

# Webinar: Sharing and archiving research data 30.04.2024

John David Didriksen and Elin Stangeland, Stavanger University Library

## Agenda

9.00 - 10.00 Introduction

- Research data management and the FAIR principles
- What data sharing entails and why this is good research practice
- How to prepare for data sharing and archiving

10.00 - 10.10 Break

10.10 – 11.00 How to archive data with Dataverse UiS Q&A



# What and why?



## What is research data?

## O <u>OECD</u>:

"Research data" are defined as factual records (numerical scores, textual records, images and sounds) used as primary sources for scientific research, and that are commonly accepted in the scientific community as necessary to validate research findings.



## FAIR principles

## • Findable

- Accessible
- Interoperable
  - Reusable



#### To be Findable:

F1. (meta)data are assigned a globally unique and persistent identifier

F2. data are described with rich metadata (defined by R1 below)

F3. metadata clearly and explicitly include the identifier of the data it describes

F4. (meta)data are registered or indexed in a searchable resource

#### To be Accessible:

A1. (meta)data are retrievable by their identifier using a standardized communications protocol

A1.1 the protocol is open, free, and universally implementable

A1.2 the protocol allows for an authentication and authorization procedure, where necessary

A2. metadata are accessible, even when the data are no longer available



#### To be Interoperable:

 (meta)data use a formal, accessible, shared and broadly applicable language for knowledge representation.
 (meta)data use vocabularies that follow FAIR principles

 I3. (meta)data include qualified references to other (meta)data

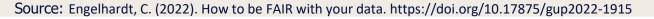
#### To be Reusable:

R1. meta(data) are richly described with a plurality of accurate and relevant attributes R1.1. (meta)data are released with a clear and accessible data usage license

R1.2. (meta)data are associated with detailed provenance

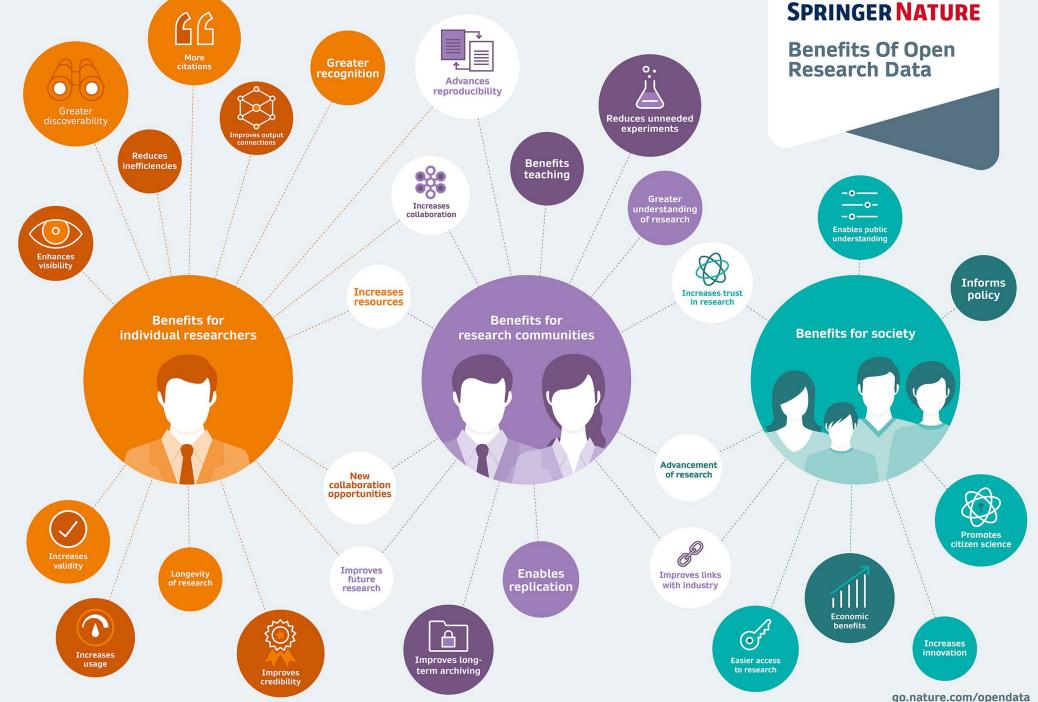
R1.3. (meta)data meet domain-relevant community standards







COPY



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C University of Stavanger

# The Research Council of Norway

Openness and knowledge sharing is a prerequisite for all research. It is an important research policy objective that the results of publicly funded research should be as open as possible.

