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Progetto Informazione e formazione per la transizione digitale della PA nell'ambito del progetto «Italia Login – la casa del cittadino»

(A valere sul PON Governance e Capacità Istituzionale 2014-2020)

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Dati aperti dalla teoria alla pratica: dati che creano valore

Dati della ricerca, l'esperienza di apertura dei dati epidemiologici

31/01/2023

Francesco Branda

UNIVERSITÀ DELLA CALABRIA

UNIONE EUROPEA

Dipartimento della Funzione Pubblica

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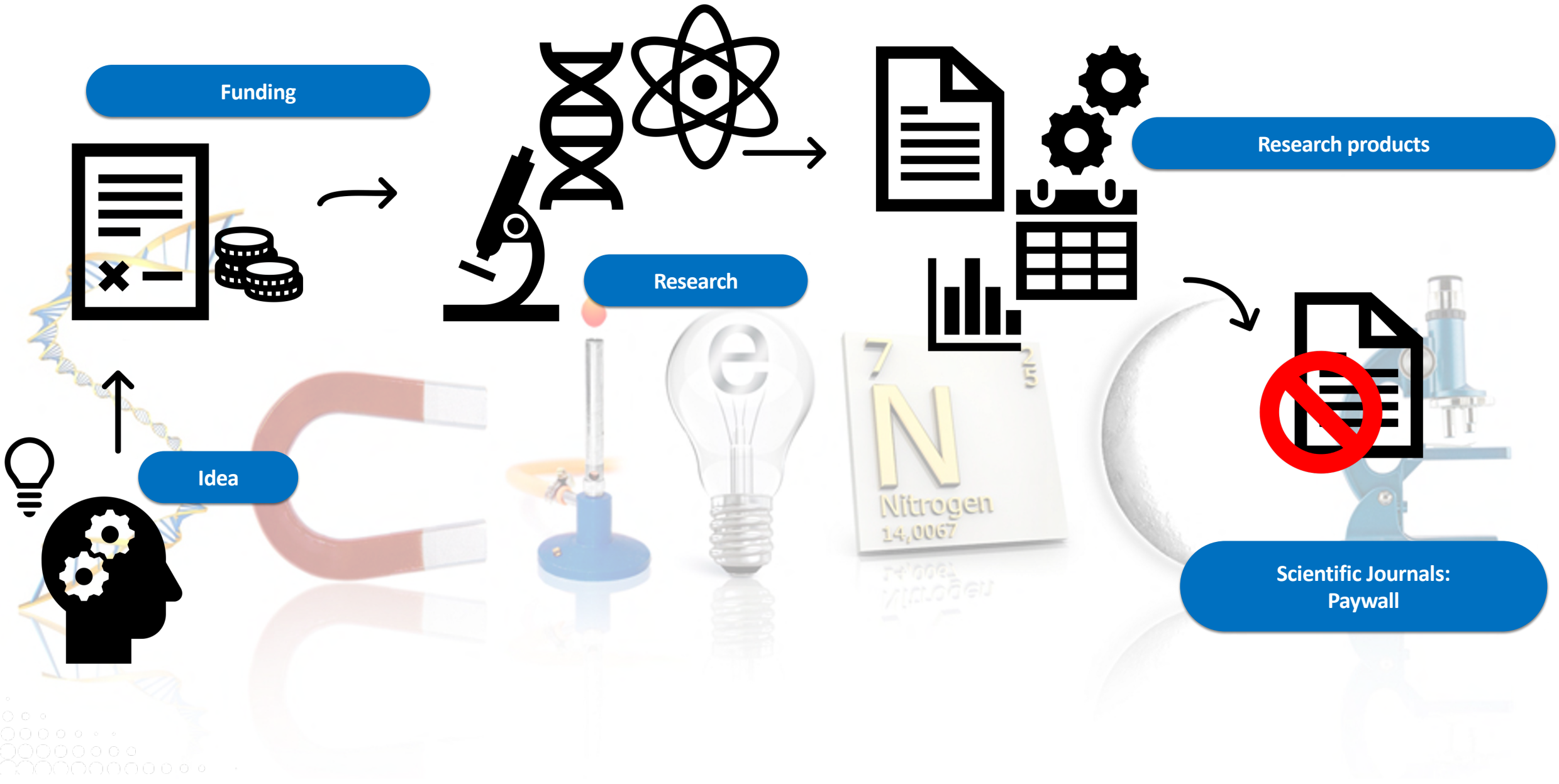
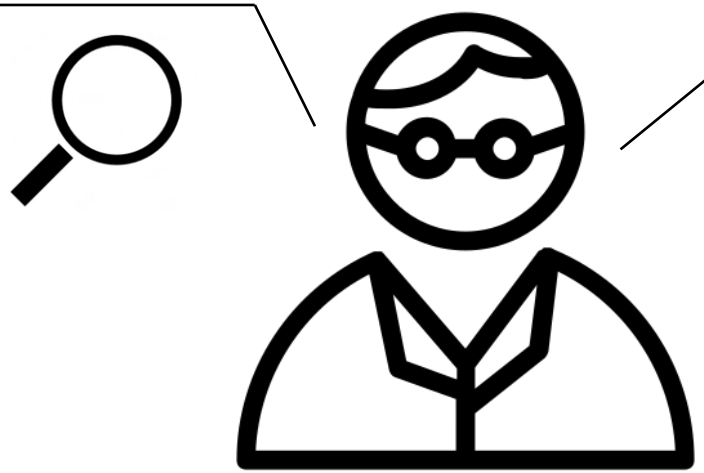

