree acquires the scientific title of a Doctor of Philosophy in their respective field: PhD, Dr. sci. or Dr. juris.

¹¹ <http://www.uns.ac.rs/index.php/c-nauka/nauka-na-uns-c/naucni-casopisi-c>

Academic study programmes in medical sciences can have integrated undergraduate and master academic studies, so that a student acquires 360 ECTS points upon their completion.

Professional studies are divided into the following categories:

1. Undergraduate professional studies, lasting three years and granting, upon their completion, 180 ECTS points;
2. Specialised professional studies, lasting at least one year and granting, upon their completion, at least 60 ECTS points.

Institutional strategies and policies that govern the implementation of open science principles in research and education

UoB has signed *Berlin Declaration on Open Access to Knowledge in the Sciences and Humanities*¹² which promotes the Internet as a functional instrument for a global scientific knowledge base and human reflection and specifies measures which research policy makers, research institutions, funding agencies, libraries, archives and museums need to consider. It clearly states that the OA paradigm via the Internet has to be supported. Declaration defines OA as a comprehensive source of human knowledge and cultural heritage that has been approved by the scientific community. Web has to be sustainable, interactive, and transparent. Content and software tools must be openly accessible and compatible. OA contributions include original scientific research results, raw data and metadata, source materials, digital representations of pictorial and graphical materials and scholarly multimedia material. These contributions must satisfy two conditions: authors and right holders grant to all users a free, irrevocable, worldwide, right of access to, and a license to copy, use, distribute derivative works, in any digital medium for any responsible purpose, subject to proper attribution of authorship; secondly, a complete version of the work and all supplemental materials in an appropriate standard electronic format is deposited (and thus published) in at least one online repository using suitable technical standards that is supported by an academic institution, scholarly society, government agency, or other institution that seeks to enable OA.

Teaching staff at the University shall consist of persons performing teaching and scientific research. Teaching staff shall be: lecturers, researchers and associates. Persons fulfilling conditions prescribed by the Law i.e. detailed conditions established in the general act on terms and conditions for promotion in the lecturers' titles adopted by the Senate may be promoted into lecturers titles, in accordance with the recommendations made by the Higher Education National Council. When promoting candidates into lecturers' titles, the following elements shall be evaluated: 1)

¹² http://bg.ac.rs/files/sr/nauka/Berlin_Declaration.pdf

evaluation of the candidate's scientific research results; 2) evaluation of the candidate's teaching; 3) evaluation of the candidate's involvement in the teaching advancement and the development of other activities of the higher education institution; 4) evaluation of the candidate's results achieved in providing young teachers and scientists; 5) evaluation of the candidate's participation in professional organisations and other activities significant for the development of science in the higher education institution. Published scientific papers must be prevailing in the narrow scientific field of the candidate's promotion.

*Rulebook on Terms and Conditions for Promotion in the Lecturers' Titles*¹³ does not comprise provisions that could be of relevance for open science, but there is a provision on facultative conditions¹⁴, that should be evaluated during the election process. In that respect, particularly would be evaluated contribution to the academic and wider community. This could be room for the inclusion of the principle of open access.

In accordance to above mentioned national legislation, UoB has Repository of defended doctoral thesis.¹⁵

Additional comments regarding publishing activities:

Within the scope of its academic activities the UoB also conducts publishing activities. These activities have a very long tradition and they include publishing of textbooks, manuals, syllabi and other editions which serve as educational tools within the framework of study programs' realization at UoB's faculties and institutes.¹⁶

All publications have to meet requirements clearly defined at UoB's *Rulebook* adopted in 2008.

Moreover, teachers and associates of the UoB represent the largest part of the scientific potential in the Republic of Serbia. Apart from their research projects which immediate objective is to improve the system of education and modernize educational process, the University staff implement a considerable number of projects from the republic Programme of Scientific Research and the Programme of Technological Development. These intensive scientific research results have been demonstrated in nearly 300 doctoral theses per year and defended by the young researchers at the faculties of the University.