Source: https://www.forskningsradet.no/en/research-policy-strategy/open-science/research-data/



## Formal requirements

- <u>University of Stavanger</u>
- <u>Research Council of Norway</u>
- European Union

Guidelines for managing research data at the University of Stavanger

2020



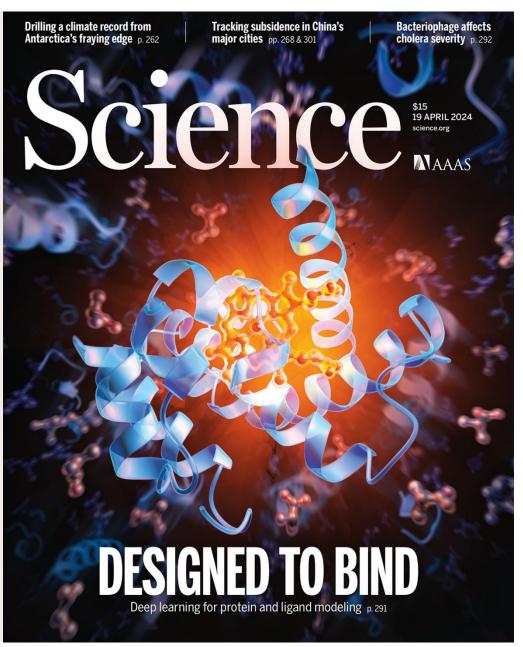
# Science

Science journals generally require all data underlying the results in published papers to be publicly and immediately available

Post-publication embargoes are not permitted, nor are stipulations for readers to contact the authors

Field-specific repositories if available – Dryad, Dataverse or Zenodo also ok.

Source: https://www.science.org/content/page/science-journals-editorial-policies#data-and-materials-after-publication

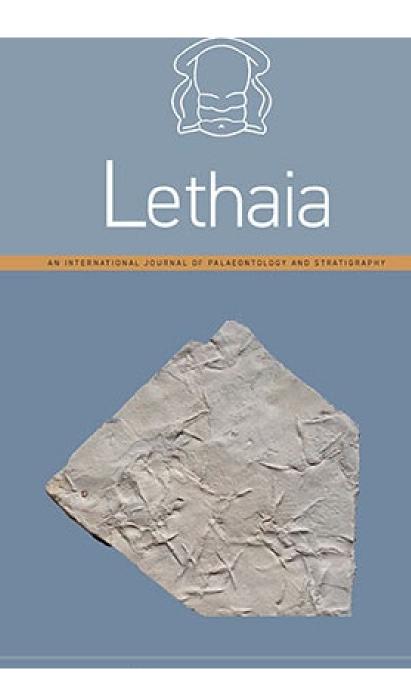




#### Data repositories

For brevity, *Lethaia* does not publish appendices. However, in line with the principles of Open Science, authors are encouraged to upload expansive/extensive datasets to reputable long-term online repositories, which can then be referenced by URL in the published paper.

Source: https://www.idunn.no/page/let/author





# **Exceptions for sharing**

- Security concerns threats to personal or national security
- Personal data conflicts with protection of personal privacy
- Other legal factors
- Commercial factors Data that have commercial value
- Other factors E.g. opening access may have major financial or practical implications for those who have generated/collected the data







### 'Data available upon request'









Journal of Clinical Epidemiology 150 (2022) 33-41

#### **ORIGINAL ARTICLE**

# Many researchers were not compliant with their published data sharing statement: a mixed-methods study

Mirko Gabelica<sup>a</sup>, Ružica Bojčić<sup>b</sup>, Livia Puljak<sup>c,\*</sup>

<sup>a</sup>Department for otorhinolaryngology, with head and neck surgery, University Hospital Centre Split, Spinčićeva 1, 21000, Split, Croatia <sup>b</sup>Institute of Emergency Medicine of Karlovac County, Ul. Dr. Vladka Mačeka 48, 47000, Karlovac, Croatia <sup>c</sup>Center for Evidence-Based Medicine and Health Care, Catholic University of Croatia, Ilica 242, 10000, Zagreb, Croatia Accepted 24 May 2022; Published online 30 May 2022

#### Abstract

**Objectives:** The objective of the study was to analyze researchers' compliance with their data availability statement (DAS) from manuscripts published in open-access journals with the mandatory DAS.