Funding
Research
Research products
Idea
Scientific Journals:
Paywall

FAIR principles

Findable

It must be clear where the data are located and can be cited.



Accessible

Data must be accessible for at least 10 years! It does not mean that the data is open, but it must be clear who and how can access the data.

Interoperable

Data must be easily integrated with other data, mechanically searchable, and linked to other search results.

Reusable

Data must be reusable for re-analysis or new research.

What is the cost of improper data management?

Time spent, cost of storage, licence costs, research retraction, double funding, interdisciplinarity and potential economic growth.

Following this approach, we found that the annual cost of not having FAIR research data costs the European economy at least €10.2bn every year. In addition, we also listed a number of consequences from not having FAIR which could not be reliably estimated, such as an impact on research quality, economic turnover, or machine readability of research data. By drawing a rough parallel with the European open data economy, we concluded that these unquantified elements could account for another €16bn annually on top of what we estimated. These results relied on a combination of desk research, interviews with the subject matter experts and our most conservative assumptions.

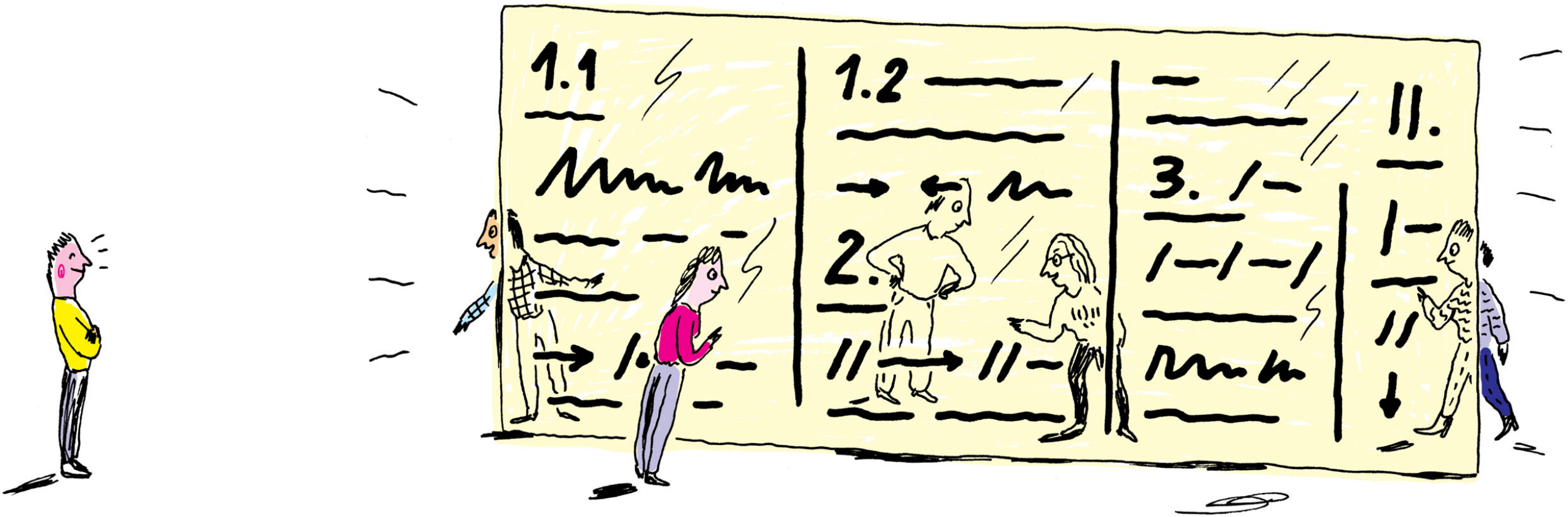
Moreover, while building on top of other available studies and being heavily reliant on existing material, we have come to realise ourselves how important is to have FAIR research data. Not only the time invested in this study could have been reduced by a significant amount, but the content could have been enhanced if more material had been accessible and reusable.

€10.2bn + €16bn every year in Europe!

Published: 2019-01-16
Corporate author(s): Directorate-General for Research and Innovation (European Commission) , PwC EU Services
Cost of not having FAIR research data

Why do we need to share research data?

Visibility and impact



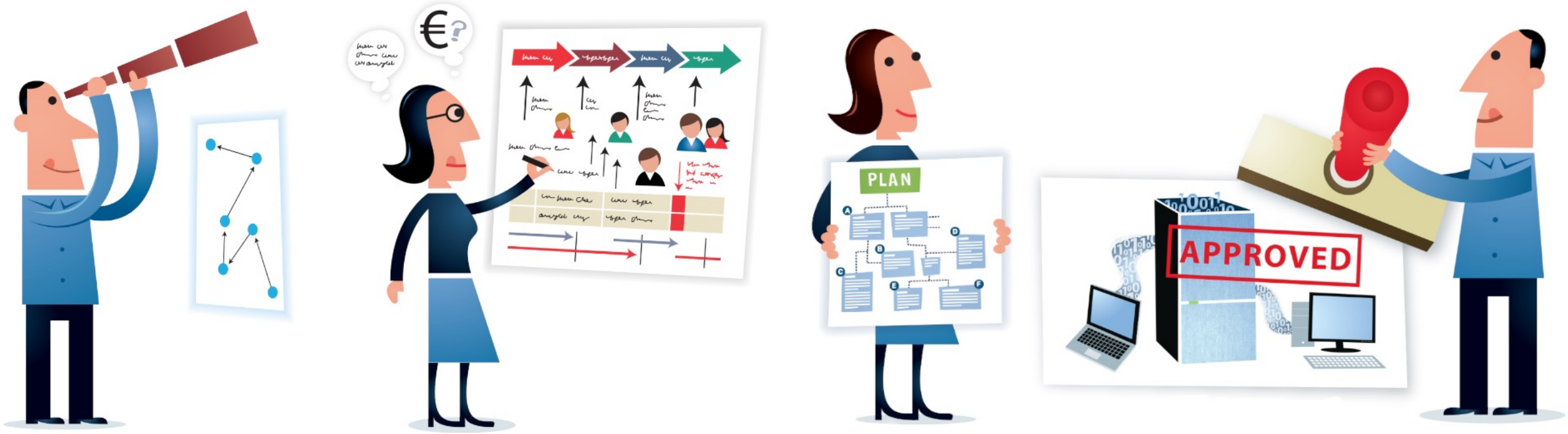
Reproducibility

Share

Preserve

Reliability

Data is the proof of your papers: how can others trust your research without accessing the data?



