

D3.1 Summary report of the EOSC-Pillar ‘National Initiatives’ Survey

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Deliverable Abstract:

EOSC-Pillar invited 2,204 organisations (funding bodies, universities, research infrastructures and e-infrastructures) in five countries (Austria, Belgium, France, Germany, Italy) to participate in the ‘National Initiatives’ Survey. 688 representatives (31%) responded to the survey and answered various questions on business models, sustainability, users, Service Level Agreements (SLAs), access to data and services, FAIRness of data, data management in repositories, regulations on open science and open data as well as on perceptions of EOSC. This document contains the main results in terms of a frequency analysis.

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DELIVERY SLIP

	Name	Partner/Activity	Date
From:	Anita Bodlos  , Lisa Hönegger  , Lars Kaczmirek  , Volker Beckmann  , Vincent Breton, Geneviève Romier, Jos van Wezel  , Achim Streit  , Uros Stevanovic  , Fulvio Galeazzi  , Federica Tanlongo  , Inge Van Nieuwerburgh 	UNIVIE CNRS KIT GARR UGENT	06.2020
Reviewed by:	Leonardo Candela  , Rob Carrillo  , Julia Geistberger  , Michele Michelotto  , Olivier Rouchon 	CNR TRUST-IT UNIVIE INFN CINES	05.2020/ 06.2020
Approved by:	Fulvio Galeazzi 	GARR	29.06.2020

D3.1 Summary Report of the 'National Initiatives' Survey

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		Sec. 4.2, 4.3, 4.4, 4.5, 5.3	Geneviève Romier (CNRS)
		Sec. 4.6, 5.4	Jos van Wezel (KIT)
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		Sec. 5.2	Inge van Nieuwerburgh (UGent)
		Sec. 5.5	Fulvio Galeazzi (GARR), Federica Tanlongo (GARR)
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List of Abbreviations

AAI	Authentication and Authorization Infrastructure
API	Application Programming Interface
AT	Austria
BE	Belgium
CC	Creative Commons
DE	Germany
dk, d.k.	don't know
DMP	Data Management Plan
DOI	Digital object identifier
EC	European Commission
EI, E-I	E-infrastructure
EGI	European Grid Infrastructure
e-IRG	e-Infrastructure Reflection Group
EOSC	European Open Science Cloud
ESFRI	European Strategy Forum on Research Infrastructures
FB	Funding Body
FAIR	Findable, Accessible, Interoperable, Reusable
FR	France
HPC	High-performance computing
IdP	identity provider
IT	Italy

na, n.a.	not applicable
NREN	National research and education network
PID	Persistent identifier
RDM	Research data management
RI	Research Infrastructures
SD	Standard Deviation
SLA	Service Level Agreement
SMD	Repositories (Respondents who ticked 'We offer data infrastructures which store and manage research data.')
SME	Small and medium-sized enterprises
Uni	University
WG	Working Group

For an extended glossary on terms related to EOSC please see <https://eosc-portal.eu/glossary>.

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Executive summary

The EOSC-Pillar 'National Initiatives' Survey aims at gaining insights into the landscape of the research supporting infrastructure in the five EOSC-Pillar countries (Austria, Belgium, France, Germany and Italy). For this purpose, we defined four target groups (funding bodies, research infrastructures, e-infrastructures and universities) and tailored questions to each target group. 31% of the 2,204 invited representatives responded (in full or partially) to the questions. Thereby, the survey design allowed us to collect data on four crucial actors of the research supporting landscape.

The questionnaire consists of a variety of questions including a description of services offered by e-infrastructures, as well as business models of e-infrastructures and regulations for funding, roadmaps and users. Furthermore, we asked e-infrastructures questions on service level agreements and how they grant access to data. Several of the questions are dedicated to repositories with the aim to assess their characteristics as well as the FAIRness of their data holdings with detailed questions. Another block of questions is dedicated to regulations on open science and perceptions of EOSC.

A thorough interpretation of the results requires taking into account the research design including its strengths and limitations (see Chapter 3). The following pages contain the key findings of each section.

Key results

Section 4.1 on **target groups and services**:

- The dataset contains (partial) responses by 27 funding bodies, 114 universities, 229 research infrastructures and 318 e-infrastructures.
- 304 representatives of e-infrastructures answered the question assessing which services their organisation provides. Based on these responses, we identify 253 repositories, 69 high-performance computing providers and 31 organisations that 'offer high-bandwidth networks which transport research data' in the dataset.

Section 4.2 on **business models**:

- E-infrastructures' sources of funding are foremost state/ministry and European funds (for more than half of the e-infrastructures), followed by research institution(s), universities and funding agencies/funding bodies, and (for less than one third of the e-infrastructures) regions/towns. Few e-infrastructures benefit from funding by research communities, or industry/SMEs. Differences across countries are substantial as the most frequently mentioned sources of resources (funding or own revenues) differs across countries. From a European perspective, it is noteworthy that more than half of the e-infrastructures benefit from European funds.
- Access restrictions to the e-infrastructures' services: the most striking finding regarding access restrictions is that, on average, 39% of the e-infrastructures do not apply any restriction criteria (at least to some of their services). We also note common trends in the countries in this analysis since only a minority of the e-infrastructures select users by competition (28 organisations of 322) or restrict access to their national users (20 organisations of 322).
- About one third of the e-infrastructures identify barriers that limit the expansion of their services whereas about half of the e-infrastructures indicated that they currently do not face such barriers.
- About one third of all e-infrastructures acquire their own revenues other than funding. Of these, about half of the e-infrastructures charge users for some services and only a minority charges users/clients for all services. Hence, from a user/client perspective, paying for services is by far rather the exception than the rule.
- Funding bodies most frequently fund 'human resources' and 'project based resources' (92% of all responses), followed by 'software' (76%) and 'hardware' (72%). Of the 25 funding bodies in the analysis, fifteen indicated that their organisation grants funding for e-infrastructures and research infrastructures based on a competitive process. Besides, nine funding bodies apply the users' affiliation as a criteria and eight indicate that their organisation has rules based on the users' disciplines. Six funding bodies grant funds based on the users' geographical location. Besides, a fifth of all respondents indicated that this question was 'not applicable' to their organisation.

Section 4.3 on **sustainability**:

- Less than half of the e-infrastructures are registered in an official roadmap.
- Less than half of the e-infrastructures participate in a European organisation.
- A majority of funding bodies declare they maintain a roadmap of the infrastructures they fund.
- Funding bodies frequently maintain national and European roadmaps of infrastructures they fund.

Section 4.4.1 on **disciplines and groups of users**:

- Across countries, **research infrastructures** provide on average most frequently Natural Sciences communities (66%) with services, followed by Medical and Health Sciences (36%), Engineering and Technology (33%), and finally Social Sciences (25%), Humanities (18%) and Agricultural Sciences (14%).
- Across countries, **e-infrastructures** provide on average most frequently Natural Sciences communities (69%) with services, followed by Humanities (45%), Engineering and Technology (43%), Medical and Health Sciences (38%), Social Sciences (38%), and finally Agricultural Sciences (30%).
- On average, 86% of the service providers indicated that (researchers based at) universities frequently or very frequently use their services. (Researchers of) non-university research institutions and students also (very) frequently use services (70%). On average, between 25% and 20% of the service providers indicated that (researchers of) private, commercial institutions, governmental institutions (e.g. census bureaus), professionals and citizen scientists use their services (very) frequently.

Section 4.4.2 on **training for users**:

- Training is frequently offered by e-infrastructures (mean = 77%). Training is also a source of revenues for several e-infrastructures.
- If e-infrastructures offer training, almost all of them (also) offer face to face training (mean = 97%). Online documentation is also a common form of training (mean = 73%). On the contrary, it seems there is space for more MOOCs and web tutorials as only 12% (mean across countries) declare to organise such training.
- On average, 79% of the e-infrastructures that provide training use English in their training programs. This high percentage is encouraging as there seems to be little reason to fear that language barriers prevent European researchers from seeking training in another country. However, we find differences across countries.

- On average, 40% of the e-infrastructures that offer training do so for everyone interested, 62% offer training for a specific community, 40% for members of defined organisations. E-infrastructures seldom exclude trainees because of their geographical location. Therefore, the target audience of training is consistent with the needs of EOSC stakeholders in the near future.

Section 4.4.3 on **user support**:

- A majority of the e-infrastructures collect feedback from their users, most frequently by user meetings and workshops as well as by discussions, but we observe a not negligible minority of 'No, user feedback is not collected' responses.
- A large majority of the e-infrastructures support their users.
- Although only few funding bodies explicitly fund user support, spending funds on user support is generally allowed and not prohibited.

Section 4.4.4 on **communication with users**:

- A vast majority of e-infrastructures publish the description of their services on a website. Most websites are also available in English.

Section 4.4.5 on **support services for users**:

- On average, 60% of all e-infrastructures offer advice on data management, 44% offer support for data management plans and 30% offer support concerning legal aspects.

Section 4.5 on **Service Level Agreements (SLAs)**:

- The current usage of SLAs by service providers and e-infrastructures in the EOSC-Pillar countries is not high: about a third of the organisations offer SLAs (mean = 28% for some services and mean = 7% for all services). Another 14% foresee to offer SLAs in the near future. There are important disparities between the different countries.
- About a quarter of the service providers and e-infrastructures participate in a transnational organisation or federation that offers Service Level Agreements (SLAs) or similar contracts.
- E-infrastructures prefer to adapt their SLAs to the different cases to using predefined or one-fits-all SLAs.
- Only few issues or barriers are currently encountered by e-infrastructures to establish SLAs with communities.

Section 4.6 on **access to data and services**:

- Most e-infrastructures have a publicly available access policy and there is large effort to increase the number of access policies especially in France and Belgium. More research is needed to better understand the reason for not having an access policy.
- The level of readiness regarding the handling of a security incident in a standardised manner is very low. More research is needed to better understand security awareness and incident readiness.
- Access to services is often granted through local authentication instead of or in addition to federative authorisation methods used in EOSC.
- A large fraction of e-infrastructures (24%) processes personal data and 66% of those handle special categories of personal data.

Section 4.7.1 on **the familiarity with the principles of FAIR data**:

- On average, representatives for e-infrastructures, funding bodies, universities and research infrastructures are predominantly familiar or very familiar with the principles of FAIR data.
- Differences across the four target groups concerning the familiarity with FAIRness of data are very small.

Section 4.7.2 on **self-assessment of FAIRness of data holdings**:

- Although the majority of the repositories consider their data holdings on average as FAIR up to a certain degree, there is room for improvement. The largest group of repositories evaluate their data holdings as 'somewhat' FAIR (44%), another 22% perceive their data holdings as 'very much' FAIR.
- Differences across countries are substantial. German repositories perceive their data holdings most frequently as (very) FAIR, whereas repositories from France and Italy are more reluctant and more frequently choose the category 'not applicable'.

Section 4.7.3 on **findability of data**:

- Across countries, repositories reach an average findability score of 65 (of 100 possible points). Repositories in Germany and Italy achieve the highest score of findability, however, country differences are overall moderate (range = 22 points).
- On average, 53% of the repositories offer a search feature for metadata and another 14% are implementing this tool. Search features for metadata are most common in Germany.
- On average, 43% of the repositories offer a search feature for research data and 15% currently are implementing this feature. Respondents from Germany most frequently indicated to offer a search feature for research data.
- On average, 43% of all repositories provide 100% of their metadata in English and another 12% offer between 76% and 99% of their metadata in English. English is most frequently used in metadata by German and Italian repositories.
- On average, 44% of the repositories assign or provide persistent identifiers (PIDs) and another 17% are implementing this tool. The most common PIDs are DOIs (Digital Object Identifiers). PIDs are most frequently used in German repositories.
- On average, 42% of the repositories use unique identifiers for researchers in metadata, most frequently ORCIDs. Unique identifiers for researchers are most common in Italian repositories.

Section 4.7.4 on **interoperability**:

- Across countries, repositories reach an average interoperability score of 65 (of 100 possible points). Differences across countries are overall small (range = 16 points).
- On average, 55% of the repositories' services are or will soon be accessible by an application programming interface (API). APIs are most common among German and French repositories.
- On average, 59% of the repositories provide a data catalogue in a machine-readable format or are implementing this feature. Machine-readable data catalogues are most frequently found in Austrian and German repositories.
- On average, 52% of the repositories use standardised/controlled vocabularies for metadata. The percentage is largest for German repositories.

Section 4.7.5 on **reusability of data**:

- Across countries, repositories reach an average reusability score of 57 (of 100 possible points). Differences across countries are moderate (range = 21 points).
- On average, 38% of the repositories perform basic data curation, 32% perform enhanced curation, 25% perform data-level curation and 28% distribute the content as deposited.
- On average, 47% of the repositories have implemented measures for ensuring documentation about the origin and the changes made in data (i.e. data provenance).

Section 4.8 on **data management of repositories**:

- Across countries, depositors are most concerned about the 'effort of preparing the data for publication' (58%), followed by 'intellectual property (e.g. copyright)' (52%), 'lack of control over the usage of data' (50%), 'data protection' (47%), 'benefit of sharing data' (40%) and 'competitive disadvantage when sharing' (39%).
- Differences across countries are moderate for most items on depositors' concerns. On average, representatives from Germany perceive depositors least frequently as (very) concerned about sharing data.
- On average, repositories archive most frequently text (71%), followed by numeric data (60%) and still images (46%). Across countries, repositories archive on average 3.5 types of data. Differences across countries are largest for numeric data and still images.
- CC licenses are widely used by repositories as 45% disseminate research data under CC licenses for open reuse and 33% use CC licenses for restricted reuse. 38% of the repositories disseminate on average research data in the public domain and 25% use tailored licenses. Differences across countries are substantial especially concerning CC licences for open reuse.
- Repositories most frequently are certified by the Core Trust Seal (CTS) and (less frequently) the Data Seal of Approval (DSA). All other certificates are less common. Differences across countries are relatively small.

Section 4.9 on **regulations on open science and open data**:

- Funding bodies frequently impose mandatory rules (for some or all grants) for data management plans (DMPs, 40%), open access publications (36%), open research data (32%), compliance of data to the FAIR principles (32%), publication of data

in a repository (28%) and the long-term availability of data (28%). Mandatory regulations on the publication of data in a certified repository are less common (8%).

- Even if funding bodies have not adopted mandatory regulations, they frequently encourage grant recipients to comply with guidelines on aspects of open science and open data.
- Across countries, universities most frequently have adopted policies and written regulations for open access publications (56%), followed by the publication of data in a repository (28%), research data management (28%), the long-term availability of research data (21%), the publication of data in a certified repository (19%), the compliance of data to the FAIR principles (18%) and open research data (13%).
- On average, the percentages of universities publishing formal/written regulations or policies is almost as large as the percentage of universities with informal regulations. However, the largest group are on average universities without any regulations on open science/open data.

Section 4.10 on **perceptions of and expectations from EOSC:**

- 18 of 26 funding body representatives indicated to be (very) familiar with EOSC as did on average 48% of the e-infrastructures, 41% of the universities and 29% of the research infrastructures. Country differences are substantial for universities and e-infrastructures.
- Across all target groups, the majority of all representatives indicated that EOSC affects their organisations' strategic plans. Between 66% (research infrastructures) and 76% (funding bodies) of the respondents indicated that EOSC will 'somewhat' or 'very much' affect their organisation's strategic plans. About a tenth of the respondents (less for e-infrastructures) indicated on average that they 'don't know' the answer to this question.
- Across target groups, expectations to benefit from EOSC are high and differences across target groups are small: Between 67% (e-infrastructures) and 76% (funding bodies) of the respondents expect that their organisation will benefit very much or somewhat from EOSC. A substantial percentage of representatives, especially from universities (18%) and e-infrastructures (19%), indicated that they 'don't know' whether their organisations will benefit from EOSC. Only about ten percent or less expect little or no benefits from EOSC.

- On average, 17% of the universities, 33% of the research infrastructures and 40% of the e-infrastructures are already contributing to EOSC. Between 14% (e-infrastructures) and 25% (research infrastructures) of the respondents indicated that they do not know whether their organisation already contributes to EOSC.
- Across all target groups, about two thirds or more expect that contributing to EOSC is or will be beneficial for their organisation. Up to 20% (universities) of the respondents chose the category 'don't know'.

In addition to these findings structured along topics of the questionnaire, we also discuss the results per country (see Chapter 5).

Preface

This report is a timely and valuable contribution to the overall implementation of the European Open Science Cloud (EOSC). Though, on 29 May 2018 the Competitiveness Council adopted its resolutions on EOSC, i.e. an open and trusted environment for managing research data, and has set up the guidelines on its implementation based on the European Commission (EC) staff working document 'Implementation Roadmap for the European Open Science Cloud' it is necessary to continuously monitor the evolution of the landscape and of EOSC related activities in the member states and associated countries. The Council highlighted the need to respect established practices and existing principles developed by research communities, the European Strategy Forum on Research Infrastructures (ESFRI), the RIs, the e-infrastructures, and the national infrastructures when implementing EOSC.

The dynamics of the process, however, requires detailed information on developments also in those areas, and projects like EOSC-Pillar have a clear role hereby. The EOSC-Pillar 'National Initiatives Survey' has been informing the various stakeholders and other EOSC projects in timely distributions of their results prior to this report. EOSC is foreseen to be created from federated services and interlink with national, regional and institutional resources of open research data and services. To this end, it is pivotal to survey, describe and understand the existing and available capacities, national, European and global infrastructures, national policies and existing funding mechanisms, and other initiatives in the context of EOSC. This stock taking exercise is done by a dedicated working group of the Executive board, mandated to map EOSC-relevant national infrastructures and the current level of spending on research data infrastructures; to take stock of federation constraints and opportunities. The WG has collated inputs from a diversity of open sources, the member states and associated countries, and it was aligning its activities with the INFRAEOSC 5b projects. From the beginning, the collaboration with the EOSC-Pillar project was very beneficial.

The work of the Landscape WG which was more based on collection and analysis of existing documents, is soundly complemented by EOSC-Pillar, actively addressing specific stakeholders. The results of the EOSC-Pillar National Initiatives Survey is a valuable

contribution to the WG Landscape, which helped deepening our understanding of the situation in Austria, Belgium, France, Germany and Italy. The data provided by EOSC-Pillar will become even more important in the analytical work to be done later in 2020.

Jan Hrusak

Chair Working Group Landscape

1 Introduction

1.1 The EOSC-Pillar survey activities in a nutshell

The H2020 project EOSC-Pillar, one of the regional INFRAEOSC projects to support the implementation of EOSC, has conducted the 'National Initiatives' survey among four defined target groups (universities, funding bodies, research infrastructures (RI) and e-infrastructures) in five European countries (Austria, Belgium, France, Germany, and Italy).

The aim of this endeavour is to create a comprehensive picture of the research supporting infrastructure with state-of-the-art data to support the creation of the European Open Science Cloud and to provide empirical data for evidence-based decision making. EOSC-Pillar delivers insights into the landscape of research supporting infrastructure by analysing organisational, technical as well as legal aspects relevant to open science and managing data. Moreover, the survey covers aspects comprising the whole research data life cycle (from data collection and processing to archiving, dissemination and reuse).

1.2 The EOSC-Pillar survey and its relevance in more detail

For gathering data as relevant and comprehensive as possible, experts in various fields were included in the EOSC-Pillar survey design process. The survey has been developed by a multidisciplinary team with expertise in survey methodology as well as in-depth knowledge of the research supporting infrastructure and the implementation process of the European Open Science Cloud. Furthermore, feedback from stakeholders (including other INFRAEOSC projects, members of EOSC Working Groups and initiatives promoting open science) was gathered and incorporated in multiple stages of the survey design, especially when defining the target groups and topics of the survey questions.

To maximise the knowledge gain across different topics and stakeholder groups, the EOSC-Pillar team decided to survey the whole population of the target groups rather than a sample. In more detail, we defined four target groups:

- universities,
- funding bodies,
- research infrastructures of national relevance (including national ESFRI nodes) and
- e-infrastructures (including data repositories, data archives, data/computing centres, grid infrastructures, HPC centres, NRENs and national museums with digital archives (see Bodlos et al. (2019b) for details and a full list).

We then gathered comprehensive lists of the organisations that belong to these target groups in all five countries. For this purpose, we used information from official records (e.g. lists of universities provided by governmental institutions) and complemented these records with our own research whenever necessary. Overall, EOSC-Pillar collected 2,204 organisations and the contact details of representatives who then were invited to participate in the survey (Bodlos et al. 2019b). The survey was conducted as a web survey in October and November 2019 and reached a response rate of 31%. In this document, we provide descriptive results of the survey for all target groups, topics and countries (see Chapter 3).

This approach of collecting comprehensive lists of respondents also guaranteed the inclusion of smaller organisations. EOSC-Pillar aimed at including these smaller organisations who may have less resources and consequently previously may have lacked opportunities to stay informed and involved in efforts for creating EOSC. Thereby, the data gathered by EOSC-Pillar complements information provided by previous studies that focused more on larger, well established organisations (see Chapter 2).

EOSC-Pillar implements the principles of open science and open research data, thus, allowing other regional projects to reuse, modify and apply a similar research design. In more detail, EOSC-Pillar shared the questionnaire (Bodlos et al. 2019a), the programming code for the online survey, the method for collecting the list of targets (Bodlos et al. 2019b), and general information on the survey design. As EOSC-Pillar was the first of the regional projects to take up survey activities, several regional projects seized the opportunity to build upon the work of EOSC-Pillar (see also Chapter 3). Therefore, EOSC-Pillar provided the basis for gathering comparable information on the research supporting landscape across Europe.

As an additional benefit, this survey served as a rather wide engagement activity, raising awareness of EOSC among the respondents and stakeholder groups. On the one hand,

we collected information on how 600+ representatives of organisations with relevance to EOSC perceive their familiarity with EOSC and what they expect from EOSC. On the other hand, addressing 2,200 organisations in total may also have raised awareness of EOSC and open science, and encouraged respondents to obtain further information on EOSC.

We aim at disseminating the survey results in two important ways that affected the survey design. First, the data will support and align project activities in EOSC-Pillar. For instance, the survey provides an overview of business models and the technical infrastructure of service providers that will be incorporated by other work packages. Second, we aim to disseminate the results beyond the project to stakeholders across Europe. We will deliver the survey results to the EOSC governance, to national representatives of research and open science and all other stakeholders involved or interested in the implementation of the European Open Science Cloud.

First results of the 'National Initiatives' Survey were presented in a webinar¹ in April 2020 and on the EOSC-Pillar website².

1.3 Outline of the document

This document proceeds as follows:

In Chapter 2, we describe previous landscaping activities in Europe in the context of EOSC (i.e. initiatives aiming at developing a state-of-art picture on EOSC-related activities). We build upon the results of these activities and explain the challenges we identified. The EOSC-Pillar survey aims to narrow the identified gaps and thereby complement the existing information.

In Chapter 3, we explain our methodological approach and survey design. In more detail, we explain the structure of the questionnaire, the process of collecting the list of targets as well as the structure of the dataset. This information is essential for the interpretation of the survey results.

Chapter 4 provides a detailed description of the results on all topics, covering business models and Service Level Agreements (SLA), the full cycle of research data management from a service provider perspective as well as in relation to policy developments, the certifications of repositories, access conditions to data and services, licenses and technical aspects of Authentication and Authorization Infrastructure (AAI), the usage of services, user communities and user support, and last but not least the FAIR principles and EOSC awareness and engagement in general.

¹<https://www.eosc-pillar.eu/events/webinar-national-initiatives-survey-results>

²<https://www.eosc-pillar.eu/news/pillar-national-initiatives-survey-results>

In Chapter 5, we bring in a view on the national perspective and landscape by describing the most important results for Austria, Belgium, France, Germany and Italy.

Chapter 6 contains a brief summary of the most important findings as well as an outlook for future activities.

The Appendix contains tables of frequencies (per countries) for all closed-ended questions of the questionnaire.

1.4 Related documents and limitations of this report

The questionnaire including a methodological description (Bodlos et al. 2019a) and the list of targets addressed by the survey (Bodlos et al. 2019b) are published and available via AUSSDA (DOI 10.11587/VOSVGK). The dataset (Bodlos et al. forthcoming a) as well as the frequency analysis (Bodlos et al. forthcoming b) will be published as part of the dataset under the same DOI in Q3 of 2020.

Recommendations derived from the EOSC-Pillar 'National Initiatives Survey' are not part of this summary report and will be addressed at a later stage of the research process. Further limitations on how the data can or cannot be interpreted and used are part of Chapter 3. EOSC-Pillar does not assume liability for any inaccuracies that may have occurred during data gathering, analysis or interpretation nor can it be held accountable for any conclusions drawn from this report.

2 Landscaping of national/thematic initiatives on open research data and services – a brief mapping of mappings

Creating a comprehensive picture of EOSC landscaping activities or mappings requires to put this survey into the context of related efforts by European or national initiatives and projects. As the need to better understand the European landscape of research supporting infrastructure and services has become more evident, there have been multiple efforts aiming at shedding more light into the fragmented European research supporting infrastructure scene. We do not consider the EOSC-Pillar survey and its results as detached from or in competition to these efforts, but as a complementing endeavour and an additional effort to deliver state-of-the-art and detailed data stemming from a comprehensive and inclusive survey mapping approach.

The approach of this survey has been influenced by previous EC efforts and efforts of EOSC related projects to ensure connectivity to already existing work. Noteworthy connections are to EC communications (European Commission 2016) and the EOSC Pilot project reports (Terrovitis et al. 2015) regarding definitions, selection of target or stakeholder groups and the selection of topics as is described in detail in Chapter 3. Other mapping efforts have also been taken into account when designing the survey at hand:

The **e-Infrastructures Reflection Group** has undertaken an analysis of national e-infrastructure landscapes in Europe to facilitate the implementation of 'e-Infrastructure Commons in Europe' (e-IRG 2019: 12). The aim of this initiative was to map existing infrastructure and deliver information on organisation, funding, access and the coordination of generic and discipline specific services. In their own words, this work should be viewed as 'a first attempt to come up with a picture of the EU complex landscape' (e-IRG 2019: 13), with one of the main findings being that the landscape is very fragmented. The need for more information, more details on infrastructures and services, provided by service

providers themselves, is evident.

The EOSC-Pillar survey has further included findings from the **ESFRI Roadmap 2018** and their landscape analysis, which is mapping the most relevant RIs in Europe, by definition 'of a unique nature' and 'to support top-level research' (ESFRI 2018: 157). As these organisations or initiatives have a certain maturity and represent important players in the European RI landscape, they are included as an additional subcategory in the RI target group in the EOSC-Pillar survey.

The same focus applies to another landscaping activity conducted by the **RISCAPE** project, with the aim to globally map the landscape of RI services and organisations. 'The scoping of the landscape goals led to a concentration on larger, more established research facilities – of the same level and general type as ESFRI initiatives. This means that many interesting and potentially relevant, e.g. smaller or commercial facilities are not necessarily covered within this analysis.' (RISCAPE 2019: 6).

Another noteworthy European mapping initiative with regard to research supporting infrastructures and open research data was conducted by the project **MERIL** (2019). Their goal was to deliver a comprehensive database for researchers in order to make services findable and deliver first-hand information on them. More than 1,000 organisations and services have been identified for all scientific disciplines and general overview information is provided for each service.

These and more existing efforts show that the need to understand the complex, fragmented, and – for a large part – uncoordinated European research supporting infrastructure is substantial. What most previous mapping efforts have in common is the focus on larger, well-functioning and well established organisations on the one hand, and providing an overview on general European trends and developments on the other hand, but without going into detail and without specifics on the operation of services or the engagement of institutions with inside knowledge from these services.

What EOSC-Pillar is now delivering are results from a wide and inclusive survey, with a broad range of topics and the inclusion of many stakeholders, some well-established and already 'EOSC-ready', others smaller, newer, with less resources, etc. – but nonetheless important in the effort to identify, harmonize and federate existing initiatives to the European Open Science Cloud. In contrast to the above mentioned and other European-wide landscaping initiatives, the regional approach of this project delivers a great advantage, as this 'limitation' in regional scope allows us to gain more detailed knowledge, more balanced information and create a more comprehensive picture of open research data services for the EOSC-Pillar countries. With this approach, EOSC-Pillar pursues its overarching goal of supporting the integration of initiatives in EOSC on a regional level.

3 Data and Methods³

The EOSC-Pillar 'National Initiatives' survey was designed as a representative, international online survey. The questionnaire is the basis of a cross-section study aiming at landscaping national initiatives of open research data and services with relevance to the European Open Science Cloud (EOSC) in five European countries (Austria, Belgium, France, Germany and Italy).

In order to contribute to a comprehensive picture of the landscape of the European research supporting infrastructure, EOSC-Pillar cooperated with other regional projects from an early research stage onwards. Since the EOSC-Pillar project activities started ahead of the other regional projects, we created the survey and questionnaire design, all the while taking into account the transferability of the survey to ensure the maximum reuse potential regarding content as well as technical implementation. The survey was then (in slightly adapted or similar versions) implemented in the other regional INFRAEOSC projects. Collaboration between the projects and regions had already started in the planning phases long before the start of the first project (by co-location of events happening prior to the project start in July 2019) and is still ongoing, manifested through an inter-project Memorandum of Understanding and organised through inter-project task forces on the topic 'Landscape'. Hence, EOSC-Pillar will deliver this important insights into the landscapes of Austria, Belgium, France, Germany and Italy, as the other regional projects similarly are doing for their respective regions – ultimately to provide a comprehensive picture for Europe.

³As noted in the license information in the beginning of the document, this report builds upon previous publications by EOSC-Pillar. Therefore, large parts of this chapter have been published identically in the questionnaire of the survey (Bodlos et al. 2019a) and the list of targets (Bodlos et al. 2019b) available under the DOI 10.11587/VOSVGK.

3.1 Definition of target groups

The target population consists of four target groups that are crucial to the implementation of EOSC:

- **e-infrastructures** (including data repositories, data archives, data/computing centres, grid infrastructures, HPCs, NRENs and national museums with digital archives). In essence, e-infrastructures in our definition are organisations that provide services to the research community and EOSC according to a definition by the European Commission (2016: 2). Therefore, we sometimes also use the term ‘service providers’ for e-infrastructures.
- **research infrastructures** of national relevance (as defined by national governments; including national ESFRI nodes),
- **universities** and
- **funding bodies**.

The aim of the survey was to obtain representative results for each target group. The survey was developed and conducted following best practices in online survey methodology. For each country and target group, we compiled a comprehensive list of organisations and individual contact details using public databases and listings (e.g. records provided by government institutions on universities and research infrastructures of national relevance, records of national ESFRI nodes as well as records of repositories and HPCs, see Bodlos et al. (2019b) for the detailed sources).

For every organisation, we identified the contact details of one expert (most likely a scientific or managing director, depending on the type of organisation). These experts received an invitation to participate in the survey as representatives of their organisation and were asked to provide answers and to gather relevant information within the organisation if necessary. By creating individual tokens with the survey software, we can ensure that only one response per target was gathered.

3.2 Design of the questionnaire

After several feedback loops, we drafted a first consolidated version of the questionnaire for cognitive pretests. In more detail, we asked members of different target groups to consider each question and to verbalize any problems, ambiguities or difficulties they may encounter. Based on these results, we revised the questionnaire.

3.2.1 Structure of the questionnaire and the dataset

All respondents received a common core of questions addressing their perceptions of EOSC along with questions about the participating organisation. Additionally, we tailored sets of questions to each target group. All respondents received only the questions relevant to them according to our classification of organisations in one of the four target groups.

The questionnaires for funding bodies, universities and research infrastructures are comparably short (less than 25 questions each).

E-infrastructures, in our definition, are the target group that provide services relevant to the EOSC catalogue and whose maturity level we aim to assess. Therefore, e-infrastructures received the most detailed questionnaire. To allow for a more fine-grained analysis, we asked the respondents of e-infrastructures which services they offer to the research community. For defining the services of e-infrastructures, we built upon previous work by the European Commission and the EOSC Pilot project:

‘The Cloud can be understood as the combination of three interdependent elements: the data infrastructures which store and manage data; the high-bandwidth networks which transport data; and the ever more powerful computers which can be used to process the data.’ (European Commission 2016: 2, see also Terrovitis et al. 2015: 9)

When compiling the list of experts for our targeted organisations, we aimed at identifying respondents that are experts in charge of one of the services according to this definition. If an organisation offers multiple services, we aimed at addressing one expert per service (e.g. the heads of the departments rather than the head of the organisation). When this was not possible and one respondent is an expert for multiple services, he or she received the questions multiple times (e.g. respondents are asked all questions once for ‘data infrastructures which store and manage data’ and once for the ‘powerful computers which can be used to process the data’).

Because of this described structure of the dataset, responses for e-infrastructures can be analysed in two ways: Analyses on an organisation-level (one answer per e-infrastructure) allow for interpreting responses for the entire e-infrastructure, e.g. how familiar the representative of an e-infrastructure is with the principles of FAIR data or whether an e-infrastructures is part of a roadmap. Analyses on a service-level (one answer per service) allow for interpreting the data for all the services that e-infrastructures provide, e.g. how many services use competition as a method of access restriction. Analysing the data on a service level requires reshaping the data to a stacked dataset, a term we frequently use in this document. A meaningful interpretation of the results therefore re-

quires taking into account on which level the data are analysed (see also the Appendix Chapter 2).

This document contains the results of the closed-ended questions (multiple and single choice questions). The questionnaire also contains several open-ended questions and respondents had the opportunity to specify their response in a text field if they chose the category 'other'. However, analysing these text responses is beyond the scope of this report.

The survey was implemented with the open source software LimeSurvey (<https://www.limesurvey.org>). More details on the structure of the questionnaire, the programming information and information on individual survey questions are described in (Bodlos et al. 2019a).

3.2.2 Implementation of the survey

In order to raise awareness of the survey and to increase the response rate, we contacted our targets multiple times. In more detail, we sent our targets a pre-notice email one week before the survey started. These emails contained endorsement messages by representatives of the national research or research supporting landscape. After the actual invitation to the survey, we sent multiple reminders to our targets including contact points for any question and feedback as well as the possibility to opt-out of the survey.

The implementation and monitoring of the survey were conducted via the survey software and by the national representatives of the EOSC-Pillar survey team. Most contact with participants (including the invitation link, the corresponding information letters and reminders) from the EOSC-Pillar team towards the identified survey targets was organised centrally through the software.

In addition, national contact points were established for further feedback and information. Information on the survey was also transported via the project website. Moreover, EOSC-Pillar conducted three national webinars to discuss topics of the questionnaire and to offer respondents an occasion to ask questions on the survey.

3.3 Scope, validity and limitations

The goal of the EOSC-Pillar survey is to deliver representative data for the selected target groups. By following guidelines for online surveys and the Total Survey Error (TSE) framework (Dillman et. al. 2019) when designing, implementing and analysing the survey (data), we aim at eliminating survey errors and biases as far as possible. Survey data can never guarantee 100% accuracy and descriptions of the research field, as the gathered data are, among else, dependent on the information and accuracy provided by

the survey participants. By closely following an established methodological approach (as described in detail in this chapter), we can however reduce errors and bias and provide high quality, representative data for the participating countries and target groups of the survey.

The curation and analysis of the data was conducted by experts in quantitative social science research methods. The description and interpretation of the data was then conducted by the EOSC-Pillar survey team in cooperation with representatives from all participating countries. These activities were carefully executed and double checked. In addition, other project members with in-depth knowledge of the landscape of the European research supporting infrastructure reviewed the report including the interpretation of the results. To allow for further analysis as well as the replication of statements and conclusions, the survey data will also be published in the AUSSDA repository for scientific reuse under the DOI 10.11587/VOSVGK .

The scope of the survey was defined following an intensive discussion between project partners and external stakeholders (including members of Executive Board working groups and related projects) in order to focus on the most relevant target groups for the implementation of EOSC at this stage of the process. The result is the inclusion of four different groups (with more subgroups) that were included in the survey. This shall not imply that the selected target groups are the only stakeholder groups that are of interest in such a landscaping activity. There are certainly many more relevant and important parties to observe and include into this discussion. However, creating and conducting such a survey with the goal of gaining meaningful and accurate data requires defining and thus limiting the scope. This limitation in scope allows for the design of a questionnaire with suitable questions for all respondents as well as for the collection of a comprehensive database of participants, a precondition for representative results. In this way, the results of this survey may also indicate the need to survey other specific target groups or address further topics to gain the needed insight for a state-of-the-art picture of the landscape of the European research supporting infrastructure and to implement the European Open Science Cloud.

Interpreting the described frequencies in this report requires also taking the number of observations as well as the method of calculation into account. The Appendix contains frequency tables for most closed questions and, where sensible, cross tabulations between countries (or target groups) and the variable of interest. The tables contain all percentages, however, we strongly emphasise that the underlying number of observations have to be taken into account: many figures rely on a low number of observations. As a consequence, individual observations may have a large leverage on the percentages. We also provide two figures per cross tabulation that summarize the figures presented

in the table. The first figure is the total percentage in the dataset. In this figure, every observation counts equally and consequently, country differences may be blurred as countries with more observations have a larger weight. The second figure presents means across countries (and target groups in some cases). For this figure, every country has the same weight and counts equally. However, the problem for percentages that rely on a low number of observations extends to the mean across countries (see also Chapter 2 in the Appendix). In this report, we most frequently refer to the mean across countries. Nevertheless, depending on the reader's interest, other figures may be more appropriate for the interpretation. In this case, we kindly ask to consult the frequency tables in the appendix or the related dataset for conducting other analyses.

In the analysis, we also include respondents who skipped individual questions (captured in the category 'no answer') and who indicate that a question is 'not applicable' to their organisation. We decided to include these categories as they also may provide valuable insights into the landscape. However, depending on the research interest, excluding these responses may be the more appropriate choice. If a respondent skipped an entire module of questions, he or she is counted as drop-out and therefore not represented in the frequency analysis. As respondents dropped out over the course of the questionnaire, the number of observation may vary across modules.

This document contains a descriptive frequency analysis of the organisations in the survey without controlling for how these organisations differ in fundamental aspects, e.g. their resources, needs, goals and interests. We cannot control for these aspects, although these differences may be, depending on the research interest, of vital importance. For instance, some e-infrastructures in the analyses indicated to have no budget dedicated to maintaining their services whereas others indicated to have a budget of six, seven or more digits at their disposal. In the frequency analysis, both service providers count equally. Likewise, service providers in different disciplines may differ substantially in their needs, goals and resources. Hence, the results we described in this document are always an approximation to reality and never cover reality and its complexity completely. As a consequence, any inferences drawn from the results have to be made carefully, require validating the results by external sources and have to take into account the research design as well as the structure of the data set. In some instances, additional (multivariate) analyses using the underlying dataset or external sources may be more appropriate than taking figures from the presented frequency tables.

Due to the different organisational structures of the landscape and institutions across countries, comparisons across borders prove challenging. The EOSC-Pillar survey team discussed these differences across countries in detail. The resulting definitions and guidelines for selecting targets have two aims: selecting targets as comparable as possible while

simultaneously respecting the country-specific landscape. Despite these efforts, the employed definition is always a trade-off between these two aspects and consequently may fit some countries and targets better than others. Interpretations and conclusions based on the gathered data, especially regarding recommendations for measures and developments to strengthen the landscape, have to be conducted carefully and with consideration of these mentioned limitations.

3.4 Response rate

EOSC-Pillar collected 2,204 organisations that fit the definition of one of the four target groups and invited representatives of these organisations to participate in the survey.⁴ Overall, 688 respondents (31%) started the survey. Of these, 603 respondents (27% of all collected organisations) completed the survey. We counted responses as completed when respondents answered questions up to the end of the survey and/or 'submitted' the survey by pressing the corresponding button on the last survey page. 85 respondents (4% of all collected organisations) started the survey and answered at least one question, but dropped out over the course of the survey. We label these cases as 'partial responses'.⁵

⁴For more information on the scope, definition and collection of survey targets, please see Bodlos et al. (2019a) and Bodlos et al. (2019b).

⁵For more details on the response rate across countries and target groups, please see the Appendix, Tables 2.1-2.5 as well as Section 4.1.

4 Results

This chapter contains the most important and interesting results of the 'National Initiatives' Survey along with their interpretation. Further results are available in the frequency tables in the Appendix and the survey data. When discussing the results, we build upon, but do not repeat the information on data gathering provided in Chapter 3 of this report and in the complementary material (Bodlos et al. 2019a,b). However, a thorough interpretation of Chapter 4 on survey results also requires considering the information concerning the survey design, the target groups, the structure of the dataset and the question wording.

This chapter is structured as follows:

- In the beginning, we describe how many representatives per target group participated in the survey and the services offered by e-infrastructures (Section 4.1).
- Section 4.2 is dedicated to business models, e.g. from which sources e-infrastructures obtain funding or other revenues and for what services funding bodies offer grants.
- In Section 4.3, we discuss the sustainability of service providers, for instance, which organisations are part of roadmaps or members of European organisations.
- The focus of Section 4.4 lies on users, their characteristics, support and training as well as other user-related aspects.
- In Section 4.5, we discuss our findings on Service Level Agreements (SLAs).
- Section 4.6 contains results on access regulations, security protocols and data protection.
- In Section 4.7, 'FAIRness', we discuss how representatives of all four target groups perceive their familiarity with the concept of FAIR data as well as the findability, interoperability and reusability of data holdings of repositories.
- Section 4.8 on 'Data management of repositories' covers characteristics of repositories, e.g. the type of data they hold or the certifications they obtain.
- In Section 4.9, we provide an overview over regulations on open science and open data by funding bodies and universities.
- Finally, in Section 4.10, we discuss perceptions of and expectations from EOSC by all four target groups.

4.1 Target groups and services

In this section, we describe how many representatives per target group were invited and how many of them actually participated in the survey. Moreover, we discuss how many representatives for the different services provided by e-infrastructures based on the definition by the European Commission (2016: 2; see Chapter 3 and Section 4.1.4 for details on the definition of services used in this survey) are included in the dataset.

4.1.1 Funding bodies

Funding bodies do not exist as numerous as universities or e-infrastructures. Altogether, EOSC-Pillar invited 91 funding bodies to participate in the survey. Of these, 25 completed the survey (28%) and another two (2%) started the survey but dropped out along the way (see Table 2.2 in the Appendix). As the number of funding bodies in the dataset is relatively low, we do not calculate frequencies across countries. Instead, all figures for funding bodies in this document rely on the data we gathered for all funding bodies combined.

4.1.2 Universities

EOSC-Pillar addressed overall 610 universities of which 114 (partially) responded to the survey (19%)⁶. Fewest universities exist in Belgium, however, the response rate among Belgian universities is exceptionally high as nine of the eleven universities responded to the survey. The highest number of universities were identified in Germany as 390 German universities and universities of applied sciences were addressed by EOSC-Pillar. However, only 54 (14%) German universities responded (partially) to the survey. The other countries range in between Belgium and Germany: 12 (28%) universities (of applied sciences) responded for Austria, 19 (23%) universities for France and 20 (24%) for Italy (see Table 2.3 in the Appendix).

4.1.3 Research infrastructures

EOSC-Pillar addressed 776 research infrastructures of national relevance. We defined research infrastructures to be of 'national relevance' if they are included in RI strategies by the national governments or part of ESFRI (see Bodlos et al. 2019b for details). Overall, we received (partial) responses of 229 research infrastructures (30%). The largest number

⁶For reporting the response rate for universities, RI and e-infrastructures, we use the total percentages, hence, the percentage of all observations combined (instead of means across countries, see Chapter 3 for a discussion).

of research infrastructures were again collected for Germany (476), fewest for Austria (14). 77 (16%) research infrastructures started the survey for Germany, 70 (42%) for Italy, 54 (61%) for France, 20 (65%) for Belgium and eight of 14 for Austria (see Table 2.4 in the Appendix).

4.1.4 E-infrastructure

We gathered information on 727 e-infrastructure of which 318 responded (partially) to the survey (44%). The largest number of e-infrastructure was identified in Germany (298), the fewest number in Belgium (35). Of all the invited e-infrastructure, 20 (57%) started the survey for Belgium, 25 (40%) for France, 38 (48%) for Austria, 94 (32%) for Germany and 141 (56%) for Italy (see Table 2.5 in the Appendix).

Services provided by e-infrastructure

EOSC-Pillar has asked representatives for e-infrastructure which services their organisation offers using a definition by the European Commission (2016, p. 2). Respondents could choose up to three services that their organisations provide:

1. As a first service according to the definition by the European Commission (2016, p. 2), respondents could choose the category **'We offer data infrastructure which store and manage research data (e.g. archive and disseminate data).'** We label organisations that offer this service as 'repositories' and sometimes abbreviate these service providers as 'SMDs' (as they 'store and manage data'). Repositories received the largest number of questions as we e.g. asked them to assess the FAIRness of their data holdings (see Sections 4.7 and 4.8).
2. Second, respondents could choose the category **'We offer high-bandwidth networks which transport research data.'**
3. The third category is **'We offer high-performance computing which can be used to process research data.'** Throughout this report, we often refer to organisations that offer this service as 'high performance computing centres' or simply as 'HPCs'.

Repositories are most common in the dataset. Overall, 253 e-infrastructure indicated to 'store and manage research data', hence, the dataset comprises 253 repositories. Across countries, Italian repositories are most frequent in the dataset as 113 e-infrastructure representatives indicated that their organisations store and manage research data. Besides, 82 respondents from Germany indicated that their organisations offer these services, as did

28 e-infrastructures for Austria, 19 e-infrastructures for France and 11 e-infrastructures for Belgium (see Table 7.18 in the Appendix).⁷

69 representatives of e-infrastructures indicated that their organisation 'offer(s) high-performance computing which can be used to process research data.' Most HPC centres in the dataset are located in Italy (30), followed by Germany (15), France (11), Austria (9) and Belgium (4, see Table 7.20 in the Appendix).

Organisations that 'offer high-bandwidth networks which transport research data' are least common in the dataset as 31 respondents indicated that their organisation offers this service. On a country level, nine e-infrastructures offer this service in Italy, as do eight e-infrastructures in Austria, seven e-infrastructures in Germany, five e-infrastructures in France and two in Belgium (see Table 7.19 in the Appendix).

The distinction of these services is important as their implementation and organisation may differ also within an organisation. For instance, if an organisation provides services as a repository and as an HPC centre, access regulations may differ between these services. Therefore, representatives of organisations who provide multiple services received questions on a service-level multiple times. Depending on the question, we analyse the data on an organisation-level or on a service-level (using a stacked dataset). A correct interpretation of the data requires carefully considering which dataset is used for the analysis.

Key results for target groups and services:

- The dataset contains (partial) responses by 27 funding bodies, 114 universities, 229 research infrastructures and 318 e-infrastructures.
- 304 representatives of e-infrastructures answered the question assessing which services their organisation provides. Based on these responses, we identify 253 repositories, 69 high-performance computing providers and 31 organisations that 'offer high-bandwidth networks which transport research data' in the dataset.

⁷As respondents dropped out along the questionnaire, these numbers do not necessarily correspond to the numbers shown in the tables of other modules.

4.2 Business models

This section presents the results of the survey concerning aspects of business models that are relevant to open science and EOSC. We describe business models from two angles: e-infrastructures and funding bodies.

4.2.1 E-infrastructures

The objective of this set of questions is to identify elements of the e-infrastructures' business models such as, for example, their sources of revenue. Sources of revenues may be funding or own revenues. As the source of funding may differ across countries, all analyses in this section rely on the stacked dataset that holds observations on a service-level (rather than on an organisation level, see Chapter 3). Tables 7.28 to 7.41 in the Annex contain the detailed figures.

Recurrent funding sources

The multiple choice question '**Who recurrently provides funding to your organisation?**' is dedicated to the identification of recurrent sources of funding and was asked to 322 e-infrastructures. Figure 4.1 provides an overview of the frequencies per country, Tables 7.28–7.36 in the Appendix contain all figures.

The frequencies for the sources of recurrent funding are as follows: Funding by national governmental institutions (state/ministry) is by far the most frequently mentioned source of funding (mean = 70%), followed by European funds (mean = 52%). Research institutions, universities, funding agencies and regions/towns all provide funding for about a third of the e-infrastructures. Compared to these funding providers, research communities (mean = 16%) and 'industries/small and medium-sized enterprises (SMEs)' (mean = 11%) are less important as sources for funding.

In more detail, the results per category and the related country differences are:

- **State/ministry:** Representatives for e-infrastructures most frequently indicated that they obtain funding from the state or ministry. Across countries, 76% of the e-infrastructures ticked on average the category 'State/ministry'. We observe little variation across the different countries of this analysis (60% in Belgium (N = 15) to 72% in Germany and Italy).
- **European funds** are also very common as more than half of the e-infrastructures (52%) indicated to benefit from 'European funds'. Country differences are substantial for this category: Italy is in the first place (78%), followed by Austria (54%), France (50%), Germany (38%) and Belgium (6 of 15).

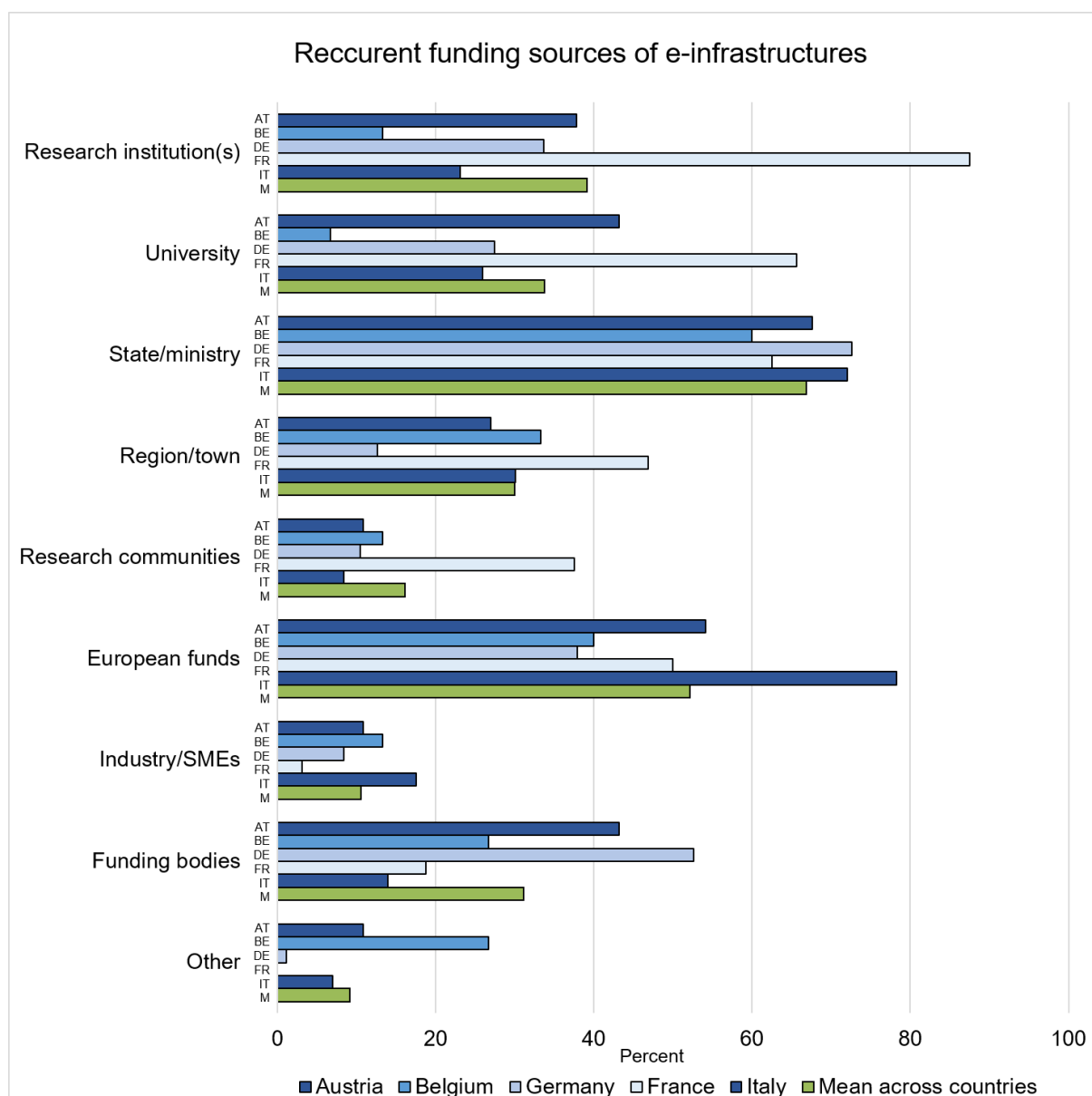


Figure 4.1 – Sources of funding of the e-infrastructures in the EOSC-Pillar partners countries

Note: target group: e-infrastructures; stacked dataset of all services; bars show percentages per country (e.g. the first bar shows that 38% of the e-infrastructures in Austria recurrently receive funding from research institution(s)); multiple choice question (so the percentages per country do not add to 100%), original categories: 'research institution(s)', 'university', 'state/ ministry', 'region/ town', 'research communities', 'European funds', 'industry/ small and medium-sized enterprises (SMEs)', 'funding agencies/funding bodies', 'other'.

- **Research institution(s)** are ranked third in terms of recurrent funding sources: Across countries, 39% of the e-infrastructures ticked on average 'Research institution(s)'. We again note large disparities between the different countries: 88% in France, 38% in Austria, 34% in Germany, 23% in Italy and 2 of 15 in Belgium.
- **University:** About a third (34%) of all e-infrastructures receive on average funding from universities. We also note variation across the different countries of this analysis. Universities most frequently provide funding in France (66%), followed by Austria (43%), then Germany (27%), Italy (26%) and Belgium (1 of 15).
- **Funding agencies/funding bodies** are a recurrent funding source for 31% of the e-infrastructures (mean across countries). We observe large differences between the countries: Funding agencies are most important for e-infrastructures in Germany, as more than half of all German e-infrastructure representatives noted that their organisation receives funding from funding agencies. Austria is ranked second (43%), followed by Belgium (4 of 15), France (19%) and Italy (14%).
- **Region/town:** On average, 30% of the e-infrastructures indicated to receive funds from the funding provider 'Region/town'. The highest percentage is observed for France (47%), followed by Belgium (5 of 15), Italy (30%), Austria (27%), and finally Germany (13%).
- **Research communities:** Only 16% of the e-infrastructures indicated on average that 'research communities' provide recurrent funding. In France, research communities are by far more important than the mean across countries suggests as 38% of the French e-infrastructures indicated to receive funding from this source. On the contrary, the percentages are considerably lower for the other countries: around a tenth in Belgium, Austria and Germany, and less in Italy (8%).
- **Industry/small and medium-sized enterprises (SMEs)** are the least frequently mentioned source of recurrent funding. Only 11% of the e-infrastructures receive on average funds from 'Industry/small and medium-sized enterprises (SMEs)'. Italy is the country where private companies are most frequently mentioned as funding source (18%), and France is the country where this source least frequently plays a role (3%).
- **Others:** Across countries, less than a tenth of the e-infrastructures indicated to benefit from other funds.

In addition, only 6 of 322 e-infrastructures did not answer this multiple-choice question.

Figure 4.1 presents a graphic overview of the different sources of funding in the different countries. The most frequently mentioned provider of resources differs across countries. State/ministries are the most frequently indicated funding providers in Austria, Belgium and Germany. On the contrary, research institutions are the most frequently mentioned funding source in France. Italian e-infrastructures most frequently rely on European funds. Industry and SMEs is the least frequently indicated source of funding across countries.

Revenues other than funding

The objective of the next questions was to analyse whether e-infrastructures have sources of revenues besides recurrent funding and what these sources of income are. The first question is '**Does your organisation acquire own revenues other than funding?**' and was asked to 322 e-infrastructures.

Across countries, 37% of the e-infrastructures answered on average that they get revenues other than funding, whereas 50% answered they do not get other revenues. 10% of the e-infrastructures indicated that they 'don't know' whether they receive revenues beyond funding and 2% did not indicate an answer.

In a next step, we aimed at gaining more insights into what revenues other than funding e-infrastructures obtain. Therefore, we asked the 106 e-infrastructures that indicated to acquire their own revenues the multiple choice question '**What are the sources of your own revenues other than funding?**'

The different sources of revenues other than funding are:

- **Consultancy or training** is on average the most important source of income for e-infrastructures: Across countries, 41% of the e-infrastructures of these 106 respondents answered on average that they make profit from consultancy or training. Due to the low number of observations for several countries, assessing country differences is difficult. However, we observe a trend of little variation across countries as figures for countries range between about a third (Belgium and Italy) and half of the e-infrastructures (Germany). In more detail, the frequencies per country are: Austria: 5 of 11 e-infrastructures; Belgium: 2 of 7; Germany: 6 of 12; France: 8 of 18 and Italy: 20 of 58 (35%).
- 32% of the service providers answered that they get revenues from **managed online services (e.g. software as a service, applications)**. Again, the low number of observations for several countries requires a cautious interpretation. Nevertheless, we note larger differences between the countries compared to the previous item. Managed online services are by far most frequently mentioned by e-infrastructures in France (11 of 18), followed by Germany (5 of 12). Managed online services are

less important as a source of income in Italy (26%), Austria (2 of 11) and Belgium (1 of 7).

- **Hosting (hardware and services for third parties)** is the least frequently mentioned source of own revenues of e-infrastructures. On average, 24% of the e-infrastructure representatives ticked this category. We again aim at a cautious interpretation on the country level: Differences across countries are more pronounced than for the previously discussed sources of income as none of the seven Belgian e-infrastructures obtains revenues from hosting whereas two thirds of the 18 French e-infrastructures do so. The other countries range in between these extremes (Italy: 10%, Austria: 2 of 11; Germany: 3 of 12).
- Surprisingly, almost half of the e-infrastructures that declare sources of revenues other than funding indicated to obtain **other** revenues not mentioned in the categories listed above. Thus, this category is the most frequently ticked response category of this question. On a country-level, we again observe a large variation. Only one of the 18 e-infrastructures in France indicated to obtain other resources, whereas six of the seven Belgian e-infrastructures and about half of the e-infrastructures in Germany, Italy and Austria behaved this way. Hence, with the exception of France, many e-infrastructures obtain further incomes that have not been covered by the categories described above. EOSC-Pillar may pursue this aspect further in another part of the project.

Limitation of the access to the e-infrastructures' services

Another important aspect of e-infrastructures' business models is the way e-infrastructures offer services and the potential limitations of business models, e.g. due to the sources of funding. Several questions are dedicated to these topics. **'Some organisations grant all users access to their services, some limit access to their services based on certain criteria. Does your organisation restrict access to its services to one or more of the following groups?'** is the first question on this matter. This question is a multiple choice question, hence respondents can choose as many response categories as apply to their organisation. This possibility is important as organisations may have different forms of access restrictions for different services. 322 e-infrastructures are part of the analysis of this question. Tables 7.42 to 7.47 in the Annex show detailed figures, Figure 4.2 visualizes the results.

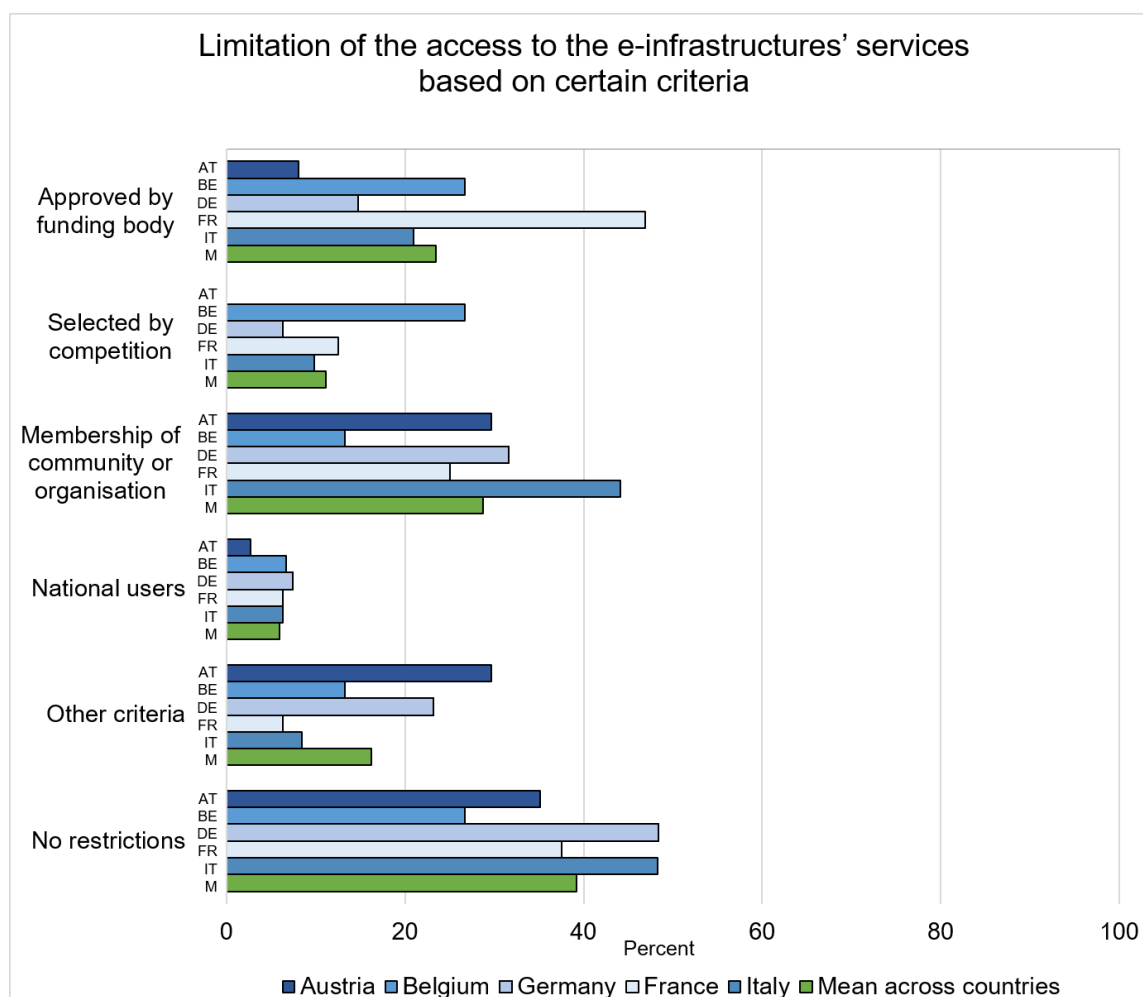


Figure 4.2 – Limitation of the access to the e-infrastructures' services based on certain criteria in the EOSC-Pillar partners countries

Note: target group: e-infrastructures; stacked dataset of all services; percentages per country, multiple choice question (so the percentages per country do not add to 100%), original categories: 'users or communities approved by the funding body (e.g. due to regional or research topic restrictions)', 'users selected by competition', 'members of certain communities or organisations (e.g. virtual organisations)', 'national users', 'no access restrictions', 'not applicable', 'other'.

The different types of access restriction are:

The most striking information acquired by this question is probably that 39% of the e-infrastructures ticked on average '**No access restriction**'. This finding has important implications for the implementation process of EOSC as it indicates that a substantial part of e-infrastructures offer services without access restrictions. We observe the highest percentage in Germany (48%) and Italy (48%), followed by France (38%), Austria (35%) and Belgium (4 of 15).

Although the percentage of e-infrastructures offering (part of) their services without access restrictions is substantial, we also find that e-infrastructures (also) restrict access to their services. **The types of access restrictions in decreasing order are:**

- Representatives of e-infrastructures most frequently indicated to restrict access to **members of certain communities or organisations (e.g. virtual organisations)**. Across countries, 29% of the e-infrastructures apply on average this type of access restriction. E-infrastructures use this criterion most frequently in Italy (44%), followed by Germany (32%), Austria (30%), France (25%) and Belgium (2 of 15).
- On average, 24% of the e-infrastructures in the dataset restrict access to their services to **users or communities approved by the funding body (e.g. due to regional or research topic restrictions)**. We note large disparities regarding this aspect between the different countries in this analysis: almost half of the organisations in France use this type of access restrictions, by far the highest percentage of the five countries. On the contrary, funding bodies impose access restrictions on only about a quarter of the e-infrastructures in Belgium (4 of 15) and Italy (21%). The percentage is even lower in Germany (15%) and Austria (8%).
- On average, 11% of the e-infrastructures restrict access to **users selected by competition**. The range varies from 0 in Austria to 13% in France and 4 of 15 in Belgium. Hence, we conclude that competitive procedures play in general a minor role as a form of access restriction for the e-infrastructures in our analysis, but cannot be ignored in the context of EOSC.
- Access restriction to **national users** is the least common selection criteria. Only 6% of the organisations restrict on average access to their national users. This finding is important regarding EOSC as the absence of restrictions to national users implies that services can be accessed by the research community across Europe.
- Finally, 16% of the e-infrastructures ticked on average that they apply **'other'** criteria of access restrictions. The descriptions of these other restrictions may be the object of further analysis in the future. Other forms of access restrictions represent a non-negligible share in the individual countries : 30% in Austria; 23% in Germany, 8% in Italy, 6% in France and 2 of 15 in Belgium.

It is also important to note that a total of 33 organisations (mean = 10%) ticked **'not applicable'** and 12 respondents (mean = 4%) did not answer this question.

Figure 4.2 visualizes the different criteria applied by e-infrastructures to restrict access to their services. Important findings are that the most frequently used criteria for access varies across countries and that more than a third of the e-infrastructures does not apply any access restriction.

Limitations to the expensions of services

Another aim of the survey is to identify the potential existence of barriers that limit the expansion of the e-infrastructures' services. To gain insights into this aspect of business models, we asked respondents the questions **'Does your organisation currently have policies, procedural and/or technical barriers that limit the expansion of your services to further user groups?'** and **'Please describe which policies, procedural and/or technical barriers limit the expansion of your services to further user groups'**. Table 7.48 in the Annex presents the responses to the first question. The responses to the second question are not presented in this report but may be studied in further work.

322 e-infrastructures are part of the analysis of this question. Across countries, 38% of the respondents for e-infrastructures answered on average that they identified barriers that limit the expansion of their organisation's services. In contrast, 47% answered that they do not have such limitations. 11% do not know whether their organisations face limitations and 5% of the e-infrastructures' representatives (mean = 5%) did not give an answer.

Charging users for services

Another essential topic for the federation of services to EOSC is whether and in what way e-infrastructures charge their users/clients for services. We aim at gaining insights into this aspect by means of two questions. The frequencies are available in Tables 7.49 to 7.43 in the Annex. Only the 106 e-infrastructures who indicated that their organisation acquire(s) own revenues other than funding received this question.

'Does your organisation charge users/clients for services?' is the first question on this matter. Across countries, 40% of the e-infrastructures answered that they do not charge their users/clients. 49% of the e-infrastructures responded that they charge their users/clients for some services. Only few e-infrastructures charge users for all services (mean = 8%). Three e-infrastructures (mean = 3%) skipped this question.

On a country level, we note that e-infrastructures in Italy charge their clients less frequently than e-infrastructures in any other country: 74% of the Italian e-infrastructures that acquire revenues beyond funding offer their services free of charge, 22% charge users for some services and only 3% charge users for all services. On the contrary, e-infrastructures in France charge users much more frequently: Of the 18 French e-infrastructures that indicated to acquire own revenues, 44% charge users for some services, 17% charge users for all services, 22% offer their services free of charge and 17% skipped the questions. The number of observations is low for the other countries, hence, any interpretation for these countries has to be made very cautiously. However, we ob-

serve that none of the twelve German and the seven Belgian e-infrastructures charge users for all services, whereas two of the eleven Austrian e-infrastructures do so. In all three countries, a larger share of e-infrastructures charge users for some of their service.

'How does your organisation charge users/clients for services?' was then asked only if respondents answered that they charge their users for some or all of their services. 46 of the 322 e-infrastructures in this module received this question. Given the very low number of cases, determining a general trend is difficult: 20 e-infrastructures use a price list for individual items/services like use of datasets, a certain storage capacity or virtual machines; 15 use a flat rate for different sets of items/services; 28 e-infrastructures use solutions tailored to the needs of users/clients and three e-infrastructures use 'other' methods. We can only deduce that different methods to charge users/clients are used by e-infrastructures.

Buying supplies, resources or services

The goal of the next question is to better understand how e-infrastructures buy supplies or rent supplies, resources or services. We asked respondents **'How do you buy supplies, resources or services?'** Respondents could choose multiple answers, hence, the percentages per country do not add to 100%. Tables 7.54 to 7.57 in the Annex contain the detailed frequencies. 322 e-infrastructures were asked this question.

How do e-infrastructures buy supplies, resources or services? In a nutshell, e-infrastructures most frequently buy or rent supplies, resources or services by means of tender (mean = 57%), followed by pre-negotiated procurements (29%) and the category 'without tender' (16%). In more detail, we find the following results:

- The largest group of e-infrastructures obtain services and supplies by tender. On average, 56% of the e-infrastructures answered that they **'buy or rent with tender'**. This way of buying resources is most common in Belgium (twelve of 15 e-infrastructures) and Italy (74%). Compared to these countries, buying resources with tender is less common in France (44%), Austria (43%) and Germany (38%).
- 29% of the organisations **'buy or rent on pre-negotiated procurement/tender'**. E-infrastructures most frequently obtain supplies this way in France (47%). Slightly more than a quarter of the respondents ticked this category in Austria, Belgium and Italy. E-infrastructures least frequently indicated to buy or rent supplies on pre-negotiated procurement/tender in Germany (14%).
- On average, 16% of the e-infrastructures **'buy or rent without tender'**. This method for obtaining supplies is most frequently used by Austrian e-infrastructures

(32%), followed by service providers in Belgian (3 of 15) and Germany (14%). However, e-infrastructures in France and Italy seldom buy supplies without tender (6% each).

- A minority of 5% of the organisations choose the category '**other**'. On a country level, representatives of Austrian (11%) and French (9%) e-infrastructures ticked this category most frequently, followed by German (4%) and Italian (3%) e-infrastructures. None of the 15 Belgian e-infrastructure representatives chose this category.

Besides, a substantial amount of respondents indicated that this question is 'not applicable' to their organisation (mean = 18%). In addition, 9% of the respondents did not answer this question.

Cost of services

Do e-infrastructures know the unit cost of the services they offer? This is important in the perspective of EOSC if these e-infrastructures are willing to participate. Although the business model of EOSC is not clear yet – besides the point of the services to be 'free in point of use' (services are provided free of charge for users) – some remuneration mechanism for the participating service providers and data providers should be defined. But if they lack the means of quantifying costs, clearly this raises the question of how to quantify the remuneration. The aim of the single choice question '**Does your organisation know the unit cost of your services? If yes, what is the granularity?**' is to investigate this point. Table 7.58 in the Annex contains the detailed figures. 322 e-infrastructures were asked this question.

Figure 4.3 shows the results by country. It reveals substantial differences across countries. France is the country where e-infrastructures are the most aware of the costs, Austrian e-infrastructures indicated to be least aware of the costs of their services.

- On average, 20% of the e-infrastructures know the unit costs in the most detailed category in this question as they indicated to know the '**cost per service**'. We observe the highest percentage for France (41%), followed by Italy (30%), Austria (16%), Belgium (2 of 15) and Germany (12%) .
- Another 13% of the e-infrastructures' respondents indicate to know the unit costs as '**cost per set of service**'. E-infrastructures in France again take the lead (28%), followed by e-infrastructures in Belgium (3 of 15), Italy (8%), and Germany (6%) .
- About 10% of the e-infrastructures answered on average '**No, but in preparation**'.

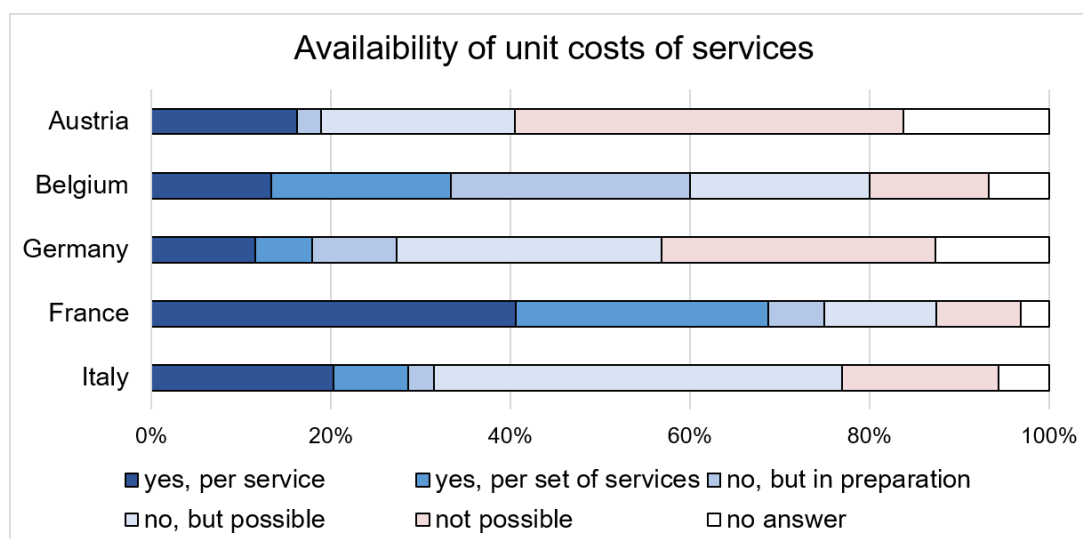


Figure 4.3 – Does your organisation know the unit cost of your services? If yes, what is the granularity? target group: e-infrastructures.

- About a quarter of the respondents ticked '**Not currently available, but could be calculated**'. The highest percentage is observable in Italy (46%), followed by Germany (30%), Austria (22%), Belgium (2 of 15) and France (13%).
- On average 23% of the respondents ticked '**No, not possible/not foreseen**'. This finding is important and varies substantially across the different countries: Austria has by far the highest percentage (43%), followed by Germany (31%), Italy (18%), Belgium (2 of 15) and France (9%).

Besides, it is important to note that a total of 28 organisations (mean = 9%) did not answer this question.

4.2.2 Funding bodies

The objectives of this part of the questionnaire are to identify what funding bodies fund and under what conditions they fund potential participants in EOSC such as e-infrastructures and research infrastructures.

Please note that funding bodies are not as common as other respondent groups. As a consequence, funding bodies are by far the smallest of our four target groups (see Table 2.2 in the Appendix). Therefore, we do not make any analyses on a country level, but combine all funding bodies in all countries. Given that we observed quite substantial country differences in other questions, we cannot rule out that our results may apply to some countries more than others.

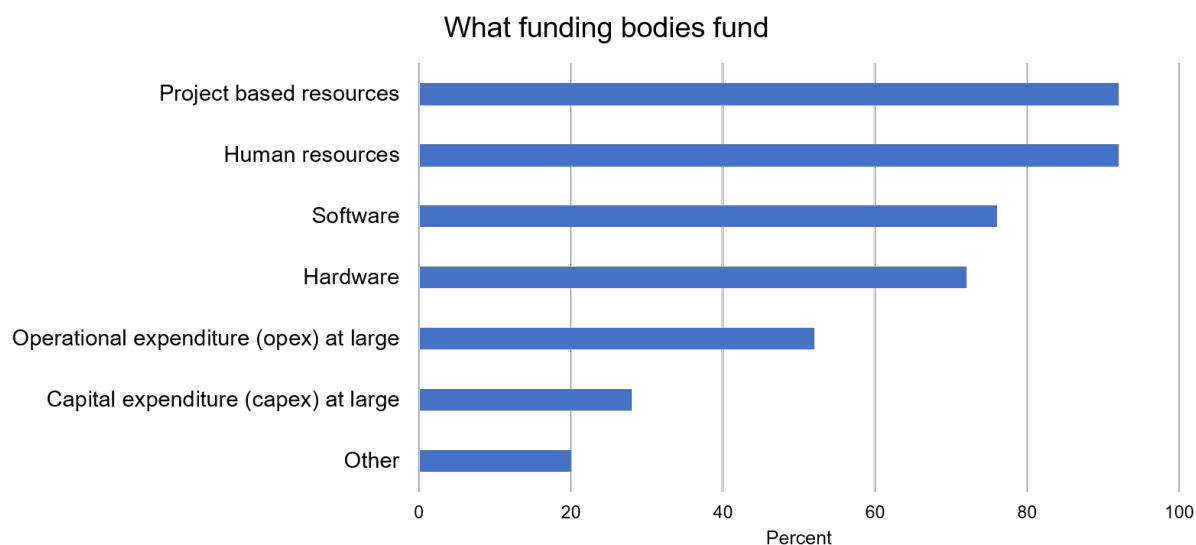


Figure 4.4 – What funding bodies fund
Note: total percentages, all countries included.

What funding bodies fund

The first question about business models asked to funding bodies was **‘What does your organisation fund?’** As shown in Figure 4.4, the main funding items are ‘human resources’ and ‘project based resources’ as 92% of the respondents chose these answers. About three quarters of the funding bodies grant funds for ‘software’ and ‘hardware’. ‘Operational expenditure (opex) at large’ is funded by 52% whereas ‘capital expenditure (capex) at large’ is funded by only 28% of the organisations. 20% of the funding bodies indicated that they offer grants for ‘other’ purposes.

Rules for funding

In order to better understand the conditions of their funding, we asked funding bodies **‘Does your organisation have rules for granting funds for e-infrastructures or research infrastructures based on the following aspects?’**

Of the 25 funding bodies in the analysis, fifteen indicated that their organisation has rules based on a competitive process. Hence, competition is by far the most common selection criteria for granting funds. Nine funding bodies indicated that they grant funds to e-infrastructures and research infrastructures based on their users’ affiliation. The users’ disciplines is almost equally common (eight cases) as a selection criteria. The geographical location of infrastructures’ users (six cases) is slightly less common as selection criteria. Four representatives of funding bodies indicated to apply other rules. Besides, a fifth of all respondents indicated that this question was ‘not applicable’ to their organisation. Figure 4.5 visualizes the different rules used by the funding bodies.

