EUA
European University Association

OPEN ACCESS

2015-2016 EUA SURVEY

RESULTS

By Rita Morais, Julian Bauer
and Lidia Borrell-Damian

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1. Preface

EUA has been committed to open access for over ten years. Since 2014, we have developed a set of concerted initiatives in this increasingly important area. Our recent work on open science is designed to support universities and develop relevant higher education and research policy at national and European level.

The European Union and several Member States have expressed considerable ambition for open science. In this context, EUA has conducted surveys and adopted policy positions supporting open access to research outcomes under the guidance of a working group of experts from over 20 European countries (EUA Expert Group on Science 2.0/Open Science). The Expert Group covers a wide range of topics in the EU Digital Agenda and open science including: copyright, negotiations with publishers and linkages with Open Access, publication models, evaluation and impact on research careers, text and data mining, open access to research data, data protection, etc.

This year sees the publication of the second EUA Open Access Survey for European universities. Conducted between the end of 2015 and early 2016, it received 169 responses (the first wave conducted in 2014-2015 received 106 responses). The results give a clear idea of institutional policies and researcher behaviour regarding open access to research results: the prevalence of incentive policies on open access; the creation of open repositories, at institutional level or shared among several institutions, which are not yet widely adopted; the need for awareness raising activities on the benefits of open access and on authors' rights vis-à-vis publishers, particularly for researchers; and weak national regulations, especially when it comes to the length of embargo periods.

It is interesting to note that the percentages from the 2015-16 results are similar to those of the 2014-2015 survey – this indicates that Open Access develops in absolute numbers. The response rate for the 2016-2017 EUA Open Access Survey (currently under analysis) has more than doubled. Increasing response rates will give a more reliable comprehensive view of open access policies and practices at European universities.

The inclusion of questions about the management of and access to research data is an important aspect of the 2015-2016 survey. While the results are more qualitative than quantitative, they do indicate increasing awareness of this topic in the university community, partially driven by European Commission initiatives.

I am confident that this series will assist Europe's academic leaders, researchers and librarians. I would like to warmly thank the EUA Secretariat: Lidia Borrell-Damian, Rita Morais and Julian Bauer, for their work.

Prof Jean-Pierre Finance

Chair of the EUA Expert Group on Science 2.0/Open Science

2. Introduction

Open Science is changing critically the way scientific research is being conducted, accessed and used both by scientists and society at large. The rapid development of Open Science is generating new and alternative ways for scientists to perform, publish and disseminate their research. The publication of research outcomes in digital formats is providing scientists and other stakeholders in research and innovation with enhanced opportunities to increase the visibility of, and widen access to, scientific articles. This facilitates developments towards Open Access (OA) to research publications, a phenomenon which has received increased attention from the academic community, publishers, research funders, governments and even the general public over the past years.

The European University Association (EUA) has been monitoring developments in the area of Open Science, in particular Open Access to research publications, from an institutional perspective, since 2007. In early 2015, in the context of an increasing complexity and extensive consequences for universities of Open Science, and with a view to supporting institutions across the wide range of issues related to the EU Digital Agenda, EUA set up an Expert Group on Science 2.0/Open Science. The group has built on EUA's previous activities in the area of Open Access, namely the recommendations on Open Access (2008), the work of the Task Force on Open Access (2012), the briefing paper on Open Access to research publications (2014) and EUA's Open Access checklist for universities (2015).

A major outcome of the work of the Expert Group on Science 2.0/Open Science has been the development of the EUA Open Access Roadmap for Research Publications, published in February 2016. This document is intended as a contribution to facilitate universities' transition towards an innovative, fair and sustainable publishing system. It outlines several objectives and priority actions, including a mapping exercise of the European Open Access landscape and the monitoring of institutional Open Access policies.

In 2014, EUA developed a survey addressed to its institutional members, focusing on the development and degree of implementation of institutional policies on Open Access. The results of this survey were published in EUA's Open Access checklist for universities. In 2015, the Expert Group on Science 2.0/Open Science decided to continue this important initiative. The group revised the questions included in the survey and added a new section focusing on Open Access to research data, an increasingly important area for European universities and for policy-making at national and European levels. It is the intention of EUA to conduct the Open Access Survey on a yearly basis, in order to identify major trends and developments across Europe.

The outcomes of the yearly EUA Open Access Survey have served, and will continue to serve, as an important source of evidence to inform EUA's policy work in the area of Open Science. The outcomes of the survey have, for example, served as an input to the EUA Open Access Roadmap for Research Publications and, in the future, will also be used as a basis for the development of standards and guidelines for European universities.

Finally, it is also worth mentioning that the EUA surveys on Open Access developed in 2014 and 2015 have mainly focused on green Open Access, although some questions also addressed gold Open Access[1].

3. Methodology and participants

Survey conducted in 2015/2016

The questionnaire on Open Access (2015/2016) included 16 questions grouped into three main sections:

• data on the institution and the respondent;

• data on institutional policies and strategies in the area of Open Access to research publications;

• data on Open Access to research data.

The survey included both open- and closed-ended questions, covering topics such as the characteristics of institutional policies and infrastructure on Open Access, level of awareness of different Open Access initiatives, drivers and barriers to Open Access and potential courses of action.

The section on Open Access to research data was of an exploratory nature and therefore most questions were open-ended.

The survey was open from 30 October 2015 until 8 January 2016. Only one response per institution was accepted.

The analysis presented in this report is based on the responses of 169 institutions from 33 European countries[2]. The geographical distribution of responses is presented in Figure 1.

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1   In the EUA Open Access Survey (2015), the following definitions have been used: open access repository (often referred to as the "green route/green open access") includes an institutional repository for the university, a shared repository for a discipline (e.g. arXiv for physics and other quantitative disciplines, RePEc for economics, PubMed Central (PMC) for health sciences), and other forms of open access repository (e.g. shared repositories among different institutions, national repositories). Publishing an open access article in a journal, often referred to as the gold route/gold open access, includes the following situations: i) a fully-open access journal, including open access journals requiring author payments (often referred to as 'Article Processing Charges', APCs) and open access journals not requiring author payments; ii) a subscription journal which allows individual articles to be made open access on payment of a fee, which is often referred to as the "hybrid route" or "hybrid journals" (e.g. Springer Open Choice).

2   Four responses were excluded from the analysis as participants did not identify their country or institution.

Figure 1. Number of respondent institutions per country
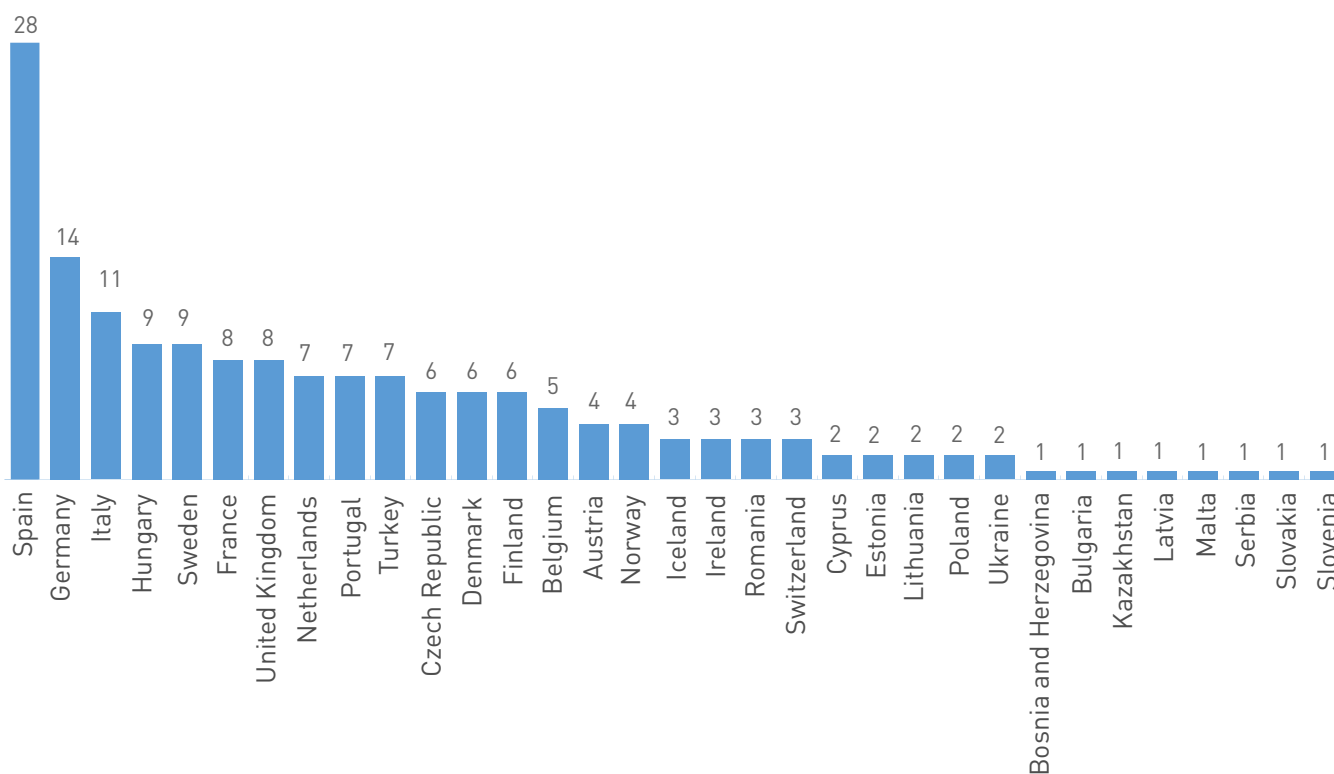
Survey conducted in 2014

The survey conducted in 2014 included eight questions focusing on institutional policies and strategies in the area of Open Access to research publications. It included mostly closed-ended questions focusing on the development and degree of implementation of institutional policies on Open Access. Only one response per institution was considered.

One hundred and six universities from 30 European countries[3] participated in the EUA Open Access Survey in 2014. It is worth noting that 45 institutions participated in both waves of the Open Access Survey (2014 and 2015/2016).

While the response rate in both the 2014 and 2015/2016 surveys reflects the diversity of EUA's membership, both in terms of geographical spread and university size, it should be noted that generalisation of the reported results to other institutions are not possible due to the nature of the data (convenience sample).

This report primarily focuses on the results of EUA's second survey on Open Access, developed in 2015/2016. Where appropriate and relevant, a comparison with the results of the survey conducted in 2014/2015 is provided.

