Guidelines for the implementation of scientific publishing policies of research data citation in scientific publications and assuring access to primary data, used in publications

Version 2.5

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RDA Node Slovenia Project

Slovenian Social Science Data Archives (ADP) in the period from February 2019 to September 2020, in co-operation with partner organizations, coordinates the project of establishing the RDA (Research Data Alliance) Node Slovenia.[1]

RDA is an international volunteer member-based organisation, focusing on the development of infrastructure and community activities that reduces barriers to data exchange and sharing and accelerates data innovation around the world.

With RDA EU 4.0 projects, the organization wants to create a common European network of nodes based on already existing networks. The purpose of such a network is to strengthen the cooperation of Member States and to increase support of the RDA in many European countries, while also presenting the work of different European countries in the field of open data in the global RDA community.

Purpose of the document

One of the goals of the Research Data Alliance (RDA) Node Slovenia is to prepare **guidelines for the formulation of scientific publishing policies of citing research data in scientific publications and for providing access to primary data on which scientific discussions are based**.

The Guidelines are intended for scientific publishers and editors of scientific journals to assist them in policy-making of the so-called open access to research data requirements as a starting point for the preparation of any journal-adapted guidance for authors, reviewers and editors. They are accompanied by an example of detailed instructions for authors, to which editorial boards may refer to authors when preparing their instructions and, where appropriate, direct authors to extract from their guidelines independent ***Explanations for understanding the policies of scientific publishers in providing access to primary data used in articles.*** We thank the Working Group of the RDA Node Slovenia and all participating representatives of the editorial offices for their comments and suggestions.

[1] Website: https://www.rd-alliance.org/groups/rda-slovenia.

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1. Introduction: Open access to research data

1.1 What are open data?

»Research data constitute primary sources that underpin scientific research and enable derivation of theoretical or applied findings. Data should be prepared for open access in a form which would enable future users to assess and understand them for the purposes of reuse«.[2]

Various synonymous terms are used to highlight the specificity of the principles of openness of access to research data. '*Default open*', '*Open as much as possible, closed as much as necessary*' highlight the need for various access restrictions, ranging from full openness to openness under certain conditions, including controlled, exceptionally inaccessible research data when there are certain privacy reasons or other justified reasons present. The justification for the limitations is given in the data management plan of the research projects, and in the accompanying statement on access to the data when the article is published.[3]

Reasons for sharing data

Access to research data brings benefits for researchers, the research community and associations, and journals and society at large. Collecting and producing research data usually takes considerable effort and many times the data represent untapped potential for further use. Access to data also facilitates verified findings and results of the scientific article. Following the principles of open science, we strive for transparency of the results and open access to as many interested parties as possible. By publishing the data in a data archive, the author of the journal article ensures that the data is accessible to demonstrate the integrity of the scientific work.

Research data can be understood as another independent scientific result. Research data published in an appropriate place, e.g. in a trusted disciplinary data service, where long-term preservation is secured for more important data and retention is used for data of lesser validity. Similar to scientific articles

[2] Štebe, J., Bezjak, S. and Vipavc Brvar, I. (2015). *Preparing research data for open access: guide for data producers*. Ljubljana: Faculty for Social Sciences. Accessible on URN:NBN:SI:DOC-G0DPXMZ1.

[3] 'Open: the use of Open in relation to research has been widely discussed over recent years, and it is acknowledged that not all data and tools can be open. There are exceptions to openness, such as confidentiality and privacy. Open is also often confused with 'for free'. Free data and services do not exist. These nuances need to be respected and intelligently open is what we mean, often referring more to accessibility under proper and well defined conditions for all elements of the EOSC2', p. 8, *Realising the European Open Science Cloud*, 2016, accessible on https://ec.europa.eu/research/openscience/pdf/realising_the_european_open_science_cloud_2016.pdf
'Careful scrutiny of the boundaries of openness is important where research could in principle be misused to threaten security, public safety or health. In such cases this report recommends a balanced and proportionate approach rather than a blanket prohibition.', p. 9, *Science as an open enterprise*, 2012, accessible on https://royalsociety.org/~/media/policy/projects/sape/2012-06-20-saoe.pdf

publishing, research data are peer-reviewed and evaluated for their accessibility and possibility of further use, based on the FAIR principles with an emphasis on R as 'Reusability'.