**Study Design and Setting:** We analyzed all articles from 333 open-access journals published during January 2019 by BioMed Central. We categorized types of the DAS. We surveyed corresponding authors who wrote in the DAS that they would share the data. Consent to participate in the study was sought for all included manuscripts. After accessing raw data sets, we checked whether data were available in a way that enabled reanalysis.

**Results:** Of 3556 analyzed articles, 3416 contained the DAS. The most frequent DAS category (42%) indicated that the data sets are available on reasonable request. Among 1792 manuscripts in which the DAS indicated that authors are willing to share their data, 1669 (93%) authors either did not respond or declined to share their data with us. Among 254 (14%) of 1792 authors who responded to our query for data sharing, only 123 (6.8%) provided the requested data.

**Conclusion:** Even when authors indicate in their manuscript that they will share data upon request, the compliance rate is the same as for authors who do not provide the DAS, suggesting that the DAS may not be sufficient to ensure data sharing. © 2022 Elsevier Inc. All

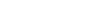


## Data availability statements

- O Include in manuscript elements
- O Put your data in a repository
- O Declare all the data you generate
- O If your data are not openly available, say why
- Include a reference for your data, and cite it from the DAS
- If there really are no data underlying your manuscript, say so.

Source: https://communities.springernature.com/posts/tips-for-writing-a-dazzling-das-data-availability-statement





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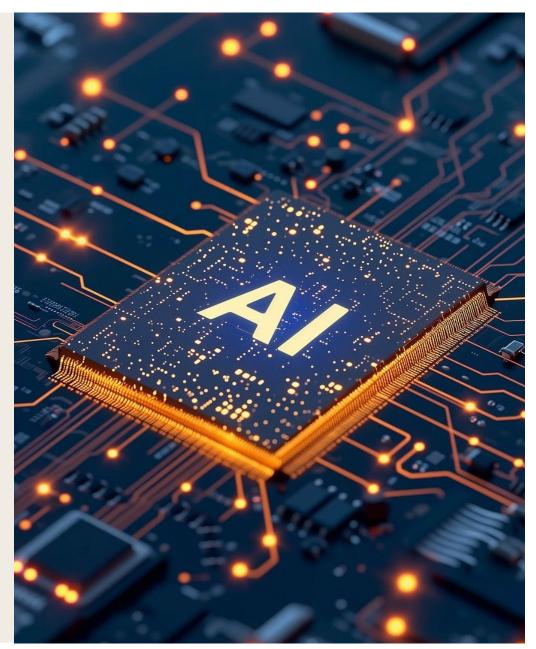
## What about AI?

## O Do share!

• Open data is a great alternative to lack of transparency for AI

## O Do not share!

• Data ends up as training materials





# How to prepare?

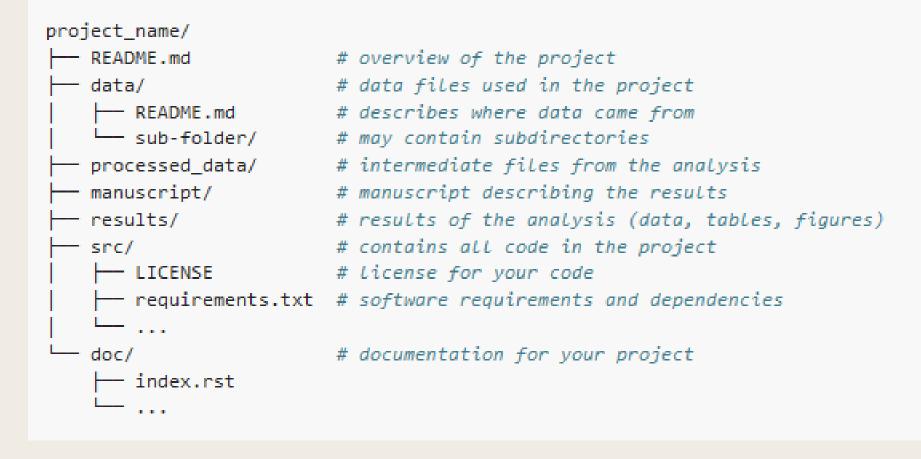






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## Folder structures



Source: https://coderefinery.github.io/reproducible-research/organizing-projects/