Collaboration

«It is imperative to leverage scientific innovations and support principles of openness and inclusiveness in processes that generate solutions to the severe health menace that is likely to bring significant hardships to humanity.»

UNESCO - Open access to facilitate research and information on COVID-19

Letter from the Elsevier Journals Leadership Team

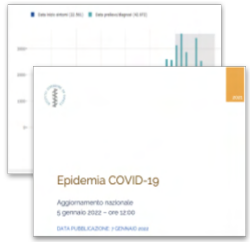
"Thank you for publishing with Elsevier in 2022. Publishing academic research is no small feat, so we would like to celebrate your achievement. Your contribution is further advancing global research and the feedback you provide helps us improve the products and services we can offer your communities.

We recognize you have a choice of journals to publish your work in, so we are honoured that you put your trust in us. We look forward to working together in the coming year.

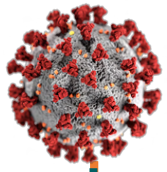
Thank you again for the hard work you devote to your field."

Laura Hassink
Managing Director Elsevier Journals

Personal initiatives for share research data



Epidemiological surveillance



All SARS-CoV-2 sequences

VoC/VoI

- Integrated surveillance (case-based data sent to TESSy)
- Monthly prevalence surveys (cross-sectoral)
- National vaccination repository
- Genomic surveillance and analysis platform
- School monitoring

Ministry of Education

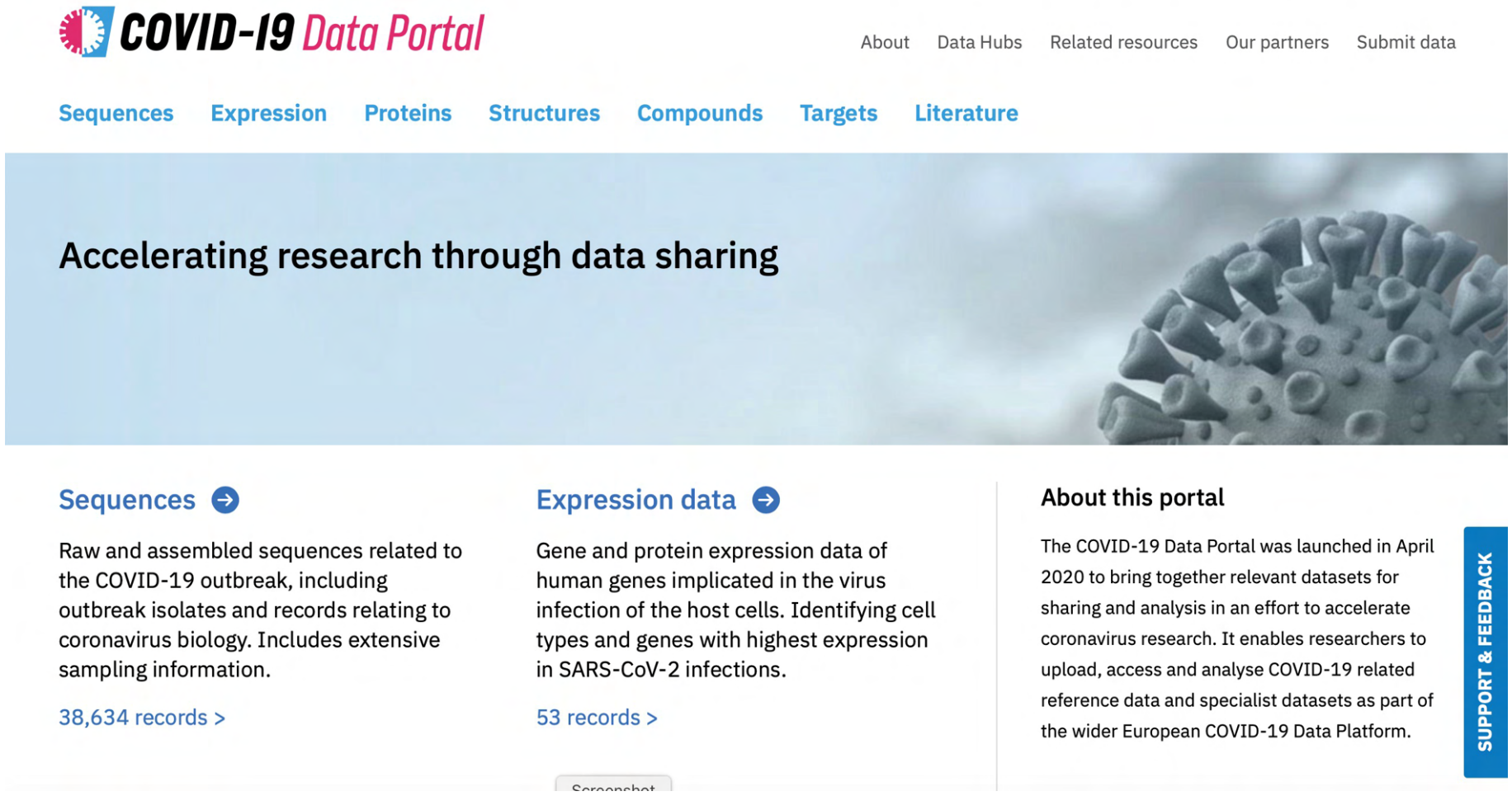
National Institute of Health (ISS)

