

Data Sharing in SCI research

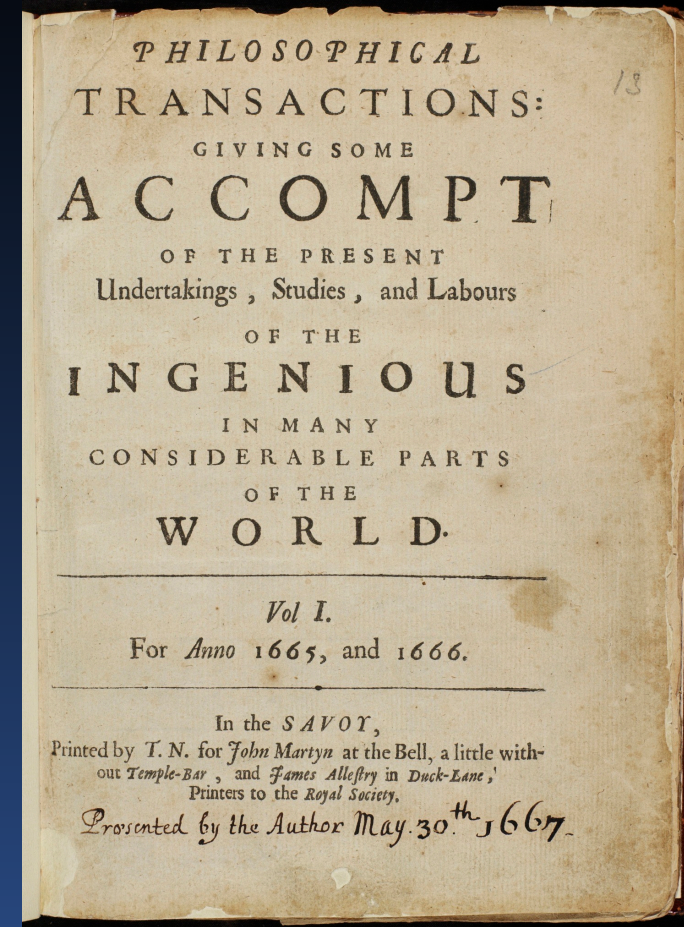
The Open Data Commons SCI



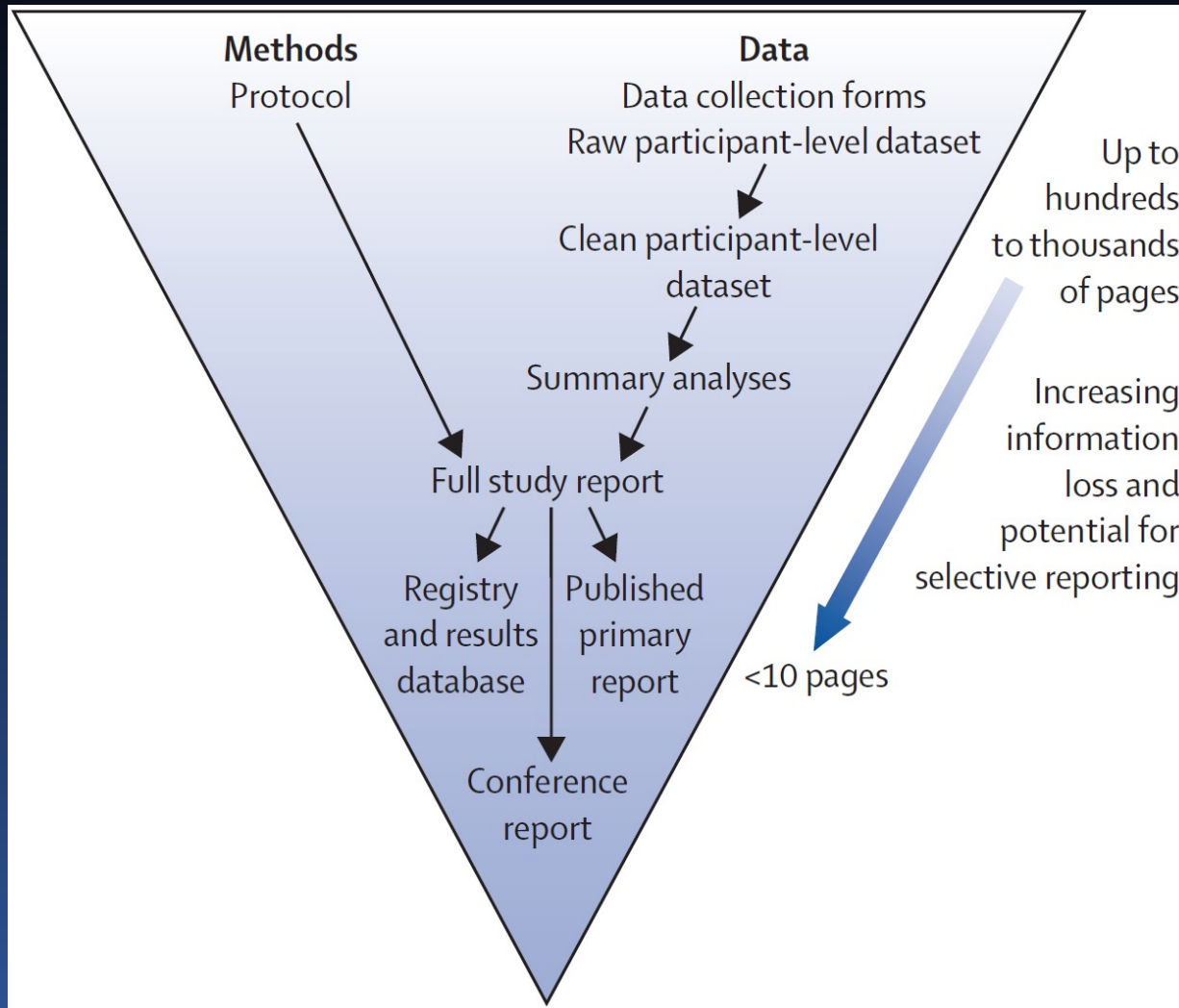
ODC-SCI.org

Why Data Sharing ?

- Science has problems
 - Translation
 - Repeatability
 - Transparency
 -
- KT is based on a really old publication approach (no real changes since 1667)



Data get lost in the process



Essay

Why Most Published Research Findings Are False

John P. A. Ioannidis

“For many current scientific fields, claimed research findings may often be simply accurate measure of the prevailing bias”.

Ioannidis, Plos Med, 2005



Carrots and sticks ?



Enhance transparency



Accelerate research



Reducing data bias



Organising data in the lab consistently



Enable meta analysis



Reduce animal numbers



Accountability (requested by funders and journals)



There are big sticks coming soon!

The screenshot shows the NIH Grants & Funding website. The header includes the NIH logo, the text 'GRANTS & FUNDING NIH Central Resource for Grants and Funding Information', and a search bar. Navigation links for 'eRA', 'NIH Staff', 'Glossary', 'FAQs', and 'Help' are visible. The main navigation menu includes 'HOME', 'ABOUT GRANTS', 'FUNDING', 'POLICY & COMPLIANCE', 'NEWS & EVENTS', and 'ABOUT OER'. The breadcrumb trail reads 'Home » Policy & Compliance » Sharing Policies » NIH Data Sharing Policy and Implementation Guidance'. The main heading is 'NIH Data Sharing Policy and Implementation Guidance'. Below it, a text block states: 'This guidance provides the National Institutes of Health (NIH) policy statement on data sharing and implementation of this policy.' A yellow callout box contains the text: 'NEWS: New NIH Policy on Data Management and Sharing (effective January 25, 2023)'. Below this, another text block states: 'NIH has issued a new Final NIH Policy for Data Management and Sharing, which will require NI prospectively submit a plan outlining how scientific data from their research will be managed the new policy will come into effect and replace the 2003 NIH Data Sharing Policy currently in effect.'