The research data may be used for purposes other than those stated at the point of collection. By reusing, we can compare and connect accessible data from different sources. Studies that are based on the available data contribute to discoveries and improvements in the natural environment, to understanding and drawing attention to the problems of social and individual life. By publishing the data, we also enable greater use of invested funds in the study. As obvious as the benefits of data sharing are, they provide analysis and discoveries that the data creator might never have imagined, but they also represent an additional expense and effort to prepare the data appropriately for another use, e.g. with additional anonymization, cleaning and documentation. The data creator can pronounce a specific embargo period for the sole use of the data to complete the project and scheduled publication of reports and articles.

Ethical requirements and the requirements of the public scientific funders oblige researchers to be as open as possible in all research results, publications, data, code, etc. To stimulate, even more, some funders provide additional funding to prepare data for publication. The contribution to open science is already being considered and will increasingly be taken into account in evaluating the results of projects and researchers' work. In addition to other evaluation and rewards methods such as considering the publication of data in a recommended data centre by classifying it in the author's bibliography, the reward for the author are citations of secondary use of his/her data, which ultimately leads to reviews of how much, by whom and how the data were reused. Quoting accessible data, however, is a feedback and a reward for the data creator.[4] Recommended data centres that retrieve data and provide access to data are assisted by a service of assigning persistent identifiers to the data, which ensures uniform citation of data and tracking of their use. Such rewards and the promotion of data sharing are also promoted by scientific journals with their advanced open access policies, requiring consistent citation of the used data.

1.2 How do journals contribute to higher quality in science?

More and more reputable scientific journals are requiring authors to provide open access to data used in their publications. Through data access policies, journals increase the transparency and verifiability of the findings presented in the articles. By linking the scientific publication to the data publication, they simultaneously enrich their service and make it even more interesting to users.

Best practice examples show that scientific journals require (in their guidelines for submitting articles to the peer review process) authors to indicate in which repository or data centre the data is accessible, so that reviewers can verify the veracity of the data and the conclusions drawn from it in the article. The authors are advised to submit the data, if possible, to a disciplinary data centre, or, if this is not possible,

[4] Compare RDA Sharing Rewards and Credit (SHARC) IG and article Pierce, H. H., Dev, A., Statham, E. and Bierer, B. E. (2019). Credit data generators for data reuse**.** *Nature* 570, 30-32**;** DOI: 10.1038/d41586-019-01715-4.

to another appropriate data repository, which ensures uniform citation of the data used and its long-term availability.

The reward for authors who submit data in an above-described manner are citations of the data by secondary users, which in turn, contributes to their reputation. Data sharing and citation are becoming an integral part of the evaluation of scientific results and are seen as contributing to open science in new ways of evaluating scientific work (see, for example, the report by the Directorate-General for Research and Innovation of the European Commission).[5] As with scientific publications (both their own and others), the authors contribute to the traceability of use of scientific results when citing data.

1.3 How does the state establish the conditions?

Both the EU Commission and the Government of the Republic of Slovenia have made requests and recommendations regarding the sharing of data in connection with scientific publications. In 2015, the Government of the Republic of Slovenia approved the *National Strategy for Open Access to Scientific Publications and Research Data in Slovenia 2015-2020*[6] (hereinafter referred to as the Strategy), which states (p. 4): "The Strategy also stipulates that scientific journals of publishers based in Slovenia, containing peer-reviewed articles, co-funded by national public funds from 2015 to 2020, provide open access to their content. The research data that underpin the articles published should be accessible in open access. "

In 2017, the Government of the Republic of Slovenia approved the *Action Plan for the Implementation of the National Strategy for Open Access to Scientific Publications and Research Data in Slovenia 2015-2020*[7] (hereinafter the Action Plan), which sets out specific measures to achieve this commitment and identifies key stakeholders in this field.

The Action Plan also sets out the following measures (pp. 14, 16 and 18) that are relevant to scientific publishers:

[5] *Evaluation of Research Careers fully acknowledging Open Science Practices; Rewards, incentives and/or recognition for researchers practicing Open Science*. (2017). Accessible on https://ec.europa.eu/research/openscience/pdf/os_rewards_wgreport_final.pdf.

[6] Government of Republic of Slovenia. (2015). *Nacionalna strategija odprtega dostopa do znanstvenih objav in raziskovalnih podatkov v Sloveniji 2015-2020*. Accessible on https://cosec.nuk.uni-lj.si/static/OdprtiDostop/Nacionalna_strategija_odprtega_dostopa.pdf.