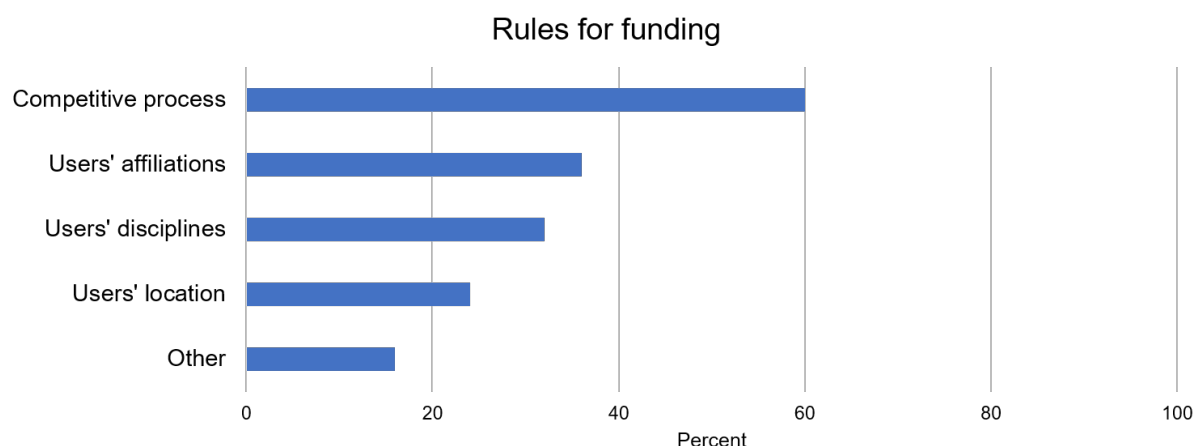


Figure 4.5 – Rules for funding

Note: target group: funding bodies, total percentages, all countries included.

Cost information as condition for funding

Regarding the readiness for the implementation of EOSC, it is interesting to know if funding bodies require infrastructures they fund to provide cost information. We aim at getting insights into this aspect by means of the question **‘Do you require infrastructures you fund to provide the cost information about the services they offer?’**

Of the 25 funding bodies in the analysis, seven funding bodies always require infrastructures to provide this cost information and nine funding bodies answered that they require this information for some grants. Hence, more than half of the funding bodies in the analysis only grant funds if infrastructures provide cost information. In addition, two funding bodies do not require this information at the moment, but (maybe) in the future. Only two funding bodies have no regulations in this regard and do not plan to introduce any. Besides, a fifth of all respondents indicated that this question was ‘not applicable’ to their organisation (see Table 4.3 in the Annex).

The next page provides the key results of the EOSC-Pillar survey on business models.

Key results for business models:

- E-infrastructures' sources of funding are foremost state/ministry and European funds (for more than half of the e-infrastructures), followed by research institution(s), universities and funding agencies/funding bodies, and (for less than one third of the e-infrastructures) regions/towns. Few e-infrastructures benefit from funding by research communities, or industry/SMEs. Differences across countries are substantial as the most frequently mentioned sources of resources (funding or own revenues) differs across countries. From a European perspective, it is noteworthy that more than half of the e-infrastructures benefit from European funds.
- Access restrictions to the e-infrastructures' services: the most striking finding regarding access restrictions is that, on average, 39% of the e-infrastructures do not apply any restriction criteria (at least to some of their services). We also note common trends in the countries in this analysis since only a minority of the e-infrastructures select users by competition (28 organisations of 322) or restrict access to their national users (20 organisations of 322).
- About one third of the e-infrastructures identify barriers that limit the expansion of their services whereas about half of the e-infrastructures indicated that they currently do not face such barriers.
- About one third of all e-infrastructures acquire their own revenues other than funding. Of these, about half of the e-infrastructures charge users for some services and only a minority charges users/clients for all services. Hence, from a user/client perspective, paying for services is by far rather the exception than the rule.
- Funding bodies most frequently fund 'human resources' and 'project based resources' (92% of all responses), followed by 'software' (76%) and 'hardware' (72%). Of the 25 funding bodies in the analysis, fifteen indicated that their organisation grants funding for e-infrastructures and research infrastructures based on a competitive process. Besides, nine funding bodies apply the users' affiliation as a criteria and eight indicate that their organisation has rules based on the users' disciplines. Six funding bodies grant funds based on the users' geographical location. Besides, a fifth of all respondents indicated that this question was 'not applicable' to their organisation.

4.3 Sustainability (e.g. roadmaps)

Because they give plans for the future, roadmaps are elements of sustainability. Roadmaps may be at the European level, national level or maintained by organisations for their own needs.

Being registered in an official roadmap is, for e-infrastructures and research infrastructures, both the acknowledgement to be an essential tool for the research community and a guarantee to receive funds easily for the next period. Hence, official roadmaps are beneficial for research supporting infrastructures and an indicator for sustainability.

4.3.1 E-infrastructures

Roadmaps

The aim of the multiple choice question '**Is your organisation in an official roadmap?**' is to identify how many e-infrastructures are registered in which roadmaps. Tables 7.9 to 7.12 in the Annex provide the detailed figures. 304 e-infrastructures were asked this question.⁸ The analysis in this section refers to the organisation-level and not to the service-level (like in most other sections on e-infrastructures, see Chapter 3).

Of these 304 organisations, 45% (average across countries) answered they are in an **official roadmap**. We observe the highest percentages in France (58%), Italy (56%) and Belgium (10 of 19), whereas roadmaps are less common among e-infrastructures in Germany (36%) and Austria (21%).

If e-infrastructures are part of a roadmap, which roadmaps are most common? On average, 56% of the organisations that are registered in an official roadmap are registered in a '**national**' roadmap. The frequencies vary substantially across the different countries: 11 of 14 in France, 71% in Italy, 47% in Germany, 5 of 8 in Austria and 2 of 10 in Belgium.

In addition, 48% are registered on average in the '**ESFRI**' roadmap. The frequencies differ across countries: 7 of 10 in Belgium, 4 of 8 in Austria, 50% in Germany, followed by 36% in Italy and 5 of 14 in France.

Finally, 23% are registered on average in '**other**' roadmaps. The frequencies per country are: Austria: 2 of 8; Belgium: 2 of 10; Germany: 6 of 32 (19%); France: 5 of 14 and Italy: 12 of 75 (16%).

⁸The selection of the survey targets was also based on public official roadmaps, however, this applies only to research infrastructures (see Chapter 3).

European organisations

An additional point regarding the sustainability of e-infrastructures is their participation in European organisations. These European organisations help both to disseminate best practices and tools and may be considered as first steps to build EOSC. The objective of the question **'Does your organisation participate in the following European organisations?'** is to identify the percentage of e-infrastructures that benefit from and contribute to such European organisations. Tables 7.13 to 7.17 in the Annex contain the detailed figures.

On average, 38% of the respondents across countries answered that the organisation they represent **participates in such a European organisation** whereas 38% answered **'no'**. In addition, 20% answered they **'do not know'** and 5% did not answer this question.

Of the 126 e-infrastructures that participate in an official European organisation, on average, 33% take part in **'EGI'**; 19% take part in **'EUDAT'**; 28% in **'PRACE'** and 48% in **'other'** European organisation. The participants that ticked 'other' were invited to specify. This additional data is not analysed in this document but may be studied further.

4.3.2 Funding bodies

As explained at the beginning of this section, roadmaps are elements of sustainability. To better know how funding bodies use this tool, we asked them **'Does your organisation maintain a roadmap of the infrastructures you fund?'** A majority of the funding bodies in the analysis (16 of 25) answered **they maintain a roadmap of the infrastructures they fund**. Only eight ticked **'no'** and one did not answer. This result is important for two reasons: On the one hand, it allows us to analyse on what basis funding bodies rely to fund the organisations. On the other hand, the collection of all these roadmaps could provide the EOSC governance with a good insight into how many and what organisations will likely be funded in the next period.

Of these 16 funding bodies, ten **'maintain a roadmap according to their own specifications'**, six maintain a roadmap **'aligned to a national roadmap'** and five a roadmap **'aligned to a European roadmap'**. Please note that multiple responses were possible. All figures are presented in Table 4.4 of the Annex.

The key results of the EOSC-Pillar survey on sustainability are summarized on the next page.

Key results for sustainability:

- Less than half of the e-infrastructures are registered in an official roadmap.
- Less than half of the e-infrastructures participate in a European organisation.
- A majority of funding bodies declare they maintain a roadmap of the infrastructures they fund.
- Funding bodies frequently maintain national and European roadmaps of infrastructures they fund.

4.4 Users

The objective of this chapter is to understand who the user communities are, what their disciplines are, how they benefit from the services offered by the research infrastructures and e-infrastructures and how the infrastructures communicate with them. Section 4.4.1 describes the groups of users and, in particular, which scientific disciplines benefit from services offered by research infrastructures and e-infrastructures. Section 4.4.2 contains observations about training, Section 4.4.3 is dedicated to user support. Section 4.4.4 presents how infrastructures communicate with users and the last Section (4.4.5) is dedicated to related services provided for users.

4.4.1 Disciplines and groups of users

Disciplines of users

It is not possible to create a comprehensive picture of the landscape of the research supporting infrastructure without identifying who the current users of the different services offered in the EOSC-Pillar countries are. **‘For which scientific discipline(s) does your organisation provide services?’** is a multiple choice question asked both to research infrastructures and e-infrastructures. The response categories rely on the ‘Fields of Science and Technology’ developed by the Organisation for Economic Co-operation and Development (2007). This question was asked to 215 research infrastructures and to 322 e-infrastructures. Graphs give a better overview of the different answers than a long description, hence Figure 4.6 and Figure 4.7 summarize our results (see also Tables 6.8 to 6.14 and Tables 7.21 to 7.27 in the Annex).

Disciplines of users – research infrastructures:

Figure 4.6 shows the percentage of research infrastructures providing disciplines with services per country and the mean across countries (light green). On average, across countries, research infrastructures provide most frequently Natural Sciences communities (66%) with services, followed by Medical and Health Sciences (36%), Engineering and Technology (33%), Social Sciences (25%), Humanities (18%) and finally Agricultural Sciences (14%).

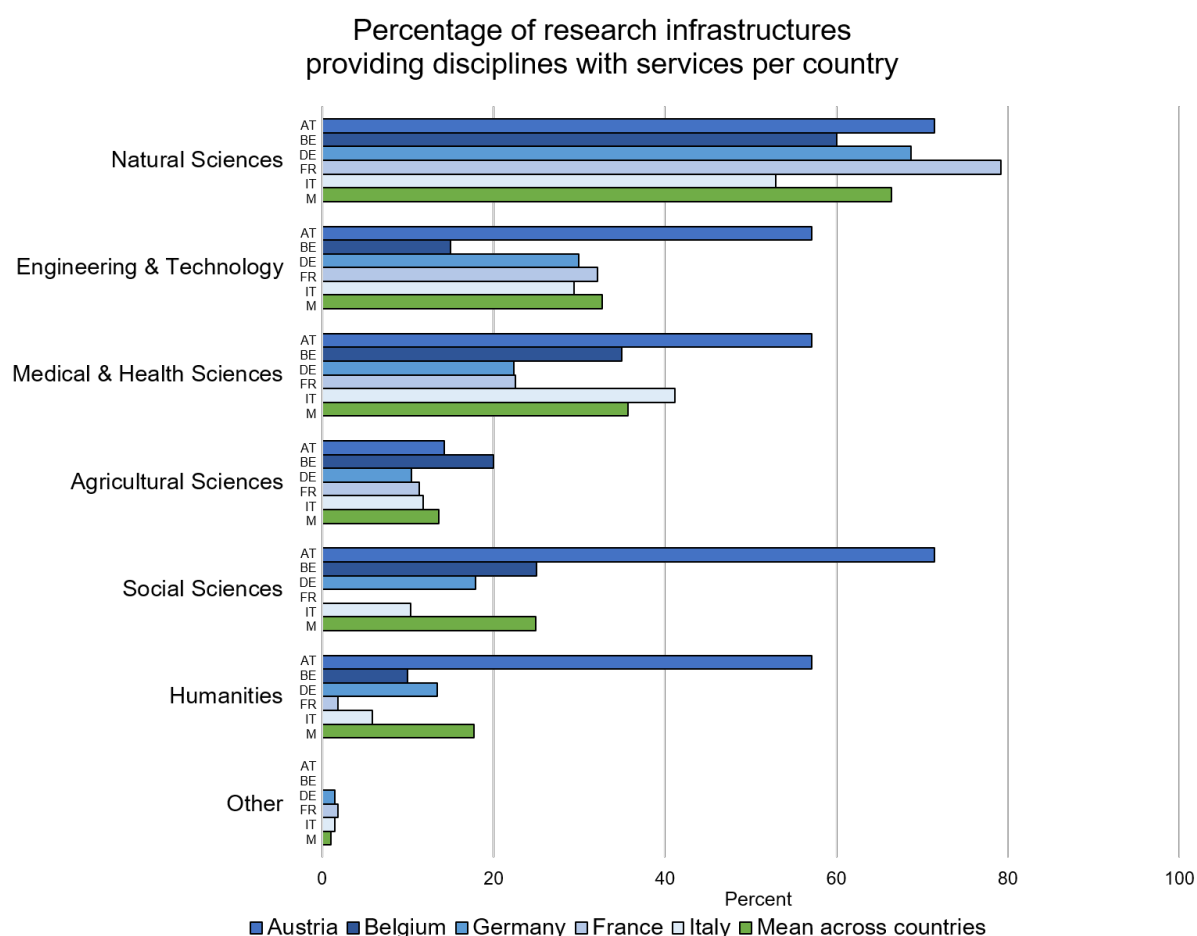


Figure 4.6 – Percentage of research infrastructures providing disciplines with services per country

Note: bars show percentages per country; multiple choice question (so the percentages do not add to 100%), the number of observations for Austria is very low ($N = 8$).

Country differences:

- Because the number of observations for **Austria** is very low ($N = 8$) it is difficult to give a trend but we can note that the percentages per discipline are higher than in several other countries.
- In **Belgium**, Agricultural Sciences are more frequently provided with services compared to the mean across countries. On the contrary, we observe percentages close to or below the mean for the other disciplines.
- The frequencies for **German** research infrastructures are not far from the mean across countries except for a lower percentage for Medical & Health Sciences (22%).
- In **France**, we observe frequencies around the mean across countries. Exceptions are that the percentage is higher for Natural Sciences (80%) and lower for Medical

& Health Sciences (23%) and particularly for Humanities (2%) and Social Sciences (0).

- The frequencies for **Italian** research infrastructures are not far from the mean across countries except for lower frequencies regarding Social Sciences (10%) and Humanities (6%).

Disciplines of users – e-infrastructures:

Figure 4.7 shows the percentage of e-infrastructures providing disciplines with services. The bars in blue show the frequencies per country, the bar in light green shows the mean across countries. On average, across countries, e-infrastructures provide most frequently Natural Sciences communities (69%) with services, followed by Humanities (45%), Engineering and Technology (43%), Medical and Health Sciences (38%), Social Sciences (38%), and finally Agricultural Sciences (30%). 6% of the e-infrastructures also indicated to provide other communities with services.

Country differences:

- In **Austria**, we observe percentages around the mean across countries except for frequencies below the mean for Agricultural Sciences (22%) and above the mean for Humanities (57%).
- In **Belgium**, e-infrastructures provide services for Engineering and Technology (33%) and Humanities (40%) less frequently, but much more frequently for communities in the Medical and Health Sciences (53%) and other disciplines (13%).
- In **Germany**, the deviation from the mean across countries concerns Engineering and Technology (32%), Medical and Health Sciences (28%) and Humanities (30%) that benefit less frequently from the e-infrastructures' services.
- In **France**, almost all frequencies are higher than in other countries: Natural Sciences (90%), followed by Engineering and Technology (66%), Medical and Health Sciences (53%), Social Sciences (53%). The exception are Humanities (44%) that receive services from e-infrastructures less frequently than in other countries.
- In **Italy**, we observe lower frequencies than the mean across countries mainly for the Natural Sciences (50%), Medical and Health Sciences (25%) and Social Sciences (26%), but a higher percentage for Humanities (56%).

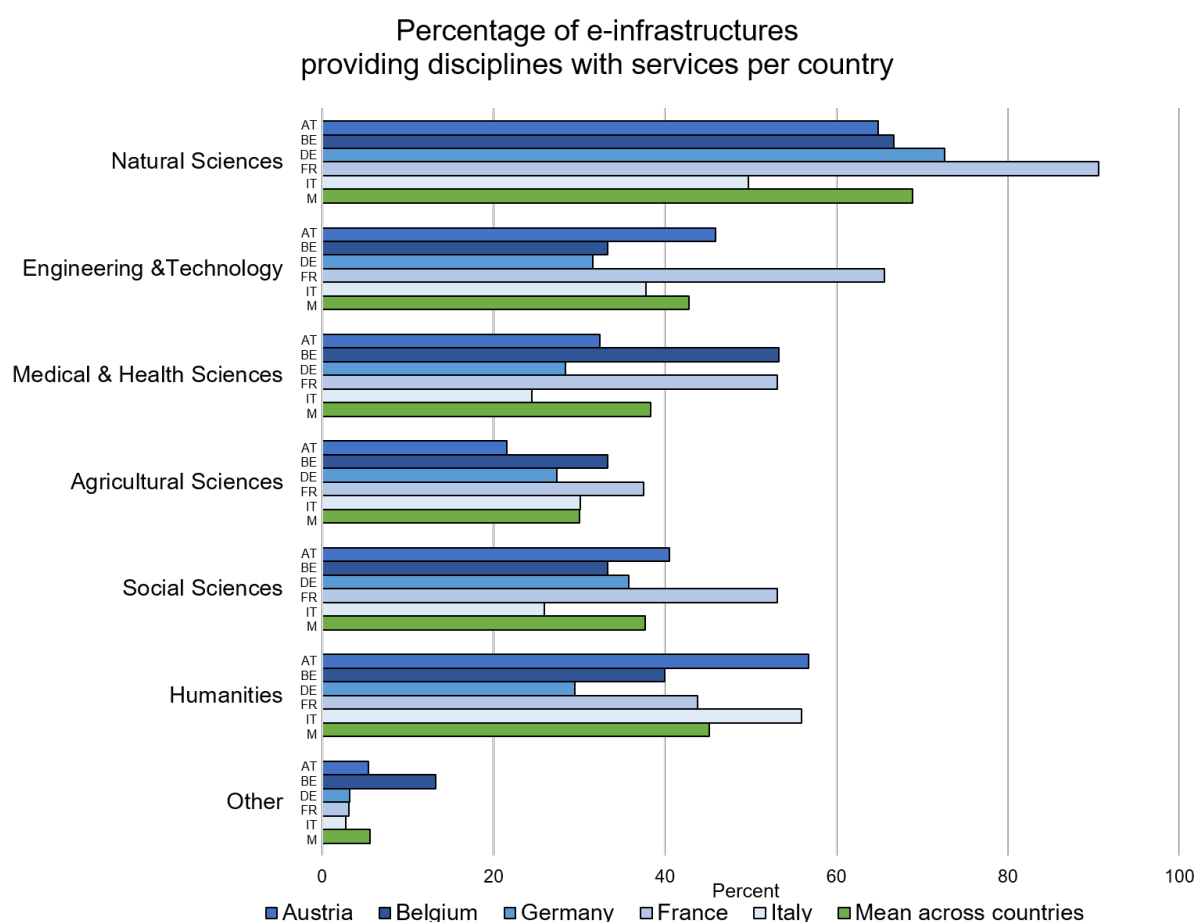


Figure 4.7 – Percentage of e-infrastructures providing disciplines with services per country

Note: bars show percentages per country; multiple choice question (so the percentages do not add to 100%), stacked dataset, residual categories ('not applicable', 'no answer') not shown.

This overview described which scientific disciplines benefit from services offered by research infrastructures and e-infrastructures and is to be completed by more details on what groups of users frequently use the services:

User groups of services

The next question aiming at getting insights into users is **'We would like to know which user groups use your organisation's services. How frequently do the following groups use your services?'** Figure 4.8 shows how frequently the individual groups use the e-infrastructures' services based on the mean across five countries (see also Tables 7.63 to 7.69 in the Annex). 311 e-infrastructures received this question.

As Figure 4.8 shows, (researchers based at) universities are by far the most frequent users of the services provided by e-infrastructures. Across countries, 86% of the e-infrastructure representatives indicated that universities and their associated researchers

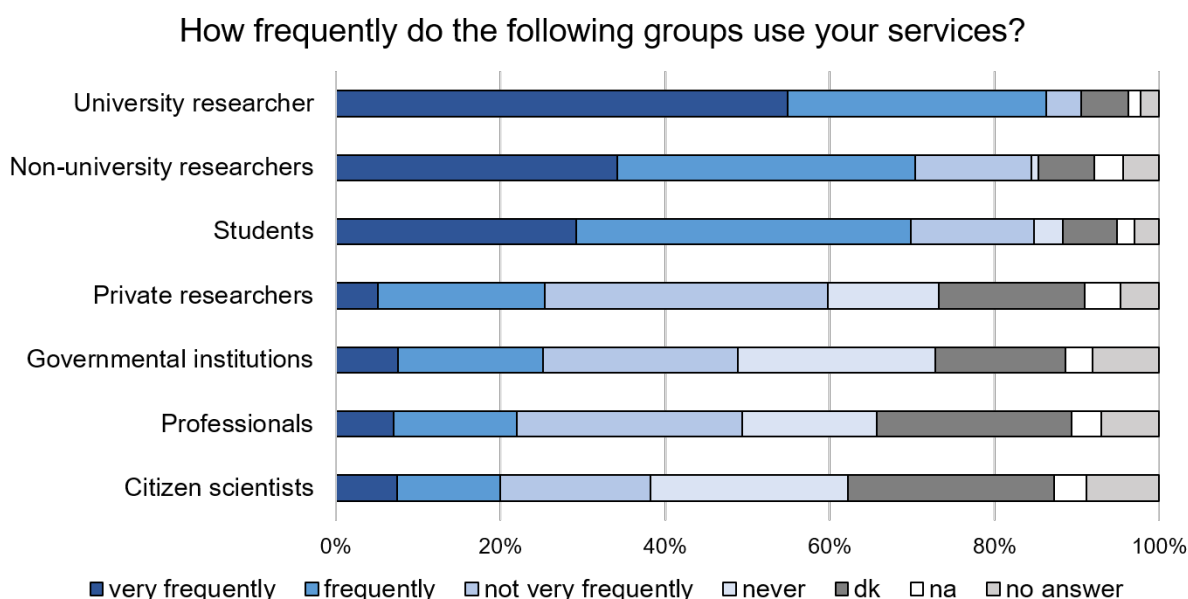


Figure 4.8 – How frequently do the following groups use the e-infrastructure services?

Note: Target group: e-infrastructure services, level of analysis: services (stacked dataset of all services combined), figures are means across countries, original label of categories: '(researchers based at) universities', '(researchers of) non-university research institutions', 'students', '(researchers of) private, commercial institutions', 'governmental institutions (e.g. census bureaus)', 'professionals', 'citizen scientists', 'other' (not shown); original response categories: 'never', 'not very frequently', 'frequently', 'very frequently', 'not applicable', 'don't know'.

use their services frequently or very frequently. Ranked second are (researchers of) non-university research institutions and students: On average, 70% of the respondents indicated that these groups use their organisations' services (very) frequently. The remaining four groups of users use the services substantially less. On average, between 25% and 20% of the service providers indicated that (researchers of) private, commercial institutions, governmental institutions (e.g. census bureaus), professionals and citizen scientists use their services (very) frequently. Besides, the percentage of respondents who indicated that they 'don't know' how frequently these groups use their services or who skipped the question increases substantially. 6% of the respondents indicated on average that 'other' groups of users use their services (very) frequently (not shown).

Country differences:

To begin with, we combine the categories 'frequently' and 'very frequently' for assessing country differences. This reveals smaller differences across countries than for many other questions: The range across countries is highest for **(researchers of) non-university institutions** (21 percentage points). This user group uses services most frequently in France (81%), followed by Italy (74%), Germany (72%), Austria (66%) and Belgium (60%, see Table 7.64 in the Appendix). Country differences for the two highest categories

are also noteworthy for **citizen scientists**. Respondents from Austria most frequently indicated that citizen scientists (very) frequently use their services (31%). For all other countries, the percentages range between 20% (Italy) and 13% (Belgium, N = 15).

Besides, countries differ substantially in their assessment of usage by governmental institutions, citizen scientists and professionals. Whereas e-infrastructures of some countries tend to indicate that they don't know whether these user groups use their services, others tend to indicate that these groups never use their services.

For all other user groups, the range across countries for the categories 'don't know' and the combined categories 'frequently' and 'very frequently' are smaller. The precise country percentages are available in the Appendix in Tables 7.63-7.69.

The key results of the EOSC-Pillar survey on disciplines and groups of users are:

Key results for disciplines and groups of users:

- Across countries, **research infrastructures** provide on average most frequently Natural Sciences communities (66%) with services, followed by Medical and Health Sciences (36%), Engineering and Technology (33%), and finally Social Sciences (25%), Humanities (18%) and Agricultural Sciences (14%).
- Across countries, **e-infrastructures** provide on average most frequently Natural Sciences communities (69%) with services, followed by Humanities (45%), Engineering and Technology (43%), Medical and Health Sciences (38%), Social Sciences (38%), and finally Agricultural Sciences (30%).
- On average, 86% of the service providers indicated that (researchers based at) universities frequently or very frequently use their services. (Researchers of) non-university research institutions and students also (very) frequently use services (70%). On average, between 25% and 20% of the service providers indicated that (researchers of) private, commercial institutions, governmental institutions (e.g. census bureaus), professionals and citizen scientists use their services (very) frequently.

4.4.2 Training

Training aims to develop skills and knowledge and to improve competencies and abilities. 'Developing and sustaining the skills of researchers, research support staff, and EOSC

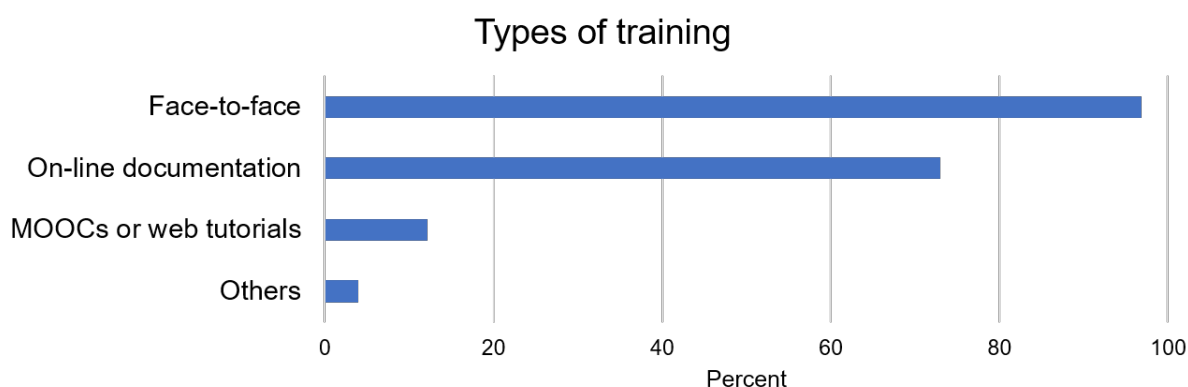


Figure 4.9 – Frequencies for the different types of training

Note: target group: e-infrastructures; stacked dataset of all services; only respondents included who indicated that their organisation offers training, percentages are means across countries.

service providers is essential for the success of the EOSC vision.’ is one of the first sentences of the Skills & Training Working Group Rationale on their page on the EOSC Secretariat (2020) website. Capturing whether and in what way service providers offer training is therefore very important and the aim of a set of questions in the survey.

‘**Does your organisation offer training?**’ is the first question dedicated to training (see Table 7.76 in the Appendix for details).

On average, 77% of the e-infrastructures organise training. Training is most frequently offered in Belgium where 14 of 15 organisations organise training, followed by France (84%), Italy (84%), and Germany (73%). The situation seems different in Austria where only 52% of the e-infrastructures offer training. Only nine organisations did not answer this question.

Hence, training is offered by about three quarters of the e-infrastructures. Training is also a source of revenues for several e-infrastructures (see Section 4.2.1).

Types of training

In a next step, we investigated what type of training is offered by e-infrastructures. This is the goal of the multiple choice question ‘**Which form(s) of training does your organisation offer?**’ The 240 e-infrastructures that answered ‘yes’ to the previous question (‘Does your organisation offer training?’) were asked this question. Figure 4.9 shows the mean across all countries for the different types of training. Detailed figures are presented in Tables 7.77 to 7.80 in the Annex.

- If organisations offer training, they almost always do so (also) face to face. On average, 97% of the respondents’ organisations organise ‘**face-to-face training (e.g., workshops, lectures)**’. Differences between countries are negligible as the

percentages per country range between 93% (Belgium , N = 14) and 100% (Germany and France).

- Across countries, 73% of the e-infrastructures provide '**online documentation**'. Online documentation is most common in France and Italy as 85% of the e-infrastructures provide this form of training (if they provide training). The share is lower for Germany (71%), Austria (12 of 18) and Belgium (8 of 14).
- Compared to the previously discussed forms of training, '**massive open online courses (MOOCs) or web tutorials**' are considerably less common. On average, 12% of the e-infrastructures use this form of training. However, none of the 18 Austrian e-infrastructures provide MOOCs or web tutorials and only one of the 14 Belgian and two of the 26 French e-infrastructures do so. Representatives of Italian (19%) and German (27%) e-infrastructures indicated that their organisations offer this form of training.
- '**Other ways of training**' are offered by 10 e-infrastructures (mean = 4%). Per country, the frequencies are: Austria: 2 of 18; Italy: 6 of 116 namely 5%; Germany: 3%; Belgium and France: 0.

Language of training

Another important point is the language in which training is provided. This aspect is important for two reasons: First, EOSC is transnational in design and it is important that trainings can meet the needs of each user in each country. Second, it is important for users to understand the legal framework in the different countries and the terms of services that may apply to the different services in order to avoid illegal or inappropriate actions. We investigate this matter by means of the multiple choice question '**In which language(s) does your organisation provide training?**' This question was asked to the 240 organisations that offer training identified in a previous question (see also Tables 7.81 to 7.83 in the Annex).

Country's/regional language: Of these 240 organisations that offer training, 76% offer on average training in their country's or region's language. This is most common in France (92%), Italy (84%) and Austria (15 of 18) and less common in Germany (71%) and Belgium (7 of 14).

English: On average, 71% of these organisations offer training in English. English is most frequently used in trainings in Belgium (12 of 14), Germany (85%) and Italy (84%) and less frequently in France (73%) and Austria (12 of 18).

Other: Only two organisations of the 240 organisations ticked the residual category ('other or several' languages).

Analysing the responses in more detail reveals that about a fifth of all e-infrastructures offer on average training only in the regional or national language and slightly more offer training only in English. However, more than half of all e-infrastructures offer on average training both in English and in the national or regional language. E-infrastructures in Austria and France offer training exclusively in their own languages above average. However, it seems that there is in general no issue or barrier with the languages used for training as two thirds or more of the e-infrastructures that offer training (also) offer training in English.

Audiences of training

The last multiple choice question of this set about training concerns the target audience: **'For whom does your organisation offer training?'** This question is asked to the 240 organisations that responded previously that they offer training (see Table 7.84 to 7.88 in the Annex).

We observe that e-infrastructures who offer training do so most frequently for specific community(ies) (mean = 62%), followed by trainees affiliated to a defined organisation (mean = 40%). The geographical area of the training audience (mean = 8%) and other criteria (mean = 8%) are less frequently used to characterize the training target. However, 40% of the organisations offer training for everyone interested. In more detail, the results are:

62% (mean across countries) ticked they offer training **'For specific communities or a specific community'**. This group of trainees is more frequent in Italy (82%) and Germany (70%) than in France (62%), Belgium (7 of 14) and Austria (8 of 18).

On average, 40% of the organisations offer training **'For everyone affiliated to (a) defined organisation(s)'**. This group is the most frequently mentioned in France (46%), Italy (45%) and Germany (42%) and less frequently in Belgium (6 of 14) and Austria (4 of 18).

On average, 40% of these 240 organisations offer training **'For everyone interested'**. Differences across countries are small (Austria: 8 of 18; Belgium: 6 of 14; Germany: 35%; France: 46% and Italy: 35%).

On average, 8% of the organisations across countries offer training **'For everyone in a certain geographical area'**. Geographical restrictions are most frequently found in France (19%), followed by Germany (10%) and substantially less frequently in Italy (2%) and Belgium (1 of 14). None of the Austrian e-infrastructures in this analysis uses geographical criteria for selecting trainees.

Across countries, about 8% of the organisations ticked on average **'Other'**: 5 of 18 in Austria, 1 of 14 in Belgium, 3% in Germany and Italy and none in France.

These findings show that training by e-infrastructures are often accessible to a wide audience and that geographical restrictions play a minor role for training admission. Hence, we have no reason to expect that the users of EOSC will face serious difficulties in accessing training programs.

The key results of the EOSC-Pillar survey on training provided for users are:

Key results for training for users:

- Training is frequently offered by e-infrastructures (mean = 77%). Training is also a source of revenues for several e-infrastructures.
- If e-infrastructures offer training, almost all of them (also) offer face to face training (mean = 97%). Online documentation is also a common form of training (mean = 73%). On the contrary, it seems there is space for more MOOCs and web tutorials as only 12% (mean across countries) declare to organise such training.
- On average, 79% of the e-infrastructures that provide training use English in their training programs. This high percentage is encouraging as there seems to be little reason to fear that language barriers prevent European researchers from seeking training in another country. However, we find differences across countries.
- On average, 40% of the e-infrastructures that offer training do so for everyone interested, 62% offer training for a specific community, 40% for members of defined organisations. E-infrastructures seldom exclude trainees because of their geographical location. Therefore, the target audience of training is consistent with the needs of EOSC stakeholders in the near future.

4.4.3 Support

User support is a key stone for the good match, on the one hand, of the users' needs and satisfaction and, on the other hand, the services offered by e-infrastructures. Thereby, user support is an important aspect of an e-infrastructure's maturity level.

E-infrastructures (user support)

A set of questions is dedicated to this topic in the e-infrastructures' questionnaire.

Gathering feedback

A first multiple choice question **'Some organisations collect their users' opinions on how to optimise their services and gather feedback from users, some do not. Does your organisation collect feedback from users?'** aims to identify if and how e-infrastructures collect feedback from their users (see Table 7.71 to 7.75 in the Annex). 311 e-infrastructures were asked this question.

A majority (average across countries = 83%) of the organisations **collect feedback from their users**. On a country level, user support is most frequently found in Belgium (14 of 15), France (87%) and Germany (86%), followed by Italy (77%) and Austria (71%).

On the contrary, 15% ticked on average **'No, user feedback is not collected'**. We observe large disparities regarding this point between the different countries in this analysis. The highest percentage is observable by far for Austria (26%), followed by Italy (19%), Germany (11%), France (10%) and Belgium (1 of 15). Ten institutions did not answer this question.

In a next step, we will describe how the 251 e-infrastructures that answered **'yes'** collect feedback from their users:

Across countries, the predominant way to collect feedback is **'by user meetings and workshops'** (67%). This way is used in every country of this analysis to an approximately similar extent: Austria (64%); Belgium (9 of 14); Germany (65%); France (67%) and Italy (73%).

Discussions are also very frequently used for gathering users' feedback (average across countries = 53%). Per country, the frequencies are: Austria (68%), France (56%), Germany (53%), Belgium (6 of 14) and Italy (45%).

On average, 40% of the organisations ticked **'Yes, by tools implemented for this purpose (e.g. feedback forms)'**. This way of feedback gathering is most frequent in Belgium (8 of 14) and Germany (49%) and less frequent in France (41%), Italy (37%) and Austria (16%).

On average, 10% of the organisations collect feedback **'by other means'**. This is the case for 28% of the e-infrastructures that collect feedback in Austria, 18% in Germany, 4% in Italy and none of the Belgian and French e-infrastructures in this analysis.

Organisation of user support

The next question concerns the way the e-infrastructures organise their own user support: **'How does your organisation organise user support?'** This is a multiple choice question, hence the different ways to support users are not exclusive. An e-infrastructure may support users in several ways (see Tables 7.89 to 7.92 in the Annex). 311 e-infrastructures were asked this question.

On average, a large majority of the e-infrastructures (90%) answered that **they support their users**. We note minor disparities between the different countries: 83% in Austria, 13 of 15 in Belgium, 91% in Italy, 94% in Germany and France. On the contrary, a very low minority of organisations (3%) ticked **'There is no user support'**: 6% in Austria, 4% in Italy, 3% in France and Germany and none in Belgium. In addition, nine organisations (mean = 4%) didn't answer this question and eight service providers (mean = 4%) indicated that this question was 'not applicable' to their organisation.

How do e-infrastructures support their users? The 282 organisations that indicated to offer user support gave the following answers:

Of these 282 organisations, 56% ticked on average **'We support users via a centrally organised system (e.g. ticketing system, helpdesk)'**. Centrally organized systems are not equally used in the different countries of this analysis: they are most frequently used in France (72%) and Germany (58%) and less frequently in Austria (41%), Belgium (8 of 14) and Italy (44%).

In addition, 54% ticked on average **'We support users individually without a centrally organised user support system.'** The frequencies per country are: Austria (69%), Belgium (6 of 14), Germany (62%), France (31%) and Italy (62%).

In addition, 12 organisations declare they support their users by other means.

Funding bodies (user support)

The involvement of funding bodies in user support is mainly realised by the way they fund the service providers. The multiple choice question **'Does your organisation allow infrastructures who receive grants to spend funding on user support?'** aims to identify how funding bodies foster user support or, on the contrary, prohibit it through the rules that apply to their funding (see Table 4.5 in the Annex). 25 funding bodies were asked this question.

The distribution of their answers is as follows:

Of the 25 funding bodies, four (16%) ticked **'We explicitly offer funding for user support.'**, while 12 (48%) did not tick this category (that means they do not offer funding for user support). 11 that represent 44% ticked **'Grant regulations allow for spending funds on user support.'** while 5 (20%) ticked **'no'** for this sub-question.

Of the 25 funding bodies, one (4%) ticked '**Grant regulations prohibit spending funds on user support.**' while 15 (60%) ticked '**no**' for this sub-question.

Of the 25 funding bodies, two (8%) ticked '**other**' and were invited to specify while 14 (56%) ticked 'no' for this sub-question.

Finally, of the 25 funding bodies, nine that represent 36% ticked '**not applicable**' indicating that this question does not apply to their organisation.

The key results of the EOSC-Pillar survey on user support are:

Key results for user support:

- A majority of the e-infrastructures collect feedback from their users, most frequently by user meetings and workshops as well as by discussions, but we observe a not negligible minority of 'No, user feedback is not collected' responses.
- A large majority of the e-infrastructures support their users.
- Although only few funding bodies explicitly fund user support, spending funds on user support is generally allowed and not prohibited.

4.4.4 Communication

Written communication with the public at large is nowadays mainly conducted via websites. In the context of EOSC, it is important to know whether e-infrastructures describe their services on their websites and whether these descriptions are easily accessible and written in a language that is understandable by the potential users of EOSC. This is the goal of two questions.

'**Does your organisation offer a website that describes your service(s)?**' is the first one (see Table 7.93 in the Annex). 311 e-infrastructures were asked this question.

On average, a large majority (90%) of the organisations **offer a website that describes their service(s)**. We observe that 83% of the e-infrastructures in Austria operate such websites, as do 13 of 15 in Belgium, 91% in Germany, 97% in France and 94% in Italy. On the contrary, 6% ticked '**No**'. The frequencies per country are: Austria: 14%; Belgium: 1 of 15; Germany: 6%; France: 0 and Italy: 4%. In addition, nine organisations did not answer this question.

286 e-infrastructures indicated that they operate a website describing their services. Hence, we conclude that a very large majority of e-infrastructures publish the description

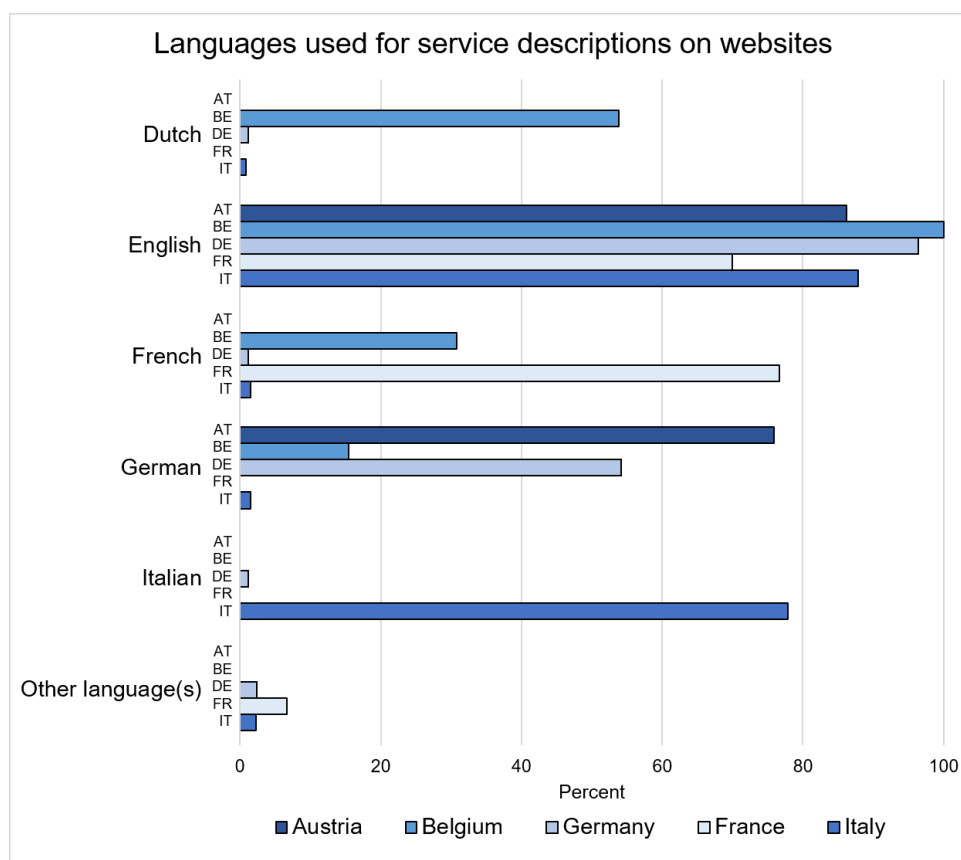


Figure 4.10 – Percentage of the languages used in the e-infrastructures websites per country

of their services on a website and consequently allow potential users of EOSC to easily acquire information on their services.

These e-infrastructures received the additional multiple choice question **‘In which language(s) is this website available?’** (see Tables 7.94 to 7.99 in the Annex). Figure 4.10 shows the distribution of their answers in percentages by language and country. As we can see, on average, 88% of the service providers that describe their services on a website (also) operate websites in English. 70% of the e-infrastructures in France operate websites in English as do 86% of the e-infrastructures in Austria, 88% of the e-infrastructures in Italy, 96% of the e-infrastructures in Germany and all 13 e-infrastructures in Belgium. Overall, these figures are encouraging in the context of EOSC as they indicate that international users frequently have the opportunity to acquire information about services from websites in English language.

The key results of the EOSC-Pillar survey on communication with users are:

Key results for communication with users:

- A vast majority of e-infrastructures publish the description of their services on a website. Most websites are also available in English.

4.4.5 Related services

EOSC-Pillar also asked e-infrastructures whether they offer support services to their users. We included three support services: 'support for data management plans', 'advice on data management' and 'support concerning legal issues'.

On average, representatives of service providers most frequently indicated that their organisation offers '**advice on data management**'. Across countries, 60% of the service providers offer this support service. The percentage is highest in France (77%), followed by Germany (68%), Italy (66%), Austria (51%) and Belgium (33%, see Table 7.101 in the Appendix).

Service providers also frequently offer '**support for data management plans**'. Across countries, 44% of the service providers offer support for data management plans on average. There is little variation observable across countries: Support for data management plans is most common in Italy (51%), followed by Germany (48%), France (42%), Belgium (40%) and Austria (37%, see Table 7.100 in the Appendix).

Across countries, 30% of the service providers also offer '**support concerning legal issues**'. Legal advice is most common in Germany (42%), followed by Italy (37%), France and Austria (29%) and Belgium (13%, see Table 7.102 in the Appendix)).

The key results of the EOSC-Pillar survey on support services for users are:

Key results for support services for users:

- On average, 60% of all e-infrastructures offer advice on data management, 44% offer support for data management plans and 30% offer support concerning legal aspects.

4.5 Service Level Agreements (SLA)

Service Level Agreements (SLAs) are defined as a ‘documented agreement between a *customer* and *service provider* that specifies the service to be provided (...)’ (EOSC hub 2019, emphasis in the original). In the context of EOSC, clients can be, for instance, a scientific community or a project. Hence, SLAs are important as they allow users to have clear expectations which levels of quality, security, availability and performances are related to the services e-infrastructures offer. An example for the usage of SLAs in the European context is EGI that offers computing services via SLAs (EGI 2020). Furthermore, SLAs can be regarded as an indicator of an e-infrastructure’s maturity level and are thus highly relevant to the implementation of EOSC.

The objective of this set of questions is to evaluate the current usage of SLAs by service providers and e-infrastructures in the EOSC-Pillar countries.

E-infrastructures with SLAs

The first single choice question ‘**Does your organisation offer Service Level Agreements (SLAs)?**’ gives us a general overview of this topic (see Table 7.59 in the Annex). 305 e-infrastructures were asked this question.

SLAs are currently not really common as a majority of the service providers and e-infrastructures answered SLAs are ‘**not foreseen in the near future**’ (mean = 23%) or ‘**not applicable**’ (mean = 29%). However, 22% of the e-infrastructures have adopted ‘**SLAs for some services**’ and another 8% have adopted ‘**SLAs for all services**’. In addition, 15% of the e-infrastructures’ representatives indicated that SLAs are not yet adopted but ‘**foreseen in the near future**’.

In more detail, the results per category and the related country differences are:

On average, 23% of the service providers and e-infrastructures across countries ticked ‘**no, not foreseen in the near future**’. We observe the highest frequency for Germany (36%), followed by France (29%), Austria (24%), Italy (10%) and Belgium (3 of 14).

On average, 29% of the service providers and e-infrastructures across countries ticked ‘**not applicable**’. The frequencies per country are: Austria: 47%; Belgium: 4 of 14; Germany: 25%; France: 19% and Italy: 25%.

On average, 15% of the e-infrastructures across countries ticked ‘**no, but foreseen in the near future**’. The highest percentages are observed in France (26%), followed by Italy (14%), Austria (12%), Germany (11%) and Belgium (2 of 14).

On average, 22% of the organisations across countries ticked ‘**Yes, for some services**’. We observe the following frequencies per country: Italy: 38%, France: 19%, Germany: 11%, Belgium: 2 of 14, Austria: none.

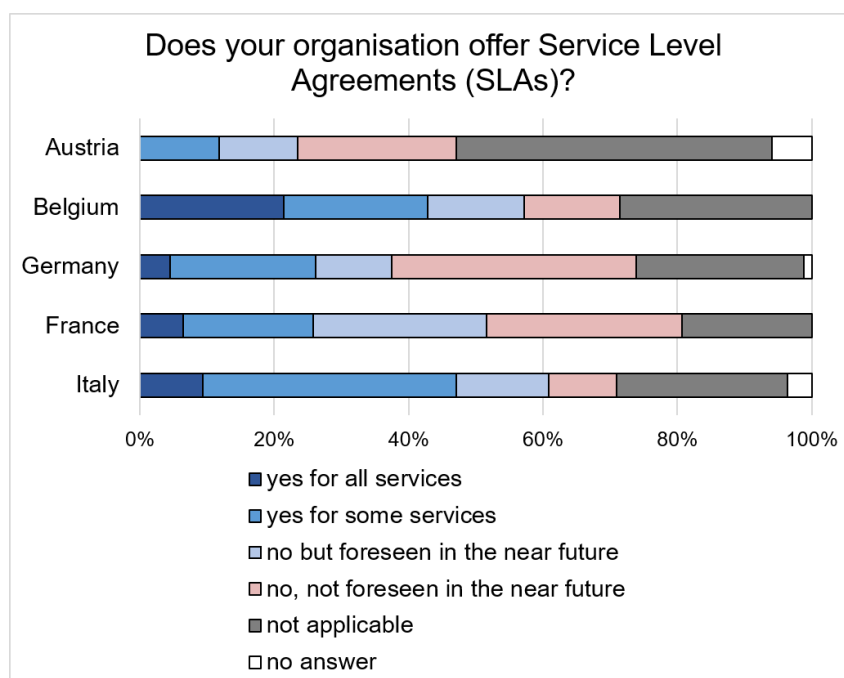


Figure 4.11 – Service Level Agreements offered by e-infrastructure.
Note: stacked dataset of all services.

On average, 8% of the organisations ticked '**Yes, for all services**'. The frequencies per country are: Italy: 9%, France: 6%, Germany: 5%; Belgium: 3 of 14 and Austria: 0. A total of eight organisations did not answer this question.

Country differences:

The results by country presented in Figure 4.11 show that SLAs (established or foreseen) are most frequently found in Italy and Belgium, followed by France and Germany. France seems willing to progress as the percentage of SLAs that are foreseen for the near future is larger than in any other country. Austria seems to be an exception where SLAs are least common and respondents more often ticked 'not applicable'.

SLAs of transnational organisations

The second question of this set is related to the international context: '**Are you participating in a transnational organisation or federation that offers Service Level Agreements (SLAs) or similar contracts that are also binding for your organisation?**' (see Table 7.60 in the Annex). 305 e-infrastructure were asked this question.

About half of these 305 e-infrastructure (mean = 51%) are **not participating** in such transnational organisations or federations. They are most frequent in Germany (66%), followed by Austria (53%), Belgium (7 of 14), France (48%) and Italy (38%). Almost a third ticked '**don't know**'. The frequencies per country are: Austria (38%), Germany

(25%), Italy (25%), Belgium (5 of 13) and France (19%).

On the contrary, across countries, 20% are on average **participating in such a transnational organisation or federation**. There is an important disparity between countries. They are most frequent in Italy (36%) and France (32%), followed by Belgium (2 of 14), Germany (9%) and Austria (6%).

Finally two organisations out of 305 did not answer this question.

The main information given by this question is that around a fifth of the e-infrastructures are currently involved in transnational SLAs or similar contracts. A quarter does not know and a half is not part of such agreements.

Types of SLAs

The third question in this set of questions related to SLAs is **'What types of Service Level Agreements (SLAs) do you offer or will you offer in the future?'** This question targets only the 149 organisations that offer SLAs or are going to offer SLAs in the future who were identified in the previous question 'Does your organisation offer Service Level Agreements (SLAs)?' (see Table 7.61 in the Annex). This question is a single choice question.

On average, across countries, half of the 149 organisations that offer SLAs or are going to offer SLAs in the future ticked **'custom made type'**. This type of SLAs is preferred most frequently in Italy (69%), followed by Austria (4 of 8), Belgium (4 of 8) and Germany (46%) and less frequently preferred in France (6 of 16).

On average, 20% of these organisations that offer SLAs or are going to offer SLAs in the future ticked **'several predefined types'**. This type of SLAs is the most frequent in Germany (27%), France (4 of 16), Austria (2 of 8), Belgium (1 of 8) and Italy (13%).

Across countries, 11% of these organisations that offer SLAs or are going to offer SLAs in the future ticked on average **'one-fits-all'**. This answer is most frequently mentioned in Belgium (2 of 8), followed by Germany (15%), France (2 of 16) and Italy (4%). There is no such answer in Austria.

In addition, 3% ticked **'other'** and 11% ticked 'not applicable'. Finally, on average, 4% across countries did not answer this question.

These results show that e-infrastructures prefer to adapt their SLAs to the different cases rather than to use predefined or one-fits-all.

Barriers of SLAs

The last question of this set of questions on SLAs, **'Have you encountered issues or barriers to establish Service Level Agreements (SLAs) with a community?'** is

a single choice question (see Table 7.62 in the Annex). 149 e-infrastructures that offer SLAs or are going to offer SLAs in the future were asked this question.

The analysis of the answers is very positive as only 9% of the e-infrastructures (mean across countries) indicate they have encountered such issues or barriers.

In more detail, the results per category and country are:

Across countries, 33% of these e-infrastructures declare on average they **have not encountered issues or barriers to establish Service Level Agreements (SLAs) with a community**. The frequencies per country are: Austria (3 of 8), Belgium (3 of 8), Germany (33%), France (4 of 16) and Italy (33%).

Across countries, another quarter ticked '**don't know**': Austria and Belgium (each 2 of 8), Germany (27%), France (4 of 16) and Italy (23%). In addition, 29% (mean across countries) ticked 'not applicable': Austria (1 of 8), Belgium (2 of 8), Germany (24%), France (7 of 16) and Italy (41%).

Only 9% of these e-infrastructures **have encountered issues or barriers to establish Service Level Agreements (SLAs) with a community**. In more detail, we find the following frequencies per country: Austria: 2 of 8; Belgium: 8 of 8; Germany: 12%; France: 1 of 16 and Italy 2%.

Finally, three organisations out of 149 did not answer this question.

These results show that only few issues or barriers are currently encountered by e-infrastructures to establish SLAs with communities. Respondents were invited to specify what issues or barriers they encountered but this cannot be studied in this report.

In conclusion of this SLAs section, we consider that the SLA is probably a topic to disseminate in order to foster its adoption in the near future in the context of EOSC including the case of SLAs in the context of transnational federations or organisations and perhaps with the help of feedback from e-infrastructures that have experience of such agreements.

The key results of the EOSC-Pillar survey on SLAs are summarized on the next page.

Key results for Service Level Agreements (SLAs):

- The current usage of SLAs by service providers and e-infrastructures in the EOSC-Pillar countries is not high: about a third of the organisations offer SLAs (mean = 28% for some services and mean = 7% for all services). Another 14% foresee to offer SLAs in the near future. There are important disparities between the different countries.
- About a quarter of the service providers and e-infrastructures participate in a transnational organisation or federation that offers Service Level Agreements (SLAs) or similar contracts.
- E-infrastructures prefer to adapt their SLAs to the different cases to using predefined or one-fits-all SLAs.
- Only few issues or barriers are currently encountered by e-infrastructures to establish SLAs with communities.

4.6 Access to data and services

This section is dedicated to the aspect of access regulations of e-infrastructures. In more detail, this section comprises access policies, methods for authorizing access and methods of access restrictions applied by e-infrastructures.

4.6.1 Legal aspects of data access

When organisations allow external users access to their data or services they implicitly give access to (part of) their network and computing equipment. The site's policy governing remote access or access policy is legally required and describes e.g. who is allowed access, what constitutes acceptable use of the accessed resource or possible penalties when violating the access policy. Furthermore, a publicly accessible access policy, which also includes the procedures to follow after a security incident, is a prerequisite for the service to be federated in the EOSC authentication infrastructure. E-infrastructures, as providers of research products, are thus expected to have clear policies when data is available to researchers outside the organisation. Therefore, having a public access policy is indicative of the 'openness' of the e-infrastructure and readiness for integration in the EOSC authentication framework. Driven by open science policies, the future EOSC not only enables more sites to publish data from repositories, but also services that enable researchers to operate on the data (European Commission 2018).

The first question in this group takes data as well as services into account. Subsequent questions only refer to data and data providers. The question: **'Does your organisation have a publicly available access policy for services and data?'** [Table 7.103, possible answers: yes, no] was followed with the question **'Is a publicly available access policy planned?'** [Table 7.104, possible answers: no, yes in less than 1 year, yes in 1 to 2 years, yes, in more than 2 years]. The answers to both questions are combined into Figure 4.12.

In each country, more than 50% of the e-infrastructures already have an access policy. In addition, a substantial amount of e-infrastructures plan to introduce access policies in the next two years: 27% of the respondents from Belgium and 23% from France plan to do so which shows significant interest and availability of resources to rectify the situation. Smaller numbers are counted in Austria (15%), Italy (9%) and Germany (9%). If plans are achieved, France will reach 94% coverage in a few years which probably means that in practice all services and data in France can be shared. According to the answers, 66% of Italy's e-infrastructures and 76% in Austria plan to have an access policy in a few years.

However, 28% of the Italian and 9% of the Austrian respondents ticked the 'not applicable' category. The latter strengthens the notion that their services are only available to

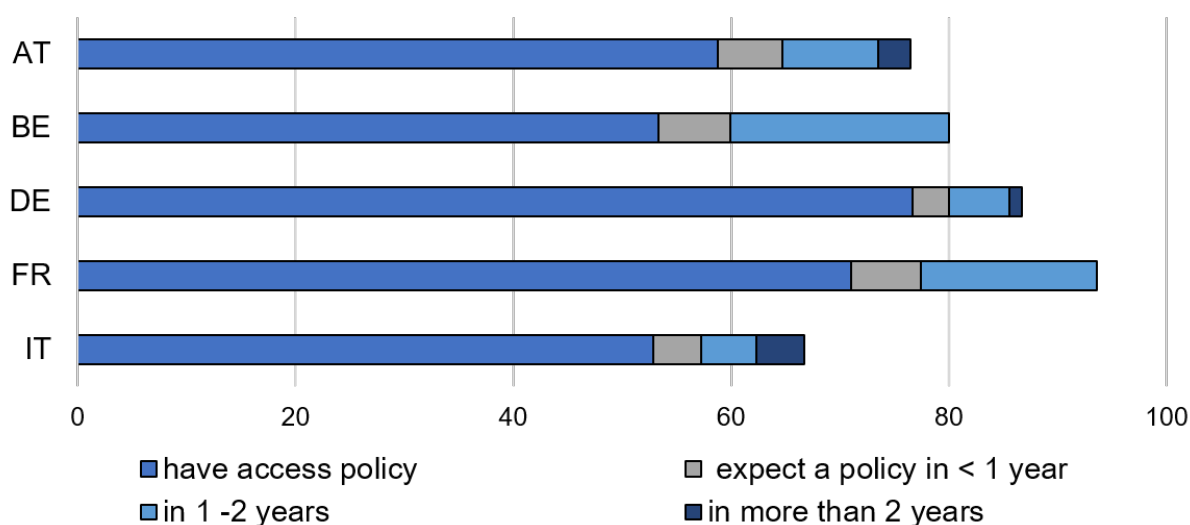


Figure 4.12 – Percentage of e-infrastructures having a publicly available access policy (or plan to have one in the near future)

the internal organisation which excludes the need for a public access policy. Organisations from Belgium (N = 15), Germany and France ticked 'not applicable' in 7%, 2% and 0% of the answers respectively.

4.6.2 Handling security incidents

Data sharing brings security aspects to the foreground, especially those that describe how to handle a possible incident. Even if the technology is state of the art, security breaches may surface eventually⁹ and a prepared organisation is better equipped to mitigate the problem and to limit its scope. The question **'Is there a security incident response procedure in place according to a certified framework?'**, was received 283 times and showed that ordered handling of security incidents, at least using a certified framework, is not (yet) widely implemented (see Figure 4.13). Although application of standards implies an additional organisational effort it may be worth steering attention to this requirement in educational activities in EOSC.

It is certainly interesting to gather more data in order to be able to differentiate between types or size of the e-infrastructure. Larger or more established e-infrastructures can be expected to belong to the group that already have an access policy and security response procedures.

⁹Security wisdom says that no doubt security incidents will happen. The question is when?

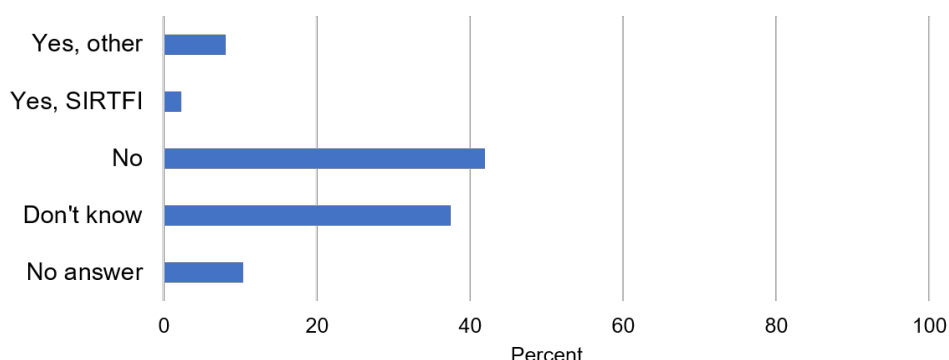


Figure 4.13 – Does the organisation have an incident response procedure?
Note: mean across countries.

4.6.3 Technical aspects of access

The previous questions aimed at establishing the readiness to share data and services. In order to do so in the context of EOSC, it is necessary to federate the service with one of the authentication domains in operation. The technical means to do so is a challenge for sites with limited technical resources or expertise. However, existing and future EOSC implementation projects can assist with choosing the implementation and handling the interaction with established providers. In order to give EOSC operations and implementation projects (e.g. EOSC-Pillar) an indication of the technical capacity and capability of the e-infrastructures to handle the federation process, the survey captured the different authentication models. Furthermore, the answers in this section could be a valuable input for future planning of the implementation of the EOSC authentication framework.

Because of the wide range of technologies and the different terminologies as well as the limitations described in Chapter 1 and 3, any interpretation of the data has to be conducted carefully and account for these constraints.

Access models

This group of questions aims to establish an idea of the proliferation of knowledge and technology regarding modern authentication federating protocols. Firstly, the questions checked whether access to the services is regulated and how. The multiple choice question **‘How does your organisation authorize access to data?’** returned average figures of: individual level (51%) and local authorisation (20%), group level (42%) or not at all (34%). The latter being equivalent to having no access control.

More than half of the organisations use a form of individual access control (either local authorisation, a variant of individual authorisation, or individual access control). A total of 308 respondents received this question. Some overlap exists between individual level

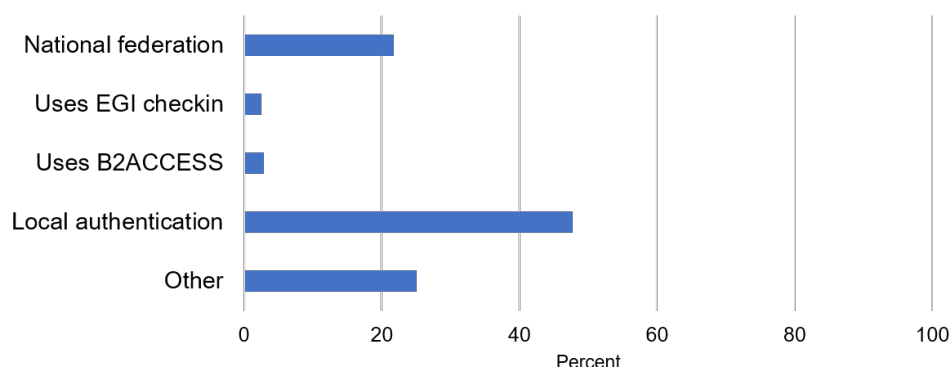


Figure 4.14 – Authentication models in use
Note: bars show means across countries, multiple answers possible.

access and group level access because individual access in certain cases implies group level regulation as well.

Secondly, the survey asked about the authentication model in use and if there already exists a federation with an EOSC implementer. Clearly the majority of the installations is still using */etc/passwd* for authentication, but federative authentication is already well represented (see Figure 4.14).

If respondents answered 'Local authentication' (i.e. using */etc/passwd*) to the question '**What is the authentication model of your services?**' (see Figure 4.14) they were presented with a second set of questions aiming to find out plans to move away from local authentication to authentication through an identity provider (IdP). However, many respondents seem uncertain since 148 respondents of the question '**Does your organisation plan to authenticate your service through an Identity Provider?**' did not know (30%), said it was not applicable (11%) or did not answer (8%)¹⁰. Of those service providers that use local authentication, 39% answered that they have plans to authenticate services through an Identity Provider (see Table 7.186 in the Appendix). Clearly, this is a difficult subject and the possible reason why almost 50% of the respondents gave a non indicative answer.

Thirdly, we asked what technologies related to authentication the sites had implemented. Results for the question '**Does your organisation make use of one of the following authentication technologies?**' showed that 30% use on average SAML (Security Assertion Markup Language) for exchanging authentication data. Figure 4.15 shows this as well as additional results of this question (see also Table 7.190–7.194 in the Appendix).

An IdP-SP proxy helps to mask changes at the service provider level that would otherwise affect the operation of the local IdP. As 70 of the 99 respondents of the question

¹⁰All percentages are means across countries.

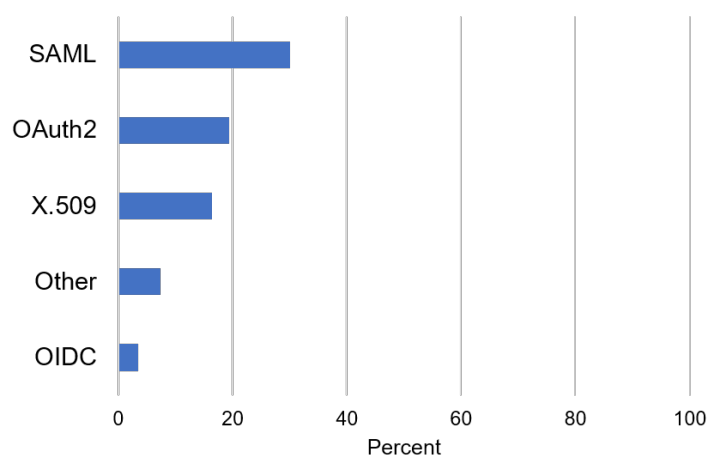


Figure 4.15 – Authentication exchange technology in use

Note: bars show means across countries, multiple answers possible, residual categories ('don't know', 'not applicable', 'no answer') not shown, see Tables 7.190–7.194 in the Appendix.

'Is your service proxied to eduGAIN?' come from Italy, we discuss the results for this country only. Of the Italian e-infrastructures, 67% indicated that they proxy their service via eduGAIN (see Table 7.187 in the Appendix). Further research is needed to establish a better understanding of the use of proxies outside Italy and of the requirements and whether current technologies are able to fulfil the requirements.

The question **'Is the authorisation information for your service(s) managed locally at the service level or received from an external attribute authority?'** was answered 99 times but, like the former question, only a few times by Austrian, Belgian, German and French respondents. This question aims to give the experts better insight into the AAI requirements and technical development of the federated landscape. The information will be evaluated and used to seed further studies.

Regarding the attributes that are exchanged at the time of authorisation, we asked the e-infrastructures **'Do you use the REFEDS R&S entity category?'** The Research and Education FEDerations group (REFEDS) research and scholarship entity category¹¹ defines additional criteria for attributes, besides those that control the use of personal attributes, for the research domain. The R&S entity category facilitates the entity exchange of the IdP with service providers, and pre-empts the need to continuously review their policy about what information they exchange with the services provider. The question was only available to those that are using national, the EGI Checkin or the EUDAT B2ACCESS identity provisioning. However, the vast majority of the respondents indicated they either 'don't know', thought the question was 'not applicable' or did not answer the question at all. Clearly this area may have been too technical for those in charge of

¹¹<https://refeds.org/category/research-and-scholarship>

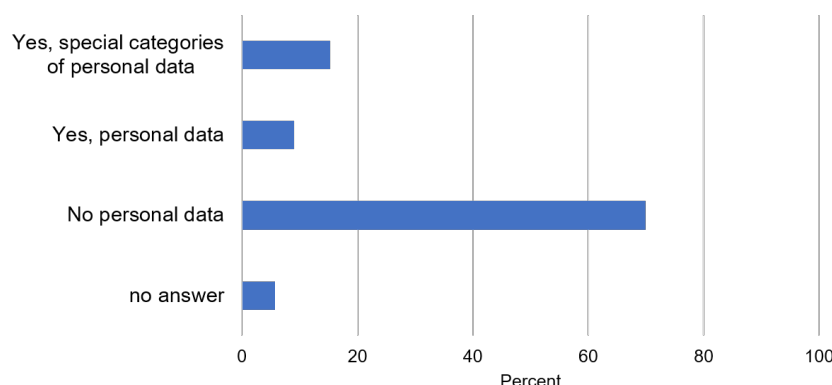


Figure 4.16 – Percentages of e-infrastructures processing personal data

answering the survey, although the instructions suggested to contact local experts for these and other questions.

4.6.4 Processing personal data

Authentication and authorisation are the keys that open the door, i.e. give access to data and services. Some data however needs specific access control because of legal regulations. Personal data by its nature and since 2018 by the General Data Protection Regulation (GDPR¹²) and related laws in the Member States need to be protected and modern access technology allows fine grained filtering on the identity of the person seeking access. Still, the obligations, technological provisions and access policies are far more complex than for non-personal research data.

The survey asked the e-infrastructures if they had personal data under their protection and if this data belonged to one or more of the special categories of personal data. For the question **‘Does your organisation offer services that process personal data in research data?’**, 24% of the 308 respondents answered on average ‘yes’. Of these, 66% answered positively to the question **‘Does your organisation offer services that process special categories of personal data in research data?’** (see Figure 4.16).

Although 308 responses to this question were counted, services that process personal data comprise a significant amount of the total. The well known argument saying that open data should be made intelligently open without doubt applies. Access restrictions do not equate access limitations and by no means contradict striving for open data. The requirements with respect to sensitive data is proven and it is up to implementers to apply the available technology and enable safe use of personal data in EOSC.

The key results of the EOSC-Pillar survey on access to data and services are:

¹²<https://gdpr-info.eu/>

Key results for access to data and services:

- Most e-infrastructures have a publicly available access policy and there is large effort to increase the number of access policies especially in France and Belgium. More research is needed to better understand the reason for not having an access policy.
- The level of readiness regarding the handling of a security incident in a standardised manner is very low. More research is needed to better understand security awareness and incident readiness.
- Access to services is often granted through local authentication instead of or in addition to federative authorisation methods used in EOSC.
- A large fraction of e-infrastructures (24%) processes personal data and 66% of those handle special categories of personal data.

4.7 FAIRness of data

FAIRness of data is a necessary precondition for a shared space of open data as it guarantees that data are findable, accessible, interoperable and reusable (Wilkinson et al. 2016). We have analysed the FAIRness of data from various angles. In Section 4.7.1, we present our results on familiarity with the concept FAIRness among all four target groups. All following sections of this chapter refer to respondents who represent organisations that 'offer data infrastructures which store and manage research data', hence, repositories. We start by discussing the self-assessment of repositories regarding the FAIRness of their data holdings (Section 4.7.2). Then, we present our results along three of the four elements of FAIR data. Section 4.7.3 is dedicated to the findability of data. We do not discuss the accessibility of data, as this information is already part of Section 4.6. Section 4.7.4 contains our results regarding the interoperability of data. Finally, we discuss the reusability of data in Section 4.7.5. In Section 4.7.6, we briefly describe to what extent our findings for findability, interoperability and reusability correlate. Section 4.7.7 contains a discussion of the limitations to the results of FAIRness of data.

A limitation that concerns all data relying on representatives of repositories is the low number of observations for several countries as well as the high percentage of respondents who ticked 'not applicable' in many questions. Interpretations have to account for these aspects.

4.7.1 Familiarity with the concept FAIRness

In a first step, the EOSC-Pillar team asked representatives of each target group '**How familiar are you with the FAIR principles regarding data?**' Respondents were asked to indicate their answers on a four-point scale ranging from 'very familiar' to 'not familiar at all'.

On average, representatives of all four target groups predominantly indicated to be familiar or very familiar with the concept of FAIR data. Differences between the target groups are very small (see Figure 4.17).

In more detail, 81% of the respondents representing **e-infrastructure**s indicated on average to be 'very familiar' or 'familiar' with the FAIR principles. Of all e-infrastructure representatives, French respondents indicated most frequently to be (very) familiar with FAIRness of data (92%), followed by German respondents (86%), Italian respondents (82%), Belgian respondents (75%) and Austrian respondents (71%; see Table 7.7 in the Appendix).

77% of all representatives for **funding bodies** indicated to be (very) familiar with FAIRness of data (total percentage of all funding bodies in the survey, see Table 3.7 in

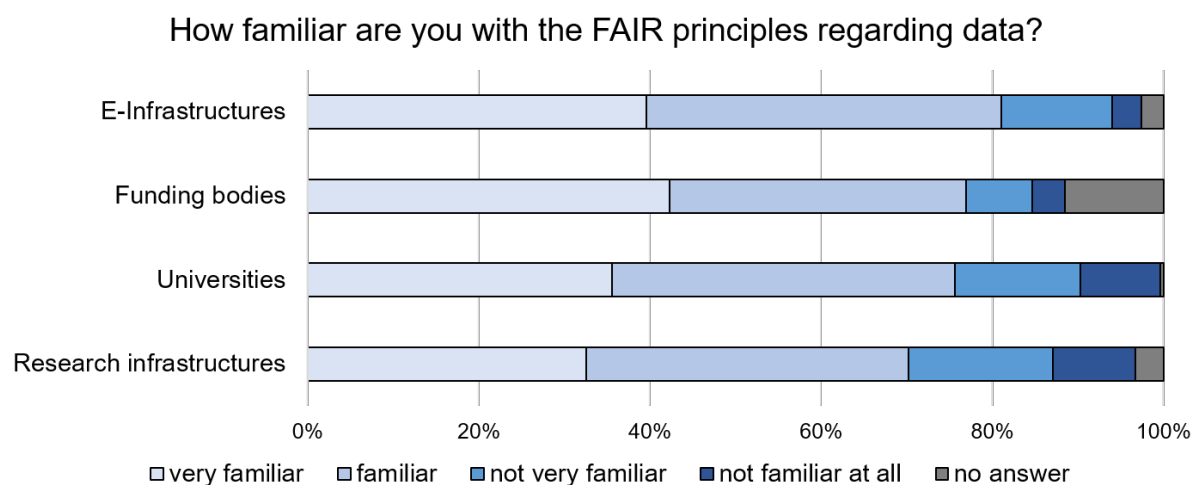


Figure 4.17 – Familiarity with FAIRness of data

Note: Mean across countries for e-infrastructures, research infrastructures and universities, total percentages for funding bodies (due to low N).

the Appendix).¹³

Across countries, about three quarters of all **universities** indicated to be (very) familiar with the FAIR principles. Still, country differences are substantial for universities. Whereas all universities from Austria (N = 12) and Belgium (N = 9) in the survey indicated to be (very) familiar with the FAIR principles, representatives for the three other countries indicated a lower familiarity. 68% of the 19 French university representatives responded to be (very) familiar with FAIR principles as well as 58% of the 19 Italian universities and 52% of the 54 German universities (see Table 5.7 in the Appendix).

Across countries, about 70% of all representatives for **research infrastructures** indicated to be (very) familiar with the concept of FAIR data. Familiarity of FAIRness among research infrastructures is highest in Belgium where 85% indicated to be (very) familiar with FAIRness of data, followed by France (78%), Germany (72%) and Italy (67%). Assessing a tendency for Austria is difficult as only eight RI responded to the survey: Of these, four representatives for RI indicated to be (very) familiar with EOSC (see Table 6.7 in the Appendix).

The overall conclusion of this subsection is that respondents across target groups are familiar with the concept of FAIRness regarding data.

¹³Usually, only a low number of funding bodies per country exists and about one third responded to the survey. Consequently, the number of responses is too low to make meaningful interpretations of country differences or the mean across countries (see Appendix Table 2.2).

Key results for the familiarity with the principles of FAIR data:

- On average, representatives for e-infrastructures, funding bodies, universities and research infrastructures are predominantly familiar or very familiar with the principles of FAIR data.
- Differences across the four target groups concerning the familiarity with FAIRness of data are very small.

In a next step, we asked respondents representing repositories, a subgroup of e-infrastructures, various questions on the FAIRness of their data holdings. We identified representatives of repositories as respondents who indicated that their organisation 'offer(s) data infrastructures which store and manage research data' (see Section 4.1.4). Hence, all further questions on the FAIRness of data rely solely on representatives of repositories.

A limitation to all results for repositories is the small number of observations for Belgium: Ten Belgian repositories answered these questions. Hence, individual percentages have a large leverage on the percentages for Belgium and, as a consequence, also on the country means. For a more detailed interpretation of the results, the tables with all frequencies are available in the Appendix.

4.7.2 Self-assessment of data holdings

To begin with, we asked respondents representing repositories to self-evaluate the degree of FAIRness of their organisation's data holdings. In more detail, we asked respondents: **'How FAIR do you consider your data holdings?'** The percentages per country are available in Table 7.132 in the Appendix.

Across countries, an average of about 44% consider their data holdings to be 'somewhat' FAIR and another 23% consider their data holdings to be 'very much' FAIR. Only about 12% indicated that their data holdings are 'not very much' FAIR and about one percent chose 'not at all' FAIR. From a normative perspective, this finding is a good starting point for EOSC, but still leaves room for improvement. Besides, 15% of the repositories indicated on average that this question was not applicable to them and 6% skipped the question.