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3   The geographical distribution of respondents was as follows: Andorra= 1; Austria= 5; Belgium= 5; Bulgaria= 1; Cyprus= 1; Czech Republic= 5; Denmark= 3; Finland= 3; France= 1; Georgia= 1; Germany= 9; Hungary= 3; Italy= 12; Latvia= 1; Lithuania= 2; Netherlands= 1; Norway= 4; Poland= 3; Portugal= 4; Romania= 4; Russia= 1; Serbia= 1; Slovenia= 3; Spain= 11; Sweden= 10; Switzerland= 4; Turkey= 2; Ukraine= 1; United Kingdom= 3; Other= 1.
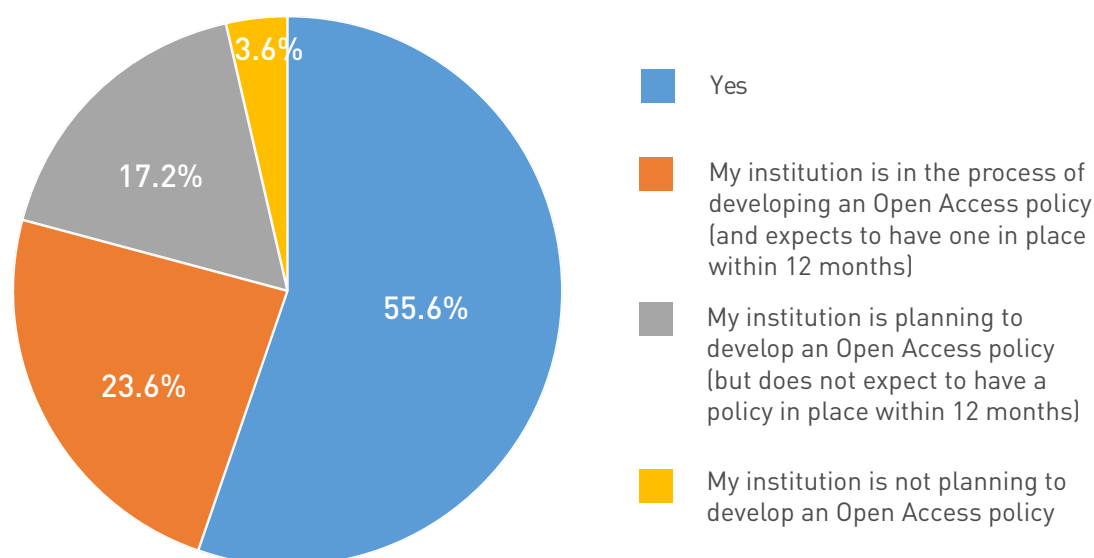
4. Open Access to research publications

4.1. Institutional policies

The majority of universities in the sample indicated having an Open Access policy (55.6%) and, in total, more than nine in 10 universities indicated having an Open Access policy in place or being either in the process of developing one or planning its development (Figure 2).

Only 3.6% of institutions showed no intention of developing an Open Access policy at the institutional level. For these institutions, the most frequent reason for not doing so were the lack of priority of Open Access at institutional level, resistance from researchers and lack of funding to support Open Access.

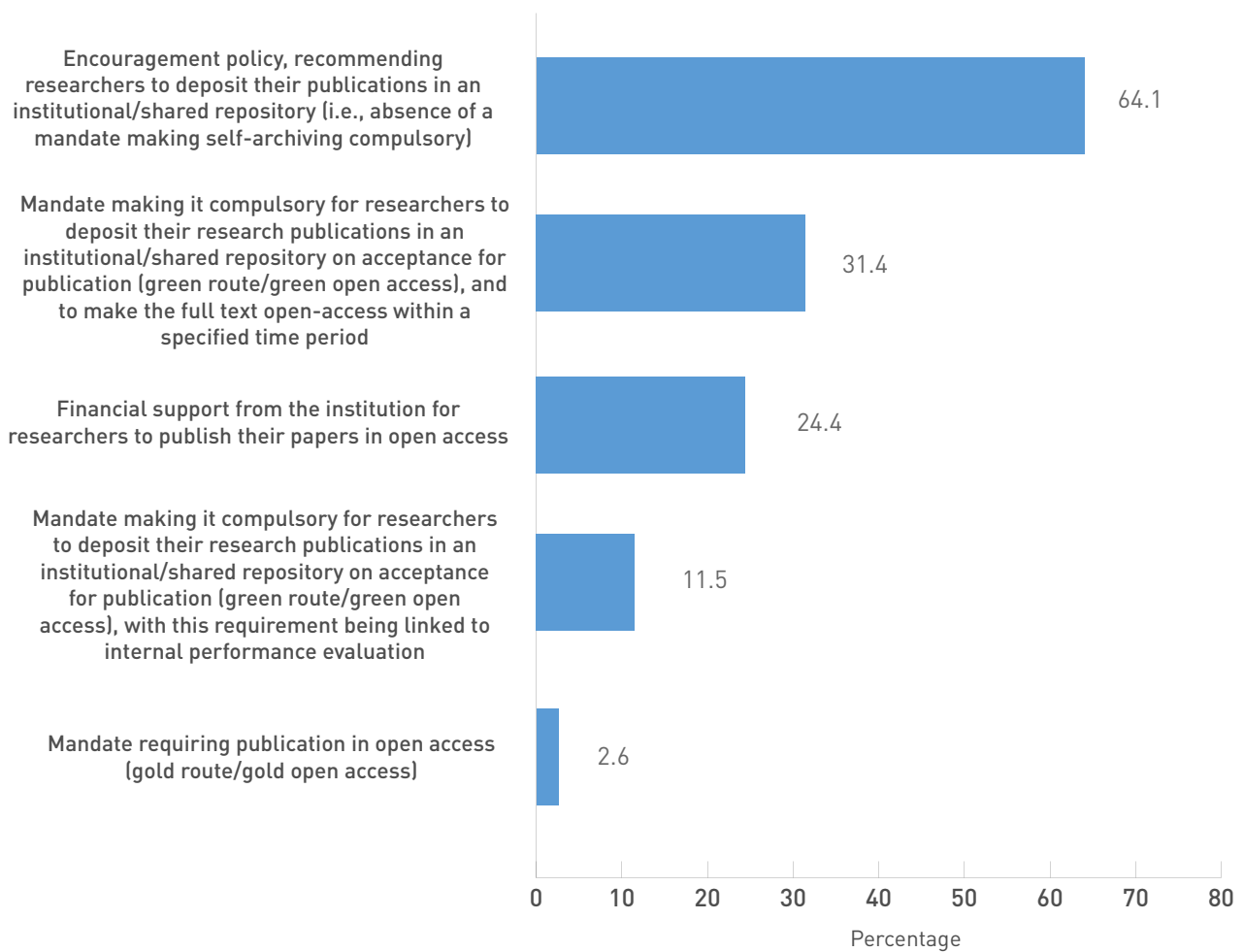**Figure 2. Institutional policy on Open Access to research publications**

Legend:
- **Yes** (55.6%)
- **My institution is in the process of developing an Open Access policy (and expects to have one in place within 12 months)** (23.6%)
- **My institution is planning to develop an Open Access policy (but does not expect to have a policy in place within 12 months)** (17.2%)
- **My institution is not planning to develop an Open Access policy** (3.6%)

Number of respondents: 169/169

> **Comparison with results in 2014:**
>
> *The results of the survey conducted in 2014 showed a similar pattern: 51.7% of institutions reported having an Open Access policy in place and 21.7% indicated being in the process of developing such a policy. Almost 20% of institutions indicated they were planning to develop an Open Access policy and 6.6% showed no intention of developing this policy.*

For those universities that already have an Open Access policy or for those that are developing or planning to develop such a policy, the most prevalent element seemed to be the encouragement/incentive character of an Open Access policy (64.1%). Mandatory policies were much less frequent, ranging from 2.6% for a mandate for gold Open Access up to 31.4% for making it compulsory for researchers to deposit publications in an institutional/shared repository. Additionally, about one quarter of respondents indicated that the institution provided financial support for researchers to publish their work in Open Access (Figure 3).

Figure 3. Elements of institutional policies on Open Access to research publications

Notes: this question only applies to universities that replied "yes", "my institution is in the process of developing an Open Access policy" or "my institution is planning to develop an Open Access policy" in Figure 2. The sub-sample for this question is 163.

Multiple-choice question. Number of respondents 156/163.

Institutions further commented on three different situations:

• Encouragement or recommendations for researchers to deposit their publications in the repository and, in addition, to also publish their articles in Open Access journals.

• Recommendation or mandate for PhD theses to be deposited in the repository.

• A "colour-neutral" approach to Open Access, in which institutions support Open Access but do not mandate or recommend that researchers pursue a specific Open Access route (green or gold). In these cases, researchers are free to decide in which Open Access format to publish/make available their articles.

Among the institutions that have in place an Open Access policy to research publications, almost 60% have it registered in ROARMAP (Figure 4).

Figure 4. Percentage of institutional repositories registered in the Registry of Open Access Repository Mandates and Policies (ROARMAP)
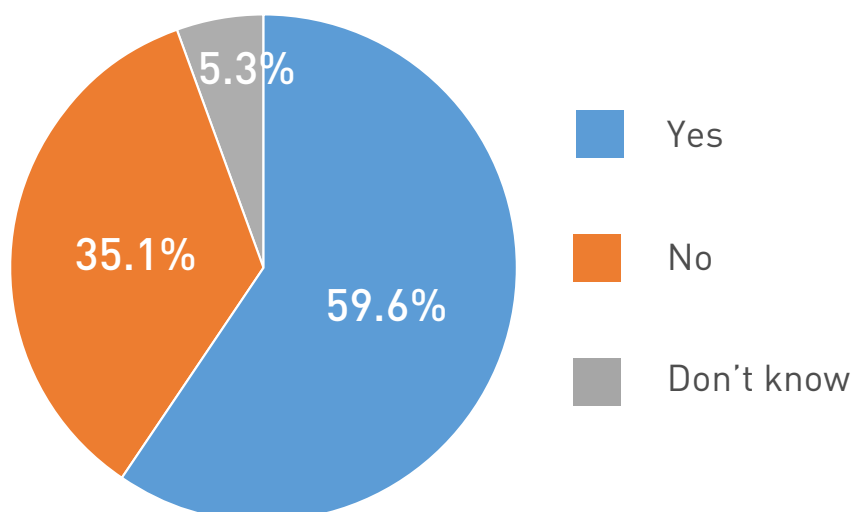
Notes: this question only applies to universities that replied "yes" in Figure 2. The sub-sample for this question is 94. Number of respondents: 94/94.

4.1.1. Repositories and deposit rates

This section focuses on a range of university practices related to the existence of repositories and their use. More specifically, it addresses the existence of institutional repositories, the software used, the participation in the OpenAIRE portal and the evolution in deposit rates.

As shown in Figure 5, almost nine in 10 universities indicated having an institutional or a shared repository. Among these, the vast majority of respondents (76.9%) reported having an institutional repository. Only 9.5% of universities mentioned not having either an institutional or shared repository.

