Open Science in Poland 2014

A Diagnosis

OPEN SCIENCE PLATFORM

UNIVERSITY OF WARSAW
Interdisciplinary Centre for Mathematical and Computational Modelling
www.icm.edu.pl

Open Science in Poland 2014

A Diagnosis

Edited by

Jakub Szprot

Contributors

Andrzej Leśniak

Michael Morys-Twarowski

Krzysztof Siewicz

Michał Starczewski

Lidia Stępińska-Ustasiak

Jakub Szprot

Translated by

Krystyna Chodorowska

Wydawnictwa ICM

Warsaw 2015

Originally published as ***Otwarta nauka w Polsce 2014. Diagnoza***

ISBN 978-83-63490-10-2

Published by

Wydawnictwa ICM
ul. Pawińskiego 5a
02-106 Warszawa

UNIVERSITY OF WARSAW
Interdisciplinary Centre for Mathematical and Computational Modelling
www.icm.edu.pl

The present report was prepared as part of the Open Science Platform project.

Editing and proofreading
Maciej Chojnowski

Cover and title page desing, graphics, typesetting and text makeup
Jakub Rakusa-Suszczewski

Translation revised by
Maciej Chojnowski, Jakub Szprot

OPEN
SCIENCE
PLATFORM

Table of Contents

CHAPTER THREE

CHAPTER FOUR

List of Tables

List of Figures

Introduction

The process of producing and distributing scientific knowledge has been undergoing significant changes recently, termed collectively as "opening" of science. The changes were begun with the development of new technologies, but their dynamics was also influenced by the features of scholary communication and the social role of scientific research, as well as its institutional and political context. The basic aspect of Open Science is Open Access to scientific literature and data, but openness can also concern other elements of science, such as conducting, evaluating, disseminating and using research and its findings.

The open models were initially implemented locally, as a "grassroot" movement, but with time a need arose for a more systematic approach, especially in strategies and policies of institutions responsible for research and funding, both state-owned and international bodies. In Poland such strategies and policies are yet to be developed, and the basic condition to be fulfilled is establishing a diagnosis of the current state of openness in the Polish science sector. The present report is an attempt to draw such a diagnosis.

In **chapter 1**, we present the institutional context of Open Science in Poland. In **chapter 2**, we analyse its selected legal aspects. In **chapter 3**, we present the current e-infrastructure of Open Access. In **chapter 4**, we summarize the results of desk research and a survey of Polish scientific journals conducted for the purpose of the present report, while in **chapter 5** we move on to the survey involving Polish scientists. **Chapter 6** is devoted to forms of Open Science other than Open Access and open data.

In the present report we adopt **the definition of Open Access (OA)** which differentiates between **gratis** and **libre** Open Access proposed in the expertise report prepared by Interdisciplinary Centre for Mathematical and Computational Modelling at the University of Warsaw (ICM UW) for the Ministry of Science and Higher Education (MSHE) *Wdrożenie i promocja otwartego dostępu do treści naukowych i edukacyjnych. Praktyki światowe a specyfika polska. Przewidywane koszty, narzędzia, zalety i wady (Implementing and Promoting Open Access to Educational and Scientific Content. World's Practices and Polish Specifics. Estimated Costs, Tools, Pros and Cons).*[1] The definitions are as follows:

1 Marek Niezgódka et al., *Wdrożenie i promocja otwartego dostępu do treści naukowych i edukacyjnych. Praktyki światowe a specyfika polska. Przewidywane koszty, narzędzia, zalety i wady* (Warszawa: ICM UW, 2011), accessed March 24, 2015, http://otwartanauka.pl/images/PDFs/ekspertyza_oa_icm.pdf.

a) **gratis Open Access** – making available of a copyrighted work or a neighbouring rights subject-matter in such a way that anyone could access it in a place and at a time of their choosing, as well as be able to use it free of charge and without technical restrictions, within the scope of copyright limitations and other exceptions as provided in the law;

b) **libre Open Access** – making available of a copyrighted work or a neighbouring rights subject-matter in such a way that anyone could access it in a place and at a time of their choosing, as well as granting the users a licence for unrestricted, free-of-charge and non-exclusive use of the original and possible derivatives; the licence may contain provisions imposing certain obligations on the licensee, without infringing on the unrestricted, free-of-charge and non-exclusive right to use the work, such as: an obligation to communicate the information about the author, producer or publisher, the subject of the licence, its provisions, or an obligation to share the subject of the licence or its derivative work with recipients under the same licence.

Chapter 1

Open Access – institutional context

The idea of Open Access (OA) originated as a reaction to changes in distributing and disseminating scientific content and the relations between institutions providing knowledge production and distribution framework. Therefore, it can be said that OA concerns science as a whole. With this in mind, it must be remembered that introducing OA to scientific literature in Poland has to account for systematic conditions that determine the functioning of science.

The system of science in Poland mostly consists of scientific units (which, according to the Act of 30 April 2010 on the Principles of Financing Science, are basic organisation units of higher education institutions, units of the Polish Academy of Sciences (PAS), research institutes, international scientific institutes established pursuant to separate regulations, operating in the territory of the Republic of Poland, the Polish Academy of Arts and Sciences and other organisational units), higher education institutions, the Polish Academy of Sciences, scientific societies and associations, other institutions conducting scientific activity funded from the state budget and two executive agencies for funding research and implementing science policy: National Science Centre (founded under the Act of 30 April 2010 on the National Science Centre) and National Centre for Research and Development (NCRD) (founded under the Act of 30 April 2010 on the National Centre for Research and Development). The main institution responsible for the government's science policy and the institution with the greatest influence on the functioning of Polish science is the Ministry of Science and Higher Education (MSHE), which defines the framework for scientific activity and funds it, according to the goals of Science Strategy in Poland until 2015, which is part of the National Development Strategy 2007–2015. These goals have been defined as "raising the level of quality and efficiency of science in Poland and increasing its contribution to international science, ensuring a fuller use of potential that science may bring into education and culture, as well as raising the civilisation level, stimulating the growth of innovation in the Polish economy and closer integration with the European Research Area."[2] The goals specified in the strategy are important from the perspective of Open Access, as almost each of the priority goals listed in the document can be achieved by implementing openness in science.

2 *Strategia Rozwoju Nauki w Polsce do roku 2015* (Warszawa: MNiSW, 2008), accessed July 10, 2014, http://www.bip.nauka.gov.pl/g2/oryginal/2013_05/77d8b666cc1470d4ab1970127bf475a6.pdf.

The Ministry of Science and Higher Education provides science funding under the Act of 30 April 2010 on the Principles of Financing Science. According to Art. 5 of the Act, science funding shall be allocated to, among others, strategic research and development work programmes funded by the National Centre for Research and Development, basic research funded by the National Science Centre, activities set forth in scientific unit Charters, activities of scientific units of the Polish Academy of Sciences, activities of scientific units of higher education institutions and large research infrastructure investments. MSHE also funds international scientific cooperation and science dissemination activities.

MSHE directly influences the process of conducting and dissemminating research in higher education institutions and in the Polish Academy of Sciences, deciding on the regulations that govern the distribution of statutory funds and shapes up the evaluation system for measuring the performance of scientific units and scientific journals. Due to its legal prerogatives in this area, it may decide on how the research results are published. Specific publication models can be defined by the entities funding the aforementioned research, for instance – specified in the agreement signed between the funding entity and the beneficiary.

The Ministry is not the only actor that can influence the implementation of an OA policy. It is important to bear in mind the competencies of two agencies which deal with funding scientific research and development work: the National Science Centre and the National Centre for Science and Development.

The relations between the Ministry of Science and Higher Education, the National Science Centre and the National Centre for Science and Development are governed by the Act of 30 April 2010 on the National Science Centre and the Act of 30 April 2010 on the National Centre for Research and Development, respectively. According to their provisions, the Minister of Science and Higher Education grants both institutions their respective Charters, specifying the scope of the tasks of their governing bodies and their operational framework. The Charters specify any administrative and organisational regulations, they do not however contain any determination of merits, which includes tender conditions regarding scientific research and science funding.

The terms of supervision over both institutions do not stipulate any interference into the rules for disseminating research findings. MSHE made it possible to establish both the National Science Centre and NCRD and specifies their operational framework, but both entities remain autonomic in their decisions and are independent in shaping up their policies. It can therefore be assumed, that both the National Science Centre and NCRD could introduce Open Access to any scientific works resulting from their self-funded research, regardless of the solutions implemented by MSHE. However, as the research funded by the National Science Centre and NCRD only constitutes a fraction of all research conducted by Polish scientists, any policies adapted by those two institutions are bound to only have a limited scope. Thus, they would not be sufficient as a means of implementing universal OA to scientific content created through public funding.

In Poland, the science system also employs funds from operational programmes. Spending those funds was mostly determined by NCRD, which acted as an intermediate body in three programmes: Innovative Economy (along with the Ministry of Economy and the Ministry of Administration and Digitization), Human

Capital (along with the Ministry of Labour and Social Policy and the Ministry of National Education) and Infrastructure and Environment (along with the Ministry of the Environment, the Ministry of Infrastructure and Development, the Ministry of Economy, the Ministry of Culture and National Heritage and the Ministry of Health) in the years 2007–2013.

From the point of view of OA, it was particularly important that NCRD was engaged in the Innovative Economy Programme, whose priorities were directly related to the changes in the science system itself and its relations to knowledge-based economy. The Programme was intended to – among other goals – fund scientific research that would stimulate knowledge-based economic development and research projects carried out at higher education institutions and intended for business sector. One of the goals was to fund research and IT infrastructure, in particular – infrastructure that would engage more than one scienfic unit. In the new financial framework 2014–2020, NCRD will act as an intermediate body in the Operational Programme Intelligent Development, whose thematic goals are defined as strengthening scientific research, technological development and innovation as well as raising competitiveness of small and medium-sized enterprises (SMEs).[3] In all those areas OA can prove to have a considerable impact.

Legislative actions of MSHE are undertaken in cooperation with external institutions. Decisive processes concerning the Polish science system stipulate that consultations take place during legislative initiatives. Therefore, the Ministry contacts the entities whom a given regulation might concern in order to obtain pertinent input and advice as to the effects of the planned legal changes.

MSHE's activity is complemented by the activity of other organisations: NGOs, scientific units and associations of higher education entities. The first group includes, among others, Obywatele Nauki movement (Citizens of Science), The Projekt: Polska Digital Center, The Modern Poland Foundation, Wikimedia Polska Association, EBIB Association, Free and Open Software Foundation. Even though the above organisations are not always affiliated with science, their activities, partially coordinated by the Coalition for Open Education, help to propagate the idea of OA, in science and elsewhere. The aforementioned organisations are not in possession of any actual mechanisms that would allow them to introduce political change, their impact is mainly on raising awareness of OA. The second group includes scientific institutions particularly active in the implementation of OA. These are, among others, Interdisciplinary Centre for Mathematical and Computational Modelling at the University of Warsaw, Adam Mickiewicz University in Poznań (AMU), Nicolaus Copernicus University in Toruń (NCU), AGH University of Science and Technology in Kraków (AGH UST), Silesian University of Technology (SUT). They aim to popularize the idea of OA and to create and implement specific solutions enabling its realisation (e.g. open repositories). The organisation of the third type, associating higher education entities, is the Conference of Rectors of Academic Schools in Poland, whose presidium, along with the presidium of the Polish Academy of Sciences (PAS), has already presented their stance on OA.[4] Both communities supported the European Commission

3 Program Operacyjny Inteligentny Rozwój, 2014–2020 [Operational Programme Intelligent Development], accessed March 26, 2015, http://www.mir.gov.pl/fundusze/Fundusze_Europejskie_2014_2020/Documents/POIR_do_KE_10012014.pdf.

4 Stanowisko Prezydium KRASP i Prezydium PAN z dnia 5 lipca 2013 r. w sprawie zasad otwartego dostępu do treści publikacji naukowych i edukacyjnych [Joint declaration of CRASP and PAS from 5 July 2013 on Open Access to scientific and educational publications], accessed May 23, 2014, http://www.aktualnosci.pan.pl/images/stories/pliki/2013/Wiadomo%C5%9Bci_biez/stanowisko_KRASP-PAN_open_access.pdf.

Recommendation of 17 July 2012 on access to and preservation of scientific information (2012/417/EU)[5] as one that supports scholarly communication, innovation and knowledge dissemination in society. They also noted the necessity to pass appropriate legal solutions which would help to introduce a chosen OA model. The presidia voted for the introduction of repository model, while simultaneously propagating the use of non-exclusive publishing licences. The condition they considered crucial for succeeding was the coordination of all actions that would lead to the creation of a consistent repository system.

Any analysis of political decisions that would concern introducing OA in Poland needs to account for the actions of the Ministry of Science and Higher Education as a key actor deciding on the goals and course of action, as well as financing of publicly funded research.

MSHE's support for open scholarly communication models began in 2004 when the OECD Declaration on Access to Research Data from Public Funding was signed by the Polish government. The declaration concerns OA to the results of publicly funded research and lists the advantages that would result from opening research data, in particular those resulting from additional opportunities for knowledge transfer, from science into industry. The declaration considers OA to research data as a basic condition for innovation, increasing the qualifications of researchers and international scientific and technological cooperation. The document contained no specific guidelines on implementing open models and should be viewed more as an acknowledgment of all the possible benefits by the signatories. Its text served as proof of their commitment to the idea of openness, transparency, legal conformity, formal responsibility, professionalism, protection of intellectual copyrights, quality, security and efficiency.

Signing of the declaration did not result in any legislative changes. The first action dedicated to openness that was undertaken by the Ministry took place in 2010. It was then that MSHE started to fund the Springer Open Choice programme for Polish authors, making it possible for them to publish in hybrid journals published by Springer (hybrid journals are journals which offer a choice between publishing in OA and in the traditional model). Thanks to this initiative, the cost of publication in OA (under Creative Commons: Attribution) is covered by MSHE for authors with a Polish affiliation.

In 2011 MSHE ordered an expert report on the implementation of OA to scientific content.[6] It was prepared by the ICM team under professor Marek Niezgódka. The analysis of international solutions contained in the report is considered the starting point for proposals for Poland. The authors emphasised the efficiency of top-down solutions – applied by funding institutions, higher education institutions and executive agencies. Compared to bottom-up initiatives, based on the initiative of researchers themselves, they are much more efficient. A *sine qua non* condition for "green Open Access" is investing in infrastructure, while "gold Open Access" requires a funding system to cover the costs of publishing in OA journals.

On July, 17 2012 the European Commission issued the aforementioned Recommendation. It reads as follows:

5 Commission's recommendation from 17 July 2012 on access to and preservation of scientific information (2012/417/UE), accessed May 23, 2014, http://eur-lex.europa.eu/LexUriServ/LexUriServ.do?uri=OJ:L:2012:194:0039:0043:EN:PDF.

6 Marek Niezgódka et al., *Wdrożenie i promocja otwartego dostępu do treści naukowych i edukacyjnych...*

"open access policies aim to provide readers with access to peer-reviewed scientific publications and research data free of charge as early as possible in the dissemination process, and enable the use and reuse of scientific research results. [...] Policies on open access to scientific research results should apply to all research that receives public funds. Such policies are expected to improve conditions for conducting research by reducing duplication of efforts and by minimising the time spent searching for information and accessing it. This will speed up scientific progress and make it easier to cooperate across and beyond the EU. Such policies will also respond to calls within the scientific community for greater access to scientific information."[7]

The Recommendation contains specific guidelines for member states. The European Commission recommends, among others, that member states define clear policies for the dissemination of and OA to scientific publications resulting from publicly funded research and ensure that as a result of these policies: "there should be open access to publications resulting from publicly funded research as soon as possible, preferably immediately and in any case no later than 6 months after the date of publication, and 12 months for social sciences and humanities."[8]

In October 2012 the Minister of Science and Higher Education declared her support for the idea of OA to the results of publicly funded research.[9] According to her declaration, at the turn of 2015–2016 60% of such research findings are to be published in OA.

It seems that the considerable disproportion between the Ministry of Science and Higher Education and other entities working on the implementation of OA places Poland among those countries where implementing the OA model on larger scale depends on a top-down initiative. Without MSHE's active support, it is impossible to implement universal mechanisms of OA to scientific works. Of course, one could imagine an introduction of semi-OA, without the Ministry's initiative (indeed, we have watched it happen until now). However, the scope of this initiative undertaken by individual entities is considerably limited.

In order to better understand the possibilities of solving the problem of OA at a national level it might be useful to see the situation in Poland in a wider international context. Due to the above-mentioned circumstances (highly centralised system of science) we are particularly interested in such scholarly communication models that have their OA policies implemented from top-down.

An example of a top-down initiative is the act passed by the Argentine National Congress. According to the provisions thereof, all institutions financed from the public funds (included in *Sistema Nacional de Ciencia, Tecnología e Innovación*) and operating within the Argentinian science system are required to create repositories allowing for Open Access to scientific literature and research data, compliant with the global interoperability standards. At the same time, researchers who use public funds are to deposit their works in the above-mentioned repositories (or give consent for the works to be deposited thus) no later than six months after

7 See footnote 5.

8 Ibid. We also discuss the Recommendation in detail in the next chapter.

9 *Minister Kudrycka o efektach reform i priorytetach resortu* [Minister Barbara Kudrycka on the reforms' results and Department's priorities], accessed May 5, 2014, http://www.nauka.gov.pl/aktualnosci-ministerstwo/minister-kudrycka-o-efektach-reform-i-priorytetach-resortu.html.

publication, and their research data – no later than five years after their acquisition. In the case of traditionally published scientific content (i.e. under agreement with publishers that disallow OA) the authors are obliged to provide their metadata and research data. They are also required to make their works available as soon as the agreement with the publisher expires.[10] The author of the act, the Ministry of Science, Technology and Productive Innovation, argues for its project by pointing out the necessity to fight the monopoly of large global publishers and the need to make scientific content available to the whole society.

On January 16, 2012 the American Congress passed Consolidated Appropriations Act, 2014, which President Barack Obama signed on January 17, 2014. It obliges federal agencies that deal with labour, health and human services and education, with research budgets exceeding USD 100 million, to guarantee OA to the findings of any research funded from the federal budget. OA should be provided no later than 12 months after the original publication.[11] It constitutes a considerable expansion of a successful National Institutes of Health OA policy. Estimations show that following this regulation, a scientific content from a funding exceeding USD 31 billion annually (out of 60 billion spent for research each year) will be made available.

In Spain OA to research results is strongly supported by the central government. As of 2011,[12] researchers who use public funding are obliged to make final versions of their publications publically available no later than 12 months after publication.

Comparing MSHE's activity with similar entities from the world's avant-garde enterprises in Open Access shows that Poland has not yet developed a policy and a strategy which would aim (even in a long term) to introduce OA to scientific content as a basic rule for organising the dissemination of knowledge in the Polish science system. The Ministry's activity is currently limited to slowly implementing elements of the European policy in this regard. The Minister's declarations have not yet become a starting point for any complex top-down actions.

The activity of non-government organisations or institutions like ICM has a limited impact due to their scope of influence. Although introducing the idea of OA bottom-up is viewed positively by the scientific community (which can be attested to by the growing number of journals in OA and publications available in repositories), it should be emphasised that such a process has only a limited effectiveness in the Polish science system.

10 Ley 26899, Creación de Repositorios Digitales Institucionales de Acceso Abierto, Propios o Compartidos, accessed May 23, 2014, http://repositorios.mincyt.gob.ar/recursos.php.

11 "Each Federal agency, or in the case of an agency with multiple bureaus, each bureau (or operating division) funded under this Act that has research and development expenditures in excess of $100,000,000 per year shall develop a Federal research public access policy that provides for — (1) the submission to the agency, agency bureau, or designated entity acting on behalf of the agency, a machine-readable version of the author's final peer-reviewed manuscripts that have been accepted for publication in peer-reviewed journals describing research supported, in whole or in part, from funding by the Federal Government; (2) free online public access to such final peer-reviewed manuscripts or published versions not later than 12 months after the official date of publication; and (3) compliance with all relevant copyright laws", Consolidated Appropriations Act 2014, Sec. 527.

12 Artículo 37.Difusión en acceso abierto. Ley 14/2011, de 1 de Junio, de la ciencia, la tecnologia y la inovacion, accessed May 23, 2014, http://recolecta.fecyt.es/sites/default/files/contenido/documentos/LEY%20DE%20LA%20CIENCIA_Art_37.pdf.

Chapter 2

Selected legal aspects of Open Science in Poland

In this chapter we analyse some legal aspects concerning Open Science in Poland. We will focus mostly on open mandates and how they relate to the regulations adopted in Polish scientific institutions. It is a key issue when we consider effective implementation of Open Access to scientific publications at an institutional level. Then we move on to a short description of European legal acts which concern OA, focusing mostly on their influence on the functioning of some elements of the Polish science system. In the next section we present the whole range of legal concerns which often arise in connection with grassroot activism regarding OA. In the last part of the chapter we present legal aspects of open data, a subsequent stage in the development of open communication models in science, which plays an increasing role.

2.1 Open mandates

2.1.1 Open mandate definition

By "open mandate" we understand "legal obligation of authors of scientific works to place those works in open access."[13] We differentiate between two versions of open mandate: **gratis** and **libre**. The first one is understood (in regard to mandates imposed by scientific institutions) as: "an obligation, imposed by competent authorities of a scientific institution, requiring all scientific publications created within this institution to be disseminated in such a way that anyone could access them in a place and at a time of their choosing, as well as be able to use it free of charge and without technical restrictions, within the scope of copyright limitations and other exceptions as provided in the law."[14] The other one "imposes an additional obligation that each of such publications be made available under a licence allowing for an unrestricted, royalty-free and non-exclusive use of the publicationand its derivative works."[15] Such a formulation of two versions of open mandate is compatible with two types of OA: gratis and libre.[16]

13 K. Siewicz, *Otwarty dostęp do publikacji naukowych. Kwestie prawne* [Open Access to scientific publiactions. Legal issues] (Warszawa, 2012) 13, accessed May 23, 2014, http://ceon.pl/pl/otwarta-nauka/kwestie-prawne.

14 See K. Siewicz, *Prawne możliwości wprowadzenia otwartego mandatu wobec publikacji naukowych* [Legal options for introducing open mandate to scientific publications], accessd May 23, 2014, http://ceon.pl/images/dspace/ceon-memorandum-otwarty-mandat.pdf.

15 Ibid.

16 See *Wdrożenie i promocja otwartego dostępu do treści naukowych i edukacyjnych*, 264–265.

2.1.2 Copyright management regulations of higher education institutions

According to Art. 86c of the Act of 27 July 2005 on the Higher Education (Journal of Laws, 2012, Item 572, Vol. 1, as amended), the Senate, or in the case of a non-public establishment – a body indicated in its statute, adopts the regulations on managing copyrights and neighbouring rights, as well as industrial property rights, and the rules of commercialising of research and development findings. The regulations should specify:

1) The rights and obligations of higher education institution, academic staff, students and doctoral students concerning the protection and use of copyrights and neighbouring rights, as well as industrial property rights;
2) remuneration rules;
3) rules and procedures for commercialising of research and development findings;
4) rules for using the institution's property used for commercialising research and development findings, and providing scientific and research services.

The regulations mentioned in Art. 86c are a basic internal act, on which the implementation of OA within a given higher education institution depends. Depending on its content, the regulations can introduce open mandate, leave it to the discretion of the authors whether they choose to put their publications in OA, or prevent OA at all.

The higher education institution may also issue other internal acts which can influence the possibilities of making a publication openly available, such as: the rector's dispositions, or publishing contract templates used by the publishers affiliated with the establishment.

For the purpose of this report, we investigated the situation at twenty higher education institutions occupying the top of the higher education institution ranking (2013) run by the journal *Perspektywy*. However, we were not able to establish all the important factors and conditions, considering that not all of the higher education institutions provide the aforementioned documents where it would be easy to find them. Not all of the institutions responded to direct requests for the material, and one of them had flatly refused it (although the document in question was later found on its public website).

In some cases, we were not only able to access the regulations, but also other internal documents; in others – we were only provided with regulations themselves, without any indication whether other internal documents exist. Certainly, our conclusions were only formed on the basis of those documents we had been able to access. We begin the analysis with the observation that all regulations and other existing internal documents have to respect the basic framework formed by Art. 14.1 of the Act on the Copyright and Related Rights. The provision states as follows: "Unless the contract of employment states otherwise, the research institutions shall have the right of first refusal in publishing a scientific work when its employee created such work as a result of performing his or her duties under the employment relationship. The author shall have the right to remuneration. The right of first refusal shall expire if within six months from the date of delivery of the work no publication contract has been made with the author or if, within two years from the date of its acceptance, the work has not been published."[17]

17 *Ranking uczelni akdemickich 2013*, accessed May 23, 2014, http://www.perspektywy.pl/portal/index.php?option=com_content&view=article&id=724:uczelnie-akademickie&catid=87&Itemid=231.

To apply it directly would be to exercise the right of first refusal, the right vested in the scientific institution itself, as well as the right to publish the scientific works created by its staff in a way the institution finds suitable (for instance, through the facility's publishing house, or through another publisher it has agreements with). According to Art. 14.1, an author should be remunerated for such a publication.

It can be argued that the discussed provision itself does not constitute the scientific institution's right to disseminate the works, but only specifies that the institution has priority in acquiring such a right. This interpretation is determined by the provision's literal formulation. It does not directly mention acquiring any rights, but does mention the agreement between the creator and the employer (scientific institution), which would be obsolete if the right resulted directly from the Act.[18]

The right of first refusal only means that the author cannot publish independently, or by a third party, until the right of first refusal exists. The institution's right to disseminate the work, however, only stems from the agreement with the creator (an agreement for a transfer of rights or a licence agreement). Only such a document will specify issues such as publication methods and the scope of rights of the work's recipients (whether they will be able to only use the work in a way specified under copyright limitations and exceptions, or whether they will be granted a separate licence, such as CC, etc.). Such an agreement, provided that it is accepted by both sides, can stipulate or prevent OA publication (for instance – if the rights required to make it available in such a way are retained or acquired by a party who does not make the works available, and shall not be obliged to do so).

However, there are also interpretations which treat Art. 14 as a source of a right effective against anyone who publishes the work with a violation of the above-mentioned right of first refusal.[19] Supporters of such interpretation point out that Art. 14 does not violate the author's personal right to make a choice concerning the first publication. The choice is only limited to publishing after the right of first refusal expires, or publishing under the conditions as set out by the scientific institution. Unfortunately, the fact that these very conditions are, under Art. 14 of the Act, to be specified in the agreement between the creator and the institution is not elaborated upon by the advocates of such interpretations.

Regardless of the interpretation, due to the necessity to negotiate an agreement (first interpretation) or to make a decision concerning publication (second interpretation) the statutory right of first refusal does not cause the institution's legal situation to be preferential, provided that the institution is obliged to abide by Art. 14 directly. The author can simply refuse to sign the proposed agreement (or decide not to publish) until the right of first refusal expires. In practice, a more effective way to use Art. 14 is to resign from the right of first refusal, which means allowing the author to publish their work anywhere, but in exchange for a consideration from the author. It is a very common solution, there are "considerations" such as stating affiliation, or deposing the works in the institution's open repository.

18 Cf. M. Bukowski, "Podmiot prawa autorskiego," *Przegląd Ustawodawstwa Gospodarczego* no. 11 (1994): 9; T. Drozdowska, "Stosunek pracy a prawa autorskie," *Prawo Spółek* no. 1 (1998): 39.

19 Cf. J. Barta i R. Markiewicz, *Prawo autorskie i prawa pokrewne. Komentarz,* LEX, 2011; M. Bieganowska, "Ochrona autorskoprawna pracowniczych utworów naukowych," *Przegląd Ustawodawstwa Gospodarczego* no. 11 (1998): 21.

Limiting the scope of "consideration" to stating affiliation or similar actions means that the regulations do not introduce an open mandate, but also do not necessarily purport OA impossible. OA may be for example introduced in lower-level legal acts, provided that they are not contradictory to the regulation itself. Some regulations openly lay down foundation for such acts, requiring the staff to abide by the rules contained in other documents.

If neither the regulation, nor any other of the institution's documents introduce open mandate, and allow the staff to publish anywhere, then the issue of introducing OA is left to the discretion of the author. Therefore, one cannot talk about open mandate, but it does not mean that the institution has no say about the works being placed in OA. For instance, at Nicolaus Copernicus University the staff are allowed to publish in a publishing house of their choosing (in exchange for stating their affiliation), but the agreement templates used by the university press include the right to publish on the Internet under the CC-BY-ND 3.0. licence. A consistent use of the same agreement templates will allow the university to easily publish the works in gratis OA. One has to bear in mind, though, that none of the authors are obliged to publish in the university press, nor discouraged from re-negotiating the agreement.

An example exists however when a higher education institution explicitly obliges its employees to place their publications in OA, or at least undertake some actions towards it. The case concerns the Silesian University of Technology in which, apart from the regulations, a rector's disposition exists, which served as a basis for creating the digital repository Repolis. The regulations confirms the default right of first refusal and exercises this right by obliging the university's staff to depose their publications in the repository in exchange for permission to publish their works via a selected publishing house.

Summing up, the practice of retaining the default provisions of Art. 14.1 of the Copyright Act, or introducing it with only minor modifications, means that voluntary OA is not impossible. In that case it cannot however be said that an open mandate exists – whose introduction, *nota bene*, would not always require a change of the regulations. If the regulations leave this issue open, or otherwise leave it to the discretion of the institutes representatives who carry out its provisions, then introducing open mandate can be achieved through their decision (for instance – a rector's disposition, like with the Silesian University of Technology, or through decisions of heads of units, provided they do not violate the regulations and are issued in accordance with the overall set of rules in force at the institution – including their rights to act in the power of the institution, etc.). The person appointed to represent the institution or its organisational unit can carry out the first right that results from the Copyright Act in such a way that would result in obliging the author to publish in OA – like it has been done at the Silesian University of Technology.

2.1.3 Open mandates in Polish scientific institutions

The list of institutions obliging their employees or donors to place their works in OA can be found in Registry of Open Access Repositories Mandatory Archiving Policies, ROARMAP.[20] There are three Polish institutions

20 Available online: http://roarmap.eprints.org, accessed May 23, 2014.

in there: the Wrocław University of Technology: Faculty of Electrical Engineering (WRUT FacEE), Institute of Biochemistry and Biophysics – Polish Academy of Sciences (IBB PAS), the Adam Mickiewicz University (AMU)[21]. The ROARMAP list is not complete though, as it does not include the aforementioned open mandate of the Silesian University of Technology (SUT). It does, however, mention institutions which have not yet introduced an open mandate in the strictest sense (according to the definition which we cited above). Therefore, we analysed the regulations of Polish institutions which adopted the open mandate and the institutions included in the ROARMAP list. The first group includes SUT, the other features IBB PAS, AMU and WRUT FacEE. It needs to be emphasised that other Polish scientific institutions are also considering introducing an open mandate. Particular attention should be given to grassroot initiatives, (such as OpenUJ at the Jagiellonian University), which show that at least some of the staff treat OA policy as one that lies in their own best interest and the best interest of the institution.

2.1.3.1 The Silesian University of Technology (SUT)

As for SUT, the basic legal act concerning Open Access is the Rector's Disposition No. 82/11/12 of 23 July 2012 concerning the creation of the Repolis repository, whose sect. 3 introduces an open mandate.[22] For this purpose, the aforementioned Art. 14. 1 Copyright Act was used. Invoking the right of first refusal resulting thereof, SUT allows for the publishing of scientific works in a way individually selected by the author (Art. 3. 2, first sentence). However: "in respect of mutual consideration, the employees are obliged to store the aforementioned works in Repolis and apply to the Repolis Scientific Board for consent to make these works publicly available in Repolis, according to procedure specified in the Repolis terms and conditions, regardless of the selected method of publication" (Art. 3. 2, second sentence).

In the case of doctoral dissertations, according to Rector's Disposition No. 44/09/10 from 25 May 2009 concerning the creation of "Digital Library of the Silesian University of Technology"[23] a doctoral student concludes a licence agreement, which can stipulate one of the following:

- making their dissertation available to all users on the Internet, with no limitations with copying allowed;
- making their dissertation available to all users on the Internet, with no limitations with copying not allowed;
- making only the summaries available to all users on the Internet, with copying allowed;
- making it available on the intranet, only to the SUT Staff and students, with copying allowed;
- making it available on the intranet, only to the SUT Staff and students, with copying not allowed;
- making only the summaries available on the intranet, only to the SUT Staff, with copying allowed.

2.1.3.2 Institute of Biochemistry and Biophysics – Polish Academy of Sciences (IBB PAS)

With IBB PAS the main legal act governing Open Access is the Disposition of IBB PAS Director from 1 February 2010. According to it, all publications created by IBB PAS employees have to be deposited in the IBB PAS Repository immediately after the final version of the manuscript is accepted.[24] The deposited version is identical to the one sent to the publisher, not the one that the publisher generates later (section 1). The metadata,

21 http://roarmap.eprints.org/view/geoname/geoname=5F2=5FPL.html, accessed May 23, 2014.

22 http://repolis.bg.polsl.pl/dlibra/text?id=Info_decree, accessed May 23, 2014.

23 http://www.bg.polsl.pl/strony/R_BC.pdf, accessed May 23, 2014.

24 http://www.ibb.waw.pl/sites/default/files/ZARZ%C4%84DZENIE%20Nr%204%202010.pdf, accessed May 23, 2014.

such as the author(s), title and journal name have to be fully accessible (section 2). The approach to full text versions is somewhat different. According to section 3 of the aforementioned disposition on "the decision to make the texts fully accessible is made by the authors in the process of depositing the manuscript, according to their own wish and the publisher's policy."

The obligation to deposit manuscripts sent to the publishers in the repository is probably an attempt to ensure that the repository also contains texts which, in their final version, due to separate agreements between the author and the publisher, could not be placed there (this issue will be elaborated upon in the section on legal concerns). While depositing the text in IBB PAS repository is compulsory, allowing OA is voluntary. This process could be hampered not only due to the publisher's policy, but also due to the stance of the authors themselves, as they might not want their publications openly available.

The lack of any obligation to make publications available in OA means that the discussed disposition does not introduce the open mandate as we understand it.

2.1.3.3 Adam Mickiewicz University in Poznań (AMU)

With AMU the basic legal act concerning Open Access is the Disposition of the AMU Rector from 20 November 2009 on collecting and sharing doctoral dissertations defended at the Adam Mickiewicz University in Poznań in the AMUR Repository by the University library.[25]

According to its provisions the author of the dissertation grants the University a non-exclusive, royalty-free licence to use the dissertation, with no time-bars or territorial limitations in the following ways: copying and disseminating the work online via the Internet (Art. 3.1). However, using the works in the Internet can be limited by the author (Art. 3.2), which causes the work to only be accessible to authorised users, at computer workstations at the University.

In practice, authors often make use of this opportunity to exclude their works from OA. At the end of April 2014, there were 245 OA doctoral theses deposited in the AMUR, compared to 651 in limited access.

The lack of obligation to ensure OA means that the aforementioned disposition does not introduce an open mandate as we understand it. Moreover, it only concerns doctoral dissertations and not other scientific works.