¹³ <http://bg.ac.rs/files/sr/univerzitet/univ-propisi/Pravilnik-kriterijumi-sticanje-zvanja-novo.pdf>

¹⁴ Art. 4

¹⁵ <https://uvidok.rcub.bg.ac.rs/>

¹⁶ http://bg.ac.rs/files/en/education/UniversityOfBelgrade_Publications.pdf, <http://bg.ac.rs/sr/univerzitet/izdavacka.php>, and <http://bg.ac.rs/files/sr/univerzitet/univ-propisi/PravilnikONastavnojLiteraturi.pdf>

3. University of Arts in Belgrade (UAB)

University of Arts in Belgrade includes 4 Faculties/Schools, with 2700 students currently attending their studies. Teaching and research staff count 470, and non-teaching 193 persons. Degree levels offered at this university are organized in the 1st cycle (BSc), 2nd cycle (MSc) and 3rd cycle (PhD) of education.

Institutional strategies and policies that govern the implementation of open science principles in research and education

Statute of the University of Arts¹⁷, and Rulebook on Giving Consent to the Employment and Election of Teachers from University of Arts¹⁸ do not contain provisions directly relevant to open science principles, however the second document includes criteria that could refer to those aspects too. It is about the contribution to the academic and wider community, in terms already explained with regards to UNS and UoB.

UAB established Digital repository¹⁹, that is part of wider repository of Serbian universities, established within Tempus Project RODOS as a collaborative activity of all Serbian universities. It is system of electronic theses and dissertations launched in 2016. The system is designed to collect and archive final dissertations as a text-based PDF file.²⁰

Faculty of Music, University of Arts, adopted Publishing Rulebook of the Faculty of Music that regulates conditions and procedures of publishing educational publications and similar teaching materials. The document describes procedure of selection of papers to be published, alternative models of financing publishing activities, publishing media/paper, CD or e-book and the way of distribution.

Additional comments regarding publishing activities:

The publishing activity of the University of Arts includes scientific research papers in the field of art, choice of compositions, monographs, and translations of significant works from the world's artistic heritage and textbooks for students at art faculties. Numerous major works, some of them true rarities, were for the first time translated and published by the University of Arts.

The publishing plan of the University of Arts is determined by the Editorial Board of the University which consists of representatives from four faculties and a representative of the Rectorate.

Publishing policy and related activities at the Faculty of Dramatic Arts are defined by the Act on Publishing Activities and the Act on Faculty Textbooks. Academic Council

¹⁷ <http://www.arts.bg.ac.rs/wp-content/uploads/2015/04/Statut-januar-2017.pdf>

¹⁸ <http://147.91.235.2/rektorat/sen/download/Pravilnik%20o%20izboru%20nastavnika%20u%20zvanje.pdf>

¹⁹ <http://www.arts.bg.ac.rs/wp-content/uploads/2016/02/Odluka-o-ustanovljavanju-digitalnog-repozitorijuma-UU.pdf>

²⁰ <http://eteze.arts.bg.ac.rs/>

of the Faculty is in charge of appointing reviewers of manuscripts, adopting the annual plan as well as individual proposals in the field of publishing. Publishing activity of the Faculty is carried out within the Institute for theatre, film, radio and television. Publishing activities of the Faculty involve publishing textbooks, supplementary textbooks, monographs, artistic, professional and scientific publications that resulted from scientific and artistic research of teachers, staff and students, as well as publishing scientific journals.

Faculty of Music has been continuously developing its publishing activities with the aim to raise the quality of teaching. For decades these activities included publishing of textbooks, practicums, research materials etc.). Then, in 2014 the Center for Publishing was established and publishing activity flourished with more than 30 editions of published scientific research papers, monographs, periodic, bulletins, catalogues, brochures as well as audio and video editions of well-known composers and performers.