TRI-AGENCY RESEARCH DATA MANAGEMENT POLICY

The agencies (the [Canadian Institutes of Health Research \(CIHR\)](#), the [Natural Sciences and Engineering Research Council of Canada \(NSERC\)](#), and the [Social Sciences and Humanities Research Council of Canada \(SSHRC\)](#)) expect the research they fund to be conducted to the highest professional and disciplinary standards, domestically and internationally. These standards support research excellence by ensuring that research is performed ethically and makes good use of public funds, experiments and studies are replicable, and research results are as accessible as possible. *Research data management (RDM) is a necessary part of research excellence.*



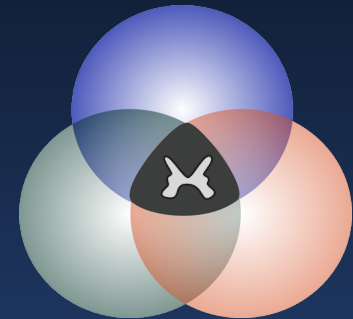
Open Data Commons SCI initiative



Raw SCI data

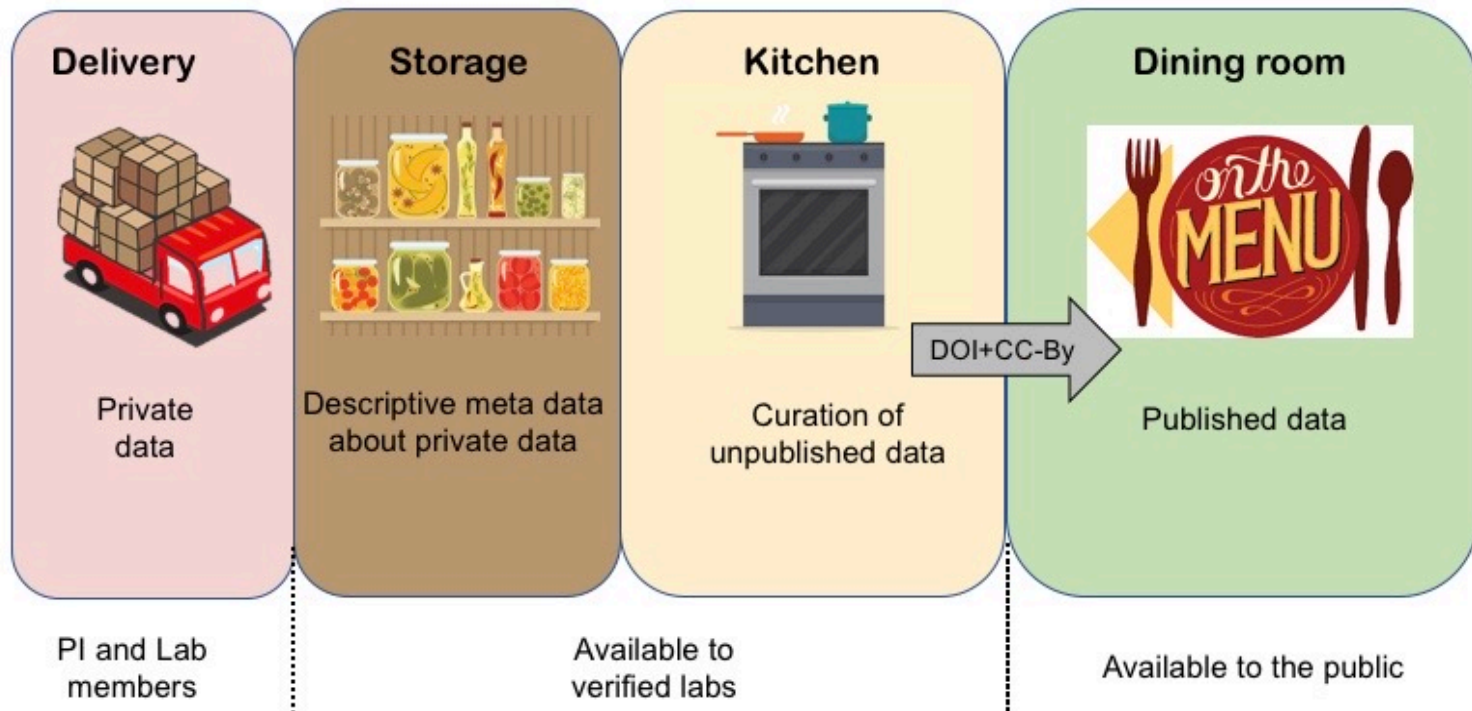


Multi species
SCI database



Community Repository Data Sharing Spaces

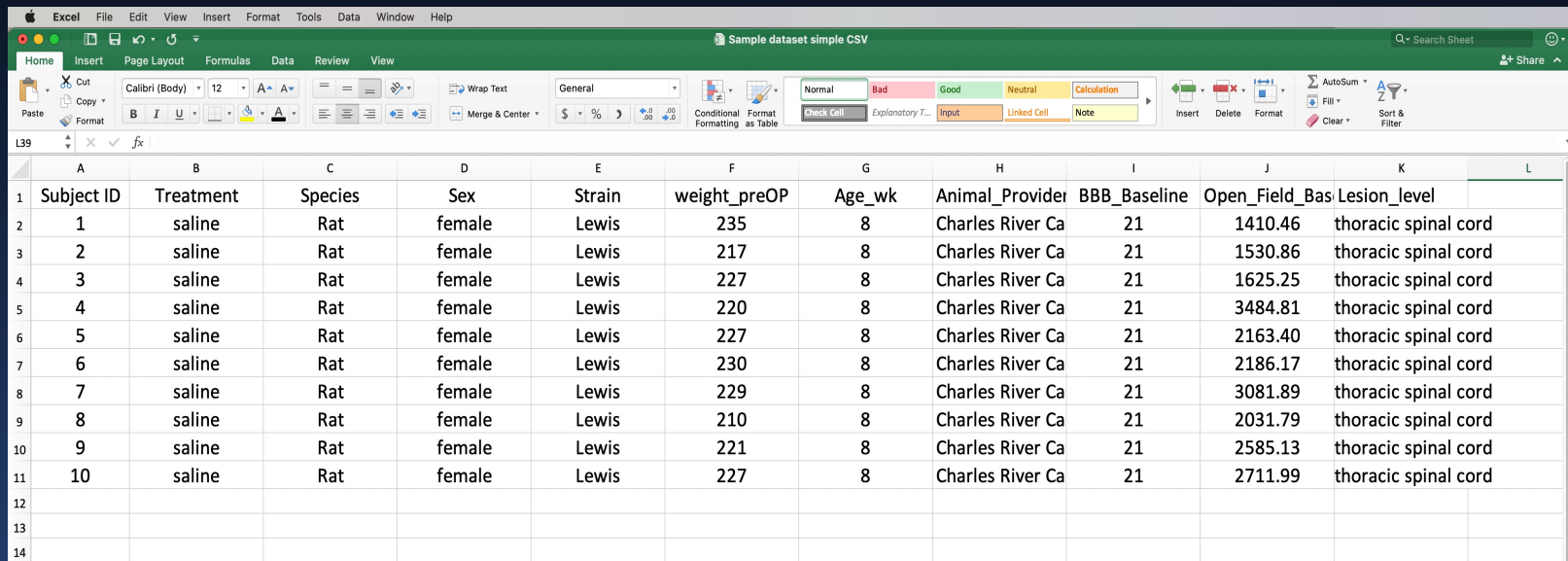
ODC-SCI "Data Sharing Spaces"



timeline

What data are we talking about?