Regional weekly monitoring

European COVID-19 Data Platform

https://www.covid19dataportal.org/

- Launched in April 2020
- Bring together relevant datasets for sharing and analysis in an effort to accelerate COVID-19 research
- Enables researchers to upload, access and analyse COVID-19 related data



https://www.covid19dataportal.it/it/data_types/forms/

App | Deep-Learning-Pr... | Predictive Policing... | Mapping Crime: U... | echen102/us-pres... | owid/covid-19-dat... | MatthewDaws/SE... | 5 Things You Nee... | Elenco di lettura

COVID-19 Data Portal ITALY

Chi siamo | Portale Europeo | Supporto & Feedback | Cerca | en | it

Genomica & Trascrittomica | Dati sulle Proteine | Dati di Imaging | Dati Sanitari | Ricerca | Eventi

Ricerca Italiana

Home / Tipologia di Dati / Ricerca Italiana

Progetti di Ricerca

Visualizzazione 1-3 di 3 elementi.

Ricerca: Argomento :

Descrizione	Leader del progetto	Contatto del Repository	Istituzione	Argomento
From the infection report to the vaccines: all the data on the Covid emergency in Calabria on a single platform	Francesco Branda	Francesco Branda francesco.branda@unical.it	Università della Calabria Rende	Health data
Descrizione completa	The COVIDA project is dedicated to the collection and visualization of data related to the COVID-19 emergency in Calabria and makes available to the scientific community all the necessary information, such as the total number of infections recorded on the territory, with a series of detailed indications (hospitalized, cured, deceased, number of swabs performed) to monitor and classify the epidemic risk, and the number of subjects vaccinated with the first dose, those vaccinated with a full cycle, the progress of vaccinations by category and age group, to evaluate the progress of the vaccination campaign. The platform can be reached at the link https://covida.tk/			
Full-genome sequencing of SARS-CoV-2 strains from the province of Parma	Enrico Silini	Riccardo Percudani riccardo.percudani@unipr.it	Università di Parma Parma	Genomics/Trascrittomics
Synthetic Antibodies neutralize SARS-CoV-2 infection of mammalian cells	Giuseppe Novelli	Giuseppe Novelli novelli@med.uniroma2.it	Università degli Studi di Roma Tor Vergata Roma	Health data Other