4. University of Kragujevac (UNIKG)

University of Kragujevac consists of 12 faculties educating 17015 students. Number of teaching staff and researchers is 1347, while of non-academic staff 520. Educational program is conducted on three degrees levels: 1st cycle (BSc), 2nd cycle (MSc) and 3rd (PhD).

Institutional strategies and policies that govern the implementation of open science principles in research and education

According to the *Statute of the University of Kragujevac*²¹, doctoral dissertations should be stored in a repository of the University of Kragujevac. The doctoral dissertations stored in this repository include following signed statements as mandatory elements:

- Signed statement of authorship which claims that the doctoral dissertation contains no parts that violate the copyrights of others;
- Signed statement that both printed and electronic versions are identical;
- Signed statement authorizing the University Library to keep the dissertation in electronic or digital form at the repository of the University of Kragujevac, and to make it available to the public under the conditions defined in the license chosen by the author.

The university is required to have an electronic version of a defended doctoral dissertation, which is kept permanently in the digital repository at the University Library, and also to store reports of the commission for evaluation of the

²¹ http://www.kg.ac.rs/Docs/statut_univerziteta_u_kragujevcu_07032017.pdf

dissertation, information on mentor and the commission's composition, information about copyright protection, as well as to make all information publicly available.

*Rules on the Application, Preparation and Defence of Doctoral Dissertation, Doctoral Art Project at the University of Kragujevac*²² adjust that application, preparation and defence of a doctoral dissertation, doctoral art projects at the University of Kragujevac are as follows: it is required that a candidate submits a doctoral thesis or PhD project in eight printed copies, together with an identical electronic version, for the purpose of storing it at the repository of the University of Kragujevac. The university is required to have an electronic version of defended doctoral dissertation or PhD project which is permanently stored in the digital repository of the University Library and also to store the commission's report on the assessment of dissertation or PhD project, information on the mentor and commission's composition, the information about copyright protection, as well as to make these data publicly available.

The University of Kragujevac adopted the Berlin Declaration on Open Access to Knowledge in order to promote the Internet as a functional instrument for global scientific knowledge base (*The decision of the Senate of the University of Kragujevac on the accession of the Berlin Declaration on Open Access to Knowledge*²³). Therefore, the University of Kragujevac encourages its researchers to publish their works according to the principles of Open Access to Knowledge and to continue developing methods of evaluating works in OSP and supports the posting of their results on the Internet.

The election and employment procedures for teachers and associates at the University of Kragujevac are regulated by relevant internal regulations or the Statute and the *Rulebook on the Procedure of Employment and Acquisition of Teaching Positions at the University of Kragujevac*. In addition to the above Rules, the Instructions for the application, delivery, completion and identification of the relevant documents of the candidate have been developed, as well as the model of folder structure that applicants must submit. In this sense, it is worth to emphasize that Statute of the University of Kragujevac establishes and regulates the academic freedom, including the freedom of scientific research and artistic creation and the freedom of publication and public presentation of scientific and artistic achievements. In the framework of higher education activities and in accordance with the law, the University carries out scientific research, expert-consulting and publishing. University may also perform other tasks that commercialize scientific research results, provided that those activities do not endanger the quality of teaching and basic activity of the University.

²² http://www.kg.ac.rs/Docs/Pravilnik_doktorske_disertacije.pdf

²³ http://www.kg.ac.rs/Docs/pristupanje_berlinskoj.pdf

Additional comments regarding publishing activities:

University of Kragujevac has published over twenty scientific journals, mostly categorized as a prominent national journals (M52) by the Ministry of Education, Science and Technological Development of RS. One of them (MATCH) has an impact factor (IF), and it is highly ranked within the disciplines it covers – and it is among the 10% of the most influential journals. Almost all of them are open access-based and have a special webpage providing links to individual articles. More than half of journals (65%) are published in English. These journals are also published in Serbian language with abstracts in English, and often have parallel texts in English and other languages. Half of them are referred to within the Serbian Citation Index. All educational and scientific papers of the University employees are included into the unique bibliographic catalogue with a database, with links to full texts. Since all employees have been assigned code numbers of researchers, which are kept in E-CRIS system on research activities in Serbia, it is easy to generate personal bibliographies of researchers. University of Kragujevac has an established digital repository - PHAIDRA.KG, with a permanent archive, unique for universities in Belgrade, Kragujevac and Nis. All employees of the University can get a user account to archive results of their work and teaching materials, and also to limit their availability. All the objects entered into the system are described by standardized metadata and are searchable through all fields. These metadata can be changed, but the object itself cannot. Each facility receives a permanent link (PI), allowing its citation. The system model was taken from the University of Vienna, and as such has been used at 14 universities in Italy, Austria and in the region. Unlike other repositories in Serbia, PHAIDRA.KG repository is not registered in Open DOAR Portal - Directory of Open Access Repositories. The University Library established and, since then, has maintained a portal with doctoral dissertations defended at the University of Kragujevac (E-thesis), in compliance with amendments to the Law on Higher Education. All University faculties have their theses stored in the regime of open access that are publically available along with the commission's assessment reports. After their defence, all dissertations are to be deposited in the University repository, from where they will be stored in the National dissertation portal in Serbia - NaRDuS. The national repository has transferred more than 460 theses defended at the University of Kragujevac, which represents close to 50% of the total number of defended dissertations at the University of Kragujevac. The University Library in Kragujevac digitalizes theses that do not exist in electronic form, but they are not put in OA regime without signed statements of the author. In DART - European portal of theses, data is periodically being deposited, and up to this moment more than 420 dissertations have been transferred.

5. University of Niš (UNI)

University of Nis includes 13 faculties having 28207 students. Among employed persons, 1639 are teaching staff and researchers, while 740 are non-academic staff. UNI offers three levels of degrees: BSc, MSc and PhD.

Institutional strategies and policies that govern the implementation of open science principles in research and education

*The Statute of the University of Nis*²⁴ regulates structural organisation and activities of University of Nis, the status of higher education institutions operating within it, the structure, authorities and method of decision-making within the university bodies and entities, the status of teaching staff, associates and other university employees, the status of students, scientific and development research, as well as other issues relevant for the University.

There are several articles which can correlate with OSP. Elections are mentioned in articles 14 and 44, as well as, conditions for elections in articles 121-139. Main activities of the University publishing unit are defined in article 70. The section VIII.1 refers to the main activities of the University library, particularly emphasizing its role in collecting and archiving bachelor, master and doctoral theses. Support for these activities is provided by JUNIS (Academic network of the UNI), which main activities are described in article 73.

*Rulebook on Publishing Activities of the University of Nis*²⁵ regulates main publishing activities at the University of Nis, which are:

1. preparing and publishing books and journals;
2. preparing and publishing audio and video publications;
3. publishing monographs and studies, in accordance with the publishing plan of University;
4. preparing journals "Themes" and "Facta Universitatis";
5. preparing "Overview of lectures" and "Bulletin of the University of Nis," as periodic publications of the University.

*Criteria for Elections*²⁶ define the elements for assessment of participants of the competition for the election of teachers and the minimum conditions that participants should meet in all fields (natural sciences and mathematics, social and human sciences, medicine science, technical and technology sciences, arts). This document is part of *Rulebook on Procedure for Acquiring the Titles and Employments for Teaching Staff at University of Nis*.²⁷ These criteria, the policy document in

²⁴ www.ni.ac.rs/dokumenti/aktuelni-pravni-propisi-univerziteta-u-nisu/send/118-aktuelni-pravni-propisi-univerziteta-u-nisu/448-statut-univerziteta-u-nisu-preciscen-tekst-glasnik-un-82014

²⁵ <https://www.ni.ac.rs/dokumenti/aktuelni-pravni-propisi-univerziteta-u-nisu/send/118-aktuelni-pravni-propisi-univerziteta-u-nisu/446-pravilnik-o-izdavackoj-delatnosti-glasnik-un-broj-32007>