Figure 5. Existence of an institutional/shared repository
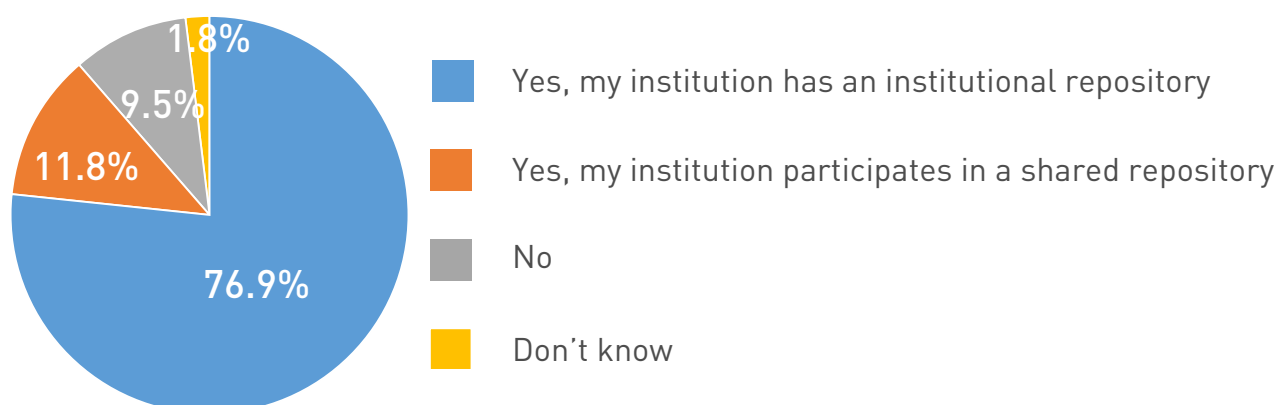
Number of respondents: 169/169

Comparison with results in 2014:

The results of the survey conducted in 2014 were somewhat similar to 2015/2016. In 2014, 72.6% of respondents indicated having an institutional repository and 9.4% participated in a shared repository. However, in 2014 more universities reported not having any repository (17.9%) than in 2015/2016 (9.5%).

Overall, DSpace was the software most frequently used by institutions that either had their own repositories or participated in a shared repository (Table 2).

Table 2. Software used in repository

	Percentage
Dspace	51.3%
Fedora	8.7%
Eprints	8%
Invenio	2.7%
Opus	2%
Other	24.7%
Don't know	2.7%

Note: this question only applies to universities that replied "yes", "my institution is in the process of developing an Open Access policy" or "my institution is planning to develop an Open Access policy" in Figure 2. The sub-sample for this question is 153. Number of respondents: 153/153.

The category 'other' includes examples from many different types of software, including custom solutions built in-house.

In addition, about six in ten institutional repositories are aggregated by the OpenAIRE portal, while almost one quarter of repositories are not (Figure 6).
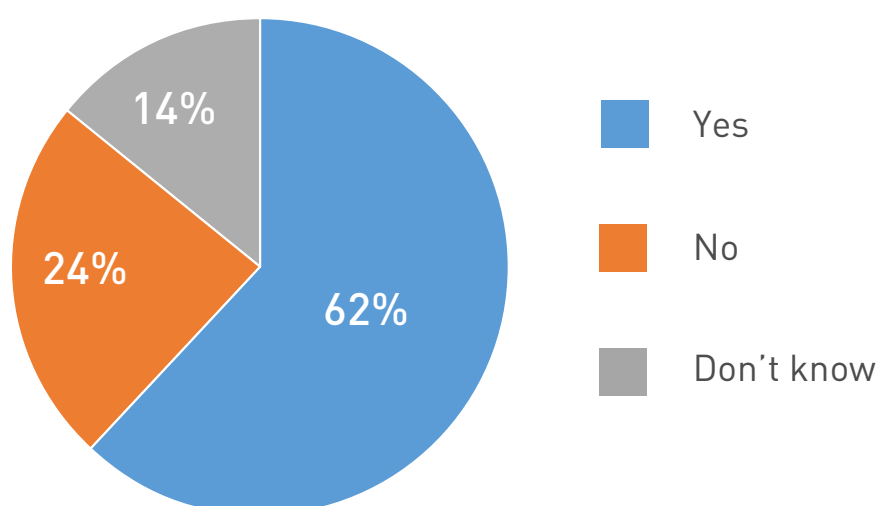
Notes: this question only applies to universities that replied "yes, institutional repository" or "yes, shared repository" in Figure 5. The sub-sample for this question is 150. Number of respondents: 150/150.

With regard to institutions whose repositories are aggregated in OpenAIRE, 50% use OpenAIRE basic and almost one quarter use OpenAIRE 3.0 (Table 3).

Table 3. Level of compatibility of the institutional repository with the OpenAIRE infrastructure

	Percentage
OpenAIRE Basic (DRIVER OA)	50.6%
OpenAIRE 2.0 (EC funding)	10.1%
OpenAIRE 2.0+ (DRIVER OA, EC funding)	15.7%
OpenAIRE 3.0 (OA, funding)	23.6%

Notes: this question only applies to universities that replied "yes" in Figure 6. The sub-sample for this question is 93. Number of respondents: 89/93.

Universities were asked about the share of peer-reviewed research publications (including journal articles, monographs/books, proceedings/conference papers) authored from members of the institution in the period between 1 January 2012 and 31 December 2014 and available on Open Access. This question was applicable to all institutions surveyed, irrespective of the existence of an Open Access institutional policy (Table 4A).

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4   www.openaire.eu

Table 4A. Estimate of the percentage of peer-reviewed research publications (including journal articles, monographs/books, proceedings/conference papers) authored from members of the institution between 1 January 2012 and 31 December 2014 and available on Open Access (all institutions)

	Deposit in the institutional/ shared repository (green Open Access) (% of institutions)	Open Access publishing (gold Open Access) (% of institutions)
Less than 20%	59.8	80.9
20-40%	19.7	8.5
40-60%	10.2	3.2
60-80%	4.7	0
More than 80%	5.5	7.4

Number of responses: green Open Access= 127/169; gold Open Access= 94/169

The majority of institutions (≈ 60%) reported having less than 20% of their peer-reviewed publications available in repositories or in Open Access journals (≈ 81%). In addition, about 20% of institutions indicated having 40% or more of their peer-reviewed publications deposited in the repository, while for Open Access publishing (gold) this only occurred in about 10% of institutions.

Comparison with results in 2014:

The question used in the survey conducted in 2014 was formulated in a more general way and it did not focus on a specific timeframe ("What is the percentage of Open Access articles in your institution provided via the green/gold route?"). However, the results showed a similar pattern of results as in 2015/2016. In 2014, 52.9% of institutions reported making less than 20% of their articles available through the green route (repositories), while the same occurred for 71.8% of institutions regarding gold Open Access.

In addition, about three in 10 institutions indicated making more than 40% of their publications available through the green route, while only 1.5 institutions in 10 reported the same for gold Open Access.

Taking a look specifically at institutions that have an Open Access policy already in place (Table 4B), the pattern of results is very similar. Almost 80% of institutions have up to 40% of its publications deposited in the repository; in addition, almost 81% of institutions have less than 20% of its publications available through Open Access publishing (gold Open Access).

Table 4B. Estimate of the percentage of peer-reviewed research publications (including journal articles, monographs/books, proceedings/conference papers) authored from members of the institution between 1 January 2012 and 31 December 2014 and available on Open Access (institutions with an Open Access policy)

	Deposit in the institutional/ shared repository (green Open Access) (% of institutions)	Open Access publishing (gold Open Access) (% of institutions)
Less than 20%	57.5	80.9
20-40%	20.5	8.5
40-60%	11	3.2
60-80%	6.8	0
More than 80%	4.1	4.1

Number of responses: green Open Access= 73/94; gold Open Access= 49/94

Universities that had an Open Access policy in place (94), were asked about the evolution in the deposit rates in the institutional/shared repository. Almost 60% reported they had seen an increase in the deposit rates of publications in the institutional or shared repository (Figure 7). It is also worth noting that 29% of respondents did not know whether an increase in the number of deposits had been registered since the adoption of the OA policy at the institutional level. Among these institutions, several noted that it was still too early to assess the effects of the institutional OA policy, because the repository was recent or no statistics were yet available.

Figure 7. Increase in the deposit rate of publications in the institutional/shared repository after the adoption of an institutional policy on Open Access to research publications
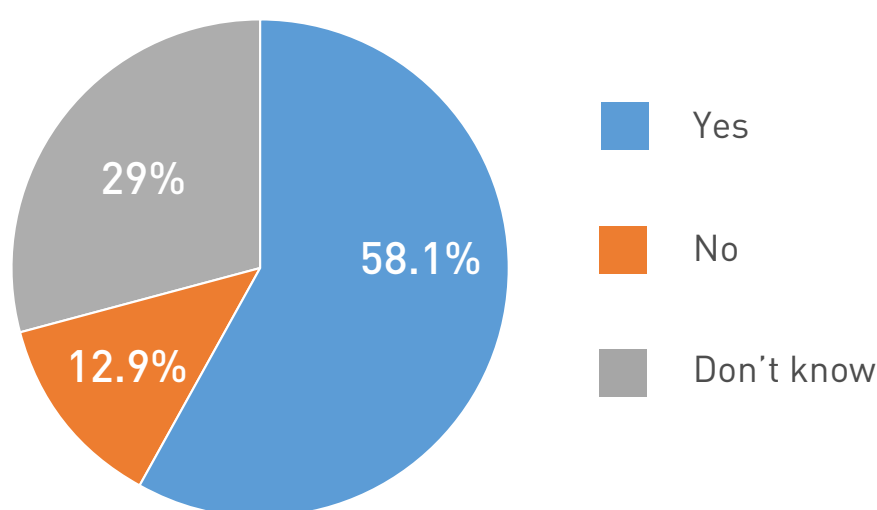
Notes: this question only applied to universities that indicated they had an institutional policy in place (Figure 2). The sub-sample for this question is 94. Number of respondents: 93/94.

Among the institutions that saw an increase in the deposit rates, some indicated that, in addition to the institutional policy, this change was due to:

• research assessment exercises, whether internal or external to the institution;

• effort of the library staff, responsible for making the articles available in the repository;

• awareness raising activities within the institution to promote Open Access.

Examples:

"A number of things coincide - mandated deposit, REF requirements, internal quality evaluation of papers, staff appraisal requires metadata deposit as minimum - and all of these have led to increased awareness and involvement in the repository." (Institution from the United Kingdom)

"Initial increase caused by the library taking over the publication registration as a central service and the library actively pursuing final author manuscripts for the OA-repository. Second wave will come from the Danish national OA strategy and associated national OA indicator, the latter to be published for the first time in Jan/Feb 2016. OA forecasting and performance is now part of regular reporting system supporting the dialogue between the university's departments and the university's board of directors." (Institution from Denmark)

"The deposit rate has accelerated since the publications policy was ratified (August 2014). Other factors – e.g. publicity events, evidence from repository in academic appraisal - will have had an impact." (Institution from the United Kingdom)

> **Comparison with results in 2014:**
>
> *The results of the survey conducted in 2014 showed that 67.3% of institutions that had an institutional/shared repository reported an increase in the deposit rates, while 5.5% did not. Similarly to the situation in 2015/2016, in 2014 more than a quarter of institutions (27.3%) did not know whether there had been an increase in the deposit rates.*

The institutions that reported an increase in the deposit rate after the adoption of an Open Access policy were asked to provide more information on the evolution of the deposit of journal articles, monographs/books, proceedings/conference papers (all peer-reviewed) and doctoral theses.

Fifty-four institutions reported an increase in the deposit rates since the adoption of the Open Access policy (Figure 7). Table 5 presents the year of adoption of the Open Access policy in this group of universities.

From these 54 institutions, only a limited number actually provided figures for both the current deposit rates and for the time of the policy adoption. The data collected is presented in Figure 8; due to the very limited response rate, the results can only be interpreted as an indication of the situation in these institutions.