## File naming conventions

- O Use the date or date range of the experiment: YYYYMMDD
- O Use the file type
- O Use the researcher's name/initials
- O Use the version number of file (v001, v002) or language used in the document (ENG)
- O Do not make file names too long (this can complicate file transfers)
- O Avoid special characters (?!@\*%{[<>) and spaces

Source: https://the-turing-way.netlify.app



#### <u>What are preferred file formats?</u>

The choice of a preferred file format is crucial in order to ensure that your data will be readable also in the future. Some file formats are more likely to allow long-term readability than others are. Such formats are usually

- → non-proprietary
- ightarrow open, with documented international standards
- → using standard character encoding, preferably Unicode (e.g. UTF-8)
- → uncompressed (space permitting)

The table below gives an overview of preferred vs. non-preferred file formats for **a selection of** document types. The list of file formats in the column "Non-preferred file formats" is non-exhaustive and includes the formats considered the ones used most commonly. If your dataset contains file formats not listed here, please contact the support services of your home institution. When uploading your data to the repository, please make sure you add your files in a preferred format. Make also sure that all of your files contain a valid file extension, e.g. .txt, .pdf. If your data cannot be stored in a preferred format, they can still be published in their original format, but in that case, DataverseNO does not commit to preserve the data in the long term. If appropriate, the file may also be archived in their original file format **in addition to** preferred format(s).

File type	Preferred file formats (examples)	Non-preferred file formats (examples)
Audio	<ul> <li>→ Uncompressed and Iossless Wav or AIFF (.wav/.aiff)</li> <li>→ Compressed and Iossless FLAC (.flac)</li> <li>→ Compressed and Iossy Mp3 (.mp3)</li> </ul>	<ul> <li>→ AAC (.m4a)</li> <li>→ Monkey's Audio (.ape)</li> <li>→ Ogg Vorbis (.ogg)</li> <li>→ Windows Media Audio (.wma)</li> </ul>
Container file	Container files are automatically unpacked when uploaded and should only be used to keep the folder structure in your dataset; see more in section Upload data files.	In case container files need to be archived as container files, use .zip. Note! In this case, files must be packed twice. That way, the inner container will be preserved when uploaded.

## Documentation

• Dataset description which provides context for your work

00\_ReadMe - Notisblokk Fil Rediger Format Vis Hjelp

1/ Title of Dataset: nor: https://doi.org/10.18710/F70878 // Title of Dataset: Covcom test videos // DOI: https://doi.org/10.18710/E2QR78

// Name: Daniel Adrian Lungu // Institution: University of Stavanger // Fmail: Aaniel a lungu@uis.no // Institution: University or Sta // Email: daniel.a.lungu@uis.no // ORCID: 0000-0002-8612-8384

Kind of data: See metadata field Kind of Data. Funding sources: See metadata field Kind of Data. Funding sources: See metadata field Date of Collection.

// Name: Daniel Adrian Lungu

Mari Linn Atterås Larsen edited the videos. // Kind of data: See metadata field Kind of Data // Date of data collection/eeneration: See metadat

METHODOLOGICAL INFORMATION

// Date of data collection/generation: See metadata field Dat
// Funding sources: See metadata section Grant Information.

GENERAL INFORMATION

This README file was generated on [2022-02-24] (2022-02-24) by [DANIEL ADRIAN LUNGU].

// Contributors: Mari Linn Atterås Lansen edited manuscript for Maria sind og data: Gaa matadata side videos. Mils Christian Fossdal is the actor in t

O It allows your collaborators, colleagues and future you to understand what has been done and why.

## O Resources:

- The Turing way ٠
- // runuanik suuries. see meleuuse selitaini viini anno meleuuse see in a factorial expe After the identification of factors to manipulate, and their corresponding lev After the identification of sources and methods used to: Control of sources and methods used to: Control of factors to manipulate, and their corresponding levels, we ended us with a professional scriptwriter and an actor to shoot the list and with a list actors to a control of the university of stavanger. <u>Cornell Data services – quide to writing readme files</u> •

#### Filename: 00\_ReadMe.txt

#### Source: https://doi.org/10.18710/EZQR78

In Covcom test videos (version 1.1), by Lungu, Daniel Adrian

Download File Close Preview

File uploaded on 2022-03-03

This README file was generated on [2022-02-24] (2022-02-24) by [DANIEL ADRIAN LUNGU]. Last updated: [2022-03-03].