[7] Government of Republic of Slovenia. (2017). *Akcijski načrt izvedbe nacionalne strategije odprtega dostopa do znanstvenih objav in raziskovalnih podatkov v Sloveniji 2015-2020*. Accessible on http://www.ff.um.si/dotAsset/68527.pdf.

Nr.	Action/Activity	Indicator	Lead actors and collaborators	Intended start of activities	Intended conclusion	Financial sources needed
I.	Scientific publications and research data					
I.7	Amendments to the Rules of procedures for (co)financing, evaluating and monitoring research activity (ARRS)	Rules of procedure for (co)financing by the ARRS… contains a provision for open access to peer-reviewed articles and research data, core elements for calls for tenders, and a co-financing contract and definitions of actions in case of non-compliance	Lead: ARRS	February 2017	March 2018	/
II.	Scientific journals and monographs of publishers based in Slovenia					
II.2	Amendments to the Rules of procedures for (co)financing, evaluating and monitoring research activity (ARRS)	Rules of procedure for (co)financing by the ARRS… contains a provision for open access to peer-reviewed articles and research data, core elements for calls for tenders, and a co-financing contract and definitions of actions in case of non-compliance	Lead: ARRS	February 2017	March 2018	/
II.2	Implementation of the principles of open access to peer-reviewed publications and research data in the field of the pilot program through a subordinate Methodology of the evaluation of calls for proposals (Public call for co-financing the publication of scientific monographs and Public call for co-financing the publication of domestic scientific periodicals)	Defining the criteria for implementing the provisions of the updated Rules of procedures for (co)financing, evaluating and monitoring research activity (https://www.arrs.gov.si/sl/akti/prav-sof-ocen-sprem-razisk-dej-avg2016.asp)	Lead: ARRS	April 2017	June 2017	/
III.	National infrastructure for open access to scientific information					
III.6	Sustainable storage of peer-reviewed publications and research data, to prevent loss, injury or misuse	- Sustainable availability of peer-reviewed publications and research data from nationally and European Commission-funded research activities - Sustainable availability of peer-reviewed publications and research data, arising from articles, from nationally funded scientific publishing - Sustainable availability of unpublished scientific information	Lead: Universities, research institutes, National University Library Collabor	February 2017	December 2020 (ongoing activity)	2019: 150.000 2020: 150.000

			ators: ARNES, IZUM			

1.4 What is the contribution of the RDA Node Slovenia?

Within the RDA Slovenia, we connect the needs of the scientific community, the supply of data service providers and the requirements of funders. Within the scope of the Pilot task of drafting the policies of scientific journals in Slovenia, we prepared guidelines for journals based on international and national guidelines. The editorial boards of the peer-reviewed scientific journals were thus able to develop their open-access policies following current guidelines.

The journals have been integrated into the Pilot through different areas with data centre support, as foreseen by the existing National Strategy, with the possibility of new journals joining the pilot throughout the duration of the Pilot.

Scientific field	Scientific journals
Social sciences (cooperation with ADP)	Journal Socialno delo CEPAR (joined in February 2020)
Humanities (cooperation with CLARIN.SI and DARIAH-SI)	Slovenščina 2.0 Contributions to Contemporary History Documenta Praehistorica
Medicine (cooperation with ELIXIR Slovenia)	Acta medico-biotechnica (joined in February 2020)
Biotechnology	Les/Wood (joined in February 2020)

The task of the editorial boards that joined the pilot was to supplement the guidelines for authors and reviewers in a way that takes into account the importance of citing and accessing research data used in their journals.

The main challenges we expected at the beginning of the pilot's implementation were the following:

1. **Data accessibility:** the authors provide original research data they present in the article with information about where the data is stored and accessible: for review purposes and also later for use by readers for verification and other purposes.
2. **Citation:** The authors cite the used data sources (their own or existing) in the article in an established way, and also list them among references/sources.
3. **Implementation:** Reviewers review the accessibility and content of the data, and consistency with the article. Scientific journals technically verify that authors properly cite the used data sources.