Table 5. Year of adoption of the Open Access policy at institutional level (institutions reporting an increase in the deposit rates since policy adoption)

	Number of institutions
2005	4
2006	2
2007	2
2008	4
2009	3
2010	6
2011	6
2012	6
2013	5
2014	6
2015	7
Non-response	3
Total	**54**

While some institutions already started adopting their Open Access policies in 2005, most reported the adoption between 2010 and 2015.

Figure 8: Evolution in the deposit rates of publications in the institutional/shared repository

Journal articles (peer-reviewed)

Monographs/books (peer-reviewed)

Proceedings/conference papers (peer-reviewed)
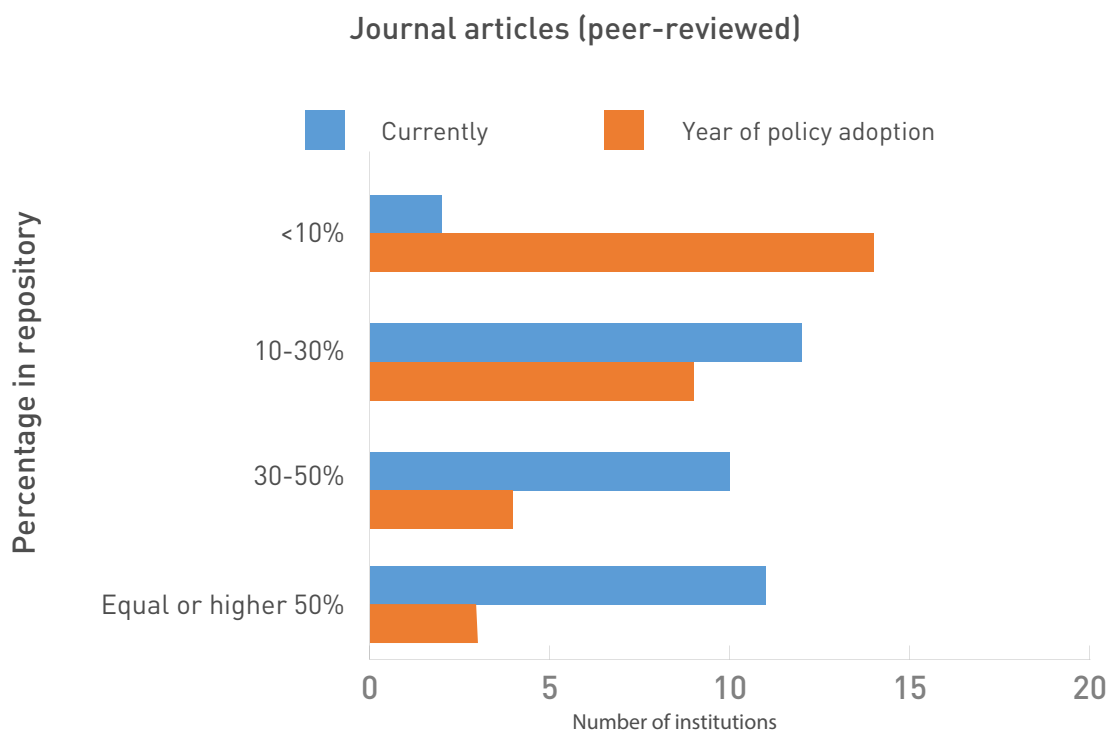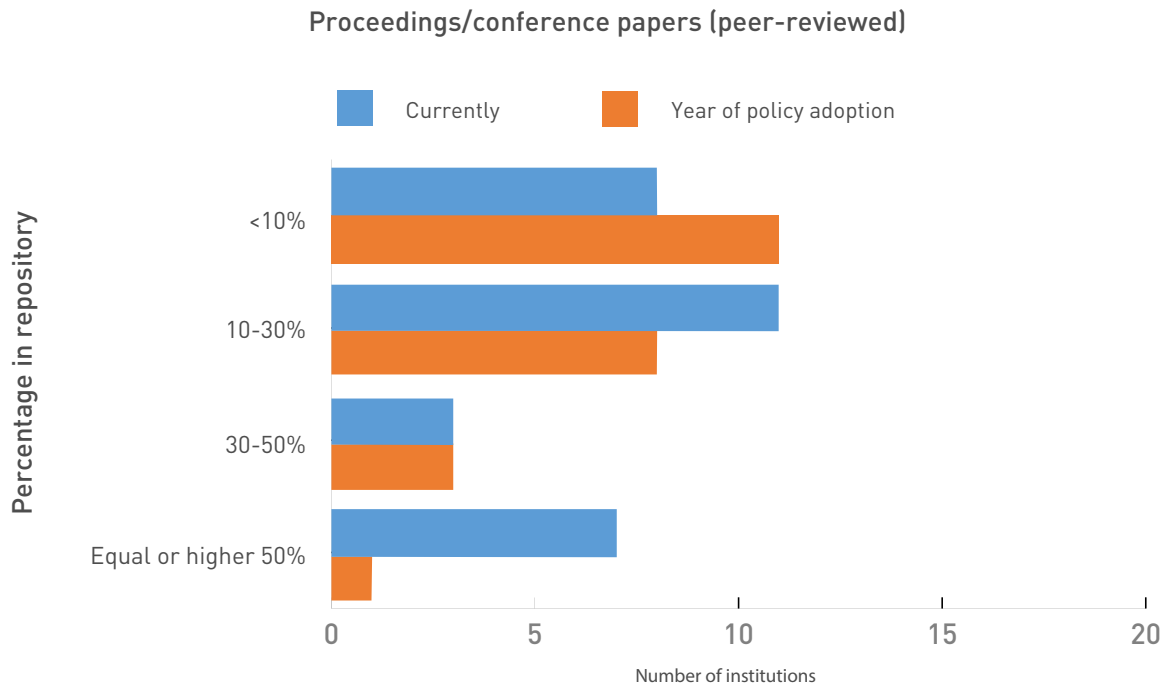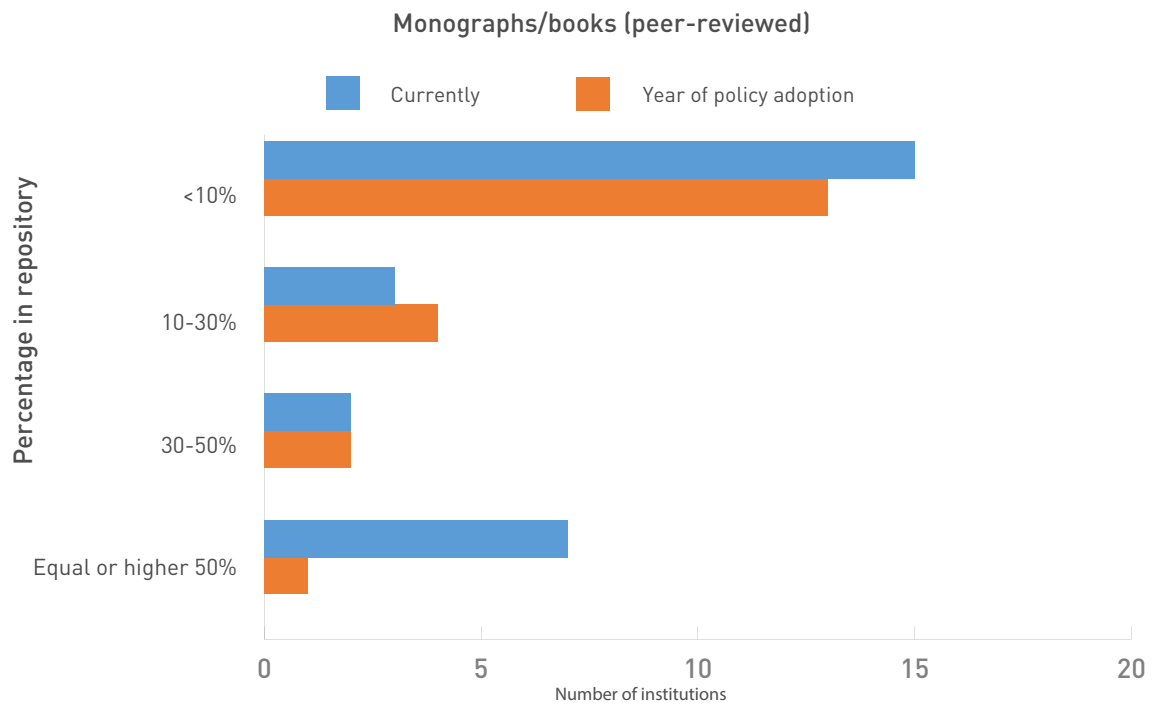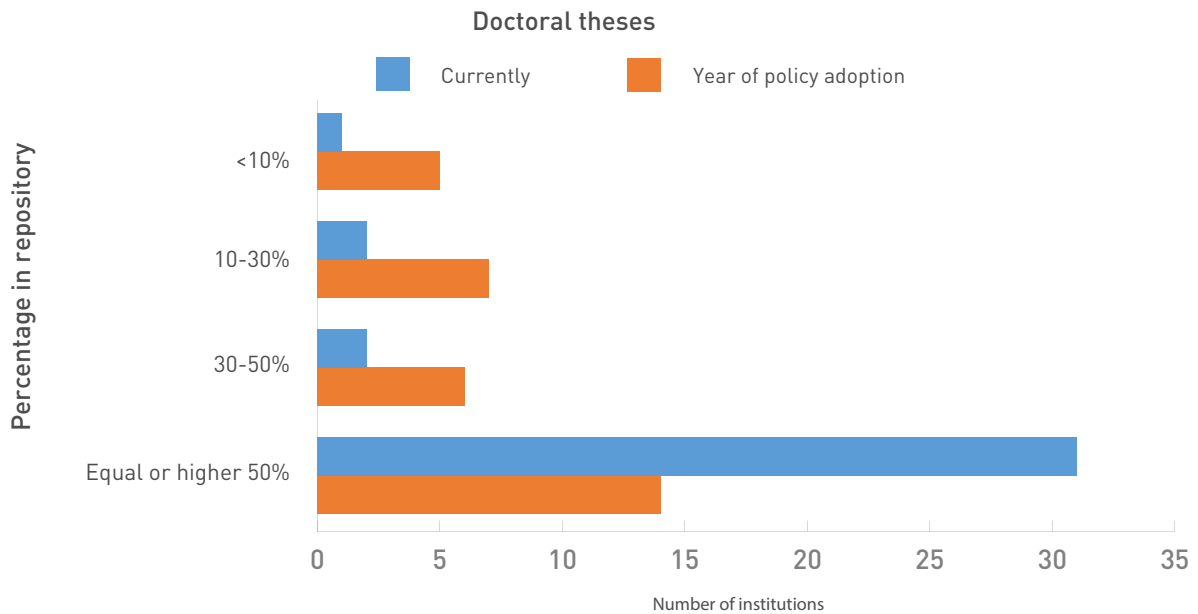
Doctoral theses

Number of responses: journal articles (currently= 35/54; year of policy adoption= 30/54), monographs/books (currently= 27/54; year of policy adoption= 20/54), proceedings/ conference papers (currently= 29/54; year of policy adoption= 23/54), doctoral theses (currently= 36/54; year of policy adoption= 32/54).