Tabular and processed data from single subjects will likely fulfill the expectation from journals and funders:



The screenshot shows an Excel spreadsheet with the following data:

	A	B	C	D	E	F	G	H	I	J	K	L
1	Subject ID	Treatment	Species	Sex	Strain	weight_preOP	Age_wk	Animal_Provider	BBB_Baseline	Open_Field_Bas	Lesion_level	
2	1	saline	Rat	female	Lewis	235	8	Charles River Ca	21	1410.46	thoracic spinal cord	
3	2	saline	Rat	female	Lewis	217	8	Charles River Ca	21	1530.86	thoracic spinal cord	
4	3	saline	Rat	female	Lewis	227	8	Charles River Ca	21	1625.25	thoracic spinal cord	
5	4	saline	Rat	female	Lewis	220	8	Charles River Ca	21	3484.81	thoracic spinal cord	
6	5	saline	Rat	female	Lewis	227	8	Charles River Ca	21	2163.40	thoracic spinal cord	
7	6	saline	Rat	female	Lewis	230	8	Charles River Ca	21	2186.17	thoracic spinal cord	
8	7	saline	Rat	female	Lewis	229	8	Charles River Ca	21	3081.89	thoracic spinal cord	
9	8	saline	Rat	female	Lewis	210	8	Charles River Ca	21	2031.79	thoracic spinal cord	
10	9	saline	Rat	female	Lewis	221	8	Charles River Ca	21	2585.13	thoracic spinal cord	
11	10	saline	Rat	female	Lewis	227	8	Charles River Ca	21	2711.99	thoracic spinal cord	
12												
13												
14												

Attaching other data is an option!



What are meta data?

=> Information about the data set other than the data

DATASET INFO

Contact: Fouad Karim (karim.fouad@ualberta.ca)

Lab: Karim Fouad

ODC-SCI Accession:459

Records in Dataset: 150

Fields per Record: 98

Files: 2

LICENSE

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FUNDING AND ACKNOWLEDGEMENTS

Wings for Life

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Lipopolysaccharide treatment in the subacute stage of cervical spinal cord injury enhances motor recovery and increases anxiety-like behaviour in female rats

DOI:10.3495/F5FW2B

DATASET CITATION

Schmidt E. K., Raposo P. J F., Vavrek R., Fouad K. (2021) Lipopolysaccharide treatment in the subacute stage of cervical spinal cord injury enhances motor recovery and increases anxiety-like behaviour in female rats. Open Data Commons for Spinal Cord Injury. ODC-SCI:459 <http://doi.org/10.3495/F5FW2B>