The project work plan followed the following steps:

1. Coordination of the RDA Node has developed a proposal for guidelines and instructions regarding access and citation of research data that underlies scientific knowledge.
2. At the meetings with the representatives of the scientific journals included in the pilot and other stakeholders of the RDA Node Slovenia, the Coordination presents the proposed guidelines, documents and collects comments.
3. The journals, included in the pilot, implement the guidelines in their amended policies for authors and reviewers.
4. Coordination of the RDA Node Slovenia, together with the participating journals, endorses the final version of the guidelines based on pilot experience and arranges for the promotion among Slovenian publishers of scientific journals in the final conference in January.[8]

During the implementation phase, we collected comments and questions from the authors and other contributors to draw conclusions and recommendations for further work. We reviewed the guidelines together with the participating editorial boards and connected with the level of the infrastructure support services of data repositories. In particular, coordination of such services was carried out by determining the fulfilment of minimum standards and by creating lists of data repositories available for ingesting research data.

In the future, we shall continue working on linking services of the data repositories, journals and other scientific information services, following the examples of individual RDA groups, such as the Scholarly Link Exchange (Scholix) project.[9]

2. Guidelines and instructions for sharing research data, accompanying scientific articles

The idea behind the national RDA Node Slovenia project is to link the recommendations of the RDA Working Groups, the National Strategy provisions and the resulting Action Plan points. The guidelines and draft instruction for the preparation of scientific journal policies in Slovenia rely in particular on the review of journals around the world by the RDA Data Policy Standardization and Implementation Interest Group.[10] In doing so, we follow the established recommendations for citing research data.[11] In making

[8] Conference Scientific Journals of Slovenia and Research Data took place on 28 January 2020. Presentations are available on https://www.adp.fdv.uni-lj.si/dogodki/znanstvene-revije-slovenije-raziskovalni-podatki/program/.
[9] https://www.rd-alliance.org/groups/rdawds-scholarly-link-exchange-scholix-wg
[10] https://rd-alliance.org/groups/data-policy-standardisation-and-implementation-ig
See also Hrynaszkiewicz, I., Simons, N., Hussain, A., Grant, R. and Goudie, S. (2020). Developing a Research Data Policy Framework for All Journals and Publishers. *Data Science Journal*, 19(1). http://doi.org/10.5334/dsj-2020-005
See webinar https://oaspa.org/oaspa-webinar-how-to-set-up-your-data-sharing-policy/.

general definitions of research data and guidelines regarding the place of submission and access to research data, we follow the National Strategy and the Action Plan.

In the Guidelines, you can find examples of instruction to authors, which we also summarize in a separate document, entitled ***Explanations for the Understanding of Scientific Publishers' Policies for Providing Access to Primary Data Used in Articles***.[12] Journal's editorial boards can tailor them to fit the discipline and style of citation of the journal as needed. The scientific journals that participated in the Pilot (or will join later), depending on the situation of each journal, choose whether to make a certain requirement an obligation or a recommendation.

2.1 What are research data?

Guidelines:

- Instructions to the article's authors should include a definition of what are and what are not research data.
- A definition from the National Strategy can be used to say that research data are 'digitally readable fact sheets that form the basis for scientific research and are considered as an appropriate means of validating research findings within the scientific community'.
- The information used in the article can be primary (created by the author of the article) or secondary (the author of the article used existing data).
- The journal should provide examples of data formats and types.
- The journal should determine data integrity requirements (intact data integrity for further analysis) and ensure the traceability of data processing and use.
- In addition to the data, related material necessary to understand the results should be made available, including documentation of procedures and software records (see, e.g., FORCE11 Software Citation Principles[13]), as stated also by the National Strategy: "it shall, through the selected repository, provide information on the available tools and instruments necessary to validate the results (for example, specialized software or program code, analysis protocols, etc.)."

Example of instructions to authors:

The research data, accompanying the scientific article, are the intact integral parts of data that underlie the presentation and conclusion of the article. Data integrity allows for various further analyses. Ensuring the integrity and comprehensive documentation of data for other uses means transferring the data to a disciplinary data centre.

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[11] Martone M. (ed.). (2014). *Data Citation Synthesis Group: Joint Declaration of Data Citation Principles.* FORCE11. https://doi.org/10.25490/a97f-egyk

[12] Štebe, J., Bezjak, S. and Dolinar, M. (2020). *Pojasnila za razumevanje politik znanstvenih založb glede zagotavljanja dostopa do primarnih podatkov, uporabljenih v člankih.* https://doi.org/10.5281/zenodo.3754783

[13] Smith, A. M., Katz, D. S., Niemeyer, K. E., FORCE11 Software Citation Working Group. (2016). Software citation principles. *PeerJ Computer Science 2*(e86). https://doi.org/10.7717/peerj-cs.86

A scientific publication (eg. an article) should be accompanied by the information necessary to understand the data on which the authors based their findings, as well as information on where this information is available. Data can be an image, a text, a numeric, etc. The data should be as full, detailed and comprehensive as possible to also include unused portions of the data collected, which may be useful for further analysis. They should also include any additional materials and tools that help to replicate and understand the published analyses.