²⁶ <https://www.ni.ac.rs/dokumenti/aktuelni-pravni-propisi-univerziteta-u-nisu/send/118-aktuelni-pravni-propisi-univerziteta-u-nisu/1060-blizi-kriterijumi-za-izbor-u-zvanja-nastavnika-glasnik-univerziteta-u-nisu-broj-102015>

²⁷ <https://www.ni.ac.rs/dokumenti/aktuelni-pravni-propisi-univerziteta-u-nisu/send/118-aktuelni-pravni-propisi-univerziteta-u-nisu/1059-pravilnik-o-postupku-sticanja-zvanja-i-zasnivanja-radnog-odnosa-nastavnika-univerziteta-u-nisu-glasnik-univerziteta-u-nisu-broj-102015>

general, resulted in greater number of publications in the journals which are part of Thomson Reuters list. In addition to this, academic staff are obliged to publish at least one paper as first authors in one of the journals published by the University of Nis in previous five years. Several journals of the University of Nis benefited from this obligation by becoming referenced in ESCI or SCI lists.

The University of Niš signed the *Berlin Declaration on Open Access to Knowledge in the Sciences and Humanities* on February 14, 2012.²⁸

Additional comments regarding publishing activities:

Since 1996, the University scientific journal “Facta universitatis” (now published in 14 series), has been published both in paper and digital form. All these editions are accessible at the University website. Today, all journals at the University of Nis are managed by Open Journal System (OJS) interface which means that all articles are free to download.

UNI has recently developed website and related database (DB) with scientific publications and artistic references of all academic staff²⁹. This DB is used to verify the competences of the PhD candidates, as well as their members of the committee for PhD promotion. DB is also used for checking references for teachers when applying for certain position (Assistant professor, Associate professor and Full professor).

Taking mentioned in account, signing the Berlin Declaration was not the beginning of open access policy at the University of Niš, but rather the confirmation of a long term practice.

6. State University of Novi Pazar (SUNP)

State University of Novi Pazar (SUNP) is the only integrated state university in Serbia. According to its' organization, it comprises 10 departments. Education and research are offered to 5000 students currently enrolled, by 250 teachers and researchers. Non-academic staff counts 80 persons. Equally to other universities, SUNP provide three cycles of education: BSc, MSc and PhD.

Institutional strategies and policies that govern the implementation of open science principles in research and education

*Statute of the State University of Novi Pazar*³⁰ regulates internal structure and activities of University, decision-making within university bodies and entities,

²⁸ <https://openaccess.mpg.de/319790/Signatories>

²⁹ <https://www.npao.ni.ac.rs>

³⁰ http://np.ac.rs/downloads/univ_docs/statut2017.pdf

organization of teaching process, status of teaching and administrative staff, and regulations of election of all bodies.

*Criteria for Elections and Employment Teaching Staff*³¹ regulates more closely conditions and procedures for electing teachers and assistants at State University of Novi Pazar. Regarding the open science principle, provisions of the evaluation during the election process are the most relevant ones, which emphasize contribution to local and international promotion of SUNP and to society.

*Rulebook on Publishing Activities of the State University of Novi Pazar*³² regulates preparing and publishing books and journals, monographs and studies.

According to the Law on Higher Education, since October 2014, all Serbian universities are obliged to send their doctoral dissertations in digital form to NARDUS. All documents and reports related to PhD thesis are available at the University website.

Additional comments regarding publishing activities:

SUNP publishes one journal, Scientific Publication of State University of Novi Pazar. The journal is managed by Open Journal System (OJS) interface which means that all articles are free to download.

PART III – FINAL ASSESMENT OF EXISTING NATIONAL LEGISLATIVE AND INSTITUTIONAL INCENTIVES TO THE IMPLEMENTATION OF OPEN SCIENCE PRINCIPLES IN EDUCATION AND RESEARCH

In order to identify potential of Serbian universities regarding the open science principles, it would be rather important to highlight characteristics that all participants have in common.