- -----
- GENERAL INFORMATION
- // Title of Dataset: Covcom test videos
- // DOI: https://doi.org/10.18710/EZQR78
- // Contact Information
  - // Name: Daniel Adrian Lungu
    // Institution: University of Stavanger
    // Email: daniel.a.lungu@uis.no
    // ORCID: 0000-0002-8612-8384

// Contributors: Magnus Nome wrote manuscript for the videos. Nils Christian Fossdal is the actor in the videos. Kare Spanne and Mari Linn Atteras Larsen edited the videos.

- // Kind of data: See metadata field Kind of Data.
- // Date of data collection/generation: See metadata field Date of Collection.
- // Funding sources: See metadata section Grant Information.

// Description of dataset: The dataset contains 12 videos about pandemics and were used in a factorial experimental design in Norway.

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METHODOLOGICAL INFORMATION

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// Description of sources and methods used for collection/generation of data:

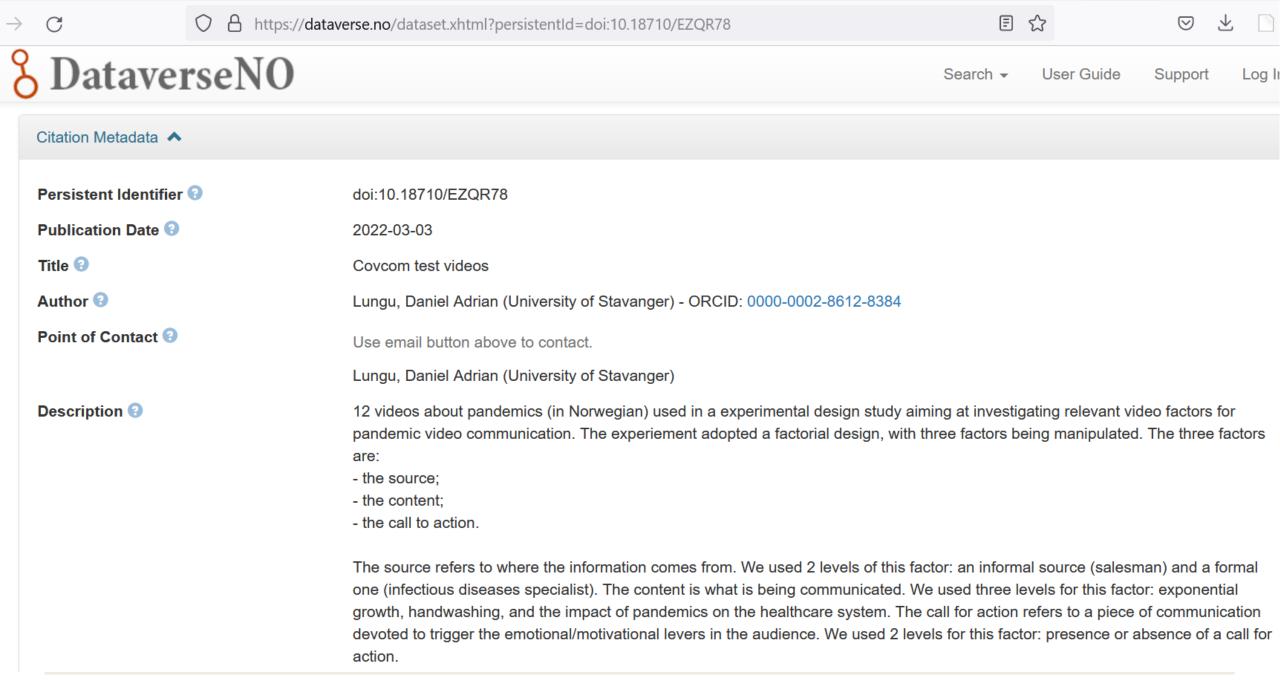
After the identification of factors to manipulate, and their corresponding levels, we ended up with 2x3x2 = 12 combinations of pandemic communication. We hired a professional scriptwriter and an actor to shoot the 12 short videos contained in this dataset. The filming and edit the University of Stavanger.

#### // Methods for processing the data:

Videos were not processed, but slightly edited to cut irrelevant frames. Videos were then used in an experiment with 12.000 participants in order to measure the effect of the manipulated factors on communication outcomes: Trust, comprehension, intentions, and behaviour. Analysis on these experiments are still in process (March 2022) and a paper will be written and submitted. Data may be published together with this la

// Facility-, instrument- or software-specific information needed to interpret the data: Any .mp4 video player will be enough to play the videos.