2.1.3.4 Wrocław University of Technology: Faculty of Electrical Engineering (WRUT FacEE)

The information we obtained via a telephone conversation implies that the employees of WRUT FacEE can place their publications in the institution's repository on a voluntary basis. Currently, there is an ongoing work on a project of a university-wide repository – Wrocław University of Technology Repository.[26]

25 http://pracownicy.amu.edu.pl/monitor-uam/nr-14/zarzdzenia-rektora/zarzdzenie-nr-11020092010-rektora-uam-z-dnia-20-listopada-2009-roku-w-sprawie-gromadzenia-i-udostpniania-przez-bibliotek-uniwersyteck-w-repozytorium-amur-rozpraw-doktorskich-bronionych-na-uniwersytecie-im.-adama-mickiewicza-w-poznaniu, accessed May 23, 2014.

26 A. Wałek, "Repozytorium Wiedzy Politechniki Wrocławskiej na potrzeby Innowacyjnej Gospodarki – wizje i cele projektu", 2013, http://prezi.com/qzbvw4hcasbx/repozytorium-wiedzy-politechniki-wrocawskiej/, accessed May 23, 2014.

Like with IBB PAS and AMU, the lack of obligation to ensure Open Access means that the aforementioned disposition does not introduce an open mandate as we understand it.

2.1.4 Ways of introducing open mandate

In the analysis above we only managed to identify one open mandate (in the strictest sense) adopted by a Polish scientific institution (the Sileasian University of Technology). It is to be expected, however, that due to the key role this solution plays in implementing OA the higher education institutions authorities will have to ask themselves how to introduce an open mandate. First and foremost, it would require establishing who holds the rights to publications that would be subject to the mandate. Open mandate should be placed on right-owners (notwithstanding the possibility to indirectly impose the mandate by obliging other legal entities to ensure that all right-owners exercise their rights properly). Copyrights, as a rule, belong to the author, but the Copyright Act lists many exceptions to this. As we mentioned before, while the copyrights to publications made by employees of scientific institutions belong to the authors, according to Art. 1 of the Copyright Act, the institution still has the right of first refusal, unless an agreement states otherwise.[27]

The recommended method of introducing an open mandate was described in the memorandum "Legal opportunities to introduce open mandate in Poland,"[28] which we cited earlier. It is based on the right of first refusal resulting from Art. 14 of the Copyright Act. As we have seen before, some higher education institutions already take advantage of this provision to coerce employees to state their affiliation in exchange for the institution resigning from the rights of first refusal. In the legal sense, stating affiliation is the employee's consideration made in exchange for the institution's consideration, which is resigning from the right of first refusal. Making a work OA – gratis or libre – can be a mutual consideration as well. A proper place for this sort of regulation – according to us – would be the regulations of managing copyrights and neighbouring rights, as well as industrial property rights and rules of commercialising research and development findings. If the regulations, however, do not completely rule out the possibility of governing those issues in lower-level documents (like rector's dispositions, or dispositions of heads of respective units), an open mandate can also be introduced that way (like it was done in the Silesian University of Technology's rector's disposition described above).

The way of introducing open mandate which we recommend in this document has several advantages. First, it does not execute the right of first refusal resulting from Art. 14 directly, which – as we explained earlier – would be problematic. Second, by allowing authors to publish anywhere they choose, this solution is compliant with the scientists' goal (and, as some consider – their duty) to publish in the most highly scored journals. The only imposed limitation is the requirement to only publish in those journals whose editors do not exclude

27 There are interpretations which suggest that art. 14 can only be applied in the cases when scientific activity is the employers basic or sole occupation. These interpretations are more favourable to employers, as in such cases they would come to acquire proprietary rights according to the provisions on employee works specified in art. 12. It would also mean that placing those works in OA by the employer (the institution) would be much less problematic. In this report we adopt an interpretation which is very conservative from the employer's point of view, that is – we assume that the employer does not acquire any proprietary rights, only the right of first refusal stemming from art. 14. Such an interpretation is also more in-line with the common practice, where publishing agreements are concluded by authors themselves, not by the institutions that hire them (and therefore, the agreements are concluded by the individual legal entity of the copyrights).

28 See footnote 14.

the possibility of sharing publications in open repositories. Therefore, authors need to be careful when signing agreements, and negotiate any provisions that would prevent OA, if an open journal with a similar score is not available. An important element of our recommendation is not only introducing an open mandate, but also offering comprehensive legal and administrative aid to employees in the process of negotiating with publishers (for instance – by providing authors with agreement templates).

2.2 European regulations on Open Access

The Polish science system, including Polish scientific institutions, is heavily influenced by European OA regulations . At the European level, many legal acts exist that concern this matter in a number of ways.

Open Access was explicitly mentioned in the Commission's Recommendations of 17 July 2012 on access to and preservation of scientific information (2012/417/EU).[29] The Commission not only recommends member states to specify their OA strategy, but is also very particular on the scope of said strategies and the detailed solutions they should include. The recommendation applies not only to scientific publications, but also research findings and scientific information. It does not constitute binding law, but the Commission requires member states to report any activities undertaken as a result of this recommendation. During the preparation of this report, collecting the aforementioned reports from member states was under way.

The European Commission itself decided to introduce an open mandate concerning the projects funded from its budget. Namely, the Regulation (EU) No 1290/2013 of the European Parliament and of the Council of 11 December 2013 laying down the rules for participation and dissemination in "Horizon 2020 – the Framework Programme for Research and Innovation (2014–2020)" and repealing Regulation (EC) No 1906/2006,[30] which introduces mandatory Open Access to scientific publications created as part of the Horizon 2020 programme. The Regulation also stipulates a pilot programme for open research data.

The Commission does not specify the kind of OA that needs to be provided (gratis or libre) and the specific rules are to be laid down in the grant agreements. The agreements will use templates available on the Internet,[31] which specify how OA should be provided. Namely – the beneficiaries are obliged to provide OA (understood as free-of-charge online access available to everybody) to all the reviewed scientific publications related to the project. In particular, it includes the obligation to immediately (no later than on the day of publication) deposit the works in the repository. Access should be provided to every deposited publication, although a 6-month (12-month in the case of humanities and social sciences) embargo period can be applied when the publisher does not provide a free of charge electronic version themselves. Beneficiaries are also obliged to provide OA to bibliographical metadata.

29 See footnote 5.

30 http://ec.europa.eu/research/participants/data/ref/h2020/legal_basis/rules_participation/h2020-rules-participation_en.pdf, accessed May 23, 2014.

31 http://ec.europa.eu/research/participants/portal/desktop/en/funding/reference_docs.html#h2020-mga, accessed June 2, 2014.

The pilot programme for open data only includes the projects functioning in selected science areas and allows to opt-out in justified cases.

2.3 Frequently occurring legal concerns about Open Access

In this section we explain the most frequent legal concerns regarding OA. Our experience shows that the persons involved in OA, in its practical application, often express concern about the following matters:

a) opening access to versions of scientific articles prior to versions published by the publisher ("non-final versions");
b) legal status of doctoral dissertations (in regard to OA);
c) establishing the copyright holder in the case of older works.

2.3.1 Publishing non-final versions in Open Access

Placing non-final versions in OA, i.e. scientific articles in their versions which do not account for all changes introduced in the publishing process, is sometimes brought up as a solution to circumvent restrictive publishing contracts. Namely, some publishers use agreement templates that stipulate a wide scope of rights transfer. After concluding such an agreement, the author may not freely dispose of the subject of the agreement themselves. However, it is a known fact that final versions of scientific publications can greatly differ from earlier versions. Therefore, a question arises if such separate versions can be considered as separate works. If so, then transferring the rights to the final version over to the publisher would not make the author incapable of disposing of earlier versions.

It mostly depends on circumstances of the particular case. In some cases the interference of the publisher (reviewer, editor, etc.) can lead to a creation of a separate work, maybe even a collective work or a derivative work. An interference from another person does not mean, however, that a new copyrighted work is created. The changes need to bear a creative character. When the changes are introduced by the author themselves, it is necessary to establish whether subsequent interventions lead to a creation of a new work, or are performed as part of the course of developing the same work. The provisions of a particular agreement between the author and the publisher are also important. They can provide more or less ground for the claim that the earlier articles are not subject to said agreement.

So, using a version of article earlier than the one published in a journal is not a simple and secure method to "circumvent" the problem of restrictive publishing agreements. Solving the problem is possible through negotiations with publishers and subsidizing agreements on the transfer of rights with agreements granting a non-exclusive publication licence. A non-exclusive licence means that the author retains the publication rights and can dispose of the works however they see fit.

It is also worth noting, that although some publishers use right-transferring agreements, they also explicitly allow authors to use non-final (and sometimes even final) versions of their articles in a limited scope (for instance – placing them on their own website or in institutional repository). This policy has been adopted by

the largest academic publishers, such as Springer[32] or Elsevier.[33] At the end of the day though, one should always pay attention to the provisions of a particular agreement concluded with the publisher, as they can differ between journals.

2.3.2 Legal status of doctoral dissertations

According to the provisions of the Act of 14 March 2003 on Academic Degrees and Titles (Journal of Laws 2003 No. 65 Item 595, with amendments), doctoral dissertation are made publicly available 10 days before the defence. As of that time, they become published works as understood by the copyright law, which means that they are subject to copyright exceptions and limitations. In particular, they can be made available by libraries, along with books and other publications. However, many libraries do not render them available, or provide them to users with restrictions not used for other works (such as an obligation to obtain the consent of rector or dean). Copyright law does not provide ground for imposing such restrictions.

Some legal differences exist between doctoral dissertations and other scientific publications, but they stem mostly from the fact that doctoral dissertations will not always be subject to the regulations resulting from Art. 14, as they usually are not counted among works made in the course of employment, even if their author is employed by the facility granting the doctoral rank. The legal difference is also caused by the fact that although published books or article collections can be considered doctoral theses, it is still possible to defend a dissertation that has not been yet published, and shall only become public 10 days before the defence (such dissertations often serve as a basis for book versions, published after receiving their doctoral status).

The current rules require candidates to present their dissertations in electronic form, which encourages the creation of their (more or less open) repositories. The above-described difference in legal status does not prevent any attempts to include doctoral dissertations in open mandate, but it needs to be done in accordance with the legal situation of a particular case. In the present report we do not analyse this matter in more detail.

2.3.3 Determining a copyright holder for older scientific works

Many institutions maintaining websites for accessing scientific content are often faced with a problem of older works. It is generally accepted that a copyright holder's consent should be obtained, but searching those persons out often runs into practical obstacles. Except for relatively simple situations when the "missing" person is a single author of a single work, for which a transfer of rights was never performed, there are more complex cases when it cannot be unambiguously decided whose consent should be obtained in order for the work to be placed in OA. These doubts occur mostly because with time it becomes increasingly difficult to determine the works' factual status (for instance – has the work really not been creatively modified by people other than the nominal author? has the author really not signed any right-transferring agreements? etc.). These concerns are often coupled with legal concerns of another nature, for instance – is the publisher's right sufficient to openly publish a collective work?

32 See http://www.sherpa.ac.uk/romeo/pub/74/, accessed May 23, 2014.

33 http://www.sherpa.ac.uk/romeo/search.php?id=30&fIDnum=|&mode=advanced&la=en, accessed May 27, 2014.

These sorts of legal concerns cannot be easily solved. Uploading and sharing protected content on the Web requires the right holder's consent, even with scientific works. Therefore, it is necessary to conduct a "copyright clearing" procedure for every single work. A certain improvement in the matter can be expected after Poland adopts the European directive on orphan works, but even this simplified procedure requires a thorough search for copyright-holders.

2.4 Open research data

The discussion on Open Access increasingly more often addresses not only the openness of publications themselves, but also of research data. The demand to provide OA to data is formulated (more or less strictly) on the European level, in documents such as the Commission Recommendation of 17 July 2012 on access to and preservation of scientific information (2012/417/EU).[34] The regulation on the Horizon 2020 programme introduces a pilot programme stipulating OA to data collected in the course of some of the Horizon 2020-funded projects. In order to establish the possible level of implementation of this demand, one should first establish the scope of the term "research data" and how the idea of openness should be understood in this context. It is particularly important to learn what technical and legal obstacles are standing in the way of providing OA to data and reuse of this data. Due to specific nature of the matter, the obstacles do not have to be the same, as it was in the case of OA to scientific publications.

We assume that any attempts to define research data as opposed to data in general, without comprehensive and detailed study of this issue would pose a high risk of mistake. There are simply too many disciplines of science and research methods to assume that any data may potentially lie outside of our scope of interest. The border between using data for scientific endeavours and other purposes is often ill-defined and blurred. For instance, the data obtained in the course of scientific research can later be used as a basis for other activities, or be added to public resources. It is also possible for the information flow to go in the other direction – the entities collecting data for non-scientific purposes, like entrepreneurs and public institutions, can transfer their data over to scientific projects.

Due to the above-mentioned reasons, in the present report we chose to limit ourselves to using the term "data". In the next section we will attempt to establish a definition of open data. We cannot refer to any existing definition, as there are numerous concepts presented as such, and not always identical to one another.[35]

---

34 Commission Recommendation of 17 July 2012 on access to and preservation of scientific information (2012/417/EU), http://eur-lex.europa.eu/LexUriServ/LexUriServ.do?uri=OJ:L:2012:194:0039:0043:en:PDF, accessed March 27, 2015.

35 By this term we understand "data that can be freely used, shared and built-on by anyone, anywhere, for any purpose" (L. James, "Defining Open Data" accessed May 23, 2014, http://blog.okfn.org/2013/10/03/defining-open-data/,). In more precise definitions of the term, emphasis is placed on providing the data with an appropriate licence, which can contain stipulations as to the requirements of attribution and requiring the processed data to be made available under the same licence. ("What is open data?" accessed May 23, 2014, http://theodi.org/guides/what-open-data). In Polish literature, "open data" is understood as "information that may be used in any way, reused, and disseminated by anyone – provided, at most, that source is indicated of that subsequent distribution of processed material is allowed under the same terms. Cf. P. Kozierski, R. Kabaciński, M. Lis, P. Kaczmarek, *Open Access: Analiza zjawiska z punktu widzenia polskiego naukowca* (Poznań–Kraków, 2013), 8, accesed May 23, 2014, https://depot.ceon.pl/bitstream/handle/123456789/2513/Open%20Access.pdf. That definitions treats "information" and "data" as synonyms, which may cause some distress from the point of view of information science. It is pointed out that open research data should be "freely available in the Internet, in a way that anyone can download, copy, analyse, modify, process using software, and use for any other purpose without financial, legal, and technical limitations, apart from accessing Internet. For that purpose, data related to scientific research should

In our attempt to find a common element in the many definitions appearing in discussions and taking the idea of OA as a starting point, we would like to emphasise that the matter of unrestricted reuse is often brought up in regard to open data. On the other hand, OA in the context of scientific publications takes place even when reusing the subject work freely is not possible, for instance due to the limitations imposed by copyright law. However OA is still believed to occur as long as the publication is available on the Internet free of charge (gratis OA). In other words, openness in regard to data only occurs when a functional equivalent of libre OA takes place. Synthesising the two common definitions, we assume that open data is the sort of data anyone can use, without considerable legal and technical limitations. The use of data includes not only downloading it, but also reuse and dissemination. Like with libre OA and scientific publications, the allowed limitations on data distribution may include: an obligation to attribute source/author or a prohibition of limiting the freedom of disposal towards other users of the data (in processed or unprocessed form – so-called copyleft clauses). A lack of technical limitations implies another condition of the data being in a format compatible with open standards.

Like with scientific publications in libre OA, the existence of open data compatible with the above definition depends of whether exclusive rights apply, and if so, then whether the limitations imposed on usage of the data are minimised by the right holders themselves (by granting a free licence).

The data can be subject to at least two kinds of exclusive rights: (**1**) copyright, and (**2**) the so-called *sui generis* database right. The data can constitute copyright-protected works if they include even a minimal amount of one's own creative input. The copyright protection can also include a database as a whole, if the creative input appears at the selection, arrangement or composition level, even if the elements themselves (data) are not creative. Databases can also be protected by the *sui generis right*, which protects the producer of the database, who can document the investment born in order to create, verify, or present the database (in this case, protection also includes the database as a whole).

Only when there is no creative input and no investment can one talk about a lack of legal protection, which we described in detail above. If no free licences are granted, copyright protection and *sui generis* stipulate a very narrow scope of allowed reuse (copyright limitations and exceptions and their limited equivalent in the *sui-generis rights* including personal use, educational use, state and internal security purposes, as well as court and administrative proceedings). There are considerable doubts whether this scope is well-suited to the needs of contemporary science (for instance – there are controversies on allowing text and data mining under the copyright limitations and exceptions).

It seems unlikely that a database is protected neither by copyrights, nor the *sui generis*. Moreover, it still would not mean that using such a database would not be subject to any limitations. For example, with data that belong to many different public resources, many restrictions on reuse (or other legal limitations concerning access or usage) can result from specific administrative laws. First and foremost, it may concern (**3**) the rules

be explicitly put in the public domain" J. Gray, "Launch of the Panton Principles for Open Data in Science and 'Is it Open Data?' Web Service" accessed May 23, 2014, http://blog.okfn.org/2010/02/19/launch-of-the-panton-principles-for-open-data-in-science. Making the data available should make it possible for other scientists to verify findings and undertake research on the basis fo the same data. Their availability in various science areas is subject to a "social contract." Cf. P. Szczęsny, *Otwarta nauka, czyli dobre praktyki uczonych* (Toruń, 2013): 14–16, http://kpbc.umk.pl/Content/81340/Szczesny_Otwarta_nauka.pdf.

of access (and reuse) of public information. They are, as a rule, laid out in one legal act (Act on Access to Public Information), which, in its current form, obliges public authorities to make this sort of information available for use without considerable limitations. However, there are still problems with executing those provisions, mostly stemming from the fact that various public bodies are subject to different specific regulations. Such regulations sometimes introduce a specific exclusivity concerning the State Treasury and particular sorts of data and the rules of its dissemination (for instance, Act on Mortgage and Land Registry, Act on National Court Register, etc.) without clear provisions on reuse (for instance, geodetic and cartographic law, geological and mining law).

Moreover, when considering the opening of data one should pay close attention to (**4**) privacy and personal data protection concerns, which are much more important here than it is with scientific publications. Processing of data, even for scientific purposes, must respect the privacy of data subjects. It does not mean, however, that processing any personal data should be banned or that complete anonymity is the only solution to the problem. Processing non-anonimysed data is possible after obtaining consent or after fulfilling any other premise listed in the Act on the Protection of Personal Data, which would allow for such processing. The data controller has to ensure that a number of other requirements resulting from the Act are met. Anonymisation allows to avoid abiding by the Act all together (the data not allowing to identify the person it refers to is not subject to the Act on the Protection of Personal Data). However, some research projects require the processing of personal data that makes identification possible. Moreover, not all anonymisation techniques are efficient. There are examples of situations where identifying data was reverse-engineered, for instance, using independent sources with a similar data relation.[36]

Summing up – the open data movement is facing challenges similar to those of Open Access to copyrighted publications. However, it is much more affected by the challenges resulting from the *sui generis* laws, which requires using open licences that take these laws into account (such licences already exist – for instance, CC 3.0 and 4.0 or the Open Database License inspired by GPL). The movement also runs into a number of practical issues, including access and reuse of public information, or problems resulting from the requirement to abide by privacy laws and personal data protection. As the issue of open data in Poland is still a fairly new thing, the above-mentioned concerns need to be taken into account when creating enterprise plans that involve providing OA to data.

36 A. Narayanan, V. Shmatikov, "Robust De-anonymization of Large Sparse Datasets" accessed May 23, 2014, http://www.cs.utexas.edu/~shmat/shmat_oak08netflix.pdf.

Chapter 3

e-Infrastructure for Open Access in Poland

Drawing the picture of Open Science in Poland with regard to the set of IT tools used for collecting and sharing of scientific content, one should list the following categories: repositories and their aggregators, the systems for storing and sharing journal content or managing their publication processes; other tools of various kinds, depending on their technical solutions and functions, as well as methods of using them. The last group includes: digital libraries, often used for repository functions, websites dedicated to sharing scientific books still protected by proprietary copyrights, blogs, authors home pages and social network sites.

3.1 Repositories

A scientific repository is an IT tool used for depositing, storing and sharing content on the Internet, in particular current academic output of scientific institutions (institutional repositories) or chosen science disciplines (disciplinary repositories).

Defining the term "scientific repository" is somewhat problematic.[37] On the other hand, such a definition seems needed, as there are numerous misunderstandings concerning this tool and the role it plays in scholarly communication in the digital environment. In its basic lexical meaning "repository" is a "place for documents".[38] The repositories present on the Polish Web vary from one another and their functions greatly exceed the above-quoted definition.

---

37 **An infrastructure-oriented definition**: "This is a framework for organizing digital content and delivering the content to its consumer in convenient ways. A digital repository is an application or a set of applications that allow users to add, manage and disseminate digital content." (https://wikis.uit.tufts.edu/confluence/display/UITKnowledgebase/Di gital+Li braries+and+Repositories, accessed May 23, 2014); **function-oriented definitions**: "A digital repository is a mechanism for managing and storing digital content" (http://www.rsp.ac.uk/start/before-you-start/what-is-a-repository/, accessed May 23, 2014), "An organization that intends to maintain information for access and use" (*Trusted Digital Repositories: Attributes and Responsibilities. An RLG-OCLC Report,* Mountain View 2002, s. 59, http://www.oclc.org/content/dam/ research/ activities/trustedrep/repositories.pdf?urlm=161690, accessed May 23, 2014); **a content and sharing method-oriented definition:** "A repository is a collection of digital objects. It is distinctive from a directory, catalogue or database in that its content can be deposited by its creator, owner or third party" (http://www.shef.ac.uk/library/cdfiles/rep, accessed May 2, 2014]); OpenDOAR does not mention a definition of a repository at all, limiting itself to the criteria for connecting and disconnecting: (http://www.opendoar.org/about.html, accessed May 23, 2014).

38 *The Polish Language Dictionary PWN* gives the following definition of a "repository": 1. formerly: a cabinet or shelf for storing official documents (http://sjp.pwn.pl/szukaj/repozytorium, accessed May 23, 2014). The Merriam-Webster dictionary gives five definitions, out of which not a single one can be used for defining a digital repository (http://www. merriam-webster.com/dictionary/repository, accessed May 23, 2014).

Therefore, the films digitised by the National Film Archive are stored in the National Film Archive's Digital Repository. The server room of the National Digital Archives (Narodowe Archiwum Cyfrowe NAC), in which files are stored and shared through various NAC tools, was called the NAC Central Digital Repository.[39] The database of the prisoners of the Auschwitz-Birkenau concentration camp is searchable thanks to the Auschwitz-Birkenau Digital Repository.[40] Local Digital Repository CYRYL contains educational materials on the city of Poznań.[41] Sometimes the whole World Wide Web is referred to as a "repository."[42]

The discourse on open scientific resources in Poland can be confusing when one tries to distinguish between scientific repositories and digital libraries. Sometimes digital repositories are discussed in the context of digitising items of cultural heritage.[43] Interdepartmental Centre for Interdisciplinary Research on Multicultural and Multinational Łódź (Międzywydziałowy Ośrodek Badań Interdyscyplinarnych Nad Wielokulturową i Wielonarodową Łodzią i Regionem) at the University of Łódź is currently running a project, which includes creating a "digital repository of the collection *Workers in 19th and 20th century*", with a large corpus of archive photos in it.[44] Repozytorium Cyfrowe Poloników also acts as a digital archive, in which Open Science does not play a significant part – the collection only shares a couple of collective works published several years ago.[45]

The confusion is furthered by the presence of many (but not all) Polish digital libraries in the OpenDOAR system, which aggregates metadata from open repositories all over the world.[46]

The value of making a precise distinction between repositories and digital libraries is evident when we examine these tools in the broader context of communication systems in which they function. Digital libraries are dedicated to sharing digitised items of cultural heritage. Their typical users are those looking for old books, maps, pictures, etc., for various purposes, including research. In contrast, repositories are a tool of scholarly communication, understood as an ongoing exchange of ideas and effects of research work.

3.1.1 Repositories: an overview

In April 2014 there were 23 scientific repositories in Poland (Table 7). One of them, CYRENA Digital Science Repository of the Łódź University of Technology, is currently at development stage and is only available in the intranet of the Łódź University of Technology.

In April 2014 we asked managers of the 22 repositories available on the Internet to take a survey consisting of nine questions. We received 20 answers. We asked about the number of items in their repositories, whether

39 http://digitalizacja.pl/category/Digitalizacja/Centralne-Repozytorium-Cyfrowe, accessed May 23, 2014.

40 http://pl.auschwitz.org/m/index.php?option=com_content&task=view&id=370&Itemid=51, accessed May 23, 2014.

41 http://cyryl.poznan.pl/cyryl.php?lang=pl&id_strony=50, accessed May 23, 2014.

42 P. Gawrysiak, "Narzędzia wyszukiwawcze reporzytoriów cyfrowych": slide 4, accessed May 23, 2014, http://tinyurl.com/m66ln2u.

43 G. Płoszajski, "Standardy digitalizacji i repozytoria cyfrowe," accessed May 23, 2014, http://www.nina.gov.pl/docs/digitalizacjaplikidopobrania/.

44 http://nno.uni.lodz.pl/index.php?option=com_content&view=article&id=55&Itemid=116, accessed May 23, 2014.

45 http://www.repcyfr.pl/dlibra, accessed May 23, 2014.

46 http://www.opendoar.org/countrylist.php?cContinent=Europe#Poland, accessed May 23, 2014.

they stored full issues of journals and how many; how many items were placed in Open Access and how many were shared under a Creative Commons licence. We also asked whether their repositories stored any other sort of materials than text files; were they managed by librarians or academic staff; we also asked them to evaluate how the persons in charge of the repository felt about the role played by the repository in their given institutions. The results were supplemented by desk research.

Repositories differ from one another in terms of volume (number of items), their content's type and the level of openness. In some of them an item can be constituted by a bibliography record, only containing a link to the place where the full text is stored (often available after paying an access charge).

Table 1. Number of objects stored in repositories

Number of objects	Number of repositories
Less than 500	8
500–2000	7
Over 2000	7

Not all materials stored in repositories are open (in the sense of at least gratis OA). In 11 cases, 100 percent of items were open, in the other 5 openly available content constituted only two thirds of the materials.

One should, however, take into account the fact that at least in one case the number of items given in the survey did not include bibliographical records, which dominated in this repository. From the point of view of its users, the OA content must have been difficult to find.

Table 2. Openness of repository resources

What percentage of items are open?	Number of repositories
0–20%	2
21–66%	3
67–100%	16
No data	1

A characteristic trait of Polish repositories is that they often play the part of journal platforms. It usually happens when journals are deposited in full, with their hierarchical structure represented (volume, number, article). The managers of 10 repositories reported in the survey that their repository did not include full journal issues at all. However, two of such answers contained the added number of items which were articles from full journal issues.

Table 3. Journals in repositories

What percentage of items are articles from full journal issues?	Number of repositories
0–20%	11
21–66%	4
67–100%	6
No data	1

Another trait that differentiates Polish repositories from one another is the scope of using the Creative Commons licence. Only three of the repositories included in the survey did not feature any items under such a licence, while in four of them all resources are shared under CC licence.

Table 4. Resources in repositories shared under Creative Commons licences

What percentage of items are shared under a Creative Commons licence?	Number of repositories
0–20%	13
21–66%	3
67–100%	4
No data	2

Most of the repositories have been established and are maintained by public higher education institutions: universities (8) or universities of technology (6). One is run by a university faculty. Two belong to private higher education institutions, one to an institute of the Polish Academy of Sciences (PAS), one to a consortium of PAS units, one to two higher education institutions who share it, one to a consortium of research institutes, and one to a science society and an association respectively.

3.1.2 Institutional and disciplinary repositories

Scientific repositories can be either institutional repositories, which collect academic output of an institution, or disciplinary repositories, dedicated to a chosen subject area, scope or discipline of science. A characteristic feature of disciplinary repository is that it can include works written by authors not affiliated with the institution running the aforementioned repository.

Most of the repositories functioning in Poland are institutional repositories. Institutional repositories created by institutions whose scope of activity includes one discipline of science (for instance, Repository of Geomatics, IBB PAS Repository) can look similar to disciplinary repositories, but are only intended for authors who are employees of the above institutions.

ECNIS is peculiar, because it can be described as a project repository. ECNIS was an international institution network (Network of Excellence) created in 6th Research Framework Programme (FP6) and coordinated by the Nofer Institute of Occupational Medicine in Łódź, and the repository contains publications created in the course of the project.

Out of all Polish repositories, only one can be described as disciplinary – Biblioteka Humanistyczna (Library of Humanities) created by Stowarzyszenie Nowa Humanistyka (New Humanities Association). Its creators describe it as "repository", which is compliant with the classification adopted for this report, as it contains new scientific texts (conference materials). The repository is aggregated by Digital Libraries Federation (and, through the Federation, by Europeana among others) and by OpenDOAR.

The Faculty of History of the University of Warsaw, in cooperation with ICM UW, is currently involved in establishing a second Polish disciplinary repository (Lectorium). This one is also a humanities repository, involving areas of history and related disciplines. Due to the potential of the institutions involved, Lectorium can be expected to become a major reference point in scholarly communication infrastructure.

Polish scientist also use foreign disciplinary repositories – first and foremost arXiv, the oldest open scientific repository launched in 1991. It is mostly intended for mathematics, physics and information technology disciplines.

A particular role is played by the CeON Repository. It is intended for all Polish scientists, regardless of their discipline and affiliation. It allows authors whose institution does not maintain its own repository to open their works, which is often not only the need of the resercher, but also the funder's requirement. In April 2014 the number of deposited works exceeded 3500 (including doctoral dissertations from the UW Repository).

The issue of open data keeps growing in importance. The specific nature of research data entails that the tools used for its depositing, storing and sharing should be properly adjusted and supplemented with all the necessary functions. Currently, there are no data repositories in Poland. Other repositories can play this part too, but it is to be expected that with the rise of open research data a need for specialised repositories will appear.

One of the most popular data repositories worldwide is figshare. Its basic functions are available free of charge, while using more sophisticated features, like group work or larger disc space, require a subscription fee. Out of 886,000 deposited items, 1556 were sent by users whose e-mail addresses ended in .pl (most of them are probably Polish scientists; many of them, however, use addresses that do not allow for identifying a country, for instance – the gmail.com domain). At the same time, according to Google Analytics, Poland is fourth in the ranking of countries where most of the figshare's users live.[47] The information we have does not allow for drawing far-reaching conclusions. One may wager a guess that Polish researchers have a need to access data, not just ready-made publications. At the same time, though, they are not ready to share their own works large-scale.

3.1.3 Organisation: who manages the repositories?

Repositories are usually managed by academic libraries. In some cases they even constitute part of the digital libraries, which is evident in the example of Academic Digital Library – Cracow (ADL-Cracow). ADL Cracow,

47 From the e-mail correspondence with Mark Hahnel, founder of Figshare, from 4 April 2014.

according to the words of the managers themselves, is made of two "streams". The first is didactic materials and the results of research works (the "repository stream") and the other is the so-called "cultural heritage[48] stream." The survey shows that 14 repositories are managed by library workers and two – by library workers and academic or other staff. Only in three cases there are no library workers engaged with the repository at all.

Table 5. Employees who manage repositories

Who manages the repository?	Who manages the repository?
Only librarians	14
Librarians along with scientists or other staff	2
Academics or other staff	3
No data	1

One could probably ask whether the librarians' experiences and habits as well as procedures developed in digital libraries influence Polish repositories. The close link between repositories and libraries is one of the reason why boundaries between systems of scholarly communication and digitalised cultural heritage are often blurred.

3.1.4 Basic functions of a scientific repository

From the point of view of an institution maintaining its own repository, it is a tool that allows for managing information on its employees' academic output. It also allows to gather digital publication copies in one place and influence the decisions on their dissemination (some materials can remain closed, for instance, due to copyright reasons, and may only be accessible via the library computers in a particular institution; in such a case, neither the institution, nor the author can reap the benefits that OA would bring).

By placing their works in open repositories authors gain increased recognition and – in consequence – greater impact, even if they had published an article in a toll-access journal (provided that the editor's policy would allow for such a solution).

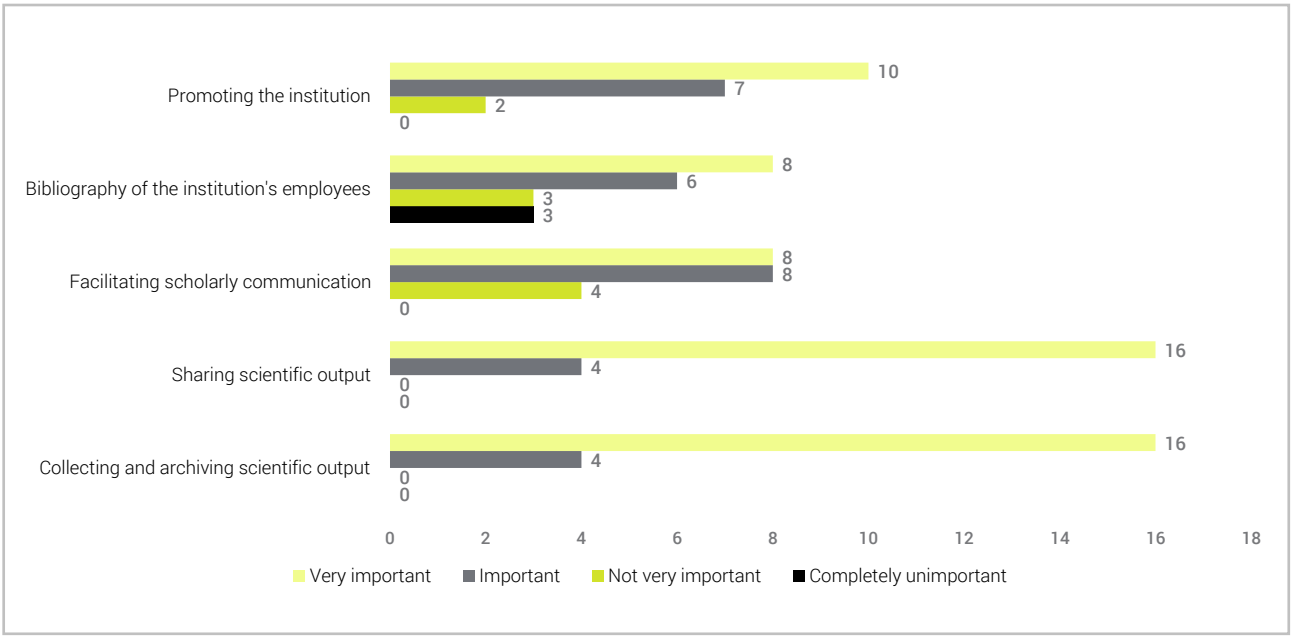
Depositing preprints allows for faster knowledge exchange between scientists. Supplementing texts with other kinds of materials, such as photos, audio or video files, as well as computer data and programs, allows for a richer, more multi-dimensional scholarly communication.

3.1.5 Actual functions of Polish repositories

As we examine the activities of Polish repositories, we cannot help but notice that tools created with one function in mind are often used for other purposes. While a scholarly communication system can be differentiated from cultural heritage flow, the tools supporting them are used in both areas.