Differences across countries are substantial. Representatives of German repositories rate their data holdings most frequently as very much or somewhat FAIR (87%), followed by representatives of repositories in Austria (77%). Whereas German repositories most frequently indicated that their data holdings are 'very much' FAIR (44%), respondents from Austria indicated the highest level of 'somewhat' FAIR data holdings (54%). Representatives for the other countries are more reluctant in the rating of their data holdings, although half of the repositories or more rate their data holdings as very or somewhat FAIR (6 of 10 in Belgium, 58% in France and 51% in Italy). The share of respondents ticking 'not applicable' or skipping the question also varies substantially across countries: 35% of the Italian, 16% of the French and two of the ten Belgian repositories indicated that the question was 'not applicable'. This relatively large share may explain why the percentage of very or somewhat FAIR data holdings is below average in these countries. Future research may investigate this matter.

Also, two aspects have to be taken into consideration as potentially biasing the results towards a higher level of reported FAIRness. First, as previously stated, the question 'How FAIR do you consider your data holdings?' aims at a self-evaluation of repositories. Although self-evaluations may provide interesting results, they are of course always in danger of being biased towards the more favourite or desirable outcome from the respondent's perspective. Second, respondents who previously indicated to be 'not at all' familiar with the concept of FAIR data did not receive this question. This only concerns a minority of six respondents. Still, these six respondents may deviate from the results described above.

In order to gain more insights into the FAIRness of data holdings, we therefore asked several follow-up questions that investigate some of the criteria that contribute to the FAIRness of data. In the following pages, we describe the results for these questions that measure some important aspects of FAIR data. Several of these questions and their categories rely on an adapted version of the Core Trust Seal (2018) guidelines.

Key results for self-assessment of FAIRness of data holdings:

- Although the majority of the repositories consider their data holdings on average as FAIR up to a certain degree, there is room for improvement. The largest group of repositories evaluate their data holdings as 'somewhat' FAIR (44%), another 22% perceive their data holdings as 'very much' FAIR.
- Differences across countries are substantial. German repositories perceive their data holdings most frequently as (very) FAIR, whereas repositories from France and Italy are more reluctant and more frequently choose the category 'not applicable'.

4.7.3 Findability

For gaining insights into the findability of data, we asked respondents questions concerning search features of data and metadata, the language of metadata, and persistent identifiers of data as well as unique identifiers for researchers. We first discuss the most important frequencies for these questions. Then, we provide an overview of these frequencies by summarizing the results in a standardized average score. The aim of the survey was to shed light on some aspects of the findability of data, but we do not claim to cover this aspect completely. Besides, a limitation of the data is the low number of observations for several countries as well as the high percentage of respondents who ticked 'not applicable' in many questions. Interpretations have to account for these aspects.

Search feature for metadata

To begin with, findability of data is related to the users' ability to search metadata. This aspect is captured in the question **'Does your organisation provide a search feature for research data?'**¹⁴

Across countries, the majority of all repositories offers a search feature for metadata: 53% (min = 32% (France), max = 74% (Germany)) of the repositories allow users to search metadata and another 14% (min. = 0 (Belgium, N = 10), max = 32% (France)) are currently implementing this feature. An additional 13% of all repositories are working on this feature and only a minority of 5% indicated that they have 'not considered this

¹⁴This question is an adapted version of one of the guidelines of the Core Trust Seal (2018: 24).

feature yet'. On average, 12% ticked the category 'not applicable' (min = 1% (Germany), max = 26% (France)) and 4% skipped the question.

In order to gain more insights into country differences and to assess how many repositories will provide a search feature in the near future, we summarized the two highest categories ('fully implemented' and 'in the implementation phase'). The summarized figures show that Germany takes the lead as 86% of all repositories already have implemented or are implementing a search feature for metadata. Ranked next are Austria (75%), and Italy (70%), followed by France (63%). As only ten repositories for Belgium are included, percentage values have to be interpreted cautiously. However, we can observe a tendency that the percentage of Belgian repositories providing search features for metadata in the near future may be lower than in the other countries (see Table 7.134 in the Appendix). Besides, about a quarter of the percentage of e-infrastructures in France indicated that this question is not applicable to them. This share is substantially larger than in the other countries (about a tenth or slightly more in Austria, Italy and Belgium) and leaves room for further analyses.

Search feature for research data

Related to search features for metadata are search features for research data. This aspect is addressed in the question **'Does your organisation provide a search feature for research data?'**¹⁵ (see Table 7.133 in the Appendix).

On average, only 7% indicated that their organisation has 'not considered this feature yet' (min = 0% (France), max = 13% (Austria)). Another 14% reported that they 'are working on or have a theoretical concept for this feature' (min = 5% (Germany), max = 3 of 10 (Belgium)). Compared to the previous question, fewer (but still the largest group of all) repositories offer this feature. On average, most repositories either already offer this feature (mean = 43%, min = 21% (France), max = 63% (Germany)) or answered that 'this feature is in the implementation phase' (mean = 15%, min: 0 (Belgium, N = 10), max = 37% (France)). Besides, 19% indicated that this question is 'not applicable' (min = 8% (Austria), max = 32% (France)) to them and 2% skipped the question.

Adding the percentages for repositories that already provide search features or are implementing a search feature facilitates a comparison across countries. The rank order of the countries is identical to the previously discussed question: Germany is ranked first as 78% of the German repositories (will) provide a search feature for research data. Considerably lower are the percentages for Austria (63%), Italy (61%) and France (58%). Three of the ten Belgian representatives of repositories indicated that they offer a search feature for research data. As in the previous question, a large share of respondents

¹⁵This question is an adapted version of one of the guidelines of the Core Trust Seal (2018: 24).

indicated that this question is 'not applicable' to them: About one third of the French and Belgian repositories chose this option as did 17% of repositories in Italy, 9% of the repositories in Germany and 8% of the repositories in Austria.

Language of metadata

In the context of EOSC, language of metadata plays an important role as providing metadata in English facilitates finding data for international users. This aspect of findability is addressed by the question **'In which language(s) does your organisation provide metadata?'** Please indicate what percentage of your metadata are available in the following languages. Please estimate if you do not know the exact percentages.'

On average, 43% of all repositories provide 100% of their metadata in English. The share is largest in Germany and Italy (51%) and smallest in France (37%) and Austria (33%). Four of ten Belgian repositories offer 100% of their metadata in English. In addition, 12% of all repositories offer on average between 76% and 99% of their metadata in English. Only 11% of the repositories do not provide any metadata in English.

Besides, a substantial amount of respondents skipped this question: In Germany, Belgium and Italy, around a tenth of the respondents did not give an answer, whereas 21% behaved this way in Austria and even 42% in France (see Table 7.137 in the Appendix).

Persistent identifiers (PIDs)

Another important aspect of findability are persistent identifiers (PIDs) that allow for finding and identifying data unambiguously. We asked respondents representing repositories: **'Does your organisation assign or provide persistent identifiers (e.g. DOI, Handle)?'**¹⁶

Across countries, 44% have fully implemented this feature (min = 3 of 10 in Belgium, max = 70% (Germany)) and another 17% are currently implementing this feature (min = 9% (Germany), max = 33% (Italy)). On average, only 16% indicated that they have not considered this feature yet (min = 1% (Germany), max = 37% (France)). Therefore, a considerable percentage of the repositories in the sample either already offer this feature or are implementing this feature. Besides, 15% of the respondents chose on average the category 'not applicable' and two respondents skipped the question.

Considering the two highest categories (fully implemented or in implementation phase), PIDs are most common in Germany (79%) and least common in France and Belgium (about half of all repositories). Italian and Austrian repositories lie in between these

¹⁶This question is an adapted version of one of the guidelines of the Core Trust Seal (2018: 24).

countries (about 63%).¹⁷

The percentage of respondents indicating that this question was 'not applicable' to their organisation is again substantial: 23% chose this category in Italy as did two of ten Belgian repositories, 17% of the Austrian, 11% of the German and 5% of the French repositories.

Of those repositories that use persistent identifiers, DOIs (Digital Object Identifiers) are by far the most common, followed by Handle and URN (Uniform Resource Name).

Unique identifiers for researchers

A more specific form of persistent identifiers are unique identifiers for researchers. This aspect is captured in the question **'Does your organisation use unique identifiers for researchers in the metadata?'**

On average, 42% of all repositories use unique identifiers for researchers in metadata. Around a fifth indicated this question was not applicable and about 1% skipped the question (Table 7.150 in the Appendix).

Country differences are substantial as 59% of Italian repositories provide unique identifiers for researchers in metadata whereas only 26% of Austrian repositories do so (see Table 7.150 in the Appendix). 37% of repositories in France and Germany provide persistent identifiers. Of the ten repositories from Belgium that answered the question about unique identifiers, five gave an affirmative answer. The percentage of respondents choosing 'not applicable' is largest in Belgium (four of ten repositories) and France (32%).

Repositories which use unique identifiers for researchers use ORCIDs much more frequently than ResearcherID (Table 7.151 and 7.152 in the Appendix).

Standardised average score for findability

In order to get an overview of the questions related to the findability of data, we created a standardised average score that summarizes these aspects. The aim of this score is not to measure findability in all its aspects, but rather to summarize the questions in the survey in this regard.

For each question, we recoded the answers so that respondents could achieve a maximum of one point if they chose the highest category. We assigned partial points for lower-ranking categories. For instance, respondents who indicated that their organisation has fully implemented DOIs receive a score of 1. If organisations are implementing this feature, they receive .667 points, if they have a theoretical concept, they receive .333 points. We sum these scores across the five questions related to findability. To make this

¹⁷These figures rely on repositories who answered question E60. Table 7.127 in the appendix shows the frequencies for this question for repositories and additionally for HPCs and high-bandwidth networks.

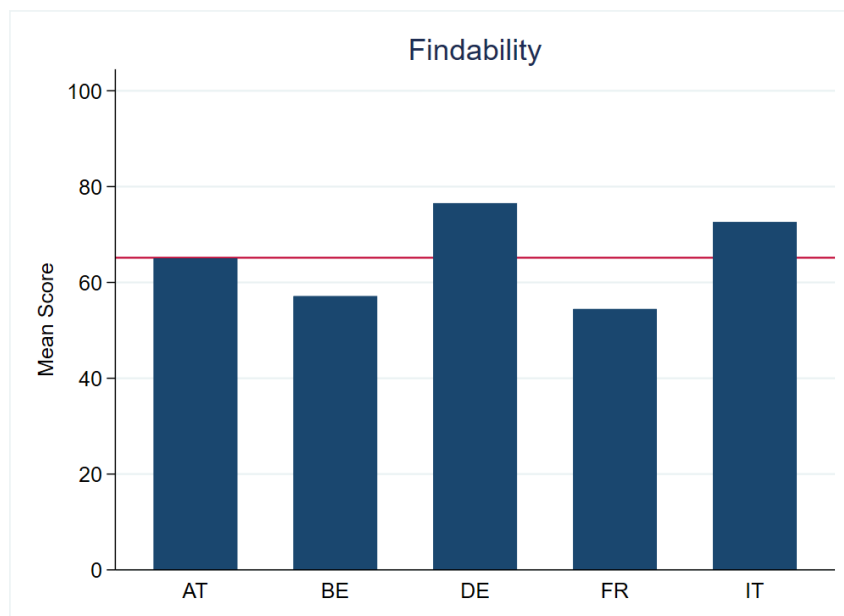


Figure 4.18 – Standardised average score for findability of data across countries
Note: Target group: repositories (a subset of e-infrastructures), the horizontal line indicates the mean across countries.

measure comparable, we then rescale the variable to values between 0 and 100. In other words, we divide the score by the number of valid answers (excluding the categories 'not applicable' and 'no answer'). Hence, unlike in the discussion of the individual questions, we exclude the categories 'not applicable' and 'no answer'.¹⁸ The resulting figure indicates to what extent an organisation's data are findable according to the questions in this survey.

Figure 4.18 shows the mean findability according to our measurement across countries. Across countries, repositories reach an average score of 65 (horizontal line). Country differences are of course, but limited to a range of 22 points. On average, repositories in Germany achieve the highest scores (mean = 77, N = 75). This is consistent with the fact that German repositories take the lead regarding findability in most of the individual questions. Italian repositories achieve a score closely to German repositories (mean = 73, N = 106). In the individual questions, Italian repositories are particularly strong regarding unique identifiers of researchers and metadata in English. Repositories in Austria lie close to the mean across countries (mean = 65, N = 24). A weak spot of Austrian repositories are the language of metadata and unique identifiers for researchers. Belgian repositories

¹⁸While we think these answers are important to understand repositories and their characteristics in detail, including them in the average score would imply that we judge repositories on criteria they themselves assess as e.g. 'not applicable' (see also Section 4.7.7). As a robustness check shows, the exclusion of the residual categories 'not applicable' and 'no answer' leads to an increase in the average scores by six to nine percentage points. Differences across countries are hardly affected (about -2 percentage points for the range).

achieve a score below average (57), albeit with a low number of observations ($N = 10$). Hence, individual repositories can have a large leverage on these scores as well as on all percentages. Given the low number of observations and the low variance across countries, we do not see a reason to believe that Belgian repositories deviate from other countries regarding findability of data to a large extent. The same conclusion applies to French repositories (mean = 55, $N = 19$) although the problem of a low number of observations is less severe for French repositories.

Overall, these figures indicate that repositories in the survey have already implemented the majority of the criteria included in the EOSC-Pillar survey to assess the findability of data. However, there is still room for improvement.

Key results for findability of data:

- Across countries, repositories reach an average findability score of 65 (of 100 possible points). Repositories in Germany and Italy achieve the highest score of findability, however, country differences are overall moderate (range = 22 points).
- On average, 53% of the repositories offer a search feature for metadata and another 14% are implementing this tool. Search features for metadata are most common in Germany.
- On average, 43% of the repositories offer a search feature for research data and 15% currently are implementing this feature. Respondents from Germany most frequently indicated to offer a search feature for research data.
- On average, 43% of all repositories provide 100% of their metadata in English and another 12% offer between 76% and 99% of their metadata in English. English is most frequently used in metadata by German and Italian repositories.
- On average, 44% of the repositories assign or provide persistent identifiers (PIDs) and another 17% are implementing this tool. The most common PIDs are DOIs (Digital Object Identifiers). PIDs are most frequently used in German repositories.
- On average, 42% of the repositories use unique identifiers for researchers in metadata, most frequently ORCID. Unique identifiers for researchers are most common in Italian repositories.

4.7.4 Interoperability

The EOSC-Pillar questionnaire contains three questions that capture aspects of interoperability: whether services are accessible via an API, the machine-readability of the data catalogue and the usage of standardized vocabulary. In more detail, APIs enable users to easily access metadata and data by providing an interface to connect to data holdings. Thereby, APIs go hand-in-hand with the machine-readability of metadata: Whereas machine-readability of metadata allow computers to read metadata, APIs allow computers to access the metadata catalogue and the data, a precondition for reading the

metadata. Providing these features, along with the use of standardized vocabulary, allows computers to access metadata, read metadata and 'understand' metadata. Thereby, different systems become interoperable. For these reasons, we have assigned these three elements to the aspect 'interoperability'.

Application programming interface (API)

To begin with, we asked service providers **'Are your organisation's services accessible by an application programming interface (API)?'**¹⁹

On average, 41% of all repositories offer an API to access their services (min = 26% (Italy), max = 50% (Austria, N = 24 and Belgium, N = 10)). In addition, another 14% are currently implementing an API (min = 0 of the 10 Belgian repositories, max = 26% (Germany)). On average, 17% have a theoretical concept for this feature (min = 5% (France), max = 38% (Italy)). Only 13% have not yet considered implementing an API (min = 8% (Austria), max = 21% (France)). 16% indicated that this question is 'not applicable' (min = 8% (Germany), max = 3 of 10 (Belgium)) and around 1% skipped this question.

Combining the two highest categories ('fully implemented' and 'in the implementation phase') allows for assessing the percentage of repositories that will provide an API at least in the next years (mean = 55%). Germany takes the lead as 66% of all German repositories will be accessible by means of an API, followed closely by France (63%). Ranked next are Austria (54%), Belgium (5 of 10) and Italy (39%).

Besides, a substantial amount of repository representatives again chose 'not applicable': Up to about a tenth behaved this way in Germany, Italy and France, 21% in Austria and even three of ten respondents did so in Belgium.²⁰

Data catalogue in a machine-readable format

Related to APIs is the machine-readability of the data catalogue. In more detail, we asked respondents of repositories **'Does your organisation provide a data catalogue in a machine-readable format?'**²¹

The average percentage of repositories that do so is slightly higher than the percentage of the previously discussed question on APIs: On average, 45% of all repositories

¹⁹Representatives of all three services as defined in the questionnaire (repositories, HPCs and high-bandwidth networks) received this question, hence, we asked respondents whether their services rather than data or metadata are accessible by an API. In the analysis of this subsection, we only use the responses of repositories. Therefore, we are confident that we capture closely to what extent data are accessible by an API. The categories are an adapted version from the Core Trust Seal (2018) guidelines.

²⁰These figures rely on repositories only. Table 7.126 in the Appendix holds information on repositories and other e-infrastructure.

²¹The question and categories are an adapted version from the Core Trust Seal (2018: 24) guidelines.

already provide a machine-readable data catalogue (min = 3 of 10 (Belgium), max = 67% (Austria)) and another 14% are implementing such a feature (min = 0 of 10 (Belgium), max = 32% (France)). Besides, 11% of the repositories have a theoretical concept for this feature (min = 4% (Austria), max = 2 of 10 (Belgium)). Only 11% have not considered this feature yet (min = 0 (Austria), max = 3 of 10 in (Belgium)). The percentage of repositories that ticked 'not applicable' is again substantial (mean = 16%, min = 4% (Germany), max = 26% (France)). In addition, 2% skipped the question.

Hence, on average about 59% of all repositories provide a machine readable data catalogue or will achieve this goal in the near future. In more detail, machine-readable data catalogues are most common in Austria and Germany as 79% respectively 72% of all repositories either have implemented or are implementing this feature in these countries. Ranked next are Italy (60%) and France (53%). Machine readable data catalogues are least common in Belgium as only 3 of the 10 repositories indicated that this feature is fully implemented (and no Belgian repository currently works on the implementation of a machine-readable data catalogue).

On average, 16% of the respondents indicated that machine-readable data catalogues are 'not applicable' to their organisation. The percentage is by far smallest in Germany (4%), followed by Austria (13%), Italy (19%), Belgium (two of ten) and France (26%, see Table 7.142 in the Appendix).

Usage of standardised/controlled vocabularies for metadata

As a third aspect of interoperability of data, we have asked respondents '**Does your organisation use standardized/controlled vocabularies for metadata?**'

On average, about half of the repositories behave this way (mean = 52%). The percentage is highest in Germany (65%), followed by Italy (56%), Austria (50%), France (47%) and Belgium (4 of 10). 29% of the representatives for repositories indicated that their organisations do not use standardized vocabularies (min = 20% (Italy), max = 4 of 10 (Belgium)).

A substantial share of respondents indicated that this question is 'not applicable' for their organisation (mean = 17%, min = 3% (Germany), max = 32% (France)) and a minority (3%) skipped this question (see Table 7.135).

Standardised average score of interoperability

Similar to the standardised average score summarizing the questions related to the findability of data, we also created a score that summarizes the questions related to the interoperability of data (please see Section 4.7.3 for an explanation of the measurement).

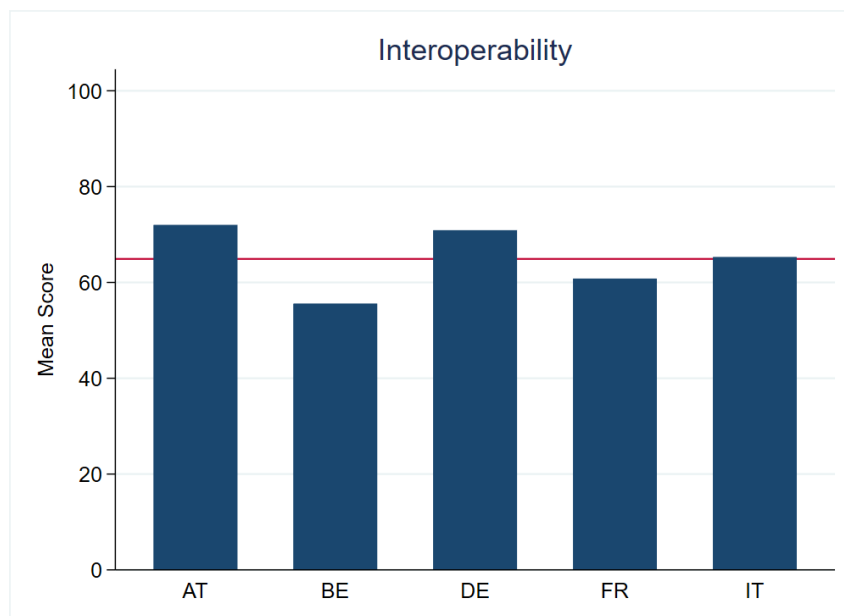


Figure 4.19 – Standardised average score for interoperability across countries
Note: Target group: repositories (a subset of e-infrastructures), the horizontal line indicates the mean across countries.

Figure 4.19 shows the results per country as well as the mean across countries (horizontal line).

Across countries, the average score of the interoperability of data is 65 (horizontal line). This figure is almost identical to the figure for the findability score, but the range (16 points) suggests even less variation across countries. The average score for interoperability is highest among Austrian repositories (mean = 72, N = 23) and German repositories (mean = 71, N = 75). German repositories are ranked first or second across all questions. Austrian repositories range around the mean for APIs and the usage of controlled vocabulary, but take the lead concerning machine-readable data catalogues. Ranked next is Italy (65, N = 104). A noteworthy country specific is that APIs are less common in Italy compared to other countries. Repositories in France reach a score of 61, probably driven by the lower percentage of machine-readable data catalogues. Belgian repositories reach the lowest score although the low number of observations (N = 9) requires a very cautious interpretation of this figure.

Key results for interoperability:

- Across countries, repositories reach an average interoperability score of 65 (of 100 possible points). Differences across countries are overall small (range = 16 points).
- On average, 55% of the repositories' services are or will soon be accessible by an application programming interface (API). APIs are most common among German and French repositories.
- On average, 59% of the repositories provide a data catalogue in a machine-readable format or are implementing this feature. Machine-readable data catalogues are most frequently found in Austrian and German repositories.
- On average, 52% of the repositories use standardised/controlled vocabularies for metadata. The percentage is largest for German repositories.

4.7.5 Reusability

The fourth letter in FAIRness regarding data stands for the reusability of data. The EOSC-Pillar questionnaire captures two aspects in this regard: data curation and data provenance.

Data curation

To begin with, respondents representing repositories were asked **'What level of curation do you perform?'** Respondents could choose up to four categories.²²

On average, repositories most frequently indicated to 'perform basic curation (e.g. brief checking, addition of basic metadata or documentation)' (mean = 38%, min = 11% (France), max = 57% (Austria)). Repositories also frequently 'perform enhanced curation (e.g. conversion to new formats, enhancement of documentation)' (mean = 32%, min = 18% (Italy), max = 45% (Germany)). About a quarter of all repositories perform the highest level of curation ('data-level curation (all changes made above and additional editing of deposited data for accuracy', mean = 25%, min = 1 of 10 (Belgium), max = 33% (Germany)). About 28% of all repositories indicated that they 'distribute the content as

²²The question and categories are an adapted version from the Core Trust Seal (2018: 8) guidelines.

deposited' (min = 22% (Germany), max = 32% (France)). This question was a multiple choice question, therefore these percentages do not add to 100% as one repository can offer multiple levels of curation. On average, 18% of the respondents skipped this question (min = 7% (Italy), max = 4 of 10 (Belgium), see Tables 7.166–7.169 in the Appendix).

Data provenance

As a second aspect of the reusability of data, EOSC-Pillar investigated data provenance. In more detail, we asked representatives of repositories **'Does your organisation implement measures for ensuring documentation about the origin and the changes made in data (i.e. data provenance)?'**²³

Across countries, almost half (47%) of all repositories have implement(ed) measures of data provenance. The percentage is highest in Germany (66%), France (53%) and Belgium (5 of 10) and lowest in Austria and Italy (about 34%). On average, 29% indicated that their organisation does not implement measures of data provenance (min = 2 of 10 (Belgium), max = 52% (Austria)). On average, almost a quarter (23%) ticked 'not applicable'. The percentage for 'not applicable' is lowest in Germany (7%) and Austria (13%) and substantially larger in France (26%), Belgium (three of ten) and Italy (38%, see Table 7.154 in the Appendix).

Of those repositories that have implemented measures of data provenance, version control is more common than file integrity checks (see Table 7.155 and 7.156 in the Appendix).

Standardised average score for reusability

As in the previous sections, we have created a standardised average score that summarises the answers of the questionnaire with regard to the reusability of data. Figure 4.20 shows the results.

Across countries, repositories achieve a mean reusability score of 57 (horizontal line). This indicates that repositories achieve on average lower scores regarding reusability than regarding findability and interoperability, as these indices have a mean of 65. The range across countries is comparable to the range for findability (21 points, hence, moderate, but slightly larger than the range for interoperability). As in the previous indices, German repositories take the lead (mean = 67, N = 73). Belgian repositories take about the same value, although – as it was the case for the previous indices – individual observations have a large leverage as only eight repositories choose a category that is part of the index. French repositories are ranked close to the mean (mean = 58, N = 16). Italian repositories

²³The source of the question is an adapted version of the Core Trust Seal (2018: 17) guidelines.

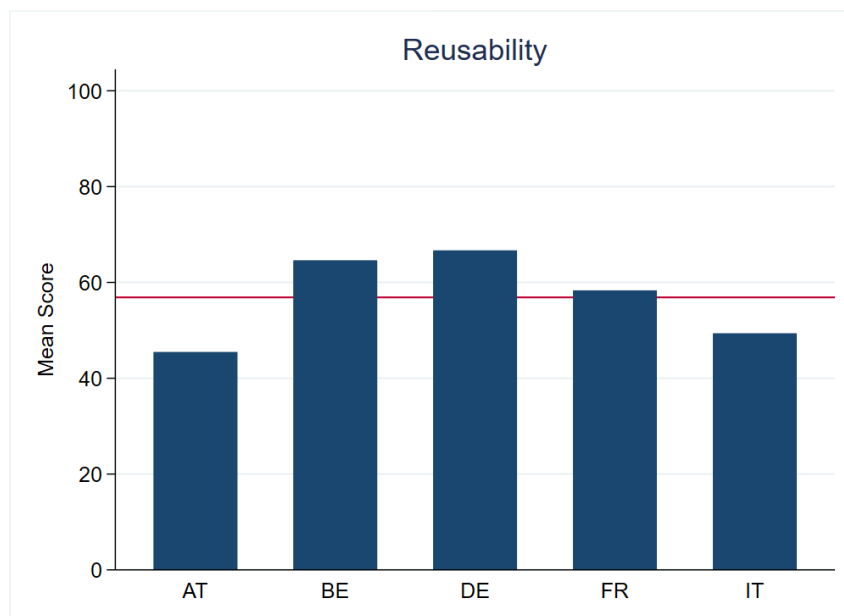


Figure 4.20 – Standardised average score for reusability across countries
Note: Target group: repositories (a subset of e-infrastructure), the horizontal line indicates the mean across countries.

(mean = 49, N = 103) and Austrian repositories (mean = 45, N = 22) achieve values below average. Repositories from both countries also least frequently use measures for data provenance.

Key results for reusability of data:

- Across countries, repositories reach an average reusability score of 57 (of 100 possible points). Differences across countries are moderate (range = 21 points).
- On average, 38% of the repositories perform basic data curation, 32% perform enhanced curation, 25% perform data-level curation and 28% distribute the content as deposited.
- On average, 47% of the repositories have implemented measures for ensuring documentation about the origin and the changes made in data (i.e. data provenance).

4.7.6 The relationship between findability, interoperability and reusability

How are the standardised average scores related? Pearson correlation coefficients between the scores are low to medium.²⁴

The highest correlation can be observed between the findability of data and the interoperability ($r = .52$). The correlation between the reusability and the interoperability of data ($r = .34$) as well as between the reusability and the findability of data ($r = .23$) is lower. This indicates that the individual aspects of FAIR data do not necessarily occur together: Repositories who have strengths in one aspect of FAIRness may have weaknesses in another aspect. However, as stated previously, the questionnaire was not designed to capture and measure FAIRness of data in all its aspects. Instead, the questionnaire was designed more broadly and only contained some aspects of FAIR data. Therefore, the indices aim at summarising the questions included in the questionnaire but do not claim to cover the individual aspects of FAIR data to completeness.

4.7.7 Limitations of the analysis on FAIRness of data holdings

Throughout this section, we noted two aspects that systematically influence the interpretation of the data and hence merit a discussion in more detail:

First, the percentage of respondents who ticked 'not applicable' is rather large on average. However, we do not have reasons to assume that respondents ticked 'not applicable' or skipped questions systematically as only a minority behaved this way.²⁵ In addition, the response 'not applicable' also provides insights. For instance, if respondents who indicated that their organisations 'offer data infrastructures which store and manage research data' indicate that search features for metadata or research data do not apply to them, their organisations may differ in crucial aspects. For these reasons, we included the categories 'not applicable' (and respondents who skipped questions) in the analysis of the individual questions. Of course, the question remains, why a relatively large share of respondents chose 'not applicable' or decided not to respond at all. Future research may investigate further in this matter.

Second, the percentage of respondents who indicated 'not applicable' or did not give an answer are not distributed equally across countries. On average, the number of respondents indicating 'not applicable' and 'no answer' is largest in Belgium and France and lowest in Germany. As we always calculate percentages across the categories per country,

²⁴We do not differentiate between countries, but run correlations on all valid observations for repositories combined.

²⁵0.4% of the respondents ticked 'not applicable' or skipped all five questions on findability, 3% behave this way for the three questions on interoperability, and 4% for the two questions on reusability.

a larger share of respondents indicating 'not applicable' or 'no answer' of course decreases the percentage values for the other categories.

In a nutshell, we decided to include the residual categories 'not applicable' and 'no answer' in the analysis of the individual questions. However, depending on the research interest, excluding these residual categories from the analysis may be a more appropriate choice. An example therefore is the exclusion of the residual categories from the calculation of the average scores (see Section 4.7.3 for a discussion).

4.8 Data management of repositories

In order to gain more insights into repositories, we asked their representatives several further questions. In more detail, the EOSC-Pillar questionnaire contained questions on how respondents perceive concerns of depositors (Section 4.8.1), the type of archived data (Section 4.8.2), licenses (Section 4.8.3) and certifications (Section 4.8.4).

4.8.1 Concerns of depositors

To begin with, we asked representatives of repositories **'Some researchers or organisations are reluctant to share and/or publish data, others are not. How concerned are your customers/depositors about the following aspects?'** Respondents could indicate that they perceive depositors as 'not concerned at all', 'somewhat concerned', 'concerned' or 'very concerned'.

Across countries, depositors are most concerned about the 'effort of preparing the data for publication' (58%), followed by 'intellectual property (e.g. copyright)' (52%), 'lack of control over the usage of data' (50%), 'data protection' (47%), 'benefit of sharing data' (40%) and 'competitive disadvantage when sharing' (39%) (see Tables 7.143–7.148 in the Appendix).

In more detail, 58% of the respondents indicated on average that depositors are concerned or very concerned regarding the **effort for preparing data**. The range across countries is narrow as depositors are least concerned in Belgium (5 of 10) and most concerned in France (63%, Table 7.144 in the Appendix).

About 52% are on average (very) concerned about **intellectual property**. Country differences are substantial: According to the data, about a third of all depositors are (very) concerned about intellectual property rights in Germany. On the contrary, the percentage for all other countries range between 52% (Italy, Austria) and 63% (France, Table 7.148 in the Appendix).

Ranked next are concerns about a **'lack of control over the usage of data'** as, on average, 50% of the repository representatives perceive depositors as (very) concerned about this aspect. Respondents perceive depositors' concerns similar across countries as the percentages of respondents that are (very) concerned range between 45% (Germany) and 57% (Austria, Table 7.143 in the Appendix) .

A substantial number of depositors is also concerned about **data protection**: On average 47% of the respondents perceive depositors as (very) concerned in this regard. Country differences are substantial: The percentage of depositors who are (very) concerned about data protection is lowest in Germany (33%) and Austria (39%). Concerns are more pronounced in Italy (51%) and France (53%). Moreover, six of the ten Belgium

respondents perceive depositors as 'very' concerned about data protection (Table 7.147 in the Appendix).

According to the data, depositors are considerably less concerned about the **benefit of sharing data**: Across countries, 40% of the respondents perceive depositors as (very) concerned in this regard. The percentage is again smallest in Germany (34%), followed by France (37%), Italy (40%) and Belgium (4 of 10 respondents). Concerns are highest in Austria as 48% of all depositors are perceived as (very) concerned about the benefits of sharing data (Table 7.145 in the Appendix).

Across countries, fewest depositors are (very) concerned about the **competitive disadvantage** (mean = 39%). The percentage of (very) concerned depositors is smallest in Austria (30%), Germany (32%) and France (32%). Concerns are more pronounced in Italy as 41% of the respondents indicated that depositors are (very) concerned about a competitive disadvantage. Six of the ten Belgian representatives also indicated substantial concerns in this regard (Table 7.146 in the Appendix).

These results all rely on the categories 'very concerned' and 'concerned'. However, if the percentages across all items and countries are compared²⁶, we find that while about a third of the respondents are 'concerned', only a minority is 'very concerned' (16%). The largest category is on average the category 'somewhat concerned' (the second lowest category). Only around 12% perceive respondents as 'not concerned at all'. Representatives of repositories seem to be confident in their assessment of depositors' concerns as the percentage of 'don't know' responses is moderate across items (mean = 7–8% for all items except for the effort of preparing the data (10%)). About the same is true for the category 'not applicable' as about 6–9% on average ticked this category.

Combining the percentages of depositors who are concerned and very concerned across items allows for assessing country differences in a more systematic way. Across countries, depositors from Germany are on average least frequently (very) concerned as 40% of the German respondents perceive depositors as (very) concerned. For all other countries, the mean percentages of depositors who are (very) concerned range around 50%.

4.8.2 Type of archived data

In a next step, we asked representatives of repositories '**What type of digital data is archived in your repository?**' Respondents could choose up to nine response categories consistent with the DDI 'Kind of Data Format' categories (Data Documentation Initiative 2016).

On average, repositories archive most frequently text (71%), followed by the categories numeric (60%), still image (46%), geospatial (36%), software (33%), video (29%),

²⁶We take the percentages per country as described above and calculate means across items.

audio (26%), 3D (15%), other (12%) and interactive (10%). Across countries, repositories archive on average 3.5 types of data. Differences across countries regarding how many types of data they archive are small.

Country differences are largest for **numeric** data. Across countries, 60% of the repositories archive numeric data on average. However, only 35% of Austrian repositories archive numeric data. Ranked next are Italian repositories as 48% archive numeric data. Numeric data are much more frequently archived in repositories located in Belgium (six of nine repositories), Germany (70%) and France (78%, Table 7.170 in the Appendix).

Differences across countries are also substantial for **still images** (mean = 46%). Still images are least common in France as 28% of the French repositories archive them. Still images are more common in Italy (44%), Belgium (4 of 9 repositories) and Germany (50%). Austrian repositories archive still images most frequently (65%, Table 7.172 in the Appendix).

Country differences are smaller for **software** (mean = 33%, range = 27 percentage points). Repositories in Italy (49%) and France (44%) most frequently archive software. In the other countries, between 22% (Austria) and 28% (Germany) of the repositories archive software (Table 7.176 in the Appendix).

The range across countries is almost as large for **audio material** (mean = 26%). Repositories in Austria most frequently archive audio material (39%), followed by repositories in Germany (30%), France (28%), Belgium (two of nine repositories) and Italy (13%, Table 7.174 in the Appendix).

For **geospatial data** (mean = 36%), we can observe three groups of countries: Geospatial data are most common in Germany (45%) and France (44%). About 35% of the repositories in Italy and Austria archive geospatial data as do two of nine Belgian repositories in the dataset (Table 7.173).

For **text** (mean = 71%), the range across countries is 21 percentage points. Text is most frequently archived by Italian repositories (82%) and least frequently archived by French repositories (61%, Table 7.171).

Videos (mean = 29%) are most frequently archived by Austrian repositories (39%) and least frequently archived by Italian repositories (20%, Table 7.175).

The range across countries is lower for **3D data** (range = 13 percentage points, mean = 15) and interactive resources (9 percentage points). Detailed percentages are available in the Appendix in the Tables 7.171–7.178.

If all the differences between the mean across countries and the percentages for individual countries are combined, Austrian repositories deviate the most from country means, followed by French and Italian repositories. German repositories correspond to the average the most. Future research may investigate further in the causes of these differences,

e.g. in the role of users' disciplines.

4.8.3 Licenses

EOSC-Pillar asked respondents representing repositories **'Under what conditions does your organisation disseminate research data?'** Respondents could choose up to four ways how their organisations disseminate research data, therefore the percentages do not add to 100%

In a nutshell, the survey data shows the wide use of Creative Commons (CC) licenses: About 45% of the repositories in the dataset use **CC licenses for open reuse**. However, country differences are substantial: CC licenses for open reuse are most common in Germany (68%), followed by Austria (56%), France (37%) and Belgium (4 of 11 repositories). CC licenses for open reuse are least common in Italy (27%, see Table 7.114 in the Appendix).

Fewer repositories use on average **CC licenses for restricted reuse** (mean = 33%). CC licenses for restricted reuse are most frequently used in Germany and Italy (51%) and least frequently in Belgium (2 of 11 repositories) and France (16%). Austria lies in between these extremes as 32% of the Austrian repositories use CC licenses for restricted reuse (see Table 7.115 in the Appendix).

On average, around 38% of the repositories disseminate research data in the **public domain**. The differences across countries are less pronounced for this type of license. Public domain licenses are most common in Germany (49%) and Belgium (5 of 11 repositories), followed by France (37%), Austria (32%) and Italy (28%, see Table 7.113 in the Appendix).

In comparison, **tailored licenses** are less frequently used as only a quarter of the repositories state to have individual, custom made licenses in place. Tailored licenses are most common in Austria (40%) and Belgium (4 of 11 repositories), followed by Germany (22%), Italy (16%) and France (11%, see Table 7.116).

In addition, 19% of the representatives of repositories indicated on average to disseminate data under 'other' conditions. The share is largest in France (32%) and Austria (24%), followed by Italy (18%), Germany (12%) and Belgium (1 of 11 repositories, see Table 7.177 in the appendix).

On average, 11% of the respondents skipped this question. In Italy, Germany and Austria, only 4% skipped the question, but 16% did so in France and three of eleven respondents in Belgium.

From a country perspective, representatives from German repositories most frequently indicated to use CC licenses for open and restricted reuse as well as to disseminate research data in the public domain. In Italian repositories, CC licenses for open reuse and public

domain licenses are least common of all countries and the percentage for tailored licenses is also substantially below average. However, Italian repositories take the lead concerning using CC licenses for restricted reuse (together with Germany). CC licenses for restricted reuse and tailored licenses are least common in French repositories. Moreover, CC licenses for open reuse are used below average in France. Repositories in Austria take the lead for tailored licenses and use CC licenses for open reuse more frequently than most other countries.

4.8.4 Certifications

Certifications granted by external organisations are an important aspect of assessing the maturity level of repositories. Therefore, EOSC-Pillar asked repositories **'Did you complete any of the following certifications or audits between 2015–2019?'** Answer categories were 'yes', 'no, but in preparation' and 'no'. Overall, 231 respondents representing repositories are in the analysis for this question. Of these, 12% did not give an answer to this question (mean across countries).

The most frequent certificate is the Core Trust Seal (CTS). On average, almost a quarter of all repositories either are certified by the CTS or pursue this goal. Country differences are moderate as most countries range between 30% (Germany and Austria) and 21% (France). Whereas by far more Italian repositories already have the CTS than prepare for it, none of the repositories in France reported to already be certified by the CTS (but 21% prepare for the CTS, as already mentioned). An exception is Belgium as one of the ten Belgian repositories indicated to prepare for the CTS certificate (see Table 7.158 in the Appendix).

About six percent of the repositories indicate to be certified by the Data Seal of Approval (DSA).²⁷ This certification is again most common in Germany (16%), followed by France (11%) and Austria (4%). None of the Belgian or Italian repositories are certified by the DSA (see Table 7.159 in the Appendix).

Other certifications (World Data System (WDS), ISO 16363 certification, Nestor Seal, Digital Repository Audit Method Based on Risk Assessment (DRAMBORA), Trustworthy Repositories Audit & Certification (TRAC)) are less common as less than five percent of the repositories prepare for obtaining these certificates or are already certified (see Tables 7.160–7.165 in the Appendix).

The key findings for the section on data management by repositories are summarized on the next page.

²⁷Although the DSA has been replaced by the CTS and hence can no longer be obtained, several respondents indicated to prepare for an application.

Key results for data management of repositories:

- Across countries, depositors are most concerned about the 'effort of preparing the data for publication' (58%), followed by 'intellectual property (e.g. copyright)' (52%), 'lack of control over the usage of data' (50%), 'data protection' (47%), 'benefit of sharing data' (40%) and 'competitive disadvantage when sharing' (39%).
- Differences across countries are moderate for most items on depositors' concerns. On average, representatives from Germany perceive depositors least frequently as (very) concerned about sharing data.
- On average, repositories archive most frequently text (71%), followed by numeric data (60%) and still images (46%). Across countries, repositories archive on average 3.5 types of data. Differences across countries are largest for numeric data and still images.
- CC licenses are widely used by repositories as 45% disseminate research data under CC licenses for open reuse and 33% use CC licenses for restricted reuse. 38% of the repositories disseminate on average research data in the public domain and 25% use tailored licenses. Differences across countries are substantial especially concerning CC licences for open reuse.
- Repositories most frequently are certified by the Core Trust Seal (CTS) and (less frequently) the Data Seal of Approval (DSA). All other certificates are less common. Differences across countries are relatively small.

4.9 Regulations on open science and open data

Policies and regulations concerning open science and data management are important instruments for fostering data sharing. Funding bodies and universities are particularly relevant in this regard as they can encourage, promote and last but not least create the basis for researchers to apply open data principles. Furthermore, they have the means to enforce regulations regarding the handling of data on associated researchers and to make open data practices more attractive to their researchers (e.g. by creating incentives, raising awareness or by providing the necessary support structures).

EOSC-Pillar aimed at gaining insights into what regulations have been adopted by universities and funding bodies by asking representatives of these target groups diverse question items. In this section, we first discuss the results for funding bodies and then for universities.

4.9.1 Funding bodies

Representatives of funding bodies were asked **'Does your organisation impose rules for funding on grant recipients concerning the following aspects?'** The percentages for all funding bodies who responded to the survey are shown in Figure 4.21 and in the Tables 4.6 and 4.7 in the Appendix

Overall, funding bodies most frequently have mandatory rules for all or some grants concerning data management plans (DMPs) and open access publications, followed by the compliance of data to the FAIR principles, open research data, publication of data in a repository and the long-term availability of research data. Rules concerning the publication of data in a certified repository are least common.

For the more detailed overview, we will first discuss how frequently funding bodies impose mandatory rules for some or all grants. Then, we will describe how frequently funding bodies encourage grant recipients to comply with certain aspects of open science/open data without enforcing mandatory regulations.

Funding bodies most frequently impose rules for some or all grants on recipients concerning **data management plans (DMPs, 40%)**: 16% of all funding bodies demand DMPs for all grants and another 24% demand DMPs for some grants.

Funding bodies also frequently enforce **open access publications** as a precondition for grants (36%): For 24% of the funding bodies in the dataset, open access publications are mandatory for all grants (the highest percentage of all aspects of open science). For another 12%, open access publications are mandatory for some grants.

32% of the funding bodies have mandatory regulations concerning **open research data** as well as for the **compliance of data to the FAIR principles**: For 16% of the

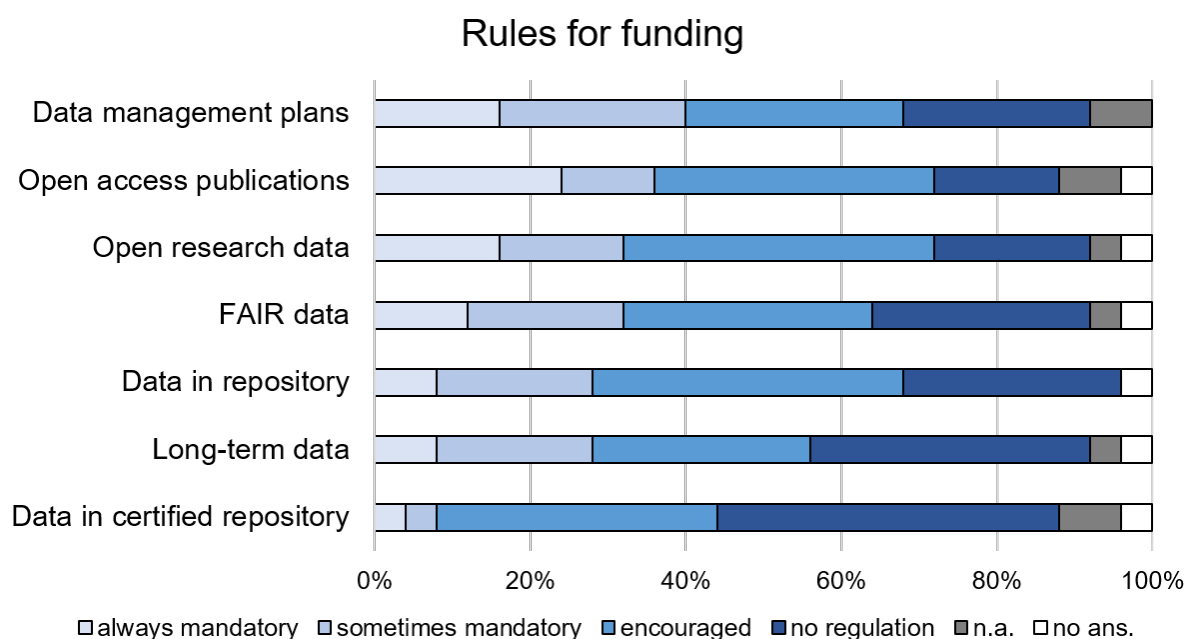


Figure 4.21 – Rules for grant recipients imposed by funding bodies

Note: Target group: funding bodies, percentages are total percentages for all funding bodies in the dataset combined; original labels for response categories: 'no regulation', 'encouraged but optional for grants', 'mandatory for some grants', 'mandatory for all grants', 'not applicable'; original labels of items: 'open access publications', 'data management plans', 'open research data', 'long-term availability of research data', 'compliance of data to the FAIR principles', 'publication of data in a repository', 'publication of data in a certified repository'.

funding bodies, open research data is mandatory for all grants and for another 16%, open research data is mandatory for some grants. 12% of the funding bodies enforce regulations on the compliance of data to the FAIR principles for all grants, another 20% for some grants.

Funding bodies also frequently have mandatory regulations for the **publication of data in a repository** and the **long-term availability of research data** (28%). For both forms of regulations, 8% of the funding bodies have adopted rules for all grants and another 20% for some grants.

Funding bodies least frequently enforce regulations on the publication of data in a certified repository. Only one of the 25 funding bodies indicated to have adopted regulations for all grants and another funding organisation enforces this rule on some grants.

In addition to these mandatory regulations, funding bodies also frequently encourage grant recipients to follow recommendations concerning open research data (40%), publication of data in a repository (40%), open access publications (36%), publication of data in a certified repository (36%), compliance of data to the FAIR principles (32%), DMPs (28%) and the long-term availability of research data (28%). These figures suggest that funding bodies frequently aim at fostering principles of open science and open data even

if they not always have adopted mandatory regulations. For most items in the questionnaire, around two thirds of the funding bodies (formally or informally) support principles of open science and open data among grant recipients. Exceptions are the long-term availability for research data and the publication of data in a certified repository that are less frequently supported by funding bodies.

Up to two representatives for funding bodies indicated that the question on rules for funding was 'not applicable' to their organisations.

4.9.2 Universities

Universities are a second important institution that can create an environment fostering open science and FAIRness of data. EOSC-Pillar has asked university representatives the following question regarding seven items: **'Some organisations have developed rules related to their work processes, whereas others have not. Has your organisation developed informal or formal regulations or publicly available policies that address the following aspects?'** Respondents could choose between the categories 'no regulation', 'informal regulation', 'formal/written regulation', 'publicly available policy' and 'not applicable'.

The detailed results are available in the Tables 5.15–5.22 in the Appendix. As visible in these tables, the number of observations for universities is low for several countries although the response rate for universities is reasonable to exceptionally high in these countries: 18 Italian universities are part of the analysis (response rate = 22%), as are 17 French universities (response rate = 20%), 12 Austrian universities (response rate = 30%) and 9 Belgian universities (response rate = 82%). As described in Chapter 3, a low number of observations grants individual observations a high leverage on percentages, a problem that extends to the mean across countries. This warning has to be taken into account for the interpretation of all figures described in this section.

Figure 4.22 gives a first impression of the findings by showing the mean percentages across countries. For the discussion of the results, we combine the categories 'formal/written regulation' and 'publicly available policy' as these are the most formal and binding rules that universities can adopt.

On average, 56% of the universities have adopted written regulations and policies concerning open access publications, although country differences are substantial (see discussion below). Hence, open access regulations are by far more common than any other official regulations. Across countries, around 28% of the universities have on average adopted written regulations or policies regarding the publication of data in a repository and regarding research data management (RDM). About a fifth of the universities have written rules or policies in place regarding the long-term availability of research data, the

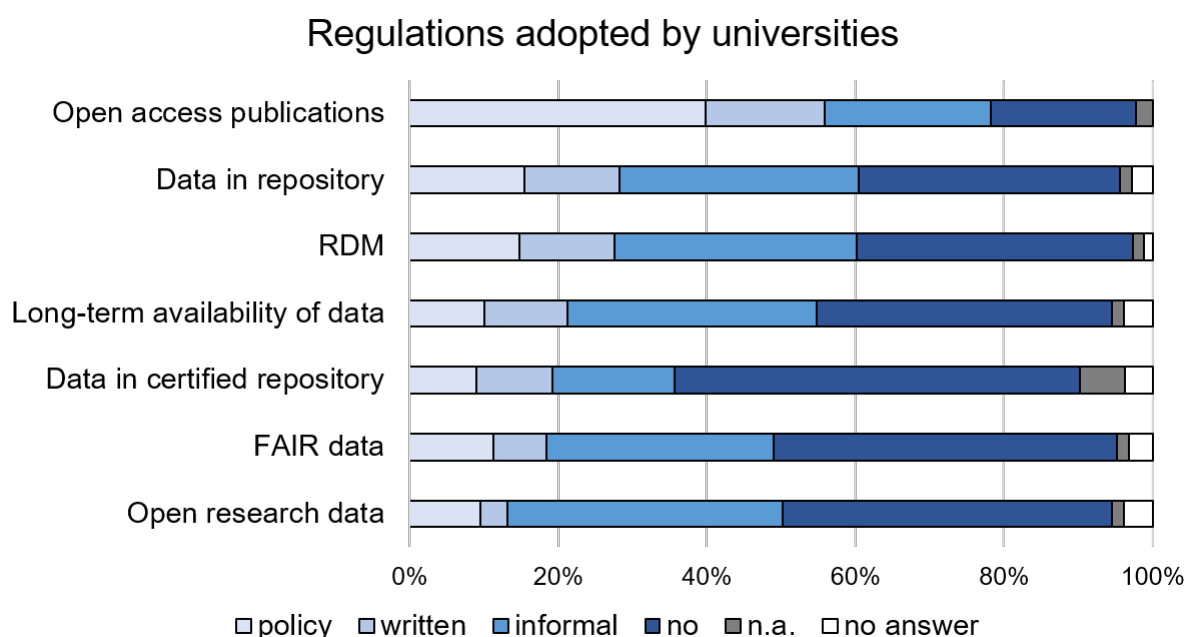


Figure 4.22 – Regulations adopted by universities.

Note: Target group: universities. The percentages are means across all five countries. Several of the percentages per countries rely on a low number of observations, see Tables 5.15–5.22 in the Appendix for details; original labels for response categories: ‘no regulation’, ‘informal regulation’, ‘formal/written regulation’, ‘publicly available policy’, ‘not applicable’; original label of items: ‘Open access publications’, ‘Publication of data in a repository’, ‘Research data management (RDM)’, ‘Long-term availability of research data’, ‘Publication of data in a certified repository’, ‘Compliance of data to the FAIR principles’, ‘Open research data’.

publication of data in a certified repository and the compliance of data to the FAIR principles. Official regulations concerning open research data are least common (mean = 13%).

In addition to written regulations and publicly available policies, many universities have adopted informal regulations. For most items in these questions, about one third of the universities have adopted on average informal regulations. However, we note two outliers: The average percentage of informal regulations is lower for open access publications (22%). Still, as noted above, universities have adopted policies and written regulations most frequently for this aspect of open science. Hence, open access publications remain the aspect of open science with the smallest share of universities without any regulation. The second outlier is the item ‘publication of data in a certified repository’. Only 16% of the universities have on average informal regulations in this regard. Besides, more than half of the universities do not have any regulations concerning publication of data in certified repositories. Therefore, this aspect of open science and open data is the least frequently regulated aspect in this question.

For most items, only about 2% of the respondents ticked on average ‘not applicable’. An exception is the item ‘publication of data in a certified repository’ as 6% indicated

that this item is 'not applicable' to their university. The average percentage of university representatives skipping this question lies between 0 (open access publication) and 4% (publication of data in a certified repository, long-term availability of research data, open research data).

Country differences

Country differences are substantial regarding regulations of **open access publications**. On average, more than half of the universities have adopted policies or written regulations in this regard. These regulations are most common in Belgium as all nine²⁸ universities in the data set have adopted these rules (and most of them even in form of publicly available policies). Open access regulations are substantially less common in the other countries as the percentages for all other countries for written regulations or policies range between 39% (Italy) and 50% (Austria, N = 12). In these countries, informal regulations exist frequently in Austria (five of twelve universities) and France (41%). On the contrary, universities in Germany (39%) and Italy (39%) more frequently renounce any regulations concerning open access publications (see Table 5.15 in the Appendix).

Country differences are less pronounced but still substantial regarding the **publication of data in a repository**. Across countries, 28% of all universities have adopted written regulations or policies in this regard. The largest percentage is by far observable for Italy (44%). Percentages for other countries range between 29% (France) and 20% (Germany). Of these four countries, universities in France and Belgium have more often adapted informal regulations. On the contrary, regulations regarding publication of data in a repository are absent above average in Austria and Germany (see Table 5.20 in the Appendix).

Country differences are similarly large for regulations concerning **research data management (RDM)**. On average, 28% of the universities have adapted official regulations. Policies and written regulations are most common in Belgium (four of the nine Belgian universities have adopted these rules) and Germany (34%). Regulations concerning RDM are least common in Italy and France as less than a fifth of the universities have adopted written regulations or policies and respondents in these countries and representatives most frequently indicated the absence of any regulation. Besides, around a third or more of the universities in Belgium, France and Austria that are part of the analysis have informal regulations (see Table 5.16 in the Appendix).

As described above, on average, 21% of the universities have adopted written regulations or policies on the **long-term availability of research data**. These regulations

²⁸As eleven universities exist in Belgium, the nine universities that responded to the survey comprise 82% of all Belgian universities.

are again most frequently found among universities in Belgium (three of the nine Belgian universities) and Germany (27%). Official regulations are less common in France (18%), Austria (17%, $N = 12$) and Italy (11%). Besides, a larger percentage of Austrian and Italian universities have informal regulations in place whereas German and French universities more frequently have not adopted any regulation concerning the long-term availability of research data (see Table 5.18 in the Appendix).

Across countries, about 19% of the universities have adopted written regulations or policies regarding the **publication of data in a certified repository**. These regulations are most common in France (35%) and Italy (28%). None of the Belgian universities has adopted such a regulation. Austria and Germany range in between these countries with figures around 16%. As already noted, the percentage of universities without regulations is highest for this aspect of open science and especially large in Germany, Belgium and Austria (see Table 5.21 in the Appendix).

On average, 18% of the universities have formal regulations or policies regarding the **compliance of data to the FAIR principles** in place. The percentage is highest in Italy with 28% and lowest in Austria (one of twelve universities in the dataset has adopted a policy in this regard). The other countries range in between Austria and Italy. Belgian and French universities have informal regulations above average. On the contrary, at least half of the universities in Italy, Germany and Austria indicated to have no regulation on FAIR data (see Table 5.19 in the Appendix).

Open research data are on average least common in formal regulations or policies of universities (mean = 13%). None of the twelve Austrian universities has adopted written regulations or policies in this regard and only one of the nine Belgian universities has done so. Regulations on open research data are more common in Italy (17%), France (18%) and Germany (20%). Informal regulations are most common in Belgium, whereas universities in Germany and Austria most frequently have not adopted any regulation (see Table 5.17 in the Appendix).

Are some countries in general more reluctant to introduce regulations? Up to now, the focus was on a specific aspect of open science and when summarizing the results, we have always asked 'Across countries, how many universities have adopted on average regulations on a specific aspect of open science (e.g. open research data)?' In this subsection, we pursue a slightly different approach and analyse differences of countries by asking 'Across aspects of open science, how many universities in a country have adopted on average regulations?' In other words, in this section, we have so far discussed means across countries per item (e.g. across the five countries in the analysis, 13% of the universities have adopted written regulations or policies regarding open research data). In this subsection, we present means across items per country (e.g. across the seven items

in the analysis, 25% of the German universities have adopted written regulations or policies). Calculating the means per country for each response category allows for giving an overview over country differences on the regulation level, e.g. whether some countries rely more frequently on informal regulations than others.

On average, there is little variation across countries observable for formal regulations and policies on open science with the exception of a lower tendency in Austria. As in the main discussion, we combined the categories 'formal/written regulation' and 'publicly available policy'. Across all countries and items, 26% ($N = 35^{29}$, $SD = 18$) of all universities have published a policy or written regulation on one aspect of open science. Across items, the mean is lowest for Austria (20%). Hence, Austrian universities are on average more reluctant to adopt formal/written regulations or publicly available policies on open science and open data. Still, as only 12 universities participated in the survey, this result has to be treated carefully as individual observations have a large leverage (and the standard deviation (SD) is indeed higher than in several other countries). The means for Germany, France and Italy are located close to the overall mean. Belgium takes the lead as a third of the nine Belgian universities has on average published a written regulation or policy on an aspect of open science. Still, this high percentage is driven solely by the exceptionally high percentage of Belgian universities with regulations on open access publications. If this item is excluded, Belgium lies close to the overall mean.

On average, 29% of all universities have informal regulations on open science ($N = 35$, $SD = 15$). Across items, the mean per country is highest for Belgium and France (38% each). For France, the standard deviation is moderate ($SD = 9$) indicating a tendency that French universities systematically more often rely on informal regulations than other countries. For Belgium, the standard deviation is higher ($SD = 20$), which suggests a large variation across items (likely a consequence of the low number of universities in Belgium). The mean percentage for Austria lies close to the overall mean and also has a high standard deviation (17), potentially because of the low number of Austrian universities in the data set. The percentages for Italy (22%) and Germany (20%) suggest that these countries less frequently have informal regulations.

Across all items, universities most frequently do not have any regulation in place (40%, $N = 35$, $SD = 16$). On average, German university representatives most frequently indicated that their organisation has no regulation on the respective item of open science (52%, $SD = 12$). Given that the percentage of German universities with formal regulations and policies is average (even above average for policies only) and that the percentage for informal regulations is below average, we conclude that German universities favour either

²⁹Five countries participated in the survey and seven items are part of this question, hence, we have 35 observations per response category (e.g. 35 observations for the category 'publicly available policy').

formal regulations or none at all. Austrian universities also indicated frequently to have no regulation (43%, $SD = 20$). As Austrian universities also are the least likely to have formal regulations or policies in place and an average percentage of informal regulations, this probably indicates that Austrian universities are in general reluctant to employ (formal) regulations on open science. However, the number of Austrian universities in the dataset is low and the standard deviations are high which make inferences beyond the data difficult. The percentage of Italian universities without a regulation lies close to the mean (39%). Hence, Italy is a rather average country concerning the absence of regulations and formal regulations and policies. Only the percentage of informal regulations is lower than average. The percentage of French universities without regulations is below average (35%). Hence, we observe that French universities lie close to the mean for adopting formal regulations, but they prefer informal regulations to having no regulations at all (compared to the respective means). The percentage of Belgian universities without regulations is lowest of all countries (29%, $SD = 20$). As Belgian universities are average in terms of adopting formal regulations and policies (and enthusiasts for open access regulations) and take the lead in informal regulations, we conclude that Belgian universities tend to engage more frequently in regulations, especially informal regulations, on open science and open data than other countries. However, the limitations prevail that the number of observations in Belgium is low (despite the exceptionally high response rate) and consequently frequency analyses have to be treated cautiously.

The key findings for regulations on open science and open data are listed on the next page:

Key results for regulations on open science and open data:

- Funding bodies frequently impose mandatory rules (for some or all grants) for data management plans (DMPs, 40%), open access publications (36%), open research data (32%), compliance of data to the FAIR principles (32%), publication of data in a repository (28%) and the long-term availability of data (28%). Mandatory regulations on the publication of data in a certified repository are less common (8%).
- Even if funding bodies have not adopted mandatory regulations, they frequently encourage grant recipients to comply with guidelines on aspects of open science and open data.
- Across countries, universities most frequently have adopted policies and written regulations for open access publications (56%), followed by the publication of data in a repository (28%), research data management (28%), the long-term availability of research data (21%), the publication of data in a certified repository (19%), the compliance of data to the FAIR principles (18%) and open research data (13%).
- On average, the percentages of universities publishing formal/written regulations or policies is almost as large as the percentage of universities with informal regulations. However, the largest group are on average universities without any regulations on open science/open data.

4.10 Perception of EOSC

In this section, we focus on the perceptions of and expectations from EOSC. In the beginning of the questionnaire, we asked respondents how familiar they are with EOSC (Section 4.10.1). Unless respondents indicated to be 'not familiar at all' with EOSC, they received several follow-up questions on their perception of or expectations from EOSC. In Section 4.10.2, we discuss how EOSC affects the strategic plans of the respondents' organisations. We also asked respondents whether their organisation benefits from the implementation of EOSC (Section 4.10.3) and whether their organisation contributes or plans to contribute to EOSC (Section 4.10.4). Finally, we asked respondents how beneficial they consider contributing to EOSC (Section 4.10.5).

This focus on perceptions and opinions distinguishes the questions discussed in this section from questions of other parts of the questionnaire as most other questions focus on facts rather than on perceptions. In addition, several questions explicitly ask respondents for their opinion rather than their organisation's view or characteristics.

All four target groups received most of these questions. Whenever possible, we discuss the mean across countries to give a general impression of the data as well as some country differences. As only few funding bodies per country exist, the number of observations is too low for assessing meaningful differences across countries. Therefore, we discuss the total percentage of all funding bodies in the survey data (irrespective of country differences).

4.10.1 Familiarity with EOSC

At the beginning of the questionnaire, all respondents were asked '**Considering everything you know about EOSC, how familiar are you with EOSC?**' Respondents could choose from a four-point scale ('very familiar', 'familiar', 'not very familiar', 'not familiar at all'). Figure 4.23 shows an overview of the results, the Tables 3.1, 5.1, 6.1 and 7.1 in the Appendix hold the detailed figures. In total, 26 funding bodies, 113 universities, 228 research infrastructures and 318 e-infrastructures received this question.

For gaining a first impression, we combined the two categories 'familiar' and 'very familiar'. We find the largest share of respondents indicating to be (very) familiar with EOSC among funding bodies: 18 of the 26 funding body representatives indicated to be (very) familiar with EOSC. Besides, the percentage of respondents who are 'not familiar at all' with EOSC is the smallest among funding bodies. On average, 48% of the e-infrastructures indicated to be (very) familiar with EOSC. 41% of the representatives of universities responded on average to be (very) familiar with EOSC, as did 29% of the representatives for research infrastructures. Overall, we note that only few respondents

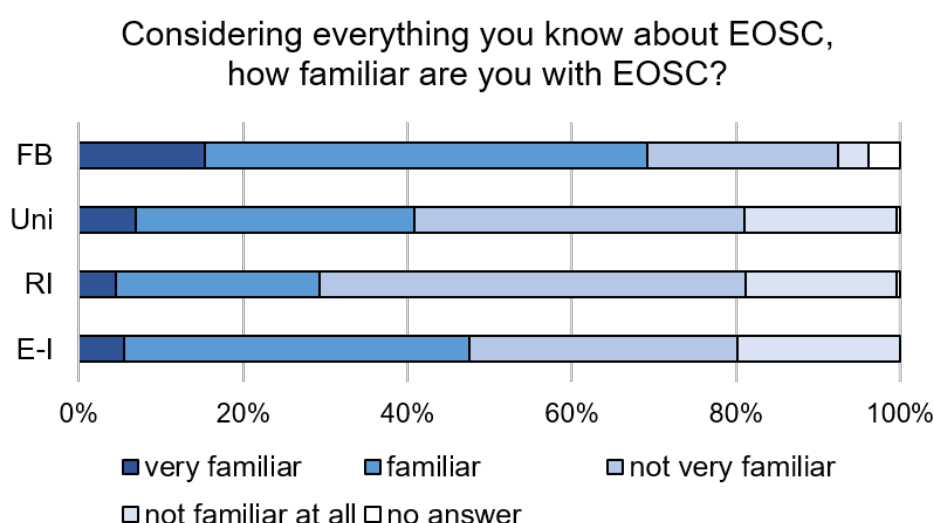


Figure 4.23 – Familiarity with EOSC across target groups

Note: The percentages for funding bodies are total percentages of all funding bodies in the dataset (irrespective of country differences). The percentages for universities (Uni), research infrastructures (RI) and e-infrastructures (EI) are means across countries.

indicated to be 'very familiar' with EOSC, but a substantial share indicated to be 'familiar' with EOSC.

These questions were the first ones of the questionnaire. Hence, we cannot exclude that self-selection of respondents affects our results and that respondents rather dropped out than indicating that they are 'not familiar at all' with EOSC.³⁰

Country differences

Country differences for **universities** are substantial. For Belgium, nine (of the eleven existing) universities responded to the question and all representatives indicated to be (very) familiar with EOSC. This indicates an exceptionally high familiarity with EOSC compared to the other countries in the data set. Of the 12 Austrian and the 19 Italian universities that answered this question, about a third indicated to be (very) familiar with EOSC. About a fifth of the 19 French and 54 German universities indicated to be (very) familiar with EOSC (see Table 5.1 in the Appendix).

Familiarity with EOSC is on average lowest among representatives of **research infrastructures** as 29% indicated to be (very) familiar with EOSC. The figures are highest for Italy (41%), followed by Belgium (35%), Germany (33%) and France (26%). Of the

³⁰Of course, this argument of self-selection of respondents concerns the entire survey: 'EOSC' was frequently mentioned in the invitations and reminders to the survey. Hence, respondents who have an interest in EOSC and open science may have participated more likely than respondents with a lower interest. We aimed at pre-empting this potential problem by taking measures for increasing the response rate (see Chapter 3 for details) as much as possible and thereby also encouraged respondents who are less familiar with EOSC to participate.

eight Austrian research infrastructures in the dataset, one representative responded to be 'familiar' with EOSC and seven respondents indicated to be 'not very familiar'. However, any interpretation for Austria must take into account the low number of observations (see Table 6.1 in the Appendix).

Analysing familiarity with EOSC among representatives of **e-infrastructures** in more detail reveals considerable country differences. Combining the two highest response categories, familiarity with EOSC is highest among Italian and French e-infrastructures as 67% respectively 60% indicated to be (very) familiar with EOSC. Familiarity with EOSC is lowest in Austria (29%) and Belgium (35%). German e-infrastructures lie in between these countries as 47% indicated to be (very) familiar with EOSC (see Table 7.1 in the Appendix).

In the following questions, only respondents who did not indicate to be 'not familiar at all' with EOSC are included. In total, 25 funding bodies, 85 universities, 170 research infrastructures and 258 e-infrastructures received the follow-up questions.

4.10.2 Effects of EOSC on strategic plans

In a next step, EOSC-Pillar asked respondents '**How does or will EOSC affect your organisation and/or your strategic plans?**' Respondents could choose the categories 'very much' 'somewhat' 'not very much' 'not at all' and 'don't know'. Figure 4.24 shows the mean across countries respectively the total percentages for funding bodies. All frequencies are available in Table 3.2, 5.2, 6.2 and 7.2 in the Appendix.

Across all target groups, the majority of all representatives indicated that EOSC affects their organisations' strategic plans. Differences across target groups are small. 76% of all representatives for funding bodies responded that EOSC will 'somewhat' or 'very much' affect their organisation's strategic plans, as did on average 74% of the e-infrastructures, 70% of the universities and 66% of the research infrastructure representatives. Hardly any organisations indicated that EOSC does not at all affect their plans. About a tenth of the respondents (less for e-infrastructures) indicated on average that they 'don't know' the answer to this question (see Figure 4.24).

Country differences

As 28 **university** representatives responded in the previous question that they are 'not familiar at all' with EOSC, they were excluded from the follow-up questions (including the question discussed in this subsection) and thereby intensify the problem that the number of observations is low for most countries. Still, several country differences are observable: Of the nine Belgian university representatives, eight indicated that EOSC 'somewhat'

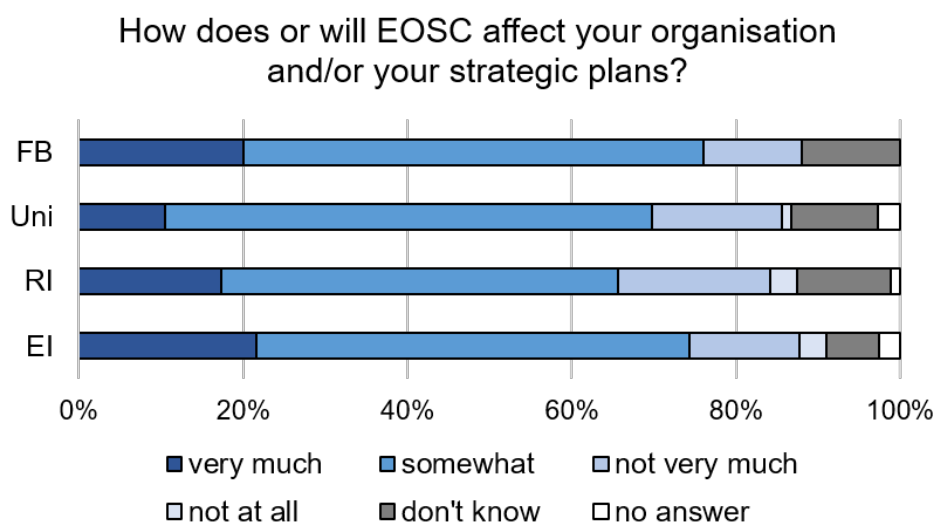


Figure 4.24 – Effect of EOSC across target groups.

Note: The percentages for funding bodies are total percentages of all funding bodies in the dataset (irrespective of country differences). The percentages for universities (Uni), research infrastructures (RI) and e-infrastructures (EI) are means across countries; question only asked to respondents who did not indicate to be 'not familiar at all' with EOSC.

concerns their strategic plans (and one representative skipped the question). Since eleven universities exist in Belgium, we can assume with certainty that the vast majority of the Belgian universities take EOSC into consideration for their strategic plans. For France (N = 15), Italy (N = 13) and Austria (N = 11), around two thirds or slightly more of the university representatives indicated that EOSC 'somewhat' or 'very much' affects strategic consideration. For Germany, 54% (N = 37) chose these categories (see Table 5.2 in the Appendix).

Country differences are considerable for **research infrastructures**. 17 of the 18 (95%) Belgian representatives indicated that EOSC 'somewhat' or 'very much' affects their strategic plans. About two thirds of the representatives for France, Italy and Germany behaved this way. For Austria, the low number of observations makes interpretations again difficult. Nevertheless, we observe that three of the eight research infrastructures expect that EOSC 'somewhat' affects their strategic plans and three ticked 'don't know' (see Table 6.2 in the Appendix).

On a country level, representatives for **e-infrastructures** in Italy (85%) and France (83%) most frequently responded to take EOSC 'very much' or 'somewhat' into consideration. 12 of the 16 Belgian representatives behave this way as do 70% of the German representatives. Austrian e-infrastructures take the last rank as 60% of the e-infrastructure representatives chose the two highest categories (see Table 7.2 in the Appendix).

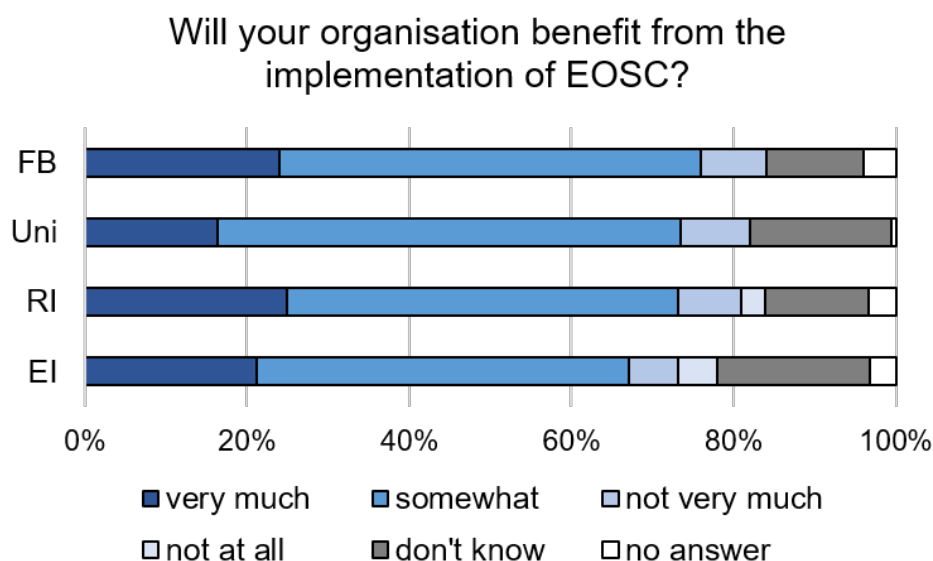


Figure 4.25 – Benefit from EOSC across target groups

Note: The percentages for funding bodies are total percentages of all funding bodies in the dataset (irrespective of country differences). The percentages for universities (Uni), research infrastructures (RI) and e-infrastructures (EI) are means across countries; question only asked to respondents who did not indicate to be 'not familiar at all' with EOSC.

4.10.3 Expected benefits from EOSC

The third question on perceptions of EOSC is **'Will your organisation benefit from the implementation of EOSC?'** As in the previous question, this question was only asked to respondents who did not indicate to be 'not familiar at all' with EOSC. Respondents could choose one of the following categories: 'very much', 'somewhat', 'not very much', 'not at all' and 'don't know'. Figure 4.25 shows the mean across countries for universities, research infrastructures and e-infrastructures and the total percentages for funding bodies. The detailed figures are available in Table 3.3, 5.3, 6.3 and 7.3 in the Appendix.

As Figure 4.25 shows, expectations to benefit from EOSC are high and differences across target groups are small: 76% of the funding bodies expect to benefit 'somewhat' or 'very much' from EOSC as do 74% of the universities, 73% of the research infrastructures and 67% of the e-infrastructures. Besides, a substantial percentage of representatives, especially from universities (18%) and e-infrastructures (19%) indicated that they 'don't know' whether their organisations will benefit from EOSC. Only about ten percent or less expect little or no benefits from EOSC.

Country differences

For **universities**, the low number of observations per country impedes comparisons across countries. However, some cautious interpretations indicate small differences across countries. Across countries, about two thirds to three quarters of the universities expect to benefit somewhat or very much from EOSC (see Table 5.3 in the Appendix).

For **research infrastructures**, expectations of benefits from EOSC are highest in Belgium where 89% of the research infrastructure representatives in the data set expect that their organisation will benefit at least 'somewhat' from EOSC. Expectations are similar among French (76%) and Italian (74%) research infrastructures. About two thirds of German representatives expect benefits for their organisations. Five of the eight Austrian research infrastructures indicated to 'somewhat' benefit from EOSC. A substantial number of respondents indicated that they 'don't know' whether their organisations benefit from EOSC. The percentage is largest for Germany (16%) and Italy (17%, see Table 6.3 in the Appendix).

Analysing differences across countries for **e-infrastructure**s reveals that the expectations concerning benefits from EOSC are by far highest in Italy as 84% of all representatives indicated that their organisations will benefit 'somewhat' or 'very much' from EOSC. The figures for all other countries range between 60% (Germany and Austria) and 70% (France, see Table 7.3 in the Appendix).

Universities: Disciplines benefiting from EOSC

University representatives received the additional question '**What research discipline(s) from your organisation will benefit mostly from EOSC?**' Respondents could choose from the 'Revised Field of Science and Technology Classification' provided by the Organisation for Economic Co-operation and Development (2007). The detailed results are available in the Tables 5.8–5.14 in the Appendix.

On average, university representatives expect Natural Sciences, Social Sciences, Medical and Health Sciences as well as Engineering and Technology to benefit most from EOSC. Across countries, around 60% of university representatives expect these disciplines to benefit from EOSC. About half of all university representatives expect humanities to benefit from EOSC and about 29% expect agricultural sciences to benefit mostly from EOSC.

Differences across countries can be extracted in detail from the Tables 5.8–5.13 in the Appendix, but have to be interpreted carefully as the number of observations is low for most countries. However, the frequencies suggest that expectations, which disciplines benefit, vary substantially across countries. An example for extreme variation across countries is the field 'Medical and Health Sciences': Whereas only 21% of the 44 German universities expect this field to benefit substantially from EOSC, seven of nine Belgian

universities do so. Future research may investigate whether these large differences are driven by the low number of observations or whether systematic differences across countries indeed exist.