Licensing	CC License Ov	erview	Share	Adapt	Attribution	onCommercial	oDerivatives	ShareAlike
Licensing is a way for you as the	0	CC0	б С	O Ad	Att	N N	No No	sh O
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	Adapt – You are free Attribution – You mu reasonable manner, b	to copy and redistribute the material in any medium or f to remix, transform, and build upon the material. st give appropriate credit, provide a link to the license, a ut not in any way that suggests the licensor endorses y nu may not use the material for commercial purposes.		es were r	nade. You	may do so	in any	
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John David Didriksen, Senior librarian

# How to archive your research data

(With a certain focus on Dataverse)

4/30/2024

## Three kinds of research data archives

## • Subject repositories

- Recommended if you find a good one! "Stay with your own"



• NB! Be aware of FAIR!  $\rightarrow$  Sufficient metadata

O Other multidisciplinary repositories

- NB! Be aware of FAIR!  $\rightarrow$  Sufficient metadata
- **O** Institutional repositories
  - At UiS: DataverseNO





## re3data.org

VIII. Philosophy 1. History of Philosophy 2. Theoretical Philosophy 3. Practical Philosophy b. Social and Behavioural Sciences I. Education Sciences 1. General Education and History of Education 2. Research on Teaching, Learning and Training 3. Research on Socialization and Educational Institutions and Professions II. Psychology 1. General, Biological and Mathematical Psychology 2. Developmental and Educational Psychology 3. Social Psychology, Industrial and Organisational Psychology 4. Differential Psychology, Clinical Psychology, Medical Psychology, Methodology III. Social Sciences 1. Sociological Theory 2. Empirical Social Research 3. Communication Science 4. Political Science IV. Economics 1. Economic Theory 2. Economic and Social Policy 3. Public Finance 4. Business Administration 5. Statistics and Econometrics 6. Economic and Social History V. Jurisprudence 1. Legal and Political Philosophy, Legal History, Legal Theory 2. Private Law 3. Public Law 4. Criminal Law and Law of Criminal Procedure 5. Criminology B. Life Sciences a. Biology I. Basic Biological and Medical Research 1. Biochemistry 2. Biophysics 3. Cell Biology 4. Structural Biology 5. General Genetics 6. Developmental Biology 7. Bioinformatics and Theoretical Biology 8. Anatomy II. Plant Sciences 1. Plant Systematics and Evolution 2. Plant Ecology and Ecosystem Analysis 3. Inter-organismic Interactions of Plants 4. Plant Physiology

#### https://www.re3data.org/browse/by-subject/



## DataverseNo

• Generic repository for open data.



- Developed by Harvard University, used all over the world.
- Core Trust Seal-certified.
- Used by all Norwegian universities, coordinated by UiT.
- Aligned with the FAIR principles: Findable, Accessible, Reusable, Interoperable.
- Gives your dataset a DOI.
- The University library provides support and data curation.



## Dataverse UiS – How to use





4/30/2024

## Prepare your data

O https://site.uit.no/dataverseno/deposit/prepare/

- → Use consistent and comprehensible file names (see section 1 below).
- → Save your data in a preferred file format(s) (see section 2 below).
- → Describe your data in a ReadMe file (see section 3 below).

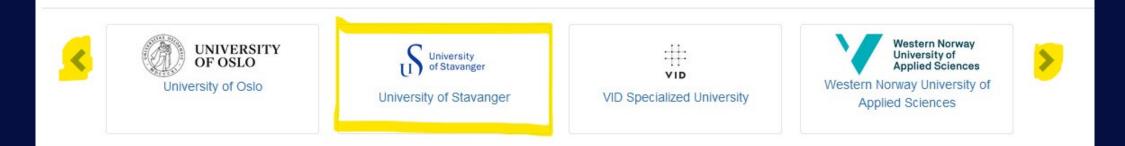
For more detailed guidelines, see below:

- 1 File naming and organization
- 2 Preferred file formats
- 3 How to describe your data
- 4 File size, number of files, and folder structure
- ✓ 5 Acknowledgement