48 http://vtls.cyf-kr.edu.pl/cgi-bin/abc-k/chameleon, accessed May 23, 2014.

Chart 1. The role of repositories according to their managers



We asked repositories managers to evaluate how important they felt particular repository functions were. Six respondents considered all the listed functions as "very important", and one described them as "important". The other six only differentiated their answers by picking "important", or "very important" (usually giving priority to the function of collecting and archiving scientific output).

The only feature considered completely unimportant (in three cases) was composing the academic staff's bibliography. The other features of low importance were as follows: facilitating scholarly communication (four answers) and promoting scientific institutions (two).

It may be a good moment to emphasise that combining bibliographies with repositories is the main reason why a tool used in such a way lacks transparency. Basic advantages that open repositories bring to scientific institutions and researchers are mostly impossible to achieve, if full texts of publications are difficult to find among the metadata which refers to content unavailable in the repository. Such a database is also not suitable for being aggregated by open content aggregators.

The functions often singled out as most important are collecting and archiving the institution's academic output; they are considered as important as the dissemination itself. It bears repeating that facilitating a discussion on scientific works – a function which is a logical consequence of making these works accessible – received less appreciation.

The respondents had an opportunity to indicate other functions fulfilled by their repositories. They listed, among others, an improved "visibility" for publications and improved citation index, good influence on the scientific units parametric evaluation and ranking position. One answer indicated a link between the repository and the opinions on the library among its academic staff.

Repositories are efficient as tools for disseminating theses, especially doctoral dissertations. The activity of UW Repository (Repozytorium UW) is currently reduced to that one function (although there are plans to expand it). However, openness is somewhat limited in regard to doctoral dissertations. For 10 days before defence, all dissertations are available in the repository. After that the authors can decide for themselves whether their work shall be available openly and under what conditions.

Some repositories allow for depositing other diplomas (bachelor, engineer and MA theses). The collection of MA theses is stored in the CeON Repository (Repository of Centre for Open Science). The Warsaw University of Technology Base of Knowledge (WUT Base of Knowledge) stores MA and engineer theses.

3.1.6 Software

Repositories use software which allows them to store and share all sorts of publications in an orderly manner. Open software is the most common choice. All over the world, the most commonly used software is DSpace (over 1600 registered installations on the producer's website[49]) and Eprints. Among 2990 repositories registered in the OpenDOAR catalogue, 1443 use DSpace, while 526 use Eprints.[50]

As for Polish repositories, they usually prefer DSpace, which has been chosen by nine repositories. The second most popular choice, however, is dLibra, created by the Poznań Supercomputing and Networking Center. It is a software designed for digital libraries. Both the Warsaw and the Cracow Universities of Technology base their repositories on their own software, while five others use other software: refBase, VTLS Virtua, Invenio, Open Repository or WordPress.

Table 6. Repository software

Software	Number of repositories
DSpace	9
dLibra	4
EPrints	2
Own	2
Other	5

3.1.7 Functionality and features

Most Polish repositories limit their function to collecting and providing access to materials in the designated collections. An important feature enables keeping multiple files in one record, which allows for several files to appear as a whole, an item described by one set of metadata (a publication can be supplemented with research data, while doctoral theses can be shared along with reviews). A user can either browse the repository collection by collection, or search out particular items (the search uses all metadata, including keywords, if they have been provided).

49 http://registry.duraspace.org/registry/dspace, accessed May 23, 2014.

50 http://roar.eprints.org/view/software/, accessed May 23, 2014.

The metadata is usually displayed in a particular way, set up by the repository (the sole exception is the ENY Repository of Wrocław University of Technology – Faculty of Electrical Engineering, which allows to display the content in seven different formats, including EndNote, MARC, BibTeX and HTML). Only some repositories allow to export metadata – with repositories using DSpace-like software this function is limited to administrators.

Registration in most cases is only used for depositing content. The ENY Repository allows registered users access to "social" functions, like reviewing publications and giving them a score. It is possible to engage in discussions under the reviews, but, unfortunately, the features are not used. Logging in allows completing a personal publication "basket". Scoring articles does not require logging in. Everyone, regardless of registering or downloading the file, can score the item on a scale from one to five.

The ENY Repository, fitted with the largest number of functions among all Polish repositories, also allows to acquire information on the other articles in the repository in which a given item was quoted, and on any records viewed by the people who visited the given repository's website.

3.1.8 Depositing initiative

Model repositories are very different from digital libraries, mainly differing in issues such as – who deposits content and to whom the depositing initiative belongs. Digital libraries are, and should be, created by librarians, who should also be the ones to determine which resource should be digitised and shared online. They are also responsible for the completeness of the resource and the metadata.

Repositories are managed somewhat differently. Depositing initiative lies with the authors (who may be obliged to share their publications by the institution who employs them or funds their research). Therefore, managing the repository mainly requires to manage its structure and control the correctness of the information provided by authors.

The primary tasks of repository managers should be encouraging authors to deposit their publications, providing support and assistance for them and promoting the repository. They should also try to avoid replacing the authors in depositing texts.

Authors can be obliged to deposit their works in repository by their institution's respective policy. In this case, 11 of the surveyed institutions oblige authors to deposit their dissertations (in seven cases this only applied to doctoral dissertations) and academic staff – to deposit their other works. The fact that an obligation to deposit works exist does not mean, however, that the works are made OA.

3.1.9 Repositories and their content

Institutional repositories were designed to host the works of all academic employees. Their structure, therefore, imitates the structure of their institution. In practice, some employees are more active in depositing their works than others (in some ways this might correlate with publication activity itself–this issue would require separate

studies). Such is the case with the Łódź University of Technology (where the top tier belongs to the Faculty of Economic and Sociology) or Institute of Biochemistry and Biophysics PAS Repository (where Biophysics and Genetics departments have the largest number of deposited works – but in this case the differences are not that big).

3.1.9.1 Repository and non-repository content

Polish repositories host a variety of different materials. At a risk of being somewhat arbitrary, we shall divide them into two categories: typical repository materials, and those that could be more efficiently disseminated using other tools.

Repository materials can be divided into groups according to their characteristics (scientific publications: articles, books and parts thereof; didactic materials; patents; institutional internal acts; regulations; dispositions) and according to their form (texts and multimedia).

According to the survey, only eight repositories host materials other than texts, namely – audio files and photographies. One of the repositories allows diplomas to be supplemented by data and computer programs.

The first category of repository materials are scientific articles deposited by authors (both preprints and postprints, as well as already published versions). A similar group consists of proceedings and monograph chapters. Such materials are shared most often. In repositories one can also find full texts of books (sometimes published several decades ago and later digitised), and theses (doctoral, master, bachelor or engineer). An important, although unique practice, consists of depositing source materials or research data on which articles were based (which has occurred in the Wrocław University of Technology ENY Repository). In such cases, one record described by one set of metadata contains several files.

Teaching materials are a diverse and quite popular group of typical repository content. The repositories of universities of technology also include patents.

When we discuss the category of materials deposited in repositories despite requiring a different set of tools, the first thing that draws our attention is the full structure of the journals (title, volume, issue, article) published by the institution managing the repository (sometimes an issue featured in the repository does not contain a single text, or contains just a handful of them). In some cases journals dominate the repository in terms of numbers (AMUR Repository, Cracow University of Technology repository). The difference between depositing articles by authors and depositing full journal issues by the journal or repository staff is vital. The latter results on the one hand in an unsuitable presentation form (repositories are not suited to representing a detailed hierarchical structure of journals), and on the other hand in expansion of institution's academic record by adding works published by the institution, but written by authors from other institutions. In some cases journals are deposited as a single PDF file (without being divided into articles). In that case, although the issue is made available, the publisher still has no chance to reach new readers, because the contents of a journal shared in this format does not allow to easily search for separate articles.

There is a large number of scientific journals that are hosted in repositories, but are not featured in the MSHE's scientific journal list, i.e. they are not rated by the Ministry. Due to this fact, in our journal review (see chapter 4) we only managed to identify 48 titles that are made available in repositories in a comprehensive manner, even though they only constitute a fraction of all journals hosted in repositories.

Among the materials that should be disseminated with other tools than repositories, we would also count digitised publications already falling into the public domain, which would be more efficiently made available through digital libraries.

Repository software is sporadically used for storing the institution's internal documents (regulations, dispositions, etc.). It may result from the traditional understanding of repository as a "place to store documents". The phenomenon, however, is very limited.

The attempts to combine repository with an institutional bibliography (without full texts) hampers the efficient use of repository functions. The Warsaw University of Technology (WUT) Base of Knowledge has been completely dominated by bibliographical records. Full-text content is very difficult to find.

Another questionable practice is depositing only tables of contents for monographs which can be bought in the publisher's online store. It is, in fact, a form of advertising, not sharing scientific content.

3.1.9.2 Formats

Most of the materials deposited in the Polish repositories are PDF files. Very seldom can one encounter a DjVu file (a standard with Polish digital libraries), DOC or RTF. Presentations are usually shared as PPT or PPTX. Multimedia files come in a variety of formats (such as MOV or MP3).

3.1.10 Aggregators

In order for the scholarly communication system to be efficient, it is necessary to make metadata available for use by aggregators, thus allowing to collect the information in one place, which would allow the user to find it easily. It is to be expected that the scientific resources whose metadata is not make available for aggregating will become increasingly marginalised.

A possible scenario of the scholarly communication system development assumes that the scientific content is collected at the level of particular institutions, but later searches are performed at an extra-institutional level thanks to the exchange of metadata (the protocols for metadata exchange play a key part here, especially OAI--PMH). Aggregators allow to separate different resource categories (according to thematic scopes, disciplines or geographical areas). Materials created by one particular institution can become the part of several collections.

The metadata exchange is possible thanks to the OAI-PMH protocol, which should be implemented in every site collecting scientific content.

In Poland, the aggregator of scientific repositories is ran by the Centre for Open Science (Centrum Otwartej Nauki CeON) at the ICM UW. The CeON Aggregator is designed for aggregating metadata from Polish open repositories. In April 2014 it was possible to search through 14 repositories via the Aggregator.

OpenDOAR, the world's most important aggregator of open repositories, is important for the visibility of the Polish research publications. In April 2014 85 Polish repositories and digital libraries could be accessed via this aggregator.

Digital Libraries Federation is basically a digital library aggregator. Three Polish repositories can be searched using this tool, in addition to being aggregated by Open DOAR.

Three repositories (except for CYRENA, which is not accessible online) are not aggregated by any tools, although the collection of doctoral theses in UW Repository is also available via the CeON Repository.

3.1.11 Polish repositories and the European infrastructure for Open Access

Due to the requirements of modern scholarly communication and the European Commission's policy on Open Access (see chapter 2), it is essential that Polish repositories become an integral part of the European OA infrastructure, which is created as a part of the OpenAIREplus project (formerly known as OpenAIRE). Only one working Polish repository (CeON Repository) is fully compatible with OpenAIRE. Five others (ECNIS Repository, AMUR Repository, University of Łódź Repository, Nicolaus Copernicus University Repository RUMaK, WSB-NLU Repository) are only compatible on a basic level – these are the repositories which had registered in the DRIVER system, later merged with OpenAIRE.[51] Considering the introduction of OA requirement in Horizon 2020 one can hope that the situation improves.

3.1.12 CeON repository package

Centre for Open Science has prepared and shared a repository package designed to facilitate the establishing and maintaining an institutional repository.[52] The package contains DSpace in a Polish language version and legal document templates (a memorandum on introducing open mandate for scientific publications, terms and conditions for using the repository and a template for a licence agreement, which authors can use for dealing with publishers).

3.2 Journals

Scientific journals are an essential communication channel, not only because of the knowledge transfer they provide, but also – the opportunity to evaluate other researchers' academic output. Ways of providing OA to journals are very diverse and their editors often choose to use several at the same time.

51 https://beta.openaire.eu/search/openaire-data-providers, accessed May 23, 2014.

52 http://pon.edu.pl/index.php/narzedzia-i-rozwiazania, accessed May 23, 2014.

3.2.1 Journal database platforms

An answer to the large dispersion of scientific journals is an emergence of journal databases – which also happens in Poland. A distinctive feature of journal databases is providing access to journals by different publishers in one place. Currently, every science discipline is represented in at least one Polish journal database. The current map of Polish scientific journal databases is a result of their genesis and evolution. The teams involved in the creation of said databases often have very different means and methods at their disposal.

An increasingly important factor is the ever more dynamic evolution of the collections in question – from bibliographical or bibliographical/abstract databases to full text collections. It should be noted that databases containing only bibliographies still exist. Among them are: Bibliography of Polish Geography since 1985, Bibliography of Polish History (Bibliografia Historii Polskiej), Polish Medical Bibliography (Polska Bibliografia Lekarska) or Analytical Bibliography of Library and Information Science (Bibliografia Analityczna Bibliotekoznawstwa i Informacji Naukowej BABIN 2.0). It seems, however, that due to the needs of journal publishers and user expectations, hosting full texts will become the main direction of evolution for those databases.

3.2.1.1 Library of Science (BazTech, AGRO, CEJSH, BazEkon, DML-PL, PSJD, Bazhum)

The largest Polish journal databases are accessible via the Library of Science (Biblioteka Nauki) created and maintained by the Centre for Open Science at the ICM UW. In addition to the Library of Science, these databases also have their own, separate instances, using – like the Library itself – the YADDA software and allowing users to browse their content.[53] The combined subject scope of those databases includes all scientific disciplines.

The BazTech database contains articles from Polish journals in the field of technological sciences. In March 2014 it included 624 journals, chronologically from 1998. Among the 292,000 indexed articles, almost 27,000 were available as full text. By April 2014 publishers of 144 journals concluded agreements with ICM UW, allowing to make their journals available in full text versions in the Library of Science, as part of the BazTech database. The database is managed by the BazTech Consortium, which includes 23 academic libraries.[54] Librarians are responsible for providing metadata.

The AGRO database contains articles from journals in the field of biological, agricultural, forestry and veterinary sciences. It was established by Main Library of the Poznań University of Life Sciences in 1993. Currently, it indexes 1049 journals. By April 2014 publishers of 66 journals concluded agreements with ICM UW, allowing to make their journals available in full text versions in the Library of Science, as part of the AGRO database. Like with the BazTech database, providing metadata is the responsibility of librarians. CEJSH (The Central European Journal of Social Sciences and Humanities) was created in 2003 by the science academies from countries in the Visegrád Group (coordinated by the Polish Academy of Sciences) as an electronic journal, publishing English summaries of articles in the field of humanities and social sciences, usually published in national languages. In fact, CEJSH has been a bibliographical database from

53 With the BazEkon and Bazhum databases there are also separate instances, managed by the Main Library of the Cracow University of Economics and Museum of Polish History, which use their own software.

54 http://www.biblos.pk.edu.pl/konsorcjum/uczestnicy_konsorcjum, accessed May 27, 2014.

the beginning. By 2013 first full-text versions of the articles started appearing in the database. By April 2014, publishers of 112 journals concluded agreements with ICM UW, allowing to make their journals available in full text versions in the Library of Science, as part of the AGRO database. In the CEJSH database metadata is provided by the editors of indexed journals.

BazEkon is a database currently produced by seven libraries of higher education institutions in the field of economics. Apart from journals, it also contains book series.[55] Created in 2010 from two databases maintained from 1993 by the Main Library of the Cracow University of Economics, BezEkon is mostly a bibliographical database, but it also makes available seven journals in full text versions.

Publications in the field of mathematics are available in the DML-PL database (The Polish Digital Mathematics Library). This full-text collection includes 11 journals, 3 book series and 68 monographs.

At the beginning of 2014 the PSJD database (Polish Scientific Journals Database) was established to index articles from Polish journals in the field of physical, chemical, medical, pharmaceutical, health and sport sciences. By April 2014 publishers of five journals concluded agreements with ICM UW, allowing to make their journals available in full text versions in the Library of Science, as part of the AGRO database. Metadata is provided by the editors of indexed journals.

In 2006, the Polish History Museum launched a humanities and social sciences journals database – BazHum. It is available either in a bibliographical only version, or in a version supplemented by full texts of several journals, running the YADDA software. A feature setting BazHum apart from the other databases is its retrospectiveness. Due to the specific feature of humanities – a long period when publications retain value – the database creators decided to index journals by moving from oldest to newest issues. The Polish History Museum digitises older issues of the journals that are available as full text. By April 2014 BazHum was indexing 340 journals; some issues of nine of them were available in full text. Metadata is provided by a team of "catalogers" and verified by librarians.

3.2.1.2 Full text journals in databases outside of the Library of Science

International journal databases based on toll access model are also used by publishers to make their content available in OA. CEEOL is a platform providing toll access to articles on humanities and social sciences from Central and Eastern Europe. Some of the journals are also available free of charge. The database creators leave it to publishers to decide whether they wish to charge readers for access. High costs of service and the increasing number of editors wanting to make their articles openly available caused the database editors to consider modifying their operating model; the change is to take place in 2015.[56]

From the Polish journals' point of view, databases from outside do not play a significant role. We identified 26 Polish journals available in, among others, ScienceDirect, in the electronic collections of the Heidelberg University and the EconPapers.repec.org database.

55 http://kangur.uek.krakow.pl/bazy_ae/bazekon/nowy/info.php, accessed May 23, 2014.

56 Information from the correspondence with Wolfgang Klotz, the director of Questa Soft GmbH, the company managing the CEEOL database.

As for domestic solutions, we should mention the website Mazovian Regional Journals (Mazowieckie Czasopisma Regionalne) which provides access to 18 journals dealing with the Mazovian region. It hosts both journals rated by the Ministry and non-rated journals. All issues have been digitised and are available from the first issue, but there are no issues published after 2012. The website was created by the Polish History Museum.

3.2.1.3 Functionality of journal databases

User interfaces of the journal databases are fitted with functions necessary for browsing and searching journal content. Their most important feature is that they allow for the representation of the journals' hierarchical structure, with title, year, volume, issue and article title. Full texts are available on article level, as files for downloading. In exceptional cases, it is possible to view articles in the browser without downloading the file.

The tools for searching content search both through metadata and full article versions. It is a great advantage of having full texts – not just the metadata – in the database. A user can download metadata in the BibTeX format but only single records. No interface of journal databases offers the opportunity to create a "basket" of required articles. Interfaces of databases using the YADDA software have a "find similar" function, which presents articles similar to the one currently being viewed and specifies the similarity index expressed as a percentage.

3.2.2 Journal publishers' platforms

Publishers with many journals in their portfolio sometimes decide to make them available on their own online platforms. This includes both commercial (Versita/De Gruyter, ViaMedica) and non-commercial publishers (Nicolaus Copernicus University Press, Polish Academy of Sciences).

The De Gruyter Open platform, which replaced the Versita Open platform after the publisher had been taken over by De Gruyter, makes both journals and books in the English language available in OA, regardless of their discipline and place of publication. A user can register and receive e-mail notifications about new articles or electronic tables of content from selected journals. The registration also allows users to complete private collections as "bookshelves." Setting up an RSS feed for a journal does not require registration. The platform has a built-in "share article" feature, which allows to share an article via social media selected from a list or sending an e-mail.

ViaMedica is a publisher of medical journals with over 40 titles in its portfolio, both in Polish and English. They are all presented on the publisher's platform. Some of them are available immediately, but the publisher usually applies a two-year embargo period. Articles can be downloaded or read online (a so-called "flip-book"). Registration allows the user to receive notifications about new articles. The platform contains functions optimised for managing the editorial process, for instance, allowing authors to submit texts.

The journal platform of the Nicolaus Copernicus University is based on the Open Journal Systems software, allowing not only to publish, but also manage the editorial process of a journal. The platform hosts 41 journals on humanities, economics and social sciences, as well as biology and geography, all published by NCU.

All journals are published under a CC BY-ND 3.0. licence. Not only current issues are available but also the previous ones that were published the last several years (some journals stipulate a gradual opening of the archival issues). Registration allows to set up notifications and submit articles for publication (only available to authors).

The Polish Academy of Sciences created its own platform – PAS Journals Reading Room (Czytelnia Czasopism PAN) – which allows access to some journals published or co-published by PAS committees or divisions. The journals can be browsed by titles or science disciplines. The platform does not support full text search.

3.2.3 Publishers' websites

As far as scientific publishers and their websites are concerned, they mostly prefer opening access to their journals. However, similar approach to monographs and other publications occurs very rarely.

Out of 1924 researched journals (see chapter 4) 716 publish their current issues openly on their own Internet websites. Among those 716, not accessible anywhere else are 402 (56%). For this reason alone, the publishers' websites are an important channel of scientific content distribution.

The websites are greatly varied. The differences are caused by the number of journal published by a given publisher (in some cases the websites start to resemble platforms but without their characteristic functionality), the software used, the scope of available journal issues and – on a lesser scale – the scientific disciplines represented by the journal.

The journals are available in many formats, with PDF being the most common. Apart from that format (707 cases), a handful of others can be found, such as DjVu, HTML, PS, EPUB, DOC and JPG. Issues are either published as a single file or divided into articles. In the latter case, articles are usually available as separate PDF files, but sometimes a single PDF contains a whole issue.

Open Access to a journal on the publisher's website is a good supplement to other ways of dissemination. The main disadvantage of this solution is a limited content visibility. Specialised search engines and content aggregators do not index websites not equipped with suitable data exchange protocols. As a result, placing the journal on a publisher's website only allows to reach those readers who already know and follow a given title. The publisher's websites usually do not contain tools for efficient search – this mostly applies to full text searches (inside the files with full text articles).

Sometimes a journal is available on several websites. It often happens when a separate website is dedicated to a publisher and another – to a journal. In some cases older websites exist along newer ones. Sometimes the access to full text articles is dependent on free of charge registration.

3.2.4 OJS and other content management systems

The Public Knowledge Project created Open Journal Systems – a complex tool facilitating the process of publishing and management of scientific journals.

We identified 41 Polish journals (rated by the Ministry) using the OJS software.[57] The actual number can be higher, as the information on using OJS is not always stated. In one case OJS is being used by a closed journal. The above-described Nicolaus Copernicus University journal platform and ViaMedica are both OJS-based.[58]

OJS is not the only journal management and publishing system. Alternative, usually paid, software is offered by companies specialising in services for academic publishing market. One of such tools is the Index Copernicus Publishers Panel. Other solutions are also used, but obtaining information about them is difficult.

3.3 Other technological solutions supporting Open Access

Apart from repositories and different forms of open dissemination of journals there are other technical solutions that support OA. Sometimes they are intended for other purposes, but are used in Open Science, and sometimes they are general-purpose tools.

3.3.1 Digital libraries

Digital libraries are an essential tool used for making digitised items of cultural heritage available. As of several years, they have been developing rapidly, both the libraries themselves and their collections. Such a dynamic development, combined with the delay in implementing proper tools of scholarly communication in many libraries, caused digital libraries to be also used as tools in this area.

Many misunderstandings arise when it comes to drawing the line between digital libraries and repositories. The software developed for one group is often used in another. Both of them tend to host the sort of content which, in a model situation, should not be kept there. In consequence, repositories apply to be included in the Digital Libraries Federation (and indirectly: in Europeana), while libraries are submitted as candidates for open digital repositories in OpenDOAR.

Digital libraries sometimes store scientific content, mostly from the field of the humanities and social sciences. It may be caused by a certain specific relationship between these kinds of publications and the items of cultural heritage. It is this relationship that makes it possible to say that digital libraries are – up to a point – a medium used by potential recipients of those publications. Like with repositories, digital libraries also sometimes make available research journals (with their structure preserved, sometimes only with a selection of articles) current or archived, but protected by copyrights. In contrast to the software of journal platforms, the software of digital libraries (usually dLibra created by Poznań Supercomputing and Networking Center) is not designed for making available journals with a complex structure.

57 The above-mentioned journal platform of Nicolaus Copernicus University using the OJS software also hosts non-rated journals.

58 Ewa Rozkosz mentions 142 Polish journals that use OJS. The difference can be explained by the fact that in this report we only limit ourselves to ranked journals; we also classified journals as ones using OJS only after obtaining the information from its website. Ewa Rozkosz also lists 10 scientific journal platforms based on OJS. See E. Rozkosz, "Open Journal Systems – wartość dodana czasopisma." *Biuletyn EBIB*, no. 4 (149) (2014), accessed May 23, 2014 http://open.ebib.pl/ojs/index.php/ebib/article/view/246/419.

Placing scientific content (new or published fairly recently) in the context of digitised items of cultural heritage causes digital libraries to function less efficiently than they could, and their technological potential is not fully realised. Digital libraries, along with museums and galleries, form a different cycle of content. Items of cultural heritage are intended for other recipients than scientific content.

3.3.2 Dedicated websites for open dissemination of scientific books

An interesting solution in OA are the websites designed for opening scientific books still protected by copyrights. Currently, there are two such websites in Poland: Open the Book (Otwórz Książkę) and Open Science Library (Biblioteka Otwartej Nauki).

Otwórz Książkę (Open the Book) is a website maintained in the Centre for Open Science at the ICM UW. In April 2014 it hosted 220 books (usually difficult to obtain in paper version) by 415 authors. Most of the books concerns history, sociology and culture studies. The website allows to read the books online or download them as PDF files. The books are made available under agreements signed by ICM with the authors who often choose to use one of the CC licences.

Open Science Library (Biblioteka Otwartej Nauki) is a website maintained by The Projekt: Polska Digital Center. In April 2014 it contained 255 items by 146 authors. Many of them are articles or parts of collective works. A lot of them is shared under one of the CC licences. The website's software is a modified version of the one used by another website – Open Reading (Wolne Lektury) created by The Modern Poland Foundation (Fundacja Nowoczesna Polska), used to store literary works. The metadata does not always allow to properly identify a publication from which a shared text has been taken.

3.3.3 Authors' own websites and blogs

Scientists often use modern tools of communication for the exchange of scientific information. It is an informal, fast method of transferring information. Blogs cannot replace peer-reviewed publications, but allow for a lively discussion and draw attention to current subjects. More information on the Polish scientific blogosphere can be found in Chapter 6 of the present report.

3.4 International tools

Polish scientists also make use of internationally available tools. It is not possible to describe them all in detail, so we will only list the most popular ones. The most important of them are: arXiV repository, foreign journals and their platforms (since 2010, as part of the Springer Open Choice project, the Ministry of Science and Higher Education has been covering the publication fees for OA articles by Polish authors in Springer subscription-based journals) and social networking for scientists: Academia.edu and Mendeley.

Academia.edu is a social networking platform for academics. It allows to set up a researcher's or institution's profile in which they can share their own works. Registration also allows to follow other users. Academia.edu allows access to statistical data on users following and reading texts (according to their time zone and IP location).

Mendeley is a tool for managing PDF files with expanded social functionality. Registered users can join thematic groups and follow bibliographies, or full texts (depending on their legal status) collected by other group members.

3.5 Metadata

Good metadata is what determines whether an object on the Internet can be found in a proper context – in other words, whether it can reach the person that searches for it. Creating proper metadata is a common challenge for all creators of tools for Open Science (and is equally essential with closed scholarly communication channels). Depending on the kind of object (text, database, photography, audio or video recording, etc.) relevant metadata standards were developed.[59] Conforming to these standards should make the objects easy to find.

Producing metadata is not enough for materials to reach their proper recipients. It is equally important to hand this metadata over to aggregators operating on national, European, or international level (OAIster Database). Making content accessible is possible thanks to metadata exchange protocols. The standard protocol is OAI-PMH.

3.6 Infona portal

As part of the SYNAT project, whose goal was to "create a universal, open repository and communication platform for online resources for science, education and open society of knowledge,"[60] the Synat Platform was created and implemented as the Infona Portal. Its creators' intention was to develop a tool to aggregate data from multiple sources – both Polish and foreign, closed and open – and offer an opportunity to work with resources and communicate with other users in a way that exceeds the functions of the tools currently available.

3.7 Summary

The data in tables 7–9 was taken from the following sources:

– desk research along with an e-mail contact information (repository name, institution that manages it, type of repository, software, interface language, OpenAIRE compatibility);

– survey among repository managers (percentage of items in OA and items shared under CC licences, as well as the share of items that are complete journal issues; we received 20 answers — in case of a lack of answer, the data was supplemented by desk research).

59 Cf. M. Nahotko, "Standardy opisu fotografii i filmów w Internecie", accessed March 31, 2014, http://www.slideshare.net/MarekN/metadane-dla-fotografii-i-filmw.

60 http://www.synat.pl/, accessed May 23, 2014.

Table 7. Polish repositories. Basic information

Repository name	Institution	Institution type	Repository type	Software
AMUR – Adam Mickiewicz University Repository	Adam Mickiewicz University in Poznań	University	Institutional	DSpace
Cracow University of Technology Repository	Cracow University of Technology	University of technology	Institutional	Own
CeON Repository	Interdisciplinary Centre for Mathematical and Computational Modelling UW	Basic university unit	inter-institutional	DSpace
University of Łódź Repository	University of Łódź	University	Institutional	DSpace
Nicolaus Copernicus University Repository RUMaK	Nicolaus Copernicus University in Toruń	University	Institutional	DSpace
ECNIS Repository	International Science Institution Consortium coordinated by the Nofer Institute of Occupational Medicine in Łódź	Consortium of research units	Institutional	Open Repository
The ENY Repository of Wrocław University of Technology	Wrocław University of Technology	University of technology	Institutional	Invenio Software
Digital Library of the Formal Linguistics Department at the University of Warsaw	Department of Formal Linguistics UW	Department	Institutional	EPrints
IBB PAS Repository	I Instytut Biochemii i Biofizyki PAS	PAS institute	Institutional	EPrints
WSB NLU Repository	Wyższa Szkoła Biznesu – National Louis University in Nowy Sącz	Pnon-public higher education	Institutional	DSpace
Kazimierz Wielki University Repository	Kazimierz Wielki University in Bydgoszcz	University	Institutional	DSpace
University of Białystok Repository	University of Białystok	University	Institutional	DSpace
Digital Repository of Scientific Institutes	PAS Institute Consortium	Consortium of PAS institutes	Institutional	dLibra
Repository of the University of Technology and Life Sciences in Bydgoszcz	University of Technology and Life Sciences in Bydgoszcz	University	Institutional	dLibra
Repolis. Silesian University of Technology Digital Repository	Silesian University of Technology	University of technology	Institutional	dLibra

Repository of Geomatics	Polskie Towarzystwo Informacji Przestrzennej	Scientific society	Institutional	refBase
Poznań University of Technology Repository	Poznań University of Technology	University of technology	Institutional	dLibra
UW Repository	University of Warsaw	University	Institutional	DSpace
WUT Knowledge Base	Warsaw University of Technology	University of technology	Institutional	own (Omega PSIR)
Academic Digital Library – Cracow (ADL-Cracow)	AGH University of Science and Technology; Kraków University of Economics	Public higher education institution	Institutional	VTLS Virtua
Institutional Repository of the Polish-Japanese Academy of Information Technology	the Polish-Japanese Academy of Information Technology	Non-public higher education institution	Institutional	DSpace
Nowa Humanistyka: Library	Stowarzyszenie Nowa Humanistyka	Association	Disciplinary	WordPress
Łódź University of Technology Repository CYRENA	Łódź University of Technology	University of technology	Institutional	No data

Table 8. Openness of resources in repositories and journals in repositories

Repository name	Items in Open Access	Items available under CC licences	Items that are complete journal issues
AMUR – Adam Mickiewicz University Repository	93%	0%	75%
Cracow University of Technology Repository	77%	10%	71%
CeON Repository	100%	53%	0%
University of Łódź Repository	100%	0%	73%
Nicolaus Copernicus University Repository RUMaK	100%	60%	89%
ECNIS Repository	No data	No data	No data
The ENY Repository of Wrocław University	100%	100%	0%
Digital Library of the Formal Linguistics Department at the University of Warsaw	100%	No data	0%
IBB PAS Repository	Almost 100%	30%	0%
WSB NLU Repository	5%	5%	1%
Kazimierz Wielki University Repository	100%	0%	26%
University of Białystok Repository	99%	3%	72%
Digital Repository of Scientific Institutes	58%	0%	26%
Repository of the University of Technology and Life Sciences in Bydgoszcz	58%	5%	5%

Repolis. Silesian University of Technology Digital Repository	100%	100%	0%
Repository of Geomatics	100%	0%	100%
Poznań University of Technology Repository	16%	0%	0%
UW Repository	41%	6%	0%
WUT Knowledge Base	100%	100%	46%
Academic Digital Library – Cracow (ADL-Cracow)	84%	0%	55%
Institutional Repository of the Polish-Japanese Academy of Information Technology	100%	100%	0%
Nowa Humanistyka: Library	100%	0%	0%
Łódź University of Technology Repository CYRENA	—	—	—

Table 9. Repositories' interface language and OpenAire compatibility

Repository name	Interface language	OpenAire compatibility
AMUR – Adam Mickiewicz University Repository	Polish, English	OpenAIRE basic
Cracow University of Technology Repository	Polish	None
CeON Repository	Polish, English	OpenAIRE 2.0+
University of Łódź Repository	Polish	OpenAIRE basic
Nicolaus Copernicus University Repository RUMaK	Polish	OpenAIRE basic
ECNIS Repository	English	OpenAIRE basic
The ENY Repository of Wrocław University of Technology	Polish, English, German	None
Digital Library of the Department of Formal Linguistics of the University of Warsaw	English and Polish (no full translation available)	None
IBB PAS Repository	English	None
WSB NLU Repository	Polish	OpenAIRE basic
Kazimierz Wielki University Repository	Polish	None
University of Białystok Repository	Polish	None
Digital Repository of Scientific Institutes	Polish, English	None
Repository of the University of Technology and Life Sciences in Bydgoszcz	Polish, English	None
Repolis. Silesian University of Technology Repository	Polish, English	None
Geomatics Repository	Polish	None
Poznań University of Technology Repository	Polish, English	None
University of Warsaw Repository	Polish, English	None
WUT Knowledge Database	Polish, English	None

Academic Digital Library – Cracow (ADL-Cracow)	Polish, English	None
Institutional Repository of the Polish-Japanese Academy of Information Technology	Polish	None
Nowa Humanistyka: Library Polish	Polish	None
Łódź University of Technology Repository CYRENA	No data	None

Chapter 4

Open Access to Polish scientific journals

4.1 Introduction: methodology

This chapter is based on the results of secondary data analysis and the survey of scientific journals using the CAWI (Computer Assisted Web Interview) method.

4.1.1 Secondary data analysis

The analysis included all Polish journals listed in sections A, B and C of the journal ranking list, according to the announcement by the Ministry of Science and Higher Education of 20 December 2012 on the list of scientific journals with the score given for publications in those journals, with further amendments on the issue of score number.[61] The list was up-to-date until December 17, 2013, when the Minister of Science and Higher Education issued a new announcement, containing a new list. As our research had started in November 2013, the scope of researched journals did not account for the changes introduced to the list. The analysis included 1924 journals. 102 of them are most likely suspended or stopped being published (11 of them are open journals).