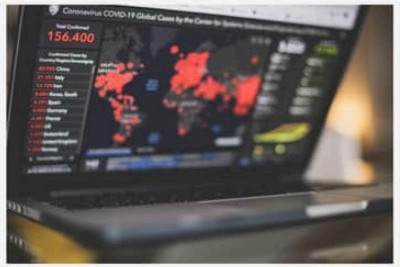
Visualizza 5 elementi per pagina

« 1 »

Portale COVID-19

COVIDA

Seguici su:



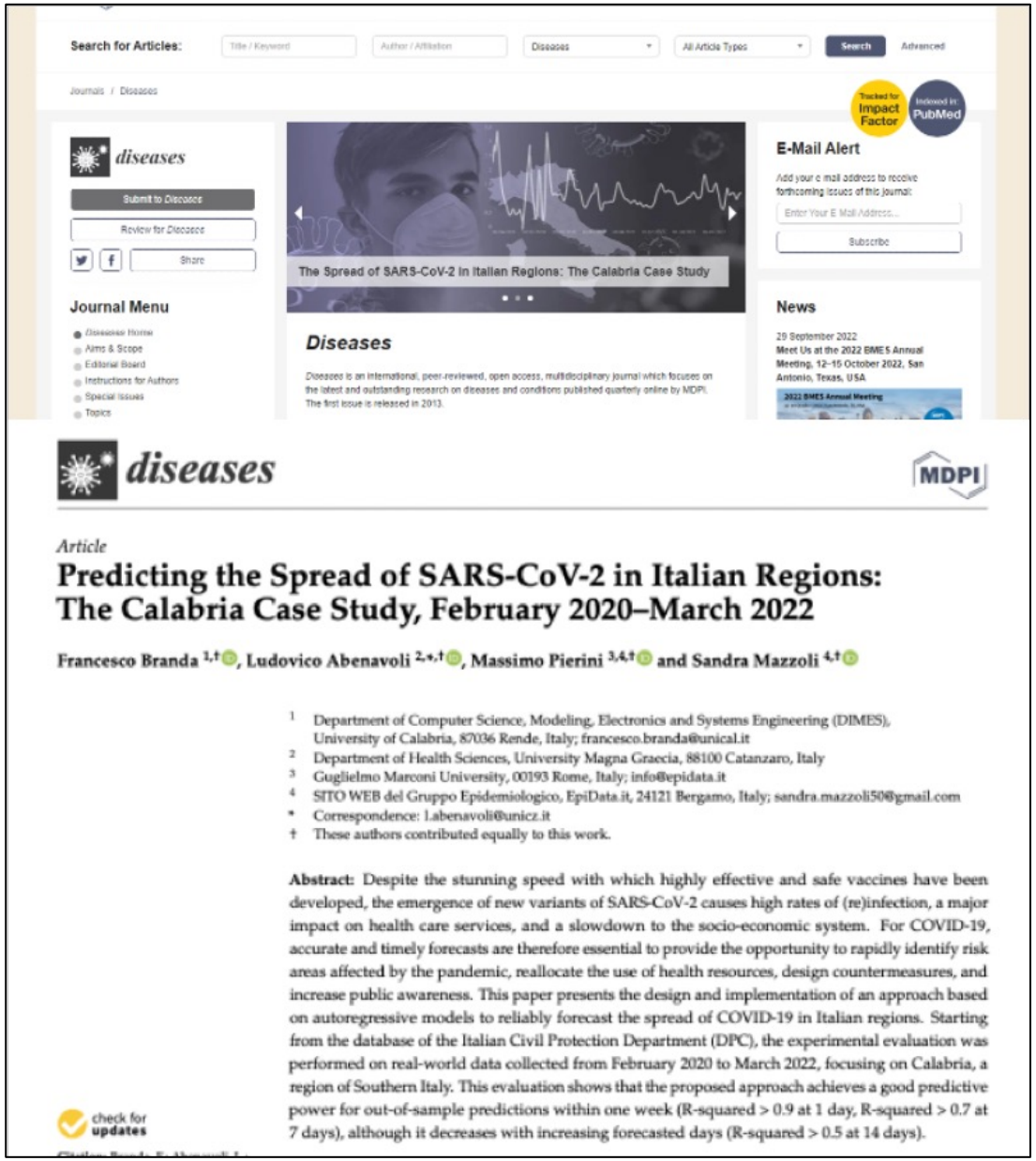
Andamento vaccinazione | Andamento epidemiologico | Bollettino giornaliero