## Log in via Feide: **S DataverseNO**

## Choose University of Stavanger:



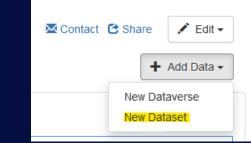
Search -

User Guide

Support

Log In

## Add a new dataset:





# Submitting your dataset

erisks indicate required fields				
tation Metadata 🔨				
Title * 🕄				
	Add "Replication Data for" to Title			
Author * 📀	Name * 🚱	Affiliation 🚱		
	1) Family Name, Given Name or 2) Org	a University of Stavanger	+	
	ldentifier Type 🕄	Identifier 🚱		
	Select	•		
Point of Contact * 🕢	Name * 🕢	Affiliation ③		
	1) FamilyName, GivenName or 2) Orga		+	
	E-mail * 😯			
	name@email.xyz			
Description * 😡	This field supports only certain HTML tag	S.	+	
	Date 😧 YYYY-MM-DD			
Subject * 🕄		•		
Keyword * 😯	Term * 🕄	Controlled Vocabulary Name 🚱		
	Controlled Vocabulary URL 🕄		+	
	Solutioned Vocabulary onL			



## Entering metadata

- Not all metadata fields are mandatory, but we highly recommend you to fill out everything that can be relevant for your work!
  - This will make your data more findable (FAIR)
- Keep in mind that we're thinking long term! Your data should be FAIR for coming generations of researchers.



## An example from UiS

# Supplementary materials for: Urban Density and Accessibility: A methodological approach

Version 1.0

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Hernández-Palacio, Fabio; Kesarovski, Todor, 2023, "Supplementary materials for: Urban Density and Accessibility: A methodological approach", <u>https://doi.org/10.18710/XO6FG7</u>, DataverseNO, V1

Cite Dataset - Learn about Data Citation Standards.

Access Dataset 🗸				
Edit Dataset -				
Link Dataset				
Contact Owner	Share			



Citation Metadata 🔺		
Persistent Identifier 🕢	doi:10.18710/X06FG7	
Publication Date 🕄	2023-11-01	
Title 😗	Supplementary materials for: Urban Density and Accessibility: A methodological approach	
Author 😌	Hernández-Palacio, Fabio (University of Stavanger) - ORCID: 0000-0003-2437-7067 Kesarovski, Todor (University of Stavanger) - ORCID: 0000-0002-0971-7783	
 Point of Contact 🕄	Use email button above to contact.	
	Hernández-Palacio, Fabio (University of Stavanger)	
Description ()	The built environment's impact on human behaviour is well-documented. Still, quantitative research on the topic usually focuses on a large scale, with few studies at the neighbourhood level. This study presents a method investigating the correlation between the local built environment densities and accessibility. We propose a three-step approach using kindergartens in the Stavanger region, Norway, as a case. First, through GIS, we estimate the kindergartens' serviceability as a function of accessibility using 10-minute walking isochrones. Second, we statistically compare the results with density quantifications to explore the relationship between the built environment and kindergarten access. Third, through field observations, we record the travel modes used to access five kindergartens in areas representing the region's built environment diversity. The results demonstrate that populations in denser areas are more likely to walk with their children. However, the research reveals that over 12% of the region's residents live beyond a 10-minute walking distance to kindergartens, making them reliant on cars to access this service. This study aims to provide an adaptable and replicable method to evaluate accessibility to a range of crucial facilities in cities. The findings from such analyses can help optimise the built environment and the provision of services in more sustainable ways. (2023-10-23) The dataset integrates information from various sources, including Census data, Cadastral data, Road network data, Kindergarten data and Observation data. Although most are collected in geo-referred format, further adjustments are required to enable the integration. The intention of the supplementary material PDF is to inform other researchers how to replicate the study, not supplying all the datasets used. (2023-10-30)	
Subject 🚱	Social Sciences	
Keyword 🕄	Urban density Built environment Travel behaviour Accessibility Cycling Walking 10-minute city GIS	
Related Publication ③	Hernández-Palacio, F. & Kesarovski, T., (2024). Urban density and accessibility: A methodological approach. In review.	
Language 🔞	English	
Producer ()	University of Stavanger (UiS) https://www.uis.no/en	
Contributor 3	Data Collector : Zarei, Elham	
Distributor 🕄	University of Stavanger (UiS) https://dataverse.no/dataverse/uis	
Depositor 🕄	Hernandez Palacio, Fabio Alberto	