The research had been conducted since November 2013 until January 2014. Based on the information contained in the Polish Scholarly Bibliography website, a part of the POL-on system, we established ISSN numbers of the journals, their publishers and their respective fields of study in the arts and sciences. Each journal was then reviewed in terms of: publishing period, access to full text version of issues still in copyright (at least one), Open Access to the last issue, the scope of OA, the use of embargo, gratis OA and the use of Creative Commons licences, the availability of abstracts, files formats, the place where content is made available (i.e., journal databases, publishers' websites, repositories), journal website software (especially Open Journal Systems), the declaration of openness. With recent year's issues, we also looked into the language versions of abstracts and full texts. In each case an attempt was made to establish the factual state of

61 According to Art.14.2 of the Minister of Science and Higher Education's executive order on the criteria and procedure of assigning scientific categories to scientific institutions of 13 July 2012, at least once a year the Minister shall specify a list of scientific journals with a score awarded for publications in those journals. The list consists of three parts: part A – with the score for publications in journals with an Impact Factor (IF), featured in the Journal Citation Reports (JCR); part B – with the score for publications in scientific journals without the Impact Factor; and part C – with the score for publications in journals featured in the European Reference Index for the Humanities (ERIH).

affairs; we did not rely solely on the declarations of the editors or publishers.[62]

The basis issue – that is, OA to journal content – was only analysed in terms of full issues. An issue was not considered open, if only some of its articles had been made available. As for the chronological scope of OA for transparency we assumed that the period is continuous, i.e. we ignored minor gaps in the availability of certain issues in that time period.

Thirty three journals are only available to registered users (with registration being free of charge) – even though this does not strictly fulfil the definition of Open Access, for the purposes of this report we considered them openly available. The matter is different with a large group of medical journals, which make the access conditional upon the user's declaration of having a medical profession (depending on the journal's specialised profile, the statements vary: they mention medical professionals, persons authorised to writing prescriptions, licenced pharmacists, etc.). Making access conditional upon such a declaration stems from Art. 57 of the Act of 6 September 2001, Pharmaceutical Law, which forbids direct advertising of selected medical products to general public. As the journals use a criterion that effectively narrows their group of readers to medical professionals, the journals using this model were regarded as closed.[63]

The licences granting the user more right than the Polish copyright law does under the provisions of fair use are mostly the Creative Commons licences. The information on licences, under which the content is made available, was collected in accordance with the attributions of publishers which were not always precise. If a publisher stated that the journal was shared under a CC licence, but did not specify a particular one, the journal was assigned a "CC licence" label.

We attempted to identify every place on the Internet where a particular journal was made openly available. The availability of journal issues was painstakingly checked in the resources of national and regional websites (journal databases, repositories, publishers' platforms, digital libraries, etc.), but in regard to some foreign collections, we were only able to establish that the journal was available there when the information was stated – for instance – on the collections websites. The "availability" of a journal meant that a user could acquaint himself with at least one full-text issue, and the files with full-text articles were stored locally on the website.

While determining the kind of software used, we considered three possibilities: that the journal used Open Journal Systems (OJS), CMS system like Joomla! or WordPress, or the website was based on other solutions. In some cases, when it was not possible to determine whether the website was based on OJS, Joomla! or WordPress, it was assigned to the last category.

62 For instance, in order to consider access to particular content as "open", it needed to be possible. This lead to the exclusion of (several) journals whose websites featured icons suggesting the possibility of a download, but the file itself was not available there.

63 It is worth to take note of different policies of medical journal publishers. If a journal contains advertisements, access to its contents is limited to professionals. It does sometimes happen that even when a particular issue has no such advertisements, the access is still limited.

We were interested in how many publishers declared their journals as open. Every positive remark on making their content openly available, even a curt one, was considered a declaration of openness. Some of the declarations took shape of more comprehensive OA policies.

When analysing abstracts (in terms of availability and language), we considered abstracts from the last journal issue (but not older than 2012), which also applied to closed journals. When analysing full-text articles (in terms of language), we only considered articles available in OA. The time-limit, however, was pushed back to 2011 (if there were no more recent issues available, we analysed the journals from 2011). This decision was caused by the fact that some journals had a delay in publishing their issues. Both with abstracts and full-text articles we we analysed only selected full-text articles and abstracts, as the study was unable to cover all available articles.

In regard to the journals' thematic scope, we adopted the classification laid out in the executive order of the Minister of Science and Higher Education of 8 August 2011 concerning areas of academic study, academic disciplines and fields of study in the arts and sciences. The areas of academic study were assigned to journals based on the declarations of their respective fields of study in the arts and sciences included in the evaluation questionnaires available on the Polish Scholarly Bibliography website or – if none were available – based on the Thomson Reuters Master Journal List classification, interpreted in compliance with the classification laid out in the above-mentioned executive order. 171 journals had no fields of study in the arts and sciences assigned, so it was not possible to specify their area of academic study. One journal can belong to more than one area of academic study.

4.1.2 CAWI research

In this chapter we also used data from the survey *Badanie czasopism naukowych 2013* (Scientific Journal Research 2013) conducted for the purpose of this report using the CAWI (Computer Assisted Web Interview) method among Polish publishers and editors of scientific journals. The questionnaire was completed by both editors and publishers – it was caused by the distribution process, which used mailing address lists indicated by the journals as contact information.

The survey included 600 journals (number of full interviews). The questionnaire was sent to 1602 journals from the A, B and C sections of the rated journals list. The interviews were collected between 7 and 15 December 2013.

During the survey, the structure of our sample was not controlled in any way. The structure was weighted (ex post weighting procedure), so that it would reflect the structure of Polish journals group. The structure was established on the basis of the secondary data analysis used in this report. In order to obtain representative sample of the entire list of scientific journals, the data was weighted according to key variables: OA to the last issue, publishing period and score in the ranking.

4.2 Open Access journals, delayed Open Access journals and journals allowing open archival access

Open Access journals, as we understand them, are journals making their current issues accessible in gratis or libre OA. However, painting a full picture of openness in the Polish journal sector requires to also acknowledge journals using an "embargo", which is a delayed OA to current issues, and journals opening older issues, but not newer ones (this variant could be termed "open archival access").

Therefore, for the purpose of further analysis, we distinguish between three groups of journals:

I Open Access journals – journals which make current issues openly available

II OA journals and delayed Open Access journals – an umbrella term for journals from group I and those which delay Open Access to their current issues

III OA journals, delayed OA journals, and those only allowing open archival access

There are 947 OA journals, which makes for 49.2% of all titles. This means that every other scientific journal published in Poland is openly available immediately after publishing. When delayed OA journals are also included, the number reaches 1150 (59.8%). And finally, if journals allowing for open archival access are counted together with OA and delayed OA journals, the number reaches 1304 journals (67.8%).

Table 10. Availability of Polish scientific journals

Journals, group I	947
% of all	49.2%
Journals, group II	1150
% of all	59.8%
Journals, group III	1304
% of all	67.8%

Among the journals that allow Open Access to at least one full issue, the largest group are OA journals in the proper sense of the word. 211 other journals are deleyed OA journals.[64] For a period of time the content remains closed, and later is made available openly. The period can last until the publication of the next issue, or for a specified time, like a year. The longest embargo specified by the publisher is five years from the moment of publication of a particular issue.[65] 154 journals only open their archival issues, which are still in copyright[66], while the recently published issues remain closed.

64 Embargo is a purposeful delay in providing OA to the journal's current issues. It usually amounts to a specified period of time (for example, six or twelve months), but sometimes providing OA depends on some conditions being fulfilled, for instance, all the printed copies of a given issue need to be sold first. During the desk research, eight journals using embargo were providing current issues based on this condition. The journals were therefore included in both groups, hence the sum of open (947) and embargo journals (211) is different from the total number of group II journals (1150).

65 http://www.verbumvitae.pl/, accessed May 23, 2014.

66 This means that the number does not include those journals whose digitised contents already falls into the public domain and which are available, for instance, in digital libraries.

4.2.1 Access and registration

Very few journals make the access conditional on free of charge registration. The registration is usually automatic, but sometimes it is required to contact an editor via e-mail. Sometimes an answer to such request would only arrive after several weeks or not at all (in the latter case, we considered it as lack of OA and the journal was classified as closed). The registration is required to gain access to 33 journals, which is 2.5% of all journals. It is a technical obstacle, which calls the journals' openness into question. However, as it only concerns a marginal percentage of all journals, we decided not to single it out in further analyses.

Tabela 11. Publishing period and registration requirements

Publishing period				
Up to 10 years	11–20 years	21–30 years	31–40 years	Over 41 years
3.3%	3.4%	1.2%	1.1%	1.4%

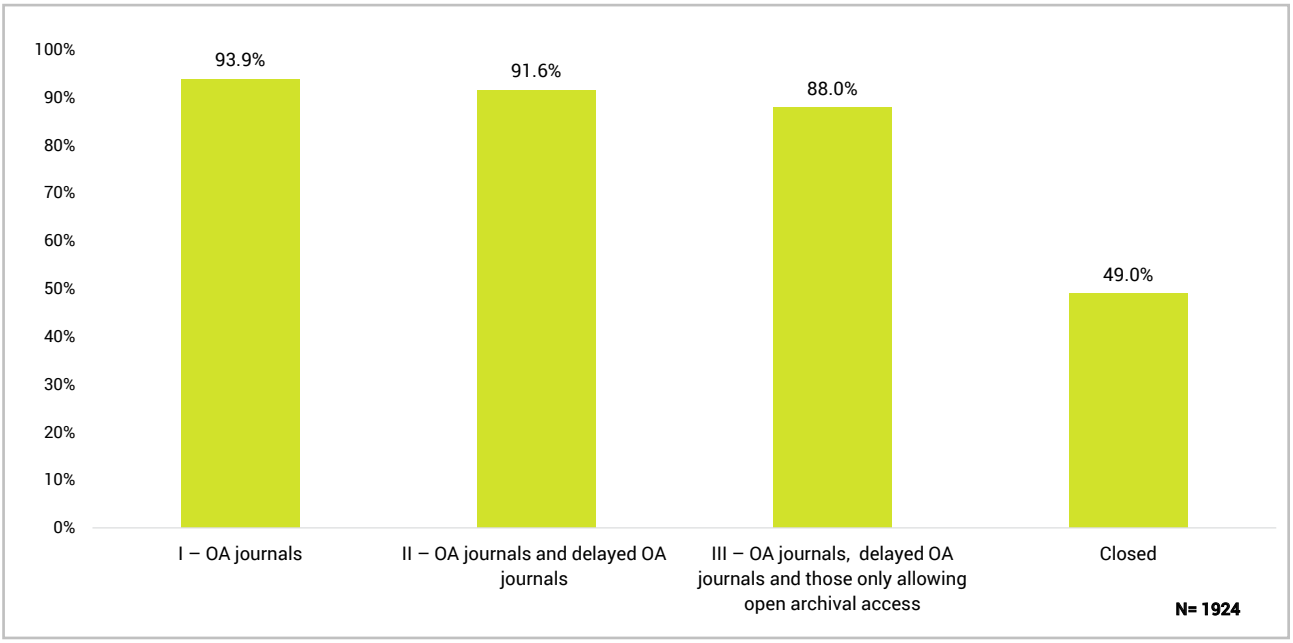
Younger journals are more willing to require registration than older ones. A clear division is visible between journals published for 20 years or shorter, out of which 3.3–3.4% require registration, and older ones, where the requirement only applies to 1.1–1.4%.

This form of control is most often employed by medical journals (9.8% of them have this requirement). None of the art journals have it, while with humanities journals it only amounts to 0.2% of titles.

None of the journals rated with 20 or more points in the MSHE system requires registration, while with the rest the registration requirement concerns 2.1–3.3% of titles.

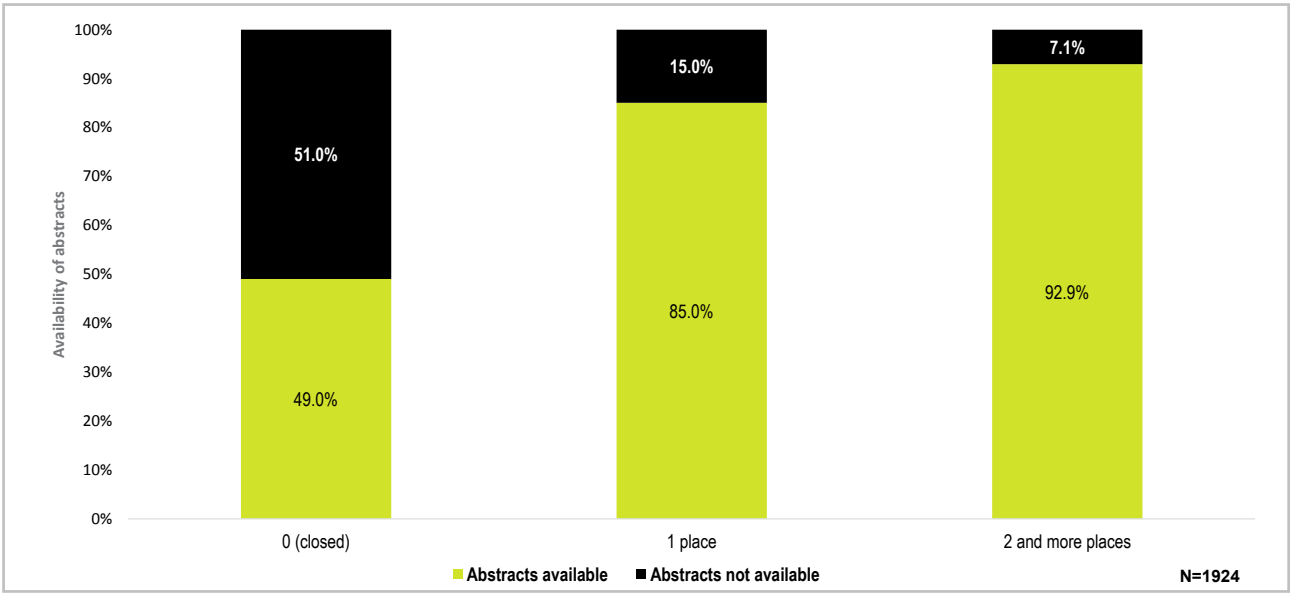
4.2.2 Abstracts

Chart 2. Availability of abstracts and availability of journals



Making abstracts available on the Internet is a popular method of increasing the journal's visibility, even when the publisher, for various reasons, does not wish to make full-text articles available. It should be noted, however, that opening abstracts correlates with opening full-text articles. Less than half of the journals (49%) that do not share a single issue openly choose to share the abstracts alone. OA journals in 93.9% also make the abstracts available. Journals from group II and III share abstracts a fraction less frequently.

Chart 3. Abstracts and a number of places in which the journal is available



The greater the number of places where a particular journal makes its content available, the more it is willing to share abstracts as well. 85% of journals available in one place share their abstracts, compared to 92.9% of journals available in two or more places.

4.3 Legal aspects of Open Access to journals

An important aspect of openness is the scope of rights granted to recipients. Almost all Polish OA journals are in gratis OA. As few as 1.35% of journals uses free licences and is in libre OA. Incidentally, some journals even attempt to limit the reader's rights.[67]

Seventy-one journals are accessible under the Creative Commons licences. Publishers choose different ones, according to their preferences.[68]

67 For instance, the journal "Edukacja Biologiczna i Środowiskowa", published by Educational Research Institute, provides two access options: toll and free of charge. The publisher claims that with the free of charge version the reader is not authorised to copy the file onto their own devices and share them with members of their household. Such limitations are inconsistent with the provisions on fair use in the Copyright and Related Rights Act.

68 More on Creative Commons licences: http://creativecommons.pl.

Table 12. Polish scientific journals available under Creative Commons licences

Licence	Number of journals	% of journals using CC licences
CC-BY	19	26.8%
CC-BY-NC	5	7%
CC-BY-NC-ND	10	14.1%
CC-BY-NC-SA	1	1.4%
CC-BY-ND	26	36.6%
CC-BY-SA	7	9.9%
Other CC	3	4.2%
In total	71	100%

In 36.6% of cases it is the CC-BY-ND licence – forbidding the use and distribution of derivative works, but allowing for commercial use. The second most popular licence is CC-BY (26.8% of the journals which use CC), the most liberal of all licences, allowing for commercial use and creating derivative works. The third most popular licence is CC-BY-NC-ND, chosen by 14.1% of journals. It is the most restrictive licence, forbidding both commercial use and the creation of derivative works.

Only in 13 cases the licences were fully specified – name, generation and national version (three in the German, and 10 in Polish version). In 53 cases the licence generation was specified (each time it was 3.0). In three cases, it was not clear what CC licence had been applied, because the licensor's statement was imprecise.

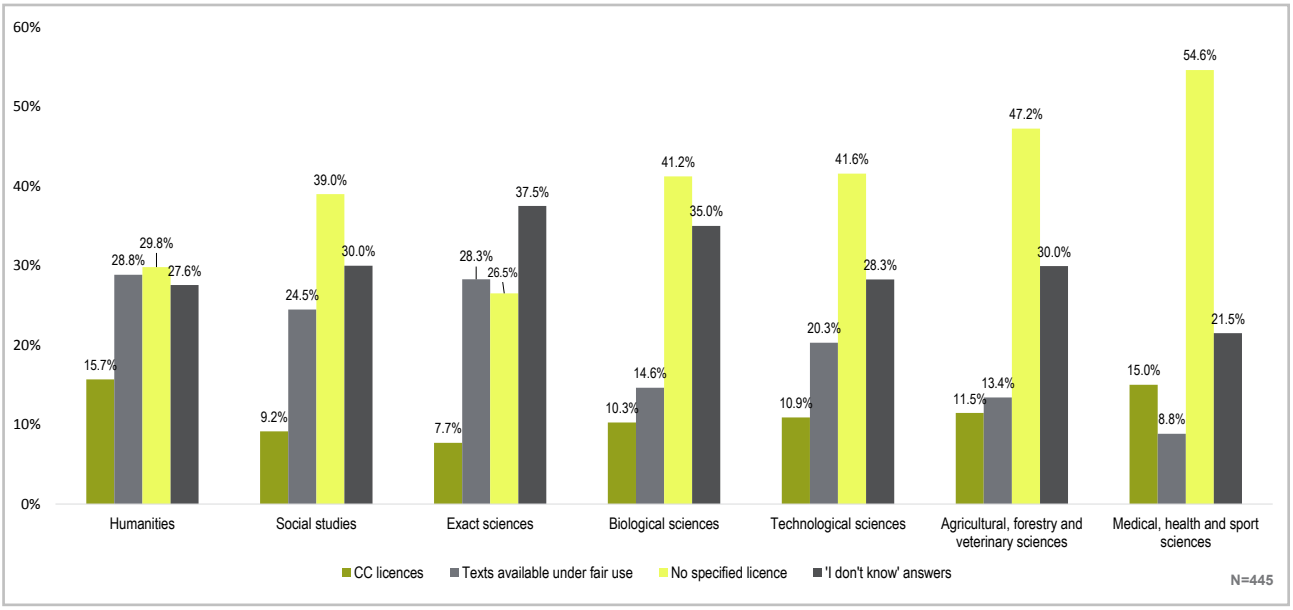
Not all Creative Commons licences are free licences – therefore, not all of them provide libre OA. The only licences that can be considered "free" are CC-BY and CC-BY-SA, as the other ones prohbit commercial use or the use of derivative works, which limits the user's liberties in such a way that it cannot be considered libre OA any more.[69] There are 19 journals available under the CC-BY licence, and seven – under CC-BY-SA. Therefore, there are only 26 Polish scientific journals accessible in libre OA, which makes up for about 1.35%.

The survey questions about the licence under which full-text articles were made available on the Internet was answered by 10.9% of journal representatives – more than it would seem from the secondary data analysis – indicating different CC licences. According to 20.5%, the texts are available under fair use, 34.2% claimed they had no specific licence (it was a multiple choice question). 36.3% declared they had had no knowledge on the type of licence used.

CC licences are most often used by the journals dealing with humanities. At the same time, this group of journals had a significantly lower percentage of answers "no licence specified" and "I do not know", which suggests increased awareness of legal aspects of online content sharing.

69 K. Siewicz, *Otwarty dostęp do publikacji naukowych* [Open Access to scientific publications], 18.

Chart 4. Licences and areas of academic study



4.4 Openness in regard to areas of academic study and fields of study in the arts and sciences

The executive order of the Minister of Science and Higher Education from 8 August 2011 concerning areas of academic study, academic disciplines and fields of study in the arts and sciences serves as a basis for formal classification of science in Poland. In the present report we adopted this classification. According to it, all journals also had to declare their respective fields of study in the questionnaires available at the Polish Scholarly Bibliography.

We attempted to find out how many journals were being published in particular areas of academic study, with the possibility of one journal belonging to more than one area. The most numerous group were social studies journals – 710 titles. The second one – humanities journals with 687 titles. In technological, biological and medical sciences there were 280–384 titles, while in exact sciences and agricultural sciences – less than 200. There were 41 titles on the arts.

Table 13. Journals in particular areas of academic study
N=1753*

Area of academic study	Number of journals**	% of all
Humanities	687	39.2%
Social studies	710	40.5%
Exact sciences	173	9.9%
Biological sciences	300	17.1%
Technological sciences	384	21.9%
Agricultural, forestry and veterinary sciences	159	9.1%

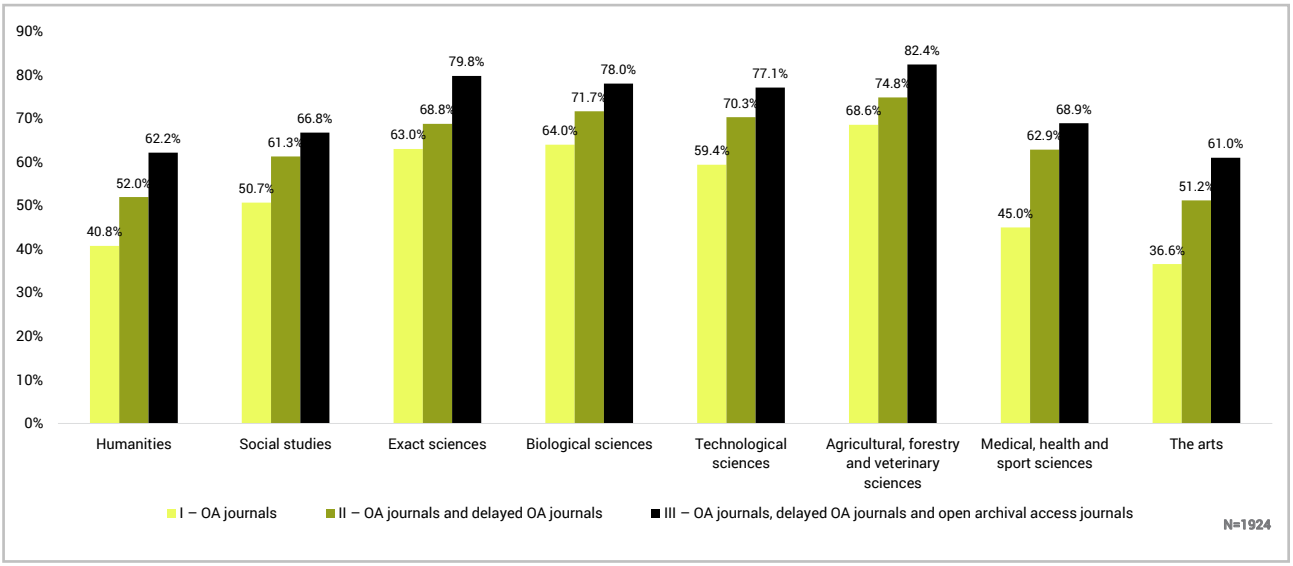
Medical, health and sport sciences	280	16%
The arts	41	2.3%

* In 171 cases it was not possible to determine areas of academic study.
** A journal can belong to more than one area, so their total sum is greater than the number of surveyed journals.

The two distinctive features differentiating journals from various areas of academic study are: the publication language and the availability of abstracts. 5% of humanities and social studies journals are multi-lingual, whereas they can feature both translated texts and parallel publications, as well as articles written in different languages. Among exact sciences journals there is a high percentage of titles published only in English (43.4%), as is with technological (34.6%) and biological sciences journals (35.7%).

65.9% of art journals and 69.3% of humanities journals make abstracts of all their articles from the most recent issues available online. It is quite a lot but less than in case of social studies journals (78.9%) and agricultural, forestry and veterinary sciences journals (91.2%).

Chart 5. Availability of journals in particular areas of academic study



As for openness in particular areas of academic study, the picture is very diverse, which can be inferred from the table below.

Table 14. Opennes of journals in particular areas of academic study

Science area	I	II	III
Humanities	40.8%	52%	62.2%
Social studies	50.7%	61.3%	66.8%
Exact sciences	63%	68.8%	79.8%
Biological sciences	64%	71.7%	78%
Technological sciences	59.4%	70.3%	77.1%
Agricultural, forestry and veterinary sciences	68.6%	74.8%	82.4%

Medical, health and sport sciences	45%	62.9%	68.9%
The arts	36.6%	51.2%	61%

I – OA journals, II – OA and delayed OA journals, III – OA journals, delayed OA journals, and open archival access journals

A small number of art journals (41) does not provide ground for assumptions about statistical dependencies in this group of journals. We can, however, conclude that these journals constitute the most closed group of all.

The most open areas of academic study are: agricultural, forestry and veterinary sciences, as well as technological and biological sciences and exact sciences. In these areas OA journals constitute 59.4–68.6% of all journals. The area of agricultural, forestry and veterinary sciences distance all the other in this respect, in both group I, II and III.

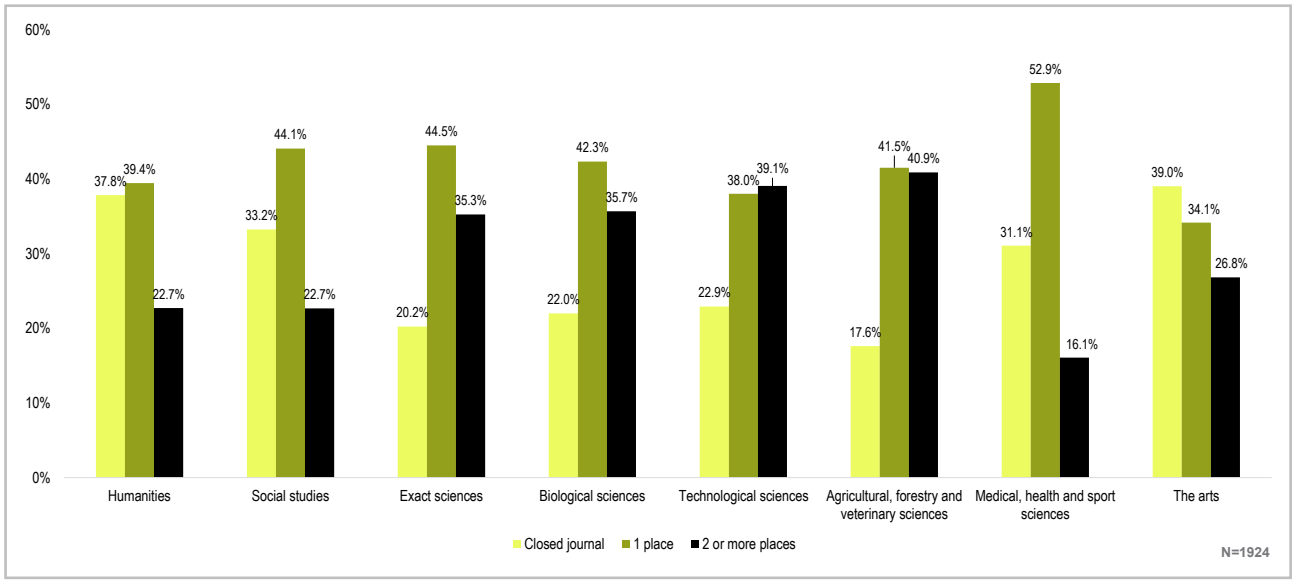
Social studies journals, which constitute the largest group, are open in 50.7%, which places them close to the average.

Compared to the lead, humanities (40.8%), medical (45%) and art journals are clearly falling behind. It must be emphasised, however, that the scope of openness in these areas is still high.

In medical, health and sport sciences it is a very common approach to use embargo. This model is used by 18.9% of journals, which caused 62.9% of the journals from this area to be assigned to group II.

A specific trait of medical journals is their common requirement of free registration, which is required by 9.8% titles. It might be attributed to the legal regulations which do not allow for prescription drugs to be advertised to people not authorised to hand out prescriptions. It should be noted, however, that the registration requirement is not always coupled with the requirement of submitting a declaration of belonging to a particular professional group.

Chart 6. Number of places in which the journal is available and areas of academic study

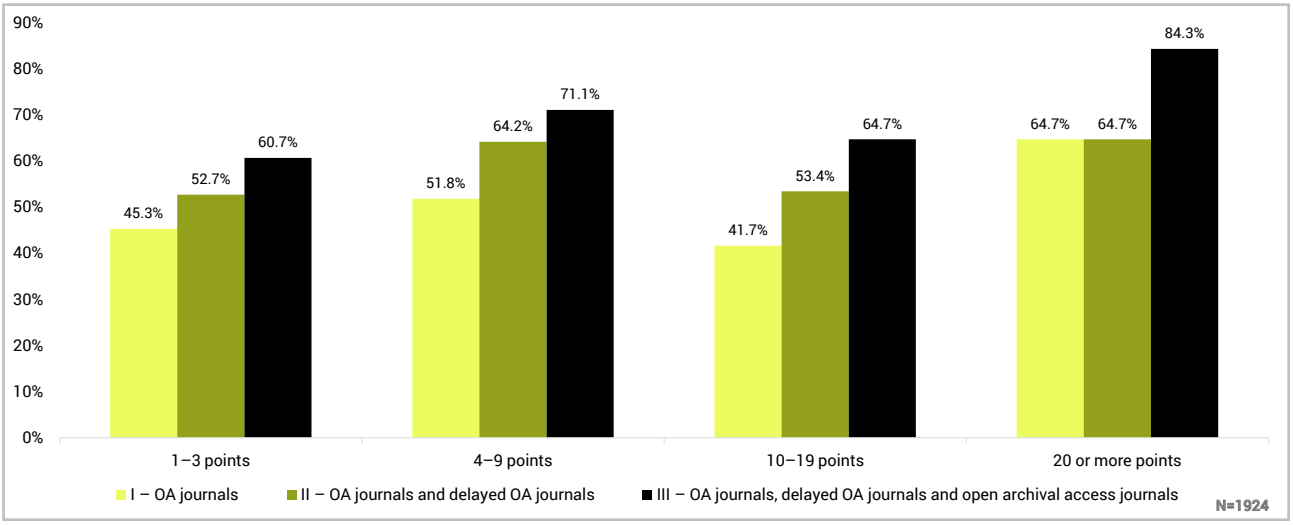


Journals from the areas characterised by the greatest openness are also distinct in the fact that they are available in the greatest number of places. 40.9% of journals concerning agricultural, forestry and veterinary sciences are accessible in two or more places. For technological and biological sciences, as well as exact sciences, this percentage amounts to 35.3–39.1%. The lowest index can be observed with medical sciences – 16.1%.

4.5 Openness and journal scores

The score assigned to journals by MSHE, regardless of any concerns and controversies, are an important point of reference, both for the journals and scientific institutions.

Chart 7. Journals availability and MSHE score



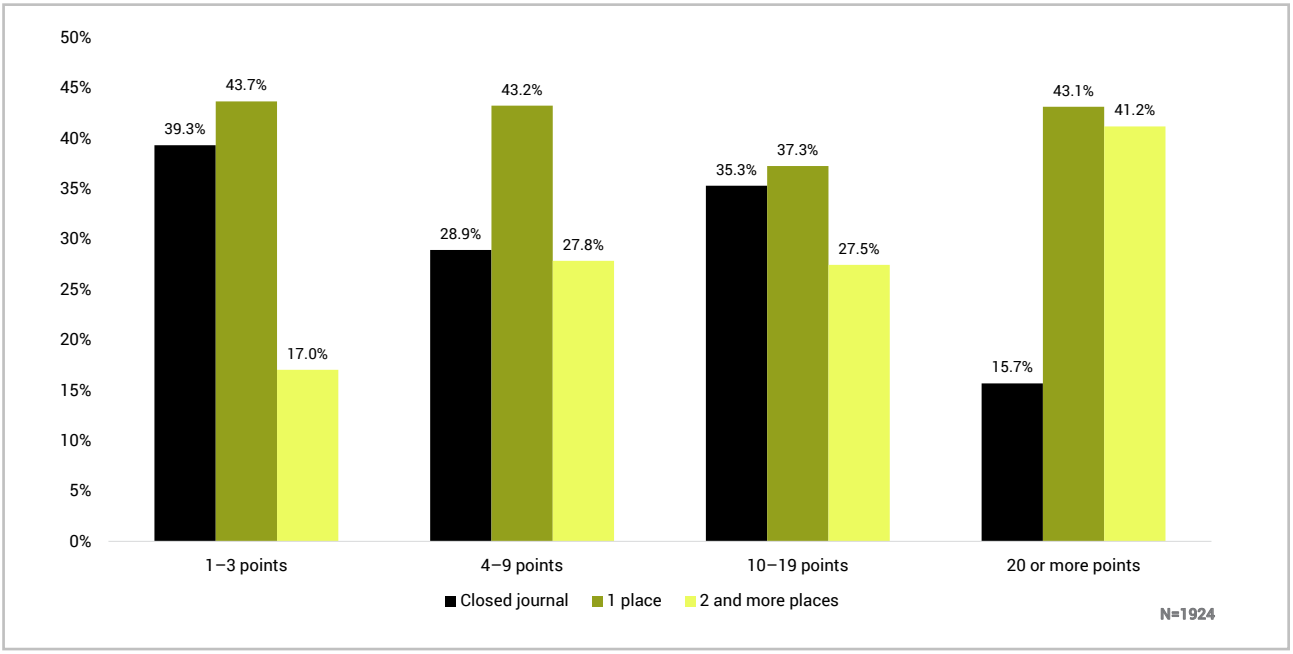
The largest percentage of OA journals – almost 64.7% – occurs in the group of most highly scored journals, ones which have 20 or more points. The same group also features the largest percentage of journals from group II and III. On the other hand, the group of lowest scored journals features the smallest percentage of journals from group II (52.7%) and III (60.7%). The lowest percentage of OA journals can be found in the group with 10–19 points: 41.7%.

Out of the highest scored journals, not a single one uses embargo. It is most often used in the group of journals between four and nine points: 12.8% cases.

The Creative Commons licences are used exclusively by journals with less than 20 points, including 3.4% of journals with one to three points and 3.9% journals in two other groups.

The percentage of journals that are only available in one place is – seemingly – independent of the score and ranges between 37.3 and 43.7%. The higher the score, however, the greater the increase of journals available in two or more places online. With journals between one and three points the percentage amounts to 17%, with four to nine point journals it reaches 27.8%, with 10–19 it comes up to 27.5%, while the highest scored reach 41.2%.