Data may have been collected for publication purposes, in which case we are dealing with primary data. Alternatively, the authors may have used secondary data.

In the case of primary data, the authors should ensure that the data is available to the editorial staff when submitting the article for review, or, if this is not possible, in the appropriate institutional or general open-access infrastructure repository. In the case of secondary data, the authors cite the data in the article and indicate where they are available for re-use.

2.2 Exemptions for data sharing in open access mode

Guidelines:

- Identifying certain types of data that are, as an exception, not fully open, and what alternative forms of access are available.
- Following from the Strategy: 'Exemptions from the rule of completely open access need to be well-defined and justified, for example for reasons of national security, protection of personal data and intellectual property rights of private research co-sponsors. Compliance with legal and ethical conditions to ensure open access must be clarified. If access to research data is restricted due to justified exceptions, at least a freely accessible metadata must be prepared for the Sectoral Catalog of the disciplinary data centre, indicating where and under what conditions the research data are accessible.'[14]
- If, depending on the particularities of the field (eg. medicine, genetics, pharmacy, chemistry), the research data must be accessible to a limited number of researchers or groups, journals should refer to best practice examples elsewhere for determining tolerable exceptions.
- Alternative access options should be offered, such as access to anonymised data, secure regulated access with predefined access conditions, and access to metadata only.
- The Data Access Statements (DAS) accompanying the publication of the journal are intended to give a brief explanation to readers of how the author follows the journal or funder's terms of access to the data.

Example of instructions to authors:

Exceptions to data sharing are justified when it comes to personal and sensitive data, when no consent has been obtained for sharing, or for reasons of protection of intellectual property, or to avoid revealing

[14] Strategy, p. 6.

endangered areas, groups or species. In these cases, it is possible to share the data in an anonymized manner, or under conditions of controlled and regulated access. Editors and reviewers must have the information available in agreement with the data archive, including the conditions of deleted information on authorship if the archive allows double-blind review. Exceptions and specifics for access to data should be explained by the author in the accompanying Data Access Statement and publicly available metadata.

2.3 Embargo

Guidelines:

- The National Strategy recommends 'reasonable embargo provisions' and states that data related to publications should be published as soon as possible.[15]
- The editorial board should limit unreasonably long embargo requirements.

Example of instructions to authors:

The data should be available to editors and reviewers when the article is submitted for review, and to all others by the publication of the journal at the latest. An embargo on access to data is permitted exceptionally, however only with reasonable provisions on the permissibility of such an embargo and with appropriate additional justification.

2.4 Where and how to publish data

Guidelines:

- Priority should be given to certain disciplinary data centres, archives or repositories for specific types of data. These should take precedence over general repositories.
- The National Strategy states: "previously mentioned types of research data must be submitted, preferably to research data repositories. Research data repositories are online archives of research data. They can be disciplinary, institutional or general. As a priority, research data should be submitted to authorized national data centres from the list of the Public Research Agency of the Republic of Slovenia."[16]
- In complying with the FAIR principles, the National Strategy states: 'Publicly funded research data should be as open and accessible as possible with as few restrictions as possible. Open data must be retrieved, accessed, evaluated and understood, they need to be useful to others and, if possible, interoperable, following certain quality standards.'[17]
- Furthermore: 'Open data must be retrieved and identified (use of persistent identification tags), accessed (use of open access licenses, reasonable embargo terms), evaluated and understood,

[15] Strategy, p. 20.
[16] Strategy, p. 20.
[17] Strategy, p. 6.

and should be suitable for continued use (securely stored and given digital custody by certified repositories) and meet certain quality standards.'[18]