In the year of adoption of the institutional OA policy, most of the surveyed institutions reported that less than 10% of articles, monographs and proceedings were deposited in the repository. For doctoral theses, however, in the year of the policy adoption, 14 universities were already observing deposit rates equal to or higher than 50%.

As can be observed in Figure 8, a similar number of universities reported currently having between 10%-30% and equal to or higher than 50% of articles deposited in the repository. This situation changes for monographs, in which the majority of institutions indicated less than 10% of these publications were available in the repository. Up to 30% of proceedings and conference papers are currently available in the repositories of most surveyed institutions. Doctoral theses are the type of publication most frequently deposited in repositories, as the vast majority of respondents indicated that 50% or more of their doctoral theses were in the repository.

A different way to examine the data on the evolution of deposit rates in the institutional/ shared repositories is to look specifically at the increase in deposit rates from the year of policy adoption until today. Figure 9 represents the increase in the deposit rates by type of publication. The calculations were made by subtracting the deposit rates in the year of policy adoption from the current deposit rates. The results are expressed in percentage points.

As can be observed in Figure 9, for most institutions, the deposit of journal articles saw an increase of more than 20 percentage points (pp), a situation which is similar to doctoral theses. The deposit of monographs/books seems to be slightly more heterogeneous, i.e. a similar number of institutions reported having either a small increase (between 0 and 5 pp) or a large increase (higher than 20 pp). Regarding proceedings/conference papers, most institutions reported either a small increase in the deposit rates (between 0-5 pp), or a medium or high increase (between 10-15 pp or higher than 20 pp).

## Figure 9. Increase in deposit rates by type of publication (in percentage points, pp)
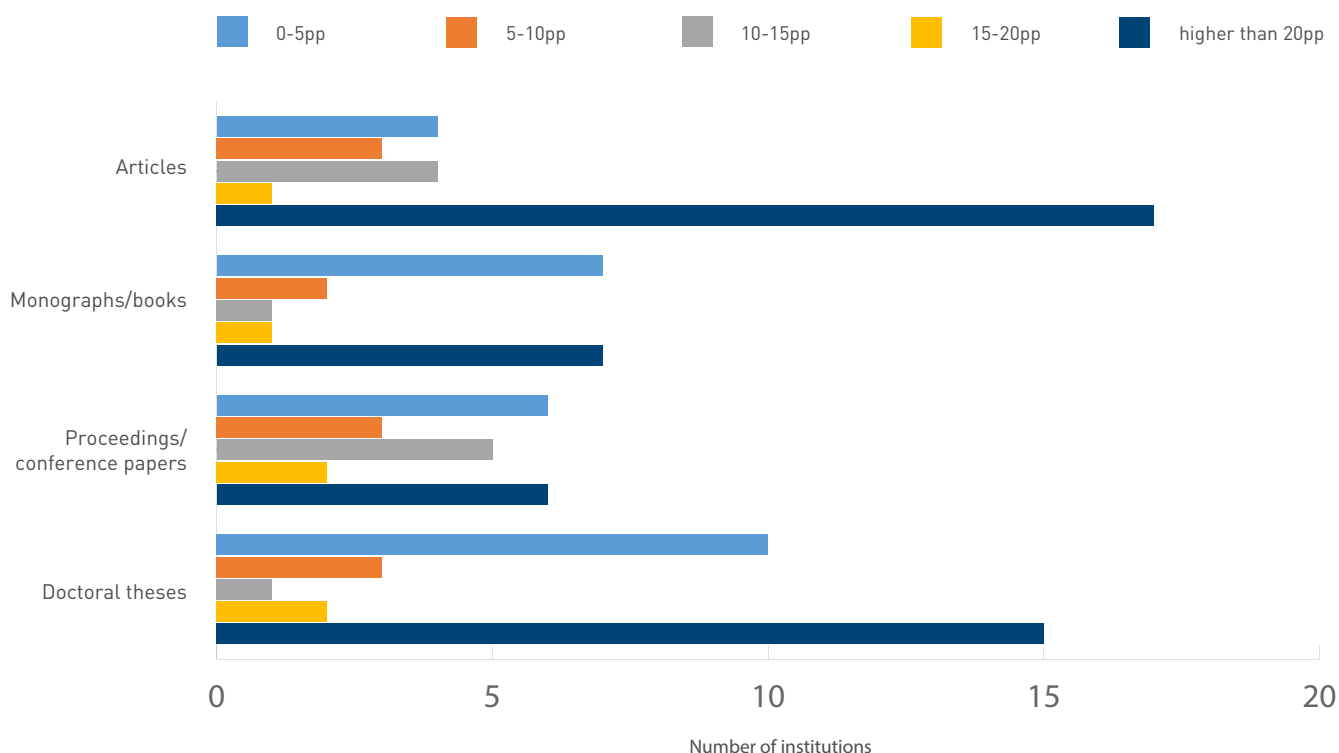
Number of responses: articles= 30/54; monographs/books= 20/54; proceedings/conference papers= 23/54; doctoral theses= 32/54. Notes: only institutions that provided data for both the current deposit rates and those in the year of the policy adoption were included in the analysis. In a few cases, the percentage of deposits in the current year were inferior to the percentage of deposits in the year of the policy adoption (negative increase). These cases are not represented in the figure; the number of institutions in which this situation occurred is as follows: for articles= 1; for monographs/books= 2; for proceedings/conference papers= 1; for doctoral theses= 1.

4.1.2. Drivers and barriers for researchers to self-archive

In order to increase the rate of deposits, universities considered that the most important actions would entail increasing the number of citations, maximising the visibility of research, and a mandate from the funding bodies (all above 80%, Figure 10). Interestingly, a mandatory requirement by the institution and a revision of research assessment methodologies were considered as very important by only about 50% of respondents.

Figure 10. Level of importance of different factors in encouraging researchers in the institution to self-archive (green route/green Open Access) their research publications in a repository
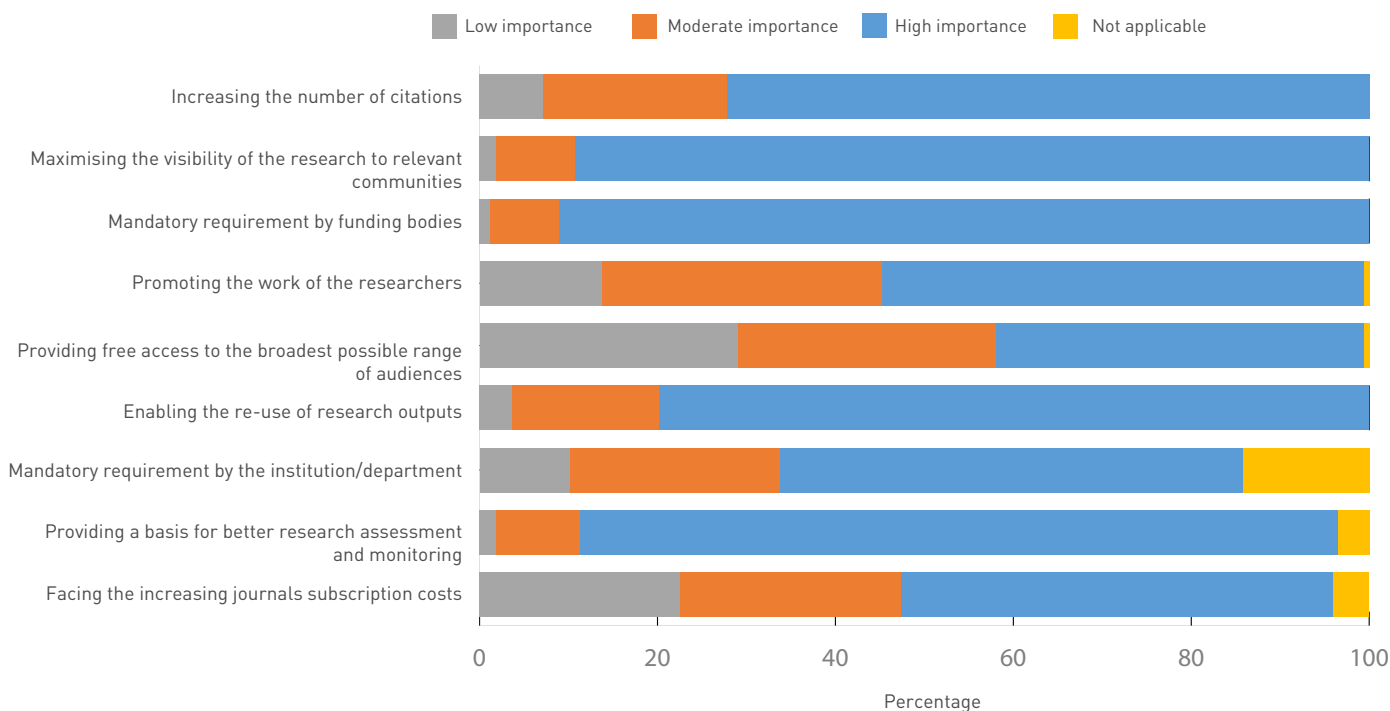
Number of respondents: 169/169, except item "enabling re-use of research outputs", which is 168/169.

Comparison with results in 2014:

The results of the survey conducted in 2014 showed a similar pattern of results. Maximising the visibility of research (90.6%), increasing the number of citations (79.2%), promoting the work of researchers (77.4%) and a mandatory requirement from the research funding bodies (74.5%), were the actions considered to be the most important for encouraging self-archiving.

When considering the concerns of researchers on self-archiving (Figure 11), institutions indicated that the most prevalent factor was the uncertainty regarding the publishers' rules on self-archiving, as well as concerns over copyright infringement, both rated as "frequent" by almost 80% of respondents. Interestingly, lack of financial support was only reported as a frequent concern by 37.6% of universities.

Number of respondents: 168/169, except items "Limited awareness of Open Access and its potential benefits", "Uncertainty about the scientific publishers' self-archiving policies", "Lack of knowledge of how to deposit material in a repository" 167/169; and item "Lack of financial support" 165/169.

Comparison with results in 2014:

The results of the survey conducted in 2014 showed a similar pattern of results. Concerns over copyright infringement (79.2%), uncertainty of publishers' self-archiving policies (75.5%), limited awareness on the potential benefits of Open Access (59.4%) and uncertainty over embargo periods (55.7%) were considered to be the most prevalent concerns for researchers.

4.2. Institutional awareness on Open Access

The survey included questions on the awareness level of different Open Access aspects amongst different groups, namely institutional leadership, librarians and researchers.

Regarding the level of awareness of publishers' policies on Open Access (Figure 12), librarians were the group assessed as having a better knowledge on this topic – 88.1% of universities considered it was "good" or "very good". For the institutional leadership, this percentage dropped to 53.9% and researchers were only considered as having a good or very good level of awareness on publishers' policies by 32% of universities. Researchers were also the group most perceived to have only a "very bad" or "bad" knowledge of publishers' policies on Open Access, with almost one-fifth of universities sharing this opinion.