Chart 8. Number of places in which the journal is available and MSHE score



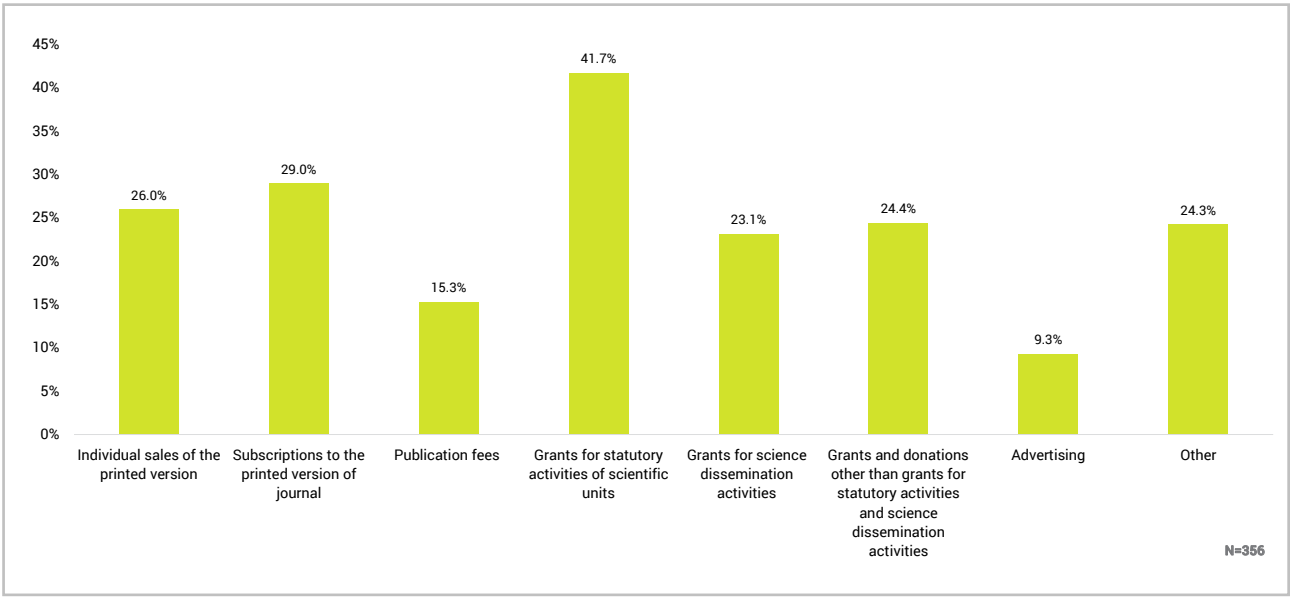
4.6 Openness and journal funding

Journal publishers and editors were asked to specify in the questionnaire – by choosing from a list – how their journals had been funded in the years 2012–2013. According to the collected data, the most common funding source is grants for statutory activities of scientific units, which was indicated by 41.7% of journals. Another popular source is subscriptions to the printed version, indicated by 29% of journals. Only a slightly lower result was achieved by the revenue from individual sales of the printed version (26%).

Grants and donations other than grants for statutory activities and science dissemination activities were listed as sources of funding by 24.4% of journals. Grants for science dissemination activities are used by 23.1% of journals. Author fees are source of funds for 15.3% of journals. The rarest source of funds is advertising (9.3%).

Among other sources of funding ("Other, please specify") respondents listed: the publisher's or institution's own funds, membership fees or conference payments.

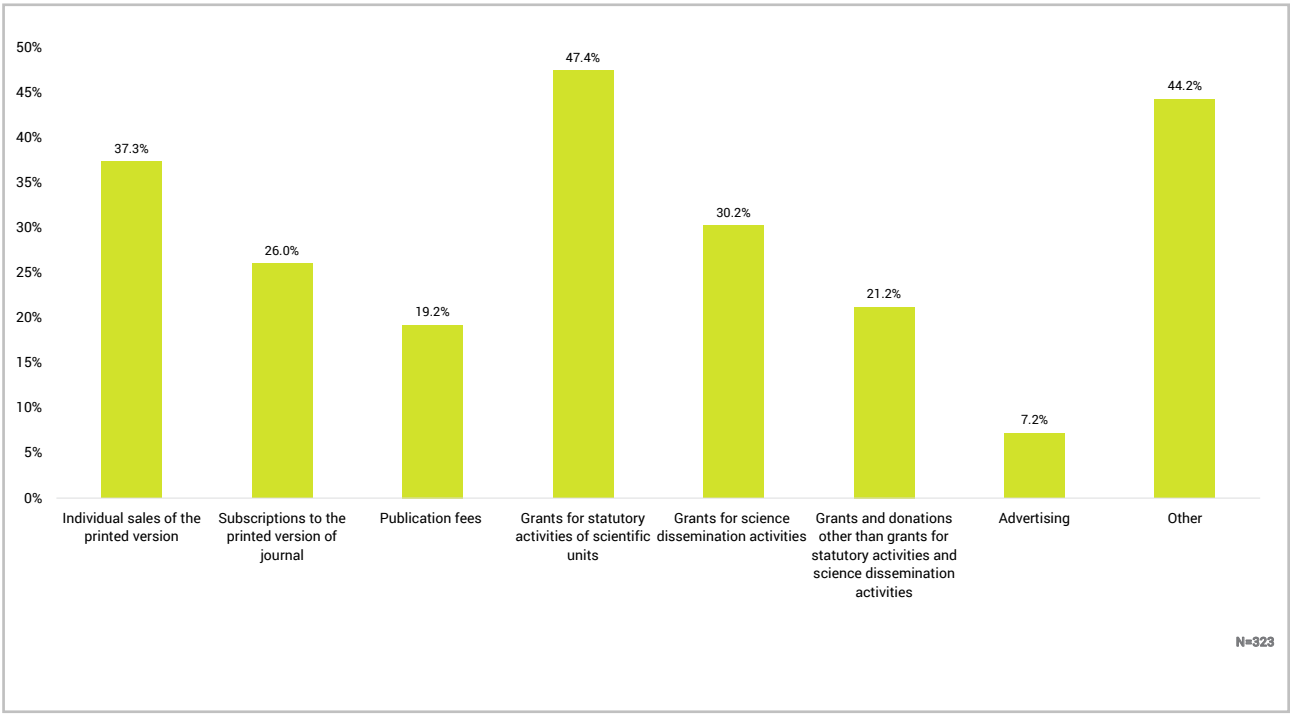
Chart 9. Funding sources for scientific journals



The respondents were asked to prioritise the funding sources according to their importance. The most important source are grants for statutory activities of scientific units, which was indicated by 41.7% of journals. Second rank–individual sales of the printed version, indicated by 37.3% of journals. Grants for science dissemination activities are one of the two most important funding sources for 30.2% of journals.

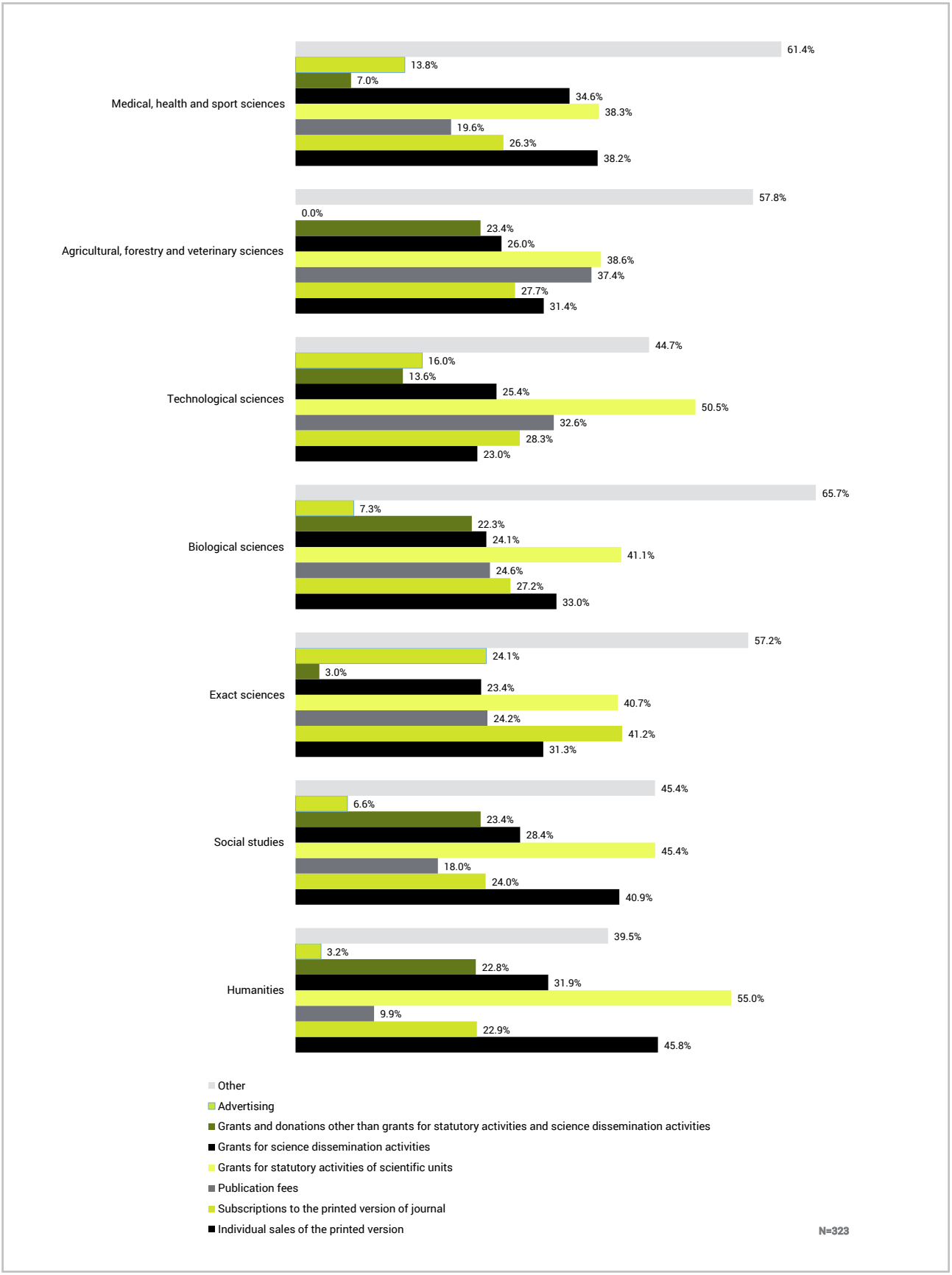
Further down the line, there are subscriptions to the printed version of journal (26%), grants and donations other than grants for statutory activities and science dissemination activities (21.2%), as well as author fees (19.2%). The least important source of funding is advertising (7.2%).

Chart 10. Most important funding sources for scientific journals



Grants for statutory activities of scientific units are usually indicated as an important funding source for the humanities and social studies journals. The journals belonging to these two groups are also heavily dependent on individual sales of the printed version, which sets them apart from other areas, where this source of funding plays a lesser part. Revenue from individual sales is of lowest importance to technological journals. Humanities journals also constitute a group less dependent on the revenue from the printed version subscriptions and author fees. Publication fees, often linked to openness, are most important for biological, technological, agricultural, forestry and veterinary sciences journals. In exact sciences, grants and donations other than grants for statutory activities and science dissemination activities play a marginal part. They also have little importance to medical journals, but in their case this source of funds is substituted by advertising. Medical journals attach a particular importance to this, similarly to technological sciences and science journals.

Chart 11. Most important funding sources for scientific journals and areas of academic study



Comparing the funds from different sources in case of open and toll access journals allows to notice several differences. Individual sales and printed version subscriptions are more important for non-open journals. In this group, individual sales of a printed version was indicated as one of the two most important sources of funds by 40.3% of journals, and subscription of printed version by 32.6%. Among OA journals these figures amounted to 34.3% and 21.2% respectively. Publication fees have a much greater importance for OA journals (23.6%) than others (14%). On the other hand, grants for statutory activities play a similar role with OA journals (47% indications) and others (47.2%). The role of grants and donations other than grants for statutory activities and science dissemination activities is of equal importance to both of these groups (OA – 21,2%, others – 21,6%). Grants for science dissemination activities are more important for OA journals (31.5%) than others (27.9%). Advertising, on the other hand, is more often used as a source of funds by journals which do not share their current issue in OA – it was indicated as an important source of funding by 9.3% of them (compared to 5.1% of OA journals).

4.7 Openness and internationalisation of Polish journals

In the past few years Polish scientific journals started to use the English language much more often than before. It concerns both journal titles and articles published in the aforementioned journals. Publishing abstracts in English is becoming a commonplace practice. The changes can be dictated by the desire to participate in international scholarly discourse, or conforming to MSHE's standards.

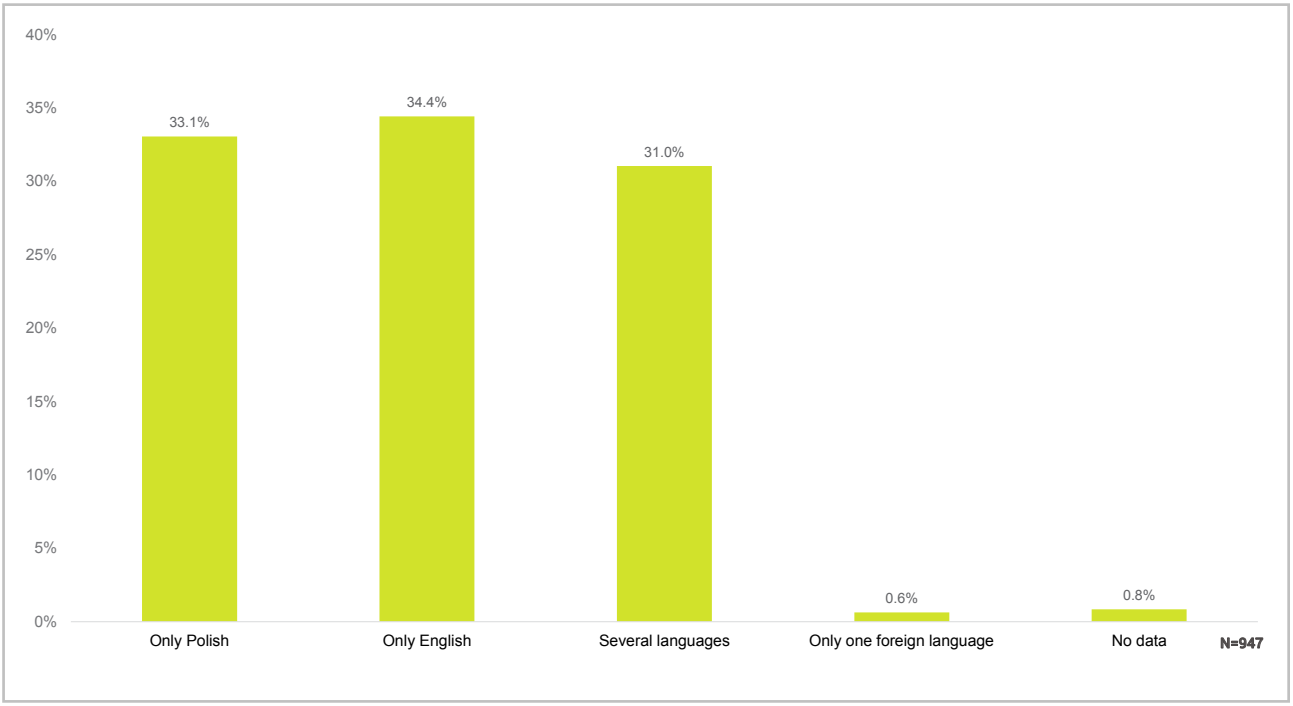
In the course of this research, it was not possible to completely determine what languages were used in closed journals. Therefore, we cannot compare toll access and Open Access journals in terms of their language of publication, which – indirectly – corresponds to the recipient groups that editors are trying to target.

Publication language influences the make-up of the recipient group. English texts have a chance of attracting readers in international circles, while Polish authors writing only in their native tongue can only hope for a reception from a very narrow, specialised group outside Poland. Polish scientific journals tend also to include content in languages other than Polish and English. Sometimes philological journals publish articles in "their" own language (like German, Russian or Italian). The journals which constitute borderline cases (Polish--German or Polish-Czech) often opt for multilingual publications.[70]

The choice of language is not only an attempt to reach the desired recipient group, but also a response to the specific characteristics of the journal's reader group. Purely academic journals, regardless of their discipline, find it more easy to switch to English than professional journals (technical, medical, etc.), which are also read by specialists outside of the academia.

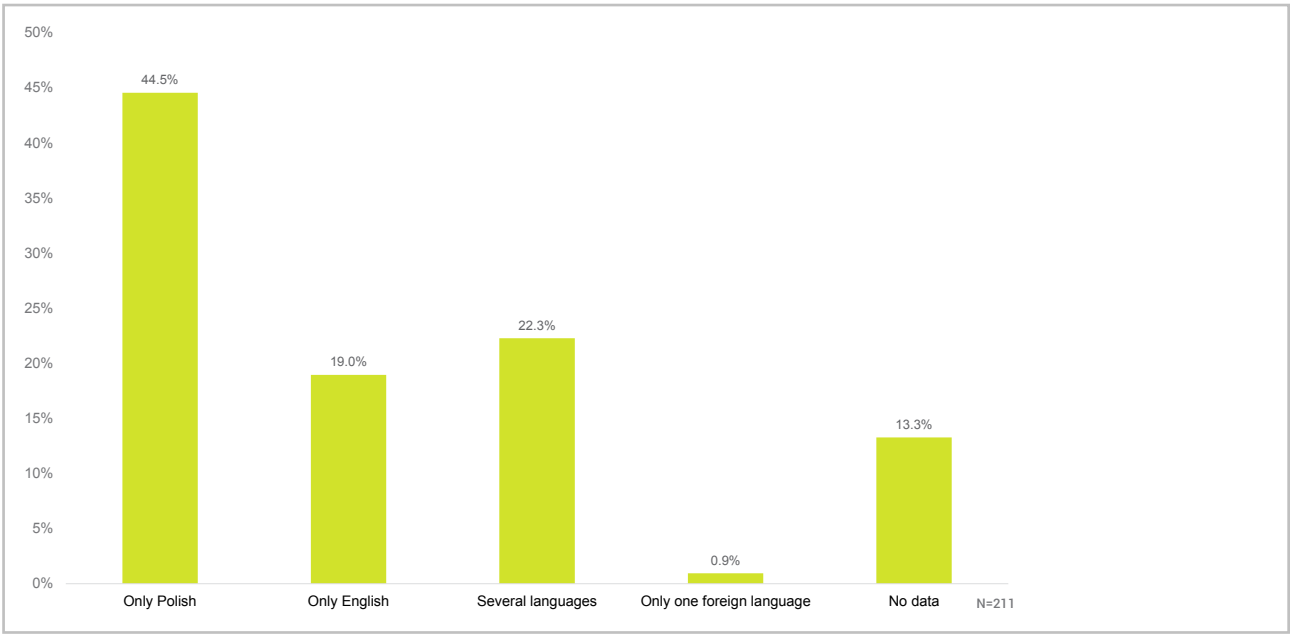
70 A noteworthy attempt was made by Wydawnictwo Adam Marszałek: as of 2011 the journal *Kultura i Edukacja* is published in Polish as a quarterly, as a six-monthly in English and as an annual issue in Chinese (all language versions are available openly on the journal's website)

Chart 12. Language versions of Open Access journals



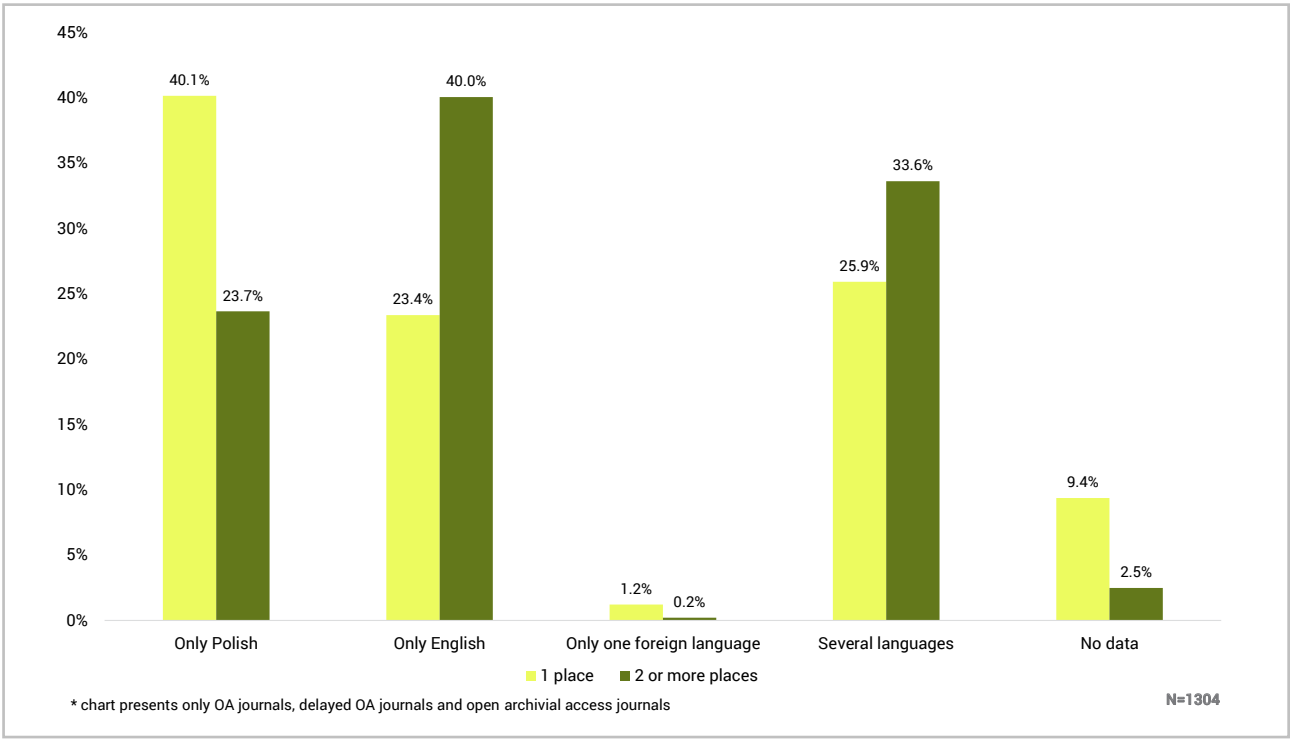
Among OA journals, a similar percentage (31–34.4%) publishes only in Polish, only in English, or in several languages. 0.6% of OA journals publish in other languages than Polish and English.

Chart 13. Language versions of delayed Open Access journals



Compared to OA journals, delayed OA journals are more likely to only publish in Polish (44.5%), rarely in English (19%) or in several languages at once (22.3%). In this group, many journals wouldn't make issues published in 2011 or later accessible, hence, they were put in the "no data" category (13.3%).

Chart 14. Language versions of journals and number of places in which the journal is available*



Comparing journals available in one place to those shared in two or more, we were able to notice that English language journals tended to be available in more places. 40.1% of journals that are only available in one place are Polish-language journals, while the same percentage (40%) of journals available in two or more places consists of English-language ones. 25.9% of journals available in one place and 33.6% of those available in two or more places are multilingual journals.

4.8 Openness and publishing period

Table 15. Openness and publishing period

Publishing period					
	Up to 10 years	11–20 years	21–30 years	31–40 years	Over 40 years
OA journals	52.5%	50.8%	49.2%	53%	43.1%

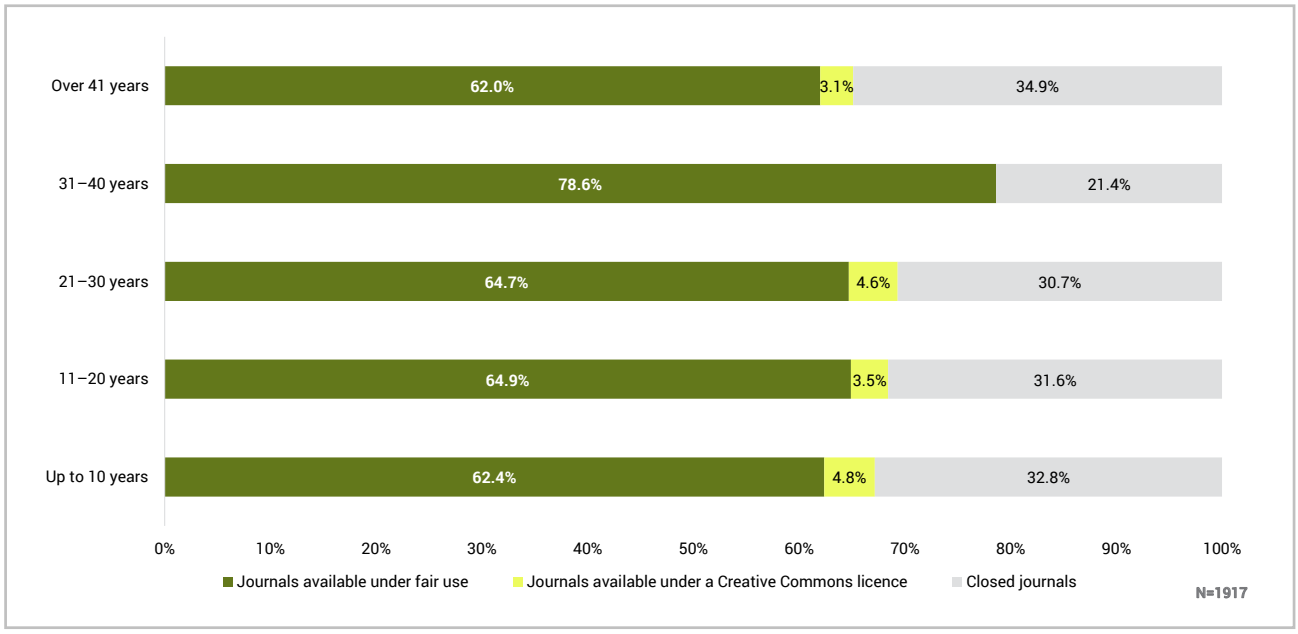
The percentage of OA journals amounts to 49.2%–53% for journals published for no longer than 40 years, but drops to 43.1% for those published for longer than 40 years.

The journals published for 11–20 and 21–30 years tend to use embargo more often than others: 13.4% and 13.7% of them decided to employ this solution. Just for comparison: for youngest and oldest journals the percentage is less than 10%–9.5% and 9.8% respectively.

The largest percentage of journals that make at least one of their issues openly available (group III) can be found among the group of journals with a publishing period between 31 and 40 years (78.6%). It could be speculated, that this phenomenon is typical for journals with a long publishing period, resulting from the progressing

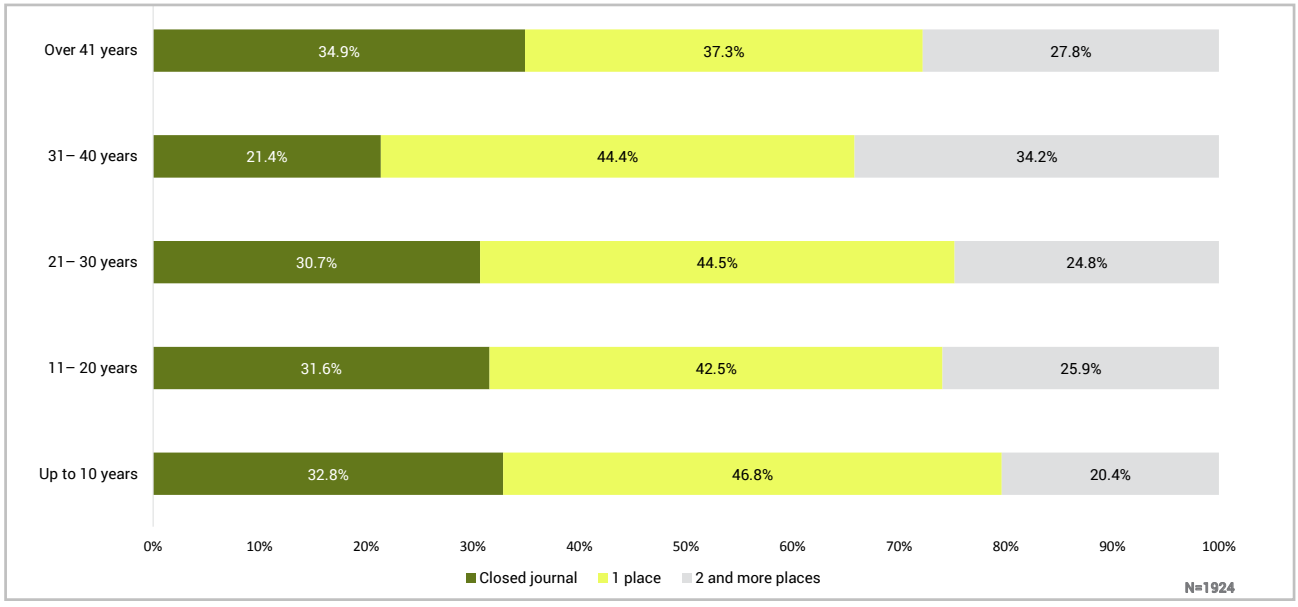
digitisation of older issues and sharing them in digital libraries. However, in the group of journals published for over 40 years, the percentage of journals making any issue available is the lowest and amounts to 65.1%.

Chart 15. Dissemination models and publishing period



The percentage of journals accessible under a Creative Commons licence amounts to 3.1–4.8% in all groups, except for journals published for 31–40 years. In this group (which at the same time, has the greatest amount of openly shared content) none of journals is shared under a Creative Commons licence. It should be noted that it is a relatively small group (117 titles).

Chart 16. Number of places in which the journal is available and publishing period



Journals with a shorter publishing period are often satisfied with making the journal available in one place only. This applies to 46.8% of journals published for under 10 years. At the same time, journals with a long

publishing period are most often made available in more than one place – this applies to 34.2% of journals with a publishing period ranging from 31 to 40 years.

4.9 Openness and journals circulation

The data on the circulation of Polish scientific journals in paper form were divided into ranges presented in Table 16.

Table 16. Circulation of Polish scientific journals

Circulation of printed version – in copies	Percentage of surveyed journals (N=483)
<= 99	7%
100–249	37.9%
250–499	30.4%
500+	24.6%

When it comes to circulation of printed copies, there are some considerable differences between Open Access and toll access journals. 33% of the latter have a circulation over 500 copies, and 38.4% – between 250 and 499, while only 18% of OA are printed in circulation exceeding 500, and 24.9% only range between 250 and 499. The circulation of open journals usually falls between 100 and 249 copies (47.3%).

Incidentally, Open Access might depend on a journal's sales. The issues whose printed versions are sold out are later make available as electronic versions. Such an approach leads to situations which may seem hard to understand – the last issue is available openly, while earlier issues are still closed. Sometimes publishers only share the special issues or one issue every year.

4.10 Openness and the activity of journals' websites users

Most of the journals which participated in the survey do not monitor the use of their contents. 54.8% do not collect data for statistics on user activity on their websites. The differences between Open Access and toll access journals are very minor in that regard, despite the fact that the question of reaching potential recipients or expanding the journal's reach often appeared in the surveys, both as an explanation for choosing OA, and as an advantage of such policy. At the same time, data on user activity is collected by 32.9% of toll access journals and only 36.3% of OA ones. The percentage of journals that do not collect this sort of data is very similar in both groups and amounts to 54.4% for toll access journals and 54.2% for OA ones.

The diverse stance on data collection is very clear, when we consider the legal tools used by journals making full-text articles available on the Internet. Among the journals that use CC licences, there is a much greater interest in monitoring the reception of content. In this group, 59.1% of journals collect such statistics. In the group without a specified licence, this percentage only amounts to 25.7%, while among the journals sharing articles under fair use – 31.5%.

As only 32.9% of surveyed journals monitor user activity, the collected data on the number of views and unique users, as well as downloads of files with separate articles or journal issues, do not allow for drawing conclusions about the studied group. Therefore, the numbers presented below are only examples illustrating the diversity among journals and their Internet coverage.

The average monthly number of views for a journal website in 2013 took on many different values – from 20 views per month, up to over 65,000. 73 journals submitted data on the subject. An even lower number – 49 – answered the question about unique users, with the amount ranging between 10 to over 29,600.

4.11 Technical aspects of Open Access to journals

4.11.1 Journal websites software

Not all journals have their own website. Sometimes it is difficult to decide whether the website is intended to present the publisher and the journal webpage is only a part of it, or whether the journal part is extensive enough to be considered a website in its own right. This also applies to OA journals. Many of them make their content available on their own websites, while some of them use their publishers' websites or other infrastructural tools. In many cases it is not possible to determine what kind of software has been used. In this report, such cases were labelled as "other". In view of the matters discussed here, the most interesting aspect is the use of Open Journal Systems – open software for journal management and publishing.

Table 17. Journal websites' software

Software	OJS	WordPress, Joomla!	Other
Journal number	41	70	1473

OJS is used by 40 journals from group III and one other journal. In the latter case the system is used for managing the publishing process only. Nineteen journals using OJS make their most recent issues openly available, while 20 are delayed OA journals (including 11 medical journals). One of them only offers open archival access. Among the journals that use OJS, the largest group is made up of medical journals (37.5%), with humanities and social studies journals second (34.4% each).

Journals using OJS tend to adopt the declaration of openness (understood in accordance with definition given in the present report) – this applies to 43.9% of such journals.

According to the survey data, only 1.6% of journals do not have their own website. Among others, the most popular form of Internet presence is the journal's own site (56.1% of the respondents). 28.2% of journals have their site hosted as part of the publisher's website, while 11.1% are hosted by another institution.

4.11.2 Article file formats

All journals were also investigated in terms of the file formats they used to make articles available. The statistics for particular formats were not collected – if at least one file in particular format had been found,

it was assigned to the journal. Formats other than PDF tend to co-exist alongside it, although it is not a hard-and-fast rule. DjVu is a popular format in digital libraries.

PDF is the most common file format in which journal content is made available. 96.6% journals which openly share at least one issue (group III) tend to use this particular format. 10.5% of journals in this category choose other formats. The most common among them are DjVu (mainly used in digital libraries and, therefore, usually found with older issues) and HTML, which are used by 45.2% and 34.2% of journals making use of formats other than PDF. Two journals provided articles in EPUB format, suitable for e-book readers, although in one case it is just a single article. The e-reader version seems to be an experiment.

Table 18. Article file formats

Formats	Number of journals from group III
PDF	1264
DjVu	62
DOC	10
EPUB	2
FLASH	2
HTML	47
ISSUU	5
JPG	2
PS	5
DVI	1
SWF	11
TXT	1
XML	1
Other	2

Moreover, additional data on file format can be inferred from the survey answers, which show that also with toll access journals PDF is still the most common format. There are, however, some minor differences. OA journals tend to choose PDF more often – it was indicated by 97.6% of these, compared to 83.9% of other journals. Journals which are not OA do not use DjVu files at all (this format appears in the responses of 2.7% OA journals), but more often choose to upload texts onto their website in a HTML format.

4.11.3 Automatic download of articles' bibliographic data

In an answer to the question whether it is possible for other computer systems to automatically download bibliographical data of articles published in a journal, 58% of respondents declared that they had no knowledge of it ("I do not know"). In 30.3% it was not possible. The journals which do allow for this function use either the OAI-PMH (5.7%) or API protocols (3.6%).