- The Action Plan provides for the 'establishment of certified disciplinary research data centres following the international standards'. [19] There are different standards for certification of data repositories. The RDA Group[20] co-developed the Core Trust Seal.[21] To date, CLARIN.SI and ADP are the two CTS certified repositories in Slovenia.
- The repository must meet the minimum requirements: adequacy review and evaluation of data usability, the existence of minimum metadata and related search capability, the definition of licenses and possible access restrictions, funder and project information,[22] and information for understanding the origin and content of data.
- The repository provides a persistent identifier of the data and its variants leading to the data description webpage, which, when properly referenced, establishes a link between the data and the publication resulting from the data.
- Does the repository provide long-term storage and access to data?
- Does the repository conduct a scientific evaluation of the submitted data material before its publication in terms of quality, legal and ethical aspects, adequacy of documentation and metadata necessary for the understanding and continued use of the data? The National Strategy states: 'Research data that have undergone a scientific assessment and are taken as such into an authorized data centre shall be recognized as a scientific publication in the evaluation of the results of a program or project.'[23]
- RDA data evaluation resources include amongst others: draft article of the Interest Group Sharing Rewards and Credit *Crediting and Rewarding Mechanisms in the data/resources sharing process*,[24] working group WDS/RDA Assessment Of Data Fitness For Use[25] and FAIRsharing, a guide to standards, databases, and policies on data and metadata.[26]

Example of instructions to authors:

[18] Strategy, p. 20.

[19] Action plan, p. 18.

[20] RDA/WDS Certification of Digital Repositories IG (https://www.rd-alliance.org/groups/rdawds-certification-digital-repositories-ig.html)

[21] https://www.coretrustseal.org/

[22] Compare Funder Registry – Crossref (https://www.crossref.org/services/funder-registry/), Research Organization Registry Community (https://ror.org/) and FAIR principles regarding metadata.

[23] Strategy, p. 21.

[24] RDA SHARC Group. (2019). *Crediting and Rewarding Mechanisms in the data/resources sharing process: towards recommendations…* Accessible on https://docs.google.com/document/d/14_HxIrrkB0128EQpmTqrwXtuJTy3zQ_TLFODuoWaqe4/edit

[25] https://www.rd-alliance.org/groups/assessment-data-fitness-use

[26] https://www.FAIRsharing.org

The data must be submitted to a data repository, a data centre or a data archive. This may be disciplinary, institutional or general. Preferably, the research data should be submitted to a central disciplinary national or international data centres. Examples of central disciplinary repositories are SIstory, CLARIN.SI, Social Science Data Archives, (…). An example of institutional repositories is the University of Ljubljana Repository, which is part of the national open-access infrastructure. An example of a general repository is Zenodo. In the event of uncertainty, the authors should seek advice in the Authors' Support (Section 2.7).

2.5 Citing data sources

Guidelines:

- Sources for the development of the guidelines: *Joint Declaration of Data Citation Principles* FORCE11 and RDA,[27] *The Tromsø Recommendations* by the interest group Linguistic Data,[28] *Data Citation of Evolving Data* by the working group Data Citation,[29] the article *A data citation roadmap for scientific publishers,*[30] recommendations by the coalition COPDESS,[31] and guidelines *Data Citation Guidelines for Earth Science Data*.[32]
- The obligation of standardized citation of used data sources is being enforced in scientific journals.
- The author of the publication is obliged to cite the data under consideration in the same way as other sources: inside the text or under graphs, tables and in the literature list, where he/she lists the sources and literature used in the article. The same should apply when the author presents research data of his/her research in an article.
- The journal should provide examples of data citation according to its citation style.
- The journal should train its technical staff, editors and reviewers on the obligation to cite data.
- Authors should follow the recommendations for citing data from the repository where they submitted the data.

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[27] Martone M. (ed.). (2014). *Data Citation Synthesis Group: Joint Declaration of Data Citation Principles.* FORCE11. https://doi.org/10.25490/a97f-egyk

[28] Andreassen, H. N., Berez-Kroeker, A. L., Collister, L., Conzett, P., Cox, C., De Smedt, K., McDonnell, B. and Research Data Alliance Linguistic Data Interest Group. (2019.) *The Tromsø Recommendations for Citation of Research Data in Linguistics*. Accessible on https://docs.google.com/document/d/1_r2D9ReMTin3_qUlfEO48z5X54otTX33m9Sujso68tI/edit#

[29] Rauber, A., Asmi, A., van Uytvanck, D. in Proell, S. (2015). *Data Citation of Evolving Data: Recommendations of the Working Group on Data Citation (WGDC)*. http://doi.org/10.15497/RDA00016

[30] Cousijn, H. et al. (2018). A data citation roadmap for scientific publishers. *Sci Data* 5, 180259 (2018), https://doi.org/10.1038/sdata.2018.259

[31] *COPDESS Suggested Author Instructions and Best Practices for Journals*, http://www.copdess.org/copdess-suggested-author-instructions-and-best-practices-for-journals/

[32] ESIP Data Preservation and Stewardship Committee, (2019). *Data Citation Guidelines for Earth Science Data. Ver. 2*. https://doi.org/10.6084/m9.figshare.8441816

- **The Guidelines** do not address specific citation formats or styles but are concerned with determining the minimum components of such citation styles.