Figure 12. Level of awareness of scientific publishers' policies on Open Access amongst institutional leadership, librarians and researchers
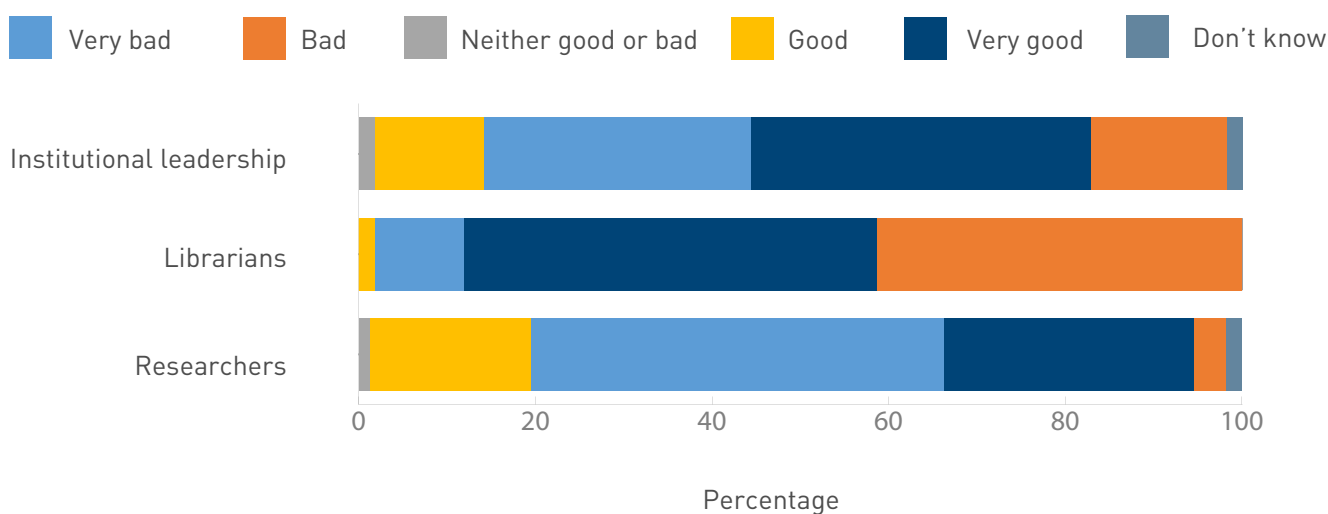
Number of respondents: 169/169

Comparison with results in 2014:

The results of the survey conducted in 2014 showed that 67.9% of institutions considered librarians' knowledge on publishers' policies on Open Access as "excellent" or "very good". Similarly to the results in 2015/2016, this percentage dropped for institutional leaders and for researchers. However, in the survey conducted in 2014, respondents had a less positive view on the level of awareness on publishers' Open Access policies among institutional leaders and researchers, which were classified as "excellent" or "very good" by only 25.5% and 9.4% of respondents, respectively.

On the level of awareness of the Open Access rules in Horizon 2020 (Figure 13), the group of librarians is again considered to be the most knowledgeable, with about 70% of institutions considering it "good" or "very good". Researchers appear to be the group perceived by institutions as being less aware of the OA rules in Horizon 2020, with 20.8% of institutions considering it "very bad" or "bad" and 41.4% of institutions indicating it is "neither good nor bad".

Figure 13. Level of awareness of the rules on Open Access defined in the current EU Framework Programme for Research and Innovation – Horizon 2020
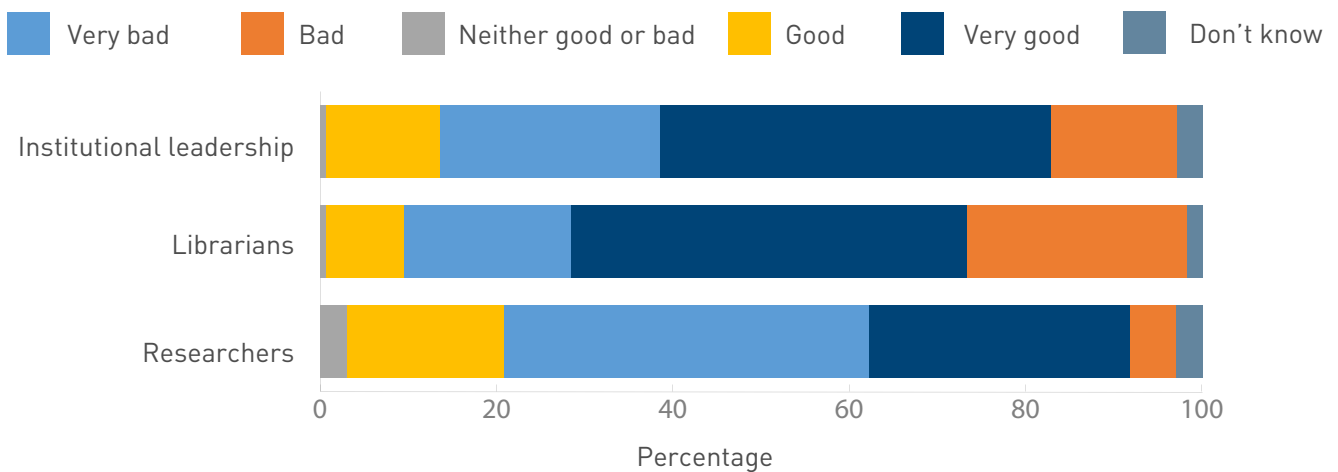
Number of respondents: 169/169

Overall, the level of awareness seems to be lower for the Open Research Data Pilot in Horizon 2020 (Figure 14), than for OA in Horizon 2020 and scientific publishers' policies. Regarding the awareness on the Open Research Data Pilot, librarians are again the group considered to have better awareness (49.7% rated as "good" or "very good"), followed by institutional leaders (34.9% rated as "good" or "very good").
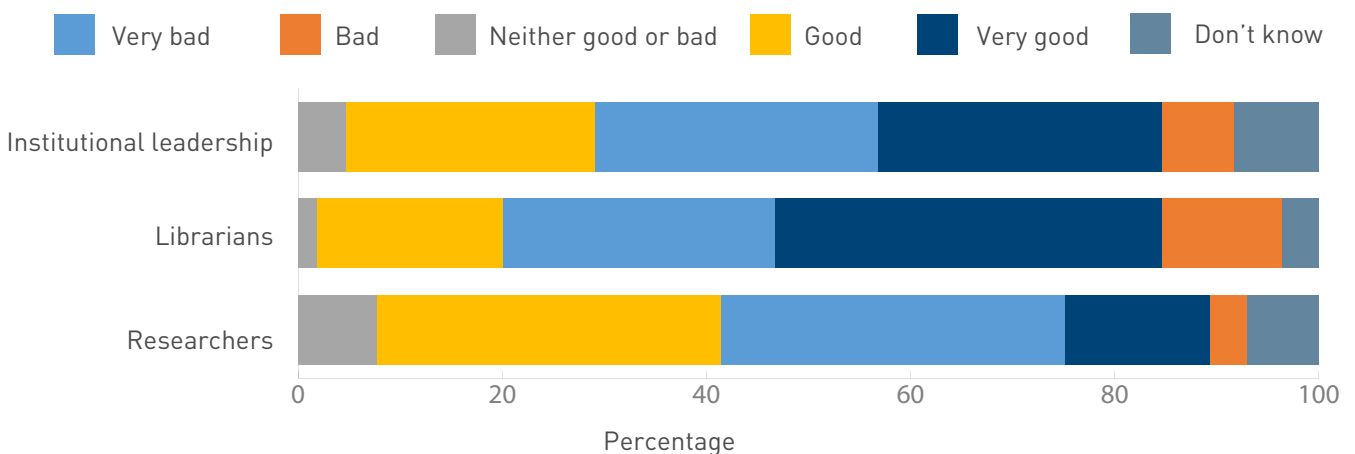
Figure 14. Level of awareness of the Open Research Data Pilot defined in the current EU Framework Programme for Research and Innovation – Horizon 2020

Number of respondents: 169/169

4.3. Promoting Open Access to research publications: actions at national and European levels

The proposed actions at both national and European levels were all perceived as important or very important by the large majority of respondents (Figure 15A).

Figure 15A. Level of priority at national and European level in the area of Open Access to research publications – strongly agree and agree
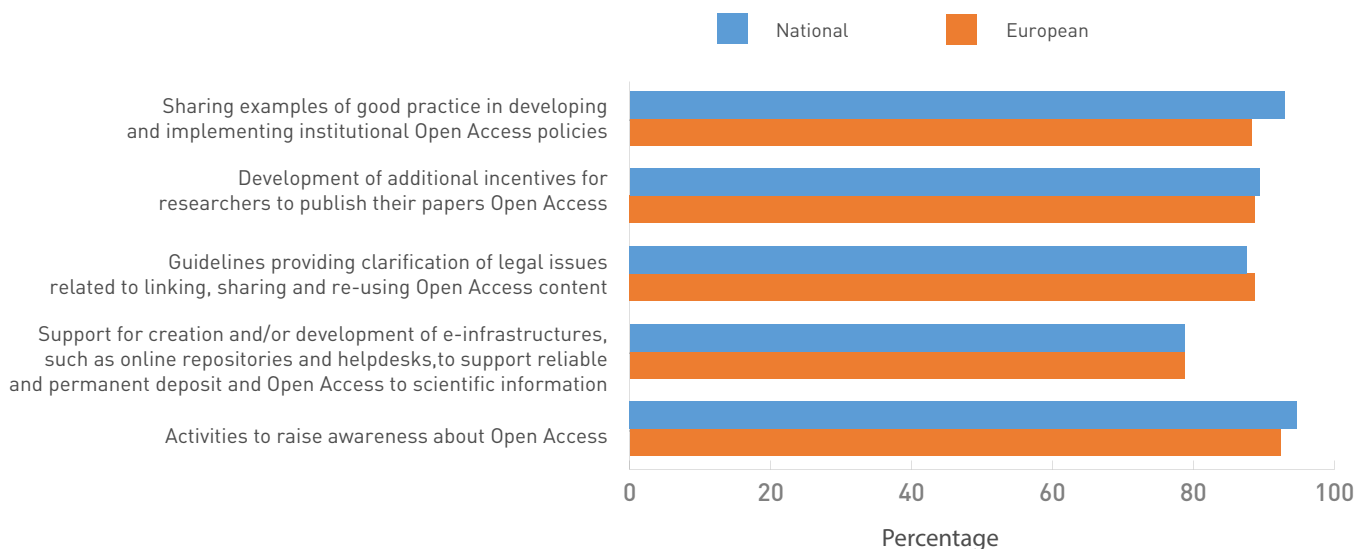
Notes: The chart displays the aggregated percentages for the response categories "strongly agree" and "agree". Number of respondents: 169/169.

However, when only considering the answers provided under "strongly agree" (Figure 15B), the results suggest that the development of more incentives for researchers and the provision of guidelines clarifying legal matters are the two action items perceived as more important, both at national and European levels.