4.12 Declarations of openness

Publishers seldom exhibit a systematic approach to openness. Therefore, every comment on openness, no matter how laconic, was treated as a "declaration of openness". Two hundred and twenty-eight of such declarations were identified. This means that 11.9% of all Polish journals and 19% of OA journals declare openness.

A big drawback in the OA policies of Polish publishers is the negligence exhibited towards depositing articles in repositories. Except for journals that use licences allowing for such deposition, it is usually hard to obtain an answer on the publisher's stance towards such practices.

Remarks on openness usually constitute a fragment of a longer presentation centred on the journal itself, for example: "*Biuletyn Polskiej Misji Historycznej* is made available on the journal platform of Nicolaus Copernicus University with the use of Open Journal Systems (OJS) under a Creative Commons licence."[71]

Sometimes the declaration of openness consists of the standard formula referring to the Open Access definition from the Budapest Declaration, for example: "The journal ACTA BIOLOGICA CRACOVIENSIA Series Botanica has an Open Access policy and is included in DOAJ (Directory of Open Access Journals – http://www.doaj.org). From the DOAJ definition of 'Open Access' users shall have the right to 'read, download, copy, distribute, print, search, or link' to the full texts of articles."[72] One of the formulas quoted word-for-word is: "This journal provides immediate open access to its content on the principle that making research freely available to the public supports a greater global exchange of knowledge."

Sometimes the opening of published content is supported with arguments referring to the benefits of such approach ("the benefit of the scientific society") or its advantages ("improves communication"). "Archival issues of PORTA AUREA are currently digitised and will be made available in open access for the befit of the scientific society. [...] The 'open access' idea entails an easy and free of charge access to the most recent knowledge through commonly used Internet platforms collecting resources in electronic form. Such a solution improves communication, enhances and speeds up the circulation of scientific data and allows for access to the most resent scientific findings for a wide circle of society."[73] "OPEN ACCESS facilitates access to scientific content and improves the chances for citation on an international scale."[74]

Declaring openness, publishers sometimes try to answer the concerns that arise in connection with making their content available online, for instance: "This journal is published open access to provide free access to its resources, without prejudice to copyright. Therefore its readers are obliged to abide by the common attribution rules, as they are with printed publications."[75] When referring to OA, editors often do not use

71 http://historicus.umk.pl/pmh/strona/index.php?page=biuletyn&hl=pl_PL, accessed May 23, 2014.

72 http://www2.ib.uj.edu.pl/abc/index.php?d=07, accessed May 23, 2014.

73 http://www.sztuka.his.ug.edu.pl/pl/dzialalnosc—publikacje--rocznik_-porta_aurea---numery_archiwalne_w_wolnym_dostepie/, accessed May 23, 2014.

74 http://www.pak.info.pl/, accessed May 23, 2014.

75 http://www.pak.info.pl/, accessed May 23, 2014.

the term itself or similar terms. For instance, "as of 2012 the journal is only published in electronic format. The subsequent issues are available as PDF files on the Institute's website."[76]

4.13 Open Access – expectations and results

In an answer to the question asked in our survey: "Why did you decide to make the articles published in your journal accessible free-of-charge online?," respondents usually mentioned the expected benefits concerning the promotion and dissemination of journal. They were mentioned in 38.3% of answers. 19.4% emphasised the availability of content for their recipients: readers, other authors, students and doctoral students.

12.3% of respondents also expected better promotion of the research conducted by authors within their scientific unit, or research promotion among society in general. It is worth noting that the motivations for disseminating journals in OA also concerned an expected increase in citations – the issue was mentioned in 11.1% responses. On the other hand, journal evaluation and the requirements to abide by the Ministry's regulations were mentioned in 8.1% of answers. Other expected benefits, mentioned a lot more rarely (under 3% of answers), were among others: conforming to the current trends, increasing the number of authors (2.4%), improving the circulation of scientific data (1.2%) and limiting printing costs (0.9%).

In the survey, the respondents also answered an open question on the changes – both positive and negative – that they noticed in regard to OA. Among the advantages of making full-text articles openly available online, they usually listed: improved coverage, visibility and impact in the scientific community, increased popularity of the journal (also described as "better access to readers"), increased recognition of the title and wider distribution. Such remarks appeared in the answers of 35.5% of respondents. An important benefit in this category, as noticed by respondents, was the increase in citations, appearing in 17.5% of answers. Among the positive changes, they also mentioned increased interest from authors – including foreign authors – which was mentioned by 12.3% of respondents.

The above statements indicated that the benefits gained through the introduction of OA usually fall in line with the expectations listed under the reasons given for introducing it. Among the beneficial factors motivating for opening content, a prominent place is often given to journal promotion. Increased citations, although they are more prevalent in the benefits section, are also prominent among the motivating factors. Attracting authors is another issue that appears both among motivations and benefits. However, while asked about why they had decided to disseminate their journal free of charge, respondents usually concentrate on the expected positive changes, when asked about changes in general, their also list incidental negative ones, such as: lower revenue from subscriptions, lower prestige or labour-consuming publishing process.

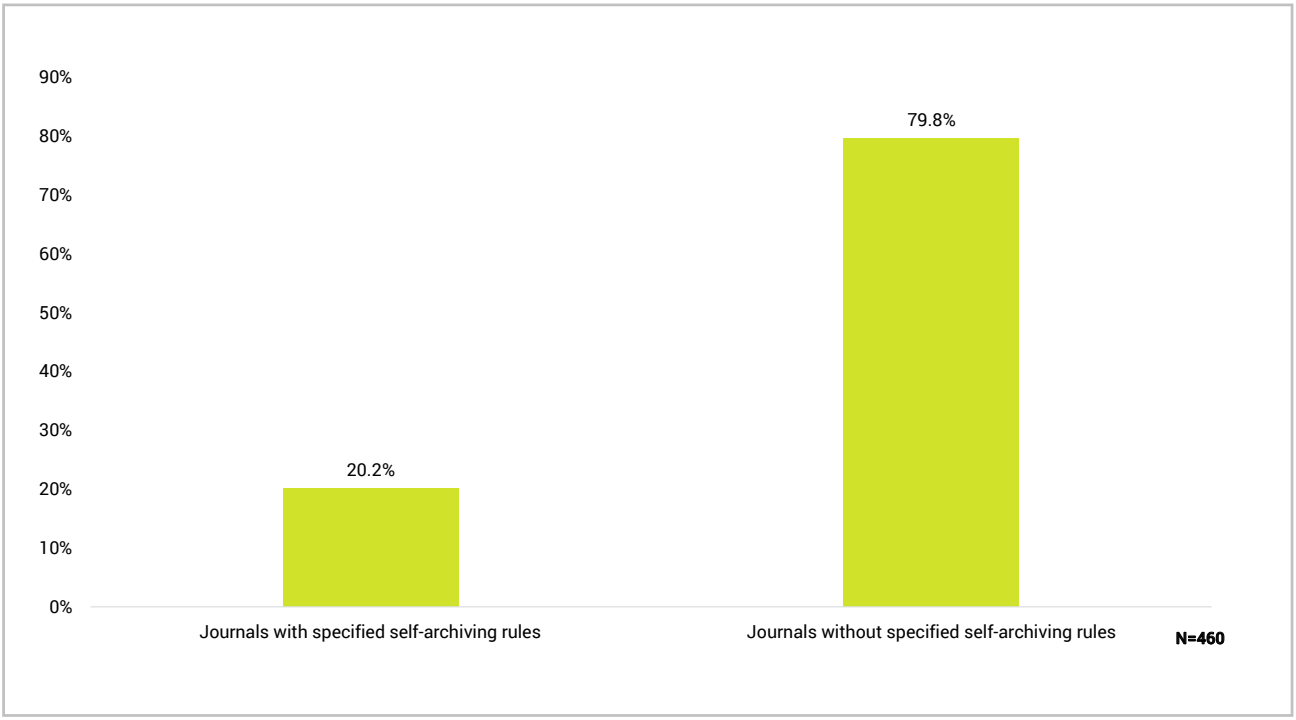
Among the few replies from respondents who decided to answer the question on why they put toll on their content, several factors were listed: usually it was the concerns about lower individual sales and subscriptions revenue, more rarely – about the lowered prestige or grants loss. Toll access was also argued for by referring to the journals commercial operating model, agreements with databases, or broadly understood financial concerns.

76 http://www.ips.lodz.pl/index.php/pl/o-czasopismie, accessed May 23, 2014.

4.14 Journals and repositories

According to the survey, most (79.8%) journals have no established rules concerning authors self-archiving their publications in repositories. At the same time, 60.2% of journals, despite a lack of such rules, declared that they would not mind if any of their authors wanted to deposit their articles in repositories. Only 19.6% claimed that despite the lack of rules, they would rather prefer authors did not deposit articles in repositories. 20.2% respondents declared their journal to have specified rules in that regard.

Chart 17. Rules for self-archiving articles in repositories



Among the journals which specified their rules concerning authors self-archiving their articles in repositories, 37.2% allow for immediate OA in any repository, 13.7% – for immediate OA only in author's institutional repository, 22.2% – for OA in any repository, but only after a an embargo period. 19.6% of journals in this group forbid authors from self-archiving articles in repositories.

4.15 Experimenting with openness

Dynamic changes of technical opportunities and – in consequence – scholarly communication standards cause journal publishers to experiment with different solutions, testing their respective usefulness.

One of the practices that can be considered as "experimenting with openness" is the parallel availability of the same journal issues in Open Access and toll access, including the electronic format. It sometimes happen, when a journal puts PDF files for free download on its website, at the same time placing electronic versions of the journal in commercial databases and on other platforms.

A conservative approach is exhibited by publishers who add watermarks to PDF files, indicating the source or legal restrictions that apply to the file.[77]

Another form of experimenting consists of making available only selected articles. In such cases, the journal does not fulfil the condition of making a full issue available, so it cannot be considered "open".

As for experimental funding acquisition, we should take note of voluntary funding systems. There are two kinds of such approach: first, voluntary payments from readers, and second – voluntary payments for publication from authors (with an emphasis on the fact, that publication itself is not dependent on the payment).[78]

77 For example, articles for the journal *Ido Movement for Culture* are stamped with a watermark claiming that the text is intended for private use only

78 "There is no page charge in *Folia Malacologica*, however the authors who have institutional budget or grant support may be asked by the Editor to contribute financially in their publication (with possible waiver for those who are unable to pay).", http://www.foliamalacologica.com/index.php?option=com_content&view=article&id=270&Itemid=68, accessed May 23, 2014.

Chapter 5

Polish scientists and Open Access

The research "Access to scientific content – a survey among Polish scientists" (Dostęp do treści naukowych – badanie ankietowe polskich naukowców) was conducted using the CAWI (Computer Assisted Web Interview) method. The questionnaire was completed by 3,119 people (full number of interviews), which means that the observational error was +/- 1.75% (with a confidence level of 95%). The respondents were recruited via mailing list, with e-mails sent to addresses available in bibliographical and abstract databases. The survey was conducted on 2–30 January 2014.

During the survey, the structure of the sample was not monitored for any features. The sample was weighted to reflect the structure of scientist population as established by the Central Statistical Office in Poland, in the *Science and Technology in 2012* report. Post-stratification weighting was used in the "Access to scientific content – a survey among Polish scientists". The structure of the sample reflected the structure of the studied population, in regard to the following features: sex, academic degree or title (no title, doctor, habilitated doctor, professor) and areas of science (biological sciences, technological sciences and engineering, medical and health sciences, agricultural sciences, social sciences and humanities). For each of the table fields, a stratification weight factor was calculated – a factor that would reflect the ratio of such persons in the population and in the researched sample, respectively. Then its value was assigned to units with the respective demographic parameters. After weighting, the sample's structure reflected the structure of the population of scientists as established by the Central Statistical Office.

Due to the methods of sample choice, the results are explorative in character and cannot be used as a basis to draw conclusions applying to the population of Polish scientists as a whole.

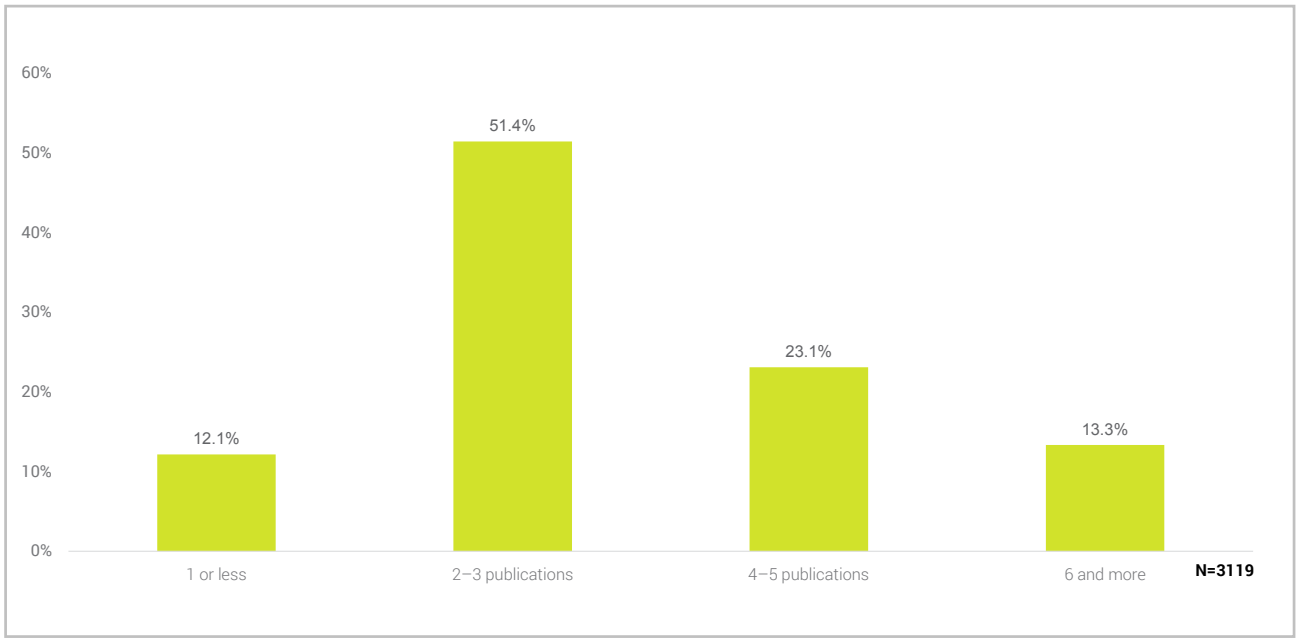
The survey was supposed to establish how authors of scientific works obtained and disseminated scientific content, what motivations underlaid their choices of particular publication models, and what role OA played in the circulation of scientific information.

5.1 Scientists as authors and recipients of scientific content

5.1.1 Publishing activity

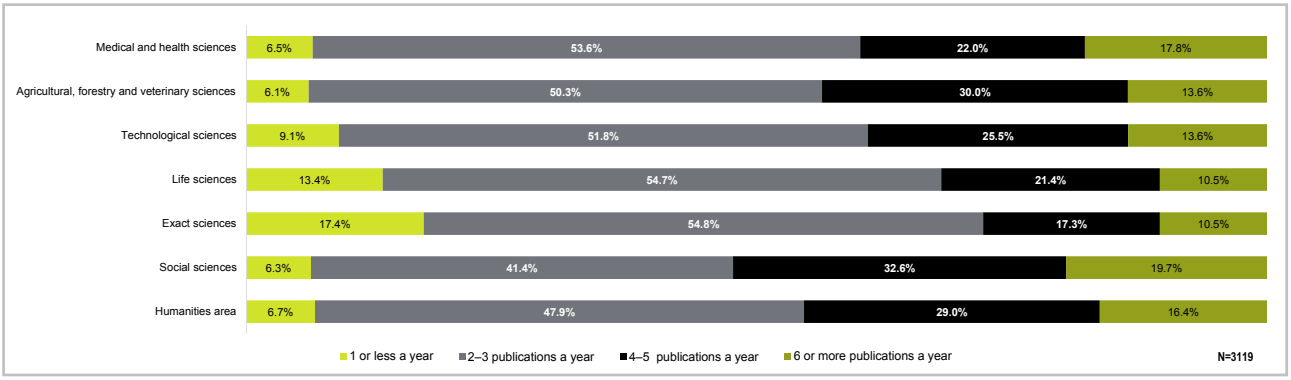
Among the 3119 scientists who took part in the survey, the most numerous group, a little over a half, claimed to be publishing two to three articles a year. A lower percentage, 23.1%, were authors who annually published four to five papers. The least numerous groups included those who published six or more articles a year and those publishing one or less. The figures were 13.3% and 12.1% respectively.

Chart 18. Declared average number of publications per year



The percentage of scientists publishing over six articles a year is highest among professors (25.3%) and habilitated doctors (19.1%), while for the group of doctors it amounts to 11.4, and for respondents without an academic title or degree – 6.7%. The group of professors and habilitated doctors has a lower rate of scientists who publish the least (one or less article a year). For professors the percentage is 6.2%, for habilitated doctors – 4.1%, while for doctors it is 13.7%, and for respondents without an academic title or degree – 23.4%. Among the scientists just beginning their academic career, that is the respondents without any academic degree and doctors, the most common range is two to three articles a year. In both of these groups, the percentage of those publishing two to three articles constitutes over a half (55.5% and 55.1% respectively).

Chart 19. Publication activity according to areas of academic study



The number of published articles can be influenced by some factors resulting from the characteristics of a particular area of science, which is evident when we examine the publishing activity after dividing it into areas of academic study. Among the respondents from the social studies area, there was the largest percentage of authors who published four to five (32.6%) or six or more (19.7%) articles a year. At the same time, the social studies was an area with the lowest number of authors publishing two to three articles (41.4%) or one or less articles (6.3%) a year.

The lowest publication rate fell to exact sciences, which had the largest representation of authors publishing one or less articles (17.4%) or two to three articles (54.8%) a year. At the same time, exact sciences were an area with the lowest number of authors publishing four to five articles (17.3%) or six or more articles (10.5%) a year.

In all areas of academic study, the most numerous group consisted of authors publishing two to three articles a year; the rate ranges between 41.1% and 54.8%.

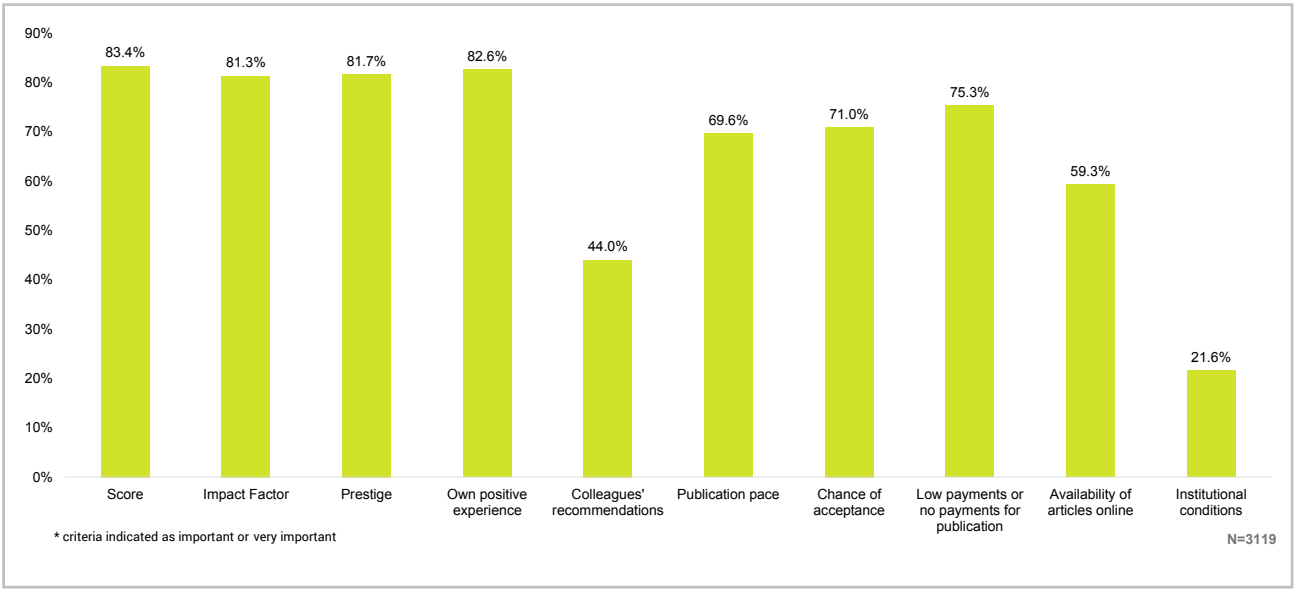
The lowest publication rate occured among scientists under 35 years old. 72.3% of respondents from this group published no more than three articles a year. Only 10.9% of young scientists published six or more articles a year. It was the lowest result from all age groups, including the group over 65 years old, out of whom almost 13.8% claimed to publish six or more articles a year.

5.1.2 Choosing a publication venue

Among the criteria influencing the choice of a publication venue, the one indicated as important or very important, was the journal's score. It was described as such by 83.4% of the respondents (with 42.2% considering it "very important"). The second important criterion was the author's own positive experience. 82.6% of researchers like to follow the beaten paths, and considered this factor as important or very important. The journal's prestige was an issue brought up by 81.7% and the Impact Factor (IF) – by 81.3%. The other factors appeared more rarely – among them, no publication fee or low publication fee – 73%, a chance for acceptance – 71%, publication pace – 69.9%. The availability of articles online turned out to be important or very important for 59.3% of respondents.

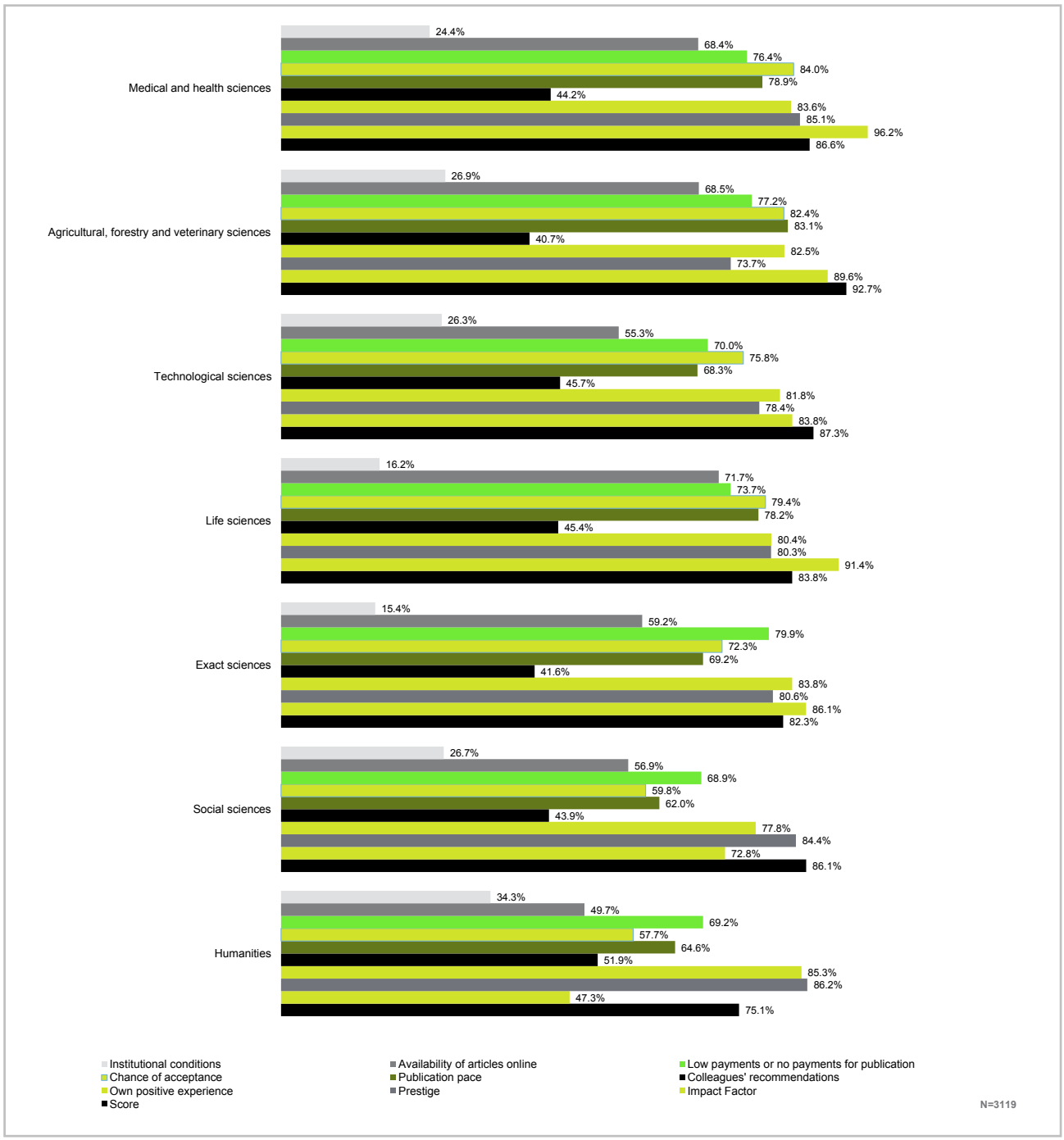
The furthest positions in this criteria ranking were occupied by: recommendations by colleagues (44%) and institutional conditions which were only important or very important for 21.6%.

Chart 20. Criteria for choosing a publication venue*



The score is least important for professors who are more likely to concentrate on the journal's prestige. Doctors more often than other groups (professors, habilitated doctors and scientists without academic degree) give priority to the chance of acceptance, publication pace and colleagues' recommendations. Doctors also tend to assign more significance to the journal's availability online and the IF. Score, IF and prestige have the greatest importance for scientists during the most intensive career development phase, between 35 and 55 years old. Among the respondents over 65, one's own positive experience plays a significant part, while colleague's recommendations seem to have a lesser importance – the most valued solutions seem to be the ones tested in practice.

Chart 21. Criteria for choosing a publication venue according to areas of academic study



The criteria of choice also differ depending on the area of knowledge which the author's research concerns. The representatives of humanities do not seem to care much for the availability of articles online (the lowest percentage of "important" and "very important" answers) at least compared to other groups, they also do not attach much significance to IF. Furthermore, they rarely tend to indicate the journal's score as important or very important. For them, the criterion of utmost importance is the journal's prestige, most often described as "important" or "very important."

The authors from agricultural, forestry and veterinary sciences display a different approach to the journal's prestige, which is for them the least important factor, compared to other groups. In contrast to the authors from humanities, score is the most important criteria influencing their final choice.

In the social studies, the main factor influencing the choice of a publication venue is the journal's score, but the prestige closely follows. Representatives of this group also attach relatively little importance to IF, whose role is assessed lower than with other groups (but higher compared to humanities).

Representatives of exact sciences are a group for whom the IF is of utmost importance. At the same time, they care more about the lack of publication fee or its low value.

IF, not the score, is most important for authors of publications from the biological sciences area. At the same time, they care about the availability of articles online more than the other authors. According to the survey results, attaching high importance to IF is usually accompanied by a high appreciation for the articles being available online. Scientists from the biological sciences also value quick publication pace and a chance of article's acceptance.

In technological sciences the basic criterion for choosing a journal, ahead of IF and own positive experience, is the journal's score. Compared to other groups, this group seems to assign little importance to publication fees.

For the representatives of medical and health sciences IF is the most important factor, more important than it is with other areas. Among the most important criteria, they also mention score, prestige and chance of acceptance, but those are all far being IF. Compared to other areas, authors from medical and health sciences attach more significance to the chance of acceptance, publication pace and online availability. The high role of these criteria is also evident with agricultural, forestry and veterinary sciences.

5.1.3 Acquiring information on scientific content

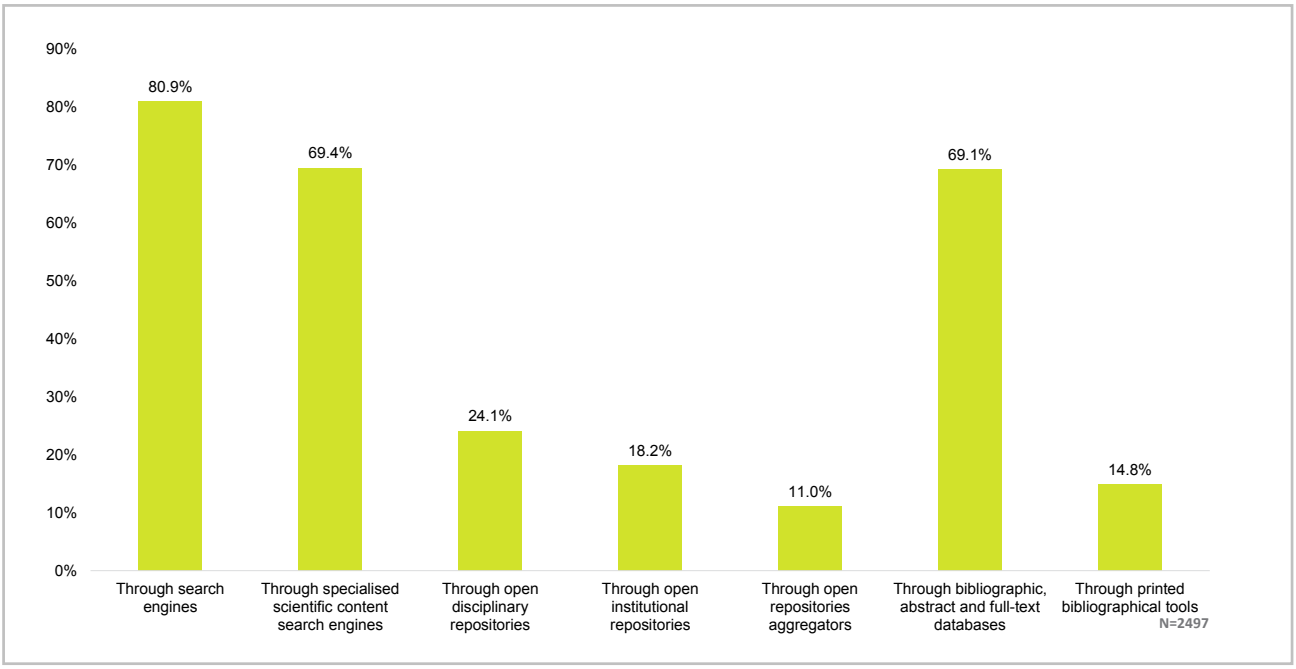
Scientists who search for information on scientific content mostly use Internet search engines – they are used by 80.9% of the respondents. It is worth noting that for the respondents with higher academic degree or a professor title, the role of ordinary search engines is less important. Subsequent places in the ranking belong to specialised engines for searching out scientific content and to databases – bibliographic, abstract or full-text. Both of these solutions are used by 69.4% and 69.1% respectively. Open disciplinary repositories and institutional repositories are used as a source of information on academic works by 24.1% and 18.2% of respondents respectively. In this range there is a great diversity between areas of knowledge. Representatives of the humanities use repositories as sources of information on scientific content information more often than the other respondents; 36.5% claim to perform searches in disciplinary, and 31.4% – in institutional repositories.[79] Disciplinary repositories are less important for the representatives of medical and health sciences – 14.8% out of the surveyed from this group go there for information, while 16.9% search through institutional repositories. In most areas disciplinary repositories seem to be more popular as a source of information on academic works than institutional ones. With exact sciences, this advantage reaches as much as 11%. Things are different with medical sciences, as well as agricultural, forestry and veterinary sciences, where institutional repositories have a greater importance.

79 It is possible that respondents from this group understand the idea of "repository" broader than the other groups (including the commonly used digital libraries).

The more rarely used tools for obtaining information are printed bibliographic tools, which are used by 14.8% of respondents.

The least popular tools are websites open repositories aggregators, which are used by 11% of respondents.

Chart 22. Searching for information on scientific content

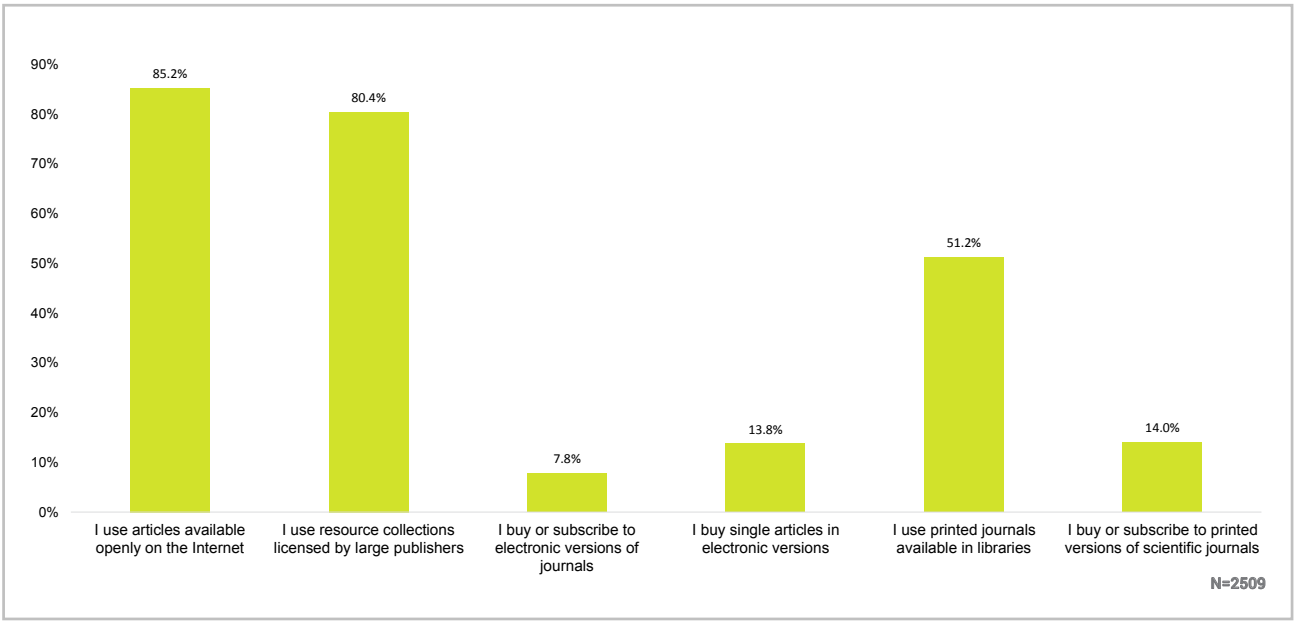


The results show that scientists who do not share their publications in OA and have never used either Polish or foreign repositories, or articles in OA, are less likely to use IT tools supporting the search for digital content. The scientists from this group visit bibliographic and abstract databases as often as others, but they are more likely to use printed bibliographic aids.