Example of instructions to authors:

Examples of quoting data sources in a specific citation style (the format is adapted to the citation style used by the scientific journal):[33]

Example in the literature list:

Hafner Fink, M. in Malešič, M. (2016). Slovenian Public Opinion 2015: Work Orientation (ISSP 2015), Role of Government (ISSP 2016), Mirror of public opinion and National Security Survey [Data File]. Ljubljana: Univerza v Ljubljani, Social Science Data Archives. ADP - IDNo: SJM15. https://doi.org/10.17898/ADP_SJM15_V1

Example of a citation in text: (Hafner Fink in Malešič, 2016)

The reference to the data source should, therefore, include the following information:

1. *author or authors of research data,*
2. *publication year of the research data in the data repository,*
3. *title of the study and its resulting data,*
4. *a persistent identifier (PID) used by the repository.*

The format adapts to the citation standard used by the scientific journal.

*A reference to a data source **may also include the following contingent elements** (depending on the characteristics of the data source and the specificity of the journal):*

1. ***version** (the default is that there is only one version. The alternate value is "dynamic", meaning that the source can change without explicit versions or timestamps; in this case, an access date is also required.),*
2. ***media** (the default is a digital format). The specification is required if other digital (eg. CD audio, CD-ROM text file) or analogue formats (eg. books, archive files) are used,*
3. ***date of access to the data source** (Required if the source is dynamic or if it is unclear whether the source is stable.).*

2.6 Licences and other restrictions on access

Guidelines:

- The data should be licensed as provided by the data repository.
- In the case of exceptions to full open access, access restrictions should be defined.
- The journal should not prescribe that the license over the data is transferred to the journal or the issuer.

[33] See examples of data citation in different styles: footnote 30.

- The National Strategy expects the use of open access licenses: 'Pilot programs and projects must take steps to ensure free access, mining, exploitation, reproduction and dissemination of research data to all users. Using free Creative Commons licenses (CC BY or CC0) to manage the copyright aspects is an easy and effective way to achieve this.''[34]
- The Guidelines *Legal Interoperability of Research Data Principles and Implementation Guidelines*[35] include recommendations for the author and the data repository to verify that all or individual portions of the dataset or related software are available free of external licensing restrictions by third parties.

Example of instructions to authors:

The data should be openly accessible using Creative Commons (CC0, CC BY or CC BY NC) licenses or other relevant licenses, such as those available in the data repository, where the data is accessible. Justified exceptions to open access to data sharing should be specifically justified by describing in the publicly accessible metadata and the Data Access Statement the reasons for access restrictions, conditions and methods of access to the data and their location.

2.7 Support for authors

Guidelines:

- Information on who to contact for advice on how to take into consideration the instructions should be provided.
- The Action Plan provides for advisory services to support open peer-reviewed scientific articles and the production of open access research data.[36]

Example of instructions to authors:

Authors should follow the recommendations and requirements of the selected data repository. Assistance in implementing instructions on data sharing on behalf of the publisher is provided by an authorized …[data centre, institutional repository, library]. If you have any questions, please send an e-mail to (…).

3. Conclusion

Depending on the circumstances, the journal may choose to have a more or less strict data sharing policy, adapting the text of the guidance to include specific provisions as an obligation or as a recommendation.

[34] Strategy, p. 20.
[35] *Legal Interoperability of Research Data Principles and Implementation Guidelines*. (2016). Accessible on https://www.rd-alliance.org/rda-codata-legal-interoperability-research-data-principles-and-implementation-guidelines-now
[36] Action plan, p. 19.

In doing so, they should take into account the frameworks set by the Strategy and the Action Plan, since their gradual fulfilment is one of the main purposes of the project.

The editorial boards should also consider how to inform and train the technical staff and reviewers to verify that authors are respecting the guidelines in terms of citing and sharing research data.