4.10.4 Contributions to EOSC

In a next step, representatives from 85 universities, 170 research infrastructures and 258 e-infrastructures received the question **'Is your organisation already contributing to EOSC?'** Respondents could choose from the categories 'yes', 'no' and 'don't know'. Figure 4.26 shows the average across countries for each target group. Respondents not already contributing for certain to EOSC were then asked about the likelihood of a future contribution: **'How likely is it that your organisation will contribute to EOSC?'** For this second question, respondents could choose from the categories 'very likely', 'likely', 'not very likely', 'not likely at all' and 'don't know'.

On average, **universities** are least likely to already contribute to EOSC. On average, 17% of all universities already contribute to EOSC, another 22% 'don't know' whether they do so and 58% indicated that they currently do not contribute to EOSC. Of those not already contributing to EOSC for certain, about half will probably contribute in the future (although the percentage of those rating a future contribution as 'likely' is substantially larger than the percentage of those rating a future contribution as 'very likely'). About a quarter of the universities perceive a contribution as 'not very likely', but no university representative ticked 'not likely at all'. About 22% chose the category 'don't know' (see Tables 5.4 and 5.5 in the Appendix).

As Figure 4.26 shows, **research infrastructures** are more likely to already contribute to EOSC than universities. Across countries, a third of all research infrastructures already contributes to EOSC. About a quarter does not know whether they contribute to EOSC. This large percentage of respondents who chose 'don't know' is similar to the one for universities. On average, 39% of the research infrastructures do not contribute to EOSC. Of those not contributing for certain, more than half indicated on average that they will (very) likely contribute to EOSC in the future. However, similar to universities, the percentage of those rating a future contribution as 'likely' is substantially larger than those rating a future contribution as 'very likely'. On average, about a quarter chose 'don't know', 16% chose 'not very likely' and only a minority indicated a future contribution as 'not likely at all' (see Tables 6.4 and 6.5 in the Appendix).

E-infrastructures are most likely to already contribute to EOSC and least likely to 'don't know' the answer to this question: On average, 40% of the e-infrastructures already contribute to EOSC. 14% chose the category 'don't know' and 42% currently do not contribute to EOSC. For those not contributing to EOSC for certain, we observe

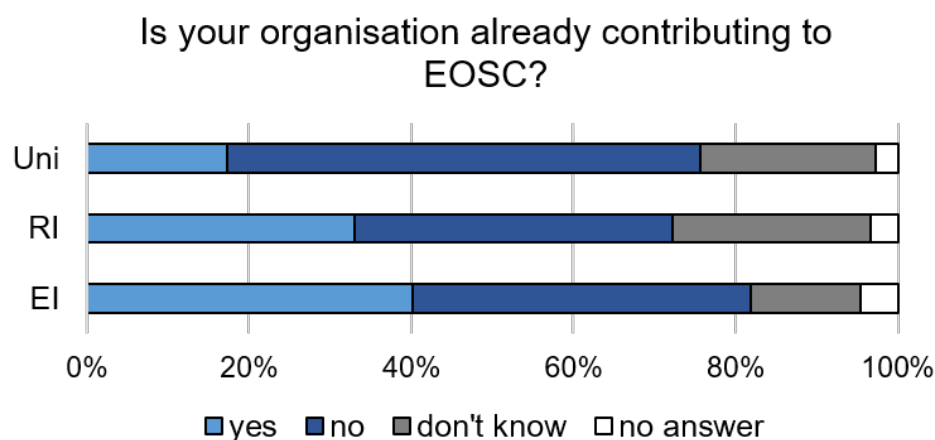


Figure 4.26 – Mean percentage of organisations that already contribute to EOSC

Note: The percentages for universities (Uni), research infrastructures (RI) and e-infrastructures (EI) are means across countries, question only asked to respondents who did not indicate to be 'not familiar at all' with EOSC.

a similar picture as for universities and research infrastructures: More than half of the e-infrastructures will probably support EOSC in the future, although respondents rate the likelihood much more frequently as 'likely' than as 'very likely'. About a quarter chose 'don't know', 7% skipped on average the question and about a tenth rated a future contribution as (very) unlikely (see Table 7.4 and 7.5 in the Appendix).

Country differences

Analysing the results for **universities** on a country level again suffers from the low number of observations per country. Due to the high response rate for Belgian universities, we estimate that about a third of all universities already contribute to EOSC. This share lies substantially above the mean across countries (17%). The percentages are lower for Italy and Austria, and even more so for France and Germany (see Table 5.4 in the Appendix).³¹

Belgium also takes the lead among **research infrastructures** as half of the 18 Belgian research infrastructures in the analysis already contribute to EOSC. At the same time, the percentage of Belgian research infrastructures who 'don't know' whether they currently contribute to EOSC is higher than in most other countries. Research infrastructures from Italy (43%) and France (39%) also frequently already contribute to EOSC. The percentage of research infrastructures contributing to EOSC is substantially lower in Germany (20%). Of the eight Austrian research infrastructures, one already contributes to EOSC (see Table 6.4). Country differences regarding which research infrastructures are (very) likely to contribute in the future are substantial, but mostly driven by countries with a very low

³¹The number of observations per country for the follow-up questions are so low that we refrain from an interpretation on a country level.

number of observations (Austria and Belgium, see Table 6.5 in the Appendix).

The percentage of **e-infrastructures** already contributing to EOSC is by far the largest in Italy (58%), followed by France (48%). 36% of the Austrian e-infrastructures already contribute to EOSC as do 31% of the Belgian ($N = 16$) and 28% of the German e-infrastructures. Noteworthy in this regard is also that a substantial amount of e-infrastructures indicated that they 'don't know' whether they already contribute to EOSC (16% in Italy, 19% in Germany, 24% in Austria, see Table 7.5 in the Appendix). Due to the low number of observations in the follow-up question, assessing country differences for a potential future contribution to EOSC is difficult. However, the country differences do not seem to be larger than for other questions as a minimum of 44% (Austria, $N = 16$) and a maximum of 65% (Germany and Italy) indicated that their organisation will (very) likely contribute to EOSC in the future (see Table 7.5 in the Appendix).

4.10.5 Expected benefits from contributing to EOSC

The last question capturing an aspect of the perception of EOSC was '**How beneficial is/will be contributing to EOSC for your organisation?**' Respondents were asked to choose from the categories 'very beneficial', 'somewhat beneficial', 'not very beneficial', 'not beneficial at all' and 'don't know'. As in the previous questions, respondents who indicated that they are 'not familiar at all' with EOSC did not receive this question. Figure 4.27 shows the total percentages for funding bodies and the mean across countries for universities, research infrastructures and e-infrastructures. Detailed figures are available in Table 3.6, 5.6, 6.6 and 7.6 in the Appendix.

As Figure 4.27 shows, differences across target groups are on average small. Adding the categories 'very beneficial' and 'somewhat beneficial' reveals that there is no substantial difference between funding bodies, research infrastructures and e-infrastructures. Across these target groups, about two thirds of the respondents expect that contributing to EOSC will be (very) beneficial for their organisation. Universities expect on average a slightly higher benefit from contributing to EOSC. Besides, e-infrastructures are on average the target group that most frequently expects that contributing to EOSC is 'very beneficial' for their organisation (mean across countries = 25%). Noteworthy is further that up to 20% (universities) of the respondents chose the category 'don't know'. These figures seem rather large given that respondents who indicated that they are 'not familiar at all' with EOSC were excluded from this question. Hence, the vast majority expects either benefits from contributing to EOSC or does not know what to expect. Only a minority (less than 10% across target groups) does not expect benefits from contributing to EOSC.

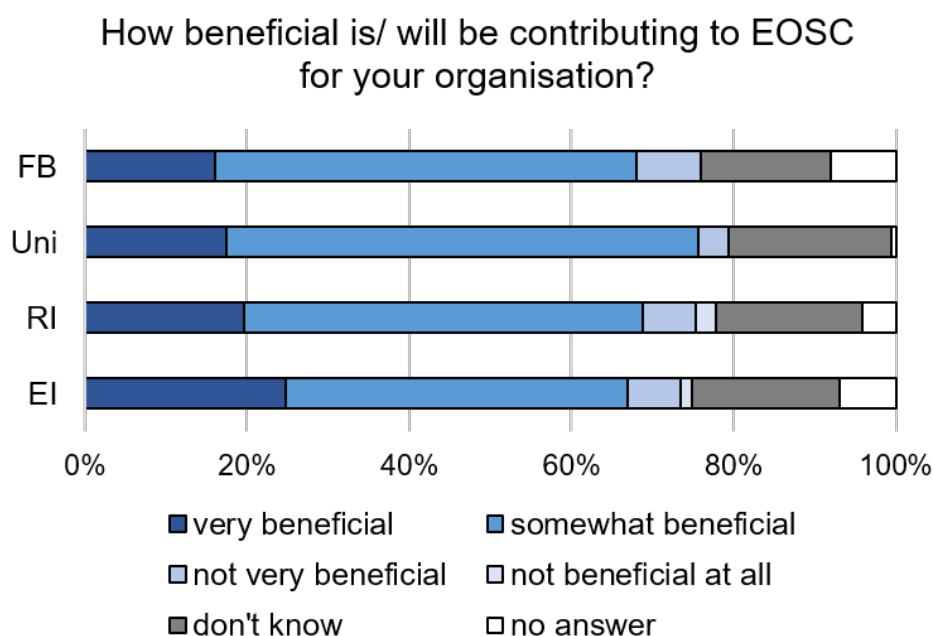


Figure 4.27 – (Expected) benefit from contributing to EOSC

Note: The percentages for funding bodies are total percentages of all funding bodies in the dataset (irrespective of country differences). The percentages for universities (Uni), research infrastructures (RI) and e-infrastructures (EI) are means across countries; question only asked to respondents who did not indicate to be 'not familiar at all' with EOSC.

Country differences

The low number of observations per country again impedes assessing country differences for **universities** in detail. However, some trends are observable: Of the nine Belgian universities who responded to this question, all expect contributing to EOSC to be (very) beneficial for their organisation. Of the eleven Austrian and the 15 French universities, a majority indicated that they will benefit (very much) from EOSC and a substantial amount chose 'don't know'. Among universities in Germany and Italy, a minority additionally expects that contributing is 'not very beneficial' for them (see Table 5.6 in the Appendix).

The percentages of **research infrastructures** that expect their organisations to benefit (very much) from contributing to EOSC ranges between 70% (Italy and Germany), 78% (France) and 89% (Belgium). In these countries, less than ten percent of the respondents ticked the categories 'not very beneficial' or 'not beneficial at all'. Research infrastructures in Italy and Germany most frequently indicated to 'don't know' what to expect from contributing to EOSC. Of the eight Austrian research infrastructures who responded to this question, three indicated to expect contributing to EOSC as beneficial, three 'don't know' what to expect and one research infrastructure does not expect benefits from a contribution (see Table 6.6 in the Appendix).

E-infrastructures in Italy most frequently expect contributing to EOSC to be (very) beneficial (80%). About two thirds of all e-infrastructures in Austria, Germany and France expect benefits. The percentage for Belgian e-infrastructures is slightly lower ($N = 16$). The percentage of e-infrastructures who don't know what to expect is the largest in France (26%), Austria (24%) and Germany (22%). Belgian e-infrastructures less frequently chose the option 'don't know', but more frequently indicated to expect a contribution to be not very beneficial or not beneficial at all.

Key results for perceptions of and expectations from EOSC:

- 18 of 26 funding body representatives indicated to be (very) familiar with EOSC as did on average 48% of the e-infrastructures, 41% of the universities and 29% of the research infrastructures. Country differences are substantial for universities and e-infrastructures.
- Across all target groups, the majority of all representatives indicated that EOSC affects their organisations' strategic plans. Between 66% (research infrastructures) and 76% (funding bodies) of the respondents indicated that EOSC will 'somewhat' or 'very much' affect their organisation's strategic plans. About a tenth of the respondents (less for e-infrastructures) indicated on average that they 'don't know' the answer to this question.
- Across target groups, expectations to benefit from EOSC are high and differences across target groups are small: Between 67% (e-infrastructures) and 76% (funding bodies) of the respondents expect that their organisation will benefit very much or somewhat from EOSC. A substantial percentage of representatives, especially from universities (18%) and e-infrastructures (19%), indicated that they 'don't know' whether their organisations will benefit from EOSC. Only about ten percent or less expect little or no benefits from EOSC.
- On average, 17% of the universities, 33% of the research infrastructures and 40% of the e-infrastructures are already contributing to EOSC. Between 14% (e-infrastructures) and 25% (research infrastructures) of the respondents indicated that they do not know whether their organisation already contributes to EOSC.
- Across all target groups, about two thirds or more expect that contributing to EOSC is or will be beneficial for their organisation. Up to 20% (universities) of the respondents chose the category 'don't know'.

5 Country Chapters

In this chapter, we analyse the data from a different angle, from the perspective of the five countries. Each subsection contains the most important results for the respective country:

In Section 5.1, we present the most important findings for Austria. Section 5.2 is dedicated to the key findings for Belgium. In Section 5.3, we discuss the results for France. Section 5.4 contains the main findings for Germany. Finally, in Section 5.5, we highlight the findings for Italy.

5.1 Austria

Austria shares many similarities with other countries regarding initiatives on open science. However, in this section, we emphasise how Austrian initiatives differ from the average across the EOSC-Pillar countries as gathered by the survey. Hence, the focus of this section is on differences rather than on similarities.

Target groups and services³²

As Austria is the smallest country in the analysis in terms of population, it is not surprising that the number of identified funding bodies, universities and research infrastructures is lower than for other countries. However, the number of identified e-infrastructures is rather large. We identified and addressed overall 80 e-infrastructures in Austria, more than we identified in Belgium (35) or France (62). Of these 80 e-infrastructures in Austria, 38 (48%) responded at least partially to the survey. As a consequence, the number of repositories for research data, high-bandwidth networks for transporting research data and service providers for high-performance computing is rather large in comparison to other countries. Based on these figures, we conclude that the Austrian e-infrastructure landscape is structured rather decentralized and consists of many smaller service providers.

³²With the exception of this subsection on target groups and services as well as the discussion of roadmaps, all frequencies for the country chapter on Austria rely on the stacked dataset that holds observation on a service level (rather than an organisation level).

Business models

Regarding recurrent sources of funding, we find that Austrian e-infrastructures more frequently receive funding from universities (43%, mean = 34%) and funding agencies (43%, mean = 31%), but (slightly) less frequently from research communities (11%, mean = 16%). Austrian e-infrastructures also less frequently acquire their own revenues other than funding (30%, mean = 37%, Tables 7.29–7.37 in the Appendix³³).

In terms of access restriction to user groups, Austrian e-infrastructures are comparable to the average in many respects (membership in an organisation or community, national users, absence of access restrictions), but are more open in two aspects: Funding bodies less frequently determine which user groups they grant access to services of e-infrastructures (8%, mean = 24%, Table 7.42) and none of the service providers use competition as a method of access restriction (mean = 11%, Table 7.43).

Austrian e-infrastructures buy supplies and resources more frequently without tender than e-infrastructures in all other countries (32%, mean = 16%, Table 7.54). Besides, Austrian e-infrastructures more frequently indicated that it is not possible or foreseen to calculate the unit cost of services (43%, mean = 23%, Table 7.58) and consequently are less frequently able to provide the unit costs of their services.

Sustainability

Austrian e-infrastructures less frequently are part of an official roadmap (21%, mean = 45%, organisation level, Table 7.9) and less frequently participate in established European organisations (EGI, EUDAT, PRACE, 29%, mean = 37%, Table 7.13).

Users

Austrian e-infrastructures more frequently provide services for the Humanities (57%, mean = 45%) and (slightly) less frequently for Agricultural sciences (22%, mean = 30%) and Medical and Health Sciences (32%, mean = 38%, Tables 7.21–7.26). Respondents of e-infrastructures in Austria more frequently than in any other country indicated that citizen scientists (31%, mean = 20%) and 'other' user groups (14%, mean = 6%, see Tables 7.68, 7.70) use their organisations' services (very) frequently.

Austrian e-infrastructures less frequently offer training (51%, mean = 77%, Table 7.76). For e-infrastructures that offer training, we observe the following characteristics: They frequently use face-to-face training and online documentation (as many other Pillar-countries), but do not rely on MOOCs or web tutorials (Table 7.78). They use English less frequently for training (67%, mean = 79%) and more frequently (also) use the national

³³All tables to which we refer in this section can be obtained from the Appendix.

language for this purpose (83%, mean = 76%, Tables 7.81–7.82). They less frequently offer training for a specific community (44%, mean = 62%), geographical area (0%, mean = 8%) or members of an organisation (22%, mean = 40%), but much more frequently indicated to have ‘other’ target audiences (28%, mean = 8%, Tables 7.85–7.88). Austrian e-infrastructures slightly less frequently offer user support (83%, mean = 89%) and if they do, they more often support users individually (69%, mean = 54%) and less frequently use a centrally organised system (41%, mean = 56%, Tables 7.89–7.91). E-infrastructures in Austria offer websites describing their services less frequently than the average Pillar-country (83%, mean = 90%, Table 7.93).

The percentage of e-infrastructures that offer support for data management plans is lower in Austria (37%, mean = 44%) as is the percentage of service providers offering advice on data management (51%, mean = 59%, Tables 7.100–7.102).

SLAs

Service level agreements (SLAs) are less common in Austria than in other countries. None of the service providers indicated that they offer SLAs for all of their services (mean = 8%) and 12% offer SLAs for some services (mean = 22%). Besides, almost half of the e-infrastructures indicated that SLAs are ‘not applicable’ to their services (mean = 29%, Table 7.59). Likewise, a smaller share of e-infrastructures indicated that they are part of a transitional organisation that offers SLAs (6%, mean = 20%, Table 7.60).

Access to data and services

Access policies are almost as common in Austria as in the average Pillar country (59%, mean = 63%, Table 7.103). The percentage of resource providers where the services are hosted and that are ISO 271001 certified is larger than in any other country (22%, mean = 7%, Table 7.198). Besides, permanent support for the integration of their services in EOSC is more common in Austrian e-infrastructures (in expense of fixed-term support, see Table 7.199). Processing personal data is more common among Austrian e-infrastructures than in any other country (35%, mean = 24%, Table 7.111).

FAIRness of data

All twelve representatives of Austrian universities that replied to the survey indicated to be very familiar or familiar with the concept of FAIR data (Table 5.7) as did four of eight Austrian research infrastructure representatives (Table 6.7). A comparison with other countries is difficult due to the low number of observations. If at all, we observe a tendency that familiarity with FAIR data is higher among universities and lower among

research infrastructures. Austrian e-infrastructures indicated below average that they are (very) familiar with FAIR data (71%, mean = 81%, Table 7.7). However, repositories consider their data holdings as (very) FAIR above average (77%, mean = 67%, see Table 7.132).

Overall, Austrian repositories achieve an average score for questions that concern the **findability** of data based on several strengths and weaknesses that cancel each other out. In more detail, strengths of Austrian repositories are search features for metadata and research data. 75% of the Austrian repositories already have implemented or currently are implementing a search feature for metadata (mean = 67%, Table 7.134). The percentage for repositories that (will) provide search features for research data is slightly above average (63%, mean = 58%, Table 7.133). Weaknesses of Austrian repositories regarding the findability of data are the language of metadata and the usage of unique identifiers for researchers: The percentage of metadata available in English is lower for Austria than for most other countries: One third (mean = 43%) of the Austrian repositories offer 100% of their metadata in English, another 8% offer 76–99% of their metadata in English (Table 7.137). Also, Austrian repositories less frequently use unique identifiers for researchers (26%, mean = 42%, Table 7.150).

Regarding **interoperability**, Austrian repositories achieve the highest score of all countries. Machine-readable data catalogues are more common among Austrian repositories than in any other country as 79% of the respondents indicated that their repositories (will) provide this feature (mean = 59%, Table 7.142). The results of Austrian repositories for the usage of application programming interfaces (APIs) and controlled vocabulary lie close to the mean across countries.

Austrian repositories achieve scores for the **reusability** of data below average. Austrian repositories less frequently implement measures of data provenance (35%, mean = 47%, Table 7.154), but more frequently engage in measures of basic and enhanced data curation (Tables 7.167–7.168).

Data management (repositories)

Country differences are small regarding depositors' concerns of sharing data. However, Austrian representatives above average perceive data depositors (very) concerned regarding the control over the usage of data (56%, mean = 50%, Table 7.143) and about the benefit of sharing data (48%, mean = 40%, Table 7.145). Austrian depositors are less frequently perceived as (very) concerned about a competitive disadvantage (30%, mean = 39%, Table 7.146) and data protection (39%, mean = 47%, Table 7.147).

Concerning the type of archived data, the most pronounced country difference for Austria is that the percentage of repositories that archive numeric data is 25 percentage points

below the mean. On the contrary, still images are archived more frequently in Austrian repositories (+19 percentage points), as is audio (+13 percentage points) and video (+11 percentage points). Software is less commonly archived in Austrian repositories compared to the mean across countries (-12 percentage points, Tables 7.171–7.178).

Concerning licenses, Creative Commons (CC) licenses for open reuse are more common in Austria than in other countries (56%, mean = 45%) as are tailored licenses (40%, mean = 25%, Tables 7.114 and 7.116). Besides, the percentage of Austrian repositories possessing or preparing for the Core Trust Seal (CTS) is above average (30%, mean = 24%, Table 7.158).

Regulations on open science

As the number of Austrian universities (of applied science) in the data set is low, interpretations of percentages have to be made carefully. However, we can observe a tendency that Austrian universities are reluctant to adapt formal regulations on aspects of open science and open data (see Section 4.9).

Perception of EOSC

Austrian e-infrastructures least frequently indicated to be familiar with EOSC as 29% of all representatives of e-infrastructures indicated to be (very) familiar with EOSC (mean = 48%, Table 7.1). Likewise, Austrian e-infrastructures take EOSC into account for their strategic plans least of all (60%, mean = 74%, Table 7.2) and expect less benefits for their organisation than most other countries (60%, mean = 67%, Table 7.3).

Overall, we identified many e-infrastructures in Austria given the size of the country. This suggests that the e-infrastructures are rather decentralized in their organisation. Therefore it is not surprising that Austrian e-infrastructures seem less mature concerning revenues, sustainability and user support than e-infrastructures in other countries. Nevertheless, Austrian e-infrastructures are average in many respects (e.g. regarding the findability of data) and, for instance, take the lead regarding the aspect of interoperability (although country differences are narrow in this regard). Hence, despite the decentralized nature of the Austrian e-infrastructure landscape, we find a high effort regarding several aspects of FAIR data.

5.2 Belgium

Targets and services

In Belgium, 63% of the targets (partially) filled out the survey (52 out of 83), which is a high response rate. In more detail, nine of eleven targeted universities answered the survey, resulting in an exceptionally high response rate for universities. Twenty of the 31 targeted research infrastructures answered the survey as well. The research infrastructures answering the survey mainly offer services for natural sciences, only a minority for engineering and humanities. Finally, twenty of the 35 targeted e-infrastructures filled out the survey (partially).

Business models

Mainly the state (60%) funds e-infrastructures, to a lesser extent the region/town (33%) and the EU (40%). Funding bodies fund about a quarter of the e-infrastructures in the survey. Research communities (13%), universities (7%), research institutions (13%) or SMEs (13%) rarely fund e-infrastructures. 27% of the e-infrastructures receive funding from other sources. Seven e-infrastructures indicate they receive their own revenue aside from funding, in diverse ways.

About half of the e-infrastructures are in an official roadmap, two in a national roadmap, seven in ESFRI.

Users

Mainly researchers and students use Belgian e-infrastructures. Other possible user groups, such as researchers working in private institutions (27%), government (27%), citizen scientists (13%) and professionals (20%), use them to a lesser extent.

93% of the e-infrastructures collect feedback from their users. If they do so, they sometimes use a special tool (57%) and some gather feedback through meetings (64%) and discussions (43%).

To enable users to work with the infrastructure 93% offer training, most of which is face-to-face (93%). More than half of the e-infrastructures that offer training offer online documentation (57%) while almost none offer web tutorials (7%). Half of the training programmes are offered in the regional language. Almost all training is offered in English as well. Training is not restricted to users of a geographical area (only 7%), but frequently targets a specific community (50%), members of defined organisations (43%) or everyone interested (43%).

User support is provided by 87% of the e-infrastructures. Of the 13 e-infrastructures that offer user support, some use a helpdesk (62%) whereas others do not operate a centrally organised support system (46%). However, 87% of the 15 e-infrastructures in the dataset describe services on a website, always in English, less frequently in the regional languages (54% of the 13 e-infrastructures that operate websites do so in Dutch, 31% in French, 15% in German). Compared to the other countries, e-infrastructures in Belgium provide less support for RDM (33%).

Access to data and services

Data in the e-infrastructures can be accessed on an individual basis (53%), through group membership (47%), by mapping of group membership through the local file system (27%) or service local authorisation (13%). 27% of the e-infrastructures do not have access control.

FAIRness of data

Services are accessible by API in 39% of the cases, another 23% have the service in concept. Persistent identifiers are assigned by 23%, using a DOI, URN or handle, while 31% are in the process of concept or implementation. To identify researchers half of the repositories use a unique identifier in the metadata, most frequently ORCIDs.

Data management of repositories

Almost half of the eleven e-infrastructures that indicated to 'store and manage research data' disseminate data in the public domain (46%). Creative commons licences are used as well, 36% use licences for open reuse, 18% for restricted use. One third of the e-infrastructures use tailored licences (36%).

Regulations on open science and open data

Four of the nine universities have adopted a written regulation or publicly available policy on RDM, while two have an informal regulation and two currently have no regulation at all. Looking at FAIR policies, the situation looks a bit different. Only two universities have a written regulation or publicly available policy, five universities have an informal policy. On the contrary, all Belgian universities in the dataset indicated to have a written regulation or a publicly available policy on open access publications which makes Belgium a pioneer in this regard.

Perceptions of EOSC

Belgian **universities** all indicate they are (very) familiar with EOSC, while the familiarity with EOSC is much lower among the universities of the other countries in the analysis. A reason for this high familiarity may be that EOSC is already quite some time part of the conversation in Belgium. On Nov. 21st 2019, for example, a Belgian EOSC community day was organised in Brussels³⁴, presenting an overall overview of EOSC. The Belgian involvement in the working groups was highlighted and several EOSC related projects with a Belgian involvement explained their work.

Seven of nine universities think that their organisation will benefit from the implementation of EOSC which puts Belgium (along with Germany and Italy) in the group of countries that are most optimistic regarding EOSC. Three Belgian universities already contribute to EOSC. However, two consider contributing in the future as unlikely. All nine Belgium universities expect that contributing to EOSC will be beneficial for them. FAIRness of data is a known concept as well. It is noteworthy that in Austria as well as in Belgium, 100% of the universities indicate to be familiar or very familiar with FAIR.

Similar to the other countries in the analysis, **research infrastructures** in Belgium are mostly not familiar with EOSC. However, most research infrastructures (RI) think that EOSC will affect them and that their organisation will benefit from EOSC. Half of the RIs already contribute to EOSC and only one of the 18 RIs rates a future contribution as unlikely. These results line up with the finding that 89% of the RIs believe that contributing to EOSC will be somewhat or very beneficial for their organisation. In all these questions, the figures for Belgium are higher than in several (and often all) other countries.

Seven of the 20 **e-infrastructures** are (very) familiar with EOSC, which means 65% are not (very) familiar. Five e-infrastructures already contribute (31%) and another six think they will contribute in the future.

³⁴More information is available here: <https://www.eosc-pillar.eu/news/eosc-belgium>.

5.3 France

The aim of this section is to highlight country specifics. Therefore, we do not repeat the content of other sections when the trend is similar to other countries. The response rate in France lies within the average. We observe fewer repositories in the dataset for France than for other countries since only 19 e-infrastructures indicate that they 'store and manage research data' but this represents about 80% of the French e-infrastructures in this study (see Section 4.1 for detailed analysis).

Business models

The e-infrastructures' sources of funding are provided first by the research institutions (88%), then by universities (66%), state/ministry (63%), then European funds (50%), regions and towns (47%), followed by research communities (38%), funding agencies (19%) and a few by industry and SMEs (3%). No other source of funding is mentioned and every e-infrastructure answered this question (see Section 4.2 for cross country results and detailed analyses).

18 e-infrastructures (56%) acquire their own revenues in addition to the funding mentioned above. This is the highest ratio compared with the other countries. These revenues come from hosting ($N = 12$), from managing online services ($N = 11$), and from consultancy or training ($N = 8$). Among these 18 e-infrastructures, 11 charge their users/clients (eight for some services, three for all services), five use a price list, five apply a flat rate for sets of services, five organisations tailor the charge to the needs of users. France is also the country where the e-infrastructures are the most aware of the true costs of their services (see Figure 4.3).

The ratio of e-infrastructures that do not apply access restrictions to their users (38%) is close to the mean across countries. The main type of restriction is 'users or communities approved by the funding body (e.g. due to regional or research topic restrictions)' (47%), followed by 'members of identified communities or organisations (e.g. virtual organisations)' (25%), then by 'users selected by competition' (13%) and finally by 'national users' (6%).

French e-infrastructures have the highest ratio (47%) of technical or administrative barriers that limit the expansion of their services whereas 44% declare they do not have such barriers.

Training and support

France is one of the countries where the organisation of training has the highest percentage among e-infrastructures. Every e-infrastructure that offers training organises face-to-

face sessions. On-line documentation is also very frequently used, but massive open online courses (MOOCs) or web tutorials are less often offered than in other countries. In addition, user training is offered more frequently in the country's language and less frequently in English.

France has the highest level of centrally organised user support. It has also the highest percentage of advice on data management.

Access policies

If plans are achieved about publicly available access policy for services and data, France will reach 94% of coverage in a few years, which probably means that in practice all services and data in France can be shared.

FAIRness

French respondents from e-infrastructures indicated most frequently (92%) to be (very) familiar with FAIRness of data (as did 68% of the university representatives and 78% of the research infrastructures). But France is in the last position with respect to 'findability of data' (see Figure 4.18): only 32% of the repositories offer a search feature for metadata. This is the lowest ratio among the different countries. However, another 32% are currently implementing this feature and this is the highest percentage of all countries. In a similar way, only 21% already offer a search feature for research data. This is the lowest percentage among the different countries, but 37% answered that this feature is in the implementation phase, and this is the highest percentage. France seems to be slower than other countries with respect to this topic. France has also the smallest percentage (37%) on 'providing 100% of the metadata in English' that facilitates finding data for international users. 36% have not yet considered the feature that allows to assign or provide persistent identifiers. This is the highest percentage. In addition, this feature is also least common in France (as only about half of all repositories have implemented or are implementing this feature). The different questions about interoperability reveal that France is in the fourth rank (see Figure 4.19) on this topic. The French position is better concerning the re-usability of data since it is close to the mean.

Familiarity with EOSC

About a fifth of the 19 French universities and a quarter of the research infrastructures indicated to be (very) familiar with EOSC (see Tables 5.1 and 6.1, respectively, in the Appendix). These figures are lower than in several other countries. On the contrary, combining the two highest response categories, familiarity with EOSC is second highest

(following Italy) among French e-infrastructures as 60% indicated to be (very) familiar with EOSC (see Table 7.1 in the Appendix).

Among the respondents who did not indicate to be 'not familiar at all' with EOSC, almost three quarters of the university representatives indicated that EOSC affects strategic consideration 'somewhat' or 'very much'. About two thirds of the representatives of the research infrastructures and 83% of the e-infrastructures in France responded this way (see Table 7.2 in the Appendix). French universities currently contribute to EOSC at a very low level (7%, see Table 5.4 in the Appendix), research infrastructures at 39%, but e-infrastructures contribute at a high level (48%) compared to the other countries except for Italy (see Section 4.10 for a cross countries and detailed analysis).

5.4 Germany

Target groups and services

The research landscape in Germany has two main axes because of the organisation of the science system, where the 16 federated states (*Länder*) and the Federal Government (*Bund*) fund and co-fund a wide range of university and non-university institutions. On the one hand, there are the federally funded research organisations overviewed by the federal ministry of Education and Research (BMBF). They comprise the bulk of the installations and institutes gathered under the grouping 'research infrastructures' used in this survey. On the other hand are the state-funded universities and other state organised research bodies. Institutions on both axes support e-infrastructures, have intricate collaboration, operate inter- and intra-organisational bodies and function at different levels of (in)dependence from federal, state or company funding. Evaluating the German landscape will therefore rarely result in a representative figure for the whole of Germany but mostly for one of its organisational axes or for a few of its equivalent constituents on both axes.

Nevertheless, this survey mapped the German landscape on many topics where the axes cross and which are generic for any research landscape. Although the response rate was lower for all target groups (with the exception of funding bodies) as compared to those in the other countries, the number of targets in Germany is exceptionally high. From the funding bodies, 4 out of 18 responded (22%), from the research infrastructures (e.g. Fraunhofer Gesellschaft, Leibniz-Gemeinschaft, Helmholtz-Gemeinschaft, Max Planck Gesellschaft), 77 out of 476 targets (16%) responded. The universities returned 54 out of 390 (14%) and lastly from the 298 e-infrastructures, 94 (32%) responded. The average response rate for Germany is 21%. Possibly this is related to the limited proliferation of the concept of EOSC, since only 36% of all German target groups combined answered they are familiar with EOSC. At the same time, 63% expect that EOSC will affect their organisation and future plans, 74% expect to benefit from EOSC and more than 50% expect to contribute to EOSC with one or more services. It is therefore safe to assume that organisations will increasingly fill the gap of knowledge and become more engaged once EOSC starts in 2021. They are sure EOSC will have an impact on their plans and business, whether they will commit to their promised contribution remains to be seen.

Business models

As mentioned, the funding situation in Germany is quite complex. Still, 73% of the e-infrastructures indicated they are funded by the federal government and only 27% by the (state funded) universities. In a follow-up study, it would be useful to investigate the distribution of the e-infrastructures over the research infrastructures and the university groups. Only 38% of the e-infrastructures said they received European funding for their research, which is the lowest figure in the group of countries studied in this survey.

A smaller share of e-infrastructures than in any other country indicated to acquire their own revenues aside from funding (13%, mean = 37%, Table 7.37). Of the 12 e-infrastructures that do acquire their own revenues, the majority charges users for services (Table 7.49). Compared to the other countries, German e-infrastructures are less aware of the unit costs of their services (Table 7.58). In order to align with the EOSC costs recovery model, this is a point that could be looked into in more detail.

FAIRness of data

Representatives of German repositories are confident in the rating of their data holdings as FAIR: 87% perceive their data holdings as very much or somewhat FAIR, 20 percentage points more than the mean across countries. As several questions on aspects of FAIR data suggest, German repositories are indeed particularly strong in this respect: German repositories take the lead in the standardised average score for findability, interoperability and reusability. Also, German repositories are ranked first in many of the individual questions dedicated to aspects of FAIR data (e.g. search features for metadata, search feature for research data, providing all metadata in English, assigning or providing persistent identifiers, providing APIs for services, using standardised vocabularies).

Data management of repositories

Compared to the other countries, representatives from repositories least frequently rate data depositors as 'very concerned' when sharing data. For instance, only a third of all depositors are perceived as (very) concerned about intellectual property right when sharing data, whereas the percentage exceeds 50% in all other countries.

German repositories use CC licenses more frequently than repositories in other countries. This relates to CC licenses for restricted reuse as well as CC licenses for open reuse. Besides, German repositories also more often disseminate research data in the public domain than any other country.

Open Science

Openness of research and data seems especially prominent in Germany since 48% of the e-infrastructures indicated that access to their services is open for in principle anyone (highest in the surveyed countries (mean = 39%, Table 7.46)). However, 64% of the universities in Germany have no written or even informal regulation and policy on Open Data (Table 5.17). Universities in other countries score much better. At the same time, data holdings of repositories are findable, interoperable and reusable to a remarkable extent (see above), meaning that if data is available, it fulfills criteria of FAIR data more frequently than in the average Pillar-country. The results give a mixed impression and there is room for improvement but still show that Open Data is today's reality in Germany.

5.5 Italy

Target groups and services

We identified a large number of targets in Italy (541) and the response rate was very high (44%), although not uniform among the four target groups.

Italy had the largest number of **'funding bodies'** targets, 40. Of these, 28 were regional or provincial government departments while the remaining belonged to several different categories, including ministerial departments, foundations and large research performing organizations. Only eight contacts replied to the questionnaire, resulting in the lowest response rate among the three large countries in the analysis. Even assuming that, to some extent, some features of the larger research performing organizations acting as funding bodies were captured by replies in the other categories, this result indicates that the complex landscape of funding agencies in Italy was only marginally captured by the questionnaire.

The fraction of Italian **universities** responding to the questionnaire is, similarly to the other countries, rather low (24%): therefore, caution must be used when analyzing the data.

66 of the 167 identified **research infrastructures** completed the questionnaire for Italy, with an additional four providing partial answers. Overall, the response rate for Italy is slightly below the cross-countries' average (42% with respect to a mean across countries of 48%: Table 2.5 in Appendix). The RIs' domains differ from the other countries in so far that more RIs are dedicated to or provide services for health and medical sciences.

With a response rate in excess of 50% (56%, counting also partial replies: Table 2.5 in Appendix) for **e-infrastructures**, Italy had one of the highest response rates of the participating countries for this target group. In general in this survey, repositories (i.e. e-infrastructures that indicated to 'store and manage research data') are most common in the dataset (253). Across countries, Italian repositories are most frequent in the dataset, with 113 e-infrastructures (Table 7.18 in Appendix). Overall, 69 representatives of e-infrastructures indicated that their organisation offers HPC services (i.e. 'high-performance computing which can be used to process research data'). Most HPC centres in the dataset are located in Italy (30), with Germany following closest with only half of this value (Table 7.20) however, information about the size of these HPC centres was not covered by the survey.

Business models

About 72% of e-infrastructures in Italy are funded at the state/ministry level, slightly more than the mean value for the five countries (mean = 67%). However, for the other sources of funding, the difference is more marked. Italy is at the first place for e-infrastructures benefiting from 'European funds' (78%), with the second ranked country at 54%. Internal funding (by research institutions, universities and research communities) is far less common than in the other countries (respectively, 23% vs. the mean across countries of 39% are funded by research organisations; 26% vs. 34% by universities; and 8% vs. 16% by research communities – Tables 7.28, 7.29, 7.32). Also, funding bodies only fund 14% of the service providers in Italy (Table 7.35), about half the share compared to the country mean (31%). This suggests that funding bodies in Italy tend to fund research rather than research supporting infrastructures.

Conversely, Italy is also the country with the highest number of e-infrastructures funded through private money (18% vs. a mean across countries of 11%; see Tables 7.28–7.34). These results suggest that either the research performing organisations and communities have less money available to fund these infrastructures, or they are less autonomous in allocating money and rely more on external funding. Either way, this suggests that it is less likely in Italy than elsewhere that a research organisation or a university is going to fund such e-infrastructures than in the other surveyed countries. This seems also consistent with the fact that a relevant number of Italian e-infrastructures declared they have other revenues different from funding (Table 7.37).

A substantial part of the Italian e-infrastructures (48%) stated that they offer services with 'no access restriction', compared to an already relevant mean across countries of 39% (Table 7.46). This is an indication that the organisational/legal barriers to contributing to EOSC for the e-infrastructures in these countries could be less stringent than elsewhere. Moreover, in nearly two thirds of the cases (Table 7.48), the existing services could easily be extended to other user groups.

For those who listed restrictions, the most common case for Italian e-infrastructures is to restrict service access to the members of certain communities or organisations (e.g. virtual organisations), with 44% of the cases (compared to a mean across countries of 29%, see Table 7.44).

Users are normally not charged for the usage of services (Table 7.37 – positive answer to 'Resources other than funding' combined with Table 7.49). This is probably the reason why in only ~30% of the cases (Table 7.58) the unit cost of the service is known to the organization: however, the percentage goes up to 75% by including cases where the unit costs could be calculated.

Sustainability

More than half of the e-infrastructures (56%) are in an official roadmap (Table 7.9): of these, 71% are in a national roadmap (Table 7.10) and 36% in an ESFRI (Table 7.11). More than half of the e-infrastructures in Italy participate in European organisations, one of the highest shares in the analysis: of these, about half participate in EGI, a quarter in EUDAT, 13% in PRACE and 38% in other European organisations (Tables 7.13–7.17 in the Appendix, respondents could indicate to be part of multiple organisations).

Users

As for the scientific disciplines served, humanities (Table 7.26) benefit from services above average, other disciplines (agricultural sciences and engineering and technology) are more or less at average, while natural, medical and health, and social science are below average (Tables 7.21–7.24)

The distribution of the groups of users of the services is in line with the average among countries, with the exception of users from the private/commercial institutions (Table 7.65) being slightly below average, and users from governmental institutions and students being slightly above average (Tables 7.66, 7.67).

Like in other countries, organisations offer training for the use of the services, in almost all cases in the form of face-to-face events, but also using web tutorials and online documentation (Tables 7.76–7.79). Training is provided in Italian and English with identical frequency, and training events are often targeted to specific communities (Table 7.85, 82% vs. mean 62%).

Service Level Agreements

SLAs are offered in nearly 50% of the cases (Table 7.59), with the fraction going up to 60% considering cases where this is foreseen. It is interesting to note that in 69% of the cases (Table 7.61) the SLA is customized. Feedback from users is collected less often than in other countries (Table 7.71, 77% vs. mean 83%).

Access to data and services

A publicly available access policy for services or data (Table 7.103) exists only in 53% of cases (mean 63%). However, of the institutions without a publicly available access policy, 31% will adopt one in the next years and 61% indicated that access policies are 'not applicable' to their organisation (Table 7.104), possibly suggesting (as discussed in Section 4.6.1) that these services may be 'consumed' internally to the organization.

When asked for their authentication model, a minority of service providers indicated the use of EGI and EUDAT, while 45% indicated that their organisations are a member of the national identity federation (Table 7.181, 45% vs. mean 24%). Moreover, about 67% of the services that are not members of the national identity federation indicated to be proxied to eduGAIN (Table 7.187). Conversely, the percentage of service providers using local authentication is below the mean (Table 7.184, 47% vs. mean 53%).

Authorization is managed locally (Table 7.188) in 37% of cases (mean 11%): in view of offering these services via EOSC, it appears desirable to support an effort to transition to externally-managed authorization.

FAIRness of data

58% of respondents from **universities** stated to be (very) familiar with FAIR principles (Table 5.19 in the Appendix), a value which sits half-way between the two other largest countries (France, 68%; Germany, 52%).

When analysing familiarity with FAIRness for **research infrastructures** (Table 6.7 in Appendix), the situation is generally better than for EOSC familiarity across countries for this target group, with about 70% of all representatives for research infrastructures indicating to be (very) familiar with the concept of FAIR data. However, if compared to those in other countries, Italian RIs do not perform especially well under this respect, with the second lowest (67%) value among the five countries.

E-infrastructures in general self-assess their familiarity with FAIR principles as high or very high in over 80% of cases (Table 7.7). However, the FAIRness of own data holdings is perceived as high or very high by only 51% of the repositories (Table 7.132).

The usage of persistent identifiers for researchers in metadata is the highest of all countries (Table 7.150, 59% vs. mean 42%). On the other hand, measures for ensuring documentation of data provenance are implemented in just 34% of the cases (Tables 7.154, mean 48%).

Data management (repositories)

As for the most common concerns of depositors regarding sharing data (Tables 7.143–7.147), the fraction of ‘not concerned at all’ is in line with, or higher than, the mean of the other countries, while the fraction of ‘very concerned’ is always below the mean of other countries. When combined with the results for policies and guidelines (discussed below), this seems to indicate that the research community in Italy has reached a level of maturity at least in line with the global research community, and this was mostly the result of a bottom-up effort.

Dissemination of research data in the public domain (Table 7.113) or with CC licenses for open reuse (Table 7.114) are below the mean of the other countries (public domain: 28% vs. 38%, CC for open reuse: 27% vs. 45%), while usage of CC licenses for restricted reuse is above the mean (Table 7.115, 51% vs. 33%).

Regulations on open science

As discussed above, country differences are substantial regarding regulations of **open access** publications. On average, more than half of the universities have adopted policies or written regulations in this regard: with a percentage of 39%, Italy scored the lowest when considering the availability of written regulations, while another 39% (in line with the German results) renounce any regulations concerning open access publications (Table 5.15 in the Appendix).

Italy is the country where official regulations concerning **RDM** are least common, with less than a fifth of the universities that have adopted them (17%) against a mean across countries of 28% (Table 5.16 in the Appendix). A similar situation can be observed for written regulations or policies on the **long-term availability of research data** (Table 5.18 in the Appendix), which again are less frequently found in Italy (11% against a mean across countries of 21%): this situation is somewhat compensated if considering informal policies, adopted by 39% of Italian universities (against a mean across countries of 34%).

On the contrary, Italian universities rank rather well regarding the **publication of data in a repository**. The percentage of Italian universities who have adopted written regulations in this regard (either publicly available or for internal use) is by far the largest (44%) across countries (Table 5.20 in the Appendix, mean across countries: 28%). Italian universities also rank rather well in the adoption of written regulations or policies regarding the **publication of data in a certified repository** with 28% against a mean across countries of 19%. This makes Italy the second country for the presence of such regulations after France (Table 5.21 in the Appendix).

The results for universities (starting from the rather low response rate – which is not an Italian specificity) suggest that there is quite some room for improvement in this category, that could be tackled by specific engagement and dissemination actions by our project.

Perception of EOSC

Generally speaking, of the four target groups addressed by the survey, **research infrastructures** have the lowest score for the perceived familiarity with EOSC, as 29% indicated on average to be (very) familiar with EOSC. Figures are highest for Italy (41%), but it must be noted that this perception varies much within the Italian RIs. While having

the highest rate of RI representatives answering they feel 'very familiar', also 23% of the RI representatives answered to be 'not familiar at all' with EOSC, which is substantially higher than the mean across countries (19%).

Research infrastructures in Italy have high expectations from EOSC (Table 6.3 in Appendix): about three quarters (74%) expect benefits from EOSC, a larger share than in Germany and slightly below France.

Italian RIs rank second among those already contributing to EOSC (Table 6.4 in Appendix), with only the Belgian RI contributing more frequently. In addition, RI currently not contributing to EOSC are substantially in line with the mean across countries for those 'likely to contribute' in the future (Table 6.5 in Appendix).

The degree of familiarity with EOSC is very high among **e-infrastructures** and EOSC itself, including participation to the realization thereof, is perceived as positively impacting the organisations: Italian e-infrastructures are above the country mean in all questions dedicated to the perception and familiarity with EOSC. In more detail, two thirds of the respondents state to be familiar or very familiar with EOSC, the highest fraction among all countries (Table 7.1 in Appendix).

Of those who are at least partially familiar with EOSC, nearly 85% (Table 7.2 in Appendix) believe it will affect their own organization and/or strategic plans, and again nearly 84% believe this impact to be positive or very positive (Table 7.3 in Appendix). This positive outlook towards EOSC may be explained by the fact that within this group (those at least partially familiar with EOSC), 58% are already contributing to EOSC and nearly two thirds of those not contributing will likely do so in the near future (Tables 7.4, 7.5). Contributing to EOSC is perceived beneficial (Table 7.6) by 80% of this subsample, a result well above the average of all countries.

6 Summary and outlook

The 'National Initiatives' Survey aimed at gaining insights into the landscape of the research supporting infrastructure in Austria, Belgium, France, Germany and Italy. To this end, we invited 2,204 representatives of funding bodies, research infrastructures, e-infrastructures and universities to participate in the survey. 31% seized the opportunity and responded (in full or partially) to the survey. Thereby, the survey design allowed us to collect data on four crucial actors of the research supporting landscape. In addition, due to the systematic collection of organisations fitting the definition of one of our four target groups, we were able to address smaller organisations that previously may have been less visible in the European research supporting infrastructure landscape.

6.1 Key results

The questionnaire consists of a variety of questions tailored to the four target groups. These questions concern a description of services offered by e-infrastructures, as well as business models of e-infrastructures and regulations for funding, roadmaps and users. Furthermore, we asked e-infrastructures questions on service level agreements and how they grant access to data. Several of the questions are dedicated to repositories with the aim to assess their characteristics as well as the FAIRness of their data holdings with detailed questions. Another block of questions is dedicated to regulations on open science and perceptions of EOSC. In each section, we defined key results that summarize the main findings. In more detail, these key findings are:

Section 4.1 on **target groups and services**:

- The dataset contains (partial) responses by 27 funding bodies, 114 universities, 229 research infrastructures and 318 e-infrastructures.
- 304 representatives of e-infrastructures answered the question assessing which services their organisation provides. Based on these responses, we identify 253 repositories, 69 high-performance computing providers and 31 organisations that 'offer high-bandwidth networks which transport research data' in the dataset.

Section 4.2 on **business models**:

- E-infrastructures' sources of funding are foremost state/ministry and European funds (for more than half of the e-infrastructures), followed by research institution(s), universities and funding agencies/funding bodies, and (for less than one third of the e-infrastructures) regions/towns. Few e-infrastructures benefit from funding by research communities, or industry/SMEs. Differences across countries are substantial as the most frequently mentioned sources of resources (funding or own revenues) differs across countries. From a European perspective, it is noteworthy that more than half of the e-infrastructures benefit from European funds.
- Access restrictions to the e-infrastructures' services: the most striking finding regarding access restrictions is that, on average, 39% of the e-infrastructures do not apply any restriction criteria (at least to some of their services). We also note common trends in the countries in this analysis since only a minority of the e-infrastructures select users by competition (28 organisations of 322) or restrict access to their national users (20 organisations of 322).
- About one third of the e-infrastructures identify barriers that limit the expansion of their services whereas about half of the e-infrastructures indicated that they currently do not face such barriers.
- About one third of all e-infrastructures acquire their own revenues other than funding. Of these, about half of the e-infrastructures charge users for some services and only a minority charges users/clients for all services. Hence, from a user/client perspective, paying for services is by far rather the exception than the rule.
- Funding bodies most frequently fund 'human resources' and 'project based resources' (92% of all responses), followed by 'software' (76%) and 'hardware' (72%). Of the 25 funding bodies in the analysis, fifteen indicated that their organisation grants funding for e-infrastructures and research infrastructures based on a competitive process. Besides, nine funding bodies apply the users' affiliation as a criteria and eight indicate that their organisation has rules based on the users' disciplines. Six funding bodies grant funds based on the users' geographical location. Besides, a fifth of all respondents indicated that this question was 'not applicable' to their organisation.

Section 4.3 on **sustainability**:

- Less than half of the e-infrastructures are registered in an official roadmap.
- Less than half of the e-infrastructures participate in a European organisation.

- A majority of funding bodies declare they maintain a roadmap of the infrastructures they fund.
- Funding bodies frequently maintain national and European roadmaps of infrastructures they fund.

Section 4.4.1 on **disciplines and groups of users**:

- Across countries, **research infrastructures** provide on average most frequently Natural Sciences communities (66%) with services, followed by Medical and Health Sciences (36%), Engineering and Technology (33%), and finally Social Sciences (25%), Humanities (18%) and Agricultural Sciences (14%).
- Across countries, **e-infrastructures** provide on average most frequently Natural Sciences communities (69%) with services, followed by Humanities (45%), Engineering and Technology (43%), Medical and Health Sciences (38%), Social Sciences (38%), and finally Agricultural Sciences (30%).
- On average, 86% of the service providers indicated that (researchers based at) universities frequently or very frequently use their services. (Researchers of) non-university research institutions and students also (very) frequently use services (70%). On average, between 25% and 20% of the service providers indicated that (researchers of) private, commercial institutions, governmental institutions (e.g. census bureaus), professionals and citizen scientists use their services (very) frequently.

Section 4.4.2 on **training for users**:

- Training is frequently offered by e-infrastructures (mean = 77%). Training is also a source of revenues for several e-infrastructures.
- If e-infrastructures offer training, almost all of them (also) offer face to face training (mean = 97%). Online documentation is also a common form of training (mean = 73%). On the contrary, it seems there is space for more MOOCs and web tutorials as only 12% (mean across countries) declare to organise such training.
- On average, 79% of the e-infrastructures that provide training use English in their training programs. This high percentage is encouraging as there seems to be little reason to fear that language barriers prevent European researchers from seeking training in another country. However, we find differences across countries.
- On average, 40% of the e-infrastructures that offer training do so for everyone interested, 62% offer training for a specific community, 40% for members of defined

organisations. E-infrastructures seldom exclude trainees because of their geographical location. Therefore, the target audience of training is consistent with the needs of EOSC stakeholders in the near future.

Section 4.4.3 on **user support**:

- A majority of the e-infrastructures collect feedback from their users, most frequently by user meetings and workshops as well as by discussions, but we observe a not negligible minority of 'No, user feedback is not collected' responses.
- A large majority of the e-infrastructures support their users.
- Although only few funding bodies explicitly fund user support, spending funds on user support is generally allowed and not prohibited.

Section 4.4.4 on **communication with users**:

- A vast majority of e-infrastructures publish the description of their services on a website. Most websites are also available in English.

Section 4.4.5 on **support services for users**:

- On average, 60% of all e-infrastructures offer advice on data management, 44% offer support for data management plans and 30% offer support concerning legal aspects.

Section 4.5 on **Service Level Agreements (SLAs)**:

- The current usage of SLAs by service providers and e-infrastructures in the EOSC-Pillar countries is not high: about a third of the organisations offer SLAs (mean = 28% for some services and mean = 7% for all services). Another 14% foresee to offer SLAs in the near future. There are important disparities between the different countries.
- About a quarter of the service providers and e-infrastructures participate in a transnational organisation or federation that offers Service Level Agreements (SLAs) or similar contracts.
- E-infrastructures prefer to adapt their SLAs to the different cases to using predefined or one-fits-all SLAs.
- Only few issues or barriers are currently encountered by e-infrastructures to establish SLAs with communities.

Section 4.6 on **access to data and services**:

- Most e-infrastructures have a publicly available access policy and there is large effort to increase the number of access policies especially in France and Belgium. More research is needed to better understand the reason for not having an access policy.
- The level of readiness regarding the handling of a security incident in a standardised manner is very low. More research is needed to better understand security awareness and incident readiness.
- Access to services is often granted through local authentication instead of or in addition to federative authorisation methods used in EOSC.
- A large fraction of e-infrastructures (24%) processes personal data and 66% of those handle special categories of personal data.

Section 4.7.1 on **the familiarity with the principles of FAIR data**:

- On average, representatives for e-infrastructures, funding bodies, universities and research infrastructures are predominantly familiar or very familiar with the principles of FAIR data.
- Differences across the four target groups concerning the familiarity with FAIRness of data are very small.

Section 4.7.2 on **self-assessment of FAIRness of data holdings**:

- Although the majority of the repositories consider their data holdings on average as FAIR up to a certain degree, there is room for improvement. The largest group of repositories evaluate their data holdings as 'somewhat' FAIR (44%), another 22% perceive their data holdings as 'very much' FAIR.
- Differences across countries are substantial. German repositories perceive their data holdings most frequently as (very) FAIR, whereas repositories from France and Italy are more reluctant and more frequently choose the category 'not applicable'.

Section 4.7.3 on **findability of data**:

- Across countries, repositories reach an average findability score of 65 (of 100 possible points). Repositories in Germany and Italy achieve the highest score of findability, however, country differences are overall moderate (range = 22 points).
- On average, 53% of the repositories offer a search feature for metadata and another 14% are implementing this tool. Search features for metadata are most common in Germany.

- On average, 43% of the repositories offer a search feature for research data and 15% currently are implementing this feature. Respondents from Germany most frequently indicated to offer a search feature for research data.
- On average, 43% of all repositories provide 100% of their metadata in English and another 12% offer between 76% and 99% of their metadata in English. English is most frequently used in metadata by German and Italian repositories.
- On average, 44% of the repositories assign or provide persistent identifiers (PIDs) and another 17% are implementing this tool. The most common PIDs are DOIs (Digital Object Identifiers). PIDs are most frequently used in German repositories.
- On average, 42% of the repositories use unique identifiers for researchers in metadata, most frequently ORCIDs. Unique identifiers for researchers are most common in Italian repositories.

Section 4.7.4 on **interoperability**:

- Across countries, repositories reach an average interoperability score of 65 (of 100 possible points). Differences across countries are overall small (range = 16 points).
- On average, 55% of the repositories' services are or will soon be accessible by an application programming interface (API). APIs are most common among German and French repositories.
- On average, 59% of the repositories provide a data catalogue in a machine-readable format or are implementing this feature. Machine-readable data catalogues are most frequently found in Austrian and German repositories.
- On average, 52% of the repositories use standardised/controlled vocabularies for metadata. The percentage is largest for German repositories.

Section 4.7.5 on **reusability of data**:

- Across countries, repositories reach an average reusability score of 57 (of 100 possible points). Differences across countries are moderate (range = 21 points).
- On average, 38% of the repositories perform basic data curation, 32% perform enhanced curation, 25% perform data-level curation and 28% distribute the content as deposited.
- On average, 47% of the repositories have implemented measures for ensuring documentation about the origin and the changes made in data (i.e. data provenance).

Section 4.8 on **data management of repositories:**

- Across countries, depositors are most concerned about the 'effort of preparing the data for publication' (58%), followed by 'intellectual property (e.g. copyright)' (52%), 'lack of control over the usage of data' (50%), 'data protection' (47%), 'benefit of sharing data' (40%) and 'competitive disadvantage when sharing' (39%).
- Differences across countries are moderate for most items on depositors' concerns. On average, representatives from Germany perceive depositors least frequently as (very) concerned about sharing data.
- On average, repositories archive most frequently text (71%), followed by numeric data (60%) and still images (46%). Across countries, repositories archive on average 3.5 types of data. Differences across countries are largest for numeric data and still images.
- CC licenses are widely used by repositories as 45% disseminate research data under CC licenses for open reuse and 33% use CC licenses for restricted reuse. 38% of the repositories disseminate on average research data in the public domain and 25% use tailored licenses. Differences across countries are substantial especially concerning CC licences for open reuse.
- Repositories most frequently are certified by the Core Trust Seal (CTS) and (less frequently) the Data Seal of Approval (DSA). All other certificates are less common. Differences across countries are relatively small.

Section 4.9 on **regulations on open science and open data:**

- Funding bodies frequently impose mandatory rules (for some or all grants) for data management plans (DMPs, 40%), open access publications (36%), open research data (32%), compliance of data to the FAIR principles (32%), publication of data in a repository (28%) and the long-term availability of data (28%). Mandatory regulations on the publication of data in a certified repository are less common (8%).
- Even if funding bodies have not adopted mandatory regulations, they frequently encourage grant recipients to comply with guidelines on aspects of open science and open data.
- Across countries, universities most frequently have adopted policies and written regulations for open access publications (56%), followed by the publication of data in a repository (28%), research data management (28%), the long-term availability

of research data (21%), the publication of data in a certified repository (19%), the compliance of data to the FAIR principles (18%) and open research data (13%).

- On average, the percentages of universities publishing formal/written regulations or policies is almost as large as the percentage of universities with informal regulations. However, the largest group are on average universities without any regulations on open science/open data.

Section 4.10 on **perceptions of and expectations from EOSC:**

- 18 of 26 funding body representatives indicated to be (very) familiar with EOSC as did on average 48% of the e-infrastructures, 41% of the universities and 29% of the research infrastructures. Country differences are substantial for universities and e-infrastructures.
- Across all target groups, the majority of all representatives indicated that EOSC affects their organisations' strategic plans. Between 66% (research infrastructures) and 76% (funding bodies) of the respondents indicated that EOSC will 'somewhat' or 'very much' affect their organisation's strategic plans. About a tenth of the respondents (less for e-infrastructures) indicated on average that they 'don't know' the answer to this question.
- Across target groups, expectations to benefit from EOSC are high and differences across target groups are small: Between 67% (e-infrastructures) and 76% (funding bodies) of the respondents expect that their organisation will benefit very much or somewhat from EOSC. A substantial percentage of representatives, especially from universities (18%) and e-infrastructures (19%), indicated that they 'don't know' whether their organisations will benefit from EOSC. Only about ten percent or less expect little or no benefits from EOSC.
- On average, 17% of the universities, 33% of the research infrastructures and 40% of the e-infrastructures are already contributing to EOSC. Between 14% (e-infrastructures) and 25% (research infrastructures) of the respondents indicated that they do not know whether their organisation already contributes to EOSC.
- Across all target groups, about two thirds or more expect that contributing to EOSC is or will be beneficial for their organisation. Up to 20% (universities) of the respondents chose the category 'don't know'.

A second way to look at the collected data is to carve out country differences as described in Chapter 5.

6.2 Outlook

What do these results tell us and which questions remain unanswered? The aim of the 'National Initiatives' Survey was to gain a first impression on the landscape of the research supporting infrastructure. This broad perspective has several strengths, but also limitations (see Chapter 3 on a detailed discussion how the data can and cannot be interpreted).

A strength of the survey is that we are able to give glimpses into the landscape of research supporting infrastructures regarding many target groups and topics as described above. However, several aspects are necessarily left in the dark as every successful research design has to take feasibility into account (see Chapter 3). Overall, the questions and the target groups that could not be included at this point could easily form the basis of various other studies. Some of these aspects will be taken up and addressed in the future by the EOSC-Pillar survey team or by other project members.

A downside of the broad scope of the survey's topics and research interest is that presenting results always requires aiming at finding the most interesting aspects for a diverse audience and prioritising some results over others. In the document at hand, we aimed at providing an overview. Hence, we described parts of the data we gathered, most frequently on a country level and combining repositories, HPCs and high-bandwidth networks. However, the collected data also offers the possibility of investigating into much more specific questions, e.g. how repositories differ from HPCs or how e-infrastructures that already contribute to EOSC differ from e-infrastructures that do not (yet) contribute (and may have no intention of contributing in the future). However, given the extensive length of the document at hand, we leave such questions to future analyses. Once the data are available for scientific use, we encourage all efforts to not only replicate our results but also to analyse the data in more detail.

In addition, the aim of any quantitative survey is of course to gain knowledge about the average and general tendencies of a large number of observations, but not to investigate details and outliers. This basic principle of quantitative social research of course also applies to the 'National Initiatives' Survey. However, to fully understand the research supporting infrastructure in Europe, this descriptive overview has to be complemented by additional research, by investigating the outliers, puzzles and blind spots the survey uncovered. A first starting point may be to analyse the answers respondents gave for the open text questions. Another aspect may be to dive more deeply in the matter and investigate the motivation or reason behind the answers given, for instance, ask respondents for their detailed expectations of EOSC or why some of them do not expect benefits, whereas comparable organisations do. These and many more questions alike may be ad-

addressed in further endeavours to contribute to the implementation of the European Open Science Cloud. EOSC-Pillar hereby lays the foundation for future landscaping activities and analyses of the European infrastructure, in order to support the harmonization of initiatives for open research data and services.

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Appendix

The following pages contain Version 1 of the document 'Results of the EOSC-Pillar "National Initiatives" Survey: Frequency Analysis'

Results of the EOSC-Pillar "National Initiatives" Survey: Frequency Analysis

Anita Bodlos, Lisa Hönegger, Lars Kaczmirek,
Volker Beckmann, Vincent Breton, Geneviève Romier,
Jos van Wezel, Achim Streit, Uros Stevanovic,
Fulvio Galeazzi, Federica Tanlongo,
Inge Van Nieuwerburgh

Corresponding Author: Lisa Hönegger, Email: info@aussda.at

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1 Introduction

This document contains a frequency analysis for the "National Initiatives" Survey conducted as part of the H2020 project EOSC-Pillar in Autumn 2019. The aim of the document is to give insights into the results by presenting frequency tables for each question or item.

Related Documents:

- **Dataset:** Bodlos, A., Hönegger, L., Kaczmirek, L., Beckmann, V., Breton, V., Romier, G., van Wezel, J., Streit, A., Stevanovic, U., Galeazzi, F., Tanlongo, F., van Nieuwerburgh, I. (forthcoming). EOSC-Pillar "National Initiatives" Survey. Vienna: AUSSDA. doi: 10.11587/VOSVGK.
- **Questionnaire:** Bodlos, A., Hönegger, L., Kaczmirek, L., Beckmann, V., Breton, V., Romier, G., van Wezel, J., Streit, A., Stevanovic, U., Galeazzi, F., Tanlongo, F., van Nieuwerburgh, I. (2019). Questionnaire for the EOSC-Pillar "National Initiatives" Survey. Vienna: AUSSDA. doi: 10.11587/VOSVGK.
- **List of targets:** Bodlos, A., Hönegger, L., Kaczmirek, L., Beckmann, V., Breton, V., Romier, G., van Wezel, J., Streit, A., Stevanovic, U., Galeazzi, F., Tanlongo, F., van Nieuwerburgh, I. (2019). List of targets for the EOSC-Pillar "National Initiatives" Survey: E-infrastructure, research infrastructure, funding bodies and universities in Austria, Belgium, France, Germany and Italy. Vienna: AUSSDA. doi: 10.11587/VOSVGK.

Version control: A previous version (Version 0.1) of this document was circulated in April 2020. Changes from Version 1.0 to Version 0.1 only concern labels of variables, adaptation of headings of tables, additional information in the footnotes of tables and some additional information in this document on the dataset. The data itself were not recoded.

2 How to use this document

2.1 General information and outline

This document contains frequency tables relying on the EOSC-Pillar "National Initiatives" Survey. For a detailed description of the survey design, please see the related documents (see p. 3).

In short, the EOSC-Pillar team defined four target groups: funding bodies, universities, research infrastructures and e-infrastructures. Each target group received a common set of questions on perceptions of the European Open Science Cloud (EOSC). Chapter 3 holds the results of this "Core Module" across target groups. In addition, we designed questions specifically for the individual target groups.

Chapter 4 is dedicated to funding bodies. Compared to other target groups, funding bodies do not exist as numerous as, for instance, universities or e-infrastructures. Therefore, the number of observations is lower ($N = 27$). As a consequence, we refrain from estimating frequencies per country as they do not yield reliable results.

Chapter 5 holds the tables for universities, Chapter 6 lists tables for research infrastructures. In both chapters, tables show the frequencies per question, respectively question item and country.

In Chapter 7, we present the tables for e-infrastructures following the same guidelines as described for research infrastructures and universities. In addition, respondents representing e-infrastructures were asked which services they provide (Question E1: "We offer data infrastructures which store and manage research data.", "We offer high-bandwidth networks which transport research data.", "We offer high-performance computing which can be used to process research data.")). If respondents indicated that their organisation offered more than one service, they received several blocks of questions multiple times. For the frequency analysis, these questions were combined in a stacked dataset. Hence, these tables contain ALL answers to this questions and do not distinguish between services. In case a table relies on this stacked dataset, this information is given in the note below the table. Interpretation of the tables therefore requires examining closely which dataset is used for the analysis.

The captions and headings of the tables in Chapter 3 through 7 correspond to an often abbreviated version of the questions and response items. Please see the questionnaire for the precise wording. If a category, which is mentioned in the questionnaire, is missing from a table, this indicates that none of the respondents gave a respective answer in the survey. For cross-tabulations, we always give row percentages (per country or target group depending on the chapter). Percentages that rely on a low number of observations per country/target group have to be treated carefully as individual observations have a large leverage effect on the percentage values. In order to raise awareness to this issue, the percentages relying on a number of observations lower than 20 are marked with a superscript "a".

Below the frequencies per country/target group, we provide two figures that summarize all observations in the data set: the row "Total" contains frequencies for all countries/target groups combined and the corresponding percentages. Consequently, countries/target groups with more observations (e.g. larger countries) have more weight than countries/target groups with fewer observations. The row "Mean" provides the mean across countries/target groups. As each country/target group is included only once for the calculation of the mean, this figure balances the weight of each country/target group. On the downside, a low number of observations per country/target group may have a disproportional effect on the mean across countries/target groups. Hence, any interpretation of tables with low numbers must be conducted very carefully.

2.2 Missing values and category "other"

We distinguish between two types of missing values: Genuine missing values indicate that respondents did never receive a question (for instance due to filter questions) or that respondents dropped out of the survey. We count a respondent as a drop-out when he or she decided to skip an entire block of questions. This corresponds to skipping an entire page of questions in LimeSurvey, the software used for conducting the survey. These genuine missing values are not reported in the tables. The second type of missing values are due to respondents who decided to skip individual questions. These cases are shown in the tables as the category "no answer" (or an abbreviation thereof).

Several questions contained the category "other". Respondents could only tick the option "other" if they specified their response in a text field. For this frequency analysis, the open-ended "other" categories were recoded: If respondents typed "no answer" in the text field, they were recoded as "no answer". If respondents typed "not applicable" in the text field, they were recoded as "not applicable". If respondents typed any other answer in the text field, they were recoded as having ticked the category "other".

2.3 Abbreviations

Throughout this document, we use several abbreviations. The lists below show frequently used abbreviations. Additional abbreviations are described in the notes of the respective tables.

Abbreviations for target groups:

TG	target group
E-I	e-infrastructure
FB	funding body
RI	research infrastructure
Uni	university

Abbreviations for countries:

AT	Austria
BE	Belgium
DE	Germany
FR	France
IT	Italy

Other abbreviations:

n.a./ na	not applicable
d.k./ dk	don't know
no a./ no ans.	no answer
No.	number
SMD	Repositories ("We offer data infrastructures which store and manage research data.")

2.4 Response rate

EOSC-Pillar collected 2,204 organisations that fit the definition of one of the four target groups and invited representatives of these organisations to participate in the survey (see the related document "List of targets" and p. 3 for more information). Overall, 688 respondents (31.3%¹) started the survey. Of these, 603 respondents (27.4% of all collected organisations) completed the survey. We counted responses as completed when respondents answered questions up to the end of the survey and/or "submitted" the survey by pressing the corresponding button on the last survey page. 85 respondents (3.9% of all collected organisations) started the survey and answered at least one question, but dropped out over the course of the survey. We label these cases as "partial responses". Table 2.1 summarizes the figures concerning the response rate.

Table 2.1: Response rate

	No.	%
survey completed	603	27.4
partial response	85	3.9
no response	1,516	68.8
Total	2,204	100.0

Note: all target groups and countries included; responses were counted as partial when respondents answered at least one question.

Table 2.2, 2.3, 2.4 and 2.5 below show the response rates for different target groups.

¹All estimations of the response rate are conservative: In some cases, we have reasons to believe that invitations sent by email have not reached the addressee due to technical problems or outdated email-contacts. This concerns about 2% of the organisations. Nevertheless, we did not exclude these cases from calculating the response rate.

Table 2.2: Response rates for funding bodies

	<i>Response rates for funding bodies</i>							
	<i>no response</i>		<i>partial response</i>		<i>completed</i>		<i>Total</i>	
	No.	%	No.	%	No.	%	No.	%
Austria	7	87.5 ^a	0	0.0 ^a	1	12.5 ^a	8	100.0 ^a
Belgium	3	50.0 ^a	0	0.0 ^a	3	50.0 ^a	6	100.0 ^a
France	8	42.1 ^a	0	0.0 ^a	11	57.9 ^a	19	100.0 ^a
Germany	14	77.8 ^a	0	0.0 ^a	4	22.2 ^a	18	100.0 ^a
Italy	32	80.0	2	5.0	6	15.0	40	100.0
Total	64	70.3	2	2.2	25	27.5	91	100.0
Mean		67.5		1.0		31.5		100.0

Note: row percentages; responses were counted as partial when respondents answered at least one question; a superscript 'a' indicates that percentages rely on a number of observations below 20 and therefore have to be treated with caution.

Table 2.3: Response rates for universities

	<i>Response rates for universities</i>							
	<i>no response</i>		<i>partial response</i>		<i>completed</i>		<i>Total</i>	
	No.	%	No.	%	No.	%	No.	%
Austria	31	72.1	0	0.0	12	27.9	43	100.0
Belgium	2	18.2 ^a	0	0.0 ^a	9	81.8 ^a	11	100.0 ^a
France	65	77.4	2	2.4	17	20.2	84	100.0
Germany	336	86.2	9	2.3	45	11.5	390	100.0
Italy	62	75.6	2	2.4	18	22.0	82	100.0
Total	496	81.3	13	2.1	101	16.6	610	100.0
Mean		65.9		1.4		32.7		100.0

Note: row percentages; responses were counted as partial when respondents answered at least one question; a superscript 'a' indicates that percentages rely on a number of observations below 20 and therefore have to be treated with caution.

Table 2.4: Response rates for research infrastructures

	<i>Response rates for research infrastructures</i>							
	<i>no response</i>		<i>partial response</i>		<i>completed</i>		<i>Total</i>	
	No.	%	No.	%	No.	%	No.	%
Austria	6	42.9 ^a	1	7.1 ^a	7	50.0 ^a	14	100.0 ^a
Belgium	11	35.5	0	0.0	20	64.5	31	100.0
France	34	38.6	3	3.4	51	58.0	88	100.0
Germany	399	83.8	16	3.4	61	12.8	476	100.0
Italy	97	58.1	4	2.4	66	39.5	167	100.0
Total	547	70.5	24	3.1	205	26.4	776	100.0
Mean		51.8		3.3		45.0		100.0

Note: row percentages; responses were counted as partial when respondents answered at least one question; a superscript 'a' indicates that percentages rely on a number of observations below 20 and therefore have to be treated with caution.

Table 2.5: Response rates for e-infrastructures

	<i>Response rates for e-infrastructures</i>							
	<i>no response</i>		<i>partial response</i>		<i>completed</i>		<i>Total</i>	
	No.	%	No.	%	No.	%	No.	%
Austria	42	52.5	10	12.5	28	35.0	80	100.0
Belgium	15	42.9	4	11.4	16	45.7	35	100.0
France	37	59.7	2	3.2	23	37.1	62	100.0
Germany	204	68.5	18	6.0	76	25.5	298	100.0
Italy	111	44.0	12	4.8	129	51.2	252	100.0
Total	409	56.3	46	6.3	272	37.4	727	100.0
Mean		53.5		7.6		38.9		100.0

Note: row percentages; responses were counted as partial when respondents answered at least one question.

3 Core Module

This chapter contains frequencies for the questions of the core module across target groups. Frequencies per country are available in the chapters for universities (Chapter 5), research infrastructures (Chapter 6) and e-infrastructures (Chapter 7).

3.1 The European Open Science Cloud (EOSC)

Table 3.1: Considering everything you know about EOSC, how familiar are you with EOSC?

	<i>EOSC familiarity</i>											
	++		+		−		− −		<i>no answer</i>		<i>Total</i>	
	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%
FB	4	15.4	14	53.8	6	23.1	1	3.8	1	3.8	26	100.0
Uni	4	3.5	29	25.7	51	45.1	28	24.8	1	0.9	113	100.0
RI	11	4.8	64	28.1	94	41.2	58	25.4	1	0.4	228	100.0
E-I	23	7.2	148	46.5	87	27.4	60	18.9	0	0.0	318	100.0
Total	42	6.1	255	37.2	238	34.7	147	21.5	3	0.4	685	100.0
Mean		7.7		38.5		34.2		18.2		1.3		100.0

Note: all countries included; original labels of categories: ++ 'very familiar', + 'familiar', – 'not very familiar', – – 'not familiar at all'; row percentages; question-ID: F5U5R12E12.

Table 3.2: How does or will EOSC affect your organisation and/or your strategic plans?

	<i>Effect of EOSC</i>													
	++		+		-		--		don't know		no answer		Total	
	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%
FB	5	20.0	14	56.0	3	12.0	0	0.0	3	12.0	0	0.0	25	100.0
Uni	7	8.2	48	56.5	17	20.0	2	2.4	9	10.6	2	2.4	85	100.0
RI	29	17.1	85	50.0	38	22.4	3	1.8	12	7.1	3	1.8	170	100.0
E-I	77	29.8	122	47.3	31	12.0	4	1.6	20	7.8	4	1.6	258	100.0
Total	118	21.9	269	50.0	89	16.5	9	1.7	44	8.2	9	1.7	538	100.0
Mean		18.8		52.5		16.6		1.4		9.4		1.4		100.0

Note: all countries included; question only asked to respondents who did not indicate to be 'not familiar at all' with EOSC; row percentages; original labels of categories: ++ 'very much', + 'somewhat', - 'not very much', -- 'not at all'; question-ID: F6U6R13E13.

Table 3.3: Will your organisation benefit from the implementation of EOSC?

	<i>Benefit from EOSC</i>													
	++		+		-		--		don't know		no answer		Total	
	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%
FB	6	24.0	13	52.0	2	8.0	0	0.0	3	12.0	1	4.0	25	100.0
Uni	13	15.3	50	58.8	7	8.2	0	0.0	14	16.5	1	1.2	85	100.0
RI	44	25.9	80	47.1	17	10.0	2	1.2	24	14.1	3	1.8	170	100.0
E-I	80	31.0	106	41.1	15	5.8	6	2.3	46	17.8	5	1.9	258	100.0
Total	143	26.6	249	46.3	41	7.6	8	1.5	87	16.2	10	1.9	538	100.0
Mean		24.1		49.8		8.0		0.9		15.1		2.2		100.0

Note: all countries included; question only asked to respondents who did not indicate to be 'not familiar at all' with EOSC; row percentages; original labels of categories: ++ 'very much', + 'somewhat', - 'not very much', -- 'not at all'; question-ID: F7U7R14E14.

Table 3.4: Is your organisation already contributing to EOSC?