5.1.4 Gaining access to scientific articles and books

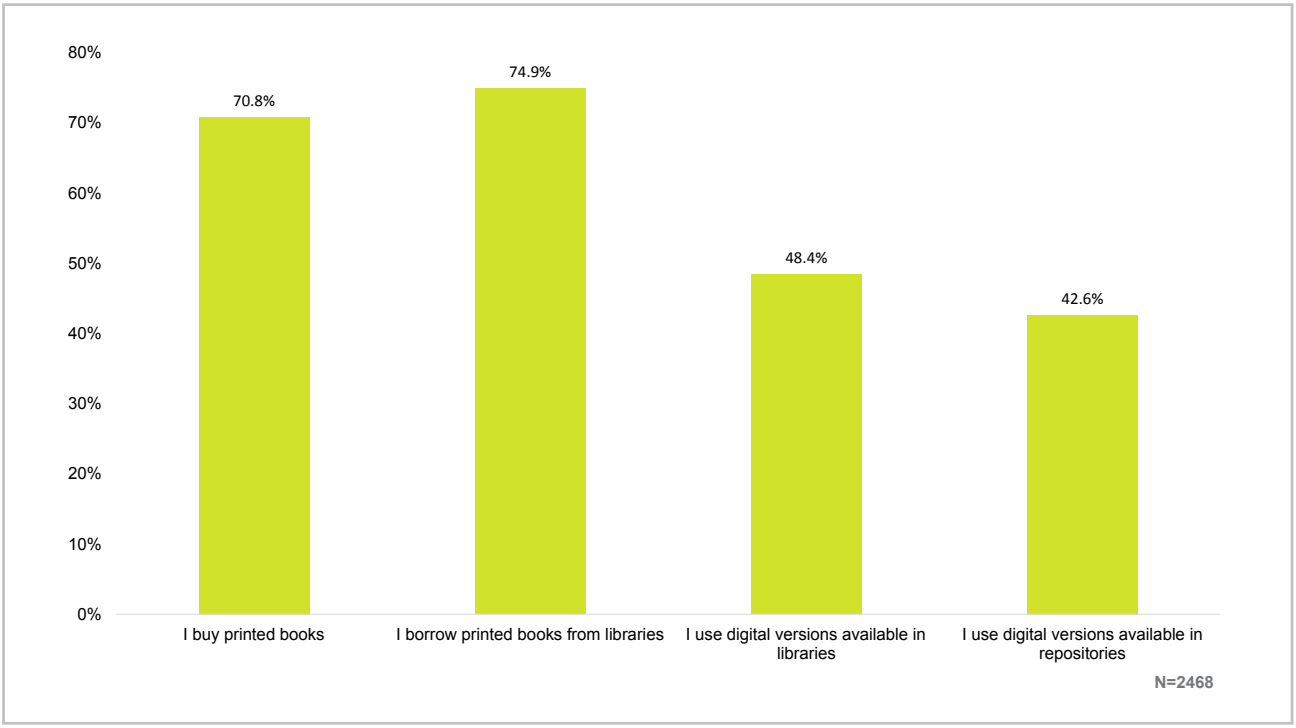
The respondents were asked not only about their methods of obtaining information on scientific content, but also of accessing the content itself, especially scientific articles and books. In their answers, the respondent most often indicated that they used articles openly available online (85.2%) and licensed resources of large publishers, available through scientific or research institutions (80.4%). Printed versions of journals available in libraries are used by 51.2% of respondents. Some of them buy or subscribe to printed (14%) or electronic (7.8%) versions of scientific journals. A more popular approach is to buy single articles – this solution is used by 13.8% of respondents.

Chart 23. Gaining access to scientific articles



While in the case of articles digital form is the most popular, with books the printed versions are still dominant, either borrowed from libraries (74.9%) or bought (70.8%). Digital versions of books available in repositories and libraries (it is worth noting that they are still much fewer in numbers than printed books) are used by 42.6% and 48.4% of respondents.

Chart 24. Gaining access to scientific books



5.2 Open Access

5.2.1 When did Polish scientists first learn about Open Access?

The notion of OA is not new to our respondents. 41.4% of them first encountered it in 2006–2011, that is, a couple of years after the publication of several documents crucial for the OA movement, such as the Budapest Open Access Initiative (2002), the Berlin Declaration on Open Access to Knowledge in the Sciences and Humanities (2003) and the Bethesda Statement on Open Access Publishing (2003). In 2001–2005 when open models were already developing dynamically, both in Europe and abroad, only 18.1% of the respondents got familiar with the notion. Very few scientists – only 8.1% of the respondents – had an opportunity to encounter this notion when the movement was not yet popular in Europe, that is, before the year 2000.

As can be expected, the period of being familiar with OA correlates with the academic work experience and the age of respondents. Among those who have longest known this notion, there is the greatest number of academics with a professor's title and respondents over 65 years old. Moreover, the older the age group, the greater the percentage of respondents who had learned about OA before the year 2000.

Open Access is a new notion for 14.8% of respondents who have only encountered it in the recent years. 17.6% of the respondents have never encountered the notion.

The most well-grounded knowledge of the OA idea is exhibited by representatives of exact sciences, out of whom 32.5% encountered the notion before 2005. The notion was slower to take root in humanities and social studies, where only 20.5% and 17.4% had known it before 2005. The survey data also shows that the group

familiar with OA for the longest time – the scientists who encountered the term before 2000 – has the lowest percentage of scientists who choose not to place their works in OA (3.7%), and the largest share of those who regularly make their works openly available (15.5%).

5.2.2 Understanding Open Access

The survey participants usually define OA as free of charge access to content via the Internet. Among the respondents who answered the question on how they understand OA, most contended themselves with general statements regarding the availability of content online or via the Internet free of charge. "Free-of-charge access," "free access" and "unlimited access" were terms that often appeared in the answers.

Very few answers made references to payments made by authors in gold OA. A similarly marginal issue is the matter of copyrights, often described in a way that suggests a limited knowledge on the possible ways of content dissemination, as well as the respective rights of the author and the recipient. Incidentally, the terms gratis OA and libre OA can be encountered. It seems that in their definitions of OA the respondents mostly focus on the recipient's perspective, which is emphasised by the presence of terms like: "free of charge access," "immediate access," "access without registration," "opportunity to use," "opportunity to view," etc.

Respondents who, adopting an author's perspective, described OA as a method of sharing scientific content, characterised this phenomenon as publishing on the Internet, sharing content with a wide circle of recipients; some answers also mentioned publication fees. The issue of disseminating scientific works via repositories was almost completely neglected.

5.2.3 Green and gold Open Access

Although the respondents use both Polish and foreign repositories, the terms green and gold OA are mostly unknown – they have only been encountered by 5.3% of respondents. The knowledge of the subject does not depend on age, academic degree or title – gold OA and green OA are terms only familiar to several percent of the surveyed scientists. When divided by areas of knowledge, the answers from humanities are more positive – 12% of respondents have encountered the terms. If we look at the results through publication experience, it seems that among the groups where scientists regularly make their works available in OA, the knowledge of these two models is somewhat higher, reaching a dozen percent. Therefore, regular publishing of one's own work in OA is usually accompanied by more systematic knowledge of the existing solutions.

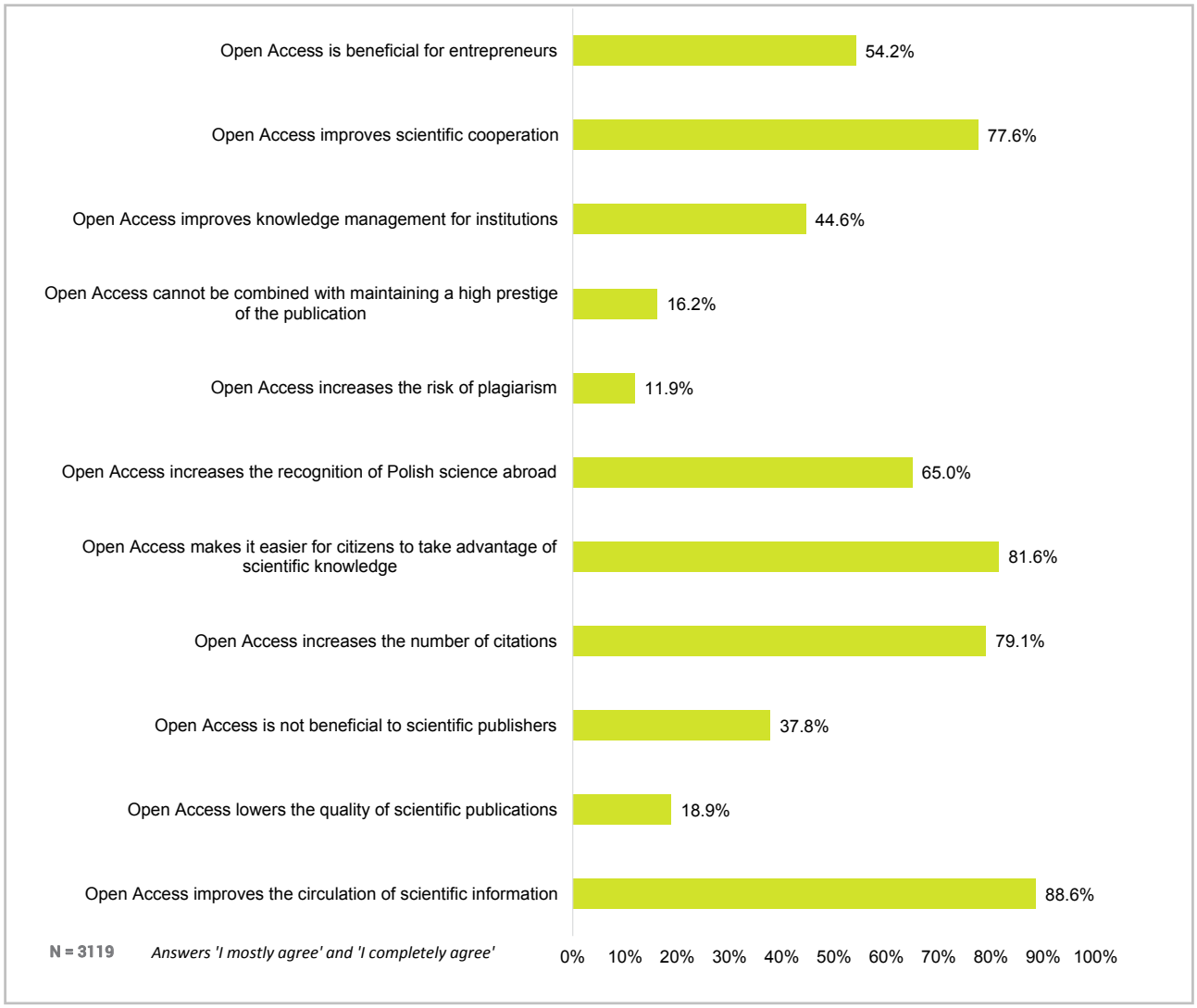
5.2.4 Views on Open Access

In the part devoted to views and perceptions of OA, respondents indicated how much they agree with common opinions on this model. Based on those indications, we are able to draw a picture of mostly positive approach to openness – the respondents agree with the statements on benefits and do not share the concerns. The answers "I mostly agree" and "I completely agree" were considered supportive to claims included in the question. According to this assumption, 88.6% of respondents believe that OA will facilitate the efficiency of scientific information circulation. Respondents also agree that OA will increase the number of citations – this

claim is supported by 79.1% of respondents. 65% believe that OA improves the visibility of Polish science abroad while 77.6% agrees that it facilitates scientific cooperation. The respondents also acknowledge its social role – almost 81.6% agree that with OA citizens will be able to use scientific knowledge more easily.

The claim that OA is disadvantageous to scientific publishers was supported by 37.8% of respondents. An even lesser percentage of them shared the belief that OA cannot be reconciled with a journal's prestige. The question that received the most mixed results was whether OA facilitated knowledge management for institutions, and whether it was favourable to entrepreneurs. In both cases the voice of support and opposition were divided almost equally. 44.6% of respondents agreed that OA facilitated managing knowledge in institutions, while 54.2% thought it was beneficial to entrepreneurs.

Chart 25. Acceptance of statements on Open Access*

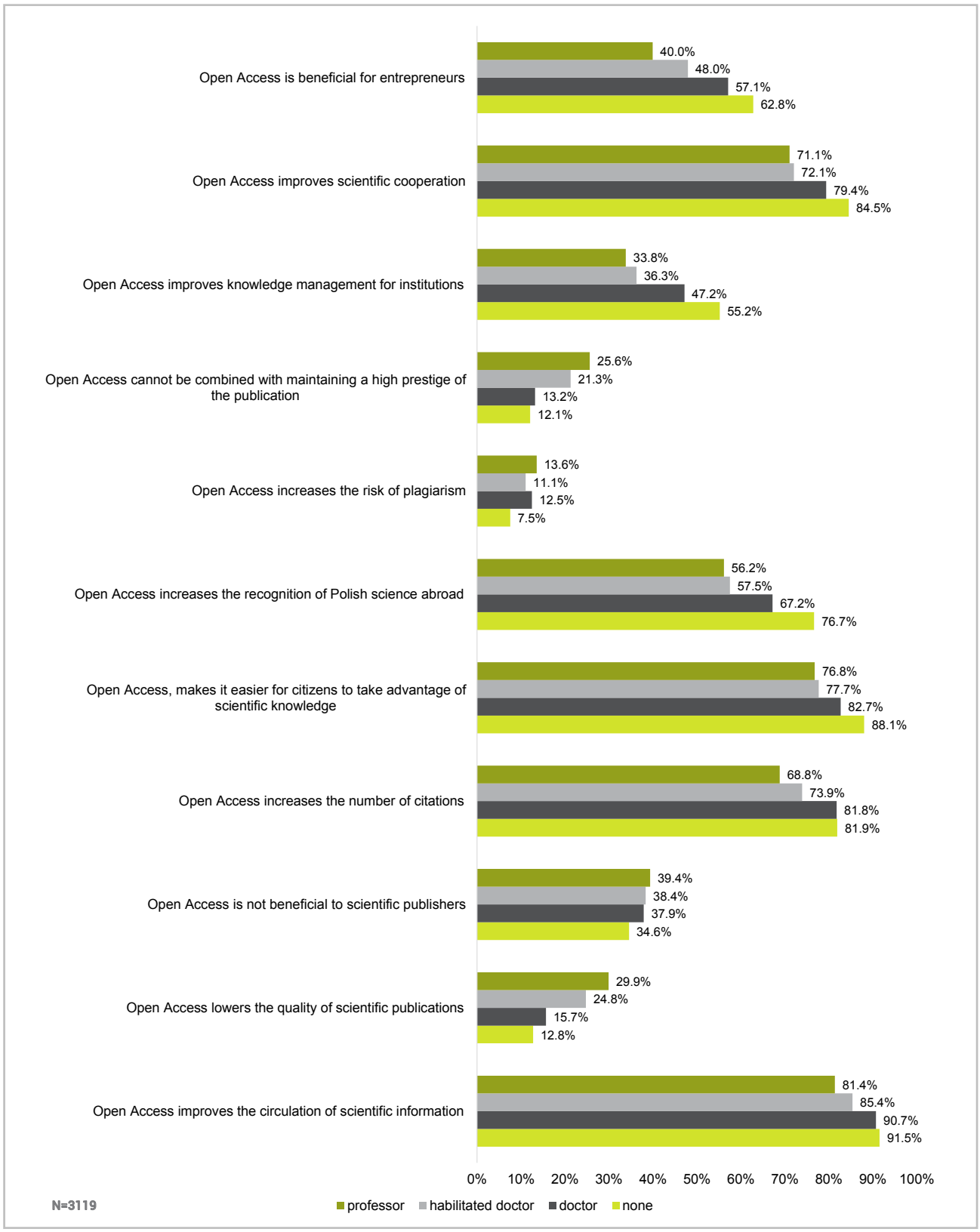


Representatives of social studies, medical and health sciences and humanities tended to agree most with all the above statements on the positive influence of making scientific content openly available, while the same claims garnered the least support among exact sciences representatives. The latter group also has the biggest number of concerns on the influence of OA on publication quality. The claim that OA has a negative impact on quality

was agreed with by 22.3% of respondents from exact sciences, while for social scientists this percentage only amounts to 9.4%. However, researchers working in social studies or humanities are not uncritical enthusiasts of OA. They are more afraid of plagiarism than all the other groups – the increased risk of plagiarism was noticed by 18.5% representatives of humanities and 15.3% of social scientists (answers "I mostly agree" and "I completely agree"). The concerns about increased plagiarism were the lowest for agricultural, forestry and veterinary sciences, where they were expressed by 4.7% of respondents.

The beneficiaries of OA, who regularly make use of articles available in Polish and foreign Open Access journals and repositories, are more likely to agree on the positive influence of OA, at the same time viewing potential dangers as less important. The data also shows considerable differences of opinions depending on the stage of academic career. Both older and more distinguished scientists are more likely to express scepticism.

Chart 26. Acceptance of statements on Open Access according to academic degree/title



5.2.5 Rules for the implementation of Open Access

The respondents were asked to specify how much they agreed with given statements on the rules for the implementation of OA. The greatest support (answers "I mostly agree" and "I completely agree") was given to

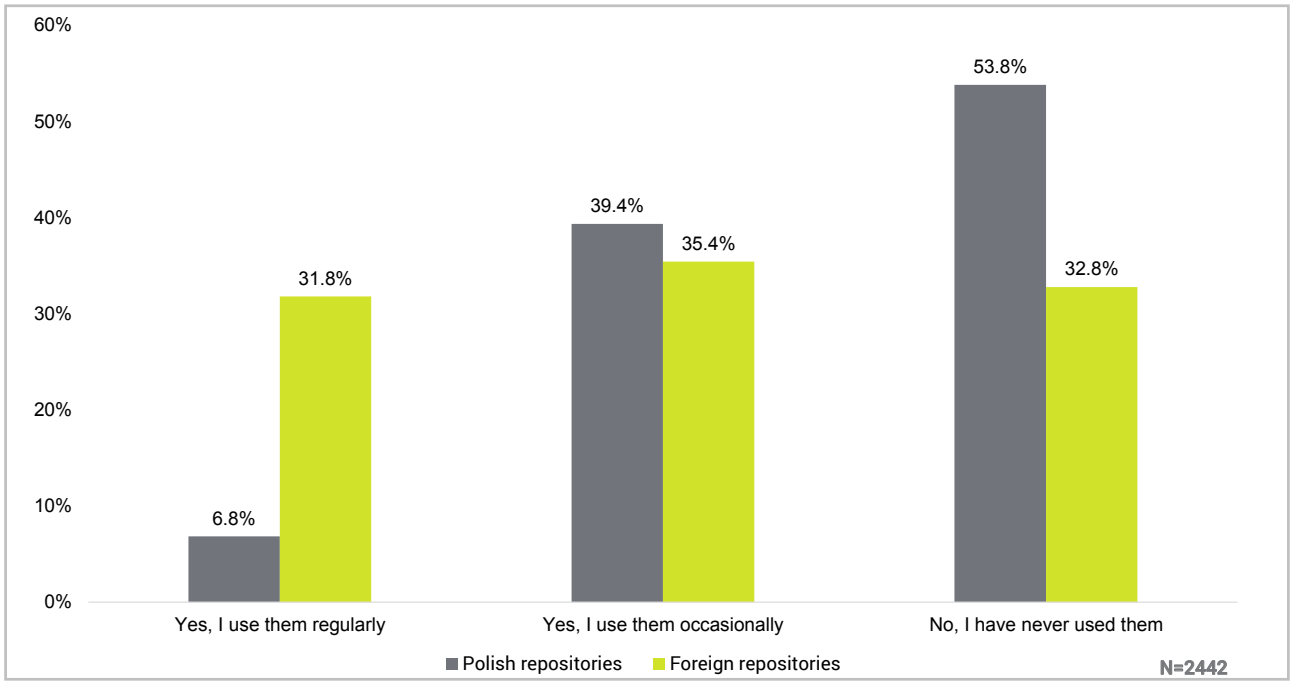
the statement that mandatory OA to scientific journals funded from public sources should be introduced – 77.5% of respondents supported this claim. Publishing the results of all research from public funds in OA was supported by 73.8%. The demand for funding agencies to impose an OA mandate on publications from the projects funded by them was supported by 57.9% of respondents. Including the issue of OA in the evaluation of scientific institutions and scientific journals was supported by 56.1% of respondents. The demand for higher education institutions to oblige their staff to place their works in the institutional repositories garnered more supporters – 62.9%.

The data shows that the acceptance of the last two statements is lower among the respondents with higher academic degree or title. On the other hand, the mandatory OA to doctoral dissertations is most strongly supported by professors and most opposed – by doctors.

5.2.6 Using the content available in Open Access journals and repositories

Foreign repositories are much more popular with Polish scientists than domestic ones. 31.8% of respondents use foreign repositories on a regular basis, while for Polish repositories the number only comes up to 6.8%. The difference can be explained with the well-grounded position of foreign repositories on one hand (especially science repositories), and the small number of Polish repositories on the other. Polish repositories are most often used by humanities researchers (19.8% of respondents) and most rarely by exact sciences researchers (4.6%). As many as 62.1% of exact sciences researchers partaking in the survey have never used Polish repositories, even though they tend to use foreign repositories more than any other surveyed group (38.9%).

Chart 27. Using Polish and foreign repositories



Similarly as with the works in foreign repositories, articles published in foreign OA journals tend to be used more often than articles in Polish OA journals. Foreign OA journals are regularly used by 42.7% of Polish scientists, especially from the medical sciences (63.5% of respondent), agricultural, forestry and veterinary sciences (61.1%) and biological sciences (63.8%). Polish OA journals are used by 20.1% of scientists, mostly from the agricultural, forestry and veterinary sciences (45%), medical sciences (33.9%), social studies (31.7%) and humanities (29.6%).

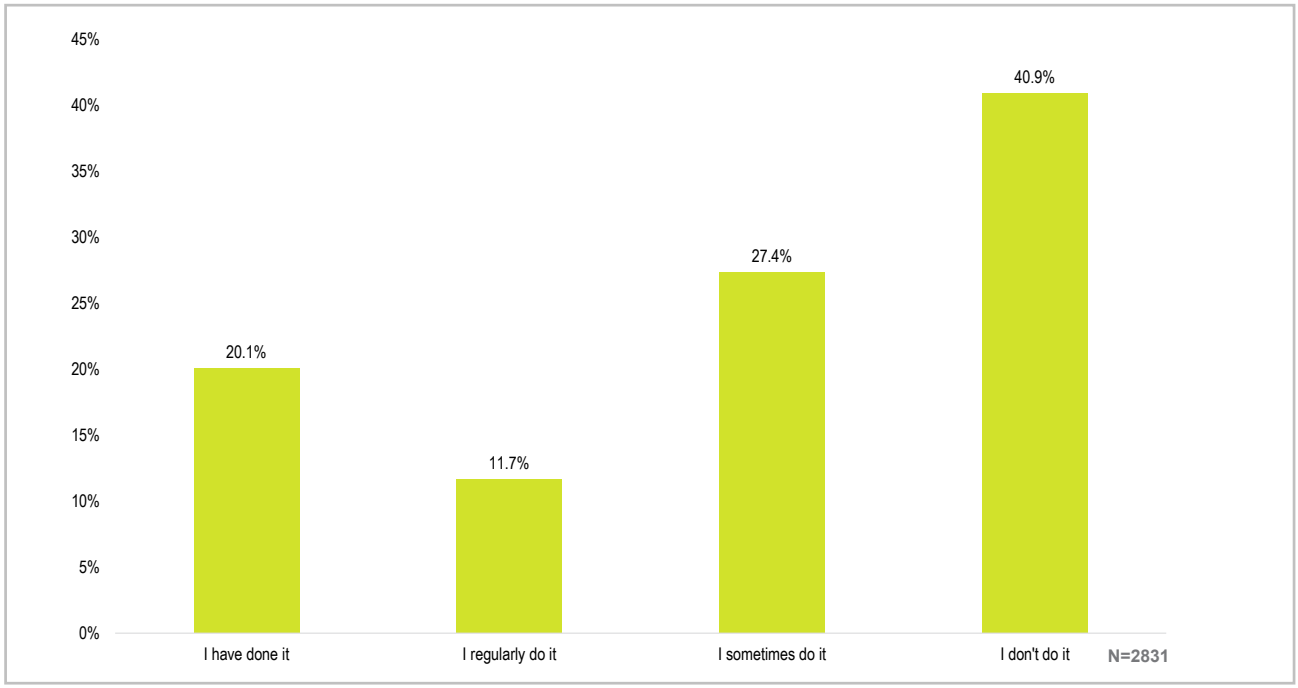
Almost half of the respondent (49.2%) believe that gratis OA (defined in the survey as a free of charge access where user can only use available content under the provision of fair use – similarly to the print copy) is more suited to their needs as recipients. Only 8.2% indicated libre OA (defined in the survey as a free of charge access for the user, who also is authorised to reuse it under free licences) as more suited to their needs. 28.5% of respondents claimed that both forms suited their needs on the same level. Among the gratis OA supporters, there is not much diversity when it comes to division by areas of knowledge, while the libre model is more valued by humanities researchers.

Interestingly enough, respondents answered the question similarly from the perspective of the author of scientific content. Both forms of OA gained a similar number of supporters, also when divided by age, degree or knowledge area.

5.2.7 Making works Open Access

Most of the Polish scientists who partook in the survey were familiar with the practice of making their works OA. 20.1% have made a work (article, book) openly accessible, 27.4% do it sometimes, 11.7% do it regularly. 40.9% do not place their works in OA.

Chart 28. Making works Open Access

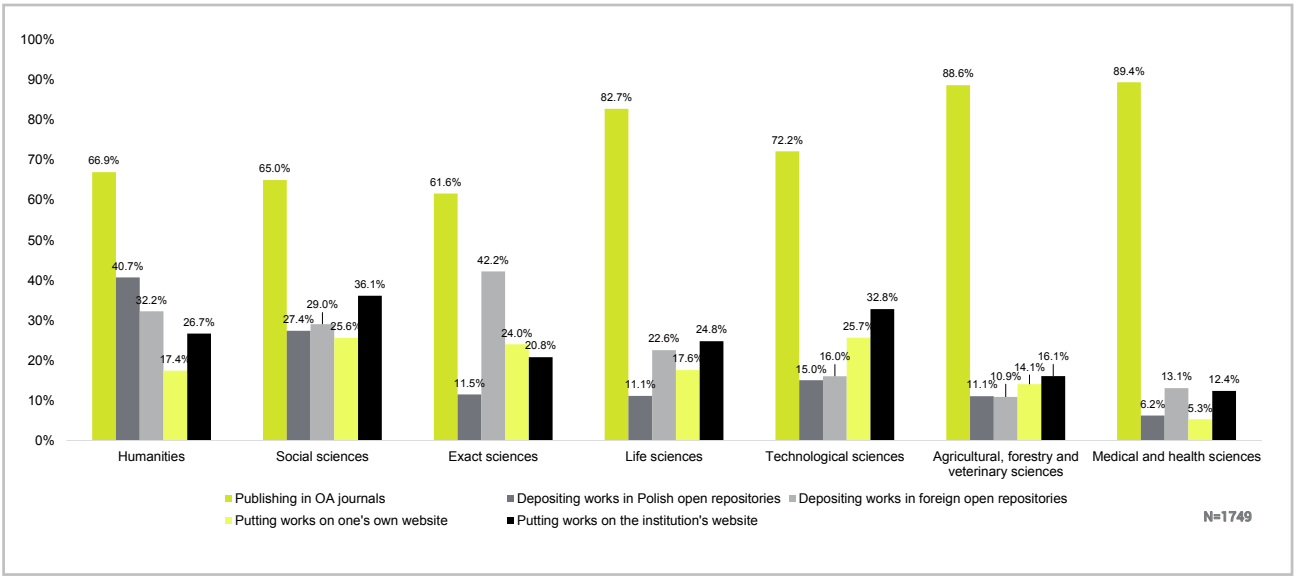


The content made openly accessible by Polish scientists are mostly scientific articles – it's the case of 94.5% of authors who use OA to disseminate their work. 28.3% make conference materials available, 16.5% – books or parts thereof, 11.5% – reports, and 11% – doctoral dissertations. The data on placing articles in OA is similar for all knowledge areas, while for other materials there is some considerable diversity. Books and reports are mostly made OA by researchers dealing with social studies, opening conference materials is popular with technological sciences and doctoral theses – with science.

Scientists who make their works openly accessible mostly use OA journals – 69% choose this way. 30.9% use foreign repositories, while only 17.5% use Polish repositories. A more popular approach is even using the institution's website – 24.3% choose it to disseminate their publications, while 20.8% use their own website.

Open Access journals are preferred by researchers from medical sciences – 89.4% of scientists publishing in OA use it. The humanities researchers, more often than other group, use foreign repositories (42.2%). Social researchers and exact scientists most often prefer to put their works on their own website, while institution's websites are most often used by researchers form social and technological sciences.

Chart 29. Ways of making works Open Access



Chapter 6

Other aspects of Open Science in Poland

6.1 Science blogs

A science blog can be described as a blog run by a scientist or specialist in a given field, written by a single author, and dedicated to the author's area of research, placing more emphasis on scientific, instead of popular elements. The latter allows to distinguish between scientific and popular science blogs, although the line may seem blurred.

A wider understanding of this concept can also be encountered. An example of such approach is Aggregator of Polish Science Blogs (Agregator Polskich Blogów Naukowych), registering 122 websites, including popular science blogs (for instance, kwantowo.pl; Nauka, rzecz ludzka) and vortals (for instance, Archeowieści, Historia i Media).

Currently, there is no complete list of Polish scientific blogs, and using the aforementioned list of the Aggregator of Polish Science Blogs, supplemented with data from web browsers (sometimes Polish scientific blogs are not explicitly described as such, which makes it more difficult to find them), also does not guarantee completeness. For this reason, we limited ourselves to describing scientific blogs based on selected examples.

The form of expression that seems to be most suitable for a blog are reviews and review notes. Blog notes are usually more emotional than articles in scientific journals. Examples of scientists who publish reviews of scientific works on blogs include: Bogusław Śliwerski (pedagogics)[80] and Piotr Napierała (history).[81] We can also point out some typical "review" blogs, whose authors do not reveal their personal information. One example of such a blog is Kompromitacje. Przypadki słabości ludzkich (the author writes under the pen name Ebenezer Rojt), which includes in-depth and critical reviews of scientific works regarding social sciences and humanities. Doktrynalia's Blog includes a number of entries on reviews and polemics appearing in Polish juridical journals. In regard to the last blog, it is worth noting that although reviews and review notes already function in traditional scholarly communication channels, it is difficult to encounter short comments there, so the use of blogs for this purpose definitely enriches the scholarly discourse.

80 http://sliwerski-pedagog.blogspot.com, accessed May 08, 2015.

81 http://piotrnapierala.blogspot.com, accessed May 08, 2015.

"Technical" or "workshop" blogs, even if they are not scientific blogs in the strictest sense, still cast an interesting light on contemporary scholarly communication. One of the examples can be Warsztat Badacza by Emanuel Kulczycki, where the author discusses science evaluation (for example, journals ranking) in detail, or Ecology & Evolution – an information blog by Michał Żmihorski on science in Poland, where users can comment on the reviews received in the course of applying for a grant from the National Science Centre, or an anonymous blog Robię habilitację.

We can also point out some blogs that started as scientific ones, but then went through a transformation. A good example would be Czas Gentelmenów. Blog dla mężczyzn z klasą at first devoted to the history of manhood as a cultural and social construct,[82] currently a popular lifestyle blog.[83]

There is a host of blogs breaking out of the academic niche – hybrids of scientific and expert blogs, an example of which is Social Media Marketing Kultury by Michał Pałasz, counted among the most popular sites of its kind in Poland.[84]

Another group consists of blogs created as less labour-consuming equivalents of traditional websites, like Quo Vadis Kuba?, a blog relaying news on the project funded by National Science Centre.

Summing up, it can be said that while the scientific blogosphere – understood as "blogs of scientists, websites on science, institutional blogs and notes aggregators"[85] – in Poland does develop rather dynamically, there are very few scientific blogs *sensu stricto*. This is probably due to the fact that such blogs have severe competition from websites, where scientists can share their content (Academia.edu, Google Scholar, Mendeley, ResearchGate). In addition, the very characteristics of blogs that make them a strongly personalised medium, are not conductive for the transfer of purely scientific content.

Therefore, even though a group of Polish scientists do keep blogs, the scientific role of such sites is marginal (except in the cases mentioned above). It still does not mean, however, that blogs cannot become a valuable tool of scholarly communication *sensu largo*, as they allow researchers to transgress the confines of the academic world and popularise their works.

6.2 Citizen science

Citizen science, as understood in Poland, involves scientific collaboration between academics and non-academics,[86] sometimes with a specific disclaimer that the term refers to the tradition of inviting "non-specialists"

82 See M. Wilkowski, "'Czas Gentelmanów' jako model bloga historycznego," *Historia i Media* (September 13, 2011), accessed May 23, 2014, http://historiaimedia.org/2011/09/13/czas-gentelmanow-jako-model-bloga-historycznego/.

83 See T. Baran, A. Miotk, *Blogerzy w Polsce 2013. Znajomość – wizerunek – znaczenie*, accessed May 23, 2014, http://pbi.org.pl/aktualnosci/Blogerzy%20w%20Polsce%202013%20%2818kwi13%29.pdf, where it is featured as "Czas dżentelmenów."

84 See Ibidem.

85 W. Babik, "Blogi naukowe narzędziem upowszechniania informacji i wiedzy" (Kraków, 2012): 2, accessed May 23, 2014, http://www.ktime. up.krakow.pl/symp2013/referaty_2013_10/babik.pdf.

86 See P. Szczęsny, "Nauka 2.0: świadome współtworzenie," accessed May 23, 2014, http://www.instytutobywatelski.pl/7365/lupa-instytutu/nauka-2-0-swiadome-wspoltworzenie.

to collect data for scientists,[87] or emphasising the use of Internet[88] in the process. The latter element is an especially important marker for citizen science, because even though academics have been supported by non-academics since the professionalisation of scientific research in the 19th century, it was only the widespread of Internet access that made this cooperation possible on a large scale.

In this report "citizen science" is understood in the sense quoted above, although there are attempts to expand the term – especially in the United States – so that it includes various forms of popularising knowledge, not just activities with scientific value of their own.

From a scientist's point of view, there are two basic advantages to citizen science. First, it allows to relieve researchers from some simple, but time-consuming tasks, and second – it can help to rebuild trust in scientists.[89] In addition, it is an opportunity for non-researchers to get familiar with research methodology, which with younger participants may become a stimulus to choose a career path related to science. Looking at a wider context, such a model of cooperation between scientists and non-scientists is a marker of a functional civil society.

The beginnings of citizen science in Poland was the sky observation project, which began in the summer 2011, when volunteers would submit information on the visibility of stars. In 2011, the website Odkrywcy Planet, a Polish version of the Planet Hunters project, established at Yale University in 2010,[90] was launched. By analysing Kepler light curves, the project's participants are looking for extrasolar planets.

The two organisations particularly active in the field of citizen science are: Polish Scientific Committee on Oceanic Research of the Polish Academy of Sciences and the Institute of Oceanology of the Polish Academy of Sciences, which, along with Province Environment Protection and Water Management Fund (Wojewódzki Fundusz Ochrony Środowiska i Gospodarki Wodnej) in Gdańsk proposed five projects for volunteers under the umbrella name: "Citizen science – learning about our environment, or Citizen science by the sea."