Figure 15B. Level of priority at national and European level in the area of Open Access to research publications – strongly agree
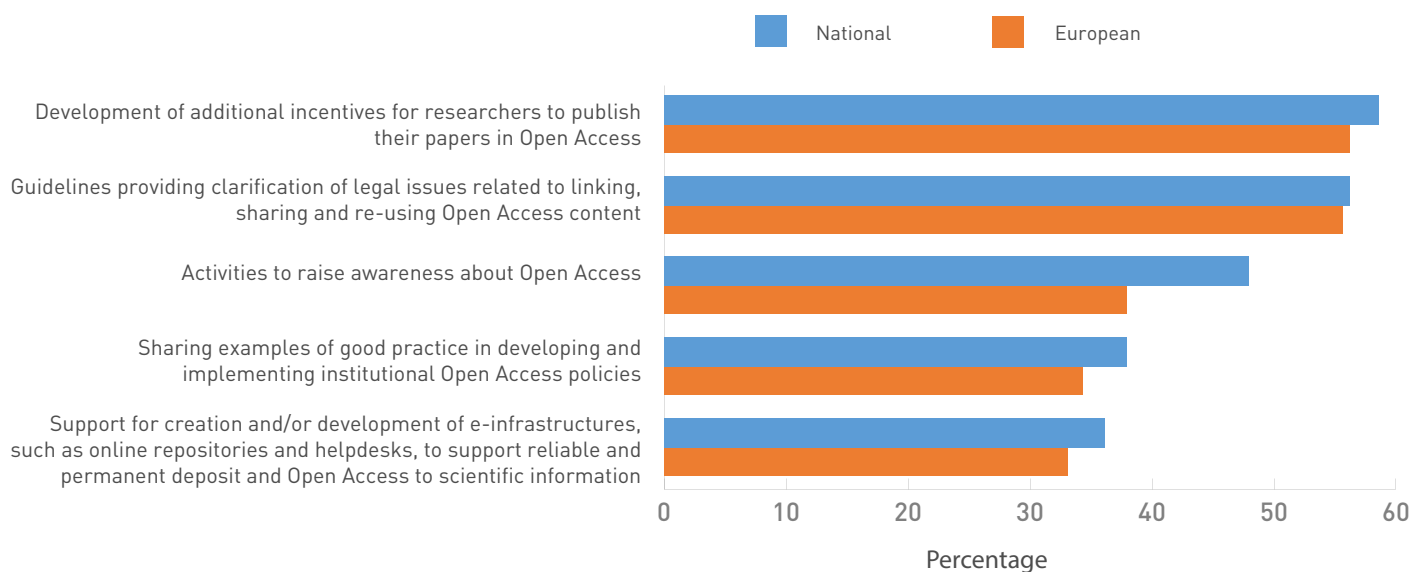
Notes: The chart displays the percentages for the response category "strongly agree". Number of respondents: 169/169.

Comparison with results in 2014:

The results of the survey conducted in 2014 showed that respondents considered the provision of national guidelines (53.8%), activities to raise awareness on Open Access (44.3%) and the development of additional incentives for researchers (43.4%) as the most important actions to be developed at national level. At the European level, the following actions were considered to be the most important: guidelines at European level (52.8%), support for the creation and/or development of e-infrastructures (43.4%) and activities to raise awareness on Open Access (39.6%).

5. Open Access to research data

5.1. Institutional policies and guidelines

Only about a quarter of institutions reported having formal or informal guidelines on Open Access to research data (Figure 16). However, more than seven in 10 institutions indicated not having any type of guidelines on this matter.

Figure 16. Existence of institutional guidelines (formal or informal) on Open Access to research data
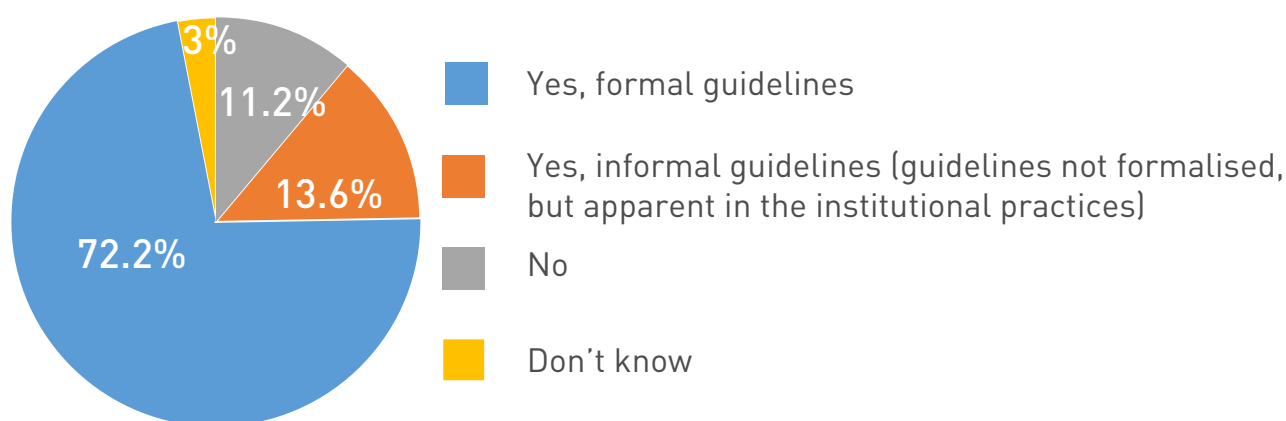
Number of respondents: 169/169

Most universities that indicated having formal or informal guidelines on Open Access to research data further specified that they had in place policies, guidelines or principles on research data management. In some cases, these policies/guidelines/principles were part of the institutional policy on research integrity or Open Access. In a few cases, different university departments had their own guidelines on data management and sharing. These policies, guidelines or principles on Open Access to research data typically covered legal, scientific and ethical aspects. They also included the need to comply with requirements on research data from scientific funders. Some institutional policies foresaw the adoption of principles of sharing data – unless restricted by ethical, legal or contractual obligations – but do not mandate it.

It is worth noting that, as is apparent in many institutions' comments, the concepts of Open Access to research data and research data management seemed to overlap. Indeed, the question used in the survey, being open-ended, did not allow to disentangle these two different areas[5].

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5   In the survey conducted in 2016/2017, the questions used have allowed to disentangle the topics of research data management and Open Access to research data.

Some universities additionally reported they were in the process of developing an overarching policy on Open Science, covering aspects such as open data, open methods and training of researchers. A few institutions were also in the process of developing incentives or recommendations on open data for specific types of publications (e.g. doctoral theses), or for different scientific disciplines.

There were also reports from universities recommending to their researchers the publication of research data in institutional or thematic (discipline-specific) repositories. Finally, some institutions reported organising training activities on open research data for researchers and/or making available materials to support researchers in these activities.

Examples:

"At this point guidelines for research data management are part of the policy regarding research integrity. The university is working on a university-wide, autonomous policy plan regarding research data. This will include the institutional vision on RDM for the future as well as hands-on information on how to manage your data properly; collecting, storing, depositing/archiving, sharing, your data, including issues like information security, privacy, copyrights, etc. A data management plan tool, DMPonline, is already set up locally to provide researchers with a template and guidelines for making their DMP, with specific templates for different financing bodies. Where appropriate, Open Access policy will be connected to the RDM policy and vice versa." (Institution from Belgium)

"Guidelines regarding access to research data is part of the 'Policy for responsible conduct of research'" (Institution from Denmark)

"Research data guidelines are not mandatory with respect to openness of research data. [The university] recommends publication of data in institutional or disciplinary repositories" (Institution from Germany)

Among the institutions that indicated not having a policy on Open Access to research data in place, many reported that guidelines or policies on access to data were in preparation or under discussion. A few universities mentioned that they were starting an internal dialogue at the university on this topic (e.g. establishment of committee). A few universities indicated being in the process of developing recommendations or guidelines due to the requirements under Horizon 2020.

The reasons indicated for a lack of formal or informal policies/guidelines on Open Access to data included the following:

- Novelty of the topic ("just started to think about this")

- Priority given implementing institutional policy on Open Access to research publications

- Complexity of the topic

- Technical complexity in implementing Open Access to research data (e.g. variety of research fields in institution, multiple data formats)

- Low interest levels from researchers

- General lack of awareness on the topic

- Absence of national guidelines or mandate/policies by research funders

- Lack of expertise on the topic at institutional level

- Lack of infrastructure or absence of funds to develop the needed infrastructure

- Unclear legal frameworks/no legislation

- Unclear distribution of responsibility on this issue between researchers, departments, libraries and funders

- Lack of institutional coordination among the different stakeholders (researchers, departments, libraries, funders)

- Institutional profile based on strong cooperation with companies makes this issue hard to deal with (e.g. IPR)

- "Scepticism about the benefit of Open Access"

Examples:

"1. Providing open access to data seems to be a new concept to many Irish researchers. Up to now the focus with data has been on protecting any potential intellectual property in research data. 2. Only one national research funder currently has a policy on research data management and archiving of data in an open repository. Funder policies on open access to data are key drivers of moving towards providing open access to data. 3. There is a general lack of awareness of open data and associated research data management practices. A recent survey of our researchers showed that 67% of them weren't familiar with research data management plans 4. The institution is currently formulating a policy on research data management which will act as a kickstart to guidelines around open access to research data." (Institution from Ireland)

"We are still working on the repository for publications. We need more time, people and infrastructures." (Institution from Italy)

"Uncertainty as regards responsibility, concern regarding privacy" (Institution from Norway)

"the absence of data preservation infrastructures, the lack of financing support and expert support, but also the non-existent guarantee of trustworthiness of data and academic defensiveness approach." (Institution from Portugal)

"Open Access to research data is a relatively recent concept and has not yet been widely adopted by the university (the researchers, the administration, the librarians). In this period, the university is not in a position to implement the infrastructure that would be needed for the deposit and Open Access to the majority of heterogeneous research data, generated by the researchers from the university. Relevant data professionals are also lacking. Some scientific specialties from the university use international subject data repositories to ensure Open Access to research data. International guidelines/standards for the preparation of research datasets for repositories and subsequent openness are needed." (Institution from Slovenia)

5.2. Barriers to the development of Open Access to research data

Institutions identified a wide range of factors that can hinder taking up Open Access to research data. The barriers identified can be assembled into the following groups:

General barriers:

- Lack of awareness of the value and benefits of Open Access to research data

- Legal concerns (e.g. data privacy)

- Absence of policies on Open Access to data at national and institutional levels, as well as from research funders

- Lack of precise definitions, technical standards and procedures in the area of Open Access to research data

- Different practices and types of data across different scientific areas

- Absence of incentives to promote Open Access to research data (e.g. no impact of Open Access to data on research performance evaluation and career progression)

Barriers at policy level:

- Complex and rapid-changing policy environment

- Fragmented copyright regulations at EU level

- Uncertainty about national regulations (e.g. absence of policies and regulations at national level)

- Lack of funders' regulations on open data and absence of funding for these activities

Barriers for institutions, libraries and researchers:

Institutions

- Lack of awareness of the benefits of open data and "distrust in Open Access"

- Concerns with higher costs incurred with Open Access to research data (need for more infrastructure)

- Concerns with privacy and confidentiality of data

- Lack of coordination between the different relevant actors within the university

- Diversity of "scientific cultures" within the institution

- Lack of specialised staff for teaching and promoting open data topics

- The topic of research data management is typically not part of the curricula (especially at postgraduate level)

- Lack of support structure at institutional level for researchers to help them publish their data

Libraries

- Uncertainty over the preparation of data, data formats, standards, metadata, backup, interoperability

- Absence of adequate software analysis tools adapted to different disciplinary needs and data formats

- Concern over costs and lack of infrastructure related to data storage and curation ("lack of scalable infrastructure solutions appropriate to the university's research activity")

- Insufficient human resources capacity (lack of know-how; shortage of staff with the appropriate skills profile to deal with Open Access to research data)

- Unclear role of libraries in the process of making data available

Researchers

- Concerns around data ownership, particularly the re-use of data, the fear of "losing control over data", and the fact that "transparency [is] taken as a threat"

- Concern with the commercial exploitation of data

- Misconceptions of Open Access to data

- Concern over legal issues involved in Open Access to research data (e.g. privacy, confidentiality, engaging in TDM)

- Little awareness of the benefits of open data

- Lack of clarity on licences suitable for data and for data mining

- Concerns over quality assurance of data

In order to overcome some of the main barriers identified above, several institutions proposed the following recommendations:

- Priority should be first to implement solid data management plans to solve issues around "usefulness, security and privacy"

- Need for more training and awareness building in the field of open data (for researchers, for leadership, for administration)

- Need for general, technical and legal advice for researchers for the publication of data

- Need for good practice examples in different disciplines.