1. Factsheet on Partners Universities

BE-OPEN project involves six Serbian universities, comprising 74 faculties, 13 institutes and, within integrated SUNP, 10 departments. Total number of students is 204278. All six universities employ 12818 teachers and researchers, and 6061 non-teaching staff which means that 223157 people altogether are directly involved in education and research. All universities offer studies in all degree levels: BSc, MSc, and PhD.

2. National legislation framework for open science principles

³¹ http://np.ac.rs/downloads/Dokumenta%20univerziteta/pravilnik_zvanja.pdf

³² Not available on web site of SUNP.

As mentioned in Part I, there are no statutory provisions at national level that could oblige universities to prescribe conditions for open access to research results, except the obligation of depositing defended doctoral theses in repositories, so as to make them accessible online.

Taking into account that most of these results are subject to intellectual property, this void is understandable. Namely, intellectual property rights exclusively belong to their owners. Any statutory limitation or exclusion, in accordance to international and Serbian law, has to be justified with higher interest, etc. public interest. Since provisions on intellectual property do not recognize legitimate interest in providing researchers' results on Internet, the owners have a freedom to decide on the manner of their works' exploitation. Hence the only way to achieve accessibility to those results in global network is stimulating teachers and researchers to do so.

On national level, there are several documents prescribing incentives for open science, but mainly in indirect way.

Apart from documents mentioned in Part I, which only declare principles on open access, currently the most relevant one is *Rulebook on the Categorization of Scientific Journals*, which is in a preparatory phase. Promotions in teaching and research positions mainly depend on these Rules, and consequently, if higher categorization requests open access, teachers and researchers will tend to obtain it.

Minimum promotion criteria do not ensure open accessibility, since the provision that might be important in this matter, is considered to be just an alternative to others. That means that no adequate incentive is provided for making results available.

3. Common conditions within universities

Since universities have the authority to regulate closer conditions with respect to education, current framework for open science principles could be formulated only by their rules and practices.

Firstly, referring to election conditions, it could be noticed that existing rules at universities do not foresee more incentives for teachers and researchers for making results of their work accessible via the Internet: provision of indirect relevance is being formulated as an alternative, as well as it is in national legislation.

According to national legislation, universities are obliged to provide open access to defended doctoral theses only.

On the other hand, all universities include open science principles in terms of their future objectives and strategies. Moreover, four of them, out of six, signed Berlin

Declaration on Open Access to Knowledge, which reflects their willingness to participate in achieving the objectives promoted in Declaration.

Although not strictly obliged to do so, almost all periodical journals, published within universities, have open access. The major issue in this respect is that availability is not obvious and noticeable to the users at first glance. In other words, user has to know exactly what he/she is looking for, in order to be able to find it on the Internet. Results within universities are not integrated. Furthermore, UNIKG repository is not registered in Open DOAR Portal - Directory of Open Access Repositories. Besides, this practice is influenced by the fact that authors choose to publish their papers in journals available in open access, but not to publish in open access as such. Related to this, monographs and course books are not in open access regime, as well as unpublished data and results.

4. Conclusion

With regards to open science principles, the only provision at national level which is binding refers to the obligation of universities to provide public access to defended doctoral dissertations via the Internet. Apart from this, there are numerous documents, both on national and institutional level, that promote OSP, in direct or indirect way.

Current practice in publishing research results shows that most of them are available in open access if they are published in journals. The reason for this lies in the fact that categorization of journals, on which election process of teachers depends on, is directly influenced by the citation, which is easier to be achieved in open access. Other results, apart from articles published in these journals, are not available on the Internet. Besides, even inherent online practices of publishing and results are not incorporated into one unique repository within each university. From the users' (teachers, researchers, students, etc.) perspective, the last fact makes access complicated.