ABSTRACT

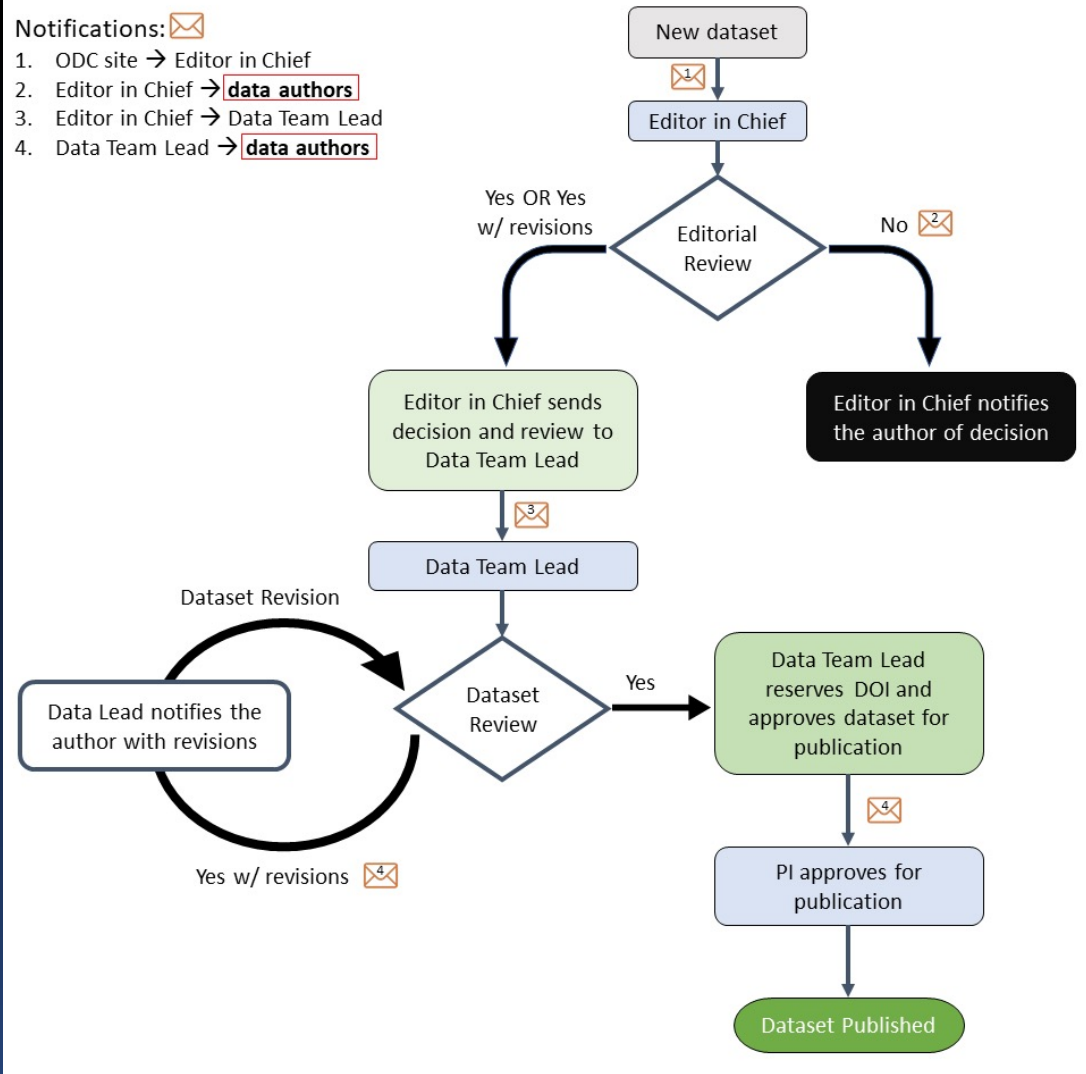
STUDY PURPOSE: Previous published work in our laboratory found that eliciting inflammation with lipopolysaccharide (LPS) in the chronic (8 weeks) stage of cervical level 4 dorsolateral quadrant spinal cord injury (SCI) enhances the efficacy of rehabilitative training (10.1093/brain/aww128). The



Data flow and curation

Notifications: ✉

1. ODC site → Editor in Chief
2. Editor in Chief → **data authors**
3. Editor in Chief → Data Team Lead
4. Data Team Lead → **data authors**



Why metadata, why curation?

Publishing FAIR !!

- **F**indable: (meta)data is uniquely and persistently identifiable
- **A**ccessible: data is reachable and accessible by humans and machines
- **I**nteroperable: data is machine readable and annotated
- **R**eusable: data is sufficiently well-described to allow (semi)automated integration with other compatible data sources



Wilkinson et al, 'The FAIR Guiding Principles scientific data management and stewardship,' Nature Scientific Data, 2016

When quality control is missing

- A DOI is given, but
- No curation
 - No metadata





A COMMUNITY-BASED REPOSITORY FOR SPINAL CORD INJURY RESEARCH

Advancing Spinal Cord Injury research through
sharing of data from basic and clinical research.