	<i>Already contributing to EOSC</i>									
	<i>no</i>		<i>yes</i>		<i>don't know</i>		<i>no answer</i>		<i>Total</i>	
	No.	%	No.	%	No.	%	No.	%	No.	%
Uni	52	61.2	11	12.9	20	23.5	2	2.4	85	100.0
RI	75	44.1	59	34.7	33	19.4	3	1.8	170	100.0
E-I	94	36.4	116	45.0	41	15.9	7	2.7	258	100.0
Total	221	43.1	186	36.3	94	18.3	12	2.3	513	100.0
Mean		47.2		30.9		19.6		2.3		100.0

Note: all countries included, question was asked to e-infrastructures, research infrastructures and universities; question only asked to respondents who did not indicate to be 'not familiar at all' with EOSC; row percentages; question-ID: U94R94E94.

Table 3.5: How likely is it that your organisation will contribute to EOSC?

	<i>Likelihood of contribution to EOSC</i>													
	<i>++</i>		<i>+</i>		<i>-</i>		<i>- -</i>		<i>don't know</i>		<i>no answer</i>		<i>Total</i>	
	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%
Uni	4	5.4	37	50.0	16	21.6	0	0.0	16	21.6	1	1.4	74	100.0
RI	11	9.9	52	46.8	19	17.1	1	0.9	25	22.5	3	2.7	111	100.0
E-I	17	12.0	69	48.6	9	6.3	1	0.7	39	27.5	7	4.9	142	100.0
Total	32	9.8	158	48.3	44	13.5	2	0.6	80	24.5	11	3.4	327	100.0
Mean		9.1		48.5		15.0		0.5		23.9		3.0		100.0

Note: all countries included, question was asked to e-infrastructures, research infrastructures and universities; question only asked to respondents who did not indicate to be 'not familiar at all' with EOSC and who do not already contribute to EOSC (question U94R94E94); row percentages; original labels of categories: ++ 'very likely', + 'likely', - 'not very likely', - - 'not likely at all'; question-ID: U8R15E15.

Table 3.6: How beneficial is/will be contributing to EOSC for your organisation?

	<i>Degree of benefit from contributing to EOSC</i>													
	++		+		-		--		don't know		no answer		Total	
	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%
FB	4	16.0	13	52.0	2	8.0	0	0.0	4	16.0	2	8.0	25	100.0
Uni	13	15.3	48	56.5	5	5.9	0	0.0	18	21.2	1	1.2	85	100.0
RI	32	18.8	91	53.5	14	8.2	1	0.6	27	15.9	5	2.9	170	100.0
E-I	90	34.9	96	37.2	17	6.6	1	0.4	44	17.1	10	3.9	258	100.0
Total	139	25.8	248	46.1	38	7.1	2	0.4	93	17.3	18	3.3	538	100.0
Mean		21.2		49.8		7.2		0.2		17.6		4.0		100.0

Note: all countries included; question only asked to respondents who did not indicate to be 'not familiar at all' with EOSC; row percentages; original labels of categories: ++ 'very beneficial', + 'somewhat beneficial', - 'not very beneficial', -- 'not beneficial at all'; question-ID: F9U9R16E16.

Table 3.7: How familiar are you with the FAIR principles regarding data?

	<i>Familiarity with FAIR principles</i>											
	++		+		-		--		no answer		Total	
	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%
FB	11	42.3	9	34.6	2	7.7	1	3.8	3	11.5	26	100.0
Uni	29	25.7	44	38.9	23	20.4	16	14.2	1	0.9	113	100.0
RI	84	36.8	80	35.1	37	16.2	23	10.1	4	1.8	228	100.0
E-I	142	44.7	119	37.4	40	12.6	11	3.5	6	1.9	318	100.0
Total	266	38.8	252	36.8	102	14.9	51	7.4	14	2.0	685	100.0
Mean		37.4		36.5		14.2		7.9		4.0		100.0

Note: all countries included; row percentages; original labels of categories: ++ 'very familiar', + 'familiar', - 'not very familiar', -- 'not familiar at all'; question-ID: F17U12R20E62.

4 Funding Bodies

As described in Chapter 2, the number of funding bodies in the analysis is very low ($N = 27$). As a consequence, the following sections hold tables containing figures of all countries combined.

4.1 Grant regulations

Table 4.1: What does your organisation fund?

	No.	%
<i>Human resources</i>		
no	2	8.0
yes	23	92.0
Total	25	100.0
<i>Hardware</i>		
no	7	28.0
yes	18	72.0
Total	25	100.0
<i>Software</i>		
no	6	24.0
yes	19	76.0
Total	25	100.0
<i>Capital expenditure (capex) at large</i>		
no	18	72.0
yes	7	28.0
Total	25	100.0
<i>Operational expenditure (opex) at large</i>		
no	12	48.0
yes	13	52.0
Total	25	100.0
<i>Project based resources</i>		
no	2	8.0
yes	23	92.0
Total	25	100.0
<i>Other</i>		
no	20	80.0
yes	5	20.0
Total	25	100.0

Note: all countries included; question-ID: F11.

Table 4.2: Does your organisation have rules for granting funds for e-infrastructures or research infrastructures based on the following aspects?

	No.	%
<i>Discipline of the infrastructure's users</i>		
no	12	48.0
yes	8	32.0
n.a.	5	20.0
Total	25	100.0
<i>Geographical location of the infrastructure's users</i>		
no	14	56.0
yes	6	24.0
n.a.	5	20.0
Total	25	100.0
<i>Selection by a competitive process</i>		
no	5	20.0
yes	15	60.0
n.a.	5	20.0
Total	25	100.0
<i>Affiliation of the infrastructure's users</i>		
no	11	44.0
yes	9	36.0
n.a.	5	20.0
Total	25	100.0
<i>Other</i>		
no	16	64.0
yes	4	16.0
n.a.	5	20.0
Total	25	100.0

Note: all countries included; question-ID: F12.

Table 4.3: Do you require infrastructures you fund to provide the cost information about the services they offer?

	No.	%
yes, always	7	28.0
yes, for some grants	9	36.0
no, but (maybe) in the future	2	8.0
no	2	8.0
not applicable	5	20.0
Total	25	100.0

Note: all countries included; question-ID: F13.

Table 4.4: Does your organisation maintain a roadmap of the infrastructures you fund?

	No.
<i>yes/ no</i>	
no	8
yes	16
no answer	1
Total	25
<i>if yes: European roadmap</i>	
no	11
yes	5
Total	16
<i>if yes: national roadmap</i>	
no	10
yes	6
Total	16
<i>if yes: own roadmap</i>	
no	6
yes	10
Total	16

Note: all countries included; question-ID: F14.

Table 4.5: Does your organisation allow infrastructures who receive grants to spend funding on user support?

	No.	%
<i>We explicitly offer funding for user support.</i>		
no	12	48.0
yes	4	16.0
n.a.	9	36.0
Total	25	100.0
<i>Grant regulations allow for spending funds on user support.</i>		
no	5	20.0
yes	11	44.0
n.a.	9	36.0
Total	25	100.0
<i>Grant regulations prohibit spending funds on user support.</i>		
no	15	60.0
yes	1	4.0
n.a.	9	36.0
Total	25	100.0
<i>other</i>		
no	14	56.0
yes	2	8.0
n.a.	9	36.0
Total	25	100.0

Note: all countries included; question-ID: F15.

4.2 Rules for funding

Table 4.6: Does your organisation impose rules for funding on grant recipients concerning the following aspects? (Part 1)

	No.	%
<i>Open access publications</i>		
no regulation	4	16.0
encouraged but optional for grants	9	36.0
mandatory for some grants	3	12.0
mandatory for all grants	6	24.0
not applicable	2	8.0
no answer	1	4.0
Total	25	100.0
<i>Data management plans</i>		
no regulation	6	24.0
encouraged but optional for grants	7	28.0
mandatory for some grants	6	24.0
mandatory for all grants	4	16.0
not applicable	2	8.0
Total	25	100.0
<i>Open research data</i>		
no regulation	5	20.0
encouraged but optional for grants	10	40.0
mandatory for some grants	4	16.0
mandatory for all grants	4	16.0
not applicable	1	4.0
no answer	1	4.0
Total	25	100.0
<i>Long-term availability of research data</i>		
no regulation	9	36.0
encouraged but optional for grants	7	28.0
mandatory for some grants	5	20.0
mandatory for all grants	2	8.0
not applicable	1	4.0
no answer	1	4.0
Total	25	100.0

Note: all countries included; question-ID: F16.

Table 4.7: Does your organisation impose rules for funding on grant recipients concerning the following aspects? (Part 2)

	No.	%
<i>Compliance of data to the FAIR principles</i>		
no regulation	7	28.0
encouraged but optional for grants	8	32.0
mandatory for some grants	5	20.0
mandatory for all grants	3	12.0
not applicable	1	4.0
no answer	1	4.0
Total	25	100.0
<i>Publication of data in a repository</i>		
no regulation	7	28.0
encouraged but optional for grants	10	40.0
mandatory for some grants	5	20.0
mandatory for all grants	2	8.0
no answer	1	4.0
Total	25	100.0
<i>Publication of data in a certified repository</i>		
no regulation	11	44.0
encouraged but optional for grants	9	36.0
mandatory for some grants	1	4.0
mandatory for all grants	1	4.0
not applicable	2	8.0
no answer	1	4.0
Total	25	100.0
<i>Other</i>		
no regulation	1	4.0
mandatory for all grants	1	4.0
not applicable	2	8.0
no answer	21	84.0
Total	25	100.0

Note: all countries included; question-ID: F16.

5 Universities

5.1 The European Open Science Cloud (EOSC)

This section contains frequencies for universities on a country level. Frequencies for universities in comparison to other target groups are available in chapter 3.

Table 5.1: Considering everything you know about EOSC, how familiar are you with EOSC?

	<i>EOSC familiarity</i>											
	++		+		-		--		<i>no answer</i>		<i>Total</i>	
	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%
AT	0	0.0 ^a	4	33.3 ^a	7	58.3 ^a	1	8.3 ^a	0	0.0 ^a	12	100.0 ^a
BE	3	33.3 ^a	6	66.7 ^a	0	0.0 ^a	0	0.0 ^a	0	0.0 ^a	9	100.0 ^a
DE	1	1.9	9	16.7	26	48.1	17	31.5	1	1.9	54	100.0
FR	0	0.0 ^a	4	21.1 ^a	11	57.9 ^a	4	21.1 ^a	0	0.0 ^a	19	100.0 ^a
IT	0	0.0 ^a	6	31.6 ^a	7	36.8 ^a	6	31.6 ^a	0	0.0 ^a	19	100.0 ^a
Total	4	3.5	29	25.7	51	45.1	28	24.8	1	0.9	113	100.0
Mean		7.0		33.9		40.2		18.5		0.4		100.0

Note: target group: universities; row percentages; original labels of categories: ++ 'very familiar', + 'familiar', - 'not very familiar', - - 'not familiar at all'; question-ID: F5U5R12E12; a superscript 'a' indicates that percentages rely on a number of observations below 20 and therefore have to be treated with caution.

Table 5.2: How does or will EOSC affect your organisation and/or your strategic plans?

	<i>Effect of EOSC</i>													
	++		+		–		– –		<i>don't know</i>		<i>no answer</i>		<i>Total</i>	
	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%
AT	4	36.4 ^a	3	27.3 ^a	1	9.1 ^a	0	0.0 ^a	3	27.3 ^a	0	0.0 ^a	11	100.0 ^a
BE	0	0.0 ^a	8	88.9 ^a	0	0.0 ^a	0	0.0 ^a	0	0.0 ^a	1	11.1 ^a	9	100.0 ^a
DE	1	2.7	19	51.4	10	27.0	2	5.4	4	10.8	1	2.7	37	100.0
FR	2	13.3 ^a	9	60.0 ^a	3	20.0 ^a	0	0.0 ^a	1	6.7 ^a	0	0.0 ^a	15	100.0 ^a
IT	0	0.0 ^a	9	69.2 ^a	3	23.1 ^a	0	0.0 ^a	1	7.7 ^a	0	0.0 ^a	13	100.0 ^a
Total	7	8.2	48	56.5	17	20.0	2	2.4	9	10.6	2	2.4	85	100.0
Mean		10.5		59.4		15.8		1.1		10.5		2.8		100.0

Note: target group: universities; row percentages; question only asked to respondents who did not indicate to be 'not familiar at all' with EOSC; original labels of categories: ++ 'very much', + 'somewhat', – 'not very much', – – 'not at all'; question-ID: F6U6R13E13; a superscript 'a' indicates that percentages rely on a number of observations below 20 and therefore have to be treated with caution.

Table 5.3: Will your organisation benefit from the implementation of EOSC?

	<i>Benefit from EOSC</i>											
	++		+		–		<i>don't know</i>		<i>no answer</i>		<i>Total</i>	
	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%
AT	4	36.4 ^a	3	27.3 ^a	1	9.1 ^a	3	27.3 ^a	0	0.0 ^a	11	100.0 ^a
BE	1	11.1 ^a	6	66.7 ^a	1	11.1 ^a	1	11.1 ^a	0	0.0 ^a	9	100.0 ^a
DE	5	13.5	23	62.2	3	8.1	5	13.5	1	2.7	37	100.0
FR	2	13.3 ^a	9	60.0 ^a	1	6.7 ^a	3	20.0 ^a	0	0.0 ^a	15	100.0 ^a
IT	1	7.7 ^a	9	69.2 ^a	1	7.7 ^a	2	15.4 ^a	0	0.0 ^a	13	100.0 ^a
Total	13	15.3	50	58.8	7	8.2	14	16.5	1	1.2	85	100.0
Mean		16.4		57.1		8.5		17.5		0.5		100.0

Note: target group: universities; row percentages; question only asked to respondents who did not indicate to be 'not familiar at all' with EOSC; original labels of categories: ++ 'very much', + 'somewhat', – 'not very much', – – 'not at all'; question-ID: F7U7R14E14; a superscript 'a' indicates that percentages rely on a number of observations below 20 and therefore have to be treated with caution.

Table 5.4: Is your organisation already contributing to EOSC?

	<i>Already contributing to EOSC</i>									
	<i>no</i>		<i>yes</i>		<i>don't know</i>		<i>no answer</i>		<i>Total</i>	
	No.	%	No.	%	No.	%	No.	%	No.	%
AT	8	72.7 ^a	2	18.2 ^a	1	9.1 ^a	0	0.0 ^a	11	100.0 ^a
BE	5	55.6 ^a	3	33.3 ^a	0	0.0 ^a	1	11.1 ^a	9	100.0 ^a
DE	26	70.3	2	5.4	8	21.6	1	2.7	37	100.0
FR	7	46.7 ^a	1	6.7 ^a	7	46.7 ^a	0	0.0 ^a	15	100.0 ^a
IT	6	46.2 ^a	3	23.1 ^a	4	30.8 ^a	0	0.0 ^a	13	100.0 ^a
Total	52	61.2	11	12.9	20	23.5	2	2.4	85	100.0
Mean		58.3		17.3		21.6		2.8		100.0

Note: target group: universities; row percentages; question only asked to respondents who did not indicate to be 'not familiar at all' with EOSC; question-ID: U94R94E94; a superscript 'a' indicates that percentages rely on a number of observations below 20 and therefore have to be treated with caution.

Table 5.5: How likely is it that your organisation will contribute to EOSC?

	<i>Likelihood of contribution to EOSC</i>											
	<i>++</i>		<i>+</i>		<i>-</i>		<i>don't know</i>		<i>no answer</i>		<i>Total</i>	
	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%
AT	0	0.0 ^a	4	44.4 ^a	3	33.3 ^a	2	22.2 ^a	0	0.0 ^a	9	100.0 ^a
BE	1	16.7 ^a	2	33.3 ^a	2	33.3 ^a	1	16.7 ^a	0	0.0 ^a	6	100.0 ^a
DE	1	2.9	19	54.3	7	20.0	7	20.0	1	2.9	35	100.0
FR	2	14.3 ^a	7	50.0 ^a	2	14.3 ^a	3	21.4 ^a	0	0.0 ^a	14	100.0 ^a
IT	0	0.0 ^a	5	50.0 ^a	2	20.0 ^a	3	30.0 ^a	0	0.0 ^a	10	100.0 ^a
Total	4	5.4	37	50.0	16	21.6	16	21.6	1	1.4	74	100.0
Mean		6.8		46.4		24.2		22.1		0.6		100.0

Note: target group: universities; row percentages; question only asked to respondents who did not indicate to be 'not familiar at all' with EOSC and who do not already contribute to EOSC (question U94R94E94); original labels of categories: ++ 'very likely', + 'likely', - 'not very likely', -- 'not likely at all', 'don't know'; question-ID: U8R15E15; a superscript 'a' indicates that percentages rely on a number of observations below 20 and therefore have to be treated with caution.

Table 5.6: How beneficial is/will be contributing to EOSC for your organisation?

	<i>Degree of benefit from contributing to EOSC</i>											
	++		+		–		<i>don't know</i>		<i>no answer</i>		<i>Total</i>	
	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%
AT	4	36.4 ^a	3	27.3 ^a	0	0.0 ^a	4	36.4 ^a	0	0.0 ^a	11	100.0 ^a
BE	1	11.1 ^a	8	88.9 ^a	0	0.0 ^a	0	0.0 ^a	0	0.0 ^a	9	100.0 ^a
DE	4	10.8	20	54.1	4	10.8	8	21.6	1	2.7	37	100.0
FR	2	13.3 ^a	10	66.7 ^a	0	0.0 ^a	3	20.0 ^a	0	0.0 ^a	15	100.0 ^a
IT	2	15.4 ^a	7	53.8 ^a	1	7.7 ^a	3	23.1 ^a	0	0.0 ^a	13	100.0 ^a
Total	13	15.3	48	56.5	5	5.9	18	21.2	1	1.2	85	100.0
Mean		17.4		58.2		3.7		20.2		0.5		100.0

Note: target group: universities; row percentages; question only asked to respondents who did not indicate to be 'not familiar at all' with EOSC; original labels of categories: ++ 'very beneficial', + 'somewhat beneficial', – 'not very beneficial', – – 'not beneficial at all'; question-ID: F9U9R16E16; a superscript 'a' indicates that percentages rely on a number of observations below 20 and therefore have to be treated with caution.

Table 5.7: How familiar are you with the FAIR principles regarding data?

	<i>Familiarity with FAIR principles</i>											
	++		+		–		– –		<i>no answer</i>		<i>Total</i>	
	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%
AT	6	50.0 ^a	6	50.0 ^a	0	0.0 ^a	0	0.0 ^a	0	0.0 ^a	12	100.0 ^a
BE	7	77.8 ^a	2	22.2 ^a	0	0.0 ^a	0	0.0 ^a	0	0.0 ^a	9	100.0 ^a
DE	10	18.5	18	33.3	14	25.9	11	20.4	1	1.9	54	100.0
FR	3	15.8 ^a	10	52.6 ^a	4	21.1 ^a	2	10.5 ^a	0	0.0 ^a	19	100.0 ^a
IT	3	15.8 ^a	8	42.1 ^a	5	26.3 ^a	3	15.8 ^a	0	0.0 ^a	19	100.0 ^a
Total	29	25.7	44	38.9	23	20.4	16	14.2	1	0.9	113	100.0
Mean		35.6		40.0		14.7		9.3		0.4		100.0

Note: target group: universities; row percentages; original labels of categories: ++ 'very familiar', + 'familiar', – 'not very familiar', – – 'not familiar at all'; question-ID: F17U12R20E62; a superscript 'a' indicates that percentages rely on a number of observations below 20 and therefore have to be treated with caution.

5.2 EOSC and open science

Table 5.8: What research discipline(s) from your organisation will benefit mostly from EOSC? (Part 1)

	<i>Natural Sciences</i>							
	<i>no</i>		<i>yes</i>		<i>no answer</i>		<i>Total</i>	
	No.	%	No.	%	No.	%	No.	%
AT	6	50.0 ^a	6	50.0 ^a	0	0.0 ^a	12	100.0 ^a
BE	1	11.1 ^a	7	77.8 ^a	1	11.1 ^a	9	100.0 ^a
DE	27	61.4	14	31.8	3	6.8	44	100.0
FR	3	17.6 ^a	14	82.4 ^a	0	0.0 ^a	17	100.0 ^a
IT	6	33.3 ^a	11	61.1 ^a	1	5.6 ^a	18	100.0 ^a
Total	43	43.0	52	52.0	5	5.0	100	100.0
Mean		34.7		60.6		4.7		100.0

Note: target group: universities; row percentages; responses in the category 'other' were recoded to the individual categories whenever possible; question-ID: U13; a superscript 'a' indicates that percentages rely on a number of observations below 20 and therefore have to be treated with caution.

Table 5.9: What research discipline(s) from your organisation will benefit mostly from EOSC? (Part 2)

	<i>Engineering and Technology</i>							
	<i>no</i>		<i>yes</i>		<i>no answer</i>		<i>Total</i>	
	No.	%	No.	%	No.	%	No.	%
AT	6	50.0 ^a	6	50.0 ^a	0	0.0 ^a	12	100.0 ^a
BE	2	22.2 ^a	6	66.7 ^a	1	11.1 ^a	9	100.0 ^a
DE	22	50.0	19	43.2	3	6.8	44	100.0
FR	6	35.3 ^a	11	64.7 ^a	0	0.0 ^a	17	100.0 ^a
IT	6	33.3 ^a	11	61.1 ^a	1	5.6 ^a	18	100.0 ^a
Total	42	42.0	53	53.0	5	5.0	100	100.0
Mean		38.2		57.1		4.7		100.0

Note: target group: universities; row percentages; responses in the category 'other' were recoded to the individual categories whenever possible; question-ID: U13; a superscript 'a' indicates that percentages rely on a number of observations below 20 and therefore have to be treated with caution.

Table 5.10: What research discipline(s) from your organisation will benefit mostly from EOSC? (Part 3)

<i>Medical and Health Sciences</i>								
	<i>no</i>		<i>yes</i>		<i>no answer</i>		<i>Total</i>	
	No.	%	No.	%	No.	%	No.	%
AT	4	33.3 ^a	8	66.7 ^a	0	0.0 ^a	12	100.0 ^a
BE	1	11.1 ^a	7	77.8 ^a	1	11.1 ^a	9	100.0 ^a
DE	32	72.7	9	20.5	3	6.8	44	100.0
FR	6	35.3 ^a	11	64.7 ^a	0	0.0 ^a	17	100.0 ^a
IT	6	33.3 ^a	11	61.1 ^a	1	5.6 ^a	18	100.0 ^a
Total	49	49.0	46	46.0	5	5.0	100	100.0
Mean		37.1		58.2		4.7		100.0

Note: target group: universities; row percentages; responses in the category 'other' were recoded to the individual categories whenever possible; question-ID: U13; a superscript 'a' indicates that percentages rely on a number of observations below 20 and therefore have to be treated with caution.

Table 5.11: What research discipline(s) from your organisation will benefit mostly from EOSC? (Part 4)

<i>Agricultural Sciences</i>								
	<i>no</i>		<i>yes</i>		<i>no answer</i>		<i>Total</i>	
	No.	%	No.	%	No.	%	No.	%
AT	9	75.0 ^a	3	25.0 ^a	0	0.0 ^a	12	100.0 ^a
BE	5	55.6 ^a	3	33.3 ^a	1	11.1 ^a	9	100.0 ^a
DE	40	90.9	1	2.3	3	6.8	44	100.0
FR	9	52.9 ^a	8	47.1 ^a	0	0.0 ^a	17	100.0 ^a
IT	10	55.6 ^a	7	38.9 ^a	1	5.6 ^a	18	100.0 ^a
Total	73	73.0	22	22.0	5	5.0	100	100.0
Mean		66.0		29.3		4.7		100.0

Note: target group: universities; row percentages; responses in the category 'other' were recoded to the individual categories whenever possible; question-ID: U13; a superscript 'a' indicates that percentages rely on a number of observations below 20 and therefore have to be treated with caution.

Table 5.12: What research discipline(s) from your organisation will benefit mostly from EOSC? (Part 5)

	<i>Social Sciences</i>							
	<i>no</i>		<i>yes</i>		<i>no answer</i>		<i>Total</i>	
	No.	%	No.	%	No.	%	No.	%
AT	5	41.7 ^a	7	58.3 ^a	0	0.0 ^a	12	100.0 ^a
BE	4	44.4 ^a	4	44.4 ^a	1	11.1 ^a	9	100.0 ^a
DE	16	36.4	25	56.8	3	6.8	44	100.0
FR	3	17.6 ^a	14	82.4 ^a	0	0.0 ^a	17	100.0 ^a
IT	8	44.4 ^a	9	50.0 ^a	1	5.6 ^a	18	100.0 ^a
Total	36	36.0	59	59.0	5	5.0	100	100.0
Mean		36.9		58.4		4.7		100.0

Note: target group: universities; row percentages; responses in the category 'other' were recoded to the individual categories whenever possible; question-ID: U13; a superscript 'a' indicates that percentages rely on a number of observations below 20 and therefore have to be treated with caution.

Table 5.13: What research discipline(s) from your organisation will benefit mostly from EOSC? (Part 6)

	<i>Humanities</i>							
	<i>no</i>		<i>yes</i>		<i>no answer</i>		<i>Total</i>	
	No.	%	No.	%	No.	%	No.	%
AT	7	58.3 ^a	5	41.7 ^a	0	0.0 ^a	12	100.0 ^a
BE	3	33.3 ^a	5	55.6 ^a	1	11.1 ^a	9	100.0 ^a
DE	25	56.8	16	36.4	3	6.8	44	100.0
FR	5	29.4 ^a	12	70.6 ^a	0	0.0 ^a	17	100.0 ^a
IT	9	50.0 ^a	8	44.4 ^a	1	5.6 ^a	18	100.0 ^a
Total	49	49.0	46	46.0	5	5.0	100	100.0
Mean		45.6		49.7		4.7		100.0

Note: target group: universities; row percentages; responses in the category 'other' were recoded to the individual categories whenever possible; question-ID: U13; a superscript 'a' indicates that percentages rely on a number of observations below 20 and therefore have to be treated with caution.

Table 5.14: What research discipline(s) from your organisation will benefit mostly from EOSC? (Part 7)

	<i>Other</i>							
	<i>no</i>		<i>yes</i>		<i>no answer</i>		<i>Total</i>	
	No.	%	No.	%	No.	%	No.	%
AT	11	91.7 ^a	1	8.3 ^a	0	0.0 ^a	12	100.0 ^a
BE	7	77.8 ^a	1	11.1 ^a	1	11.1 ^a	9	100.0 ^a
DE	41	93.2	0	0.0	3	6.8	44	100.0
FR	17	100.0 ^a	0	0.0 ^a	0	0.0 ^a	17	100.0 ^a
IT	17	94.4 ^a	0	0.0 ^a	1	5.6 ^a	18	100.0 ^a
Total	93	93.0	2	2.0	5	5.0	100	100.0
Mean		91.4		3.9		4.7		100.0

Note: target group: universities; row percentages; responses in the category ‘other’ were recoded to the individual categories whenever possible; question-ID: U13; a superscript ‘a’ indicates that percentages rely on a number of observations below 20 and therefore have to be treated with caution.

Table 5.15: Has your organisation developed informal or formal regulations or publicly available policies that address the following aspects? (Part 1)

	<i>Open access publications</i>											
	<i>no</i>		<i>informal</i>		<i>written</i>		<i>policy</i>		<i>n. a.</i>		<i>Total</i>	
	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%
AT	1	8.3 ^a	5	41.7 ^a	1	8.3 ^a	5	41.7 ^a	0	0.0 ^a	12	100.0 ^a
BE	0	0.0 ^a	0	0.0 ^a	2	22.2 ^a	7	77.8 ^a	0	0.0 ^a	9	100.0 ^a
DE	17	38.6	8	18.2	4	9.1	15	34.1	0	0.0	44	100.0
FR	2	11.8 ^a	7	41.2 ^a	5	29.4 ^a	3	17.6 ^a	0	0.0 ^a	17	100.0 ^a
IT	7	38.9 ^a	2	11.1 ^a	2	11.1 ^a	5	27.8 ^a	2	11.1 ^a	18	100.0 ^a
Total	27	27.0	22	22.0	14	14.0	35	35.0	2	2.0	100	100.0
Mean		19.5		22.4		16.0		39.8		2.2		100.0

Note: target group: universities; row percentages; original labels of categories: ‘no regulation’, ‘informal regulation’, ‘formal/written regulation’, ‘publicly available policy’, ‘not applicable’; question-ID: U11; a superscript ‘a’ indicates that percentages rely on a number of observations below 20 and therefore have to be treated with caution.

Table 5.16: Has your organisation developed informal or formal regulations or publicly available policies that address the following aspects? (Part 2)

Research data management (RDM)														
	no		informal		written		policy		n.a.		no answer		Total	
	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%
AT	4	33.3 ^a	5	41.7 ^a	1	8.3 ^a	2	16.7 ^a	0	0.0 ^a	0	0.0 ^a	12	100.0 ^a
BE	2	22.2 ^a	3	33.3 ^a	2	22.2 ^a	2	22.2 ^a	0	0.0 ^a	0	0.0 ^a	9	100.0 ^a
DE	17	38.6	11	25.0	7	15.9	8	18.2	1	2.3	0	0.0	44	100.0
FR	8	47.1 ^a	6	35.3 ^a	2	11.8 ^a	1	5.9 ^a	0	0.0 ^a	0	0.0 ^a	17	100.0 ^a
IT	8	44.4 ^a	5	27.8 ^a	1	5.6 ^a	2	11.1 ^a	1	5.6 ^a	1	5.6 ^a	18	100.0 ^a
Total	39	39.0	30	30.0	13	13.0	15	15.0	2	2.0	1	1.0	100	100.0
Mean		37.1		32.6		12.8		14.8		1.6		1.1		100.0

Note: target group: universities; row percentages; original labels of categories: ‘no regulation’, ‘informal regulation’, ‘formal/written regulation’, ‘publicly available policy’, ‘not applicable’; question-ID: U11; a superscript ‘a’ indicates that percentages rely on a number of observations below 20 and therefore have to be treated with caution.

Table 5.17: Has your organisation developed informal or formal regulations or publicly available policies that address the following aspects? (Part 3)

<i>Open research data</i>														
	<i>no</i>		<i>informal</i>		<i>written</i>		<i>policy</i>		<i>n.a.</i>		<i>no answer</i>		<i>Total</i>	
	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%
AT	6	50.0 ^a	5	41.7 ^a	0	0.0 ^a	0	0.0 ^a	0	0.0 ^a	1	8.3 ^a	12	100.0 ^a
BE	3	33.3 ^a	5	55.6 ^a	0	0.0 ^a	1	11.1 ^a	0	0.0 ^a	0	0.0 ^a	9	100.0 ^a
DE	28	63.6	6	13.6	3	6.8	6	13.6	1	2.3	0	0.0	44	100.0
FR	7	41.2 ^a	7	41.2 ^a	1	5.9 ^a	2	11.8 ^a	0	0.0 ^a	0	0.0 ^a	17	100.0 ^a
IT	6	33.3 ^a	6	33.3 ^a	1	5.6 ^a	2	11.1 ^a	1	5.6 ^a	2	11.1 ^a	18	100.0 ^a
Total	50	50.0	29	29.0	5	5.0	11	11.0	2	2.0	3	3.0	100	100.0
Mean		44.3		37.1		3.7		9.5		1.6		3.9		100.0

Note: target group: universities; row percentages; original labels of categories: ‘no regulation’, ‘informal regulation’, ‘formal/written regulation’, ‘publicly available policy’, ‘not applicable’; question-ID: U11; a superscript ‘a’ indicates that percentages rely on a number of observations below 20 and therefore have to be treated with caution.

Table 5.18: Has your organisation developed informal or formal regulations or publicly available policies that address the following aspects? (Part 4)

<i>Long-term availability of research data</i>														
	<i>no</i>		<i>informal</i>		<i>written</i>		<i>policy</i>		<i>n.a.</i>		<i>no answer</i>		<i>Total</i>	
	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%
AT	4	33.3 ^a	5	41.7 ^a	1	8.3 ^a	1	8.3 ^a	0	0.0 ^a	1	8.3 ^a	12	100.0 ^a
BE	3	33.3 ^a	3	33.3 ^a	2	22.2 ^a	1	11.1 ^a	0	0.0 ^a	0	0.0 ^a	9	100.0 ^a
DE	20	45.5	11	25.0	6	13.6	6	13.6	1	2.3	0	0.0	44	100.0
FR	9	52.9 ^a	5	29.4 ^a	1	5.9 ^a	2	11.8 ^a	0	0.0 ^a	0	0.0 ^a	17	100.0 ^a
IT	6	33.3 ^a	7	38.9 ^a	1	5.6 ^a	1	5.6 ^a	1	5.6 ^a	2	11.1 ^a	18	100.0 ^a
Total	42	42.0	31	31.0	11	11.0	11	11.0	2	2.0	3	3.0	100	100.0
Mean		39.7		33.7		11.1		10.1		1.6		3.9		100.0

Note: target group: universities; row percentages; original labels of categories: ‘no regulation’, ‘informal regulation’, ‘formal/written regulation’, ‘publicly available policy’, ‘not applicable’; question-ID: U11; a superscript ‘a’ indicates that percentages rely on a number of observations below 20 and therefore have to be treated with caution.

Table 5.19: Has your organisation developed informal or formal regulations or publicly available policies that address the following aspects? (Part 5)

Compliance of data to the FAIR principles														
	no		informal		written		policy		n.a.		no answer		Total	
	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%
AT	8	66.7 ^a	2	16.7 ^a	0	0.0 ^a	1	8.3 ^a	0	0.0 ^a	1	8.3 ^a	12	100.0 ^a
BE	2	22.2 ^a	5	55.6 ^a	1	11.1 ^a	1	11.1 ^a	0	0.0 ^a	0	0.0 ^a	9	100.0 ^a
DE	25	56.8	10	22.7	1	2.3	6	13.6	1	2.3	1	2.3	44	100.0
FR	6	35.3 ^a	8	47.1 ^a	1	5.9 ^a	2	11.8 ^a	0	0.0 ^a	0	0.0 ^a	17	100.0 ^a
IT	9	50.0 ^a	2	11.1 ^a	3	16.7 ^a	2	11.1 ^a	1	5.6 ^a	1	5.6 ^a	18	100.0 ^a
Total	50	50.0	27	27.0	6	6.0	12	12.0	2	2.0	3	3.0	100	100.0
Mean		46.2		30.6		7.2		11.2		1.6		3.2		100.0

Note: target group: universities; row percentages; original labels of categories: ‘no regulation’, ‘informal regulation’, ‘formal/written regulation’, ‘publicly available policy’, ‘not applicable’; question-ID: U11; a superscript ‘a’ indicates that percentages rely on a number of observations below 20 and therefore have to be treated with caution.

Table 5.20: Has your organisation developed informal or formal regulations or publicly available policies that address the following aspects? (Part 6)

<i>Publication of data in a repository</i>														
	<i>no</i>		<i>informal</i>		<i>written</i>		<i>policy</i>		<i>n.a.</i>		<i>no answer</i>		<i>Total</i>	
	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%
AT	6	50.0 ^a	2	16.7 ^a	1	8.3 ^a	2	16.7 ^a	0	0.0 ^a	1	8.3 ^a	12	100.0 ^a
BE	2	22.2 ^a	5	55.6 ^a	1	11.1 ^a	1	11.1 ^a	0	0.0 ^a	0	0.0 ^a	9	100.0 ^a
DE	23	52.3	11	25.0	2	4.5	7	15.9	1	2.3	0	0.0	44	100.0
FR	4	23.5 ^a	8	47.1 ^a	3	17.6 ^a	2	11.8 ^a	0	0.0 ^a	0	0.0 ^a	17	100.0 ^a
IT	5	27.8 ^a	3	16.7 ^a	4	22.2 ^a	4	22.2 ^a	1	5.6 ^a	1	5.6 ^a	18	100.0 ^a
Total	40	40.0	29	29.0	11	11.0	16	16.0	2	2.0	2	2.0	100	100.0
Mean		35.2		32.2		12.7		15.5		1.6		2.8		100.0

Note: target group: universities; row percentages; original labels of categories: 'no regulation', 'informal regulation', 'formal/written regulation', 'publicly available policy', 'not applicable'; question-ID: U11; a superscript 'a' indicates that percentages rely on a number of observations below 20 and therefore have to be treated with caution.

Table 5.21: Has your organisation developed informal or formal regulations or publicly available policies that address the following aspects? (Part 7)

<i>Publication of data in a certified repository</i>														
	<i>no</i>		<i>informal</i>		<i>written</i>		<i>policy</i>		<i>n.a.</i>		<i>no answer</i>		<i>Total</i>	
	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%
AT	7	58.3 ^a	0	0.0 ^a	1	8.3 ^a	1	8.3 ^a	2	16.7 ^a	1	8.3 ^a	12	100.0 ^a
BE	6	66.7 ^a	3	33.3 ^a	0	0.0 ^a	0	0.0 ^a	0	0.0 ^a	0	0.0 ^a	9	100.0 ^a
DE	30	68.2	4	9.1	1	2.3	6	13.6	1	2.3	2	4.5	44	100.0
FR	6	35.3 ^a	4	23.5 ^a	4	23.5 ^a	2	11.8 ^a	1	5.9 ^a	0	0.0 ^a	17	100.0 ^a
IT	8	44.4 ^a	3	16.7 ^a	3	16.7 ^a	2	11.1 ^a	1	5.6 ^a	1	5.6 ^a	18	100.0 ^a
Total	57	57.0	14	14.0	9	9.0	11	11.0	5	5.0	4	4.0	100	100.0
Mean		54.6		16.5		10.2		9.0		6.1		3.7		100.0

Note: target group: universities; row percentages; original labels of categories: 'no regulation', 'informal regulation', 'formal/written regulation', 'publicly available policy', 'not applicable'; question-ID: U11; a superscript 'a' indicates that percentages rely on a number of observations below 20 and therefore have to be treated with caution.

Table 5.22: Has your organisation developed informal or formal regulations or publicly available policies that address the following aspects? (Part 8)

	<i>Other</i>											
	<i>no</i>		<i>informal</i>		<i>written</i>		<i>n. a.</i>		<i>no answer</i>		<i>Total</i>	
	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%
AT	1	8.3 ^a	0	0.0 ^a	0	0.0 ^a	1	8.3 ^a	10	83.3 ^a	12	100.0 ^a
BE	0	0.0 ^a	0	0.0 ^a	1	11.1 ^a	0	0.0 ^a	8	88.9 ^a	9	100.0 ^a
DE	4	9.1	1	2.3	0	0.0	1	2.3	38	86.4	44	100.0
FR	1	5.9 ^a	0	0.0 ^a	1	5.9 ^a	0	0.0 ^a	15	88.2 ^a	17	100.0 ^a
IT	1	5.6 ^a	0	0.0 ^a	2	11.1 ^a	2	11.1 ^a	13	72.2 ^a	18	100.0 ^a
Total	7	7.0	1	1.0	4	4.0	4	4.0	84	84.0	100	100.0
Mean		5.8		0.5		5.6		4.3		83.8		100.0

Note: target group: universities; row percentages; original labels of categories: 'no regulation', 'informal regulation', 'formal/written regulation', 'publicly available policy', 'not applicable'; question-ID: U11; a superscript 'a' indicates that percentages rely on a number of observations below 20 and therefore have to be treated with caution.

6 Research Infrastructures

6.1 The European Open Science Cloud (EOSC)

This section contains frequencies for research infrastructures on a country level. Frequencies for research infrastructures in comparison to other target groups are available in chapter 3.

Table 6.1: Considering everything you know about EOSC, how familiar are you with EOSC?

	<i>EOSC familiarity</i>											
	++		+		-		--		<i>no answer</i>		<i>Total</i>	
	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%
AT	0	0.0 ^a	1	12.5 ^a	7	87.5 ^a	0	0.0 ^a	0	0.0 ^a	8	100.0 ^a
BE	2	10.0	5	25.0	11	55.0	2	10.0	0	0.0	20	100.0
DE	3	3.9	22	28.6	25	32.5	27	35.1	0	0.0	77	100.0
FR	1	1.9	13	24.1	26	48.1	13	24.1	1	1.9	54	100.0
IT	5	7.2	23	33.3	25	36.2	16	23.2	0	0.0	69	100.0
Total	11	4.8	64	28.1	94	41.2	58	25.4	1	0.4	228	100.0
Mean		4.6		24.7		51.9		18.5		0.4		100.0

Note: target group: research infrastructures; row percentages; original labels of categories: ++ 'very familiar', + 'familiar', - 'not very familiar', - - 'not familiar at all'; question-ID: F5U5R12E12; a superscript 'a' indicates that percentages rely on a number of observations below 20 and therefore have to be treated with caution.

Table 6.2: How does or will EOSC affect your organisation and/or your strategic plans?

<i>Effect of EOSC</i>														
	++		+		-		--		<i>don't know</i>		<i>no answer</i>		<i>Total</i>	
	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%
AT	0	0.0 ^a	3	37.5 ^a	1	12.5 ^a	1	12.5 ^a	3	37.5 ^a	0	0.0 ^a	8	100.0 ^a
BE	7	38.9 ^a	10	55.6 ^a	1	5.6 ^a	0	0.0 ^a	0	0.0 ^a	0	0.0 ^a	18	100.0 ^a
DE	3	6.0	28	56.0	14	28.0	1	2.0	4	8.0	0	0.0	50	100.0
FR	11	26.8	17	41.5	8	19.5	0	0.0	4	9.8	1	2.4	41	100.0
IT	8	15.1	27	50.9	14	26.4	1	1.9	1	1.9	2	3.8	53	100.0
Total	29	17.1	85	50.0	38	22.4	3	1.8	12	7.1	3	1.8	170	100.0
Mean		17.4		48.3		18.4		3.3		11.4		1.2		100.0

Note: target group: research infrastructures; row percentages; question only asked to respondents who did not indicate to be 'not familiar at all' with EOSC; original labels of categories: ++ 'very much', + 'somewhat', - 'not very much', -- 'not at all'; question-ID: F6U6R13E13; a superscript 'a' indicates that percentages rely on a number of observations below 20 and therefore have to be treated with caution.

Table 6.3: Will your organisation benefit from the implementation of EOSC?

<i>Benefit from EOSC</i>														
	++		+		-		--		<i>don't know</i>		<i>no answer</i>		<i>Total</i>	
	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%
AT	0	0.0 ^a	5	62.5 ^a	0	0.0 ^a	1	12.5 ^a	1	12.5 ^a	1	12.5 ^a	8	100.0 ^a
BE	9	50.0 ^a	7	38.9 ^a	1	5.6 ^a	0	0.0 ^a	1	5.6 ^a	0	0.0 ^a	18	100.0 ^a
DE	7	14.0	26	52.0	9	18.0	0	0.0	8	16.0	0	0.0	50	100.0
FR	15	36.6	16	39.0	3	7.3	1	2.4	5	12.2	1	2.4	41	100.0
IT	13	24.5	26	49.1	4	7.5	0	0.0	9	17.0	1	1.9	53	100.0
Total	44	25.9	80	47.1	17	10.0	2	1.2	24	14.1	3	1.8	170	100.0
Mean		25.0		48.3		7.7		3.0		12.7		3.4		100.0

Note: target group: research infrastructures; row percentages; question only asked to respondents who did not indicate to be 'not familiar at all' with EOSC; original labels of categories: ++ 'very much', + 'somewhat', - 'not very much', -- 'not at all'; question-ID: F7U7R14E14; a superscript 'a' indicates that percentages rely on a number of observations below 20 and therefore have to be treated with caution.

Table 6.4: Is your organisation already contributing to EOSC?

	<i>Already contributing to EOSC</i>									
	<i>no</i>		<i>yes</i>		<i>don't know</i>		<i>no answer</i>		<i>Total</i>	
	No.	%	No.	%	No.	%	No.	%	No.	%
AT	3	37.5 ^a	1	12.5 ^a	3	37.5 ^a	1	12.5 ^a	8	100.0 ^a
BE	3	16.7 ^a	9	50.0 ^a	6	33.3 ^a	0	0.0 ^a	18	100.0 ^a
DE	31	62.0	10	20.0	9	18.0	0	0.0	50	100.0
FR	15	36.6	16	39.0	9	22.0	1	2.4	41	100.0
IT	23	43.4	23	43.4	6	11.3	1	1.9	53	100.0
Total	75	44.1	59	34.7	33	19.4	3	1.8	170	100.0
Mean		39.2		33.0		24.4		3.4		100.0

Note: target group: research infrastructures; row percentages; question was asked to e-infrastructures, research infrastructures and universities; question only asked to respondents who did not indicate to be 'not familiar at all' with EOSC; question-ID: U94R94E94; a superscript 'a' indicates that percentages rely on a number of observations below 20 and therefore have to be treated with caution.

Table 6.5: How likely is it that your organisation will contribute to EOSC?

<i>Likelihood of contribution to EOSC</i>														
	++		+		-		--		<i>don't know</i>		<i>no answer</i>		<i>Total</i>	
	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%
AT	1	14.3 ^a	1	14.3 ^a	1	14.3 ^a	0	0.0 ^a	3	42.9 ^a	1	14.3 ^a	7	100.0 ^a
BE	1	11.1 ^a	6	66.7 ^a	1	11.1 ^a	0	0.0 ^a	1	11.1 ^a	0	0.0 ^a	9	100.0 ^a
DE	1	2.5	23	57.5	8	20.0	0	0.0	8	20.0	0	0.0	40	100.0
FR	5	20.0	9	36.0	6	24.0	1	4.0	3	12.0	1	4.0	25	100.0
IT	3	10.0	13	43.3	3	10.0	0	0.0	10	33.3	1	3.3	30	100.0
Total	11	9.9	52	46.8	19	17.1	1	0.9	25	22.5	3	2.7	111	100.0
Mean		11.6		43.6		15.9		0.8		23.9		4.3		100.0

Note: target group: research infrastructures; row percentages; question was asked to e-infrastructures, research infrastructures and universities; question only asked to respondents who did not indicate to be 'not familiar at all' with EOSC and who do not already contribute to EOSC (question U94R94E94); original labels of categories: ++ 'very likely', + 'likely', - 'not very likely', - - 'not likely at all'; question-ID: U8R15E15; a superscript 'a' indicates that percentages rely on a number of observations below 20 and therefore have to be treated with caution.

Table 6.6: How beneficial is/will be contributing to EOSC for your organisation?

	<i>Degree of benefit from contributing to EOSC</i>													
	++		+		–		– –		<i>don't know</i>		<i>no answer</i>		<i>Total</i>	
	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%
AT	0	0.0 ^a	3	37.5 ^a	0	0.0 ^a	1	12.5 ^a	3	37.5 ^a	1	12.5 ^a	8	100.0 ^a
BE	8	44.4 ^a	8	44.4 ^a	1	5.6 ^a	0	0.0 ^a	1	5.6 ^a	0	0.0 ^a	18	100.0 ^a
DE	0	0.0	35	70.0	4	8.0	0	0.0	9	18.0	2	4.0	50	100.0
FR	15	36.6	17	41.5	4	9.8	0	0.0	4	9.8	1	2.4	41	100.0
IT	9	17.0	28	52.8	5	9.4	0	0.0	10	18.9	1	1.9	53	100.0
Total	32	18.8	91	53.5	14	8.2	1	0.6	27	15.9	5	2.9	170	100.0
Mean		19.6		49.2		6.6		2.5		18.0		4.2		100.0

Note: target group: research infrastructures; row percentages; question only asked to respondents who did not indicate to be ‘not familiar at all’ with EOSC; original labels of categories: ++ ‘very beneficial’, + ‘somewhat beneficial’, – ‘not very beneficial’, – – ‘not beneficial at all’; question-ID: F9U9R16E16; a superscript ‘a’ indicates that percentages rely on a number of observations below 20 and therefore have to be treated with caution.

Table 6.7: How familiar are you with the FAIR principles regarding data?

	<i>Familiarity with FAIR principles</i>											
	++		+		–		– –		<i>no answer</i>		<i>Total</i>	
	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%
AT	1	12.5 ^a	3	37.5 ^a	2	25.0 ^a	1	12.5 ^a	1	12.5 ^a	8	100.0 ^a
BE	8	40.0	9	45.0	2	10.0	1	5.0	0	0.0	20	100.0
DE	38	49.4	17	22.1	11	14.3	9	11.7	2	2.6	77	100.0
FR	18	33.3	24	44.4	8	14.8	4	7.4	0	0.0	54	100.0
IT	19	27.5	27	39.1	14	20.3	8	11.6	1	1.4	69	100.0
Total	84	36.8	80	35.1	37	16.2	23	10.1	4	1.8	228	100.0
Mean		32.5		37.6		16.9		9.6		3.3		100.0

Note: target group: research infrastructures; row percentages; original labels of categories: ++ ‘very familiar’, + ‘familiar’, – ‘not very familiar’, – – ‘not familiar at all’; question-ID: F17U12R20E62; a superscript ‘a’ indicates that percentages rely on a number of observations below 20 and therefore have to be treated with caution.

6.2 General information and policies

Table 6.8: For which scientific discipline(s) does your organisation provide services? (Part 1)

	<i>Natural Sciences</i>					
	<i>no</i>		<i>yes</i>		<i>Total</i>	
	No.	%	No.	%	No.	%
AT	2	28.6 ^a	5	71.4 ^a	7	100.0 ^a
BE	8	40.0	12	60.0	20	100.0
DE	21	31.3	46	68.7	67	100.0
FR	11	20.8	42	79.2	53	100.0
IT	32	47.1	36	52.9	68	100.0
Total	74	34.4	141	65.6	215	100.0
Mean		33.6		66.4		100.0

Note: target group: research infrastructures; responses in the category 'other' were recoded to the individual categories whenever possible; row percentages; question-ID: R11; a superscript 'a' indicates that percentages rely on a number of observations below 20 and therefore have to be treated with caution.

Table 6.9: For which scientific discipline(s) does your organisation provide services? (Part 2)

	<i>Engineering and Technology</i>					
	<i>no</i>		<i>yes</i>		<i>Total</i>	
	No.	%	No.	%	No.	%
AT	3	42.9 ^a	4	57.1 ^a	7	100.0 ^a
BE	17	85.0	3	15.0	20	100.0
DE	47	70.1	20	29.9	67	100.0
FR	36	67.9	17	32.1	53	100.0
IT	48	70.6	20	29.4	68	100.0
Total	151	70.2	64	29.8	215	100.0
Mean		67.3		32.7		100.0

Note: target group: research infrastructures; responses in the category 'other' were recoded to the individual categories whenever possible; row percentages; question-ID: R11; a superscript 'a' indicates that percentages rely on a number of observations below 20 and therefore have to be treated with caution.

Table 6.10: For which scientific discipline(s) does your organisation provide services?
(Part 3)

<i>Medical and Health Sciences</i>						
	<i>no</i>		<i>yes</i>		<i>Total</i>	
	No.	%	No.	%	No.	%
AT	3	42.9 ^a	4	57.1 ^a	7	100.0 ^a
BE	13	65.0	7	35.0	20	100.0
DE	52	77.6	15	22.4	67	100.0
FR	41	77.4	12	22.6	53	100.0
IT	40	58.8	28	41.2	68	100.0
Total	149	69.3	66	30.7	215	100.0
Mean		64.3		35.7		100.0

Note: target group: research infrastructures; responses in the category 'other' were recoded to the individual categories whenever possible; row percentages; question-ID: R11; a superscript 'a' indicates that percentages rely on a number of observations below 20 and therefore have to be treated with caution.

Table 6.11: For which scientific discipline(s) does your organisation provide services?
(Part 4)

<i>Agricultural Sciences</i>						
	<i>no</i>		<i>yes</i>		<i>Total</i>	
	No.	%	No.	%	No.	%
AT	6	85.7 ^a	1	14.3 ^a	7	100.0 ^a
BE	16	80.0	4	20.0	20	100.0
DE	60	89.6	7	10.4	67	100.0
FR	47	88.7	6	11.3	53	100.0
IT	60	88.2	8	11.8	68	100.0
Total	189	87.9	26	12.1	215	100.0
Mean		86.4		13.6		100.0

Note: target group: research infrastructures; responses in the category 'other' were recoded to the individual categories whenever possible; row percentages; question-ID: R11; a superscript 'a' indicates that percentages rely on a number of observations below 20 and therefore have to be treated with caution.

Table 6.12: For which scientific discipline(s) does your organisation provide services?
(Part 5)

	<i>Social Sciences</i>					
	<i>no</i>		<i>yes</i>		<i>Total</i>	
	No.	%	No.	%	No.	%
AT	2	28.6 ^a	5	71.4 ^a	7	100.0 ^a
BE	15	75.0	5	25.0	20	100.0
DE	55	82.1	12	17.9	67	100.0
FR	53	100.0	0	0.0	53	100.0
IT	61	89.7	7	10.3	68	100.0
Total	186	86.5	29	13.5	215	100.0
Mean		75.1		24.9		100.0

Note: target group: research infrastructures; responses in the category 'other' were recoded to the individual categories whenever possible; row percentages; question-ID: R11; a superscript 'a' indicates that percentages rely on a number of observations below 20 and therefore have to be treated with caution.

Table 6.13: For which scientific discipline(s) does your organisation provide services?
(Part 6)

	<i>Humanities</i>					
	<i>no</i>		<i>yes</i>		<i>Total</i>	
	No.	%	No.	%	No.	%
AT	3	42.9 ^a	4	57.1 ^a	7	100.0 ^a
BE	18	90.0	2	10.0	20	100.0
DE	58	86.6	9	13.4	67	100.0
FR	52	98.1	1	1.9	53	100.0
IT	64	94.1	4	5.9	68	100.0
Total	195	90.7	20	9.3	215	100.0
Mean		82.3		17.7		100.0

Note: target group: research infrastructures; responses in the category 'other' were recoded to the individual categories whenever possible; row percentages; question-ID: R11; a superscript 'a' indicates that percentages rely on a number of observations below 20 and therefore have to be treated with caution.

Table 6.14: For which scientific discipline(s) does your organisation provide services? (Part 7)

	<i>Other</i>					
	<i>no</i>		<i>yes</i>		<i>Total</i>	
	No.	%	No.	%	No.	%
AT	7	100.0 ^a	0	0.0 ^a	7	100.0 ^a
BE	20	100.0	0	0.0	20	100.0
DE	66	98.5	1	1.5	67	100.0
FR	52	98.1	1	1.9	53	100.0
IT	67	98.5	1	1.5	68	100.0
Total	212	98.6	3	1.4	215	100.0
Mean		99.0		1.0		100.0

Note: target group: research infrastructures; responses in the category ‘other’ were recoded to the individual categories whenever possible; row percentages; question-ID: R11; a superscript ‘a’ indicates that percentages rely on a number of observations below 20 and therefore have to be treated with caution.

Table 6.15: Is your organisation in an official roadmap? (Part 1)

	<i>Roadmap: yes/no</i>									
	<i>no</i>		<i>yes</i>		<i>don't know</i>		<i>no answer</i>		<i>Total</i>	
	No.	%	No.	%	No.	%	No.	%	No.	%
AT	3	42.9 ^a	4	57.1 ^a	0	0.0 ^a	0	0.0 ^a	7	100.0 ^a
BE	3	15.0	13	65.0	4	20.0	0	0.0	20	100.0
DE	20	29.9	22	32.8	24	35.8	1	1.5	67	100.0
FR	0	0.0	52	98.1	1	1.9	0	0.0	53	100.0
IT	7	10.3	53	77.9	5	7.4	3	4.4	68	100.0
Total	33	15.3	144	67.0	34	15.8	4	1.9	215	100.0
Mean		19.6		66.2		13.0		1.2		100.0

Note: target group: research infrastructures; row percentages; question-ID: R18; roadmaps were part of the selection criteria for RI; a superscript ‘a’ indicates that percentages rely on a number of observations below 20 and therefore have to be treated with caution.

Table 6.16: Is your organisation in an official roadmap? (Part 2)

	<i>Roadmap: yes, national</i>					
	<i>no</i>		<i>yes</i>		<i>Total</i>	
	No.	%	No.	%	No.	%
AT	1	25.0 ^a	3	75.0 ^a	4	100.0 ^a
BE	8	61.5 ^a	5	38.5 ^a	13	100.0 ^a
DE	4	18.2	18	81.8	22	100.0
FR	10	19.2	42	80.8	52	100.0
IT	16	30.2	37	69.8	53	100.0
Total	39	27.1	105	72.9	144	100.0
Mean		30.8		69.2		100.0

Note: target group: research infrastructures; only respondents who indicated that they are part of an official roadmap are included (see table above including Part 1); row percentages; question-ID: R18; roadmaps were part of the selection criteria for RI; a superscript 'a' indicates that percentages rely on a number of observations below 20 and therefore have to be treated with caution.

Table 6.17: Is your organisation in an official roadmap? (Part 3)

	<i>Roadmap: yes, ESFRI</i>					
	<i>no</i>		<i>yes</i>		<i>Total</i>	
	No.	%	No.	%	No.	%
AT	2	50.0 ^a	2	50.0 ^a	4	100.0 ^a
BE	3	23.1 ^a	10	76.9 ^a	13	100.0 ^a
DE	11	50.0	11	50.0	22	100.0
FR	27	51.9	25	48.1	52	100.0
IT	34	64.2	19	35.8	53	100.0
Total	77	53.5	67	46.5	144	100.0
Mean		47.8		52.2		100.0

Note: target group: research infrastructures; only respondents who indicated that they are part of an official roadmap are included (see table above including Part 1); row percentages; question-ID: R18; roadmaps were part of the selection criteria for RI; a superscript 'a' indicates that percentages rely on a number of observations below 20 and therefore have to be treated with caution.

Table 6.18: Is your organisation in an official roadmap? (Part 4)

	<i>Roadmap: other</i>					
	<i>no</i>		<i>yes</i>		<i>Total</i>	
	No.	%	No.	%	No.	%
AT	3	75.0 ^a	1	25.0 ^a	4	100.0 ^a
BE	12	92.3 ^a	1	7.7 ^a	13	100.0 ^a
DE	20	90.9	2	9.1	22	100.0
FR	47	90.4	5	9.6	52	100.0
IT	43	81.1	10	18.9	53	100.0
Total	125	86.8	19	13.2	144	100.0
Mean		85.9		14.1		100.0

Note: target group: research infrastructures; only respondents who indicated that they are part of an official roadmap are included (see table above including Part 1); row percentages; question-ID: R18; roadmaps were part of the selection criteria for RI; a superscript 'a' indicates that percentages rely on a number of observations below 20 and therefore have to be treated with caution.

Table 6.19: Has your organisation developed informal or formal regulations or publicly available policies that address the following aspects? (Part 1)

	Open access publications													
	no		informal		written		policy		n.a.		no answer		Total	
	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%
AT	4	57.1 ^a	1	14.3 ^a	0	0.0 ^a	2	28.6 ^a	0	0.0 ^a	0	0.0 ^a	7	100.0 ^a
BE	0	0.0	7	35.0	6	30.0	5	25.0	1	5.0	1	5.0	20	100.0
DE	6	9.0	18	26.9	17	25.4	22	32.8	0	0.0	4	6.0	67	100.0
FR	13	24.5	11	20.8	6	11.3	8	15.1	7	13.2	8	15.1	53	100.0
IT	16	23.5	23	33.8	8	11.8	9	13.2	8	11.8	4	5.9	68	100.0
Total	39	18.1	60	27.9	37	17.2	46	21.4	16	7.4	17	7.9	215	100.0
Mean		22.8		26.2		15.7		22.9		6.0		6.4		100.0

Note: target group: research infrastructures; row percentages; original labels of categories: 'no regulation', 'informal regulation', 'formal/written regulation', 'publicly available policy', 'not applicable'; question-ID: R19; a superscript 'a' indicates that percentages rely on a number of observations below 20 and therefore have to be treated with caution.

Table 6.20: Has your organisation developed informal or formal regulations or publicly available policies that address the following aspects? (Part 2)

Research data management (RDM)														
no			informal		written		policy		n.a.		no answer		Total	
No.		%	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%
AT	3	42.9 ^a	2	28.6 ^a	1	14.3 ^a	0	0.0 ^a	0	0.0 ^a	1	14.3 ^a	7	100.0 ^a
BE	2	10.0	8	40.0	7	35.0	2	10.0	0	0.0	1	5.0	20	100.0
DE	7	10.4	17	25.4	22	32.8	14	20.9	3	4.5	4	6.0	67	100.0
FR	3	5.7	13	24.5	12	22.6	14	26.4	4	7.5	7	13.2	53	100.0
IT	15	22.1	21	30.9	14	20.6	4	5.9	9	13.2	5	7.4	68	100.0
Total	30	14.0	61	28.4	56	26.0	34	15.8	16	7.4	18	8.4	215	100.0
Mean		18.2		29.9		25.1		12.6		5.0		9.2		100.0

Note: target group: research infrastructures; row percentages; original labels of categories: ‘no regulation’, ‘informal regulation’, ‘formal/written regulation’, ‘publicly available policy’, ‘not applicable’; question-ID: R19; a superscript ‘a’ indicates that percentages rely on a number of observations below 20 and therefore have to be treated with caution.

Table 6.21: Has your organisation developed informal or formal regulations or publicly available policies that address the following aspects? (Part 3)

Open research data														
no			informal		written		policy		n.a.		no answer		Total	
No.	%		No.	%	No.	%	No.	%	No.	%	No.	%	No.	%
AT	3	42.9 ^a	2	28.6 ^a	0	0.0 ^a	1	14.3 ^a	0	0.0 ^a	1	14.3 ^a	7	100.0 ^a
BE	2	10.0	7	35.0	5	25.0	4	20.0	1	5.0	1	5.0	20	100.0
DE	15	22.4	21	31.3	11	16.4	12	17.9	3	4.5	5	7.5	67	100.0
FR	3	5.7	11	20.8	12	22.6	15	28.3	5	9.4	7	13.2	53	100.0
IT	14	20.6	24	35.3	9	13.2	10	14.7	7	10.3	4	5.9	68	100.0
Total	37	17.2	65	30.2	37	17.2	42	19.5	16	7.4	18	8.4	215	100.0
Mean		20.3		30.2		15.4		19.0		5.8		9.2		100.0

Note: target group: research infrastructures; row percentages; original labels of categories: ‘no regulation’, ‘informal regulation’, ‘formal/written regulation’, ‘publicly available policy’, ‘not applicable’; question-ID: R19; a superscript ‘a’ indicates that percentages rely on a number of observations below 20 and therefore have to be treated with caution.

Table 6.22: Has your organisation developed informal or formal regulations or publicly available policies that address the following aspects? (Part 4)

<i>Long-term availability of research data</i>														
<i>no</i>			<i>informal</i>		<i>written</i>		<i>policy</i>		<i>n.a.</i>		<i>no answer</i>		<i>Total</i>	
No.		%	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%
AT	2	28.6 ^a	2	28.6 ^a	1	14.3 ^a	1	14.3 ^a	0	0.0 ^a	1	14.3 ^a	7	100.0 ^a
BE	3	15.0	6	30.0	6	30.0	4	20.0	0	0.0	1	5.0	20	100.0
DE	9	13.4	19	28.4	20	29.9	13	19.4	1	1.5	5	7.5	67	100.0
FR	2	3.8	13	24.5	12	22.6	16	30.2	4	7.5	6	11.3	53	100.0
IT	19	27.9	23	33.8	8	11.8	9	13.2	5	7.4	4	5.9	68	100.0
Total	35	16.3	63	29.3	47	21.9	43	20.0	10	4.7	17	7.9	215	100.0
Mean		17.7		29.1		21.7		19.4		3.3		8.8		100.0

Note: target group: research infrastructures; row percentages; original labels of categories: 'no regulation', 'informal regulation', 'formal/written regulation', 'publicly available policy', 'not applicable'; question-ID: R19; a superscript 'a' indicates that percentages rely on a number of observations below 20 and therefore have to be treated with caution.

Table 6.23: Has your organisation developed informal or formal regulations or publicly available policies that address the following aspects? (Part 5)

Compliance of data to the FAIR principles														
	no		informal		written		policy		n.a.		no answer		Total	
	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%
AT	3	42.9 ^a	3	42.9 ^a	0	0.0 ^a	0	0.0 ^a	0	0.0 ^a	1	14.3 ^a	7	100.0 ^a
BE	5	25.0	5	25.0	6	30.0	2	10.0	0	0.0	2	10.0	20	100.0
DE	24	35.8	19	28.4	10	14.9	5	7.5	4	6.0	5	7.5	67	100.0
FR	4	7.5	17	32.1	9	17.0	8	15.1	8	15.1	7	13.2	53	100.0
IT	20	29.4	23	33.8	8	11.8	4	5.9	9	13.2	4	5.9	68	100.0
Total	56	26.0	67	31.2	33	15.3	19	8.8	21	9.8	19	8.8	215	100.0
Mean		28.1		32.4		14.7		7.7		6.9		10.2		100.0

Note: target group: research infrastructures; row percentages; original labels of categories: 'no regulation', 'informal regulation', 'formal/written regulation', 'publicly available policy', 'not applicable'; question-ID: R19; a superscript 'a' indicates that percentages rely on a number of observations below 20 and therefore have to be treated with caution.

Table 6.24: Has your organisation developed informal or formal regulations or publicly available policies that address the following aspects? (Part 6)

Publication of data in a repository														
	no		informal		written		policy		n.a.		no answer		Total	
	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%
AT	3	42.9 ^a	0	0.0 ^a	2	28.6 ^a	1	14.3 ^a	0	0.0 ^a	1	14.3 ^a	7	100.0 ^a
BE	2	10.0	9	45.0	2	10.0	5	25.0	1	5.0	1	5.0	20	100.0
DE	15	22.4	25	37.3	13	19.4	7	10.4	3	4.5	4	6.0	67	100.0
FR	6	11.3	9	17.0	13	24.5	11	20.8	8	15.1	6	11.3	53	100.0
IT	15	22.1	20	29.4	18	26.5	7	10.3	4	5.9	4	5.9	68	100.0
Total	41	19.1	63	29.3	48	22.3	31	14.4	16	7.4	16	7.4	215	100.0
Mean		21.7		25.7		21.8		16.2		6.1		8.5		100.0

Note: target group: research infrastructures; row percentages; original labels of categories: 'no regulation', 'informal regulation', 'formal/written regulation', 'publicly available policy', 'not applicable'; question-ID: R19; a superscript 'a' indicates that percentages rely on a number of observations below 20 and therefore have to be treated with caution.

Table 6.25: Has your organisation developed informal or formal regulations or publicly available policies that address the following aspects? (Part 7)

<i>Publication of data in a certified repository</i>														
	<i>no</i>		<i>informal</i>		<i>written</i>		<i>policy</i>		<i>n.a.</i>		<i>no answer</i>		<i>Total</i>	
	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%
AT	3	42.9 ^a	0	0.0 ^a	2	28.6 ^a	1	14.3 ^a	0	0.0 ^a	1	14.3 ^a	7	100.0 ^a
BE	2	10.0	10	50.0	1	5.0	4	20.0	2	10.0	1	5.0	20	100.0
DE	27	40.3	15	22.4	7	10.4	5	7.5	7	10.4	6	9.0	67	100.0
FR	14	26.4	7	13.2	7	13.2	6	11.3	10	18.9	9	17.0	53	100.0
IT	25	36.8	13	19.1	16	23.5	1	1.5	8	11.8	5	7.4	68	100.0
Total	71	33.0	45	20.9	33	15.3	17	7.9	27	12.6	22	10.2	215	100.0
Mean		31.3		20.9		16.1		10.9		10.2		10.5		100.0

Note: target group: research infrastructures; row percentages; original labels of categories: 'no regulation', 'informal regulation', 'formal/written regulation', 'publicly available policy', 'not applicable'; question-ID: R19; a superscript 'a' indicates that percentages rely on a number of observations below 20 and therefore have to be treated with caution.

Table 6.26: Has your organisation developed informal or formal regulations or publicly available policies that address the following aspects? (Part 8)

	<i>Other</i>													
	<i>no</i>		<i>informal</i>		<i>written</i>		<i>policy</i>		<i>n.a.</i>		<i>no answer</i>		<i>Total</i>	
	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%
AT	3	42.9 ^a	0	0.0 ^a	0	0.0 ^a	0	0.0 ^a	0	0.0 ^a	4	57.1 ^a	7	100.0 ^a
BE	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	20	100.0	20	100.0
DE	2	3.0	0	0.0	0	0.0	1	1.5	4	6.0	60	89.6	67	100.0
FR	0	0.0	3	5.7	1	1.9	0	0.0	3	5.7	46	86.8	53	100.0
IT	3	4.4	0	0.0	3	4.4	0	0.0	10	14.7	52	76.5	68	100.0
Total	8	3.7	3	1.4	4	1.9	1	0.5	17	7.9	182	84.7	215	100.0
Mean		10.1		1.1		1.3		0.3		5.3		82.0		100.0

Note: target group: research infrastructures; row percentages; original labels of categories: 'no regulation', 'informal regulation', 'formal/written regulation', 'publicly available policy', 'not applicable'; question-ID: R19; a superscript 'a' indicates that percentages rely on a number of observations below 20 and therefore have to be treated with caution.

6.3 Services

Table 6.27: Does your organisation provide one or more of these services to the research community? (Part 1)

<i>Services: collections, archives or research data</i>								
	<i>no</i>		<i>yes</i>		<i>no answer</i>		<i>Total</i>	
	No.	%	No.	%	No.	%	No.	%
AT	3	42.9 ^a	4	57.1 ^a	0	0.0 ^a	7	100.0 ^a
BE	6	30.0	14	70.0	0	0.0	20	100.0
DE	14	23.3	44	73.3	2	3.3	60	100.0
FR	19	38.0	31	62.0	0	0.0	50	100.0
IT	25	37.9	41	62.1	0	0.0	66	100.0
Total	67	33.0	134	66.0	2	1.0	203	100.0
Mean		34.4		64.9		0.7		100.0

Note: target group: research infrastructures (no other filters applied); row percentages; question-ID: R5; a superscript 'a' indicates that percentages rely on a number of observations below 20 and therefore have to be treated with caution.

Table 6.28: Does your organisation provide one or more of these services to the research community? (Part 2)

<i>Services: data and computing systems, communication networks</i>								
	<i>no</i>		<i>yes</i>		<i>no answer</i>		<i>Total</i>	
	No.	%	No.	%	No.	%	No.	%
AT	4	57.1 ^a	3	42.9 ^a	0	0.0 ^a	7	100.0 ^a
BE	10	50.0	10	50.0	0	0.0	20	100.0
DE	32	53.3	26	43.3	2	3.3	60	100.0
FR	28	56.0	22	44.0	0	0.0	50	100.0
IT	27	40.9	39	59.1	0	0.0	66	100.0
Total	101	49.8	100	49.3	2	1.0	203	100.0
Mean		51.5		47.9		0.7		100.0

Note: target group: research infrastructures (no other filters applied); row percentages; question-ID: R5; a superscript 'a' indicates that percentages rely on a number of observations below 20 and therefore have to be treated with caution.

Table 6.29: Does your organisation provide one or more of these services to the research community? (Part 3)

	<i>Services: major scientific equipment or sets of instruments</i>							
	<i>no</i>		<i>yes</i>		<i>no answer</i>		<i>Total</i>	
	No.	%	No.	%	No.	%	No.	%
AT	6	85.7 ^a	1	14.3 ^a	0	0.0 ^a	7	100.0 ^a
BE	10	50.0	10	50.0	0	0.0	20	100.0
DE	29	48.3	29	48.3	2	3.3	60	100.0
FR	11	22.0	39	78.0	0	0.0	50	100.0
IT	20	30.3	46	69.7	0	0.0	66	100.0
Total	76	37.4	125	61.6	2	1.0	203	100.0
Mean		47.3		52.1		0.7		100.0

Note: target group: research infrastructures (no other filters applied); row percentages; question-ID: R5; a superscript 'a' indicates that percentages rely on a number of observations below 20 and therefore have to be treated with caution.

Table 6.30: Does your organisation provide one or more of these services to the research community? (Part 4)

	<i>Services: none of this list</i>							
	<i>no</i>		<i>yes</i>		<i>no answer</i>		<i>Total</i>	
	No.	%	No.	%	No.	%	No.	%
AT	5	71.4 ^a	2	28.6 ^a	0	0.0 ^a	7	100.0 ^a
BE	18	90.0	2	10.0	0	0.0	20	100.0
DE	52	86.7	6	10.0	2	3.3	60	100.0
FR	48	96.0	2	4.0	0	0.0	50	100.0
IT	65	98.5	1	1.5	0	0.0	66	100.0
Total	188	92.6	13	6.4	2	1.0	203	100.0
Mean		88.5		10.8		0.7		100.0

Note: target group: research infrastructures (no other filters applied); row percentages; question-ID: R5; a superscript 'a' indicates that percentages rely on a number of observations below 20 and therefore have to be treated with caution.

Table 6.31: Does your organisation provide one or more of these services to the research community? (Part 5)

	<i>Services: other</i>							
	<i>no</i>		<i>yes</i>		<i>no answer</i>		<i>Total</i>	
	No.	%	No.	%	No.	%	No.	%
AT	5	71.4 ^a	2	28.6 ^a	0	0.0 ^a	7	100.0 ^a
BE	14	70.0	6	30.0	0	0.0	20	100.0
DE	51	85.0	7	11.7	2	3.3	60	100.0
FR	41	82.0	9	18.0	0	0.0	50	100.0
IT	49	74.2	17	25.8	0	0.0	66	100.0
Total	160	78.8	41	20.2	2	1.0	203	100.0
Mean		76.5		22.8		0.7		100.0

Note: target group: research infrastructures (no other filters applied); row percentages; question-ID: R5; a superscript 'a' indicates that percentages rely on a number of observations below 20 and therefore have to be treated with caution.

Table 6.32: Does your organisation offer data infrastructures which store and manage research data (e.g. archive and disseminate data)?

	<i>Services: store and manage data</i>							
	<i>no</i>		<i>yes</i>		<i>no answer</i>		<i>Total</i>	
	No.	%	No.	%	No.	%	No.	%
AT	4	57.1 ^a	3	42.9 ^a	0	0.0 ^a	7	100.0 ^a
BE	8	40.0	12	60.0	0	0.0	20	100.0
DE	23	38.3	36	60.0	1	1.7	60	100.0
FR	20	40.0	30	60.0	0	0.0	50	100.0
IT	29	43.9	36	54.5	1	1.5	66	100.0
Total	84	41.4	117	57.6	2	1.0	203	100.0
Mean		43.9		55.5		0.6		100.0

Note: target group: research infrastructures; row percentages; question-ID: R30; a superscript 'a' indicates that percentages rely on a number of observations below 20 and therefore have to be treated with caution.

Table 6.33: Does your organisation offer high-bandwidth networks which transport re-search data?

	<i>Services: high-bandwidth networks</i>							
	<i>no</i>		<i>yes</i>		<i>no answer</i>		<i>Total</i>	
	No.	%	No.	%	No.	%	No.	%
AT	5	71.4 ^a	2	28.6 ^a	0	0.0 ^a	7	100.0 ^a
BE	16	80.0	3	15.0	1	5.0	20	100.0
DE	41	68.3	17	28.3	2	3.3	60	100.0
FR	39	78.0	11	22.0	0	0.0	50	100.0
IT	40	60.6	24	36.4	2	3.0	66	100.0
Total	141	69.5	57	28.1	5	2.5	203	100.0
Mean		71.7		26.1		2.3		100.0

Note: target group: research infrastructures; row percentages; question-ID: R31; a superscript 'a' indicates that percentages rely on a number of observations below 20 and therefore have to be treated with caution.

Table 6.34: Does your organisation offer high-performance computing to process research data?

	<i>Services: HPCs</i>							
	<i>no</i>		<i>yes</i>		<i>no answer</i>		<i>Total</i>	
	No.	%	No.	%	No.	%	No.	%
AT	5	71.4 ^a	2	28.6 ^a	0	0.0 ^a	7	100.0 ^a
BE	13	65.0	6	30.0	1	5.0	20	100.0
DE	36	60.0	23	38.3	1	1.7	60	100.0
FR	32	64.0	18	36.0	0	0.0	50	100.0
IT	42	63.6	21	31.8	3	4.5	66	100.0
Total	128	63.1	70	34.5	5	2.5	203	100.0
Mean		64.8		32.9		2.2		100.0

Note: target group: research infrastructures; row percentages; question-ID: R32; a superscript 'a' indicates that percentages rely on a number of observations below 20 and therefore have to be treated with caution.

Table 6.35: Which term(s) fit(s) your organisation best?

	<i>Terms for organisation</i>											
	<i>RI</i>		<i>E-I</i>		<i>both</i>		<i>other</i>		<i>no answer</i>		<i>Total</i>	
	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%
AT	5	71.4 ^a	0	0.0 ^a	0	0.0 ^a	2	28.6 ^a	0	0.0 ^a	7	100.0 ^a
BE	17	85.0	0	0.0	3	15.0	0	0.0	0	0.0	20	100.0
DE	36	60.0	2	3.3	4	6.7	16	26.7	2	3.3	60	100.0
FR	42	84.0	1	2.0	5	10.0	2	4.0	0	0.0	50	100.0
IT	48	72.7	1	1.5	2	3.0	13	19.7	2	3.0	66	100.0
Total	148	72.9	4	2.0	14	6.9	33	16.3	4	2.0	203	100.0
Mean		74.6		1.4		6.9		15.8		1.3		100.0

Note: target group: research infrastructures; row percentages; original labels of categories: 'research infrastructure', 'e-infrastructure', 'both terms are equally valid', 'neither term fits my organisation, the correct term is:'; question-ID: R21; a superscript 'a' indicates that percentages rely on a number of observations below 20 and therefore have to be treated with caution.

7 E-Infrastructures

7.1 The European Open Science Cloud (EOSC)

This section contains frequencies for e-infrastructures on a country level. Frequencies for e-infrastructures in comparison to other target groups are available in chapter 3.