1. Human – a big species of land mammal at the seaside (research questions: what number of people visits the beach, how do they walk along the shore, and how the infrastructure influences those visits?)
2. *Talitrus saltator* – a disappearing species of *amphipod crustacean* (research question: what is the current distribution of the *talitrus saltator* population on the Polish coast?)
3. Three engineer species (research question: what is the current dissipation of rare and protected macrophytes on the Polish coats?)
4. Plastic at the seaside – unknown danger (research question: how much plastic and what kind

87 Cf. P. Szczęsny, *Otwarta nauka* (Toruń, 2013): 19, accessed March 30, 2015, http://repozytorium.uwb.edu.pl/jspui/download/Szczesny_Otwarta_nauka.pdf.

88 "Nauka obywatelska – poznajmy nasze środowisko, czyli 'citizen science' nad morzem," accessed May 23, 2014, http://www.iopan.gda.pl/projects/NaukaObywatelska/.

89 Cf. J.M. Węsławski, "Popularyzacja nauki już nie wystarczy," accessed May 23, 2014, http://pracownia.org.pl/dzikie-zycie-numery-archiwalne,2306,article,5349.

90 S.T. Muzzin, "Citizen Scientists Join Search for Earth-like Planets," accessed May 23, 2014, http://news.yale.edu/2010/12/16/citizen-scientists-join-search-earth-planets.

accumulates on the Polish coast?)

5. Economy and sociology of the beach (research question: what benefits of going to the beach people value the most, how do they choose the place and method of relaxation?)

The Institute of Oceanology of the Polish Academy of Sciences also cooperates with two high schools (I Akademickie Liceum Ogólnokształcące in Gdynia, II Liceum Ogólnokształcące z Oddziałami Dwujęzycznymi im. Adama Mickiewicza in Gdynia) in its pursue of citizen science. In the organism distribution project, the cooperation resulted in several peer-reviewed publications.

The help of volunteers proved indispensable with ornithology research. In the Common Breeding Bird Monitoring Scheme, part of the Bird Monitoring Scheme programme, since the beginning in 2000, the works are only carried out by observers-volunteers. In the first year of the programme, there had only been 95 observers, while in 2009 (tenth season) their number grew to 301.[91] The high qualifications of the amateur observers were much emphasised.[92] Volunteers can also participate in a stork-watching programme in Przygodzice in the Barycz Valley.[93]

Citizen science is also used in the field of history.[94] Volunteers can supplement existing databases, like with Straty osobowe i ofiary represji pod okupacją niemiecką (Human losses and victims of repression under German occupation) initiated by the Institute of National Remembrance and the Ministry of Culture and National Heritage and carried out by the Foundation for Polish-German Reconciliation, or the project Otwarte Zabytki (Open monuments), managed by The Project: Polska Digital Center. There is also an opportunity for volunteers to transcribe documents in the Virtual Transcription Laboratory, prepared by the Poznań Supercomputing and Networking Center (PSNC).

The situation of genealogy, an auxiliary science of history, is quite specific. A number of projects concerning this discipline stems from the initiative of non-scientists, although their findings can later be used for science. In Poland, the examples of such initiatives can be: Database of Archival Indexing System BaSIA, Poznan Project: Poznan region marriage indexing project for 1800–1899 and Geneteka, the database of Polish Genealogy Association (Polskie Towarzystwo Genealogiczne).

The potential of citizen science is huge. For practical reasons, the Polish language should only be used for local/national projects, while for projects on an international scale English should be preferred (which does not prevent researchers from making local language versions, so that non-scientists, without sufficient grasp of English, could partake in the project).

---

91 G. Neubauer et al., *Monitoring ptaków w tym monitoring obszarów specjalnej ochrony ptaków Natura 2000, faza III, lata 2010–2012* (Gdańsk–Warszawa, 2010): 27–28, Accessed May 23, 2014, http://www.monitoringptakow.gios.gov.pl/raporty?file=files/pliki/raporty_faza3/RaportMPP3_etap1_zad4_wiosna2009.pdf.

92 *Podsumowanie sezonu lęgowego Monitoringu Ptaków Polski w 2012 r.* (Marki–Gdańsk–Olsztyn, 2012); 30, accessed May 23, 2014, http://www.monitoringptakow.gios.gov.pl/raporty?file=files/pliki/raporty_faza4/RaportMPP4_etap1_zad2%264_wiosna2012.pdf.

93 P.T. Dolata, *Projekt obserwacji kamerą internetową gniazda bocianów białych „Blisko bocianów"*, http://www.pwg.otop.org.pl/bocian4.php; cf. [GK], "Bociani 'Truman Show'," accessed June 2, 2014, http://polska.newsweek.pl/bociani--truman-show-,58385,1,1.html.

94 See M. Wilkowski, *Wprowadzenie do historii cyfrowej* (Gdańsk, 2013): 67–72, accessed May 23, 2014, http://otworzksiazke.pl/ksiazka/wprowadzenie_do_historii_cyfrowej/.

6.3 Open peer review

In the Polish scientific literature the term "otwarte recenzje" (open peer review) usually refers to a situation when both the author and the reviewer are aware of who the other is.[95] Sometimes another distinction is made, when the above situation is termed a "private open peer review." "Public open peer review" is a situation when readers are included in the discussion of the reviewed text.[96]

In order to avoid terminological misunderstandings, we should distinguish between a **non-confidential peer review** (both the author and the reviewer know who the other is), **open peer review** (third parties can acquaint themselves with the review) and **social peer review** (third parties can get involved in the review process).

Non-confidential reviews are used in procedures of applying for the degrees of doctor and habilitated doctor; it also used to be the standard practice with publishing of monographs and in some scientific journals. Currently, the trend is reverting, mainly due to the position of the Ministry of Science and Higher Education, which recommends a model in which the author(s) and reviewers do not know who the other is (double-blind peer review), and with other approaches requires the reviewer to sign a declaration stating no conflict of interest.[97] Pursuant to Art. 15.3 of the Act of 30 April 2010 on the Principles of Financing Science, the National Science Centre does not disclose the reviewers' names to applicants.

Open peer review only occurs in Poland as part of the procedure of applying for a doctor's and habilitated doctor's degree. According to Art. 13.7 of the Act of 14 March 2003 Law on Academic Degrees and Title and Degrees and Title in the Arts: "The summary of the doctoral thesis and its reviews shall be published on the Internet webpage of the higher education institution or academic unit conducting the doctoral assessment. The summary of the thesis shall be published on the date the board of the unit council adopts the resolution on the acceptance of the doctoral thesis while the reviews shall be published on the date of the delivery thereof by the reviewers. The summary and reviews shall be displayed on the Internet webpage at least until the date the degree of *doctor* is conferred. The requirement of publication on a webpage of the summary and its reviews shall not apply to any such thesis whose subject matter falls under the protection of any relevant official secrets act." According to Art. 36.1 of the Act, The Degrees and Titles Committee is obliged to upload the reviews submitted in the course of the procedures of applying for the degrees of doctor and habilitated doctor, as well as the title of professor. It is worth noting that at least some of the reviews are uploaded with a considerable delay.

Social peer review is the most controversial, as its "openness" effect is rather minor. It moves the beginning of discussion from the moment of publication to the moment of sharing the article with the public, before the

95 *Procedury recenzowania i doboru recenzentów*, ed. J. Protasiewicz, vol. 1, (Warszawa, 2012): 52; A. Marszałek, "Narodowe Centrum Nauki jako instytucja kreująca nową jakość finansowania badań podstawowych w Polsce," *Studia BAS*, no. 3(5) (2013): 192, where the term "jawna recenzja" (non-confidential review) appears.

96 See "Redakcja e-mentor poleca," *E-Mentor. Dwumiesięcznik Szkoły Głównej Handlowej w Warszawie*, accessed May 27, 2014, http://www.e-mentor.edu.pl/artykul/index//15/id/319/part/2.

97 An announcement of the Minister of Science and Higher Education on evaluation mood and criteria from 14 September 2012, art 4 sect. 5, accessed May 23, 2014, http://www.nauka.gov.pl/g2/oryginal/2013_05/e02b66aaeb832c04a2fcfcef5686929c.pdf.

text is accepted for publication. As a rule, such reviews are not used by editors of Polish scientific journals. The comment function on the website of the journal *iNFOTEZY. Internetowy periodyk naukowy poświęcony mediom i nauce o informacji* refers to this idea *expressis verbis*: "The comment function refers to the idea of open peer review."[98]

6.4 Open notebook science

The term "open notebook science," first used by Jean-Claude Bradley, chemistry professor from Drexel University in Philadelphia, describes a model where the researcher not only informs the public about their research results, but presents the whole process of collecting and processing data, as well as publishing. Each stage is recorded or described and available for everyone, usually on a website that acts as an "open notebook", or a blog, or tools based on the wiki solutions.[99]

Such an approach currently plays a much greater role in life sciences and exact sciences than in social sciences or humanities; in Poland it is generally not practiced. It also raises some concerns about the uncontrolled use of data in experimental sciences, making registering a patent impossible, and unnecessary widening of the spectrum of scientific texts in a situation when there is already a flood of peer-reviewed publications.

98 http://www.ujk.edu.pl/infotezy/ojs/index.php/infotezy/pages/view/regulamin, accessed May 27, 2014.

99 E. Kulczycki, "Wykorzystanie mediów społecznościowych przez akademickie uczelnie wyższe w Polsce. Badania w formule otwartego notatnika," in: *Komunikologia.Teoria i praktyka komunikacji*, ed. E. Kulczycki, M. Wendland, (Poznań, 2012): 96, accessed May 27, 2014, http://otworzksiazke.pl/images/ksiazki/komunikologia/komunikologia.pdf.

Summary

The most important element of open science in Poland in 2014 is Open Access to scientific content, while other elements play only a minor part, or are virtually absent. This also applies – in particular – to research data whose role in open science becomes more and more prominent in Europe and all over the world.

Open Access is mostly implemented by publishers of scientific journals, researchers themselves, institutions providing IT solutions and few institutions managing repositories. Almost half of all Polish scientific journals are OA journals. There is a growing popularity of OA practices in the scientific community, and the beliefs on the advantages of openness are taking root. There is a growing and developing OA e-infrastructure. Open repositories are established, although still only on a small scale. These phenomena provide good ground for further implementation of open models, whereas the main challenge is the implementation of solutions – legal, technical, organisational and financial – that would allow to use the full potential of openly available content. This mostly applies to expanding the repository infrastructure and developing optimal use of the infrastructure, allowing for unified access to diverse resources on a national level.

A serious problem, both in the context of international scholarly communication and the European Commission policy, is that Poland lacks institutional OA strategies and policies, both on the government level, and the level of research-funding and scientific institutions. International experience shows that without such strategies and policies an efficient implementation of OA is not possible. At the same time, it appears that due to the shape of Polish science system, developing, adopting and implementing such strategies and policies could help Poland to quickly catch up to international standards.

Bibliography

Artículo 37.Difusión en acceso abierto. Ley 14/2011, de 1 de Junio, de la ciencia, la tecnologia y la inovacion, accessed May 23, 2014, http://recolecta.fecyt.es/sites/default/fi les/contenido/documentos/LEY%20DE%20LA%20CIENCIA_Art_37. pdf.

Babik W., "Blogi naukowe narzędziem upowszechniania informacji i wiedzy" (Kraków, 2012): 2, accessed May 23, 2014, http://www.ktime. up.krakow.pl/symp2013/referaty_2013_10/babik.pdf.

Baran T., and A. Miotk, *Blogerzy w Polsce 2013. Znajomość – wizerunek – znaczenie*, accessed May 23, 2014, http://pbi.org.pl/aktualnosci/Blogerzy%20w%20Polsce%202013%20%2818kwi13%29.pdf (featured as "Czas dżentelmenów").

Barta J., and R. Markiewicz, *Prawo autorskie i prawa pokrewne. Komentarz,* LEX, 2011; M. Bieganowska, "Ochrona autorskoprawna pracowniczych utworów naukowych," *Przegląd Ustawodawstwa Gospodarczego* no. 11 (1998): 21.

Bieganowska M., "Ochrona autorskoprawna pracowniczych utworów naukowych," *Przegląd Ustawodawstwa Gospodarczego* no. 11 (1998): 21.

Bukowski M., "Podmiot prawa autorskiego," *Przegląd Ustawodawstwa Gospodarczego* no. 11 (1994): 9.

Commission's recommendation from 17 July 2012 on access to and preservation of scientific information (2012/417/ UE), accessed May 23, 2014, http://eurlex.europa.eu/LexUriServ/LexUriServ.do?uri=OJ:L:2012:194:0039:0043:EN:PDF.

Consolidated Appropriations Act 2014, Sec. 527.

Dolata P.T., "Projekt obserwacji kamerą internetową gniazda bocianów białych 'Blisko bocianów'," http://www.pwg.otop. org.pl/bocian4.php.

Drozdowska T., "Stosunek pracy a prawa autorskie," *Prawo Spółek* no. 1 (1998): 39.

Gawrysiak P., "Narzędzia wyszukiwawcze reporzytoriów cyfrowych": slide 4, accessed May 23, 2014, http://tinyurl.com/m66ln2u.

[GK], "Bociani 'Truman Show'," accessed June 2, 2014, http://polska.newsweek.pl/bociani--truman- show-,58385,1,1.html.

Gray J., "Launch of the Panton Principles for Open Data in Science and 'Is it Open Data?' Web Service," accessed May 23, 2014, http://blog.okfn.org/2010/02/19/launch-of-the-panton-prin- ciples-for-open-data-in-science.

James L., "Defining Open Data," accessed May 23, 2014, http://blog.okfn.org/2013/10/03/defi ning-open-data/.

Komunikat Ministra Nauki i Szkolnictwa Wyższego z dnia 14 września 2012 r. w sprawie kryteriów i trybu oceny, pkt 4 ust. 5, accessed May 23, 2015, http://www.nauka.gov.pl/g2/oryginal/2013_05/e02b66aaeb832c04a2fcfcef5686929c.pdf.

Kozierski P., and R. Kabaciński, M. Lis, P. Kaczmarek, *Open Access: Analiza zjawiska z punktu widzenia polskiego naukowca* (Poznań–Kraków, 2013): 8, accessed May 23, 2014, https://depot.ceon.pl/bitstream/handle/123456789/2513/Open%20Access.pdf.

Kulczycki E., "Wykorzystanie mediów społecznościowych przez akademickie uczelnie wyższe w Polsce. Badania w formule otwartego notatnika," in: *Komunikologia. Teoria i praktyka komunikacji*, eds. E. Kulczycki, M. Wendland (Poznań, 2012): 96, accessed May 27, 2014, http://otworzksiazke.pl/images/ksiazki/komunikologia/komunikologia.pdf.

Ley 26899, Creación de Repositorios Digitales Institucionales de Acceso Abierto, Propios o Compartidos, accessed May 23, 2014, http://repositorios.mincyt.gob.ar/recursos.php.

Marszałek A., "Narodowe Centrum Nauki jako instytucja kreująca nową jakość finansowania badań podstawowych w Polsce," *Studia BAS*, no. 3(5) (2013): 192.

Minister Kudrycka o efektach reform i priorytetach resortu [Minister Barbara Kudrycka on the reforms' results and Department's priorities], accessed 5 May, 2014, http://www.nauka.gov.pl/aktualnosci-ministerstwo/minister-kudrycka-o-efektach-reform-i-priorytetach-resortu.html.

Muzzin S.T., "Citizen Scientists Join Search for Earth-like Planets," accessed May 23, 2014, http://news.yale.edu/2010/12/16/citizen-scientists-join-search-earth-planets.

Nahotko M., "Standardy opisu fotografi i filmów w Internecie," accessed March 31, 2014, http://www.slideshare.net/MarekN/metadane-dla-fotografi i-i-fi lmw.

Narayanan A., and V. Shmatikov, "Robust De-anonymization of Large Sparse Datasets," accessed May 23, 2014, http://www. cs.utexas.edu/~shmat/shmat_oak08netflix.pdf.

"Nauka obywatelska – poznajmy nasze środowisko, czyli 'citizen science' nad morzem," accessed May 23, 2014, http://www.iopan.gda.pl/projects/NaukaObywatelska/.

Neubauer G. et al., *Monitoring ptaków w tym monitoring obszarów specjalnej ochrony ptaków Natura 2000, faza III, lata 2010–2012* (Gdańsk–Warszawa, 2010): 27–28, accessed May 23, 2014, http://www.monitoringptakow.gios.gov.pl/ raporty?fi le=fi les/pliki/raporty_faza3/RaportMPP3_etap1_zad4_wiosna2009.pdf.

Niezgódka M. et al., *Wdrożenie i promocja otwartego dostępu do treści naukowych i edukacyjnych. Praktyki światowe a specyfi ka polska. Przewidywane koszty, narzędzia, zalety i wady*. (Warszawa: ICM UW, 2011) accessed March 24, 2015, http://otwartanauka.pl/images/PDFs/ekspertyza_oa_icm.pdf.

Płoszajski G., "Standardy digitalizacji i repozytoria cyfrowe," accessed May 23, 2014, http://www.nina.gov.pl/docs/digitalizacjaplikidopobrania/

Podsumowanie sezonu lęgowego Monitoringu Ptaków Polski w 2012 r. (Marki–Gdańsk–Olsztyn, 2012): 30, accessed May 23, 2014, http://www.monitoringptakow.gios.gov.pl/raporty?fı le=fı les/pliki/raporty_faza4/RaportMPP4_etap1_ zad2%264_wiosna2012.pdf.

Procedury recenzowania i doboru recenzentów, ed. J. Protasiewicz, vol. 1, (Warszawa, 2012): 52.

Program Operacyjny Inteligentny Rozwój, 2014–2020 [Operational Programme Intelligent Development], accessed March 26, 2015, http://www.mir.gov.pl/fundusze/Fundusze_Europejskie_2014_2020/Documents/POIR_do_KE_10012014.pdf.

Regulation (EU) No 1290/2013 of the European Parliament and of the Council of 11 December 2013 laying down the rules for participation and dissemination in "Horizon 2020 – the Framework Programme for Research and Innovation (2014–2020)" and repealing Regulation (EC) No 1906/2006, accessed April 15, 2015, http://inea.ec.europa.eu/download/legal_framework/regulation_12912013_establishing_h2020.pdf.

Rozkosz E., "Open Journal Systems – wartość dodana czasopisma." *Biuletyn EBIB*, no. 4 (149) (2014), accessed May 23, 2014, http://open.ebib.pl/ojs/index.php/ebib/article/view/246/419.

Rozporządzenie Ministra Nauki i Szkolnictwa Wyższego z dnia 13 lipca 2012 r. w sprawie kryteriów i trybu przyznawania kategorii naukowej jednostkom naukowym, accessed May 27, 2015, http://isap.sejm.gov.pl/DetailsServlet?id=W DU20120000877.

Siewicz K., *Otwarty dostęp do publikacji naukowych. Kwestie prawne* [Open Access to scientific publiactions. Legal issues] (Warszawa, 2012): 13, accessed May 23, 2014, http://ceon.pl/pl/otwarta-nauka/kwestie-prawne.

Siewicz K., *Prawne możliwości wprowadzenia otwartego mandatu wobec publikacji naukowych* [Legal options for

introducing open mandate to scientifi c publications], accessd May 23, 2014, http://ceon.pl/images/dspace/ceon-memo- randum-otwarty-mandat.pdf.

Stanowisko Prezydium KRASP i Prezydium PAN z dnia 5 lipca 2013 r. w sprawie zasad otwartego dostępu do treści publikacji naukowych i edukacyjnych [Joint declaration of CRASP and PAS from 5 July 2013 on Open Access to scientific and educational publications], accessed May 23, 2014, http://www.krasp.org.pl/pliki/992d99235fb877473dce4fc03fbc4696.pdf.

Strategia Rozwoju Nauki w Polsce do roku 2015 [Science Strategy in Poland until 2015](Warszawa: MNiSW, 2008) accessed July 10, 2014, http://www.bip.nauka. gov.pl/g2/oryginal/2013_05/77d8b666cc1470d4ab1970127bf475a6.pdf.

Szczęsny P., "Nauka 2.0: świadome współtworzenie," accessed May 23, 2014, http://www.instytutobywatelski.pl/7365/lupa-instytutu/nauka-2-0-swiadome-wspoltworzenie.

Szczęsny P., *Otwarta nauka, czyli dobre praktyki uczonych* (Toruń, 2013): 14–16, http://http://kpbc.umk.pl/Content/81340/Szczesny_Otwarta_nauka.pdf.

Wałek A., "Repozytorium Wiedzy Politechniki Wrocławskiej na potrzeby Innowacyjnej Gospodarki – wizje i cele projektu", 2013, accessed May 23, 2014, http://prezi.com/qzbvw4hcasbx/repozytorium-wiedzy-politechniki-wrocawskiej/.

Węsławski J.M., "Popularyzacja nauki już nie wystarczy," accessed May 23, 2014, http://pracownia.org.pl/dzikie-zycie-numery-archiwalne,2306,article,5349.

"What is open data?," accessed May 23, 2014, http://theodi.org/guides/what-open-data.

Wilkowski M., "'Czas Gentelmanów' jako model bloga historycznego," *Historia i Media* (September 13, 2011), accessed May 23, 2014.

M. Wilkowski M., *Wprowadzenie do historii cyfrowej* (Gdańsk, 2013), accessed May 23, 2014, http://otworzksiazke.pl/ksiazka/wprowadzenie_do_historii_cyfrowej/.

Appendix

List of provisions of intellectual property terms of universities with regard to Open Access

No.	University name	Available on	Key provisions affecting Open Access	Comments
1	Jagiellonian University	http://www.uj.edu.pl/documents/1333504/3092436/2007_regulamin_wlasnosci_intelektualnej_UJ.pdf	§ 9. Scientific works (publication right) 1. Employees may publish scientific works under a contract with a third party or disseminate it otherwise, subject to the following provisions. 2. However, publication of works enumerated in § 8.3 [computer programs, databases, e-learning materials, journals of research (if they feature a scientific work)] is subject to the right of first refusal of the University. The right terminates if a publishing contract is not concluded with the author within 6 months from the delivery of the work, or if the work is not published within 2 years from its acceptance. The contract specifies remuneration due to the author. (...) 4. Employees shall observe to the rules of financing publications and to the procedure of commissioning publishing services by departments of Jagiellonian University specified in separate internal regulations binding at the Jagiellonian University.	• Waiver of priority apart from special types of scientific works. • Open mandate can be ordered with a separate decision, provided it is not contrary to the terms and conditions (e.g., by rules of financing and contracting publishing services). • Authors may place their works in open access on their own (unless publishing contracts provide to the contrary).
2	University of Warsaw	http://monitor.uw.edu.pl/Lists/Uchway/Attachments/297/M.2014.20.Obw.2.pdf	§ 5 and § 5a 3. Author may publish or otherwise disseminate a scientific work under a contract with a third party provided that the disclosure of such a work does not deprive other employee›s creative results of legal protection that the University is entitled to under these Rules. Author shall present full name of the University with his/her name.	• Waiver of priority in consideration of obligation to attribute affiliation. • Open mandate can be ordered with a separate decision, provided it is not contrary to the terms and conditions. • Authors may place their works in open access on their own (unless publishing contracts provide to the contrary).
3	Adam Mickiewicz University in Poznań	Terms and conditions are under preparation	—	—
4	Warsaw University of Technology	http://www.bip.pw.edu.pl/content/download/22598/210393/file/u491.pdf	§ 5 Management of copyrights 1. Right to publish a work of authorship (record and copy – production of copies using a specific technology, including printing, reprography, magnetic recording and digital technology) belongs to the Author, unless an individual contract specifies otherwise. [The right] is subject to invoking the full name of the Department, and in case of theses also to indicating the promotor. If the work is a part of a collective work, its publication is subject to consent of coauthors. 2. Author of a work of authorship shall observe respective provisions of the School regulating central evidencing, archiving and repository of works of Employees, Students, and Department of the School.	• Waiver of priority in consideration of obligation to attribute affiliation. • Open mandate subject to rules of the central inventory system and repository - http://www.bg.pw.edu.pl/dane/biblprawo/20121121_Zasady_ewidencji_uchwala.pdf • Current rules provide for: - compulsory gratis open access of works used for granting scientific degree or title, subject to restrictions that follow from publishing or financing contracts. - other works subject to negotiations with authors and within boundaries set in publishing contracts; - access in open Internet as a default: „restrictions in access apply to works archived in REPO PW, if a publishing or financing contract limits authors or School's right to make the work available".

No.	University name	Available on	Key provisions affecting Open Access	Comments
5	AGH University of Science and Technology in Kraków	http://www.imir.agh.edu.pl/modules/media/dokumenty_Regulamin_ochrony_korzystania_oraz_komercjalizacji_wlasnosci_intelektualnej_w_AGH.pdf	4.4.3 Copyrights to doctoral and postdoctoral theses and other publications of scientific nature remain with their authors, while the results of research works contained in these works belong to AGH. The publication is subject to the right of first refusal of AGH.	• Priority under art. 14 of Copyright Act, no rules for exercising the priority. • Open mandate can be ordered with a separate decision, specifying rules for exercising the priority.
6	The Wrocław University of Technology	—	§ 4 Rules of publication of scientific works 1. The School suspends execution of the right of first refusal to publications of scientific works made for hire (following from art. 14.1 of the Copyright Act) until further notice. The Author publishing outside of the School shall present full name of the School together with the name of the author. 2. In justified cases, the School shall execute its right of first refusal to publication of scientific works. It may follow a justified application of the executive manager of the department where the Author is employed. In such a case, the publication is made under conditions agreed between the Author and the School, which shall also specify rules for the remuneration of the Author. 3. In case a scientific work of an employee is published in the School›s own publications, the dissemination of the work is subject to individual publishing contract concluded between the School and the author, generally not longer than within 6 months from the delivery of the work. The Contract should specify rules for the remuneration of the Author.	• Priority exercised only in individual (justified) cases. • Open mandate can be ordered with a separate decision, provided it is not contrary to the terms and conditions, e.g., by specifying rules of exercising priority in „justified" cases, or by setting a standard form publishing contract of internal publishers. • Authors may place their works in open access on their own (unless publishing contracts provide to the contrary).
7	University of Wrocław	http://bip.biuletyn.info.pl/php/pobierz.php3?bip=bip_uniwr&id_dzi=15&id_zal=6340&id_dok=5056&nazwa_pliku=Uchwa-a-Nr-4-2013-Senatu-UWr-z-dnia-30.01.2013-r.-w-sprawie-regulaminu-korzystania-z-wynik-w-pracy-intelektualnej-powsta-ej-w-Uniwersytecie-Wroc-awskim.pdf	§ 64 Employees may publish scientific works under a contract with a third party or disseminate them otherwise, subject to the right of first refusal of the University. The right terminates if the contract with the author is not concluded within 6 months from the delivery of the work to the Prorector responsible for Research and International Cooperation, or if the School does not communicate its intent to publish the scientific work in its own publications. In such a case, if the author considers publication of the work at a specialized publisher the right of first refusal shall be considered as performed by placing the full name of the School by the name of the author.	• Priority retained. • Open mandate can be ordered with a separate decision, provided it is not contrary to the terms and conditions. • Authors may place their works in open access on their own (unless publishing contracts provide to the contrary).

No.	University name	Available on	Key provisions affecting Open Access	Comments
8	Poznan University of Medical Sciences	Terms and conditions are under preparation	—	—
9	Nicolaus Copernicus University in Toruń	—	§ 8 Provisions on copyrights... 3. Authors may publish or otherwise disseminate scientific works under a contract with third parties or individually (in particular by depositing the work in the UMK Repository or UMK Educational Portal) if the disclosure of such a work and research results contained in it does not deprive other employee›s intellectual goods of legal protection (or does not prevent from obtaining such a protection) that the UMK is entitled to under these Rules. Author shall present full name of the University with his/her name.	• Waiver of priority in consideration of obligation to attribute affiliation. • Open mandate can be ordered with a separate decision, provided it is not contrary to the terms and conditions. • Additional order establishing UMK Journal Platform, possibility of publication under CC-BY-ND 3.0.
10	Warsaw School of Economics	http://bip.sgh.waw.pl/pl/Documents/US_nr_76_z_27_marca_2013_Regulamin_prawa_autorskie_zal.pdf	§ 5 Rights to works made for hire 5. Unless the labour contract provides otherwise, SGH has the right of first refusal to the publication of a work made for hire by an employee. Author is entitled to remuneration. The right terminates if a publishing contract is not concluded with the author within 6 months from the delivery of the work or if the work is not publisher within 2 years after its acceptance.	• Statutory priority rules copied to terms (priority retained). • Open mandate can be ordered with a separate decision specifying rules of exercising priority. • Authors may place their works in open access on their own (unless publishing or university contracts provide to the contrary).
11	Medical University of Warsaw	http://www.wum.edu.pl/files/dokumenty/zarzadzenia-rektora/2009/zarzadzenie_rektora_64A-2009_zalacznik.pdf	No regulation	• Priority under art. 14 retained, no rules for exercising the priority. • Open mandate can be ordered with a separate decision specifying rules of exercising priorit.
12	Medical University of Gdańsk	—	Par. 6 GUMed does not acquire rights to scientific works with the exception of subsection 2. Works that may be subject to acquisition of rights by GUMed under subsection 1 are in particular: computer programs, databases, e-learning materials, journals of research, also if they feature a scientific work.	• Priority under art. 14 retained, no rules for exercising the priority. • Open mandate can be ordered with a separate decision specifying rules of exercising priority.

No.	University name	Available on	Key provisions affecting Open Access	Comments
13	Łódź University of Technology	Uchwała Nr 2/2013 z dn. 30 stycznia 2013 r. REGULAMIN zarządzania prawami własności intelektualnej oraz zasad komercjalizacji wyników badań naukowych i prac rozwojowych w Politechnice Łódzkiej. [Resolution No. 2/2013 dated 30 January 2013 Rules of management of intellectual property rights and commercialization of results of research and development in Łodź Technical University]	No regulation in the Rules; attached to the rules is a standard-form publishing contract concluded upon application by an academic teacher holding classes or promotor of a thesis. Under the contract, the school waives its right of first refusal as specified in art. 14 and acquires copyrights on widely specified fields of endeavor.	• Open mandate can be ordered with a separate decision specifying rules of exercising priority or rules of exercising rights acquired under standard form contract.
14	University of Gdańsk	http://www.ug.edu.pl/pl/administracja/_upload/akty_normatywne/1851/files/61u-11zal.pdf	§ 9 Copyrights 1. At the moment of acceptance of a work, the University acquires copyrights to the work made for hire in the scope resulting from the purpose of the employment contract and mutual intent of the parties. (...) 2. Works that may be subject to acquisition or rights by the University are in particular: 1) computer programs 2) databases 3) journals of research 4) educational materials (e.g. textbooks, scripts, journals, e-learning materials, syllabuses). § 10 Right of publication 1. Employees may publish works under contracts with third parties or otherwise disseminate them, subject to the following clauses. (...) 2. With regard to works enumerated in § 9 the University holds the right of first refusal. The right is executed by managing directors of respective departments within 14 days from the application. Failure to act constitutes waiver of the right of first refusal.	• Unclear regulation, different interpretations may apply. The university in one provision acquires copyrights, in the other – only priority. • No open mandate, introduction of open mandate would require a uniform policy for exercising priority right, or amending the terms and conditions. .
15	Kozminski University	No data	—	—
16	Medical University of Lodz	http://www.umed.pl/pl/doc/Regulamin_wlasnosci_intelektualnej_i_ochrony_praw.pdf	§ 9 Scientific works (publication right) 1. Employees may publish scientific works under a contract with a third party or otherwise disseminate them, subject to the following clauses. 2. However, with regard to publication of works specified in § 8.3 [computer programs, databases, e-learning materials, journals of research] the University holds the right of first refusal.	• Waiver of priority apart from special types of scientific works. • open mandate can be ordered with a separate decision, provided it is not contrary to the terms and conditions. • authors may place their works in open access on their own (unless publishing or university contracts provide to the contrary).

No.	University name	Available on	Key provisions affecting Open Access	Comments
17	Wroclaw Medical University	http://www.citt.am.wroc.pl/images/CITT/Regulamin%20korzystania%20z%20wynik%C3%B3w%20pracy%20intelektualnej%20w%20Akademii%20Medycznej.doc	§5 1. Academy suspends, until further notice, the execution of the right of first refusal that it holds towards works made for hire (under art. 14.1 of the Copyright Act). The Author publishing outside of the Academia shall place the full name of the Academy by the name of the Author. 2. In case the scientific work of an employee is published in the Academy›s own publications, the dissemination of the work is made under conditions specified in an individual publishing contract, not later than within 6 months from the delivery of the work by the Author. The contract shall specify rules for remunerating the Author. 3. If the publisher to whom the Author applies for the publication conditions the publication on the transfer of all copyrights, the Author shall obtain consent of any other right owners for the transfer. The above provision does not apply to publications in internationally-circulated journals and in conference materials with regard to the Academy›s rights.	• Explicit suspension of priority in consideration of obligation to attribute affiliation. • Open mandate can be ordered with a separate decision, provided it is not contrary to the terms and conditions, e.g., within rules of acceptance of works by university press. • Authors may place their works in open access on their own (unless publishing or university contracts provide to the contrary).
18	Silesian University of Technology	http://www.polsl.pl/Jednostki/RR10/Lists/Aktualnosci/Attachments/17/Z2P11-1112.pdf	§ 5 2. Copyrights to works made for hire, in particular doctoral and postdoctoral theses, monographes, and scientific articles belong to the author. (...) 5. The School has the right of first refusal to publication of scientific works referred to in subsection 2. The right does not apply to articles that do not exceed 5 publishing sheets.	• Priority right exercised through an open mandate introduced by the Rector (http://repolis.bg.polsl.pl/dlibra/text?id=Info_decree), which allows to publish in a journal of choice in consideration of depositing in institutional repository.
19	Medical University of Bialystok	http://www.umb.edu.pl/photo/pliki/bowitt/pliki/regulamin_zarz_prawami_autorskimi.pdf	§ 6.7 Public availability of any scientific work in any manner, including conferences, congresses, seminars, convents of scientific nature, with the reservation of subsection 8 requires presentation of the full name of the School, apart from the names of the Authors.	• Waiver of priority apart in consideration of obligation to attribute affiliation. • Open mandate can be ordered with a separate decision, provided it is not contrary to the terms and conditions. • Authors may place their works in open access on their own (unless publishing or university contracts provide to the contrary).

No.	University name	Available on	Key provisions affecting Open Access	Comments
20	University of Silesia	—	§ 4 Specific provisions concerning works (...) 3. Copyrights to works made for hire belong to the author, subject to the following exceptions: 1) University holds – under conditions specified in art. 14 of the Copyright Act the right of first refusal to the publication of such a work; the decision is made by the direct supervisor, immediately after delivery of the work by the author 2) University may – without separate remuneration for the author – use the scientific material contained in the scientific work and to disseminate the work to third parties if it follows from the agreed purpose of the work or was concluded in the contract. (...) 6. If University wishes to execute its right of first refusal to the publication of the scientific work, the publication and dissemination is made under conditions specified in the publishing contract made between the University and the author of the scientific work.	• Priority retained. • Open mandate can be ordered with a separate decision specifying rules of exercising priority, or by setting a standard form publishing contract. • Open access possible by exercising priority in individual decisions of supervisors.