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Usage update

68

Labs



339

Users



151

Datasets



21

Public data



5214

Visitors

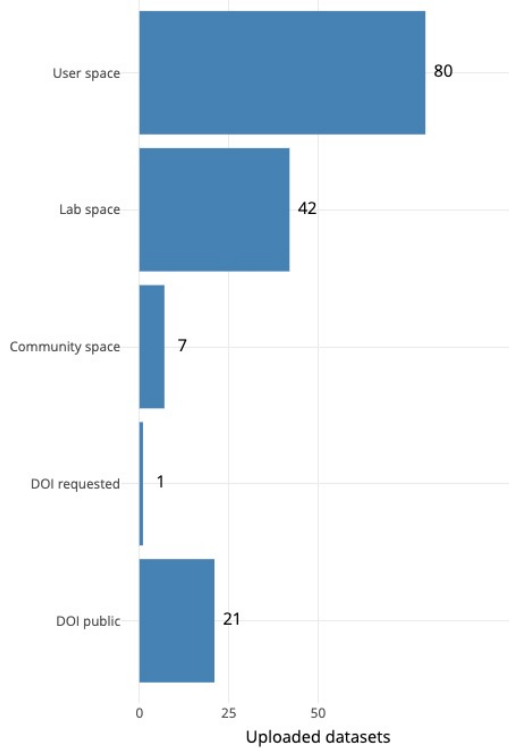


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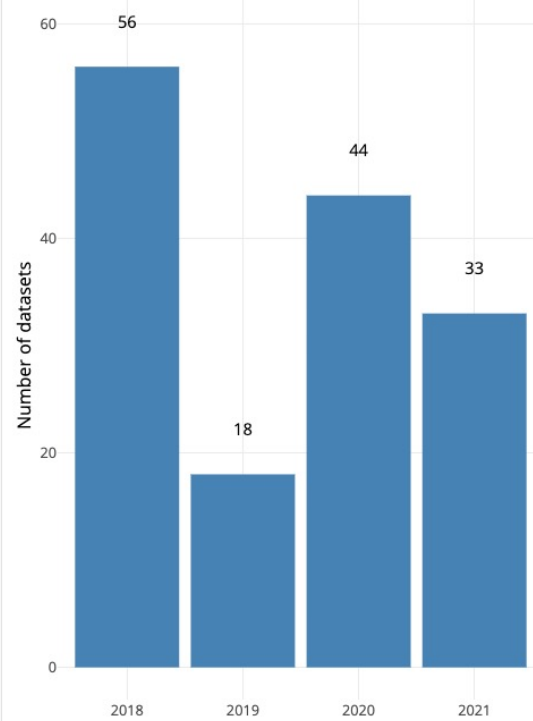
Countries



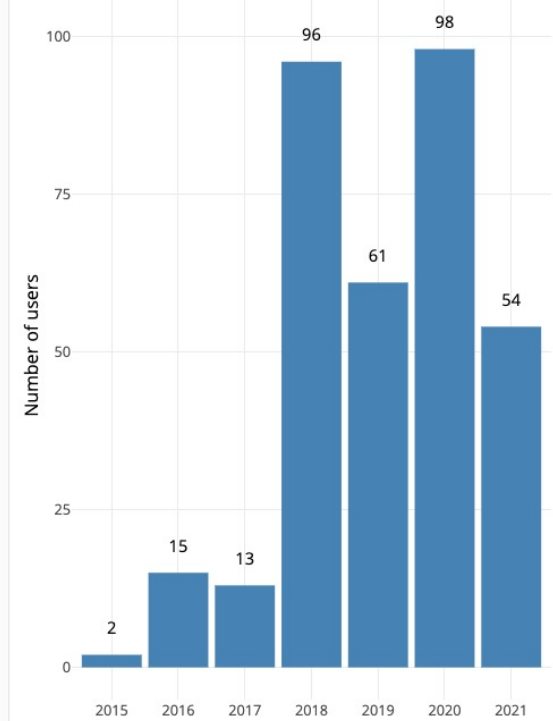
Dataset status



Datasets per year



Users per year



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