Examples:

"Researchers and institutional leadership is not convinced about the usefulness of OA to research data; distrust to Open Access in general; missing national support regarding open access, i.e. the uncertainty about what will be mandatory on the national level; lack of awareness, lack of expertise; it was not necessary till now; technical solution is not 100% finished" (Institution from the Czech Republic)

"Institutional level: privacy and confidentiality should be safeguarded researchers: privacy and confidentiality should be safeguarded. fear of getting scooped: Other researchers will «steal» my data and publish before I have finished my research, caution about commercial (mis)use of data, a changing mind-set that hasn't been adopted yet, transparency taken as a threat; for library or other central services main barriers are capacity: staff with appropriate skills, infrastructure (storage, safety measures, being accepted as an important player in the process): but one by one these issues are dealt with" (Institution from Belgium)

"- Research data management is intensively promoted, but it does not automatically imply open access to research data. - There may be some open access-fatigue, but it is less experienced as such with regard to data. - Open access is often not preferred (a bridge too far), due to doubt ('it is my data') or because of the critical or privacy-sensitive nature of most data. - On the institutional level research data management is promoted but very often it does not reach all researchers in a research institute, as they are still in the process of developing their additional (practical) disciplinary policy - Research data management implies good infrastructures, which are costly and the development is time-consuming. - Research data management implies good support services, which implies investing in data librarians/ data scientists, which is costly and the development is time-consuming as well. - Awareness of (open access to) research data is in fact only starting and it will take some years to deliver best practices." (Institution from the Netherlands)

5.3. Promoting Open Access to research data: actions at national and European levels

Institutions identified the following actions that could be pursued at national level in order to support institutions in the transition to Open Access to research data:

- Development of national-level policies and/or guidelines, with a particular emphasis on clarifying legal issues around Open Science (copyright, data protection, data privacy)

- Several institutions mentioned that they would welcome policies from research funders mandating the publication of data

- Definition of common technical standards

- Ensuring interoperability between national and local systems

- Investing and providing support to new infrastructures or creating national infrastructures

- Providing financial support to universities for the development of infrastructure

- Providing incentives for openness and sharing

- Raising awareness of academic leadership, academic administration, researchers, scholarly societies (e.g. events, training sessions)

- Promoting cooperation of different stakeholders and sharing best practices among universities

- Promoting rewards/incentives for sharing or opening data in researchers' assessment evaluations.

Examples:

"Clear guidelines; a common set of research data management requirements shared across research funders; access to skills development opportunities; funding for infrastructure development." (Institution from the United Kingdom)

"A national mandate to Open Access to research data. (…) The harmonisation of future national data e-infrastructures or the creation of a national research data e-infrastructure. It is also crucial the adoption of technical standards at national level." (Institution from Spain)

"developing a comprehensive policy of open access to research data; having a plan for the long-term preservation and curation of research data; training of researchers and librarians; raising researchers' awareness of the necessity of sharing research data; addressing legal issues" (Institution from Poland)

"Providing a national strategy with common guidelines; providing incentives; changing the current research evaluation criteria; supporting collaborative projects" (Institution from Italy)

Regarding possible actions at European-level to further Open Access to research data, institutions identified the following priorities:

- Development of policies and clear guidelines at European level, with an emphasis on clarification of legal issues around Open Access to research data (e.g. copyright, data protection, TDM)

- Support the copyright reform in favour of research, making exceptions for TDM

- Extend the research data pilot in H2020 to all areas

- Make Open Access to research data mandatory for all projects funded by the EC

- Take into account "openness" in the evaluation of European projects

- Promoting the exchange of best practices across Europe

- Raising awareness on the benefits of Open Access to data to different stakeholders (academic leadership, scholarly societies, researchers)

- Provide financial support to institutions

- Develop, extend and support European-level infrastructure for data storage, access and sharing

- Work on the definition of standards, procedures and definitions relevant for Open Access to research data

- Provide guidelines of quality assurance of Open Access to research data

Examples:

"Open Research Data pilot in H2020 is a welcome initiative to test the workflows and barriers for open research data. Regarding infrastructure, more international subject data repositories would be welcome, so EU Member States would not have to maintain data repositories with low numbers of datasets. It would make sense to organise support for

making the research data open in scientific specialties at the European level (EU Member States might not have adequate data professionals). International guidelines/standards for the preparation of research datasets for repositories and subsequent openness are needed." (Institution from Slovenia)

"- To extend the research open data pilot to all disciplines and make it mandatory. - To define a clear roadmap from the openness of research data to Open Science and the European single market approach. Including a tangible idea for universities of the European Open Science Cloud implications and commitments. - To create more incentives (including economic) to harmonise the Open Access to research data among disciplines in Europe. - To make a clear liaison between «PSI Directive» and Public funded research outputs, looking for particular incentives for the re-use of research datasets. - To lobby to include open research data figures (and OA in general) in university ranking indicators." (Institution from Spain)

"Awareness by the EC that current data management/storage is highly decentralised, often even at the level of the individual researcher while institutional level or national level infrastructure is either non-existent or unknown. A transition should go gradually, with sufficient financial support to the institutions to support that transition. A policy should also take account of the legal and ethical issues that can go with data sharing and should give the researcher who invested in the data gathering sufficient time to exploit his/her work." (Institution from Belgium)

6. Conclusions

The results of the EUA Open Access Survey 2015/2016 showed that European universities are moving fast in the transition towards Open Access to research publications. A large number of institutions (≈ 80%) surveyed already had an Open Access policy to publications in place or were in the process of developing and implementing one in less than 12 months. In addition, more than eight in 10 universities either had their own or participated in a shared repository. The results also showed, however, that universities had difficulty in gathering and providing reliable data regarding the deposit rates of publications in the repository or the number of articles published in Open Access journals. In some cases, this was due to the recent implementation of institutional repositories, but several universities indicated that there were no set procedures on data collection in these areas at institutional level. The exception seemed to be for institutions that used the information contained in the repository for internal and/or external evaluation procedures, although this practice was not yet widespread among the survey respondents. The lack of data on the evolution of Open Access publishing (gold Open Access) and deposit rates in the repositories make it difficult for institutions to assess progress in the implementation of their Open Access policies. The results of the survey also indicated that the main concerns of researchers regarding self-archiving are related to uncertainty on publishers' policies and fear of copyright infringement. Finally, with the emergence of different publishing models, further clarification of the green- and gold-Open Access concepts would also be useful.

In the area of Open Access to research data, the results of the survey showed that this area is still less mature than Open Access to research publications. Indeed, only a small proportion of universities reported having some type of policy or guidelines on Open Access to research data, but these mostly focused on research data management. Indeed, for many universities the concepts of Open Access to research data and research data management seemed to overlap. This would indicate that further clarification and disentanglement of these two concepts is needed.

Institutions also characterised the area of Open Access to research data as very complex and fragmented in terms of European or national policies. Uncertainty and concerns over legal infringements were also paramount among the surveyed institutions. However, sharing of information and good practices in this area, including Text and Data Mining (TDM), could help institutions to move forward in this important area.

On its part, EUA and its Expert Group on Science 2.0/Open Science will continue to monitor the progress of European universities in the area of Open Access to research publications and data. At the time of writing of this report, the third wave of EUA's Open Access Survey (2016/2017) is being conducted. EUA is currently also involved in mapping the European 'Big Deal' landscape in Europe, the results of which, in tandem with those presented in this report, provide a comprehensive perspective on the status and progress of European institutions in their transition towards Open Access and Open Science. Other related topics, such as Text and Data Mining (TDM), and research assessment will continue to be high on the agendas of EUA and its Expert Group on Science 2.0/Open Science. In addition, EUA is also actively involved in discussions on the copyright reform, having recently published the

"[Updated EUA response to the European Commission proposal for a Directive on Copyright in the Digital Single Market](#)". Linkages to OpenAIRE and the European Commission's Open Science Policy Platform (OSPP), for example, will enable EUA to strengthen its active role in contributing to important European policy developments in the area of Open Science.

KEY RESULTS OF EUA OPEN ACCESS SURVEY 2015/2016

Open Access to research publications

- Almost 80% of institutions had a policy on Open Access to research publication or were actively developing one. Most of these policies were formulated as recommendations, rather than being mandatory.

- 88% of institutions had an institutional or shared repository.

- Deposit rates in repositories increased in 60% of institutions, but many report difficulties to gather reliable data.

- Institutions reported that the main concerns of researchers on self-archiving relate to uncertainty about the publishers' policies and concerns over copyright infringements.

- The awareness of the scientific publishers' policies on Open Access was assessed as "very good" or "good" for librarians by 88% of institutions, but only so for 54% of the institutional leadership and for 32% of researchers. A similar pattern of results was verified for Open Access rules in Horizon 2020 and the Open Research Data Pilot.

- Institutions considered that the actions most needed at national and European levels for implementing Open Access to publications focused on: developing additional incentives for researchers and providing guidelines on linking, sharing and re-using Open Access content.

Open Access to research data

- About 25% of institutions reported having formal or informal guidelines on Open Access to research data. Most of these refer to research data management and are formulated as recommendations.

- Institutions identified several reasons for the absence of guidelines or policies on Open Access to research data, including: novel topic, priority to Open Access to publications, absence of mandate from funders, absence of national-level policy, lack of awareness, legal concerns.

- The barriers identified by institutions for Open Access to research data revolved around: uncertainty, complexity (technical, legal), concerns over costs and reduced awareness.

- Institutions considered that the actions most needed at European level should focus on, inter alia: the development of policies and guidelines, covering quality assurance and legal matters (e.g. copyright, data protection, TDM); awareness raising activities; focus on European-level infrastructure for data storage, access and sharing; and promoting rewards/incentives for Open Access to research data (e.g. research assessment).

The European University Association (EUA) is the representative organisation of universities and national rectors' conferences in 47 European countries. EUA plays a crucial role in the Bologna Process and in influencing EU policies on higher education, research and innovation. Thanks to its interaction with a range of other European and international organisations EUA ensures that the independent voice of European universities is heard wherever decisions are being taken that will impact their activities.

The Association provides a unique expertise in higher education and research as well as a forum for exchange of ideas and good practice among universities. The results of EUA's work are made available to members and stakeholders through conferences, seminars, website and publications.