Table 7.1: Considering everything you know about EOSC, how familiar are you with EOSC?

	<i>EOSC familiarity</i>									
	++		+		–		– –		<i>Total</i>	
	No.	%	No.	%	No.	%	No.	%	No.	%
AT	3	7.9	8	21.1	14	36.8	13	34.2	38	100.0
BE	1	5.0	6	30.0	9	45.0	4	20.0	20	100.0
DE	5	5.3	39	41.5	28	29.8	22	23.4	94	100.0
FR	0	0.0	15	60.0	8	32.0	2	8.0	25	100.0
IT	14	9.9	80	56.7	28	19.9	19	13.5	141	100.0
Total	23	7.2	148	46.5	87	27.4	60	18.9	318	100.0
Mean		5.6		41.9		32.7		19.8		100.0

Note: target group: e-infrastructures; row percentages; original labels of categories: ++ 'very familiar', + 'familiar', – 'not very familiar', – – 'not familiar at all'; question-ID: F5U5R12E12.

Table 7.2: How does or will EOSC affect your organisation and/ or your strategic plans?

	<i>Effect of EOSC</i>													
	++		+		-		--		don't know		no answer		Total	
	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%
AT	8	32.0	7	28.0	7	28.0	2	8.0	1	4.0	0	0.0	25	100.0
BE	1	6.3 ^a	11	68.8 ^a	2	12.5 ^a	0	0.0 ^a	1	6.3 ^a	1	6.3 ^a	16	100.0 ^a
DE	12	16.7	38	52.8	9	12.5	0	0.0	12	16.7	1	1.4	72	100.0
FR	2	8.7	17	73.9	1	4.3	2	8.7	0	0.0	1	4.3	23	100.0
IT	54	44.3	49	40.2	12	9.8	0	0.0	6	4.9	1	0.8	122	100.0
Total	77	29.8	122	47.3	31	12.0	4	1.6	20	7.8	4	1.6	258	100.0
Mean		21.6		52.7		13.4		3.3		6.4		2.6		100.0

Note: target group: e-infrastructures; row percentages; question only asked to respondents who did not indicate to be 'not familiar at all' with EOSC; original labels of categories: ++ 'very much', + 'somewhat', - 'not very much', -- 'not at all'; question-ID: F6U6R13E13; a superscript 'a' indicates that percentages rely on a number of observations below 20 and therefore have to be treated with caution.

Table 7.3: Will your organisation benefit from the implementation of EOSC?

	<i>Benefit from EOSC</i>													
	++		+		-		--		don't know		no answer		Total	
	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%
AT	6	24.0	9	36.0	2	8.0	1	4.0	7	28.0	0	0.0	25	100.0
BE	2	12.5 ^a	8	50.0 ^a	1	6.3 ^a	1	6.3 ^a	2	12.5 ^a	2	12.5 ^a	16	100.0 ^a
DE	12	16.7	31	43.1	5	6.9	0	0.0	22	30.6	2	2.8	72	100.0
FR	1	4.3	15	65.2	1	4.3	3	13.0	3	13.0	0	0.0	23	100.0
IT	59	48.4	43	35.2	6	4.9	1	0.8	12	9.8	1	0.8	122	100.0
Total	80	31.0	106	41.1	15	5.8	6	2.3	46	17.8	5	1.9	258	100.0
Mean		21.2		45.9		6.1		4.8		18.8		3.2		100.0

Note: target group: e-infrastructures; row percentages; question only asked to respondents who did not indicate to be 'not familiar at all' with EOSC; original labels of categories: ++ 'very much', + 'somewhat', - 'not very much', -- 'not at all'; question-ID: F7U7R14E14; a superscript 'a' indicates that percentages rely on a number of observations below 20 and therefore have to be treated with caution.

Table 7.4: Is your organisation already contributing to EOSC?

	<i>Already contributing to EOSC</i>									
	<i>no</i>		<i>yes</i>		<i>don't know</i>		<i>no answer</i>		<i>Total</i>	
	No.	%	No.	%	No.	%	No.	%	No.	%
AT	10	40.0	9	36.0	6	24.0	0	0.0	25	100.0
BE	8	50.0 ^a	5	31.3 ^a	0	0.0 ^a	3	18.8 ^a	16	100.0 ^a
DE	36	50.0	20	27.8	14	19.4	2	2.8	72	100.0
FR	10	43.5	11	47.8	2	8.7	0	0.0	23	100.0
IT	30	24.6	71	58.2	19	15.6	2	1.6	122	100.0
Total	94	36.4	116	45.0	41	15.9	7	2.7	258	100.0
Mean		41.6		40.2		13.5		4.6		100.0

Note: target group: e-infrastructures; row percentages; question was asked to e-infrastructures, research infrastructures and universities; question only asked to respondents who did not indicate to be 'not familiar at all' with EOSC; question-ID: U94R94E94; a superscript 'a' indicates that percentages rely on a number of observations below 20 and therefore have to be treated with caution.

Table 7.5: How likely is it that your organisation will contribute to EOSC?

	<i>Likelihood of contribution to EOSC</i>													
	++		+		-		--		<i>don't know</i>		<i>no answer</i>		<i>Total</i>	
	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%
AT	1	6.3 ^a	6	37.5 ^a	3	18.8 ^a	0	0.0 ^a	6	37.5 ^a	0	0.0 ^a	16	100.0 ^a
BE	2	18.2 ^a	4	36.4 ^a	0	0.0 ^a	1	9.1 ^a	1	9.1 ^a	3	27.3 ^a	11	100.0 ^a
DE	5	9.6	29	55.8	3	5.8	0	0.0	12	23.1	3	5.8	52	100.0
FR	1	8.3 ^a	5	41.7 ^a	1	8.3 ^a	0	0.0 ^a	5	41.7 ^a	0	0.0 ^a	12	100.0 ^a
IT	8	15.7	25	49.0	2	3.9	0	0.0	15	29.4	1	2.0	51	100.0
Total	17	12.0	69	48.6	9	6.3	1	0.7	39	27.5	7	4.9	142	100.0
Mean		11.6		44.1		7.4		1.8		28.2		7.0		100.0

Note: target group: e-infrastructures; row percentages; question was asked to e-infrastructures, research infrastructures and universities; question only asked to respondents who did not indicate to be 'not familiar at all' with EOSC and who do not already contribute to EOSC (question U94R94E94); original labels of categories: ++ 'very much', + 'somewhat', - 'not very much', - - 'not at all'; question-ID: U8R15E15; a superscript 'a' indicates that percentages rely on a number of observations below 20 and therefore have to be treated with caution.

Table 7.6: How beneficial is/ will be contributing to EOSC for your organisation?

	<i>Degree of benefit from contributing to EOSC</i>													
	++		+		-		--		don't know		no answer		Total	
	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%
AT	6	24.0	11	44.0	2	8.0	0	0.0	6	24.0	0	0.0	25	100.0
BE	1	6.3 ^a	8	50.0 ^a	1	6.3 ^a	1	6.3 ^a	1	6.3 ^a	4	25.0 ^a	16	100.0 ^a
DE	14	19.4	33	45.8	6	8.3	0	0.0	16	22.2	3	4.2	72	100.0
FR	5	21.7	10	43.5	1	4.3	0	0.0	6	26.1	1	4.3	23	100.0
IT	64	52.5	34	27.9	7	5.7	0	0.0	15	12.3	2	1.6	122	100.0
Total	90	34.9	96	37.2	17	6.6	1	0.4	44	17.1	10	3.9	258	100.0
Mean		24.8		42.2		6.5		1.3		18.2		7.0		100.0

Note: target group: e-infrastructure; row percentages; question only asked to respondents who did not indicate to be 'not familiar at all' with EOSC; original labels of categories: ++ 'very beneficial', + 'somewhat beneficial', - 'not very beneficial', -- 'not beneficial at all'; question-ID: F9U9R16E16; a superscript 'a' indicates that percentages rely on a number of observations below 20 and therefore have to be treated with caution.

Table 7.7: How familiar are you with the FAIR principles regarding data?

	<i>Familiarity with FAIR principles</i>											
	++		+		-		--		no answer		Total	
	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%
AT	12	31.6	15	39.5	9	23.7	2	5.3	0	0.0	38	100.0
BE	6	30.0	9	45.0	2	10.0	1	5.0	2	10.0	20	100.0
DE	63	67.0	18	19.1	10	10.6	3	3.2	0	0.0	94	100.0
FR	8	32.0	15	60.0	2	8.0	0	0.0	0	0.0	25	100.0
IT	53	37.6	62	44.0	17	12.1	5	3.5	4	2.8	141	100.0
Total	142	44.7	119	37.4	40	12.6	11	3.5	6	1.9	318	100.0
Mean		39.6		41.5		12.9		3.4		2.6		100.0

Note: target group: e-infrastructure; row percentages; question-ID: F17U12R20E62.

7.2 General information

Table 7.8: Is your organisation part of or related to another organisation which facilitates integrating your data and services into EOSC?

	<i>Part of organisation that facilitates EOSC integration</i>									
	<i>no</i>		<i>yes</i>		<i>don't know</i>		<i>no answer</i>		<i>Total</i>	
	No.	%	No.	%	No.	%	No.	%	No.	%
AT	15	39.5	6	15.8	16	42.1	1	2.6	38	100.0
BE	10	52.6 ^a	6	31.6 ^a	3	15.8 ^a	0	0.0 ^a	19	100.0 ^a
DE	32	36.0	30	33.7	25	28.1	2	2.2	89	100.0
FR	5	20.8	13	54.2	6	25.0	0	0.0	24	100.0
IT	26	19.4	79	59.0	29	21.6	0	0.0	134	100.0
Total	88	28.9	134	44.1	79	26.0	3	1.0	304	100.0
Mean		33.7		38.9		26.5		1.0		100.0

Note: target group: e-infrastructure; row percentages; question-ID: E84; a superscript 'a' indicates that percentages rely on a number of observations below 20 and therefore have to be treated with caution.

Table 7.9: Is your organisation in an official roadmap? (Part 1)

	<i>Roadmap: yes/no</i>									
	<i>no</i>		<i>yes</i>		<i>don't know</i>		<i>no answer</i>		<i>Total</i>	
	No.	%	No.	%	No.	%	No.	%	No.	%
AT	16	42.1	8	21.1	12	31.6	2	5.3	38	100.0
BE	6	31.6 ^a	10	52.6 ^a	2	10.5 ^a	1	5.3 ^a	19	100.0 ^a
DE	33	37.1	32	36.0	23	25.8	1	1.1	89	100.0
FR	7	29.2	14	58.3	3	12.5	0	0.0	24	100.0
IT	34	25.4	75	56.0	25	18.7	0	0.0	134	100.0
Total	96	31.6	139	45.7	65	21.4	4	1.3	304	100.0
Mean		33.1		44.8		19.8		2.3		100.0

Note: target group: e-infrastructure; row percentages; question-ID: E24; a superscript 'a' indicates that percentages rely on a number of observations below 20 and therefore have to be treated with caution.

Table 7.10: Is your organisation in an official roadmap? (Part 2)

	<i>Roadmap: yes, national</i>					
	<i>no</i>		<i>yes</i>		<i>Total</i>	
	No.	%	No.	%	No.	%
AT	3	37.5 ^a	5	62.5 ^a	8	100.0 ^a
BE	8	80.0 ^a	2	20.0 ^a	10	100.0 ^a
DE	17	53.1	15	46.9	32	100.0
FR	3	21.4 ^a	11	78.6 ^a	14	100.0 ^a
IT	22	29.3	53	70.7	75	100.0
Total	53	38.1	86	61.9	139	100.0
Mean		44.3		55.7		100.0

Note: target group: e-infrastructures; only respondents who indicated that they are part of an official roadmap are included (see table above showing Part 1 of question E24); row percentages; question-ID: E24; a superscript 'a' indicates that percentages rely on a number of observations below 20 and therefore have to be treated with caution.

Table 7.11: Is your organisation in an official roadmap? (Part 3)

	<i>Roadmap: yes, ESFRI</i>					
	<i>no</i>		<i>yes</i>		<i>Total</i>	
	No.	%	No.	%	No.	%
AT	4	50.0 ^a	4	50.0 ^a	8	100.0 ^a
BE	3	30.0 ^a	7	70.0 ^a	10	100.0 ^a
DE	16	50.0	16	50.0	32	100.0
FR	9	64.3 ^a	5	35.7 ^a	14	100.0 ^a
IT	48	64.0	27	36.0	75	100.0
Total	80	57.6	59	42.4	139	100.0
Mean		51.7		48.3		100.0

Note: target group: e-infrastructures; only respondents who indicated that they are part of an official roadmap are included (see table above showing Part 1 of question E24); row percentages; question-ID: E24; a superscript 'a' indicates that percentages rely on a number of observations below 20 and therefore have to be treated with caution.

Table 7.12: Is your organisation in an official roadmap? (Part 4)

	<i>Roadmap: other</i>					
	<i>no</i>		<i>yes</i>		<i>Total</i>	
	No.	%	No.	%	No.	%
AT	6	75.0 ^a	2	25.0 ^a	8	100.0 ^a
BE	8	80.0 ^a	2	20.0 ^a	10	100.0 ^a
DE	26	81.3	6	18.8	32	100.0
FR	9	64.3 ^a	5	35.7 ^a	14	100.0 ^a
IT	63	84.0	12	16.0	75	100.0
Total	112	80.6	27	19.4	139	100.0
Mean		76.9		23.1		100.0

Note: target group: e-infrastructures; only respondents who indicated that they are part of an official roadmap are included (see table above showing Part 1 of question E24); row percentages; question-ID: E24; a superscript 'a' indicates that percentages rely on a number of observations below 20 and therefore have to be treated with caution.

Table 7.13: Does your organisation participate in the following European organisations? (Part 1)

	<i>Participation in any of the following European organisations: yes/no</i>									
	<i>no</i>		<i>yes</i>		<i>don't know</i>		<i>no answer</i>		<i>Total</i>	
	No.	%	No.	%	No.	%	No.	%	No.	%
AT	19	50.0	11	28.9	6	15.8	2	5.3	38	100.0
BE	7	36.8 ^a	4	21.1 ^a	6	31.6 ^a	2	10.5 ^a	19	100.0 ^a
DE	45	50.6	26	29.2	15	16.9	3	3.4	89	100.0
FR	6	25.0	13	54.2	4	16.7	1	4.2	24	100.0
IT	37	27.6	72	53.7	24	17.9	1	0.7	134	100.0
Total	114	37.5	126	41.4	55	18.1	9	3.0	304	100.0
Mean		38.0		37.4		19.8		4.8		100.0

Note: target group: e-infrastructures; row percentages; question-ID: E37; a superscript 'a' indicates that percentages rely on a number of observations below 20 and therefore have to be treated with caution.

Table 7.14: Does your organisation participate in the following European organisations?
(Part 2)

	<i>Participation: EGI</i>					
	<i>no</i>		<i>yes</i>		<i>Total</i>	
	No.	%	No.	%	No.	%
AT	10	90.9 ^a	1	9.1 ^a	11	100.0 ^a
BE	2	50.0 ^a	2	50.0 ^a	4	100.0 ^a
DE	24	92.3	2	7.7	26	100.0
FR	7	53.8 ^a	6	46.2 ^a	13	100.0 ^a
IT	35	48.6	37	51.4	72	100.0
Total	78	61.9	48	38.1	126	100.0
Mean		67.1		32.9		100.0

Note: target group: e-infrastructures; only respondents who indicated that they are part of an official roadmap are included (see table above showing Part 1 of question E37); row percentages; question-ID: E37; a superscript 'a' indicates that percentages rely on a number of observations below 20 and therefore have to be treated with caution.

Table 7.15: Does your organisation participate in the following European organisations?
(Part 3)

	<i>Participation: EUDAT</i>					
	<i>no</i>		<i>yes</i>		<i>Total</i>	
	No.	%	No.	%	No.	%
AT	9	81.8 ^a	2	18.2 ^a	11	100.0 ^a
BE	4	100.0 ^a	0	0.0 ^a	4	100.0 ^a
DE	15	57.7	11	42.3	26	100.0
FR	12	92.3 ^a	1	7.7 ^a	13	100.0 ^a
IT	54	75.0	18	25.0	72	100.0
Total	94	74.6	32	25.4	126	100.0
Mean		81.4		18.6		100.0

Note: target group: e-infrastructures; only respondents who indicated that they are part of an official roadmap are included (see table above showing Part 1 of question E37); row percentages; question-ID: E37; a superscript 'a' indicates that percentages rely on a number of observations below 20 and therefore have to be treated with caution.

Table 7.16: Does your organisation participate in the following European organisations?
(Part 4)

	<i>Participation: PRACE</i>					
	<i>no</i>		<i>yes</i>		<i>Total</i>	
	No.	%	No.	%	No.	%
AT	8	72.7 ^a	3	27.3 ^a	11	100.0 ^a
BE	1	25.0 ^a	3	75.0 ^a	4	100.0 ^a
DE	23	88.5	3	11.5	26	100.0
FR	11	84.6 ^a	2	15.4 ^a	13	100.0 ^a
IT	63	87.5	9	12.5	72	100.0
Total	106	84.1	20	15.9	126	100.0
Mean		71.7		28.3		100.0

Note: target group: e-infrastructures; only respondents who indicated that they are part of an official roadmap are included (see table above showing Part 1 of question E37); row percentages; question-ID: E37; a superscript 'a' indicates that percentages rely on a number of observations below 20 and therefore have to be treated with caution.

Table 7.17: Does your organisation participate in the following European organisations?
(Part 5)

	<i>Participation: other</i>					
	<i>no</i>		<i>yes</i>		<i>Total</i>	
	No.	%	No.	%	No.	%
AT	5	45.5 ^a	6	54.5 ^a	11	100.0 ^a
BE	2	50.0 ^a	2	50.0 ^a	4	100.0 ^a
DE	11	42.3	15	57.7	26	100.0
FR	8	61.5 ^a	5	38.5 ^a	13	100.0 ^a
IT	45	62.5	27	37.5	72	100.0
Total	71	56.3	55	43.7	126	100.0
Mean		52.4		47.6		100.0

Note: target group: e-infrastructures; only respondents who indicated that they are part of an official roadmap are included (see table above showing Part 1 of question E37); row percentages; question-ID: E37; a superscript 'a' indicates that percentages rely on a number of observations below 20 and therefore have to be treated with caution.

Table 7.18: Which service(s) does your organisation provide to the research community?
(Part 1)

<i>We offer data infrastructures which store and manage research data.</i>								
	<i>no</i>		<i>yes</i>		<i>no answer</i>		<i>Total</i>	
	No.	%	No.	%	No.	%	No.	%
AT	2	5.3	28	73.7	8	21.1	38	100.0
BE	2	10.5 ^a	11	57.9 ^a	6	31.6 ^a	19	100.0 ^a
DE	1	1.1	82	92.1	6	6.7	89	100.0
FR	4	16.7	19	79.2	1	4.2	24	100.0
IT	8	6.0	113	84.3	13	9.7	134	100.0
Total	17	5.6	253	83.2	34	11.2	304	100.0
Mean		7.9		77.4		14.7		100.0

Note: target group: e-infrastructures; row percentages; question-ID: E1; a superscript 'a' indicates that percentages rely on a number of observations below 20 and therefore have to be treated with caution.

Table 7.19: Which service(s) does your organisation provide to the research community?
(Part 2)

<i>We offer high-bandwidth networks which transport research data.</i>								
	<i>no</i>		<i>yes</i>		<i>no answer</i>		<i>Total</i>	
	No.	%	No.	%	No.	%	No.	%
AT	22	57.9	8	21.1	8	21.1	38	100.0
BE	11	57.9 ^a	2	10.5 ^a	6	31.6 ^a	19	100.0 ^a
DE	76	85.4	7	7.9	6	6.7	89	100.0
FR	18	75.0	5	20.8	1	4.2	24	100.0
IT	112	83.6	9	6.7	13	9.7	134	100.0
Total	239	78.6	31	10.2	34	11.2	304	100.0
Mean		72.0		13.4		14.7		100.0

Note: target group: e-infrastructures; row percentages; question-ID: E1; a superscript 'a' indicates that percentages rely on a number of observations below 20 and therefore have to be treated with caution.

Table 7.20: Which service(s) does your organisation provide to the research community?
(Part 3)

<i>We offer high-performance computing which can be used to process research data.</i>								
	<i>no</i>		<i>yes</i>		<i>no answer</i>		<i>Total</i>	
	No.	%	No.	%	No.	%	No.	%
AT	21	55.3	9	23.7	8	21.1	38	100.0
BE	9	47.4 ^a	4	21.1 ^a	6	31.6 ^a	19	100.0 ^a
DE	68	76.4	15	16.9	6	6.7	89	100.0
FR	12	50.0	11	45.8	1	4.2	24	100.0
IT	91	67.9	30	22.4	13	9.7	134	100.0
Total	201	66.1	69	22.7	34	11.2	304	100.0
Mean		59.4		26.0		14.7		100.0

Note: target group: e-infrastructures; row percentages; question-ID: E1; a superscript 'a' indicates that percentages rely on a number of observations below 20 and therefore have to be treated with caution.

7.3 Funding and business models

Questions of this section (along with questions of several of the following sections) were asked once per service that the respondents indicated to provide (as shown in Table 7.18, Table 7.19 and Table 7.20). The answers to these questions are analysed using a stacked dataset that combines all the services. Therefore, unless otherwise specified, the tables of this section and several of the following sections give information on e-infrastructures that "store and manage research data" (Table 7.18), e-infrastructures that "offer high-bandwidth networks which transport research data" (Table 7.19) and e-infrastructures that "offer high-performance computing" (Table 7.20).

Table 7.21: For which scientific discipline(s) does your organisation provide services? (Part 1)

	<i>Natural Sciences</i>									
	<i>no</i>		<i>yes</i>		<i>n.a.</i>		<i>no answer</i>		<i>Total</i>	
	No.	%	No.	%	No.	%	No.	%	No.	%
AT	12	32.4	24	64.9	0	0.0	1	2.7	37	100.0
BE	4	26.7 ^a	10	66.7 ^a	1	6.7 ^a	0	0.0 ^a	15	100.0 ^a
DE	26	27.4	69	72.6	0	0.0	0	0.0	95	100.0
FR	3	9.4	29	90.6	0	0.0	0	0.0	32	100.0
IT	71	49.7	71	49.7	0	0.0	1	0.7	143	100.0
Total	116	36.0	203	63.0	1	0.3	2	0.6	322	100.0
Mean		29.1		68.9		1.3		0.7		100.0

Note: target group: e-infrastructures; stacked dataset of all services; responses in the category 'other' were recoded to the individual categories whenever possible; row percentages; question-ID: E18; a superscript 'a' indicates that percentages rely on a number of observations below 20 and therefore have to be treated with caution.

Table 7.22: For which scientific discipline(s) does your organisation provide services?
(Part 2)

	<i>Engineering and Technology</i>									
	<i>no</i>		<i>yes</i>		<i>n.a.</i>		<i>no answer</i>		<i>Total</i>	
	No.	%	No.	%	No.	%	No.	%	No.	%
AT	19	51.4	17	45.9	0	0.0	1	2.7	37	100.0
BE	9	60.0 ^a	5	33.3 ^a	1	6.7 ^a	0	0.0 ^a	15	100.0 ^a
DE	65	68.4	30	31.6	0	0.0	0	0.0	95	100.0
FR	11	34.4	21	65.6	0	0.0	0	0.0	32	100.0
IT	88	61.5	54	37.8	0	0.0	1	0.7	143	100.0
Total	192	59.6	127	39.4	1	0.3	2	0.6	322	100.0
Mean		55.1		42.8		1.3		0.7		100.0

Note: target group: e-infrastructures; stacked dataset of all services; responses in the category 'other' were recoded to the individual categories whenever possible; row percentages; question-ID: E18; a superscript 'a' indicates that percentages rely on a number of observations below 20 and therefore have to be treated with caution.

Table 7.23: For which scientific discipline(s) does your organisation provide services?
(Part 3)

	<i>Medical and Health Sciences</i>									
	<i>no</i>		<i>yes</i>		<i>n.a.</i>		<i>no answer</i>		<i>Total</i>	
	No.	%	No.	%	No.	%	No.	%	No.	%
AT	24	64.9	12	32.4	0	0.0	1	2.7	37	100.0
BE	6	40.0 ^a	8	53.3 ^a	1	6.7 ^a	0	0.0 ^a	15	100.0 ^a
DE	68	71.6	27	28.4	0	0.0	0	0.0	95	100.0
FR	15	46.9	17	53.1	0	0.0	0	0.0	32	100.0
IT	107	74.8	35	24.5	0	0.0	1	0.7	143	100.0
Total	220	68.3	99	30.7	1	0.3	2	0.6	322	100.0
Mean		59.6		38.3		1.3		0.7		100.0

Note: target group: e-infrastructures; stacked dataset of all services; responses in the category 'other' were recoded to the individual categories whenever possible; row percentages; question-ID: E18; a superscript 'a' indicates that percentages rely on a number of observations below 20 and therefore have to be treated with caution.

Table 7.24: For which scientific discipline(s) does your organisation provide services?
(Part 4)

	<i>Agricultural Sciences</i>									
	<i>no</i>		<i>yes</i>		<i>n.a.</i>		<i>no answer</i>		<i>Total</i>	
	No.	%	No.	%	No.	%	No.	%	No.	%
AT	28	75.7	8	21.6	0	0.0	1	2.7	37	100.0
BE	9	60.0 ^a	5	33.3 ^a	1	6.7 ^a	0	0.0 ^a	15	100.0 ^a
DE	69	72.6	26	27.4	0	0.0	0	0.0	95	100.0
FR	20	62.5	12	37.5	0	0.0	0	0.0	32	100.0
IT	99	69.2	43	30.1	0	0.0	1	0.7	143	100.0
Total	225	69.9	94	29.2	1	0.3	2	0.6	322	100.0
Mean		68.0		30.0		1.3		0.7		100.0

Note: target group: e-infrastructures; stacked dataset of all services; responses in the category 'other' were recoded to the individual categories whenever possible; row percentages; question-ID: E18; a superscript 'a' indicates that percentages rely on a number of observations below 20 and therefore have to be treated with caution.

Table 7.25: For which scientific discipline(s) does your organisation provide services?
(Part 5)

	<i>Social Sciences</i>									
	<i>no</i>		<i>yes</i>		<i>n.a.</i>		<i>no answer</i>		<i>Total</i>	
	No.	%	No.	%	No.	%	No.	%	No.	%
AT	21	56.8	15	40.5	0	0.0	1	2.7	37	100.0
BE	9	60.0 ^a	5	33.3 ^a	1	6.7 ^a	0	0.0 ^a	15	100.0 ^a
DE	61	64.2	34	35.8	0	0.0	0	0.0	95	100.0
FR	15	46.9	17	53.1	0	0.0	0	0.0	32	100.0
IT	105	73.4	37	25.9	0	0.0	1	0.7	143	100.0
Total	211	65.5	108	33.5	1	0.3	2	0.6	322	100.0
Mean		60.3		37.7		1.3		0.7		100.0

Note: target group: e-infrastructures; stacked dataset of all services; responses in the category 'other' were recoded to the individual categories whenever possible; row percentages; question-ID: E18; a superscript 'a' indicates that percentages rely on a number of observations below 20 and therefore have to be treated with caution.

Table 7.26: For which scientific discipline(s) does your organisation provide services?
(Part 6)

	<i>Humanities</i>									
	<i>no</i>		<i>yes</i>		<i>n.a.</i>		<i>no answer</i>		<i>Total</i>	
	No.	%	No.	%	No.	%	No.	%	No.	%
AT	15	40.5	21	56.8	0	0.0	1	2.7	37	100.0
BE	8	53.3 ^a	6	40.0 ^a	1	6.7 ^a	0	0.0 ^a	15	100.0 ^a
DE	67	70.5	28	29.5	0	0.0	0	0.0	95	100.0
FR	18	56.3	14	43.8	0	0.0	0	0.0	32	100.0
IT	62	43.4	80	55.9	0	0.0	1	0.7	143	100.0
Total	170	52.8	149	46.3	1	0.3	2	0.6	322	100.0
Mean		52.8		45.2		1.3		0.7		100.0

Note: target group: e-infrastructures; stacked dataset of all services; responses in the category 'other' were recoded to the individual categories whenever possible; row percentages; question-ID: E18; a superscript 'a' indicates that percentages rely on a number of observations below 20 and therefore have to be treated with caution.

Table 7.27: For which scientific discipline(s) does your organisation provide services?
(Part 7)

	<i>Other</i>									
	<i>no</i>		<i>yes</i>		<i>n.a.</i>		<i>no answer</i>		<i>Total</i>	
	No.	%	No.	%	No.	%	No.	%	No.	%
AT	34	91.9	2	5.4	0	0.0	1	2.7	37	100.0
BE	12	80.0 ^a	2	13.3 ^a	1	6.7 ^a	0	0.0 ^a	15	100.0 ^a
DE	92	96.8	3	3.2	0	0.0	0	0.0	95	100.0
FR	31	96.9	1	3.1	0	0.0	0	0.0	32	100.0
IT	138	96.5	4	2.8	0	0.0	1	0.7	143	100.0
Total	307	95.3	12	3.7	1	0.3	2	0.6	322	100.0
Mean		92.4		5.6		1.3		0.7		100.0

Note: target group: e-infrastructures; stacked dataset of all services; responses in the category 'other' were recoded to the individual categories whenever possible; row percentages; question-ID: E18; a superscript 'a' indicates that percentages rely on a number of observations below 20 and therefore have to be treated with caution.

Table 7.28: Who recurrently provides funding to your organisation? (Part 1)

	<i>Research institution(s)</i>							
	<i>no</i>		<i>yes</i>		<i>no answer</i>		<i>Total</i>	
	No.	%	No.	%	No.	%	No.	%
AT	21	56.8	14	37.8	2	5.4	37	100.0
BE	12	80.0 ^a	2	13.3 ^a	1	6.7 ^a	15	100.0 ^a
DE	61	64.2	32	33.7	2	2.1	95	100.0
FR	4	12.5	28	87.5	0	0.0	32	100.0
IT	109	76.2	33	23.1	1	0.7	143	100.0
Total	207	64.3	109	33.9	6	1.9	322	100.0
Mean		57.9		39.1		3.0		100.0

Note: target group: e-infrastructures; stacked dataset of all services; row percentages; question-ID: E19; a superscript 'a' indicates that percentages rely on a number of observations below 20 and therefore have to be treated with caution.

Table 7.29: Who recurrently provides funding to your organisation? (Part 2)

	<i>University</i>							
	<i>no</i>		<i>yes</i>		<i>no answer</i>		<i>Total</i>	
	No.	%	No.	%	No.	%	No.	%
AT	19	51.4	16	43.2	2	5.4	37	100.0
BE	13	86.7 ^a	1	6.7 ^a	1	6.7 ^a	15	100.0 ^a
DE	67	70.5	26	27.4	2	2.1	95	100.0
FR	11	34.4	21	65.6	0	0.0	32	100.0
IT	105	73.4	37	25.9	1	0.7	143	100.0
Total	215	66.8	101	31.4	6	1.9	322	100.0
Mean		63.3		33.8		3.0		100.0

Note: target group: e-infrastructures; stacked dataset of all services; row percentages; question-ID: E19; a superscript 'a' indicates that percentages rely on a number of observations below 20 and therefore have to be treated with caution.

Table 7.30: Who recurrently provides funding to your organisation? (Part 3)

	<i>State/ministry</i>							
	<i>no</i>		<i>yes</i>		<i>no answer</i>		<i>Total</i>	
	No.	%	No.	%	No.	%	No.	%
AT	10	27.0	25	67.6	2	5.4	37	100.0
BE	5	33.3 ^a	9	60.0 ^a	1	6.7 ^a	15	100.0 ^a
DE	24	25.3	69	72.6	2	2.1	95	100.0
FR	12	37.5	20	62.5	0	0.0	32	100.0
IT	39	27.3	103	72.0	1	0.7	143	100.0
Total	90	28.0	226	70.2	6	1.9	322	100.0
Mean		30.1		66.9		3.0		100.0

Note: target group: e-infrastructures; stacked dataset of all services; row percentages; question-ID: E19; a superscript 'a' indicates that percentages rely on a number of observations below 20 and therefore have to be treated with caution.

Table 7.31: Who recurrently provides funding to your organisation? (Part 4)

	<i>Region/town</i>							
	<i>no</i>		<i>yes</i>		<i>no answer</i>		<i>Total</i>	
	No.	%	No.	%	No.	%	No.	%
AT	25	67.6	10	27.0	2	5.4	37	100.0
BE	9	60.0 ^a	5	33.3 ^a	1	6.7 ^a	15	100.0 ^a
DE	81	85.3	12	12.6	2	2.1	95	100.0
FR	17	53.1	15	46.9	0	0.0	32	100.0
IT	99	69.2	43	30.1	1	0.7	143	100.0
Total	231	71.7	85	26.4	6	1.9	322	100.0
Mean		67.0		30.0		3.0		100.0

Note: target group: e-infrastructures; stacked dataset of all services; row percentages; question-ID: E19; a superscript 'a' indicates that percentages rely on a number of observations below 20 and therefore have to be treated with caution.

Table 7.32: Who recurrently provides funding to your organisation? (Part 5)

	<i>Research communities</i>							
	<i>no</i>		<i>yes</i>		<i>no answer</i>		<i>Total</i>	
	No.	%	No.	%	No.	%	No.	%
AT	31	83.8	4	10.8	2	5.4	37	100.0
BE	12	80.0 ^a	2	13.3 ^a	1	6.7 ^a	15	100.0 ^a
DE	83	87.4	10	10.5	2	2.1	95	100.0
FR	20	62.5	12	37.5	0	0.0	32	100.0
IT	130	90.9	12	8.4	1	0.7	143	100.0
Total	276	85.7	40	12.4	6	1.9	322	100.0
Mean		80.9		16.1		3.0		100.0

Note: target group: e-infrastructures; stacked dataset of all services; row percentages; question-ID: E19; a superscript ‘a’ indicates that percentages rely on a number of observations below 20 and therefore have to be treated with caution.

Table 7.33: Who recurrently provides funding to your organisation? (Part 6)

	<i>European funds</i>							
	<i>no</i>		<i>yes</i>		<i>no answer</i>		<i>Total</i>	
	No.	%	No.	%	No.	%	No.	%
AT	15	40.5	20	54.1	2	5.4	37	100.0
BE	8	53.3 ^a	6	40.0 ^a	1	6.7 ^a	15	100.0 ^a
DE	57	60.0	36	37.9	2	2.1	95	100.0
FR	16	50.0	16	50.0	0	0.0	32	100.0
IT	30	21.0	112	78.3	1	0.7	143	100.0
Total	126	39.1	190	59.0	6	1.9	322	100.0
Mean		45.0		52.1		3.0		100.0

Note: target group: e-infrastructures; stacked dataset of all services; row percentages; question-ID: E19; a superscript ‘a’ indicates that percentages rely on a number of observations below 20 and therefore have to be treated with caution.

Table 7.34: Who recurrently provides funding to your organisation? (Part 7)

	<i>Industry/small and medium-sized enterprises (SMEs)</i>							
	<i>no</i>		<i>yes</i>		<i>no answer</i>		<i>Total</i>	
	No.	%	No.	%	No.	%	No.	%
AT	31	83.8	4	10.8	2	5.4	37	100.0
BE	12	80.0 ^a	2	13.3 ^a	1	6.7 ^a	15	100.0 ^a
DE	85	89.5	8	8.4	2	2.1	95	100.0
FR	31	96.9	1	3.1	0	0.0	32	100.0
IT	117	81.8	25	17.5	1	0.7	143	100.0
Total	276	85.7	40	12.4	6	1.9	322	100.0
Mean		86.4		10.6		3.0		100.0

Note: target group: e-infrastructures; stacked dataset of all services; row percentages; question-ID: E19; a superscript 'a' indicates that percentages rely on a number of observations below 20 and therefore have to be treated with caution.

Table 7.35: Who recurrently provides funding to your organisation? (Part 8)

	<i>Funding agencies/funding bodies</i>							
	<i>no</i>		<i>yes</i>		<i>no answer</i>		<i>Total</i>	
	No.	%	No.	%	No.	%	No.	%
AT	19	51.4	16	43.2	2	5.4	37	100.0
BE	10	66.7 ^a	4	26.7 ^a	1	6.7 ^a	15	100.0 ^a
DE	43	45.3	50	52.6	2	2.1	95	100.0
FR	26	81.3	6	18.8	0	0.0	32	100.0
IT	122	85.3	20	14.0	1	0.7	143	100.0
Total	220	68.3	96	29.8	6	1.9	322	100.0
Mean		66.0		31.1		3.0		100.0

Note: target group: e-infrastructures; stacked dataset of all services; row percentages; question-ID: E19; a superscript 'a' indicates that percentages rely on a number of observations below 20 and therefore have to be treated with caution.

Table 7.36: Who recurrently provides funding to your organisation? (Part 9)

	<i>Other</i>							
	<i>no</i>		<i>yes</i>		<i>no answer</i>		<i>Total</i>	
	No.	%	No.	%	No.	%	No.	%
AT	31	83.8	4	10.8	2	5.4	37	100.0
BE	10	66.7 ^a	4	26.7 ^a	1	6.7 ^a	15	100.0 ^a
DE	92	96.8	1	1.1	2	2.1	95	100.0
FR	32	100.0	0	0.0	0	0.0	32	100.0
IT	132	92.3	10	7.0	1	0.7	143	100.0
Total	297	92.2	19	5.9	6	1.9	322	100.0
Mean		87.9		9.1		3.0		100.0

Note: target group: e-infrastructures; stacked dataset of all services; row percentages; question-ID: E19; a superscript 'a' indicates that percentages rely on a number of observations below 20 and therefore have to be treated with caution.

Table 7.37: Does your organisation acquire own revenues other than funding?

	<i>Revenues other than funding</i>									
	<i>no</i>		<i>yes</i>		<i>don't know</i>		<i>no answer</i>		<i>Total</i>	
	No.	%	No.	%	No.	%	No.	%	No.	%
AT	16	43.2	11	29.7	8	21.6	2	5.4	37	100.0
BE	8	53.3 ^a	7	46.7 ^a	0	0.0 ^a	0	0.0 ^a	15	100.0 ^a
DE	68	71.6	12	12.6	12	12.6	3	3.2	95	100.0
FR	13	40.6	18	56.3	1	3.1	0	0.0	32	100.0
IT	62	43.4	58	40.6	19	13.3	4	2.8	143	100.0
Total	167	51.9	106	32.9	40	12.4	9	2.8	322	100.0
Mean		50.4		37.2		10.1		2.3		100.0

Note: Note: target group: e-infrastructures; stacked dataset of all services; row percentages; question-ID: E20; a superscript 'a' indicates that percentages rely on a number of observations below 20 and therefore have to be treated with caution.

Table 7.38: What are the sources of your own revenues other than funding? (Part 1)

<i>Revenues: managed online services (e.g. software as a service, applications)</i>								
	<i>no</i>		<i>yes</i>		<i>no answer</i>		<i>Total</i>	
	No.	%	No.	%	No.	%	No.	%
AT	8	72.7 ^a	2	18.2 ^a	1	9.1 ^a	11	100.0 ^a
BE	6	85.7 ^a	1	14.3 ^a	0	0.0 ^a	7	100.0 ^a
DE	7	58.3 ^a	5	41.7 ^a	0	0.0 ^a	12	100.0 ^a
FR	7	38.9 ^a	11	61.1 ^a	0	0.0 ^a	18	100.0 ^a
IT	42	72.4	15	25.9	1	1.7	58	100.0
Total	70	66.0	34	32.1	2	1.9	106	100.0
Mean		65.6		32.2		2.2		100.0

Note: target group: e-infrastructures; only respondents included who indicated that their 'organisation acquire(s) own revenues other than funding' (see previous question); stacked dataset of all services; row percentages; question-ID: E201; a superscript 'a' indicates that percentages rely on a number of observations below 20 and therefore have to be treated with caution.

Table 7.39: What are the sources of your own revenues other than funding? (Part 2)

<i>Revenues: hosting (hardware and services for third parties)</i>								
	<i>no</i>		<i>yes</i>		<i>no answer</i>		<i>Total</i>	
	No.	%	No.	%	No.	%	No.	%
AT	8	72.7 ^a	2	18.2 ^a	1	9.1 ^a	11	100.0 ^a
BE	7	100.0 ^a	0	0.0 ^a	0	0.0 ^a	7	100.0 ^a
DE	9	75.0 ^a	3	25.0 ^a	0	0.0 ^a	12	100.0 ^a
FR	6	33.3 ^a	12	66.7 ^a	0	0.0 ^a	18	100.0 ^a
IT	51	87.9	6	10.3	1	1.7	58	100.0
Total	81	76.4	23	21.7	2	1.9	106	100.0
Mean		73.8		24.0		2.2		100.0

Note: target group: e-infrastructures; only respondents included who indicated that their 'organisation acquire(s) own revenues other than funding' (see previous question); stacked dataset of all services; row percentages; question-ID: E201; a superscript 'a' indicates that percentages rely on a number of observations below 20 and therefore have to be treated with caution.

Table 7.40: What are the sources of your own revenues other than funding? (Part 3)

	<i>Revenues: consultancy or training</i>							
	<i>no</i>		<i>yes</i>		<i>no answer</i>		<i>Total</i>	
	No.	%	No.	%	No.	%	No.	%
AT	5	45.5 ^a	5	45.5 ^a	1	9.1 ^a	11	100.0 ^a
BE	5	71.4 ^a	2	28.6 ^a	0	0.0 ^a	7	100.0 ^a
DE	6	50.0 ^a	6	50.0 ^a	0	0.0 ^a	12	100.0 ^a
FR	10	55.6 ^a	8	44.4 ^a	0	0.0 ^a	18	100.0 ^a
IT	37	63.8	20	34.5	1	1.7	58	100.0
Total	63	59.4	41	38.7	2	1.9	106	100.0
Mean		57.3		40.6		2.2		100.0

Note: target group: e-infrastructures; only respondents included who indicated that their 'organisation acquire(s) own revenues other than funding' (see previous question); stacked dataset of all services; row percentages; question-ID: E201; a superscript 'a' indicates that percentages rely on a number of observations below 20 and therefore have to be treated with caution.

Table 7.41: What are the sources of your own revenues other than funding? (Part 4)

	<i>Revenues: other</i>							
	<i>no</i>		<i>yes</i>		<i>no answer</i>		<i>Total</i>	
	No.	%	No.	%	No.	%	No.	%
AT	5	45.5 ^a	5	45.5 ^a	1	9.1 ^a	11	100.0 ^a
BE	1	14.3 ^a	6	85.7 ^a	0	0.0 ^a	7	100.0 ^a
DE	6	50.0 ^a	6	50.0 ^a	0	0.0 ^a	12	100.0 ^a
FR	17	94.4 ^a	1	5.6 ^a	0	0.0 ^a	18	100.0 ^a
IT	24	41.4	33	56.9	1	1.7	58	100.0
Total	53	50.0	51	48.1	2	1.9	106	100.0
Mean		49.1		48.7		2.2		100.0

Note: target group: e-infrastructures; only respondents included who indicated that their 'organisation acquire(s) own revenues other than funding' (see previous question); stacked dataset of all services; row percentages; question-ID: E201; a superscript 'a' indicates that percentages rely on a number of observations below 20 and therefore have to be treated with caution.

Table 7.42: Does your organisation restrict access to its services to one or more of the following groups? (Part 1)

	<i>Access restriction: approved by funding body</i>									
	<i>no</i>		<i>yes</i>		<i>n.a.</i>		<i>no answer</i>		<i>Total</i>	
	No.	%	No.	%	No.	%	No.	%	No.	%
AT	28	75.7	3	8.1	3	8.1	3	8.1	37	100.0
BE	7	46.7 ^a	4	26.7 ^a	3	20.0 ^a	1	6.7 ^a	15	100.0 ^a
DE	72	75.8	14	14.7	5	5.3	4	4.2	95	100.0
FR	16	50.0	15	46.9	1	3.1	0	0.0	32	100.0
IT	88	61.5	30	21.0	21	14.7	4	2.8	143	100.0
Total	211	65.5	66	20.5	33	10.2	12	3.7	322	100.0
Mean		61.9		23.5		10.2		4.4		100.0

Note: target group: e-infrastructures; stacked dataset of all services; row percentages; question-ID: E21; a superscript 'a' indicates that percentages rely on a number of observations below 20 and therefore have to be treated with caution.

Table 7.43: Does your organisation restrict access to its services to one or more of the following groups? (Part 2)

	<i>Access restriction: selected by competition</i>									
	<i>no</i>		<i>yes</i>		<i>n.a.</i>		<i>no answer</i>		<i>Total</i>	
	No.	%	No.	%	No.	%	No.	%	No.	%
AT	31	83.8	0	0.0	3	8.1	3	8.1	37	100.0
BE	7	46.7 ^a	4	26.7 ^a	3	20.0 ^a	1	6.7 ^a	15	100.0 ^a
DE	80	84.2	6	6.3	5	5.3	4	4.2	95	100.0
FR	27	84.4	4	12.5	1	3.1	0	0.0	32	100.0
IT	104	72.7	14	9.8	21	14.7	4	2.8	143	100.0
Total	249	77.3	28	8.7	33	10.2	12	3.7	322	100.0
Mean		74.4		11.1		10.2		4.4		100.0

Note: target group: e-infrastructures; stacked dataset of all services; row percentages; question-ID: E21; a superscript 'a' indicates that percentages rely on a number of observations below 20 and therefore have to be treated with caution.

Table 7.44: Does your organisation restrict access to its services to one or more of the following groups? (Part 3)

<i>Access restriction: membership</i>										
	<i>no</i>		<i>yes</i>		<i>n.a.</i>		<i>no answer</i>		<i>Total</i>	
	No.	%	No.	%	No.	%	No.	%	No.	%
AT	20	54.1	11	29.7	3	8.1	3	8.1	37	100.0
BE	9	60.0 ^a	2	13.3 ^a	3	20.0 ^a	1	6.7 ^a	15	100.0 ^a
DE	56	58.9	30	31.6	5	5.3	4	4.2	95	100.0
FR	23	71.9	8	25.0	1	3.1	0	0.0	32	100.0
IT	55	38.5	63	44.1	21	14.7	4	2.8	143	100.0
Total	163	50.6	114	35.4	33	10.2	12	3.7	322	100.0
Mean		56.7		28.7		10.2		4.4		100.0

Note: target group: e-infrastructures; stacked dataset of all services; row percentages; question-ID: E21; a superscript 'a' indicates that percentages rely on a number of observations below 20 and therefore have to be treated with caution.

Table 7.45: Does your organisation restrict access to its services to one or more of the following groups? (Part 4)

<i>Access restriction: national users</i>										
	<i>no</i>		<i>yes</i>		<i>n.a.</i>		<i>no answer</i>		<i>Total</i>	
	No.	%	No.	%	No.	%	No.	%	No.	%
AT	30	81.1	1	2.7	3	8.1	3	8.1	37	100.0
BE	10	66.7 ^a	1	6.7 ^a	3	20.0 ^a	1	6.7 ^a	15	100.0 ^a
DE	79	83.2	7	7.4	5	5.3	4	4.2	95	100.0
FR	29	90.6	2	6.3	1	3.1	0	0.0	32	100.0
IT	109	76.2	9	6.3	21	14.7	4	2.8	143	100.0
Total	257	79.8	20	6.2	33	10.2	12	3.7	322	100.0
Mean		79.6		5.9		10.2		4.4		100.0

Note: target group: e-infrastructures; stacked dataset of all services; row percentages; question-ID: E21; a superscript 'a' indicates that percentages rely on a number of observations below 20 and therefore have to be treated with caution.

Table 7.46: Does your organisation restrict access to its services to one or more of the following groups? (Part 5)

<i>Access restriction: no restrictions</i>										
	<i>no</i>		<i>yes</i>		<i>n.a.</i>		<i>no answer</i>		<i>Total</i>	
	No.	%	No.	%	No.	%	No.	%	No.	%
AT	18	48.6	13	35.1	3	8.1	3	8.1	37	100.0
BE	7	46.7 ^a	4	26.7 ^a	3	20.0 ^a	1	6.7 ^a	15	100.0 ^a
DE	40	42.1	46	48.4	5	5.3	4	4.2	95	100.0
FR	19	59.4	12	37.5	1	3.1	0	0.0	32	100.0
IT	49	34.3	69	48.3	21	14.7	4	2.8	143	100.0
Total	133	41.3	144	44.7	33	10.2	12	3.7	322	100.0
Mean		46.2		39.2		10.2		4.4		100.0

Note: target group: e-infrastructures; stacked dataset of all services; row percentages; question-ID: E21; a superscript 'a' indicates that percentages rely on a number of observations below 20 and therefore have to be treated with caution.

Table 7.47: Does your organisation restrict access to its services to one or more of the following groups? (Part 6)

<i>Access restriction: other</i>										
	<i>no</i>		<i>yes</i>		<i>n.a.</i>		<i>no answer</i>		<i>Total</i>	
	No.	%	No.	%	No.	%	No.	%	No.	%
AT	20	54.1	11	29.7	3	8.1	3	8.1	37	100.0
BE	9	60.0 ^a	2	13.3 ^a	3	20.0 ^a	1	6.7 ^a	15	100.0 ^a
DE	64	67.4	22	23.2	5	5.3	4	4.2	95	100.0
FR	29	90.6	2	6.3	1	3.1	0	0.0	32	100.0
IT	106	74.1	12	8.4	21	14.7	4	2.8	143	100.0
Total	228	70.8	49	15.2	33	10.2	12	3.7	322	100.0
Mean		69.2		16.2		10.2		4.4		100.0

Note: target group: e-infrastructures; stacked dataset of all services; row percentages; question-ID: E21; a superscript 'a' indicates that percentages rely on a number of observations below 20 and therefore have to be treated with caution.

Table 7.48: Does your organisation currently have policies, procedural and/ or technical barriers that limit the expansion of your services to further user groups?

	<i>Limitation of service</i>									
	<i>no</i>		<i>yes</i>		<i>don't know</i>		<i>no answer</i>		<i>Total</i>	
	No.	%	No.	%	No.	%	No.	%	No.	%
AT	16	43.2	15	40.5	4	10.8	2	5.4	37	100.0
BE	5	33.3 ^a	6	40.0 ^a	3	20.0 ^a	1	6.7 ^a	15	100.0 ^a
DE	45	47.4	37	38.9	9	9.5	4	4.2	95	100.0
FR	14	43.8	15	46.9	1	3.1	2	6.3	32	100.0
IT	94	65.7	32	22.4	13	9.1	4	2.8	143	100.0
Total	174	54.0	105	32.6	30	9.3	13	4.0	322	100.0
Mean		46.7		37.7		10.5		5.1		100.0

Note: target group: e-infrastructure; stacked dataset of all services; row percentages; question-ID: E22; a superscript 'a' indicates that percentages rely on a number of observations below 20 and therefore have to be treated with caution.

Table 7.49: Does your organisation charge users/clients for services?

	<i>Users charged for services</i>									
	<i>no</i>		<i>yes, for some services</i>		<i>yes, for all services</i>		<i>no answer</i>		<i>Total</i>	
	No.	%	No.	%	No.	%	No.	%	No.	%
AT	4	36.4 ^a	5	45.5 ^a	2	18.2 ^a	0	0.0 ^a	11	100.0 ^a
BE	3	42.9 ^a	4	57.1 ^a	0	0.0 ^a	0	0.0 ^a	7	100.0 ^a
DE	3	25.0 ^a	9	75.0 ^a	0	0.0 ^a	0	0.0 ^a	12	100.0 ^a
FR	4	22.2 ^a	8	44.4 ^a	3	16.7 ^a	3	16.7 ^a	18	100.0 ^a
IT	43	74.1	13	22.4	2	3.4	0	0.0	58	100.0
Total	57	53.8	39	36.8	7	6.6	3	2.8	106	100.0
Mean		40.1		48.9		7.7		3.3		100.0

Note: target group: e-infrastructure; only respondents included who indicated that their 'organisation acquire(s) own revenues other than funding' (question E20); stacked dataset of all services; row percentages; question-ID: E25; a superscript 'a' indicates that percentages rely on a number of observations below 20 and therefore have to be treated with caution.

Table 7.50: How does your organisation charge users/clients for services? (Part 1)

<i>Users charged: price list for individual services</i>								
	<i>no</i>		<i>yes</i>		<i>no answer</i>		<i>Total</i>	
	No.	%	No.	%	No.	%	No.	%
AT	4	57.1 ^a	3	42.9 ^a	0	0.0 ^a	7	100.0 ^a
BE	2	50.0 ^a	1	25.0 ^a	1	25.0 ^a	4	100.0 ^a
DE	3	33.3 ^a	6	66.7 ^a	0	0.0 ^a	9	100.0 ^a
FR	6	54.5 ^a	5	45.5 ^a	0	0.0 ^a	11	100.0 ^a
IT	10	66.7 ^a	5	33.3 ^a	0	0.0 ^a	15	100.0 ^a
Total	25	54.3	20	43.5	1	2.2	46	100.0
Mean		52.3		42.7		5.0		100.0

Note: target group: e-infrastructure; stacked dataset of all services; row percentages; only respondents included who indicated that their 'organisation charge(s) users/clients for services' (E25); question-ID: E251; a superscript 'a' indicates that percentages rely on a number of observations below 20 and therefore have to be treated with caution.

Table 7.51: How does your organisation charge users/clients for services? (Part 2)

<i>Users charged: flat rate for sets of services</i>								
	<i>no</i>		<i>yes</i>		<i>no answer</i>		<i>Total</i>	
	No.	%	No.	%	No.	%	No.	%
AT	6	85.7 ^a	1	14.3 ^a	0	0.0 ^a	7	100.0 ^a
BE	2	50.0 ^a	1	25.0 ^a	1	25.0 ^a	4	100.0 ^a
DE	5	55.6 ^a	4	44.4 ^a	0	0.0 ^a	9	100.0 ^a
FR	6	54.5 ^a	5	45.5 ^a	0	0.0 ^a	11	100.0 ^a
IT	11	73.3 ^a	4	26.7 ^a	0	0.0 ^a	15	100.0 ^a
Total	30	65.2	15	32.6	1	2.2	46	100.0
Mean		63.8		31.2		5.0		100.0

Note: target group: e-infrastructure; stacked dataset of all services; row percentages; only respondents included who indicated that their 'organisation charge(s) users/clients for services' (E25); question-ID: E251; a superscript 'a' indicates that percentages rely on a number of observations below 20 and therefore have to be treated with caution.

Table 7.52: How does your organisation charge users/clients for services? (Part 3)

<i>Users charged: tailored to the needs of user</i>								
	<i>no</i>		<i>yes</i>		<i>no answer</i>		<i>Total</i>	
	No.	%	No.	%	No.	%	No.	%
AT	4	57.1 ^a	3	42.9 ^a	0	0.0 ^a	7	100.0 ^a
BE	2	50.0 ^a	1	25.0 ^a	1	25.0 ^a	4	100.0 ^a
DE	4	44.4 ^a	5	55.6 ^a	0	0.0 ^a	9	100.0 ^a
FR	6	54.5 ^a	5	45.5 ^a	0	0.0 ^a	11	100.0 ^a
IT	1	6.7 ^a	14	93.3 ^a	0	0.0 ^a	15	100.0 ^a
Total	17	37.0	28	60.9	1	2.2	46	100.0
Mean		42.5		52.5		5.0		100.0

Note: target group: e-infrastructure; stacked dataset of all services; row percentages; only respondents included who indicated that their ‘organisation charge(s) users/clients for services’ (E25); question-ID: E251; a superscript ‘a’ indicates that percentages rely on a number of observations below 20 and therefore have to be treated with caution.

Table 7.53: How does your organisation charge users/clients for services? (Part 4)

<i>Users charged: other</i>								
	<i>no</i>		<i>yes</i>		<i>no answer</i>		<i>Total</i>	
	No.	%	No.	%	No.	%	No.	%
AT	5	71.4 ^a	2	28.6 ^a	0	0.0 ^a	7	100.0 ^a
BE	3	75.0 ^a	0	0.0 ^a	1	25.0 ^a	4	100.0 ^a
DE	9	100.0 ^a	0	0.0 ^a	0	0.0 ^a	9	100.0 ^a
FR	11	100.0 ^a	0	0.0 ^a	0	0.0 ^a	11	100.0 ^a
IT	14	93.3 ^a	1	6.7 ^a	0	0.0 ^a	15	100.0 ^a
Total	42	91.3	3	6.5	1	2.2	46	100.0
Mean		87.9		7.1		5.0		100.0

Note: target group: e-infrastructure; stacked dataset of all services; row percentages; only respondents included who indicated that their ‘organisation charge(s) users/clients for services’ (E25); question-ID: E251; a superscript ‘a’ indicates that percentages rely on a number of observations below 20 and therefore have to be treated with caution.

Table 7.54: How do you buy supplies, resources or services? (Part 1)

<i>Buy or rent resources: without tender</i>										
	<i>no</i>		<i>yes</i>		<i>n.a.</i>		<i>no answer</i>		<i>Total</i>	
	No.	%	No.	%	No.	%	No.	%	No.	%
AT	14	37.8	12	32.4	7	18.9	4	10.8	37	100.0
BE	9	60.0 ^a	3	20.0 ^a	2	13.3 ^a	1	6.7 ^a	15	100.0 ^a
DE	36	37.9	13	13.7	35	36.8	11	11.6	95	100.0
FR	23	71.9	2	6.3	2	6.3	5	15.6	32	100.0
IT	119	83.2	9	6.3	12	8.4	3	2.1	143	100.0
Total	201	62.4	39	12.1	58	18.0	24	7.5	322	100.0
Mean		58.2		15.7		16.7		9.4		100.0

Note: target group: e-infrastructures; stacked dataset of all services; row percentages; question-ID: E27; a superscript 'a' indicates that percentages rely on a number of observations below 20 and therefore have to be treated with caution.

Table 7.55: How do you buy supplies, resources or services? (Part 2)

<i>Buy or rent resources: with tender</i>										
	<i>no</i>		<i>yes</i>		<i>n.a.</i>		<i>no answer</i>		<i>Total</i>	
	No.	%	No.	%	No.	%	No.	%	No.	%
AT	10	27.0	16	43.2	7	18.9	4	10.8	37	100.0
BE	0	0.0 ^a	12	80.0 ^a	2	13.3 ^a	1	6.7 ^a	15	100.0 ^a
DE	13	13.7	36	37.9	35	36.8	11	11.6	95	100.0
FR	11	34.4	14	43.8	2	6.3	5	15.6	32	100.0
IT	23	16.1	105	73.4	12	8.4	3	2.1	143	100.0
Total	57	17.7	183	56.8	58	18.0	24	7.5	322	100.0
Mean		18.2		55.7		16.7		9.4		100.0

Note: target group: e-infrastructures; stacked dataset of all services; row percentages; question-ID: E27; a superscript 'a' indicates that percentages rely on a number of observations below 20 and therefore have to be treated with caution.

Table 7.56: How do you buy supplies, resources or services? (Part 3)

<i>Buy or rent resources: on pre-negotiated procurement/tender</i>										
	<i>no</i>		<i>yes</i>		<i>n.a.</i>		<i>no answer</i>		<i>Total</i>	
	No.	%	No.	%	No.	%	No.	%	No.	%
AT	15	40.5	11	29.7	7	18.9	4	10.8	37	100.0
BE	8	53.3 ^a	4	26.7 ^a	2	13.3 ^a	1	6.7 ^a	15	100.0 ^a
DE	36	37.9	13	13.7	35	36.8	11	11.6	95	100.0
FR	10	31.3	15	46.9	2	6.3	5	15.6	32	100.0
IT	90	62.9	38	26.6	12	8.4	3	2.1	143	100.0
Total	159	49.4	81	25.2	58	18.0	24	7.5	322	100.0
Mean		45.2		28.7		16.7		9.4		100.0

Note: target group: e-infrastructures; stacked dataset of all services; row percentages; question-ID: E27; a superscript 'a' indicates that percentages rely on a number of observations below 20 and therefore have to be treated with caution.

Table 7.57: How do you buy supplies, resources or services? (Part 4)

<i>Buy or rent resources: other</i>										
	<i>no</i>		<i>yes</i>		<i>n.a.</i>		<i>no answer</i>		<i>Total</i>	
	No.	%	No.	%	No.	%	No.	%	No.	%
AT	22	59.5	4	10.8	7	18.9	4	10.8	37	100.0
BE	12	80.0 ^a	0	0.0 ^a	2	13.3 ^a	1	6.7 ^a	15	100.0 ^a
DE	45	47.4	4	4.2	35	36.8	11	11.6	95	100.0
FR	22	68.8	3	9.4	2	6.3	5	15.6	32	100.0
IT	124	86.7	4	2.8	12	8.4	3	2.1	143	100.0
Total	225	69.9	15	4.7	58	18.0	24	7.5	322	100.0
Mean		68.5		5.4		16.7		9.4		100.0

Note: target group: e-infrastructures; stacked dataset of all services; row percentages; question-ID: E27; a superscript 'a' indicates that percentages rely on a number of observations below 20 and therefore have to be treated with caution.

Table 7.58: Does your organisation know the unit cost of your services? If yes, what is the granularity?

	<i>Organisation knows the unit cost</i>													
	<i>yes (serv.)</i>		<i>yes (sets)</i>		<i>no (poss.)</i>		<i>no (prep.)</i>		<i>not poss.</i>		<i>no ans.</i>		<i>Total</i>	
	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%
AT	6	16.2	0	0.0	8	21.6	1	2.7	16	43.2	6	16.2	37	100.0
BE	2	13.3 ^a	3	20.0 ^a	3	20.0 ^a	4	26.7 ^a	2	13.3 ^a	1	6.7 ^a	15	100.0 ^a
DE	11	11.6	6	6.3	28	29.5	9	9.5	29	30.5	12	12.6	95	100.0
FR	13	40.6	9	28.1	4	12.5	2	6.3	3	9.4	1	3.1	32	100.0
IT	29	20.3	12	8.4	65	45.5	4	2.8	25	17.5	8	5.6	143	100.0
Total	61	18.9	30	9.3	108	33.5	20	6.2	75	23.3	28	8.7	322	100.0
Mean		20.4		12.6		25.8		9.6		22.8		8.8		100.0

Note: target group: e-infrastructures; stacked dataset of all services; row percentages; original labels of categories: 'yes, cost per service', 'yes, cost per set of services', 'not currently available, but could be calculated', 'no, but in preparation', 'no, not possible/not foreseen'; question-ID: E30; a superscript 'a' indicates that percentages rely on a number of observations below 20 and therefore have to be treated with caution.

7.4 Service Level Agreements (SLAs)

All tables in this section rely on the stacked dataset.

Table 7.59: Does your organisation offer Service Level Agreements (SLAs)?

	<i>SLA: offered</i>													
	<i>yes, all</i>		<i>yes, some</i>		<i>no, foreseen</i>		<i>no, not fors.</i>		<i>n.a.</i>		<i>no ans.</i>		<i>Total</i>	
	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%
AT	0	0.0	4	11.8	4	11.8	8	23.5	16	47.1	2	5.9	34	100.0
BE	3	21.4 ^a	3	21.4 ^a	2	14.3 ^a	2	14.3 ^a	4	28.6 ^a	0	0.0 ^a	14	100.0 ^a
DE	4	4.5	19	21.6	10	11.4	32	36.4	22	25.0	1	1.1	88	100.0
FR	2	6.5	6	19.4	8	25.8	9	29.0	6	19.4	0	0.0	31	100.0
IT	13	9.4	52	37.7	19	13.8	14	10.1	35	25.4	5	3.6	138	100.0
Total	22	7.2	84	27.5	43	14.1	65	21.3	83	27.2	8	2.6	305	100.0
Mean		8.4		22.4		15.4		22.7		29.1		2.1		100.0

Note: target group: e-infrastructures; stacked dataset of all services; row percentages; original labels of categories: 'yes, for all services', 'yes, for some services', 'no, but foreseen in the near future', 'no, not foreseen in the near future', 'not applicable'; question-ID: E28; a superscript 'a' indicates that percentages rely on a number of observations below 20 and therefore have to be treated with caution.

Table 7.60: Are you participating in a transnational organisation or federation that offers Service Level Agreements (SLAs) or similar contracts that are also binding for your organisation?

	<i>transnational SLAs by membership</i>									
	<i>no</i>		<i>yes</i>		<i>don't know</i>		<i>no answer</i>		<i>Total</i>	
	No.	%	No.	%	No.	%	No.	%	No.	%
AT	18	52.9	2	5.9	13	38.2	1	2.9	34	100.0
BE	7	50.0 ^a	2	14.3 ^a	5	35.7 ^a	0	0.0 ^a	14	100.0 ^a
DE	58	65.9	8	9.1	22	25.0	0	0.0	88	100.0
FR	15	48.4	10	32.3	6	19.4	0	0.0	31	100.0
IT	53	38.4	50	36.2	34	24.6	1	0.7	138	100.0
Total	151	49.5	72	23.6	80	26.2	2	0.7	305	100.0
Mean		51.1		19.6		28.6		0.7		100.0

Note: target group: e-infrastructures; stacked dataset of all services; row percentages; question-ID: E29; a superscript 'a' indicates that percentages rely on a number of observations below 20 and therefore have to be treated with caution.

Table 7.61: What types of Service Level Agreements (SLAs) do you offer or will you offer in the future?

SLA: Types offered														
	predefined		customized		one-fits-all		other		n.a.		no ans.		Total	
	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%
AT	2	25.0 ^a	4	50.0 ^a	0	0.0 ^a	1	12.5 ^a	1	12.5 ^a	0	0.0 ^a	8	100.0 ^a
BE	1	12.5 ^a	4	50.0 ^a	2	25.0 ^a	0	0.0 ^a	0	0.0 ^a	1	12.5 ^a	8	100.0 ^a
DE	9	27.3	15	45.5	5	15.2	0	0.0	2	6.1	2	6.1	33	100.0
FR	4	25.0 ^a	6	37.5 ^a	2	12.5 ^a	0	0.0 ^a	4	25.0 ^a	0	0.0 ^a	16	100.0 ^a
IT	11	13.1	58	69.0	3	3.6	3	3.6	8	9.5	1	1.2	84	100.0
Total	27	18.1	87	58.4	12	8.1	4	2.7	15	10.1	4	2.7	149	100.0
Mean		20.6		50.4		11.3		3.2		10.6		4.0		100.0

Note: target group: e-infrastructures; stacked dataset of all services; only respondents who indicated in question E28 ('Does your organisation offer Service Level Agreements (SLAs)?') either 'yes, for all services', 'yes, for some services' or 'no, but foreseen in the near future' received this question; original labels of categories: 'several predefined types', 'custom made type', 'one-fits-all', 'other, please specify', 'not applicable'; row percentages; question-ID: E32; a superscript 'a' indicates that percentages rely on a number of observations below 20 and therefore have to be treated with caution.

Table 7.62: Have you encountered issues or barriers to establish Service Level Agreements (SLAs) with a community?

<i>SLA: issue encountered</i>													
	<i>no</i>		<i>yes</i>		<i>don't know</i>		<i>not applicable</i>		<i>no answer</i>		<i>Total</i>		
	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%	
AT	3	37.5 ^a	2	25.0 ^a	2	25.0 ^a	1	12.5 ^a	0	0.0 ^a	8	100.0 ^a	
BE	3	37.5 ^a	0	0.0 ^a	2	25.0 ^a	2	25.0 ^a	1	12.5 ^a	8	100.0 ^a	
DE	11	33.3	4	12.1	9	27.3	8	24.2	1	3.0	33	100.0	
FR	4	25.0 ^a	1	6.3 ^a	4	25.0 ^a	7	43.8 ^a	0	0.0 ^a	16	100.0 ^a	
IT	28	33.3	2	2.4	19	22.6	34	40.5	1	1.2	84	100.0	
Total	49	32.9	9	6.0	36	24.2	52	34.9	3	2.0	149	100.0	
Mean		33.3		9.2		25.0		29.2		3.3		100.0	

Note: target group: e-infrastructures; stacked dataset of all services; only respondents who indicated in question E28 ('Does your organisation offer Service Level Agreements (SLAs)?') either 'yes, for all services', 'yes, for some services' or 'no, but foreseen in the near future' received this question; row percentages; question-ID: E31; a superscript 'a' indicates that percentages rely on a number of observations below 20 and therefore have to be treated with caution.

7.5 Users

All tables in this section rely on the stacked dataset.

Table 7.63: How frequently do the following groups use your services? (Part 1)

<i>Users: (researchers based at) universities</i>														
	–		+		++		<i>d.k.</i>		<i>n.a.</i>		<i>no a.</i>		<i>Total</i>	
	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%
AT	2	5.7	8	22.9	21	60.0	3	8.6	0	0.0	1	2.9	35	100.0
BE	0	0.0 ^a	6	40.0 ^a	6	40.0 ^a	2	13.3 ^a	1	6.7 ^a	0	0.0 ^a	15	100.0 ^a
DE	7	7.7	28	30.8	49	53.8	3	3.3	0	0.0	4	4.4	91	100.0
FR	0	0.0	5	16.1	24	77.4	1	3.2	0	0.0	1	3.2	31	100.0
IT	11	7.9	66	47.5	60	43.2	0	0.0	1	0.7	1	0.7	139	100.0
Total	20	6.4	113	36.3	160	51.4	9	2.9	2	0.6	7	2.3	311	100.0
Mean		4.3		31.5		54.9		5.7		1.5		2.2		100.0

Note: target group: e-infrastructures; stacked dataset of all services; original label of categories: – – 'never', – 'not very frequently', + 'frequently', ++ 'very frequently', not applicable; row percentages; question-ID: E78; a superscript 'a' indicates that percentages rely on a number of observations below 20 and therefore have to be treated with caution.

Table 7.64: How frequently do the following groups use your services? (Part 2)

<i>Users: (researchers of) non-university research institutions</i>																
	--		-		+		++		<i>d.k.</i>		<i>n.a.</i>		<i>no a.</i>		<i>Total</i>	
	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%
AT	0	0.0	4	11.4	14	40.0	9	25.7	4	11.4	2	5.7	2	5.7	35	100.0
BE	0	0.0 ^a	2	13.3 ^a	5	33.3 ^a	4	26.7 ^a	2	13.3 ^a	1	6.7 ^a	1	6.7 ^a	15	100.0 ^a
DE	2	2.2	14	15.4	34	37.4	31	34.1	5	5.5	0	0.0	5	5.5	91	100.0
FR	0	0.0	4	12.9	7	22.6	18	58.1	1	3.2	0	0.0	1	3.2	31	100.0
IT	3	2.2	24	17.3	66	47.5	37	26.6	1	0.7	7	5.0	1	0.7	139	100.0
Total	5	1.6	48	15.4	126	40.5	99	31.8	13	4.2	10	3.2	10	3.2	311	100.0
Mean		0.9		14.1		36.2		34.2		6.8		3.5		4.4		100.0

Note: target group: e-infrastructures; stacked dataset of all services; original label of categories: – – 'never', – 'not very frequently', + 'frequently', ++ 'very frequently', not applicable; row percentages; question-ID: E78; a superscript 'a' indicates that percentages rely on a number of observations below 20 and therefore have to be treated with caution.

Table 7.65: How frequently do the following groups use your services? (Part 3)

<i>Users: (researchers of) private, commercial institutions</i>																
--		-		+		++		<i>d.k.</i>		<i>n.a.</i>		<i>no a.</i>		<i>Total</i>		
No.	%	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%	
AT	3	8.6	9	25.7	6	17.1	4	11.4	7	20.0	2	5.7	4	11.4	35	100.0
BE	3	20.0 ^a	4	26.7 ^a	4	26.7 ^a	0	0.0 ^a	3	20.0 ^a	1	6.7 ^a	0	0.0 ^a	15	100.0 ^a
DE	13	14.3	26	28.6	21	23.1	3	3.3	20	22.0	2	2.2	6	6.6	91	100.0
FR	5	16.1	15	48.4	5	16.1	3	9.7	2	6.5	0	0.0	1	3.2	31	100.0
IT	12	8.6	59	42.4	25	18.0	2	1.4	28	20.1	10	7.2	3	2.2	139	100.0
Total	36	11.6	113	36.3	61	19.6	12	3.9	60	19.3	15	4.8	14	4.5	311	100.0
Mean		13.5		34.4		20.2		5.2		17.7		4.4		4.7		100.0

Note: target group: e-infrastructures; stacked dataset of all services; original label of categories: -- 'never', - 'not very frequently', + 'frequently', ++ 'very frequently', not applicable; row percentages; question-ID: E78; a superscript 'a' indicates that percentages rely on a number of observations below 20 and therefore have to be treated with caution.

Table 7.66: How frequently do the following groups use your services? (Part 4)

<i>Users: governmental institutions (e.g. census bureaus)</i>																
--		-		+		++		<i>d.k.</i>		<i>n.a.</i>		<i>no a.</i>		<i>Total</i>		
No.	%	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%	
AT	6	17.1	9	25.7	6	17.1	4	11.4	5	14.3	1	2.9	4	11.4	35	100.0
BE	3	20.0 ^a	3	20.0 ^a	3	20.0 ^a	1	6.7 ^a	2	13.3 ^a	1	6.7 ^a	2	13.3 ^a	15	100.0 ^a
DE	21	23.1	17	18.7	17	18.7	5	5.5	22	24.2	1	1.1	8	8.8	91	100.0
FR	15	48.4	10	32.3	3	9.7	2	6.5	0	0.0	0	0.0	1	3.2	31	100.0
IT	16	11.5	30	21.6	31	22.3	11	7.9	38	27.3	8	5.8	5	3.6	139	100.0
Total	61	19.6	69	22.2	60	19.3	23	7.4	67	21.5	11	3.5	20	6.4	311	100.0
Mean		24.0		23.7		17.6		7.6		15.8		3.3		8.1		100.0

Note: target group: e-infrastructures; stacked dataset of all services; original label of categories: -- 'never', - 'not very frequently', + 'frequently', ++ 'very frequently', not applicable; row percentages; question-ID: E78; a superscript 'a' indicates that percentages rely on a number of observations below 20 and therefore have to be treated with caution.

Table 7.67: How frequently do the following groups use your services? (Part 5)

	<i>Users: students</i>															
	--		-		+		++		<i>d.k.</i>		<i>n.a.</i>		<i>no a.</i>		<i>Total</i>	
	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%
AT	1	2.9	6	17.1	11	31.4	13	37.1	3	8.6	0	0.0	1	2.9	35	100.0
BE	0	0.0 ^a	2	13.3 ^a	7	46.7 ^a	3	20.0 ^a	2	13.3 ^a	1	6.7 ^a	0	0.0 ^a	15	100.0 ^a
DE	0	0.0	11	12.1	30	33.0	34	37.4	10	11.0	0	0.0	6	6.6	91	100.0
FR	4	12.9	6	19.4	12	38.7	8	25.8	0	0.0	0	0.0	1	3.2	31	100.0
IT	3	2.2	18	12.9	74	53.2	36	25.9	0	0.0	5	3.6	3	2.2	139	100.0
Total	8	2.6	43	13.8	134	43.1	94	30.2	15	4.8	6	1.9	11	3.5	311	100.0
Mean		3.6		15.0		40.6		29.2		6.6		2.1		3.0		100.0

Note: target group: e-infrastructures; stacked dataset of all services; original label of categories: -- 'never', - 'not very frequently', + 'frequently', ++ 'very frequently', not applicable; row percentages; question-ID: E78; a superscript 'a' indicates that percentages rely on a number of observations below 20 and therefore have to be treated with caution.

Table 7.68: How frequently do the following groups use your services? (Part 6)

	<i>Users: citizen scientists</i>															
	--		-		+		++		<i>d.k.</i>		<i>n.a.</i>		<i>no a.</i>		<i>Total</i>	
	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%
AT	6	17.1	6	17.1	6	17.1	5	14.3	9	25.7	1	2.9	2	5.7	35	100.0
BE	4	26.7 ^a	1	6.7 ^a	2	13.3 ^a	0	0.0 ^a	4	26.7 ^a	1	6.7 ^a	3	20.0 ^a	15	100.0 ^a
DE	15	16.5	25	27.5	11	12.1	6	6.6	24	26.4	3	3.3	7	7.7	91	100.0
FR	17	54.8	5	16.1	3	9.7	2	6.5	3	9.7	0	0.0	1	3.2	31	100.0
IT	7	5.0	33	23.7	14	10.1	14	10.1	51	36.7	9	6.5	11	7.9	139	100.0
Total	49	15.8	70	22.5	36	11.6	27	8.7	91	29.3	14	4.5	24	7.7	311	100.0
Mean		24.0		18.2		12.5		7.5		25.0		3.9		8.9		100.0

Note: target group: e-infrastructures; stacked dataset of all services; original label of categories: -- 'never', - 'not very frequently', + 'frequently', ++ 'very frequently', not applicable; row percentages; question-ID: E78; a superscript 'a' indicates that percentages rely on a number of observations below 20 and therefore have to be treated with caution.