Deposit Date 🕢	2023-10-23
Time Period 😯	Start Date: 2021-06-21 ; End Date: 2021-08-23 Start Date: 2022-02-07 ; End Date: 2022-02-11
Date of Collection 🕢	Start Date: 2021-06-21 ; End Date: 2021-08-23 Start Date: 2022-02-07 ; End Date: 2022-02-11
Data Type 🕢	text
Data Source	Census data on rutenett 250 m: https://kartkatalog.geonorge.no/metadata/befolkning-paa-rutenett-250-m/ 0c0ad0ce-55e8-4d73-9c12-0eb0e2454acb [lastly accessed October 26, 2023] ; Census data on grunnkrets level: https://kartkatalog.geonorge.no/metadata/befolkning-paa-grunnkretsniv/7eb907de-fdaa-4442- a8eb-e4bd06da9ca8 [lastly accessed October 26, 2023] ; FKB-Bygning: https://kartkatalog.geonorge.no/metadata/fkb-bygning/8b4304ea-4fb0-479c-a24d-fa225e2c6e97 [lastly accessed October 26, 2023] ; Elveg 2.0: https://kartkatalog.geonorge.no/metadata/elveg-20/77944f7e-3d75-4f6d-ae04-c528cc72e8f6 [lastly accessed October 26, 2023] ; Barnehager: https://kartkatalog.geonorge.no/metadata/barnehager/e229a364-0caa-4a24-8dbe-225b3d83e075 [lastly accessed October 26, 2023] ; Cadaster data: Not publicly accessible. Can be obtained through Kartverket.
Geospatial Metadata 🔺	
Geographic Coverage 😯	Norway, Stavanger Norway, Sandnes Norway, Sola Norway, Randaberg
Geographic Unit 🕄	city
Geographic Bounding Box 🕢	4.96 6.13 59.32 58.77
Social Science and Humanities Metada	ata 🔨
Unit of Analysis 📀	kindergartens



## Uploading files

O Save all files in a preferred file format

O Start with a <u>ReadMe file</u>

- Use general template
- NB! Mandatory

• Use <u>consistent and comprehensible file names</u>, and a logical file structure



Search this dataset Q	➡ Upload Files
ilter by ile Type: All - Access: All -	<b>↓1</b> sort -
1 to 6 of 6 Files	🖍 Edit Files 🗸 🕹 Download
O0_ReadMe_Recovery_is_up_to_you.txt Plain Text - 6.1 KB Published Feb 24, 2022 2 Downloads MD5: 7f7d87	• با با ا
O1_Recovery_is_up_to_you.csv Comma Separated Values - 80.6 KB Published Feb 24, 2022 4 Downloads MD5: c8d637	• بل ال
O2_Recovery_is_up_to_you.sav SPSS Binary - 125.3 KB Published Feb 24, 2022 3 Downloads MD5: 89142b 💰	<u>↓</u> . : -
O3_Svar_fra_REK_26.06.19.pdf Adobe PDF - 80.1 KB Published Feb 24, 2022 30 Downloads MD5: f895a7	• با با ا
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05_Endringsskjema_NSD.pdf Adobe PDF - 120.5 KB Published Feb 24, 2022 30 Downloads MD5: 3a88f5 \$	• با با



## Add a license

O CC-0 (public domain) is the standard license in Dataverse.

• O Other licenses may be used if external data sources has a stricter license.

 ense/D reemer	ata Use nt		DOMAIN	CC0 1.0	
Files	Metadata	Terms	Versions		
					Edit Terms Requirements
Dataset	Terms 🔺				
Licen	ise/Data Use	Agreeme	nt	Our <u>Community Norms</u> as well as good scientific practices expect that proper credit is given via cita citation shown on the dataset page.	ation. Please use the data
				CC0 1.0	



## Curation process

O Goal: To make your data as FAIR as possible.

- Members of the university librarys' open science team go through your submission, and suggest improvements.
- We will send you a report with those suggestions, so you can enter more metadata, or adjust what you have already entered.
- O NB! This may require some work, but keep in mind (again): We're thinking long term.





## Webinar: Open access publishing of journal articles >

Tue. 07.05.2024 09:00-11:00

Teams

More library training sessions are available at: https://www.uis.no/en/library/classes



## Thank you!

- O Relevant web pages:
- UBiS open access pages
- UBiS research data
- O management pages



- O Don't hesitate to contact us about anything relating to open science!
- O Publishing: <u>ub-brage@uis.no</u>
- O Data management: <u>datahandtering@uis.no</u>
- Elin: elin.stangeland@uis.no
- John David: john.d.didriksen@uis.no