Table 7.69: How frequently do the following groups use your services? (Part 7)

<i>Users: professionals</i>																
	--		-		+		++		<i>d.k.</i>		<i>n.a.</i>		<i>no a.</i>		<i>Total</i>	
	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%
AT	5	14.3	8	22.9	6	17.1	3	8.6	9	25.7	1	2.9	3	8.6	35	100.0
BE	2	13.3 ^a	3	20.0 ^a	2	13.3 ^a	1	6.7 ^a	4	26.7 ^a	1	6.7 ^a	2	13.3 ^a	15	100.0 ^a
DE	11	12.1	21	23.1	15	16.5	10	11.0	24	26.4	3	3.3	7	7.7	91	100.0
FR	11	35.5	11	35.5	4	12.9	1	3.2	3	9.7	0	0.0	1	3.2	31	100.0
IT	9	6.5	49	35.3	21	15.1	8	5.8	41	29.5	8	5.8	3	2.2	139	100.0
Total	38	12.2	92	29.6	48	15.4	23	7.4	81	26.0	13	4.2	16	5.1	311	100.0
Mean		16.3		27.4		15.0		7.1		23.6		3.7		7.0		100.0

Note: target group: e-infrastructures; stacked dataset of all services; original label of categories: -- 'never', - 'not very frequently', + 'frequently', ++ 'very frequently', not applicable; row percentages; question-ID: E78; a superscript 'a' indicates that percentages rely on a number of observations below 20 and therefore have to be treated with caution.

Table 7.70: How frequently do the following groups use your services? (Part 8)

<i>Users: other</i>																
	--		-		+		++		<i>d.k.</i>		<i>n.a.</i>		<i>no a.</i>		<i>Total</i>	
	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%
AT	0	0.0	2	5.7	1	2.9	4	11.4	1	2.9	0	0.0	27	77.1	35	100.0
BE	0	0.0 ^a	0	0.0 ^a	0	0.0 ^a	0	0.0 ^a	3	20.0 ^a	1	6.7 ^a	11	73.3 ^a	15	100.0 ^a
DE	2	2.2	4	4.4	2	2.2	1	1.1	17	18.7	0	0.0	65	71.4	91	100.0
FR	3	9.7	0	0.0	1	3.2	2	6.5	3	9.7	0	0.0	22	71.0	31	100.0
IT	6	4.3	0	0.0	4	2.9	2	1.4	12	8.6	5	3.6	110	79.1	139	100.0
Total	11	3.5	6	1.9	8	2.6	9	2.9	36	11.6	6	1.9	235	75.6	311	100.0
Mean		3.2		2.0		2.2		4.1		12.0		2.1		74.4		100.0

Note: target group: e-infrastructures; stacked dataset of all services; original label of categories: -- 'never', - 'not very frequently', + 'frequently', ++ 'very frequently', not applicable; row percentages; question-ID: E78; a superscript 'a' indicates that percentages rely on a number of observations below 20 and therefore have to be treated with caution.

Table 7.71: Does your organisation collect feedback from users? (Part 1)

	<i>Users: feedback collected: yes/no</i>							
	<i>no</i>		<i>yes</i>		<i>no answer</i>		<i>Total</i>	
	No.	%	No.	%	No.	%	No.	%
AT	9	25.7	25	71.4	1	2.9	35	100.0
BE	1	6.7 ^a	14	93.3 ^a	0	0.0 ^a	15	100.0 ^a
DE	10	11.0	78	85.7	3	3.3	91	100.0
FR	3	9.7	27	87.1	1	3.2	31	100.0
IT	27	19.4	107	77.0	5	3.6	139	100.0
Total	50	16.1	251	80.7	10	3.2	311	100.0
Mean		14.5		82.9		2.6		100.0

Note: target group: e-infrastructures; stacked dataset of all services; row percentages; question-ID: E34; a superscript 'a' indicates that percentages rely on a number of observations below 20 and therefore have to be treated with caution.

Table 7.72: Does your organisation collect feedback from users? (Part 2)

	<i>Users: feedback collected by special tools</i>					
	<i>no</i>		<i>yes</i>		<i>Total</i>	
	No.	%	No.	%	No.	%
AT	21	84.0	4	16.0	25	100.0
BE	6	42.9 ^a	8	57.1 ^a	14	100.0 ^a
DE	40	51.3	38	48.7	78	100.0
FR	16	59.3	11	40.7	27	100.0
IT	67	62.6	40	37.4	107	100.0
Total	150	59.8	101	40.2	251	100.0
Mean		60.0		40.0		100.0

Note: target group: e-infrastructures; stacked dataset of all services; only respondents who indicated that their 'organisation collect(s) feedback from users' are included (see table above showing Part 1 of question E34); row percentages; question-ID: E34; a superscript 'a' indicates that percentages rely on a number of observations below 20 and therefore have to be treated with caution.

Table 7.73: Does your organisation collect feedback from users? (Part 3)

	<i>Users: feedback collected by meetings</i>					
	<i>no</i>		<i>yes</i>		<i>Total</i>	
	No.	%	No.	%	No.	%
AT	9	36.0	16	64.0	25	100.0
BE	5	35.7 ^a	9	64.3 ^a	14	100.0 ^a
DE	27	34.6	51	65.4	78	100.0
FR	9	33.3	18	66.7	27	100.0
IT	28	26.2	79	73.8	107	100.0
Total	78	31.1	173	68.9	251	100.0
Mean		33.2		66.8		100.0

Note: target group: e-infrastructures; stacked dataset of all services; only respondents who indicated that their 'organisation collect(s) feedback from users' are included (see table above showing Part 1 of question E34); row percentages; question-ID: E34; a superscript 'a' indicates that percentages rely on a number of observations below 20 and therefore have to be treated with caution.

Table 7.74: Does your organisation collect feedback from users? (Part 4)

	<i>Users: feedback collected by discussions</i>					
	<i>no</i>		<i>yes</i>		<i>Total</i>	
	No.	%	No.	%	No.	%
AT	8	32.0	17	68.0	25	100.0
BE	8	57.1 ^a	6	42.9 ^a	14	100.0 ^a
DE	37	47.4	41	52.6	78	100.0
FR	12	44.4	15	55.6	27	100.0
IT	59	55.1	48	44.9	107	100.0
Total	124	49.4	127	50.6	251	100.0
Mean		47.2		52.8		100.0

Note: target group: e-infrastructures; stacked dataset of all services; only respondents who indicated that their 'organisation collect(s) feedback from users' are included (see table above showing Part 1 of question E34); row percentages; question-ID: E34; a superscript 'a' indicates that percentages rely on a number of observations below 20 and therefore have to be treated with caution.

Table 7.75: Does your organisation collect feedback from users? (Part 5)

	<i>Users: feedback collected by other means</i>					
	<i>no</i>		<i>yes</i>		<i>Total</i>	
	No.	%	No.	%	No.	%
AT	18	72.0	7	28.0	25	100.0
BE	14	100.0 ^a	0	0.0 ^a	14	100.0 ^a
DE	64	82.1	14	17.9	78	100.0
FR	27	100.0	0	0.0	27	100.0
IT	103	96.3	4	3.7	107	100.0
Total	226	90.0	25	10.0	251	100.0
Mean		90.1		9.9		100.0

Note: target group: e-infrastructure; stacked dataset of all services; only respondents who indicated that their 'organisation collect(s) feedback from users' are included (see table above showing Part 1 of question E34); row percentages; question-ID: E34; a superscript 'a' indicates that percentages rely on a number of observations below 20 and therefore have to be treated with caution.

Table 7.76: Does your organisation offer training?

	<i>Users: training offered</i>							
	<i>no</i>		<i>yes</i>		<i>no answer</i>		<i>Total</i>	
	No.	%	No.	%	No.	%	No.	%
AT	15	42.9	18	51.4	2	5.7	35	100.0
BE	1	6.7 ^a	14	93.3 ^a	0	0.0 ^a	15	100.0 ^a
DE	23	25.3	66	72.5	2	2.2	91	100.0
FR	4	12.9	26	83.9	1	3.2	31	100.0
IT	19	13.7	116	83.5	4	2.9	139	100.0
Total	62	19.9	240	77.2	9	2.9	311	100.0
Mean		20.3		76.9		2.8		100.0

Note: target group: e-infrastructure; stacked dataset of all services; row percentages; question-ID: E35; a superscript 'a' indicates that percentages rely on a number of observations below 20 and therefore have to be treated with caution.

Table 7.77: Which form(s) of training does your organisation offer? (Part 1)

<i>User training offered: face-to-face</i>								
	<i>no</i>		<i>yes</i>		<i>no answer</i>		<i>Total</i>	
	No.	%	No.	%	No.	%	No.	%
AT	1	5.6 ^a	17	94.4 ^a	0	0.0 ^a	18	100.0 ^a
BE	1	7.1 ^a	13	92.9 ^a	0	0.0 ^a	14	100.0 ^a
DE	0	0.0	66	100.0	0	0.0	66	100.0
FR	0	0.0	26	100.0	0	0.0	26	100.0
IT	2	1.7	113	97.4	1	0.9	116	100.0
Total	4	1.7	235	97.9	1	0.4	240	100.0
Mean		2.9		96.9		0.2		100.0

Note: target group: e-infrastructure; stacked dataset of all services; row percentages; only respondents included who indicated that their 'organisation offer(s) training' (see above question E35); question-ID: E351; a superscript 'a' indicates that percentages rely on a number of observations below 20 and therefore have to be treated with caution.

Table 7.78: Which form(s) of training does your organisation offer? (Part 2)

<i>User training offered: MOOCs or web tutorials</i>								
	<i>no</i>		<i>yes</i>		<i>no answer</i>		<i>Total</i>	
	No.	%	No.	%	No.	%	No.	%
AT	18	100.0 ^a	0	0.0 ^a	0	0.0 ^a	18	100.0 ^a
BE	13	92.9 ^a	1	7.1 ^a	0	0.0 ^a	14	100.0 ^a
DE	48	72.7	18	27.3	0	0.0	66	100.0
FR	24	92.3	2	7.7	0	0.0	26	100.0
IT	93	80.2	22	19.0	1	0.9	116	100.0
Total	196	81.7	43	17.9	1	0.4	240	100.0
Mean		87.6		12.2		0.2		100.0

Note: target group: e-infrastructure; stacked dataset of all services; row percentages; only respondents included who indicated that their 'organisation offer(s) training' (see above question E35); question-ID: E351; a superscript 'a' indicates that percentages rely on a number of observations below 20 and therefore have to be treated with caution.

Table 7.79: Which form(s) of training does your organisation offer? (Part 3)

	<i>User training offered: on-line documentation</i>							
	<i>no</i>		<i>yes</i>		<i>no answer</i>		<i>Total</i>	
	No.	%	No.	%	No.	%	No.	%
AT	6	33.3 ^a	12	66.7 ^a	0	0.0 ^a	18	100.0 ^a
BE	6	42.9 ^a	8	57.1 ^a	0	0.0 ^a	14	100.0 ^a
DE	19	28.8	47	71.2	0	0.0	66	100.0
FR	4	15.4	22	84.6	0	0.0	26	100.0
IT	16	13.8	99	85.3	1	0.9	116	100.0
Total	51	21.3	188	78.3	1	0.4	240	100.0
Mean		26.8		73.0		0.2		100.0

Note: target group: e-infrastructure; stacked dataset of all services; row percentages; only respondents included who indicated that their 'organisation offer(s) training' (see above question E35); question-ID: E351; a superscript 'a' indicates that percentages rely on a number of observations below 20 and therefore have to be treated with caution.

Table 7.80: Which form(s) of training does your organisation offer? (Part 4)

	<i>User training offered: others</i>							
	<i>no</i>		<i>yes</i>		<i>no answer</i>		<i>Total</i>	
	No.	%	No.	%	No.	%	No.	%
AT	16	88.9 ^a	2	11.1 ^a	0	0.0 ^a	18	100.0 ^a
BE	14	100.0 ^a	0	0.0 ^a	0	0.0 ^a	14	100.0 ^a
DE	64	97.0	2	3.0	0	0.0	66	100.0
FR	26	100.0	0	0.0	0	0.0	26	100.0
IT	109	94.0	6	5.2	1	0.9	116	100.0
Total	229	95.4	10	4.2	1	0.4	240	100.0
Mean		96.0		3.9		0.2		100.0

Note: target group: e-infrastructure; stacked dataset of all services; row percentages; only respondents included who indicated that their 'organisation offer(s) training' (see above question E35); question-ID: E351; a superscript 'a' indicates that percentages rely on a number of observations below 20 and therefore have to be treated with caution.

Table 7.81: In which language(s) does your organisation provide training? (Part 1)

	<i>User training: country's/regional language</i>							
	<i>no</i>		<i>yes</i>		<i>no answer</i>		<i>Total</i>	
	No.	%	No.	%	No.	%	No.	%
AT	3	16.7 ^a	15	83.3 ^a	0	0.0 ^a	18	100.0 ^a
BE	7	50.0 ^a	7	50.0 ^a	0	0.0 ^a	14	100.0 ^a
DE	17	25.8	47	71.2	2	3.0	66	100.0
FR	2	7.7	24	92.3	0	0.0	26	100.0
IT	19	16.4	97	83.6	0	0.0	116	100.0
Total	48	20.0	190	79.2	2	0.8	240	100.0
Mean		23.3		76.1		0.6		100.0

Note: target group: e-infrastructure; stacked dataset of all services; row percentages; only respondents included who indicated that their 'organisation offer(s) training' (see above question E35); question-ID: E352; a superscript 'a' indicates that percentages rely on a number of observations below 20 and therefore have to be treated with caution.

Table 7.82: In which language(s) does your organisation provide training? (Part 2)

	<i>User training: English</i>							
	<i>no</i>		<i>yes</i>		<i>no answer</i>		<i>Total</i>	
	No.	%	No.	%	No.	%	No.	%
AT	6	33.3 ^a	12	66.7 ^a	0	0.0 ^a	18	100.0 ^a
BE	2	14.3 ^a	12	85.7 ^a	0	0.0 ^a	14	100.0 ^a
DE	8	12.1	56	84.8	2	3.0	66	100.0
FR	7	26.9	19	73.1	0	0.0	26	100.0
IT	19	16.4	97	83.6	0	0.0	116	100.0
Total	42	17.5	196	81.7	2	0.8	240	100.0
Mean		20.6		78.8		0.6		100.0

Note: target group: e-infrastructure; stacked dataset of all services; row percentages; only respondents included who indicated that their 'organisation offer(s) training' (see above question E35); question-ID: E352; a superscript 'a' indicates that percentages rely on a number of observations below 20 and therefore have to be treated with caution.

Table 7.83: In which language(s) does your organisation provide training? (Part 3)

	<i>User training: other or several</i>							
	<i>no</i>		<i>yes</i>		<i>no answer</i>		<i>Total</i>	
	No.	%	No.	%	No.	%	No.	%
AT	17	94.4 ^a	1	5.6 ^a	0	0.0 ^a	18	100.0 ^a
BE	14	100.0 ^a	0	0.0 ^a	0	0.0 ^a	14	100.0 ^a
DE	63	95.5	1	1.5	2	3.0	66	100.0
FR	26	100.0	0	0.0	0	0.0	26	100.0
IT	116	100.0	0	0.0	0	0.0	116	100.0
Total	236	98.3	2	0.8	2	0.8	240	100.0
Mean		98.0		1.4		0.6		100.0

Note: target group: e-infrastructure; stacked dataset of all services; row percentages; only respondents included who indicated that their ‘organisation offer(s) training’ (see above question E35); question-ID: E352; a superscript ‘a’ indicates that percentages rely on a number of observations below 20 and therefore have to be treated with caution.

Table 7.84: For whom does your organisation offer training? (Part 1)

	<i>User training audience: everyone interested</i>							
	<i>no</i>		<i>yes</i>		<i>no answer</i>		<i>Total</i>	
	No.	%	No.	%	No.	%	No.	%
AT	10	55.6 ^a	8	44.4 ^a	0	0.0 ^a	18	100.0 ^a
BE	8	57.1 ^a	6	42.9 ^a	0	0.0 ^a	14	100.0 ^a
DE	42	63.6	23	34.8	1	1.5	66	100.0
FR	14	53.8	12	46.2	0	0.0	26	100.0
IT	76	65.5	40	34.5	0	0.0	116	100.0
Total	150	62.5	89	37.1	1	0.4	240	100.0
Mean		59.1		40.6		0.3		100.0

Note: target group: e-infrastructure; stacked dataset of all services; row percentages; only respondents included who indicated that their ‘organisation offer(s) training’ (see above question E35); question-ID: E353; a superscript ‘a’ indicates that percentages rely on a number of observations below 20 and therefore have to be treated with caution.

Table 7.85: For whom does your organisation offer training? (Part 2)

<i>User training audience: specific community</i>								
	<i>no</i>		<i>yes</i>		<i>no answer</i>		<i>Total</i>	
	No.	%	No.	%	No.	%	No.	%
AT	10	55.6 ^a	8	44.4 ^a	0	0.0 ^a	18	100.0 ^a
BE	7	50.0 ^a	7	50.0 ^a	0	0.0 ^a	14	100.0 ^a
DE	19	28.8	46	69.7	1	1.5	66	100.0
FR	10	38.5	16	61.5	0	0.0	26	100.0
IT	21	18.1	95	81.9	0	0.0	116	100.0
Total	67	27.9	172	71.7	1	0.4	240	100.0
Mean		38.2		61.5		0.3		100.0

Note: target group: e-infrastructures; stacked dataset of all services; row percentages; only respondents included who indicated that their 'organisation offer(s) training' (see above question E35); question-ID: E353; a superscript 'a' indicates that percentages rely on a number of observations below 20 and therefore have to be treated with caution.

Table 7.86: For whom does your organisation offer training? (Part 3)

<i>User training audience: geographical area</i>								
	<i>no</i>		<i>yes</i>		<i>no answer</i>		<i>Total</i>	
	No.	%	No.	%	No.	%	No.	%
AT	18	100.0 ^a	0	0.0 ^a	0	0.0 ^a	18	100.0 ^a
BE	13	92.9 ^a	1	7.1 ^a	0	0.0 ^a	14	100.0 ^a
DE	58	87.9	7	10.6	1	1.5	66	100.0
FR	21	80.8	5	19.2	0	0.0	26	100.0
IT	114	98.3	2	1.7	0	0.0	116	100.0
Total	224	93.3	15	6.3	1	0.4	240	100.0
Mean		92.0		7.7		0.3		100.0

Note: target group: e-infrastructures; stacked dataset of all services; row percentages; only respondents included who indicated that their 'organisation offer(s) training' (see above question E35); question-ID: E353; a superscript 'a' indicates that percentages rely on a number of observations below 20 and therefore have to be treated with caution.

Table 7.87: For whom does your organisation offer training? (Part 4)

	<i>User training audience: affiliation to defined organisation</i>							
	<i>no</i>		<i>yes</i>		<i>no answer</i>		<i>Total</i>	
	No.	%	No.	%	No.	%	No.	%
AT	14	77.8 ^a	4	22.2 ^a	0	0.0 ^a	18	100.0 ^a
BE	8	57.1 ^a	6	42.9 ^a	0	0.0 ^a	14	100.0 ^a
DE	37	56.1	28	42.4	1	1.5	66	100.0
FR	14	53.8	12	46.2	0	0.0	26	100.0
IT	64	55.2	52	44.8	0	0.0	116	100.0
Total	137	57.1	102	42.5	1	0.4	240	100.0
Mean		60.0		39.7		0.3		100.0

Note: target group: e-infrastructures; stacked dataset of all services; row percentages; only respondents included who indicated that their ‘organisation offer(s) training’ (see above question E35); question-ID: E353; a superscript ‘a’ indicates that percentages rely on a number of observations below 20 and therefore have to be treated with caution.

Table 7.88: For whom does your organisation offer training? (Part 5)

	<i>User training audience: other</i>							
	<i>no</i>		<i>yes</i>		<i>no answer</i>		<i>Total</i>	
	No.	%	No.	%	No.	%	No.	%
AT	13	72.2 ^a	5	27.8 ^a	0	0.0 ^a	18	100.0 ^a
BE	13	92.9 ^a	1	7.1 ^a	0	0.0 ^a	14	100.0 ^a
DE	63	95.5	2	3.0	1	1.5	66	100.0
FR	26	100.0	0	0.0	0	0.0	26	100.0
IT	112	96.6	4	3.4	0	0.0	116	100.0
Total	227	94.6	12	5.0	1	0.4	240	100.0
Mean		91.4		8.3		0.3		100.0

Note: target group: e-infrastructures; stacked dataset of all services; row percentages; only respondents included who indicated that their ‘organisation offer(s) training’ (see above question E35); question-ID: E353; a superscript ‘a’ indicates that percentages rely on a number of observations below 20 and therefore have to be treated with caution.

Table 7.89: How does your organisation organise user support? (Part 1)

	<i>User support exists: yes/no</i>									
	<i>no</i>		<i>yes</i>		<i>n.a.</i>		<i>no answer</i>		<i>Total</i>	
	No.	%	No.	%	No.	%	No.	%	No.	%
AT	2	5.7	29	82.9	3	8.6	1	2.9	35	100.0
BE	0	0.0 ^a	13	86.7 ^a	1	6.7 ^a	1	6.7 ^a	15	100.0 ^a
DE	3	3.3	85	93.4	1	1.1	2	2.2	91	100.0
FR	1	3.2	29	93.5	0	0.0	1	3.2	31	100.0
IT	6	4.3	126	90.6	3	2.2	4	2.9	139	100.0
Total	12	3.9	282	90.7	8	2.6	9	2.9	311	100.0
Mean		3.3		89.4		3.7		3.6		100.0

Note: target group: e-infrastructures; stacked dataset of all services; row percentages; question-ID: E36; a superscript 'a' indicates that percentages rely on a number of observations below 20 and therefore have to be treated with caution.

Table 7.90: How does your organisation organise user support? (Part 2)

	<i>We support users via a centrally organised system (e.g. ticketing, helpdesk).</i>					
	<i>no</i>		<i>yes</i>		<i>Total</i>	
	No.	%	No.	%	No.	%
AT	17	58.6	12	41.4	29	100.0
BE	5	38.5 ^a	8	61.5 ^a	13	100.0 ^a
DE	36	42.4	49	57.6	85	100.0
FR	8	27.6	21	72.4	29	100.0
IT	70	55.6	56	44.4	126	100.0
Total	136	48.2	146	51.8	282	100.0
Mean		44.5		55.5		100.0

Note: target group: e-infrastructures; stacked dataset of all services; only respondents who indicated that their organisation operates a user support are included (see table above showing Part 1 of question E36); row percentages; question-ID: E36; a superscript 'a' indicates that percentages rely on a number of observations below 20 and therefore have to be treated with caution.

Table 7.91: How does your organisation organise user support? (Part 3)

<i>We support users individually without a centrally organised user support system.</i>						
	<i>no</i>		<i>yes</i>		<i>Total</i>	
	No.	%	No.	%	No.	%
AT	9	31.0	20	69.0	29	100.0
BE	7	53.8 ^a	6	46.2 ^a	13	100.0 ^a
DE	32	37.6	53	62.4	85	100.0
FR	20	69.0	9	31.0	29	100.0
IT	48	38.1	78	61.9	126	100.0
Total	116	41.1	166	58.9	282	100.0
Mean		45.9		54.1		100.0

Note: target group: e-infrastructures; stacked dataset of all services; only respondents who indicated that their organisation operates a user support are included (see table above showing Part 1 of question E36); row percentages; question-ID: E36; a superscript 'a' indicates that percentages rely on a number of observations below 20 and therefore have to be treated with caution.

Table 7.92: How does your organisation organise user support? (Part 4)

<i>User support organisation: other</i>						
	<i>no</i>		<i>yes</i>		<i>Total</i>	
	No.	%	No.	%	No.	%
AT	26	89.7	3	10.3	29	100.0
BE	12	92.3 ^a	1	7.7 ^a	13	100.0 ^a
DE	82	96.5	3	3.5	85	100.0
FR	27	93.1	2	6.9	29	100.0
IT	123	97.6	3	2.4	126	100.0
Total	270	95.7	12	4.3	282	100.0
Mean		93.8		6.2		100.0

Note: target group: e-infrastructures; stacked dataset of all services; only respondents who indicated that their organisation operates a user support are included (see table above showing Part 1 of question E36); row percentages; question-ID: E36; a superscript 'a' indicates that percentages rely on a number of observations below 20 and therefore have to be treated with caution.

Table 7.93: Does your organisation offer a website that describes your service(s)?

	<i>Website describing services</i>							
	<i>no</i>		<i>yes</i>		<i>no answer</i>		<i>Total</i>	
	No.	%	No.	%	No.	%	No.	%
AT	5	14.3	29	82.9	1	2.9	35	100.0
BE	1	6.7 ^a	13	86.7 ^a	1	6.7 ^a	15	100.0 ^a
DE	5	5.5	83	91.2	3	3.3	91	100.0
FR	0	0.0	30	96.8	1	3.2	31	100.0
IT	5	3.6	131	94.2	3	2.2	139	100.0
Total	16	5.1	286	92.0	9	2.9	311	100.0
Mean		6.0		90.4		3.7		100.0

Note: target group: e-infrastructures; stacked dataset of all services; row percentages; question-ID: E79; a superscript ‘a’ indicates that percentages rely on a number of observations below 20 and therefore have to be treated with caution.

Table 7.94: In which language(s) is this website available? (Part 1)

	<i>Website: Dutch</i>					
	<i>no</i>		<i>yes</i>		<i>Total</i>	
	No.	%	No.	%	No.	%
AT	29	100.0	0	0.0	29	100.0
BE	6	46.2 ^a	7	53.8 ^a	13	100.0 ^a
DE	82	98.8	1	1.2	83	100.0
FR	30	100.0	0	0.0	30	100.0
IT	130	99.2	1	0.8	131	100.0
Total	277	96.9	9	3.1	286	100.0
Mean		88.8		11.2		100.0

Note: target group: e-infrastructures; stacked dataset of all services; row percentages; only respondents included that indicated that their ‘organisation offer(s) a website’ (see question E79 above); question-ID: E791; a superscript ‘a’ indicates that percentages rely on a number of observations below 20 and therefore have to be treated with caution.

Table 7.95: In which language(s) is this website available? (Part 2)

	<i>Website: English</i>					
	<i>no</i>		<i>yes</i>		<i>Total</i>	
	No.	%	No.	%	No.	%
AT	4	13.8	25	86.2	29	100.0
BE	0	0.0 ^a	13	100.0 ^a	13	100.0 ^a
DE	3	3.6	80	96.4	83	100.0
FR	9	30.0	21	70.0	30	100.0
IT	16	12.2	115	87.8	131	100.0
Total	32	11.2	254	88.8	286	100.0
Mean		11.9		88.1		100.0

Note: target group: e-infrastructures; stacked dataset of all services; row percentages; only respondents included that indicated that their 'organisation offer(s) a website' (see question E79 above); question-ID: E791; a superscript 'a' indicates that percentages rely on a number of observations below 20 and therefore have to be treated with caution.

Table 7.96: In which language(s) is this website available? (Part 3)

	<i>Website: French</i>					
	<i>no</i>		<i>yes</i>		<i>Total</i>	
	No.	%	No.	%	No.	%
AT	29	100.0	0	0.0	29	100.0
BE	9	69.2 ^a	4	30.8 ^a	13	100.0 ^a
DE	82	98.8	1	1.2	83	100.0
FR	7	23.3	23	76.7	30	100.0
IT	129	98.5	2	1.5	131	100.0
Total	256	89.5	30	10.5	286	100.0
Mean		78.0		22.0		100.0

Note: target group: e-infrastructures; stacked dataset of all services; row percentages; only respondents included that indicated that their 'organisation offer(s) a website' (see question E79 above); question-ID: E791; a superscript 'a' indicates that percentages rely on a number of observations below 20 and therefore have to be treated with caution.

Table 7.97: In which language(s) is this website available? (Part 4)

	<i>Website: German</i>					
	<i>no</i>		<i>yes</i>		<i>Total</i>	
	No.	%	No.	%	No.	%
AT	7	24.1	22	75.9	29	100.0
BE	11	84.6 ^a	2	15.4 ^a	13	100.0 ^a
DE	38	45.8	45	54.2	83	100.0
FR	30	100.0	0	0.0	30	100.0
IT	129	98.5	2	1.5	131	100.0
Total	215	75.2	71	24.8	286	100.0
Mean		70.6		29.4		100.0

Note: target group: e-infrastructures; stacked dataset of all services; row percentages; only respondents included that indicated that their 'organisation offer(s) a website' (see question E79 above); question-ID: E791; a superscript 'a' indicates that percentages rely on a number of observations below 20 and therefore have to be treated with caution.

Table 7.98: In which language(s) is this website available? (Part 5)

	<i>Website: Italian</i>					
	<i>no</i>		<i>yes</i>		<i>Total</i>	
	No.	%	No.	%	No.	%
AT	29	100.0	0	0.0	29	100.0
BE	13	100.0 ^a	0	0.0 ^a	13	100.0 ^a
DE	82	98.8	1	1.2	83	100.0
FR	30	100.0	0	0.0	30	100.0
IT	29	22.1	102	77.9	131	100.0
Total	183	64.0	103	36.0	286	100.0
Mean		84.2		15.8		100.0

Note: target group: e-infrastructures; stacked dataset of all services; row percentages; only respondents included that indicated that their 'organisation offer(s) a website' (see question E79 above); question-ID: E791; a superscript 'a' indicates that percentages rely on a number of observations below 20 and therefore have to be treated with caution.

Table 7.99: In which language(s) is this website available? (Part 6)

	<i>Website: other language</i>					
	<i>no</i>		<i>yes</i>		<i>Total</i>	
	No.	%	No.	%	No.	%
AT	29	100.0	0	0.0	29	100.0
BE	13	100.0 ^a	0	0.0 ^a	13	100.0 ^a
DE	81	97.6	2	2.4	83	100.0
FR	28	93.3	2	6.7	30	100.0
IT	128	97.7	3	2.3	131	100.0
Total	279	97.6	7	2.4	286	100.0
Mean		97.7		2.3		100.0

Note: target group: e-infrastructures; stacked dataset of all services; row percentages; only respondents included that indicated that their 'organisation offer(s) a website' (see question E79 above); question-ID: E791; a superscript 'a' indicates that percentages rely on a number of observations below 20 and therefore have to be treated with caution.

Table 7.100: Does your organisation provide the following services? (Part 1)

	<i>Support service: data management plans</i>							
	<i>no</i>		<i>yes</i>		<i>no answer</i>		<i>Total</i>	
	No.	%	No.	%	No.	%	No.	%
AT	20	57.1	13	37.1	2	5.7	35	100.0
BE	7	46.7 ^a	6	40.0 ^a	2	13.3 ^a	15	100.0 ^a
DE	44	48.4	44	48.4	3	3.3	91	100.0
FR	16	51.6	13	41.9	2	6.5	31	100.0
IT	65	46.8	71	51.1	3	2.2	139	100.0
Total	152	48.9	147	47.3	12	3.9	311	100.0
Mean		50.1		43.7		6.2		100.0

Note: target group: e-infrastructures; stacked dataset of all services; row percentages; question-ID: E80; a superscript 'a' indicates that percentages rely on a number of observations below 20 and therefore have to be treated with caution.

Table 7.101: Does your organisation provide the following services? (Part 2)

	<i>Support service: data management</i>							
	<i>no</i>		<i>yes</i>		<i>no answer</i>		<i>Total</i>	
	No.	%	No.	%	No.	%	No.	%
AT	15	42.9	18	51.4	2	5.7	35	100.0
BE	8	53.3 ^a	5	33.3 ^a	2	13.3 ^a	15	100.0 ^a
DE	26	28.6	62	68.1	3	3.3	91	100.0
FR	5	16.1	24	77.4	2	6.5	31	100.0
IT	43	30.9	92	66.2	4	2.9	139	100.0
Total	97	31.2	201	64.6	13	4.2	311	100.0
Mean		34.4		59.3		6.3		100.0

Note: target group: e-infrastructures; stacked dataset of all services; row percentages; question-ID: E80; a superscript 'a' indicates that percentages rely on a number of observations below 20 and therefore have to be treated with caution.

Table 7.102: Does your organisation provide the following services? (Part 3)

	<i>Support service: legal issues</i>							
	<i>no</i>		<i>yes</i>		<i>no answer</i>		<i>Total</i>	
	No.	%	No.	%	No.	%	No.	%
AT	24	68.6	10	28.6	1	2.9	35	100.0
BE	10	66.7 ^a	2	13.3 ^a	3	20.0 ^a	15	100.0 ^a
DE	49	53.8	38	41.8	4	4.4	91	100.0
FR	20	64.5	9	29.0	2	6.5	31	100.0
IT	85	61.2	51	36.7	3	2.2	139	100.0
Total	188	60.5	110	35.4	13	4.2	311	100.0
Mean		63.0		29.9		7.2		100.0

Note: target group: e-infrastructures; stacked dataset of all services; row percentages; question-ID: E80; a superscript 'a' indicates that percentages rely on a number of observations below 20 and therefore have to be treated with caution.

7.6 Access conditions and legal aspects

Most tables in this section rely on the stacked dataset. An exception are the tables for question E90 (Table 7.113–Table 7.117) which include only respondents who indicated that their organisation "offer(s) data infrastructures which store and manage research data".

Table 7.103: Does your organisation have a publicly available access policy for services or data?

	<i>Access: policy exists</i>							
	<i>no</i>		<i>yes</i>		<i>no answer</i>		<i>Total</i>	
	No.	%	No.	%	No.	%	No.	%
AT	13	38.2	20	58.8	1	2.9	34	100.0
BE	7	46.7 ^a	8	53.3 ^a	0	0.0 ^a	15	100.0 ^a
DE	20	22.2	69	76.7	1	1.1	90	100.0
FR	8	25.8	22	71.0	1	3.2	31	100.0
IT	62	44.9	73	52.9	3	2.2	138	100.0
Total	110	35.7	192	62.3	6	1.9	308	100.0
Mean		35.6		62.5		1.9		100.0

Note: target group: e-infrastructures; stacked dataset of all services; row percentages; question-ID: E38; a superscript 'a' indicates that percentages rely on a number of observations below 20 and therefore have to be treated with caution.

Table 7.104: Is a publicly available access policy planned?

	<i>Access: policy planned</i>													
	<i>no</i>		<i>in <1 y.</i>		<i>in 1–2 y.</i>		<i>in >2 y.</i>		<i>n.a.</i>		<i>no a.</i>		<i>Total</i>	
	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%
AT	4	30.8 ^a	2	15.4 ^a	3	23.1 ^a	1	7.7 ^a	3	23.1 ^a	0	0.0 ^a	13	100.0 ^a
BE	2	28.6 ^a	1	14.3 ^a	3	42.9 ^a	0	0.0 ^a	1	14.3 ^a	0	0.0 ^a	7	100.0 ^a
DE	9	45.0	3	15.0	5	25.0	1	5.0	1	5.0	1	5.0	20	100.0
FR	1	12.5 ^a	2	25.0 ^a	5	62.5 ^a	0	0.0 ^a	0	0.0 ^a	0	0.0 ^a	8	100.0 ^a
IT	5	8.1	6	9.7	7	11.3	6	9.7	38	61.3	0	0.0	62	100.0
Total	21	19.1	14	12.7	23	20.9	8	7.3	43	39.1	1	0.9	110	100.0
Mean		25.0		15.9		33.0		4.5		20.7		1.0		100.0

Note: target group: e-infrastructures; stacked dataset of all services; row percentages; respondents only received this question if they indicated that their organisation does not have an access policy (see question E38 above); original label of categories: 'no', 'yes, in less than 1 year', 'yes, in 1 to 2 years', 'yes, in more than 2 years', 'not applicable'; question-ID: E39; a superscript 'a' indicates that percentages rely on a number of observations below 20 and therefore have to be treated with caution.

Table 7.105: How does your organisation authorize access to data? (Part 1)

	<i>Group membership</i>									
	<i>no</i>		<i>yes</i>		<i>n.a.</i>		<i>no answer</i>		<i>Total</i>	
	No.	%	No.	%	No.	%	No.	%	No.	%
AT	20	58.8	11	32.4	2	5.9	1	2.9	34	100.0
BE	7	46.7 ^a	7	46.7 ^a	1	6.7 ^a	0	0.0 ^a	15	100.0 ^a
DE	53	58.9	33	36.7	2	2.2	2	2.2	90	100.0
FR	9	29.0	20	64.5	1	3.2	1	3.2	31	100.0
IT	91	65.9	42	30.4	4	2.9	1	0.7	138	100.0
Total	180	58.4	113	36.7	10	3.2	5	1.6	308	100.0
Mean		51.9		42.1		4.2		1.8		100.0

Note: target group: e-infrastructures; stacked dataset of all services; row percentages; question-ID: E50; a superscript 'a' indicates that percentages rely on a number of observations below 20 and therefore have to be treated with caution.

Table 7.106: How does your organisation authorize access to data? (Part 2)

	<i>Mapping of group membership to the local file system</i>									
	<i>no</i>		<i>yes</i>		<i>n.a.</i>		<i>no answer</i>		<i>Total</i>	
	No.	%	No.	%	No.	%	No.	%	No.	%
AT	22	64.7	9	26.5	2	5.9	1	2.9	34	100.0
BE	10	66.7 ^a	4	26.7 ^a	1	6.7 ^a	0	0.0 ^a	15	100.0 ^a
DE	69	76.7	17	18.9	2	2.2	2	2.2	90	100.0
FR	20	64.5	9	29.0	1	3.2	1	3.2	31	100.0
IT	118	85.5	15	10.9	4	2.9	1	0.7	138	100.0
Total	239	77.6	54	17.5	10	3.2	5	1.6	308	100.0
Mean		71.6		22.4		4.2		1.8		100.0

Note: target group: e-infrastructures; stacked dataset of all services; row percentages; question-ID: E50; a superscript 'a' indicates that percentages rely on a number of observations below 20 and therefore have to be treated with caution.

Table 7.107: How does your organisation authorize access to data? (Part 3)

	<i>Individually</i>									
	<i>no</i>		<i>yes</i>		<i>n.a.</i>		<i>no answer</i>		<i>Total</i>	
	No.	%	No.	%	No.	%	No.	%	No.	%
AT	13	38.2	18	52.9	2	5.9	1	2.9	34	100.0
BE	6	40.0 ^a	8	53.3 ^a	1	6.7 ^a	0	0.0 ^a	15	100.0 ^a
DE	41	45.6	45	50.0	2	2.2	2	2.2	90	100.0
FR	19	61.3	10	32.3	1	3.2	1	3.2	31	100.0
IT	44	31.9	89	64.5	4	2.9	1	0.7	138	100.0
Total	123	39.9	170	55.2	10	3.2	5	1.6	308	100.0
Mean		43.4		50.6		4.2		1.8		100.0

Note: target group: e-infrastructures; stacked dataset of all services; row percentages; question-ID: E50; a superscript 'a' indicates that percentages rely on a number of observations below 20 and therefore have to be treated with caution.

Table 7.108: How does your organisation authorize access to data? (Part 4)

	<i>Service local authorization</i>									
	<i>no</i>		<i>yes</i>		<i>n.a.</i>		<i>no answer</i>		<i>Total</i>	
	No.	%	No.	%	No.	%	No.	%	No.	%
AT	26	76.5	5	14.7	2	5.9	1	2.9	34	100.0
BE	12	80.0 ^a	2	13.3 ^a	1	6.7 ^a	0	0.0 ^a	15	100.0 ^a
DE	69	76.7	17	18.9	2	2.2	2	2.2	90	100.0
FR	22	71.0	7	22.6	1	3.2	1	3.2	31	100.0
IT	91	65.9	42	30.4	4	2.9	1	0.7	138	100.0
Total	220	71.4	73	23.7	10	3.2	5	1.6	308	100.0
Mean		74.0		20.0		4.2		1.8		100.0

Note: target group: e-infrastructures; stacked dataset of all services; row percentages; question-ID: E50; a superscript 'a' indicates that percentages rely on a number of observations below 20 and therefore have to be treated with caution.

Table 7.109: How does your organisation authorize access to data? (Part 5)

<i>No access control, data is openly accessible.</i>										
	<i>no</i>		<i>yes</i>		<i>n.a.</i>		<i>no answer</i>		<i>Total</i>	
	No.	%	No.	%	No.	%	No.	%	No.	%
AT	19	55.9	12	35.3	2	5.9	1	2.9	34	100.0
BE	10	66.7 ^a	4	26.7 ^a	1	6.7 ^a	0	0.0 ^a	15	100.0 ^a
DE	34	37.8	52	57.8	2	2.2	2	2.2	90	100.0
FR	22	71.0	7	22.6	1	3.2	1	3.2	31	100.0
IT	98	71.0	35	25.4	4	2.9	1	0.7	138	100.0
Total	183	59.4	110	35.7	10	3.2	5	1.6	308	100.0
Mean		60.5		33.6		4.2		1.8		100.0

Note: target group: e-infrastructures; stacked dataset of all services; row percentages; question-ID: E50; a superscript 'a' indicates that percentages rely on a number of observations below 20 and therefore have to be treated with caution.

Table 7.110: How does your organisation authorize access to data? (Part 6)

<i>Other</i>										
	<i>no</i>		<i>yes</i>		<i>n.a.</i>		<i>no answer</i>		<i>Total</i>	
	No.	%	No.	%	No.	%	No.	%	No.	%
AT	28	82.4	3	8.8	2	5.9	1	2.9	34	100.0
BE	13	86.7 ^a	1	6.7 ^a	1	6.7 ^a	0	0.0 ^a	15	100.0 ^a
DE	78	86.7	8	8.9	2	2.2	2	2.2	90	100.0
FR	26	83.9	3	9.7	1	3.2	1	3.2	31	100.0
IT	126	91.3	7	5.1	4	2.9	1	0.7	138	100.0
Total	271	88.0	22	7.1	10	3.2	5	1.6	308	100.0
Mean		86.2		7.8		4.2		1.8		100.0

Note: target group: e-infrastructures; stacked dataset of all services; row percentages; question-ID: E50; a superscript 'a' indicates that percentages rely on a number of observations below 20 and therefore have to be treated with caution.

Table 7.111: Does your organisation offer services that process personal data in research data?

	<i>Personal data: processed</i>							
	<i>no</i>		<i>yes</i>		<i>no answer</i>		<i>Total</i>	
	No.	%	No.	%	No.	%	No.	%
AT	20	58.8	12	35.3	2	5.9	34	100.0
BE	9	60.0 ^a	4	26.7 ^a	2	13.3 ^a	15	100.0 ^a
DE	75	83.3	14	15.6	1	1.1	90	100.0
FR	21	67.7	9	29.0	1	3.2	31	100.0
IT	110	79.7	21	15.2	7	5.1	138	100.0
Total	235	76.3	60	19.5	13	4.2	308	100.0
Mean		69.9		24.4		5.7		100.0

Note: target group: e-infrastructures; stacked dataset of all services; row percentages; question-ID: E46; a superscript 'a' indicates that percentages rely on a number of observations below 20 and therefore have to be treated with caution.

Table 7.112: Does your organisation offer services that process special categories of personal data in research data?

	<i>Personal data: special categories processed</i>							
	<i>no</i>		<i>yes</i>		<i>no answer</i>		<i>Total</i>	
	No.	%	No.	%	No.	%	No.	%
AT	8	57.1 ^a	5	35.7 ^a	1	7.1 ^a	14	100.0 ^a
BE	1	16.7 ^a	3	50.0 ^a	2	33.3 ^a	6	100.0 ^a
DE	4	26.7 ^a	11	73.3 ^a	0	0.0 ^a	15	100.0 ^a
FR	3	30.0 ^a	6	60.0 ^a	1	10.0 ^a	10	100.0 ^a
IT	11	39.3	14	50.0	3	10.7	28	100.0
Total	27	37.0	39	53.4	7	9.6	73	100.0
Mean		34.0		53.8		12.2		100.0

Note: target group: e-infrastructures; stacked dataset of all services; row percentages; only respondents who did NOT indicate that their organisation does not process personal data (question E46 above) received this question; question-ID: E47; a superscript 'a' indicates that percentages rely on a number of observations below 20 and therefore have to be treated with caution.

Table 7.113: Under what conditions does your organisation disseminate research data?
(Part 1)

	<i>Dissemination of data: public domain (SMD)</i>							
	<i>no</i>		<i>yes</i>		<i>no answer</i>		<i>Total</i>	
	No.	%	No.	%	No.	%	No.	%
AT	16	64.0	8	32.0	1	4.0	25	100.0
BE	3	27.3 ^a	5	45.5 ^a	3	27.3 ^a	11	100.0 ^a
DE	36	46.8	38	49.4	3	3.9	77	100.0
FR	9	47.4 ^a	7	36.8 ^a	3	15.8 ^a	19	100.0 ^a
IT	73	68.2	30	28.0	4	3.7	107	100.0
Total	137	57.3	88	36.8	14	5.9	239	100.0
Mean		50.7		38.3		10.9		100.0

Note: target group: e-infrastructures; only respondents included who indicated that their organisation 'offer(s) data infrastructures which store and manage research data' (see question E1); row percentages; question-ID: E90; a superscript 'a' indicates that percentages rely on a number of observations below 20 and therefore have to be treated with caution.

Table 7.114: Under what conditions does your organisation disseminate research data?
(Part 2)

	<i>Dissemination of data: cc licences for open reuse (SMD)</i>							
	<i>no</i>		<i>yes</i>		<i>no answer</i>		<i>Total</i>	
	No.	%	No.	%	No.	%	No.	%
AT	10	40.0	14	56.0	1	4.0	25	100.0
BE	4	36.4 ^a	4	36.4 ^a	3	27.3 ^a	11	100.0 ^a
DE	22	28.6	52	67.5	3	3.9	77	100.0
FR	9	47.4 ^a	7	36.8 ^a	3	15.8 ^a	19	100.0 ^a
IT	74	69.2	29	27.1	4	3.7	107	100.0
Total	119	49.8	106	44.4	14	5.9	239	100.0
Mean		44.3		44.8		10.9		100.0

Note: target group: e-infrastructures; only respondents included who indicated that their organisation 'offer(s) data infrastructures which store and manage research data' (see question E1); row percentages; question-ID: E90; a superscript 'a' indicates that percentages rely on a number of observations below 20 and therefore have to be treated with caution.

Table 7.115: Under what conditions does your organisation disseminate research data?
(Part 3)

	<i>Dissemination of data: cc licenses for restricted reuse (SMD)</i>							
	<i>no</i>		<i>yes</i>		<i>no answer</i>		<i>Total</i>	
	No.	%	No.	%	No.	%	No.	%
AT	16	64.0	8	32.0	1	4.0	25	100.0
BE	6	54.5 ^a	2	18.2 ^a	3	27.3 ^a	11	100.0 ^a
DE	35	45.5	39	50.6	3	3.9	77	100.0
FR	13	68.4 ^a	3	15.8 ^a	3	15.8 ^a	19	100.0 ^a
IT	49	45.8	54	50.5	4	3.7	107	100.0
Total	119	49.8	106	44.4	14	5.9	239	100.0
Mean		55.6		33.4		10.9		100.0

Note: target group: e-infrastructures; only respondents included who indicated that their organisation 'offer(s) data infrastructures which store and manage research data' (see question E1); row percentages; question-ID: E90; a superscript 'a' indicates that percentages rely on a number of observations below 20 and therefore have to be treated with caution.

Table 7.116: Under what conditions does your organisation disseminate research data?
(Part 4)

	<i>Dissemination of data: tailored licences (SMD)</i>							
	<i>no</i>		<i>yes</i>		<i>no answer</i>		<i>Total</i>	
	No.	%	No.	%	No.	%	No.	%
AT	14	56.0	10	40.0	1	4.0	25	100.0
BE	4	36.4 ^a	4	36.4 ^a	3	27.3 ^a	11	100.0 ^a
DE	57	74.0	17	22.1	3	3.9	77	100.0
FR	14	73.7 ^a	2	10.5 ^a	3	15.8 ^a	19	100.0 ^a
IT	86	80.4	17	15.9	4	3.7	107	100.0
Total	175	73.2	50	20.9	14	5.9	239	100.0
Mean		64.1		25.0		10.9		100.0

Note: target group: e-infrastructures; only respondents included who indicated that their organisation 'offer(s) data infrastructures which store and manage research data' (see question E1); row percentages; question-ID: E90; a superscript 'a' indicates that percentages rely on a number of observations below 20 and therefore have to be treated with caution.

Table 7.117: Under what conditions does your organisation disseminate research data? (Part 5)

<i>Dissemination of data: other (SMD)</i>										
	<i>no</i>		<i>yes</i>		<i>n. a.</i>		<i>no answer</i>		<i>Total</i>	
	No.	%	No.	%	No.	%	No.	%	No.	%
AT	18	72.0	6	24.0	0	0.0	1	4.0	25	100.0
BE	7	63.6 ^a	1	9.1 ^a	0	0.0 ^a	3	27.3 ^a	11	100.0 ^a
DE	64	83.1	9	11.7	1	1.3	3	3.9	77	100.0
FR	10	52.6 ^a	6	31.6 ^a	0	0.0 ^a	3	15.8 ^a	19	100.0 ^a
IT	84	78.5	19	17.8	0	0.0	4	3.7	107	100.0
Total	183	76.6	41	17.2	1	0.4	14	5.9	239	100.0
Mean		70.0		18.8		0.3		10.9		100.0

Note: target group: e-infrastructures; only respondents included who indicated that their organisation ‘offer(s) data infrastructures which store and manage research data’ (see question E1); row percentages; question-ID: E90; a superscript ‘a’ indicates that percentages rely on a number of observations below 20 and therefore have to be treated with caution.

Table 7.118: Do you need implementation support outside of your organisation to federate your service to EOSC?

<i>Support for federation to EOSC needed</i>										
	<i>no</i>		<i>yes</i>		<i>don't know</i>		<i>no answer</i>		<i>Total</i>	
	No.	%	No.	%	No.	%	No.	%	No.	%
AT	5	21.7	7	30.4	10	43.5	1	4.3	23	100.0
BE	2	15.4 ^a	3	23.1 ^a	4	30.8 ^a	4	30.8 ^a	13	100.0 ^a
DE	16	21.6	25	33.8	29	39.2	4	5.4	74	100.0
FR	6	20.7	6	20.7	12	41.4	5	17.2	29	100.0
IT	24	19.0	61	48.4	37	29.4	4	3.2	126	100.0
Total	53	20.0	102	38.5	92	34.7	18	6.8	265	100.0
Mean		19.7		31.3		36.9		12.2		100.0

Note: target group: e-infrastructures; stacked dataset of all services; row percentages; only respondents who did NOT indicate that they are ‘not familiar at all’ with EOSC (question F5U5R12E12) received this question; question-ID: E54; a superscript ‘a’ indicates that percentages rely on a number of observations below 20 and therefore have to be treated with caution.

7.7 Policies and technical specifications

All tables in this section rely on the stacked dataset.

Table 7.119: Has your organisation developed informal or formal regulations or publicly available policies that address the following aspects? (Part 1)

	Research data management (RDM)													
	no		informal		written		policy		n.a.		no ans.		Total	
	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%
AT	5	15.6	11	34.4	4	12.5	3	9.4	7	21.9	2	6.3	32	100.0
BE	2	15.4 ^a	3	23.1 ^a	4	30.8 ^a	1	7.7 ^a	2	15.4 ^a	1	7.7 ^a	13	100.0 ^a
DE	21	23.3	19	21.1	20	22.2	16	17.8	8	8.9	6	6.7	90	100.0
FR	7	22.6	7	22.6	2	6.5	4	12.9	2	6.5	9	29.0	31	100.0
IT	26	19.0	55	40.1	24	17.5	16	11.7	14	10.2	2	1.5	137	100.0
Total	61	20.1	95	31.4	54	17.8	40	13.2	33	10.9	20	6.6	303	100.0
Mean		19.2		28.3		17.9		11.9		12.6		10.2		100.0

Note: target group: e-infrastructures; stacked dataset of all services; row percentages; original labels of categories: 'no regulation', 'informal regulation', 'formal/written regulation', 'publicly available policy', 'not applicable' question-ID: E56; a superscript 'a' indicates that percentages rely on a number of observations below 20 and therefore have to be treated with caution.

Table 7.120: Has your organisation developed informal or formal regulations or publicly available policies that address the following aspects? (Part 2)

	Open research data													
	no		informal		written		policy		n.a.		no ans.		Total	
	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%
AT	6	18.8	7	21.9	4	12.5	6	18.8	5	15.6	4	12.5	32	100.0
BE	3	23.1 ^a	1	7.7 ^a	5	38.5 ^a	1	7.7 ^a	2	15.4 ^a	1	7.7 ^a	13	100.0 ^a
DE	19	21.1	18	20.0	19	21.1	22	24.4	6	6.7	6	6.7	90	100.0
FR	5	16.1	8	25.8	2	6.5	5	16.1	2	6.5	9	29.0	31	100.0
IT	21	15.3	61	44.5	16	11.7	27	19.7	10	7.3	2	1.5	137	100.0
Total	54	17.8	95	31.4	46	15.2	61	20.1	25	8.3	22	7.3	303	100.0
Mean		18.9		24.0		18.1		17.3		10.3		11.5		100.0

Note: target group: e-infrastructures; stacked dataset of all services; row percentages; original labels of categories: 'no regulation', 'informal regulation', 'formal/written regulation', 'publicly available policy', 'not applicable' question-ID: E56; a superscript 'a' indicates that percentages rely on a number of observations below 20 and therefore have to be treated with caution.

Table 7.121: Has your organisation developed informal or formal regulations or publicly available policies that address the following aspects? (Part 3)

Long-term availability of research data														
	no		informal		written		policy		n.a.		no ans.		Total	
	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%
AT	5	15.6	11	34.4	3	9.4	6	18.8	4	12.5	3	9.4	32	100.0
BE	3	23.1 ^a	6	46.2 ^a	0	0.0 ^a	1	7.7 ^a	2	15.4 ^a	1	7.7 ^a	13	100.0 ^a
DE	17	18.9	21	23.3	21	23.3	18	20.0	7	7.8	6	6.7	90	100.0
FR	4	12.9	6	19.4	3	9.7	7	22.6	3	9.7	8	25.8	31	100.0
IT	48	35.0	35	25.5	23	16.8	13	9.5	14	10.2	4	2.9	137	100.0
Total	77	25.4	79	26.1	50	16.5	45	14.9	30	9.9	22	7.3	303	100.0
Mean		21.1		29.8		11.8		15.7		11.1		10.5		100.0

Note: target group: e-infrastructures; stacked dataset of all services; row percentages; original labels of categories: 'no regulation', 'informal regulation', 'formal/written regulation', 'publicly available policy', 'not applicable' question-ID: E56; a superscript 'a' indicates that percentages rely on a number of observations below 20 and therefore have to be treated with caution.

Table 7.122: Has your organisation developed informal or formal regulations or publicly available policies that address the following aspects? (Part 4)

<i>Compliance of data to the FAIR principles</i>														
	<i>no</i>		<i>informal</i>		<i>written</i>		<i>policy</i>		<i>n.a.</i>		<i>no ans.</i>		<i>Total</i>	
	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%
AT	6	18.8	9	28.1	2	6.3	3	9.4	8	25.0	4	12.5	32	100.0
BE	5	38.5 ^a	2	15.4 ^a	2	15.4 ^a	0	0.0 ^a	3	23.1 ^a	1	7.7 ^a	13	100.0 ^a
DE	21	23.3	26	28.9	13	14.4	13	14.4	9	10.0	8	8.9	90	100.0
FR	6	19.4	6	19.4	2	6.5	4	12.9	3	9.7	10	32.3	31	100.0
IT	28	20.4	70	51.1	8	5.8	8	5.8	17	12.4	6	4.4	137	100.0
Total	66	21.8	113	37.3	27	8.9	28	9.2	40	13.2	29	9.6	303	100.0
Mean		24.1		28.6		9.7		8.5		16.0		13.2		100.0

Note: target group: e-infrastructures; stacked dataset of all services; row percentages; original labels of categories: 'no regulation', 'informal regulation', 'formal/written regulation', 'publicly available policy', 'not applicable' question-ID: E56; a superscript 'a' indicates that percentages rely on a number of observations below 20 and therefore have to be treated with caution.

Table 7.123: Has your organisation developed informal or formal regulations or publicly available policies that address the following aspects? (Part 5)

<i>Publication of data in a repository</i>														
	<i>no</i>		<i>informal</i>		<i>written</i>		<i>policy</i>		<i>n.a.</i>		<i>no ans.</i>		<i>Total</i>	
	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%
AT	2	6.3	10	31.3	3	9.4	7	21.9	7	21.9	3	9.4	32	100.0
BE	2	15.4 ^a	3	23.1 ^a	4	30.8 ^a	1	7.7 ^a	2	15.4 ^a	1	7.7 ^a	13	100.0 ^a
DE	16	17.8	19	21.1	18	20.0	23	25.6	8	8.9	6	6.7	90	100.0
FR	6	19.4	4	12.9	4	12.9	5	16.1	3	9.7	9	29.0	31	100.0
IT	12	8.8	40	29.2	52	38.0	18	13.1	11	8.0	4	2.9	137	100.0
Total	38	12.5	76	25.1	81	26.7	54	17.8	31	10.2	23	7.6	303	100.0
Mean		13.5		23.5		22.2		16.9		12.8		11.1		100.0

Note: target group: e-infrastructures; stacked dataset of all services; row percentages; original labels of categories: ‘no regulation’, ‘informal regulation’, ‘formal/written regulation’, ‘publicly available policy’, ‘not applicable’ question-ID: E56; a superscript ‘a’ indicates that percentages rely on a number of observations below 20 and therefore have to be treated with caution.

Table 7.124: Has your organisation developed informal or formal regulations or publicly available policies that address the following aspects? (Part 6)

<i>Publication of data in a certified repository</i>														
	<i>no</i>		<i>informal</i>		<i>written</i>		<i>policy</i>		<i>n.a.</i>		<i>no ans.</i>		<i>Total</i>	
	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%
AT	7	21.9	5	15.6	2	6.3	4	12.5	10	31.3	4	12.5	32	100.0
BE	2	15.4 ^a	3	23.1 ^a	4	30.8 ^a	0	0.0 ^a	3	23.1 ^a	1	7.7 ^a	13	100.0 ^a
DE	26	28.9	20	22.2	6	6.7	11	12.2	18	20.0	9	10.0	90	100.0
FR	7	22.6	1	3.2	2	6.5	5	16.1	6	19.4	10	32.3	31	100.0
IT	22	16.1	31	22.6	45	32.8	9	6.6	25	18.2	5	3.6	137	100.0
Total	64	21.1	60	19.8	59	19.5	29	9.6	62	20.5	29	9.6	303	100.0
Mean		21.0		17.3		16.6		9.5		22.4		13.2		100.0

Note: target group: e-infrastructures; stacked dataset of all services; row percentages; original labels of categories: ‘no regulation’, ‘informal regulation’, ‘formal/written regulation’, ‘publicly available policy’, ‘not applicable’ question-ID: E56; a superscript ‘a’ indicates that percentages rely on a number of observations below 20 and therefore have to be treated with caution.

Table 7.125: Has your organisation developed informal or formal regulations or publicly available policies that address the following aspects? (Part 7)

	<i>Other</i>											
	<i>no</i>		<i>written</i>		<i>policy</i>		<i>n. a.</i>		<i>no ans.</i>		<i>Total</i>	
	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%
AT	0	0.0	0	0.0	0	0.0	4	12.5	28	87.5	32	100.0
BE	0	0.0 ^a	0	0.0 ^a	0	0.0 ^a	2	15.4 ^a	11	84.6 ^a	13	100.0 ^a
DE	3	3.3	0	0.0	2	2.2	6	6.7	79	87.8	90	100.0
FR	2	6.5	0	0.0	0	0.0	3	9.7	26	83.9	31	100.0
IT	4	2.9	2	1.5	1	0.7	18	13.1	112	81.8	137	100.0
Total	9	3.0	2	0.7	3	1.0	33	10.9	256	84.5	303	100.0
Mean		2.5		0.3		0.6		11.5		85.1		100.0

Note: target group: e-infrastructures; stacked dataset of all services; row percentages; original labels of categories: ‘no regulation’, ‘informal regulation’, ‘formal/written regulation’, ‘publicly available policy’, ‘not applicable’ question-ID: E56; a superscript ‘a’ indicates that percentages rely on a number of observations below 20 and therefore have to be treated with caution.

Table 7.126: Are your organisation’s services accessible by an application programming interface (API)?

	Services accessibly by API													
	no		concept		implementing		yes		n.a.		no a.		Total	
	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%
AT	3	9.4	6	18.8	2	6.3	14	43.8	6	18.8	1	3.1	32	100.0
BE	1	7.7 ^a	3	23.1 ^a	0	0.0 ^a	5	38.5 ^a	4	30.8 ^a	0	0.0 ^a	13	100.0 ^a
DE	8	8.9	12	13.3	23	25.6	33	36.7	10	11.1	4	4.4	90	100.0
FR	6	19.4	2	6.5	6	19.4	11	35.5	5	16.1	1	3.2	31	100.0
IT	20	14.6	52	38.0	16	11.7	34	24.8	12	8.8	3	2.2	137	100.0
Total	38	12.5	75	24.8	47	15.5	97	32.0	37	12.2	9	3.0	303	100.0
Mean		12.0		19.9		12.6		35.9		17.1		2.6		100.0

Note: target group: e-infrastructures; stacked dataset of all services; row percentages; original labels of categories: ‘We have not considered this feature yet.’, ‘We are working on or have a theoretical concept for this feature.’, ‘This feature is in the implementation phase.’, ‘This feature is fully implemented.’; question-ID: E58; a superscript ‘a’ indicates that percentages rely on a number of observations below 20 and therefore have to be treated with caution.

Table 7.127: Does your organisation assign or provide persistent identifiers (e.g. DOI, Handle)?

	<i>PIDs assigned</i>													
	<i>no</i>		<i>concept</i>		<i>implementing</i>		<i>yes</i>		<i>n.a.</i>		<i>no a.</i>		<i>Total</i>	
	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%
AT	5	15.6	1	3.1	4	12.5	14	43.8	7	21.9	1	3.1	32	100.0
BE	3	23.1 ^a	2	15.4 ^a	2	15.4 ^a	3	23.1 ^a	3	23.1 ^a	0	0.0 ^a	13	100.0 ^a
DE	2	2.2	6	6.7	8	8.9	60	66.7	12	13.3	2	2.2	90	100.0
FR	11	35.5	5	16.1	2	6.5	7	22.6	5	16.1	1	3.2	31	100.0
IT	10	7.3	10	7.3	39	28.5	41	29.9	34	24.8	3	2.2	137	100.0
Total	31	10.2	24	7.9	55	18.2	125	41.3	61	20.1	7	2.3	303	100.0
Mean		16.7		9.7		14.4		37.2		19.8		2.1		100.0

Note: target group: e-infrastructures; stacked dataset of all services; row percentages; original labels of categories: 'We have not considered this feature yet.', 'We are working on or have a theoretical concept for this feature.', 'This feature is in the implementation phase.', 'This feature is fully implemented.'; question-ID: E60; a superscript 'a' indicates that percentages rely on a number of observations below 20 and therefore have to be treated with caution.

Table 7.128: Which persistent identifiers does your organisation assign? (Part 1)

	<i>PIDs assigned: DOI</i>									
	<i>no</i>		<i>yes</i>		<i>n.a.</i>		<i>no answer</i>		<i>Total</i>	
	No.	%	No.	%	No.	%	No.	%	No.	%
AT	7	36.8 ^a	12	63.2 ^a	0	0.0 ^a	0	0.0 ^a	19	100.0 ^a
BE	1	14.3 ^a	4	57.1 ^a	1	14.3 ^a	1	14.3 ^a	7	100.0 ^a
DE	13	17.6	61	82.4	0	0.0	0	0.0	74	100.0
FR	3	21.4 ^a	8	57.1 ^a	3	21.4 ^a	0	0.0 ^a	14	100.0 ^a
IT	46	51.1	40	44.4	4	4.4	0	0.0	90	100.0
Total	70	34.3	125	61.3	8	3.9	1	0.5	204	100.0
Mean		28.2		60.8		8.0		2.9		100.0

Note: target group: e-infrastructures; stacked dataset of all services; row percentages; only respondents included who indicated in question E60 that their 'organisation assign(s) or provide(s) persistent identifiers' (i.e. respondents who chose one of the following options: 'This feature is fully implemented.' OR 'This feature is in the implementation phase.' OR 'We are working on or have a theoretical concept for this feature.'), question-ID: E61; a superscript 'a' indicates that percentages rely on a number of observations below 20 and therefore have to be treated with caution.

Table 7.129: Which persistent identifiers does your organisation assign? (Part 2)

<i>PIDs assigned: URN</i>										
	<i>no</i>		<i>yes</i>		<i>n.a.</i>		<i>no answer</i>		<i>Total</i>	
	No.	%	No.	%	No.	%	No.	%	No.	%
AT	16	84.2 ^a	3	15.8 ^a	0	0.0 ^a	0	0.0 ^a	19	100.0 ^a
BE	3	42.9 ^a	2	28.6 ^a	1	14.3 ^a	1	14.3 ^a	7	100.0 ^a
DE	58	78.4	16	21.6	0	0.0	0	0.0	74	100.0
FR	11	78.6 ^a	0	0.0 ^a	3	21.4 ^a	0	0.0 ^a	14	100.0 ^a
IT	78	86.7	8	8.9	4	4.4	0	0.0	90	100.0
Total	166	81.4	29	14.2	8	3.9	1	0.5	204	100.0
Mean		74.2		15.0		8.0		2.9		100.0

Note: target group: e-infrastructures; stacked dataset of all services; row percentages; only respondents included who indicated in question E60 that their 'organisation assign(s) or provide(s) persistent identifiers' (i.e. respondents who chose one of the following options: 'This feature is fully implemented.' OR 'This feature is in the implementation phase.' OR 'We are working on or have a theoretical concept for this feature.'). question-ID: E61; a superscript 'a' indicates that percentages rely on a number of observations below 20 and therefore have to be treated with caution.

Table 7.130: Which persistent identifiers does your organisation assign? (Part 3)

<i>PIDs assigned: Handle</i>										
	<i>no</i>		<i>yes</i>		<i>n.a.</i>		<i>no answer</i>		<i>Total</i>	
	No.	%	No.	%	No.	%	No.	%	No.	%
AT	12	63.2 ^a	7	36.8 ^a	0	0.0 ^a	0	0.0 ^a	19	100.0 ^a
BE	4	57.1 ^a	1	14.3 ^a	1	14.3 ^a	1	14.3 ^a	7	100.0 ^a
DE	56	75.7	18	24.3	0	0.0	0	0.0	74	100.0
FR	9	64.3 ^a	2	14.3 ^a	3	21.4 ^a	0	0.0 ^a	14	100.0 ^a
IT	47	52.2	39	43.3	4	4.4	0	0.0	90	100.0
Total	128	62.7	67	32.8	8	3.9	1	0.5	204	100.0
Mean		62.5		26.6		8.0		2.9		100.0

Note: target group: e-infrastructures; stacked dataset of all services; row percentages; only respondents included who indicated in question E60 that their 'organisation assign(s) or provide(s) persistent identifiers' (i.e. respondents who chose one of the following options: 'This feature is fully implemented.' OR 'This feature is in the implementation phase.' OR 'We are working on or have a theoretical concept for this feature.'). question-ID: E61; a superscript 'a' indicates that percentages rely on a number of observations below 20 and therefore have to be treated with caution.

Table 7.131: Which persistent identifiers does your organisation assign? (Part 4)

	<i>PIDs assigned: other</i>									
	<i>no</i>		<i>yes</i>		<i>n.a.</i>		<i>no answer</i>		<i>Total</i>	
	No.	%	No.	%	No.	%	No.	%	No.	%
AT	14	73.7 ^a	5	26.3 ^a	0	0.0 ^a	0	0.0 ^a	19	100.0 ^a
BE	4	57.1 ^a	1	14.3 ^a	1	14.3 ^a	1	14.3 ^a	7	100.0 ^a
DE	63	85.1	11	14.9	0	0.0	0	0.0	74	100.0
FR	7	50.0 ^a	4	28.6 ^a	3	21.4 ^a	0	0.0 ^a	14	100.0 ^a
IT	70	77.8	16	17.8	4	4.4	0	0.0	90	100.0
Total	158	77.5	37	18.1	8	3.9	1	0.5	204	100.0
Mean		68.7		20.4		8.0		2.9		100.0

Note: target group: e-infrastructures; stacked dataset of all services; row percentages; only respondents included who indicated in question E60 that their 'organisation assign(s) or provide(s) persistent identifiers' (i.e. respondents who chose one of the following options: 'This feature is fully implemented.' OR 'This feature is in the implementation phase.' OR 'We are working on or have a theoretical concept for this feature.')., question-ID: E61; a superscript 'a' indicates that percentages rely on a number of observations below 20 and therefore have to be treated with caution.

7.8 FAIRness of data I

All tables in this section rely exclusively on data on repositories.

Table 7.132: How FAIR do you consider your data holdings?

<i>How FAIR do you consider your data holdings?</i>														
	--		-		+		++		<i>n.a.</i>		<i>no ans.</i>		<i>Total</i>	
	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%
AT	0	0.0	1	4.5	12	54.5	5	22.7	1	4.5	3	13.6	22	100.0
BE	0	0.0 ^a	2	20.0 ^a	4	40.0 ^a	2	20.0 ^a	2	20.0 ^a	0	0.0 ^a	10	100.0 ^a
DE	0	0.0	4	5.3	32	42.7	33	44.0	1	1.3	5	6.7	75	100.0
FR	0	0.0 ^a	4	21.1 ^a	9	47.4 ^a	2	10.5 ^a	3	15.8 ^a	1	5.3 ^a	19	100.0 ^a
IT	3	2.9	9	8.7	36	34.6	17	16.3	36	34.6	3	2.9	104	100.0
Total	3	1.3	20	8.7	93	40.4	59	25.7	43	18.7	12	5.2	230	100.0
Mean		0.6		11.9		43.8		22.7		15.2		5.7		100.0

Note: target group: e-infrastructures; only respondents included who indicated that their organisation 'offer(s) data infrastructures which store and manage research data' (see question E1) and who did NOT indicate to be 'not familiar at all' with the concept of FAIR data (see question F17U12R20E62); original label of categories: -- 'not at all', - 'not very much', + 'somewhat', ++ 'very much', 'not applicable'; row percentages; question-ID: E63; a superscript 'a' indicates that percentages rely on a number of observations below 20 and therefore have to be treated with caution.

Table 7.133: Does your organisation provide a search feature for research data?

<i>Search feature for research data</i>														
	<i>no</i>		<i>concept</i>		<i>implementing</i>		<i>yes</i>		<i>n.a.</i>		<i>no a.</i>		<i>Total</i>	
	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%
AT	3	12.5	3	12.5	3	12.5	12	50.0	2	8.3	1	4.2	24	100.0
BE	1	10.0 ^a	3	30.0 ^a	0	0.0 ^a	3	30.0 ^a	3	30.0 ^a	0	0.0 ^a	10	100.0 ^a
DE	4	5.3	4	5.3	11	14.5	48	63.2	7	9.2	2	2.6	76	100.0
FR	0	0.0 ^a	2	10.5 ^a	7	36.8 ^a	4	21.1 ^a	6	31.6 ^a	0	0.0 ^a	19	100.0 ^a
IT	10	9.3	10	9.3	13	12.1	52	48.6	18	16.8	4	3.7	107	100.0
Total	18	7.6	22	9.3	34	14.4	119	50.4	36	15.3	7	3.0	236	100.0
Mean		7.4		13.5		15.2		42.6		19.2		2.1		100.0

Note: target group: e-infrastructures; only respondents included who indicated that their organisation 'offer(s) data infrastructures which store and manage research data' (see question E1); original labels of categories: 'We have not considered this feature yet.', 'We are working on or have a theoretical concept for this feature.', 'This feature is in the implementation phase.', 'This feature is fully implemented.'; row percentages; question-ID: E64; a superscript 'a' indicates that percentages rely on a number of observations below 20 and therefore have to be treated with caution.

Table 7.134: Does your organisation provide a search feature for metadata?

	<i>Search feature for metadata</i>													
	<i>no</i>		<i>concept</i>		<i>implementing</i>		<i>yes</i>		<i>n.a.</i>		<i>no a.</i>		<i>Total</i>	
	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%
AT	1	4.2	1	4.2	2	8.3	16	66.7	3	12.5	1	4.2	24	100.0
BE	1	10.0 ^a	3	30.0 ^a	0	0.0 ^a	4	40.0 ^a	1	10.0 ^a	1	10.0 ^a	10	100.0 ^a
DE	3	3.9	4	5.3	9	11.8	56	73.7	1	1.3	3	3.9	76	100.0
FR	0	0.0 ^a	2	10.5 ^a	6	31.6 ^a	6	31.6 ^a	5	26.3 ^a	0	0.0 ^a	19	100.0 ^a
IT	5	4.7	14	13.1	19	17.8	56	52.3	11	10.3	2	1.9	107	100.0
Total	10	4.2	24	10.2	36	15.3	138	58.5	21	8.9	7	3.0	236	100.0
Mean		4.6		12.6		13.9		52.9		12.1		4.0		100.0

Note: target group: e-infrastructures; only respondents included who indicated that their organisation 'offer(s) data infrastructures which store and manage research data' (see question E1); original labels of categories: 'We have not considered this feature yet.', 'We are working on or have a theoretical concept for this feature.', 'This feature is in the implementation phase.', 'This feature is fully implemented.'; row percentages; question-ID: E65; a superscript 'a' indicates that percentages rely on a number of observations below 20 and therefore have to be treated with caution.

Table 7.135: Does your organisation use standardized/controlled vocabularies for metadata?

	<i>Controlled vocabulary</i>									
	<i>no</i>		<i>yes</i>		<i>n.a.</i>		<i>no answer</i>		<i>Total</i>	
	No.	%	No.	%	No.	%	No.	%	No.	%
AT	8	33.3	12	50.0	2	8.3	2	8.3	24	100.0
BE	4	40.0 ^a	4	40.0 ^a	2	20.0 ^a	0	0.0 ^a	10	100.0 ^a
DE	22	28.9	49	64.5	2	2.6	3	3.9	76	100.0
FR	4	21.1 ^a	9	47.4 ^a	6	31.6 ^a	0	0.0 ^a	19	100.0 ^a
IT	21	19.6	60	56.1	25	23.4	1	0.9	107	100.0
Total	59	25.0	134	56.8	37	15.7	6	2.5	236	100.0
Mean		28.6		51.6		17.2		2.6		100.0

Note: target group: e-infrastructures; only respondents included who indicated that their organisation 'offer(s) data infrastructures which store and manage research data' (see question E1); row percentages; question-ID: E66; a superscript 'a' indicates that percentages rely on a number of observations below 20 and therefore have to be treated with caution.

Table 7.136: Please indicate what percentage of your metadata are available in the following languages. (Part 1)

<i>Meta data language: Dutch</i>													
<i>0%</i>		<i>1-25%</i>		<i>26-50%</i>		<i>76-99%</i>		<i>100%</i>		<i>no answer</i>		<i>Total</i>	
No.	%	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%
AT	8 33.3	1 4.2	0 0.0	0 0.0	0 0.0	0 0.0	0 0.0	15 62.5	24 100.0				
BE	3 30.0 ^a	1 10.0 ^a	2 20.0 ^a	1 10.0 ^a	1 10.0 ^a	2 20.0 ^a	1 10.0 ^a	2 20.0 ^a	10 100.0 ^a				
DE	10 13.2	4 5.3	0 0.0	0 0.0	0 0.0	0 0.0	0 0.0	62 81.6	76 100.0				
FR	4 21.1 ^a	0 0.0 ^a	0 0.0 ^a	0 0.0 ^a	0 0.0 ^a	0 0.0 ^a	0 0.0 ^a	15 78.9 ^a	19 100.0 ^a				
IT	16 15.0	2 1.9	1 0.9	0 0.0	2 1.9	86 80.4	107 100.0						
Total	41 17.4	8 3.4	3 1.3	1 0.4	3 1.3	180 76.3	236 100.0						
Mean	22.5	4.3	4.2	2.0	2.4	64.7	100.0						

Note: target group: e-infrastructures; only respondents included who indicated that their organisation 'offer(s) data infrastructures which store and manage research data' (see question E1); row percentages; question-ID: E67; a superscript 'a' indicates that percentages rely on a number of observations below 20 and therefore have to be treated with caution.

Table 7.137: Please indicate what percentage of your metadata are available in the following languages. (Part 2)

<i>Meta data language: English</i>															
<i>0%</i>		<i>1-25%</i>		<i>26-50%</i>		<i>51-75%</i>		<i>76-99%</i>		<i>100%</i>		<i>no answer</i>		<i>Total</i>	
No.	%	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%
AT	1 4.2	5 20.8	1 4.2	2 8.3	2 8.3	8 33.3	5 20.8	24 100.0							
BE	3 30.0 ^a	1 10.0 ^a	1 10.0 ^a	0 0.0 ^a	0 0.0 ^a	4 40.0 ^a	1 10.0 ^a	10 100.0 ^a							
DE	4 5.3	0 0.0	4 5.3	3 3.9	19 25.0	39 51.3	7 9.2	76 100.0							
FR	1 5.3 ^a	0 0.0 ^a	0 0.0 ^a	0 0.0 ^a	3 15.8 ^a	7 36.8 ^a	8 42.1 ^a	19 100.0 ^a							
IT	8 7.5	5 4.7	14 13.1	4 3.7	9 8.4	55 51.4	12 11.2	107 100.0							
Total	17 7.2	11 4.7	20 8.5	9 3.8	33 14.0	113 47.9	33 14.0	236 100.0							
Mean	10.5	7.1	6.5	3.2	11.5	42.6	18.7	100.0							

Note: target group: e-infrastructures; only respondents included who indicated that their organisation 'offer(s) data infrastructures which store and manage research data' (see question E1); row percentages; question-ID: E67; a superscript 'a' indicates that percentages rely on a number of observations below 20 and therefore have to be treated with caution.

Table 7.138: Please indicate what percentage of your metadata are available in the following languages. (Part 3)

<i>Meta data language: French</i>												
	<i>0%</i>		<i>1-25%</i>		<i>26-50%</i>		<i>100%</i>		<i>no answer</i>		<i>Total</i>	
	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%
AT	6	25.0	3	12.5	0	0.0	0	0.0	15	62.5	24	100.0
BE	4	40.0 ^a	1	10.0 ^a	2	20.0 ^a	0	0.0 ^a	3	30.0 ^a	10	100.0 ^a
DE	10	13.2	4	5.3	0	0.0	0	0.0	62	81.6	76	100.0
FR	3	15.8 ^a	3	15.8 ^a	0	0.0 ^a	5	26.3 ^a	8	42.1 ^a	19	100.0 ^a
IT	14	13.1	9	8.4	1	0.9	2	1.9	81	75.7	107	100.0
Total	37	15.7	20	8.5	3	1.3	7	3.0	169	71.6	236	100.0
Mean		21.4		10.4		4.2		5.6		58.4		100.0

Note: target group: e-infrastructures; only respondents included who indicated that their organisation ‘offer(s) data infrastructures which store and manage research data’ (see question E1); row percentages; question-ID: E67; a superscript ‘a’ indicates that percentages rely on a number of observations below 20 and therefore have to be treated with caution.

Table 7.139: Please indicate what percentage of your metadata are available in the following languages. (Part 4)

<i>Meta data language: German</i>																
	<i>0%</i>		<i>1-25%</i>		<i>26-50%</i>		<i>51-75%</i>		<i>76-99%</i>		<i>100%</i>		<i>no answer</i>		<i>Total</i>	
	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%
AT	1	4.2	2	8.3	0	0.0	3	12.5	3	12.5	10	41.7	5	20.8	24	100.0
BE	5	50.0 ^a	2	20.0 ^a	0	0.0 ^a	0	0.0 ^a	0	0.0 ^a	0	0.0 ^a	3	30.0 ^a	10	100.0 ^a
DE	6	7.9	13	17.1	4	5.3	3	3.9	4	5.3	16	21.1	30	39.5	76	100.0
FR	2	10.5 ^a	1	5.3 ^a	0	0.0 ^a	0	0.0 ^a	0	0.0 ^a	0	0.0 ^a	16	84.2 ^a	19	100.0 ^a
IT	15	14.0	7	6.5	0	0.0	0	0.0	0	0.0	2	1.9	83	77.6	107	100.0
Total	29	12.3	25	10.6	4	1.7	6	2.5	7	3.0	28	11.9	137	58.1	236	100.0
Mean		17.3		11.4		1.1		3.3		3.6		12.9		50.4		100.0

Note: target group: e-infrastructures; only respondents included who indicated that their organisation ‘offer(s) data infrastructures which store and manage research data’ (see question E1); row percentages; question-ID: E67; a superscript ‘a’ indicates that percentages rely on a number of observations below 20 and therefore have to be treated with caution.

Table 7.140: Please indicate what percentage of your metadata are available in the following languages. (Part 5)

<i>Meta data language: Italian</i>																
	<i>0%</i>		<i>1-25%</i>		<i>26-50%</i>		<i>51-75%</i>		<i>76-99%</i>		<i>100%</i>		<i>no answer</i>		<i>Total</i>	
	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%
AT	7	29.2	2	8.3	0	0.0	0	0.0	0	0.0	0	0.0	15	62.5	24	100.0
BE	5	50.0 ^a	0	0.0 ^a	0	0.0 ^a	0	0.0 ^a	0	0.0 ^a	0	0.0 ^a	5	50.0 ^a	10	100.0 ^a
DE	10	13.2	3	3.9	0	0.0	0	0.0	0	0.0	0	0.0	63	82.9	76	100.0
FR	3	15.8 ^a	0	0.0 ^a	0	0.0 ^a	0	0.0 ^a	0	0.0 ^a	0	0.0 ^a	16	84.2 ^a	19	100.0 ^a
IT	9	8.4	8	7.5	12	11.2	4	3.7	5	4.7	22	20.6	47	43.9	107	100.0
Total	34	14.4	13	5.5	12	5.1	4	1.7	5	2.1	22	9.3	146	61.9	236	100.0
Mean		23.3		3.9		2.2		0.7		0.9		4.1		64.7		100.0

Note: target group: e-infrastructures; only respondents included who indicated that their organisation 'offer(s) data infrastructures which store and manage research data' (see question E1); row percentages; question-ID: E67; a superscript 'a' indicates that percentages rely on a number of observations below 20 and therefore have to be treated with caution.

Table 7.141: Please indicate what percentage of your metadata are available in the following languages. (Part 6)

Meta data language: other													
	0%		1-25%		26-50%		100%		no answer		Total		
	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%	
AT	0	0.0	1	4.2	0	0.0	1	4.2	22	91.7	24	100.0	
BE	1	10.0 ^a	0	0.0 ^a	0	0.0 ^a	0	0.0 ^a	9	90.0 ^a	10	100.0 ^a	
DE	3	3.9	4	5.3	0	0.0	0	0.0	69	90.8	76	100.0	
FR	2	10.5 ^a	2	10.5 ^a	0	0.0 ^a	0	0.0 ^a	15	78.9 ^a	19	100.0 ^a	
IT	9	8.4	5	4.7	1	0.9	1	0.9	91	85.0	107	100.0	
Total	15	6.4	12	5.1	1	0.4	2	0.8	206	87.3	236	100.0	
Mean		6.6		4.9		0.2		1.0		87.3		100.0	

Note: target group: e-infrastructures; only respondents included who indicated that their organisation 'offer(s) data infrastructures which store and manage research data' (see question E1); row percentages; question-ID: E67; a superscript 'a' indicates that percentages rely on a number of observations below 20 and therefore have to be treated with caution.

Table 7.142: Does your organisation provide a data catalogue in a machine-readable format?

	<i>Machine-readable data catalogue</i>													
	<i>no</i>		<i>concept</i>		<i>implementing</i>		<i>yes</i>		<i>n.a.</i>		<i>no a.</i>		<i>Total</i>	
	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%
AT	0	0.0	1	4.2	3	12.5	16	66.7	3	12.5	1	4.2	24	100.0
BE	3	30.0 ^a	2	20.0 ^a	0	0.0 ^a	3	30.0 ^a	2	20.0 ^a	0	0.0 ^a	10	100.0 ^a
DE	7	9.2	7	9.2	11	14.5	44	57.9	3	3.9	4	5.3	76	100.0
FR	2	10.5 ^a	2	10.5 ^a	6	31.6 ^a	4	21.1 ^a	5	26.3 ^a	0	0.0 ^a	19	100.0 ^a
IT	8	7.5	13	12.1	13	12.1	51	47.7	20	18.7	2	1.9	107	100.0
Total	20	8.5	25	10.6	33	14.0	118	50.0	33	14.0	7	3.0	236	100.0
Mean		11.4		11.2		14.1		44.7		16.3		2.3		100.0

Note: target group: e-infrastructure; only respondents included who indicated that their organisation 'offer(s) data infrastructures which store and manage research data' (see question E1); original labels of categories: 'We have not considered this feature yet.', 'We are working on or have a theoretical concept for this feature.', 'This feature is in the implementation phase.', 'This feature is fully implemented.'; row percentages; question-ID: E57; a superscript 'a' indicates that percentages rely on a number of observations below 20 and therefore have to be treated with caution.

7.9 FAIRness of data II

All tables in this section rely exclusively on data on repositories.

Table 7.143: How concerned are your customers/depositors about the following aspects?
(Part 1)

<i>Depositors concerned: control over the usage of data</i>																
	--		-		+		++		<i>d.k.</i>		<i>n.a.</i>		<i>no ans.</i>		<i>Total</i>	
	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%
AT	1	4.3	6	26.1	6	26.1	7	30.4	1	4.3	2	8.7	0	0.0	23	100.0
BE	0	0.0 ^a	3	30.0 ^a	2	20.0 ^a	3	30.0 ^a	1	10.0 ^a	1	10.0 ^a	0	0.0 ^a	10	100.0 ^a
DE	7	9.6	26	35.6	25	34.2	8	11.0	2	2.7	4	5.5	1	1.4	73	100.0
FR	3	15.8 ^a	4	21.1 ^a	5	26.3 ^a	4	21.1 ^a	2	10.5 ^a	0	0.0 ^a	1	5.3 ^a	19	100.0 ^a
IT	14	13.2	21	19.8	49	46.2	5	4.7	6	5.7	8	7.5	3	2.8	106	100.0
Total	25	10.8	60	26.0	87	37.7	27	11.7	12	5.2	15	6.5	5	2.2	231	100.0
Mean		8.6		26.5		30.6		19.4		6.6		6.3		1.9		100.0

Note: target group: e-infrastructures; only respondents included who indicated that their organisation 'offer(s) data infrastructures which store and manage research data' (see question E1); original label of categories: -- 'not concerned at all', - 'somewhat concerned', + 'concerned', ++ 'very concerned', 'don't know', 'not applicable'; row percentages; question-ID: E69; a superscript 'a' indicates that percentages rely on a number of observations below 20 and therefore have to be treated with caution.

Table 7.144: How concerned are your customers/depositors about the following aspects?
(Part 2)

<i>Depositors concerned: effort of preparing the data</i>																
	--		-		+		++		<i>d.k.</i>		<i>n.a.</i>		<i>no ans.</i>		<i>Total</i>	
	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%
AT	3	13.0	2	8.7	9	39.1	5	21.7	2	8.7	2	8.7	0	0.0	23	100.0
BE	1	10.0 ^a	1	10.0 ^a	3	30.0 ^a	2	20.0 ^a	2	20.0 ^a	1	10.0 ^a	0	0.0 ^a	10	100.0 ^a
DE	5	6.8	15	20.5	27	37.0	17	23.3	4	5.5	3	4.1	2	2.7	73	100.0
FR	3	15.8 ^a	1	5.3 ^a	8	42.1 ^a	4	21.1 ^a	2	10.5 ^a	0	0.0 ^a	1	5.3 ^a	19	100.0 ^a
IT	12	11.3	19	17.9	46	43.4	13	12.3	5	4.7	6	5.7	5	4.7	106	100.0
Total	24	10.4	38	16.5	93	40.3	41	17.7	15	6.5	12	5.2	8	3.5	231	100.0
Mean		11.4		12.5		38.3		19.7		9.9		5.7		2.5		100.0

Note: target group: e-infrastructures; only respondents included who indicated that their organisation 'offer(s) data infrastructures which store and manage research data' (see question E1); original label of categories: -- 'not concerned at all', - 'somewhat concerned', + 'concerned', ++ 'very concerned', 'don't know', 'not applicable'; row percentages; question-ID: E69; a superscript 'a' indicates that percentages rely on a number of observations below 20 and therefore have to be treated with caution.

Table 7.145: How concerned are your customers/depositors about the following aspects?
(Part 3)

<i>Depositors concerned: doubts about the benefit</i>																
	--		-		+		++		<i>d.k.</i>		<i>n.a.</i>		<i>no ans.</i>		<i>Total</i>	
	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%
AT	2	8.7	5	21.7	9	39.1	2	8.7	2	8.7	3	13.0	0	0.0	23	100.0
BE	1	10.0 ^a	3	30.0 ^a	1	10.0 ^a	3	30.0 ^a	1	10.0 ^a	1	10.0 ^a	0	0.0 ^a	10	100.0 ^a
DE	14	19.2	26	35.6	19	26.0	6	8.2	2	2.7	4	5.5	2	2.7	73	100.0
FR	3	15.8 ^a	5	26.3 ^a	7	36.8 ^a	0	0.0 ^a	2	10.5 ^a	1	5.3 ^a	1	5.3 ^a	19	100.0 ^a
IT	26	24.5	21	19.8	38	35.8	4	3.8	7	6.6	6	5.7	4	3.8	106	100.0
Total	46	19.9	60	26.0	74	32.0	15	6.5	14	6.1	15	6.5	7	3.0	231	100.0
Mean		15.6		26.7		29.5		10.1		7.7		7.9		2.4		100.0

Note: target group: e-infrastructures; only respondents included who indicated that their organisation 'offer(s) data infrastructures which store and manage research data' (see question E1); original label of categories: -- 'not concerned at all', - 'somewhat concerned', + 'concerned', ++ 'very concerned', 'don't know', 'not applicable'; row percentages; question-ID: E69; a superscript 'a' indicates that percentages rely on a number of observations below 20 and therefore have to be treated with caution.

Table 7.146: How concerned are your customers/depositors about the following aspects?
(Part 4)

<i>Depositors concerned: competitive disadvantage</i>																
	--		-		+		++		<i>d.k.</i>		<i>n.a.</i>		<i>no ans.</i>		<i>Total</i>	
	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%
AT	3	13.0	8	34.8	5	21.7	2	8.7	1	4.3	4	17.4	0	0.0	23	100.0
BE	1	10.0 ^a	1	10.0 ^a	2	20.0 ^a	4	40.0 ^a	1	10.0 ^a	1	10.0 ^a	0	0.0 ^a	10	100.0 ^a
DE	10	13.7	28	38.4	14	19.2	9	12.3	6	8.2	4	5.5	2	2.7	73	100.0
FR	4	21.1 ^a	5	26.3 ^a	3	15.8 ^a	3	15.8 ^a	2	10.5 ^a	1	5.3 ^a	1	5.3 ^a	19	100.0 ^a
IT	27	25.5	19	17.9	41	38.7	2	1.9	6	5.7	6	5.7	5	4.7	106	100.0
Total	45	19.5	61	26.4	65	28.1	20	8.7	16	6.9	16	6.9	8	3.5	231	100.0
Mean		16.7		25.5		23.1		15.7		7.7		8.8		2.5		100.0

Note: target group: e-infrastructures; only respondents included who indicated that their organisation 'offer(s) data infrastructures which store and manage research data' (see question E1); original label of categories: -- 'not concerned at all', - 'somewhat concerned', + 'concerned', ++ 'very concerned', 'don't know', 'not applicable'; row percentages; question-ID: E69; a superscript 'a' indicates that percentages rely on a number of observations below 20 and therefore have to be treated with caution.

Table 7.147: How concerned are your customers/depositors about the following aspects?
(Part 5)

<i>Depositors concerned: data protection</i>																
	--		-		+		++		<i>d.k.</i>		<i>n.a.</i>		<i>no ans.</i>		<i>Total</i>	
	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%
AT	3	13.0	8	34.8	4	17.4	5	21.7	1	4.3	2	8.7	0	0.0	23	100.0
BE	0	0.0 ^a	2	20.0 ^a	4	40.0 ^a	2	20.0 ^a	1	10.0 ^a	1	10.0 ^a	0	0.0 ^a	10	100.0 ^a
DE	13	17.8	25	34.2	17	23.3	7	9.6	4	5.5	5	6.8	2	2.7	73	100.0
FR	2	10.5 ^a	4	21.1 ^a	7	36.8 ^a	3	15.8 ^a	2	10.5 ^a	0	0.0 ^a	1	5.3 ^a	19	100.0 ^a
IT	16	15.1	21	19.8	50	47.2	4	3.8	5	4.7	6	5.7	4	3.8	106	100.0
Total	34	14.7	60	26.0	82	35.5	21	9.1	13	5.6	14	6.1	7	3.0	231	100.0
Mean		11.3		26.0		32.9		14.2		7.0		6.2		2.4		100.0

Note: target group: e-infrastructures; only respondents included who indicated that their organisation 'offer(s) data infrastructures which store and manage research data' (see question E1); original label of categories: -- 'not concerned at all', - 'somewhat concerned', + 'concerned', ++ 'very concerned', 'don't know', 'not applicable'; row percentages; question-ID: E69; a superscript 'a' indicates that percentages rely on a number of observations below 20 and therefore have to be treated with caution.

Table 7.148: How concerned are your customers/depositors about the following aspects?
(Part 6)

<i>Depositors concerned: intellectual property</i>																
	--		-		+		++		<i>d.k.</i>		<i>n.a.</i>		<i>no ans.</i>		<i>Total</i>	
	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%
AT	1	4.3	7	30.4	8	34.8	4	17.4	1	4.3	2	8.7	0	0.0	23	100.0
BE	0	0.0 ^a	1	10.0 ^a	2	20.0 ^a	4	40.0 ^a	2	20.0 ^a	1	10.0 ^a	0	0.0 ^a	10	100.0 ^a
DE	10	13.7	31	42.5	15	20.5	9	12.3	1	1.4	5	6.8	2	2.7	73	100.0
FR	1	5.3 ^a	4	21.1 ^a	10	52.6 ^a	2	10.5 ^a	1	5.3 ^a	0	0.0 ^a	1	5.3 ^a	19	100.0 ^a
IT	11	10.4	21	19.8	46	43.4	9	8.5	6	5.7	8	7.5	5	4.7	106	100.0
Total	23	10.0	64	27.7	81	35.1	28	12.1	11	4.8	16	6.9	8	3.5	231	100.0
Mean		6.7		24.8		34.3		17.7		7.3		6.6		2.5		100.0

Note: target group: e-infrastructures; only respondents included who indicated that their organisation 'offer(s) data infrastructures which store and manage research data' (see question E1); original label of categories: -- 'not concerned at all', - 'somewhat concerned', + 'concerned', ++ 'very concerned', 'don't know', 'not applicable'; row percentages; question-ID: E69; a superscript 'a' indicates that percentages rely on a number of observations below 20 and therefore have to be treated with caution.

Table 7.149: How concerned are your customers/depositors about the following aspects?
(Part 7)

	<i>Depositors concerned: other</i>													
	--		+		++		<i>d.k.</i>		<i>n.a.</i>		<i>no ans.</i>		<i>Total</i>	
	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%
AT	0	0.0	0	0.0	1	4.3	1	4.3	2	8.7	19	82.6	23	100.0
BE	0	0.0 ^a	0	0.0 ^a	0	0.0 ^a	0	0.0 ^a	0	0.0 ^a	10	100.0 ^a	10	100.0 ^a
DE	1	1.4	1	1.4	1	1.4	1	1.4	2	2.7	67	91.8	73	100.0
FR	1	5.3 ^a	0	0.0 ^a	0	0.0 ^a	1	5.3 ^a	1	5.3 ^a	16	84.2 ^a	19	100.0 ^a
IT	2	1.9	2	1.9	0	0.0	2	1.9	9	8.5	91	85.8	106	100.0
Total	4	1.7	3	1.3	2	0.9	5	2.2	14	6.1	203	87.9	231	100.0
Mean		1.7		0.7		1.1		2.6		5.0		88.9		100.0

Note: target group: e-infrastructures; only respondents included who indicated that their organisation ‘offer(s) data infrastructures which store and manage research data’ (see question E1); original label of categories: -- ‘not concerned at all’, - ‘somewhat concerned’, + ‘concerned’, ++ ‘very concerned’, ‘don’t know’, ‘not applicable’; row percentages; question-ID: E69; a superscript ‘a’ indicates that percentages rely on a number of observations below 20 and therefore have to be treated with caution.

Table 7.150: Does your organisation use unique identifiers for researchers in the metadata?
(Part 1)

	<i>PID in metadata: exists</i>									
	<i>no</i>		<i>yes</i>		<i>n.a.</i>		<i>no answer</i>		<i>Total</i>	
	No.	%	No.	%	No.	%	No.	%	No.	%
AT	15	65.2	6	26.1	2	8.7	0	0.0	23	100.0
BE	1	10.0 ^a	5	50.0 ^a	4	40.0 ^a	0	0.0 ^a	10	100.0 ^a
DE	41	56.2	27	37.0	4	5.5	1	1.4	73	100.0
FR	6	31.6 ^a	7	36.8 ^a	6	31.6 ^a	0	0.0 ^a	19	100.0 ^a
IT	26	24.5	62	58.5	16	15.1	2	1.9	106	100.0
Total	89	38.5	107	46.3	32	13.9	3	1.3	231	100.0
Mean		37.5		41.7		20.2		0.7		100.0

Note: target group: e-infrastructures; only respondents included who indicated that their organisation ‘offer(s) data infrastructures which store and manage research data’ (see question E1); row percentages; question-ID: E70; a superscript ‘a’ indicates that percentages rely on a number of observations below 20 and therefore have to be treated with caution.

Table 7.151: Does your organisation use unique identifiers for researchers in the metadata?
(Part 2)

	<i>PID in metadata: ORCID</i>					
	<i>no</i>		<i>yes</i>		<i>Total</i>	
	No.	%	No.	%	No.	%
AT	0	0.0 ^a	6	100.0 ^a	6	100.0 ^a
BE	2	40.0 ^a	3	60.0 ^a	5	100.0 ^a
DE	5	18.5	22	81.5	27	100.0
FR	2	28.6 ^a	5	71.4 ^a	7	100.0 ^a
IT	4	6.5	58	93.5	62	100.0
Total	13	12.1	94	87.9	107	100.0
Mean		18.7		81.3		100.0

Note: target group: e-infrastructures; only respondents included who indicated that their organisation 'offer(s) data infrastructures which store and manage research data' (see question E1) and who indicated that their 'organisation uses unique identifiers for researchers in the metadata' (see table above showing Part 1 of question E70); row percentages; question-ID: E70; a superscript 'a' indicates that percentages rely on a number of observations below 20 and therefore have to be treated with caution.

Table 7.152: Does your organisation use unique identifiers for researchers in the metadata?
(Part 3)

	<i>PID in metadata: ResearcherID</i>					
	<i>no</i>		<i>yes</i>		<i>Total</i>	
	No.	%	No.	%	No.	%
AT	5	83.3 ^a	1	16.7 ^a	6	100.0 ^a
BE	3	60.0 ^a	2	40.0 ^a	5	100.0 ^a
DE	24	88.9	3	11.1	27	100.0
FR	7	100.0 ^a	0	0.0 ^a	7	100.0 ^a
IT	53	85.5	9	14.5	62	100.0
Total	92	86.0	15	14.0	107	100.0
Mean		83.5		16.5		100.0

Note: target group: e-infrastructures; only respondents included who indicated that their organisation 'offer(s) data infrastructures which store and manage research data' (see question E1) and who indicated that their 'organisation uses unique identifiers for researchers in the metadata' (see table above showing Part 1 of question E70); row percentages; question-ID: E70; a superscript 'a' indicates that percentages rely on a number of observations below 20 and therefore have to be treated with caution.

Table 7.153: Does your organisation use unique identifiers for researchers in the metadata? (Part 4)

	<i>PID in metadata: other</i>					
	<i>no</i>		<i>yes</i>		<i>Total</i>	
	No.	%	No.	%	No.	%
AT	6	100.0 ^a	0	0.0 ^a	6	100.0 ^a
BE	4	80.0 ^a	1	20.0 ^a	5	100.0 ^a
DE	19	70.4	8	29.6	27	100.0
FR	5	71.4 ^a	2	28.6 ^a	7	100.0 ^a
IT	55	88.7	7	11.3	62	100.0
Total	89	83.2	18	16.8	107	100.0
Mean		82.1		17.9		100.0

Note: target group: e-infrastructures; only respondents included who indicated that their organisation 'offer(s) data infrastructures which store and manage research data' (see question E1) and who indicated that their 'organisation uses unique identifiers for researchers in the metadata' (see table above showing Part 1 of question E70); row percentages; question-ID: E70; a superscript 'a' indicates that percentages rely on a number of observations below 20 and therefore have to be treated with caution.

Table 7.154: Does your organisation implement measures for ensuring documentation about the origin and the changes made in data (i.e. data provenance)?

	<i>Data provenance</i>									
	<i>no</i>		<i>yes</i>		<i>n. a.</i>		<i>no answer</i>		<i>Total</i>	
	No.	%	No.	%	No.	%	No.	%	No.	%
AT	12	52.2	8	34.8	3	13.0	0	0.0	23	100.0
BE	2	20.0 ^a	5	50.0 ^a	3	30.0 ^a	0	0.0 ^a	10	100.0 ^a
DE	18	24.7	48	65.8	5	6.8	2	2.7	73	100.0
FR	4	21.1 ^a	10	52.6 ^a	5	26.3 ^a	0	0.0 ^a	19	100.0 ^a
IT	29	27.4	36	34.0	40	37.7	1	0.9	106	100.0
Total	65	28.1	107	46.3	56	24.2	3	1.3	231	100.0
Mean		29.1		47.4		22.8		0.7		100.0

Note: target group: e-infrastructures; only respondents included who indicated that their organisation 'offer(s) data infrastructures which store and manage research data' (see question E1); row percentages; question-ID: E71; a superscript 'a' indicates that percentages rely on a number of observations below 20 and therefore have to be treated with caution.

Table 7.155: Which measures for ensuring documentation about the origin and the changes made in data (i.e. data provenance) does your organisation implement? (Part 1)

<i>Data provenance: version control</i>										
	<i>no</i>		<i>yes</i>		<i>n.a.</i>		<i>no answer</i>		<i>Total</i>	
	No.	%	No.	%	No.	%	No.	%	No.	%
AT	0	0.0 ^a	7	87.5 ^a	1	12.5 ^a	0	0.0 ^a	8	100.0 ^a
BE	2	40.0 ^a	2	40.0 ^a	0	0.0 ^a	1	20.0 ^a	5	100.0 ^a
DE	6	12.5	40	83.3	1	2.1	1	2.1	48	100.0
FR	4	40.0 ^a	6	60.0 ^a	0	0.0 ^a	0	0.0 ^a	10	100.0 ^a
IT	5	13.9	29	80.6	2	5.6	0	0.0	36	100.0
Total	17	15.9	84	78.5	4	3.7	2	1.9	107	100.0
Mean		21.3		70.3		4.0		4.4		100.0

Note: target group: e-infrastructures; only respondents included who indicated that their organisation 'offer(s) data infrastructures which store and manage research data' (see question E1) and that their 'organisation implement(s) measures for ensuring documentation about the origin and the changes made in data' (see question E71 above); row percentages; question-ID: E72; a superscript 'a' indicates that percentages rely on a number of observations below 20 and therefore have to be treated with caution.

Table 7.156: Which measures for ensuring documentation about the origin and the changes made in data (i.e. data provenance) does your organisation implement? (Part 2)

<i>Data provenance: file integrity checks</i>										
	<i>no</i>		<i>yes</i>		<i>n.a.</i>		<i>no answer</i>		<i>Total</i>	
	No.	%	No.	%	No.	%	No.	%	No.	%
AT	4	50.0 ^a	3	37.5 ^a	1	12.5 ^a	0	0.0 ^a	8	100.0 ^a
BE	3	60.0 ^a	1	20.0 ^a	0	0.0 ^a	1	20.0 ^a	5	100.0 ^a
DE	19	39.6	27	56.3	1	2.1	1	2.1	48	100.0
FR	5	50.0 ^a	5	50.0 ^a	0	0.0 ^a	0	0.0 ^a	10	100.0 ^a
IT	12	33.3	22	61.1	2	5.6	0	0.0	36	100.0
Total	43	40.2	58	54.2	4	3.7	2	1.9	107	100.0
Mean		46.6		45.0		4.0		4.4		100.0

Note: target group: e-infrastructures; only respondents included who indicated that their organisation 'offer(s) data infrastructures which store and manage research data' (see question E1) and that their 'organisation implement(s) measures for ensuring documentation about the origin and the changes made in data' (see question E71 above); row percentages; question-ID: E72; a superscript 'a' indicates that percentages rely on a number of observations below 20 and therefore have to be treated with caution.

Table 7.157: Which measures for ensuring documentation about the origin and the changes made in data (i.e. data provenance) does your organisation implement? (Part 3)

	<i>Data provenance: other</i>									
	<i>no</i>		<i>yes</i>		<i>n. a.</i>		<i>no answer</i>		<i>Total</i>	
	No.	%	No.	%	No.	%	No.	%	No.	%
AT	6	75.0 ^a	1	12.5 ^a	1	12.5 ^a	0	0.0 ^a	8	100.0 ^a
BE	3	60.0 ^a	1	20.0 ^a	0	0.0 ^a	1	20.0 ^a	5	100.0 ^a
DE	41	85.4	5	10.4	1	2.1	1	2.1	48	100.0
FR	4	40.0 ^a	6	60.0 ^a	0	0.0 ^a	0	0.0 ^a	10	100.0 ^a
IT	28	77.8	6	16.7	2	5.6	0	0.0	36	100.0
Total	82	76.6	19	17.8	4	3.7	2	1.9	107	100.0
Mean		67.6		23.9		4.0		4.4		100.0

Note: target group: e-infrastructures; only respondents included who indicated that their organisation ‘offer(s) data infrastructures which store and manage research data’ (see question E1) and that their ‘organisation implement(s) measures for ensuring documentation about the origin and the changes made in data’ (see question E71 above); row percentages; question-ID: E72; a superscript ‘a’ indicates that percentages rely on a number of observations below 20 and therefore have to be treated with caution.

Table 7.158: Did you complete any of the following certifications or audits between 2015-2019? (Part 1)

	<i>Core Trust Seal (CTS)</i>									
	<i>no</i>		<i>no, but in preparation</i>		<i>yes</i>		<i>no answer</i>		<i>Total</i>	
	No.	%	No.	%	No.	%	No.	%	No.	%
AT	12	52.2	4	17.4	3	13.0	4	17.4	23	100.0
BE	8	80.0 ^a	1	10.0 ^a	0	0.0 ^a	1	10.0 ^a	10	100.0 ^a
DE	44	60.3	13	17.8	9	12.3	7	9.6	73	100.0
FR	13	68.4 ^a	4	21.1 ^a	0	0.0 ^a	2	10.5 ^a	19	100.0 ^a
IT	65	61.3	4	3.8	25	23.6	12	11.3	106	100.0
Total	142	61.5	26	11.3	37	16.0	26	11.3	231	100.0
Mean		64.4		14.0		9.8		11.8		100.0

Note: target group: e-infrastructures; only respondents included who indicated that their organisation ‘offer(s) data infrastructures which store and manage research data’ (see question E1); row percentages; question-ID: E73; a superscript ‘a’ indicates that percentages rely on a number of observations below 20 and therefore have to be treated with caution.

Table 7.159: Did you complete any of the following certifications or audits between 2015-2019? (Part 2)

	<i>Data Seal of Approval (DSA)</i>									
	<i>no</i>		<i>no, but in preparation</i>		<i>yes</i>		<i>no answer</i>		<i>Total</i>	
	No.	%	No.	%	No.	%	No.	%	No.	%
AT	17	73.9	0	0.0	1	4.3	5	21.7	23	100.0
BE	8	80.0 ^a	0	0.0 ^a	0	0.0 ^a	2	20.0 ^a	10	100.0 ^a
DE	52	71.2	1	1.4	12	16.4	8	11.0	73	100.0
FR	15	78.9 ^a	1	5.3 ^a	2	10.5 ^a	1	5.3 ^a	19	100.0 ^a
IT	69	65.1	1	0.9	0	0.0	36	34.0	106	100.0
Total	161	69.7	3	1.3	15	6.5	52	22.5	231	100.0
Mean		73.8		1.5		6.2		18.4		100.0

Note: target group: e-infrastructures; only respondents included who indicated that their organisation ‘offer(s) data infrastructures which store and manage research data’ (see question E1); row percentages; question-ID: E73; a superscript ‘a’ indicates that percentages rely on a number of observations below 20 and therefore have to be treated with caution.

Table 7.160: Did you complete any of the following certifications or audits between 2015-2019? (Part 3)

	<i>World Data System (WDS)</i>									
	<i>no</i>		<i>no, but in preparation</i>		<i>yes</i>		<i>no answer</i>		<i>Total</i>	
	No.	%	No.	%	No.	%	No.	%	No.	%
AT	17	73.9	0	0.0	1	4.3	5	21.7	23	100.0
BE	8	80.0 ^a	0	0.0 ^a	0	0.0 ^a	2	20.0 ^a	10	100.0 ^a
DE	57	78.1	0	0.0	4	5.5	12	16.4	73	100.0
FR	14	73.7 ^a	1	5.3 ^a	1	5.3 ^a	3	15.8 ^a	19	100.0 ^a
IT	69	65.1	0	0.0	0	0.0	37	34.9	106	100.0
Total	165	71.4	1	0.4	6	2.6	59	25.5	231	100.0
Mean		74.2		1.1		3.0		21.8		100.0

Note: target group: e-infrastructures; only respondents included who indicated that their organisation ‘offer(s) data infrastructures which store and manage research data’ (see question E1); row percentages; question-ID: E73; a superscript ‘a’ indicates that percentages rely on a number of observations below 20 and therefore have to be treated with caution.

Table 7.161: Did you complete any of the following certifications or audits between 2015-2019? (Part 4)

	<i>ISO 16363 certification</i>							
	<i>no</i>		<i>no, but in preparation</i>		<i>no answer</i>		<i>Total</i>	
	No.	%	No.	%	No.	%	No.	%
AT	17	73.9	0	0.0	6	26.1	23	100.0
BE	8	80.0 ^a	0	0.0 ^a	2	20.0 ^a	10	100.0 ^a
DE	58	79.5	0	0.0	15	20.5	73	100.0
FR	15	78.9 ^a	1	5.3 ^a	3	15.8 ^a	19	100.0 ^a
IT	69	65.1	1	0.9	36	34.0	106	100.0
Total	167	72.3	2	0.9	62	26.8	231	100.0
Mean		75.5		1.2		23.3		100.0

Note: target group: e-infrastructures; only respondents included who indicated that their organisation ‘offer(s) data infrastructures which store and manage research data’ (see question E1); row percentages; question-ID: E73; a superscript ‘a’ indicates that percentages rely on a number of observations below 20 and therefore have to be treated with caution.

Table 7.162: Did you complete any of the following certifications or audits between 2015-2019? (Part 5)

	<i>Nestor Seal</i>									
	<i>no</i>		<i>no, but in preparation</i>		<i>yes</i>		<i>no answer</i>		<i>Total</i>	
	No.	%	No.	%	No.	%	No.	%	No.	%
AT	17	73.9	0	0.0	0	0.0	6	26.1	23	100.0
BE	8	80.0 ^a	0	0.0 ^a	0	0.0 ^a	2	20.0 ^a	10	100.0 ^a
DE	56	76.7	1	1.4	1	1.4	15	20.5	73	100.0
FR	15	78.9 ^a	1	5.3 ^a	0	0.0 ^a	3	15.8 ^a	19	100.0 ^a
IT	69	65.1	0	0.0	0	0.0	37	34.9	106	100.0
Total	165	71.4	2	0.9	1	0.4	63	27.3	231	100.0
Mean		74.9		1.3		0.3		23.5		100.0

Note: target group: e-infrastructures; only respondents included who indicated that their organisation ‘offer(s) data infrastructures which store and manage research data’ (see question E1); row percentages; question-ID: E73; a superscript ‘a’ indicates that percentages rely on a number of observations below 20 and therefore have to be treated with caution.

Table 7.163: Did you complete any of the following certifications or audits between 2015-2019? (Part 6)

<i>Digital Repository Audit Method Based on Risk Assessment (DRAMBORA)</i>								
	<i>no</i>		<i>no, but in preparation</i>		<i>no answer</i>		<i>Total</i>	
	No.	%	No.	%	No.	%	No.	%
AT	17	73.9	0	0.0	6	26.1	23	100.0
BE	8	80.0 ^a	0	0.0 ^a	2	20.0 ^a	10	100.0 ^a
DE	58	79.5	0	0.0	15	20.5	73	100.0
FR	15	78.9 ^a	1	5.3 ^a	3	15.8 ^a	19	100.0 ^a
IT	67	63.2	1	0.9	38	35.8	106	100.0
Total	165	71.4	2	0.9	64	27.7	231	100.0
Mean		75.1		1.2		23.6		100.0

Note: target group: e-infrastructures; only respondents included who indicated that their organisation 'offer(s) data infrastructures which store and manage research data' (see question E1); row percentages; question-ID: E73; a superscript 'a' indicates that percentages rely on a number of observations below 20 and therefore have to be treated with caution.

Table 7.164: Did you complete any of the following certifications or audits between 2015-2019? (Part 7)

<i>Trustworthy Repositories Audit & Certification (TRAC)</i>								
	<i>no</i>		<i>no, but in preparation</i>		<i>no answer</i>		<i>Total</i>	
	No.	%	No.	%	No.	%	No.	%
AT	17	73.9	0	0.0	6	26.1	23	100.0
BE	8	80.0 ^a	0	0.0 ^a	2	20.0 ^a	10	100.0 ^a
DE	58	79.5	0	0.0	15	20.5	73	100.0
FR	15	78.9 ^a	1	5.3 ^a	3	15.8 ^a	19	100.0 ^a
IT	67	63.2	1	0.9	38	35.8	106	100.0
Total	165	71.4	2	0.9	64	27.7	231	100.0
Mean		75.1		1.2		23.6		100.0

Note: target group: e-infrastructures; only respondents included who indicated that their organisation 'offer(s) data infrastructures which store and manage research data' (see question E1); row percentages; question-ID: E73; a superscript 'a' indicates that percentages rely on a number of observations below 20 and therefore have to be treated with caution.

Table 7.165: Did you complete any of the following certifications or audits between 2015-2019? (Part 8)

	<i>Other</i>									
	<i>no</i>		<i>no, but in preparation</i>		<i>yes</i>		<i>no answer</i>		<i>Total</i>	
	No.	%	No.	%	No.	%	No.	%	No.	%
AT	4	17.4	1	4.3	1	4.3	17	73.9	23	100.0
BE	0	0.0 ^a	0	0.0 ^a	0	0.0 ^a	10	100.0 ^a	10	100.0 ^a
DE	18	24.7	0	0.0	5	6.8	50	68.5	73	100.0
FR	5	26.3 ^a	1	5.3 ^a	0	0.0 ^a	13	68.4 ^a	19	100.0 ^a
IT	21	19.8	0	0.0	2	1.9	83	78.3	106	100.0
Total	48	20.8	2	0.9	8	3.5	173	74.9	231	100.0
Mean		17.6		1.9		2.6		77.8		100.0

Note: target group: e-infrastructures; only respondents included who indicated that their organisation 'offer(s) data infrastructures which store and manage research data' (see question E1); row percentages; question-ID: E73; a superscript 'a' indicates that percentages rely on a number of observations below 20 and therefore have to be treated with caution.

Table 7.166: What level of curation do you perform? (Part 1)

	<i>Curation level: distribute as deposited</i>							
	<i>no</i>		<i>yes</i>		<i>no answer</i>		<i>Total</i>	
	No.	%	No.	%	No.	%	No.	%
AT	13	56.5	7	30.4	3	13.0	23	100.0
BE	3	30.0 ^a	3	30.0 ^a	4	40.0 ^a	10	100.0 ^a
DE	56	76.7	16	21.9	1	1.4	73	100.0
FR	8	42.1 ^a	6	31.6 ^a	5	26.3 ^a	19	100.0 ^a
IT	69	65.1	30	28.3	7	6.6	106	100.0
Total	149	64.5	62	26.8	20	8.7	231	100.0
Mean		54.1		28.4		17.5		100.0

Note: target group: e-infrastructures; only respondents included who indicated that their organisation 'offer(s) data infrastructures which store and manage research data' (see question E1); row percentages; question-ID: E74; a superscript 'a' indicates that percentages rely on a number of observations below 20 and therefore have to be treated with caution.

Table 7.167: What level of curation do you perform? (Part 2)

	<i>Curation level: basic curation</i>							
	<i>no</i>		<i>yes</i>		<i>no answer</i>		<i>Total</i>	
	No.	%	No.	%	No.	%	No.	%
AT	7	30.4	13	56.5	3	13.0	23	100.0
BE	3	30.0 ^a	3	30.0 ^a	4	40.0 ^a	10	100.0 ^a
DE	38	52.1	34	46.6	1	1.4	73	100.0
FR	12	63.2 ^a	2	10.5 ^a	5	26.3 ^a	19	100.0 ^a
IT	49	46.2	50	47.2	7	6.6	106	100.0
Total	109	47.2	102	44.2	20	8.7	231	100.0
Mean		44.4		38.2		17.5		100.0

Note: target group: e-infrastructures; only respondents included who indicated that their organisation 'offer(s) data infrastructures which store and manage research data' (see question E1); row percentages; question-ID: E74; a superscript 'a' indicates that percentages rely on a number of observations below 20 and therefore have to be treated with caution.

Table 7.168: What level of curation do you perform? (Part 3)

	<i>Curation level: enhanced curation</i>							
	<i>no</i>		<i>yes</i>		<i>no answer</i>		<i>Total</i>	
	No.	%	No.	%	No.	%	No.	%
AT	11	47.8	9	39.1	3	13.0	23	100.0
BE	3	30.0 ^a	3	30.0 ^a	4	40.0 ^a	10	100.0 ^a
DE	39	53.4	33	45.2	1	1.4	73	100.0
FR	9	47.4 ^a	5	26.3 ^a	5	26.3 ^a	19	100.0 ^a
IT	80	75.5	19	17.9	7	6.6	106	100.0
Total	142	61.5	69	29.9	20	8.7	231	100.0
Mean		50.8		31.7		17.5		100.0

Note: target group: e-infrastructures; only respondents included who indicated that their organisation 'offer(s) data infrastructures which store and manage research data' (see question E1); row percentages; question-ID: E74; a superscript 'a' indicates that percentages rely on a number of observations below 20 and therefore have to be treated with caution.

Table 7.169: What level of curation do you perform? (Part 4)

	<i>Curation level: data-level curation</i>							
	<i>no</i>		<i>yes</i>		<i>no answer</i>		<i>Total</i>	
	No.	%	No.	%	No.	%	No.	%
AT	15	65.2	5	21.7	3	13.0	23	100.0
BE	5	50.0 ^a	1	10.0 ^a	4	40.0 ^a	10	100.0 ^a
DE	48	65.8	24	32.9	1	1.4	73	100.0
FR	8	42.1 ^a	6	31.6 ^a	5	26.3 ^a	19	100.0 ^a
IT	69	65.1	30	28.3	7	6.6	106	100.0
Total	145	62.8	66	28.6	20	8.7	231	100.0
Mean		57.6		24.9		17.5		100.0

Note: target group: e-infrastructures; only respondents included who indicated that their organisation 'offer(s) data infrastructures which store and manage research data' (see question E1); row percentages; question-ID: E74; a superscript 'a' indicates that percentages rely on a number of observations below 20 and therefore have to be treated with caution.

7.10 Repositories

All tables in this section rely exclusively on data on repositories.

Table 7.170: What type of digital data is archived in your repository? (Part 1)

	<i>Numeric</i>							
	<i>no</i>		<i>yes</i>		<i>no answer</i>		<i>Total</i>	
	No.	%	No.	%	No.	%	No.	%
AT	15	65.2	8	34.8	0	0.0	23	100.0
BE	3	33.3 ^a	6	66.7 ^a	0	0.0 ^a	9	100.0 ^a
DE	21	28.4	52	70.3	1	1.4	74	100.0
FR	4	22.2 ^a	14	77.8 ^a	0	0.0 ^a	18	100.0 ^a
IT	54	50.9	51	48.1	1	0.9	106	100.0
Total	97	42.2	131	57.0	2	0.9	230	100.0
Mean		40.0		59.5		0.5		100.0

Note: target group: e-infrastructures; only respondents included who indicated that their organisation 'offer(s) data infrastructures which store and manage research data' (see question E1); row percentages; question-ID: E93; a superscript 'a' indicates that percentages rely on a number of observations below 20 and therefore have to be treated with caution.

Table 7.171: What type of digital data is archived in your repository? (Part 2)

	<i>Text</i>							
	<i>no</i>		<i>yes</i>		<i>no answer</i>		<i>Total</i>	
	No.	%	No.	%	No.	%	No.	%
AT	6	26.1	17	73.9	0	0.0	23	100.0
BE	3	33.3 ^a	6	66.7 ^a	0	0.0 ^a	9	100.0 ^a
DE	21	28.4	52	70.3	1	1.4	74	100.0
FR	7	38.9 ^a	11	61.1 ^a	0	0.0 ^a	18	100.0 ^a
IT	18	17.0	87	82.1	1	0.9	106	100.0
Total	55	23.9	173	75.2	2	0.9	230	100.0
Mean		28.7		70.8		0.5		100.0

Note: target group: e-infrastructures; only respondents included who indicated that their organisation 'offer(s) data infrastructures which store and manage research data' (see question E1); row percentages; question-ID: E93; a superscript 'a' indicates that percentages rely on a number of observations below 20 and therefore have to be treated with caution.

Table 7.172: What type of digital data is archived in your repository? (Part 3)

	<i>Still image</i>							
	<i>no</i>		<i>yes</i>		<i>no answer</i>		<i>Total</i>	
	No.	%	No.	%	No.	%	No.	%
AT	8	34.8	15	65.2	0	0.0	23	100.0
BE	5	55.6 ^a	4	44.4 ^a	0	0.0 ^a	9	100.0 ^a
DE	36	48.6	37	50.0	1	1.4	74	100.0
FR	13	72.2 ^a	5	27.8 ^a	0	0.0 ^a	18	100.0 ^a
IT	58	54.7	47	44.3	1	0.9	106	100.0
Total	120	52.2	108	47.0	2	0.9	230	100.0
Mean		53.2		46.3		0.5		100.0

Note: target group: e-infrastructures; only respondents included who indicated that their organisation 'offer(s) data infrastructures which store and manage research data' (see question E1); row percentages; question-ID: E93; a superscript 'a' indicates that percentages rely on a number of observations below 20 and therefore have to be treated with caution.

Table 7.173: What type of digital data is archived in your repository? (Part 4)

	<i>Geospatial</i>							
	<i>no</i>		<i>yes</i>		<i>no answer</i>		<i>Total</i>	
	No.	%	No.	%	No.	%	No.	%
AT	15	65.2	8	34.8	0	0.0	23	100.0
BE	7	77.8 ^a	2	22.2 ^a	0	0.0 ^a	9	100.0 ^a
DE	40	54.1	33	44.6	1	1.4	74	100.0
FR	10	55.6 ^a	8	44.4 ^a	0	0.0 ^a	18	100.0 ^a
IT	67	63.2	38	35.8	1	0.9	106	100.0
Total	139	60.4	89	38.7	2	0.9	230	100.0
Mean		63.2		36.4		0.5		100.0

Note: target group: e-infrastructures; only respondents included who indicated that their organisation 'offer(s) data infrastructures which store and manage research data' (see question E1); row percentages; question-ID: E93; a superscript 'a' indicates that percentages rely on a number of observations below 20 and therefore have to be treated with caution.

Table 7.174: What type of digital data is archived in your repository? (Part 5)

	<i>Audio</i>							
	<i>no</i>		<i>yes</i>		<i>no answer</i>		<i>Total</i>	
	No.	%	No.	%	No.	%	No.	%
AT	14	60.9	9	39.1	0	0.0	23	100.0
BE	7	77.8 ^a	2	22.2 ^a	0	0.0 ^a	9	100.0 ^a
DE	51	68.9	22	29.7	1	1.4	74	100.0
FR	13	72.2 ^a	5	27.8 ^a	0	0.0 ^a	18	100.0 ^a
IT	91	85.8	14	13.2	1	0.9	106	100.0
Total	176	76.5	52	22.6	2	0.9	230	100.0
Mean		73.1		26.4		0.5		100.0

Note: target group: e-infrastructures; only respondents included who indicated that their organisation ‘offer(s) data infrastructures which store and manage research data’ (see question E1); row percentages; question-ID: E93; a superscript ‘a’ indicates that percentages rely on a number of observations below 20 and therefore have to be treated with caution.

Table 7.175: What type of digital data is archived in your repository? (Part 6)

	<i>Video</i>							
	<i>no</i>		<i>yes</i>		<i>no answer</i>		<i>Total</i>	
	No.	%	No.	%	No.	%	No.	%
AT	14	60.9	9	39.1	0	0.0	23	100.0
BE	7	77.8 ^a	2	22.2 ^a	0	0.0 ^a	9	100.0 ^a
DE	52	70.3	21	28.4	1	1.4	74	100.0
FR	12	66.7 ^a	6	33.3 ^a	0	0.0 ^a	18	100.0 ^a
IT	84	79.2	21	19.8	1	0.9	106	100.0
Total	169	73.5	59	25.7	2	0.9	230	100.0
Mean		71.0		28.6		0.5		100.0

Note: target group: e-infrastructures; only respondents included who indicated that their organisation ‘offer(s) data infrastructures which store and manage research data’ (see question E1); row percentages; question-ID: E93; a superscript ‘a’ indicates that percentages rely on a number of observations below 20 and therefore have to be treated with caution.

Table 7.176: What type of digital data is archived in your repository? (Part 7)

	<i>Software</i>							
	<i>no</i>		<i>yes</i>		<i>no answer</i>		<i>Total</i>	
	No.	%	No.	%	No.	%	No.	%
AT	18	78.3	5	21.7	0	0.0	23	100.0
BE	7	77.8 ^a	2	22.2 ^a	0	0.0 ^a	9	100.0 ^a
DE	52	70.3	21	28.4	1	1.4	74	100.0
FR	10	55.6 ^a	8	44.4 ^a	0	0.0 ^a	18	100.0 ^a
IT	53	50.0	52	49.1	1	0.9	106	100.0
Total	140	60.9	88	38.3	2	0.9	230	100.0
Mean		66.4		33.2		0.5		100.0

Note: target group: e-infrastructures; only respondents included who indicated that their organisation ‘offer(s) data infrastructures which store and manage research data’ (see question E1); row percentages; question-ID: E93; a superscript ‘a’ indicates that percentages rely on a number of observations below 20 and therefore have to be treated with caution.

Table 7.177: What type of digital data is archived in your repository? (Part 8)

	<i>Interactive resource</i>							
	<i>no</i>		<i>yes</i>		<i>no answer</i>		<i>Total</i>	
	No.	%	No.	%	No.	%	No.	%
AT	22	95.7	1	4.3	0	0.0	23	100.0
BE	8	88.9 ^a	1	11.1 ^a	0	0.0 ^a	9	100.0 ^a
DE	64	86.5	9	12.2	1	1.4	74	100.0
FR	16	88.9 ^a	2	11.1 ^a	0	0.0 ^a	18	100.0 ^a
IT	91	85.8	14	13.2	1	0.9	106	100.0
Total	201	87.4	27	11.7	2	0.9	230	100.0
Mean		89.2		10.4		0.5		100.0

Note: target group: e-infrastructures; only respondents included who indicated that their organisation ‘offer(s) data infrastructures which store and manage research data’ (see question E1); row percentages; question-ID: E93; a superscript ‘a’ indicates that percentages rely on a number of observations below 20 and therefore have to be treated with caution.

Table 7.178: What type of digital data is archived in your repository? (Part 9)

	<i>3D</i>							
	<i>no</i>		<i>yes</i>		<i>no answer</i>		<i>Total</i>	
	No.	%	No.	%	No.	%	No.	%
AT	21	91.3	2	8.7	0	0.0	23	100.0
BE	8	88.9 ^a	1	11.1 ^a	0	0.0 ^a	9	100.0 ^a
DE	57	77.0	16	21.6	1	1.4	74	100.0
FR	15	83.3 ^a	3	16.7 ^a	0	0.0 ^a	18	100.0 ^a
IT	87	82.1	18	17.0	1	0.9	106	100.0
Total	188	81.7	40	17.4	2	0.9	230	100.0
Mean		84.5		15.0		0.5		100.0

Note: target group: e-infrastructures; only respondents included who indicated that their organisation 'offer(s) data infrastructures which store and manage research data' (see question E1); row percentages; question-ID: E93; a superscript 'a' indicates that percentages rely on a number of observations below 20 and therefore have to be treated with caution.

Table 7.179: What type of digital data is archived in your repository? (Part 10)

	<i>Other</i>							
	<i>no</i>		<i>yes</i>		<i>no answer</i>		<i>Total</i>	
	No.	%	No.	%	No.	%	No.	%
AT	19	82.6	4	17.4	0	0.0	23	100.0
BE	8	88.9 ^a	1	11.1 ^a	0	0.0 ^a	9	100.0 ^a
DE	66	89.2	7	9.5	1	1.4	74	100.0
FR	15	83.3 ^a	3	16.7 ^a	0	0.0 ^a	18	100.0 ^a
IT	99	93.4	6	5.7	1	0.9	106	100.0
Total	207	90.0	21	9.1	2	0.9	230	100.0
Mean		87.5		12.1		0.5		100.0

Note: target group: e-infrastructures; only respondents included who indicated that their organisation 'offer(s) data infrastructures which store and manage research data' (see question E1); row percentages; question-ID: E93; a superscript 'a' indicates that percentages rely on a number of observations below 20 and therefore have to be treated with caution.

7.11 Budget

Most questions of this section were open, hence, respondents had the opportunity to type answers in a text field. Consequently, these answers need recoding before an analysis is possible and results will be available at a later stage of the research process.

Table 7.180: Which term(s) fit(s) your organisation best?

	<i>Terms for organisation</i>											
	<i>RI</i>		<i>E-I</i>		<i>both</i>		<i>other</i>		<i>no answer</i>		<i>Total</i>	
	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%
AT	13	40.6	4	12.5	4	12.5	9	28.1	2	6.3	32	100.0
BE	6	37.5 ^a	1	6.3 ^a	2	12.5 ^a	6	37.5 ^a	1	6.3 ^a	16	100.0 ^a
DE	46	58.2	6	7.6	12	15.2	15	19.0	0	0.0	79	100.0
FR	9	39.1	2	8.7	6	26.1	4	17.4	2	8.7	23	100.0
IT	31	24.8	52	41.6	18	14.4	24	19.2	0	0.0	125	100.0
Total	105	38.2	65	23.6	42	15.3	58	21.1	5	1.8	275	100.0
Mean		40.0		15.3		16.1		24.2		4.3		100.0

Note: target group: e-infrastructures; row percentages; original labels of categories: 'research infrastructure', 'e-infrastructure', 'both terms are equally valid', 'neither term fits my organisation, the correct term is:'; question-ID: E831; a superscript 'a' indicates that percentages rely on a number of observations below 20 and therefore have to be treated with caution.

7.12 Authentication and Authorization Infrastructure (AAI)

All tables in this section rely on the stacked dataset.

Table 7.181: What is the authentication model of your service? (Part 1)

<i>Authentication model: Member of national federation</i>								
	<i>no</i>		<i>yes</i>		<i>no answer</i>		<i>Total</i>	
	No.	%	No.	%	No.	%	No.	%
AT	17	73.9	3	13.0	3	13.0	23	100.0
BE	7	53.8 ^a	2	15.4 ^a	4	30.8 ^a	13	100.0 ^a
DE	55	67.9	13	16.0	13	16.0	81	100.0
FR	18	62.1	9	31.0	2	6.9	29	100.0
IT	70	51.1	61	44.5	6	4.4	137	100.0
Total	167	59.0	88	31.1	28	9.9	283	100.0
Mean		61.8		24.0		14.2		100.0

Note: target group: e-infrastructures; stacked dataset of all services; row percentages; question-ID: E40; a superscript 'a' indicates that percentages rely on a number of observations below 20 and therefore have to be treated with caution.

Table 7.182: What is the authentication model of your service? (Part 2)

<i>Authentication model: Using EGI (Checkin)</i>								
	<i>no</i>		<i>yes</i>		<i>no answer</i>		<i>Total</i>	
	No.	%	No.	%	No.	%	No.	%
AT	20	87.0	0	0.0	3	13.0	23	100.0
BE	9	69.2 ^a	0	0.0 ^a	4	30.8 ^a	13	100.0 ^a
DE	68	84.0	0	0.0	13	16.0	81	100.0
FR	25	86.2	2	6.9	2	6.9	29	100.0
IT	121	88.3	10	7.3	6	4.4	137	100.0
Total	243	85.9	12	4.2	28	9.9	283	100.0
Mean		82.9		2.8		14.2		100.0

Note: target group: e-infrastructures; stacked dataset of all services; row percentages; question-ID: E40; a superscript 'a' indicates that percentages rely on a number of observations below 20 and therefore have to be treated with caution.

Table 7.183: What is the authentication model of your service? (Part 3)

<i>Authentication model: Using EUDAT (B2ACCESS)</i>								
	<i>no</i>		<i>yes</i>		<i>no answer</i>		<i>Total</i>	
	No.	%	No.	%	No.	%	No.	%
AT	20	87.0	0	0.0	3	13.0	23	100.0
BE	8	61.5 ^a	1	7.7 ^a	4	30.8 ^a	13	100.0 ^a
DE	64	79.0	4	4.9	13	16.0	81	100.0
FR	27	93.1	0	0.0	2	6.9	29	100.0
IT	126	92.0	5	3.6	6	4.4	137	100.0
Total	245	86.6	10	3.5	28	9.9	283	100.0
Mean		82.5		3.2		14.2		100.0

Note: target group: e-infrastructures; stacked dataset of all services; row percentages; question-ID: E40; a superscript 'a' indicates that percentages rely on a number of observations below 20 and therefore have to be treated with caution.

Table 7.184: What is the authentication model of your service? (Part 4)

<i>Authentication model: Local authentication</i>								
	<i>no</i>		<i>yes</i>		<i>no answer</i>		<i>Total</i>	
	No.	%	No.	%	No.	%	No.	%
AT	2	8.7	18	78.3	3	13.0	23	100.0
BE	6	46.2 ^a	3	23.1 ^a	4	30.8 ^a	13	100.0 ^a
DE	22	27.2	46	56.8	13	16.0	81	100.0
FR	10	34.5	17	58.6	2	6.9	29	100.0
IT	67	48.9	64	46.7	6	4.4	137	100.0
Total	107	37.8	148	52.3	28	9.9	283	100.0
Mean		33.1		52.7		14.2		100.0

Note: target group: e-infrastructures; stacked dataset of all services; row percentages; question-ID: E40; a superscript 'a' indicates that percentages rely on a number of observations below 20 and therefore have to be treated with caution.

Table 7.185: What is the authentication model of your service? (Part 5)

	<i>Authentication model: other</i>							
	<i>no</i>		<i>yes</i>		<i>no answer</i>		<i>Total</i>	
	No.	%	No.	%	No.	%	No.	%
AT	17	73.9	3	13.0	3	13.0	23	100.0
BE	4	30.8 ^a	5	38.5 ^a	4	30.8 ^a	13	100.0 ^a
DE	49	60.5	19	23.5	13	16.0	81	100.0
FR	16	55.2	11	37.9	2	6.9	29	100.0
IT	96	70.1	35	25.5	6	4.4	137	100.0
Total	182	64.3	73	25.8	28	9.9	283	100.0
Mean		58.1		27.7		14.2		100.0

Note: target group: e-infrastructures; stacked dataset of all services; row percentages; question-ID: E40; a superscript 'a' indicates that percentages rely on a number of observations below 20 and therefore have to be treated with caution.

Table 7.186: Does your organisation plan to authenticate your service(s) through an Identity Provider (IdP)?

	<i>Authentication through IdP planned</i>															
	<i>no</i>		<i>in <1 y.</i>		<i>in 1–2 y.</i>		<i>in >2 y.</i>		<i>d.k.</i>		<i>n.a.</i>		<i>no a.</i>		<i>Total</i>	
	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%
AT	5	27.8 ^a	0	0.0 ^a	3	16.7 ^a	3	16.7 ^a	3	16.7 ^a	3	16.7 ^a	1	5.6 ^a	18	100.0 ^a
BE	0	0.0 ^a	1	33.3 ^a	0	0.0 ^a	0	0.0 ^a	1	33.3 ^a	0	0.0 ^a	1	33.3 ^a	3	100.0 ^a
DE	12	26.1	4	8.7	12	26.1	1	2.2	12	26.1	4	8.7	1	2.2	46	100.0
FR	0	0.0 ^a	3	17.6 ^a	5	29.4 ^a	2	11.8 ^a	5	29.4 ^a	2	11.8 ^a	0	0.0 ^a	17	100.0 ^a
IT	6	9.4	12	18.8	4	6.3	5	7.8	27	42.2	10	15.6	0	0.0	64	100.0
Total	23	15.5	20	13.5	24	16.2	11	7.4	48	32.4	19	12.8	3	2.0	148	100.0
Mean		12.7		15.7		15.7		7.7		29.5		10.6		8.2		100.0

Note: target group: e-infrastructures; stacked dataset of all services; only respondents who indicated that their organisations uses 'Local authentication (etc/passwd)' received this question; row percentages; original labels of categories: 'no', 'yes, in less than 1 year', 'yes, in 1 to 2 years', 'yes, in more than 2 years', 'not applicable', 'don't know'; question-ID: E41; a superscript 'a' indicates that percentages rely on a number of observations below 20 and therefore have to be treated with caution.

Table 7.187: Is your service proxied to eduGAIN?

	<i>Service proxied to eduGAIN</i>											
	<i>yes</i>		<i>no proxy</i>		<i>different proxy</i>		<i>don't know</i>		<i>no a.</i>		<i>Total</i>	
	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%
AT	2	66.7 ^a	1	33.3 ^a	0	0.0 ^a	0	0.0 ^a	0	0.0 ^a	3	100.0 ^a
BE	0	0.0 ^a	1	50.0 ^a	0	0.0 ^a	1	50.0 ^a	0	0.0 ^a	2	100.0 ^a
DE	5	33.3 ^a	4	26.7 ^a	2	13.3 ^a	3	20.0 ^a	1	6.7 ^a	15	100.0 ^a
FR	2	22.2 ^a	3	33.3 ^a	1	11.1 ^a	3	33.3 ^a	0	0.0 ^a	9	100.0 ^a
IT	47	67.1	6	8.6	3	4.3	14	20.0	0	0.0	70	100.0
Total	56	56.6	15	15.2	6	6.1	21	21.2	1	1.0	99	100.0
Mean		37.9		30.4		5.7		24.7		1.3		100.0

Note: target group: e-infrastructures; stacked dataset of all services; only respondents who indicated that their organisations uses at least one of the following authentication models (see question E40 above): 'Member of national federation', 'Using EGI (Checkin)' or 'Using EUDAT (B2ACCESS)'; row percentages; original labels of categories: 'yes', 'No, we don't use a proxy', 'No, we use a different service provider-identity provider (SP-IdP) proxy', 'don't know'; question-ID: E43; a superscript 'a' indicates that percentages rely on a number of observations below 20 and therefore have to be treated with caution.

Table 7.188: Is the authorisation information for your service(s) managed locally at the service level or received from an external attribute authority?

	Authorization managed locally or externally													
	locally		externally		both		d.k.		n.a.		no a.		Total	
	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%
AT	0	0.0 ^a	0	0.0 ^a	1	33.3 ^a	0	0.0 ^a	1	33.3 ^a	1	33.3 ^a	3	100.0 ^a
BE	0	0.0 ^a	0	0.0 ^a	0	0.0 ^a	2	100.0 ^a	0	0.0 ^a	0	0.0 ^a	2	100.0 ^a
DE	1	6.7 ^a	4	26.7 ^a	8	53.3 ^a	2	13.3 ^a	0	0.0 ^a	0	0.0 ^a	15	100.0 ^a
FR	1	11.1 ^a	0	0.0 ^a	4	44.4 ^a	3	33.3 ^a	1	11.1 ^a	0	0.0 ^a	9	100.0 ^a
IT	26	37.1	7	10.0	33	47.1	4	5.7	0	0.0	0	0.0	70	100.0
Total	28	28.3	11	11.1	46	46.5	11	11.1	2	2.0	1	1.0	99	100.0
Mean		11.0		7.3		35.6		30.5		8.9		6.7		100.0

Note: target group: e-infrastructures; stacked dataset of all services; only respondents who indicated that their organisations uses at least one of the following authentication models (see question E40 above): 'Member of national federation', 'Using EGI (Checkin)' or 'Using EUDAT (B2ACCESS)'; row percentages; original labels of categories: 'attributes are managed locally', 'attributes are received from an external authority', 'both, managed locally and received from an external authority', 'don't know', 'not applicable'; question-ID: E44; a superscript 'a' indicates that percentages rely on a number of observations below 20 and therefore have to be treated with caution.

Table 7.189: Do you use the REFEDS R&S entity category?

	Use the REFEDS R&S entity category																	
	yes		<1 y.		1-2 y.		>2 y.		no		d.k.		n.a.		no a.		Total	
	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%
AT	0	0.0 ^a	1	33.3 ^a	0	0.0 ^a	0	0.0 ^a	0	0.0 ^a	0	0.0 ^a	1	33.3 ^a	1	33.3 ^a	3	100.0 ^a
BE	0	0.0 ^a	0	0.0 ^a	0	0.0 ^a	0	0.0 ^a	1	50.0 ^a	1	50.0 ^a	0	0.0 ^a	0	0.0 ^a	2	100.0 ^a
DE	2	13.3 ^a	0	0.0 ^a	0	0.0 ^a	0	0.0 ^a	5	33.3 ^a	8	53.3 ^a	0	0.0 ^a	0	0.0 ^a	15	100.0 ^a
FR	0	0.0 ^a	0	0.0 ^a	0	0.0 ^a	1	11.1 ^a	1	11.1 ^a	6	66.7 ^a	1	11.1 ^a	0	0.0 ^a	9	100.0 ^a
IT	3	4.3	1	1.4	1	1.4	1	1.4	15	21.4	48	68.6	1	1.4	0	0.0	70	100.0
Total	5	5.1	2	2.0	1	1.0	2	2.0	22	22.2	63	63.6	3	3.0	1	1.0	99	100.0
Mean		3.5		6.9		0.3		2.5		23.2		47.7		9.2		6.7		100.0

Note: target group: e-infrastructures; stacked dataset of all services; only respondents who indicated that their organisations uses at least one of the following authentication models (see question E40 above): 'Member of national federation', 'Using EGI (Checkin)' or 'Using EUDAT (B2ACCESS)'; row percentages; original labels of categories: 'no', 'yes', 'yes, in less than 1 year', 'yes, in 1 to 2 years', 'yes, in more than 2 years', 'don't know', 'not applicable'; question-ID: E51; a superscript 'a' indicates that percentages rely on a number of observations below 20 and therefore have to be treated with caution.

Table 7.190: Does your organisation make use of one of the following authentication technologies? (Part 1)

	Usage of: <i>OIDC</i>											
	<i>no</i>		<i>yes</i>		<i>don't know</i>		<i>n.a.</i>		<i>no answer</i>		<i>Total</i>	
	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%
AT	8	34.8	0	0.0	9	39.1	3	13.0	3	13.0	23	100.0
BE	7	53.8 ^a	0	0.0 ^a	4	30.8 ^a	0	0.0 ^a	2	15.4 ^a	13	100.0 ^a
DE	29	35.8	3	3.7	28	34.6	16	19.8	5	6.2	81	100.0
FR	11	37.9	1	3.4	5	17.2	9	31.0	3	10.3	29	100.0
IT	65	47.4	14	10.2	26	19.0	26	19.0	6	4.4	137	100.0
Total	120	42.4	18	6.4	72	25.4	54	19.1	19	6.7	283	100.0
Mean		41.9		3.5		28.1		16.6		9.9		100.0

Note: target group: e-infrastructures; stacked dataset of all services; row percentages; question-ID: E52; a superscript 'a' indicates that percentages rely on a number of observations below 20 and therefore have to be treated with caution.

Table 7.191: Does your organisation make use of one of the following authentication technologies? (Part 2)

	<i>Usage of: SAML</i>											
	<i>no</i>		<i>yes</i>		<i>don't know</i>		<i>n.a.</i>		<i>no answer</i>		<i>Total</i>	
	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%
AT	3	13.0	5	21.7	9	39.1	3	13.0	3	13.0	23	100.0
BE	1	7.7 ^a	6	46.2 ^a	4	30.8 ^a	0	0.0 ^a	2	15.4 ^a	13	100.0 ^a
DE	18	22.2	14	17.3	28	34.6	16	19.8	5	6.2	81	100.0
FR	7	24.1	5	17.2	5	17.2	9	31.0	3	10.3	29	100.0
IT	13	9.5	66	48.2	26	19.0	26	19.0	6	4.4	137	100.0
Total	42	14.8	96	33.9	72	25.4	54	19.1	19	6.7	283	100.0
Mean		15.3		30.1		28.1		16.6		9.9		100.0

Note: target group: e-infrastructures; stacked dataset of all services; row percentages; question-ID: E52; a superscript 'a' indicates that percentages rely on a number of observations below 20 and therefore have to be treated with caution.

Table 7.192: Does your organisation make use of one of the following authentication technologies? (Part 3)

	<i>Usage of: OAuth2</i>											
	<i>no</i>		<i>yes</i>		<i>don't know</i>		<i>n.a.</i>		<i>no answer</i>		<i>Total</i>	
	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%
AT	4	17.4	4	17.4	9	39.1	3	13.0	3	13.0	23	100.0
BE	3	23.1 ^a	4	30.8 ^a	4	30.8 ^a	0	0.0 ^a	2	15.4 ^a	13	100.0 ^a
DE	17	21.0	15	18.5	28	34.6	16	19.8	5	6.2	81	100.0
FR	10	34.5	2	6.9	5	17.2	9	31.0	3	10.3	29	100.0
IT	47	34.3	32	23.4	26	19.0	26	19.0	6	4.4	137	100.0
Total	81	28.6	57	20.1	72	25.4	54	19.1	19	6.7	283	100.0
Mean		26.1		19.4		28.1		16.6		9.9		100.0

Note: target group: e-infrastructures; stacked dataset of all services; row percentages; question-ID: E52; a superscript 'a' indicates that percentages rely on a number of observations below 20 and therefore have to be treated with caution.

Table 7.193: Does your organisation make use of one of the following authentication technologies? (Part 4)

<i>Usage of: X.509</i>												
	<i>no</i>		<i>yes</i>		<i>don't know</i>		<i>n.a.</i>		<i>no answer</i>		<i>Total</i>	
	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%
AT	7	30.4	1	4.3	9	39.1	3	13.0	3	13.0	23	100.0
BE	5	38.5 ^a	2	15.4 ^a	4	30.8 ^a	0	0.0 ^a	2	15.4 ^a	13	100.0 ^a
DE	26	32.1	6	7.4	28	34.6	16	19.8	5	6.2	81	100.0
FR	3	10.3	9	31.0	5	17.2	9	31.0	3	10.3	29	100.0
IT	46	33.6	33	24.1	26	19.0	26	19.0	6	4.4	137	100.0
Total	87	30.7	51	18.0	72	25.4	54	19.1	19	6.7	283	100.0
Mean		29.0		16.4		28.1		16.6		9.9		100.0

Note: target group: e-infrastructures; stacked dataset of all services; row percentages; question-ID: E52; a superscript 'a' indicates that percentages rely on a number of observations below 20 and therefore have to be treated with caution.

Table 7.194: Does your organisation make use of one of the following authentication technologies? (Part 5)

<i>Usage of: other</i>												
	<i>no</i>		<i>yes</i>		<i>don't know</i>		<i>n.a.</i>		<i>no answer</i>		<i>Total</i>	
	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%
AT	7	30.4	1	4.3	9	39.1	3	13.0	3	13.0	23	100.0
BE	6	46.2 ^a	1	7.7 ^a	4	30.8 ^a	0	0.0 ^a	2	15.4 ^a	13	100.0 ^a
DE	20	24.7	12	14.8	28	34.6	16	19.8	5	6.2	81	100.0
FR	11	37.9	1	3.4	5	17.2	9	31.0	3	10.3	29	100.0
IT	70	51.1	9	6.6	26	19.0	26	19.0	6	4.4	137	100.0
Total	114	40.3	24	8.5	72	25.4	54	19.1	19	6.7	283	100.0
Mean		38.1		7.4		28.1		16.6		9.9		100.0

Note: target group: e-infrastructures; stacked dataset of all services; row percentages; question-ID: E52; a superscript 'a' indicates that percentages rely on a number of observations below 20 and therefore have to be treated with caution.

Table 7.195: Do you make use of any assurance framework? (Part 1)

	<i>Assurance framework exists</i>							
	<i>no</i>		<i>yes</i>		<i>no answer</i>		<i>Total</i>	
	No.	%	No.	%	No.	%	No.	%
AT	18	78.3	1	4.3	4	17.4	23	100.0
BE	8	61.5 ^a	0	0.0 ^a	5	38.5 ^a	13	100.0 ^a
DE	62	76.5	3	3.7	16	19.8	81	100.0
FR	22	75.9	2	6.9	5	17.2	29	100.0
IT	115	83.9	6	4.4	16	11.7	137	100.0
Total	225	79.5	12	4.2	46	16.3	283	100.0
Mean		75.2		3.9		20.9		100.0

Note: target group: e-infrastructures; stacked dataset of all services; row percentages; question-ID: E92; a superscript 'a' indicates that percentages rely on a number of observations below 20 and therefore have to be treated with caution.

Table 7.196: Do you make use of any assurance framework? (Part 2)

	No.	%
<i>Assurance frameworks: REFEDS Assurance framework.</i>		
no	8	66.7
yes	4	33.3
Total	12	100.0
<i>Assurance frameworks: Kantara IAF-SAC.</i>		
no	12	100.0
Total	12	100.0
<i>Assurance frameworks: eIDAS.</i>		
no	10	83.3
yes	2	16.7
Total	12	100.0
<i>Assurance frameworks: NIST 800-63B</i>		
no	11	91.7
yes	1	8.3
Total	12	100.0
<i>Assurance frameworks: other</i>		
no	7	58.3
yes	5	41.7
Total	12	100.0

Note: all countries included; target group: e-infrastructures; stacked dataset of all services; only respondents included who indicated that their organisation uses any assurance framework (see Part 1 of question E92); question-ID: E92.

Table 7.197: Is there a security incident response procedure in place according to a certified framework?

	<i>Security incident response procedure according to a certified framework</i>											
	<i>No</i>		<i>Yes, SIRTFI</i>		<i>don't know</i>		<i>Yes, other</i>		<i>no answer</i>		<i>Total</i>	
	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%
AT	8	34.8	0	0.0	13	56.5	1	4.3	1	4.3	23	100.0
BE	5	38.5 ^a	0	0.0 ^a	4	30.8 ^a	0	0.0 ^a	4	30.8 ^a	13	100.0 ^a
DE	46	56.8	3	3.7	23	28.4	5	6.2	4	4.9	81	100.0
FR	9	31.0	1	3.4	11	37.9	6	20.7	2	6.9	29	100.0
IT	66	48.2	6	4.4	46	33.6	12	8.8	7	5.1	137	100.0
Total	134	47.3	10	3.5	97	34.3	24	8.5	18	6.4	283	100.0
Mean		41.9		2.3		37.4		8.0		10.4		100.0

Note: target group: e-infrastructures; stacked dataset of all services; row percentages; question-ID: E48; a superscript 'a' indicates that percentages rely on a number of observations below 20 and therefore have to be treated with caution.

Table 7.198: Is your resource provider, where your service(s) are hosted, or is your organisation ISO27001 certified?

	<i>ISO27001 certified</i>															
	<i>provider</i>		<i>organisation</i>		<i>neither</i>		<i>d.k.</i>		<i>other</i>		<i>n.a.</i>		<i>no a.</i>		<i>Total</i>	
	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%
AT	5	21.7	0	0.0	6	26.1	10	43.5	0	0.0	1	4.3	1	4.3	23	100.0
BE	1	7.7 ^a	0	0.0 ^a	1	7.7 ^a	7	53.8 ^a	0	0.0 ^a	0	0.0 ^a	4	30.8 ^a	13	100.0 ^a
DE	3	3.7	2	2.5	35	43.2	33	40.7	1	1.2	4	4.9	3	3.7	81	100.0
FR	0	0.0	0	0.0	15	51.7	6	20.7	4	13.8	2	6.9	2	6.9	29	100.0
IT	5	3.6	12	8.8	32	23.4	35	25.5	2	1.5	48	35.0	3	2.2	137	100.0
Total	14	4.9	14	4.9	89	31.4	91	32.2	7	2.5	55	19.4	13	4.6	283	100.0
Mean		7.3		2.3		30.4		36.8		3.3		10.2		9.6		100.0

Note: target group: e-infrastructures; stacked dataset of all services; original labels of categories: 'Yes, my resource provider is ISO27001 certified.', 'Yes, my organisation is ISO27001 certified.', 'No, neither is certified.', 'No, but we use other certification or security standards, please specify', 'not applicable', 'don't know'; row percentages; question-ID: E49; a superscript 'a' indicates that percentages rely on a number of observations below 20 and therefore have to be treated with caution.

Table 7.199: Does your organisation provide support for integration of your services in EOSC and for the accompanying implementation and upkeep of security standards and policies?

<i>Support for integration</i>																
	<i>no</i>		<i>permanent</i>		<i>fixed term</i>		<i>both</i>		<i>d.k.</i>		<i>n.a.</i>		<i>no a.</i>		<i>Total</i>	
	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%
AT	9	39.1	3	13.0	1	4.3	0	0.0	9	39.1	0	0.0	1	4.3	23	100.0
BE	4	30.8 ^a	1	7.7 ^a	0	0.0 ^a	0	0.0 ^a	4	30.8 ^a	0	0.0 ^a	4	30.8 ^a	13	100.0 ^a
DE	40	49.4	0	0.0	10	12.3	2	2.5	22	27.2	3	3.7	4	4.9	81	100.0
FR	15	51.7	0	0.0	3	10.3	0	0.0	6	20.7	2	6.9	3	10.3	29	100.0
IT	46	33.6	5	3.6	35	25.5	3	2.2	37	27.0	8	5.8	3	2.2	137	100.0
Total	114	40.3	9	3.2	49	17.3	5	1.8	78	27.6	13	4.6	15	5.3	283	100.0
Mean		40.9		4.9		10.5		0.9		29.0		3.3		10.5		100.0

Note: target group: e-infrastructures; stacked dataset of all services; original labels of categories: 'yes with dedicated staff (permanent)', 'yes through local/national/international funded projects (fixed term)', 'no', 'not applicable', 'don't know'; row percentages; question-ID: E55; a superscript 'a' indicates that percentages rely on a number of observations below 20 and therefore have to be treated with caution.

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