COVID-19 Regione Calabria

Ultimo aggiornamento: 21-07-2022

+3.020*	+4	+1.503	72.904
Nuovi casi	Deceduti	Dimessi / Guariti	Casi attivi
315 (-8)	18 (-1)		
Ricoverati	Terapia intensiva		

*Numero tamponi: 12.208 (+3.870 rispetto a ieri)



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The Spread of SARS-CoV-2 in Italian Regions: The Calabria Case Study

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29 September 2022

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diseases

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Article

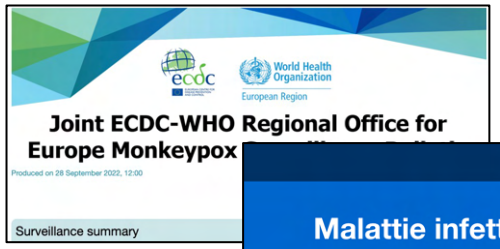
Predicting the Spread of SARS-CoV-2 in Italian Regions: The Calabria Case Study, February 2020–March 2022

Francesco Branda [1,†], Ludovico Abenavoli [2,*,†], Massimo Pierini [3,4,†] and Sandra Mazzoli [4,†]

1 Department of Computer Science, Modeling, Electronics and Systems Engineering (DIMES), University of Calabria, 87036 Rende, Italy; francesco.branda@unical.it
2 Department of Health Sciences, University Magna Graecia, 88100 Catanzaro, Italy
3 Guglielmo Marconi University, 00193 Rome, Italy; info@epidata.it
4 SITO WEB del Gruppo Epidemiologico, EpiData.it, 24121 Bergamo, Italy; sandra.mazzoli50@gmail.com
* Correspondence: l.abenavoli@unicz.it
† These authors contributed equally to this work.

Abstract: Despite the stunning speed with which highly effective and safe vaccines have been developed, the emergence of new variants of SARS-CoV-2 causes high rates of (re)infection, a major impact on health care services, and a slowdown to the socio-economic system. For COVID-19, accurate and timely forecasts are therefore essential to provide the opportunity to rapidly identify risk areas affected by the pandemic, reallocate the use of health resources, design countermeasures, and increase public awareness. This paper presents the design and implementation of an approach based on autoregressive models to reliably forecast the spread of COVID-19 in Italian regions. Starting from the database of the Italian Civil Protection Department (DPC), the experimental evaluation was performed on real-world data collected from February 2020 to March 2022, focusing on Calabria, a region of Southern Italy. This evaluation shows that the proposed approach achieves a good predictive power for out-of-sample predictions within one week (R-squared > 0.9 at 1 day, R-squared > 0.7 at 7 days), although it decreases with increasing forecasted days (R-squared > 0.5 at 14 days).

check for updates


Joint ECDC-WHO Regional Office for Europe Monkeypox
Surveillance summary


Ministero della Salute
Malattie infettive
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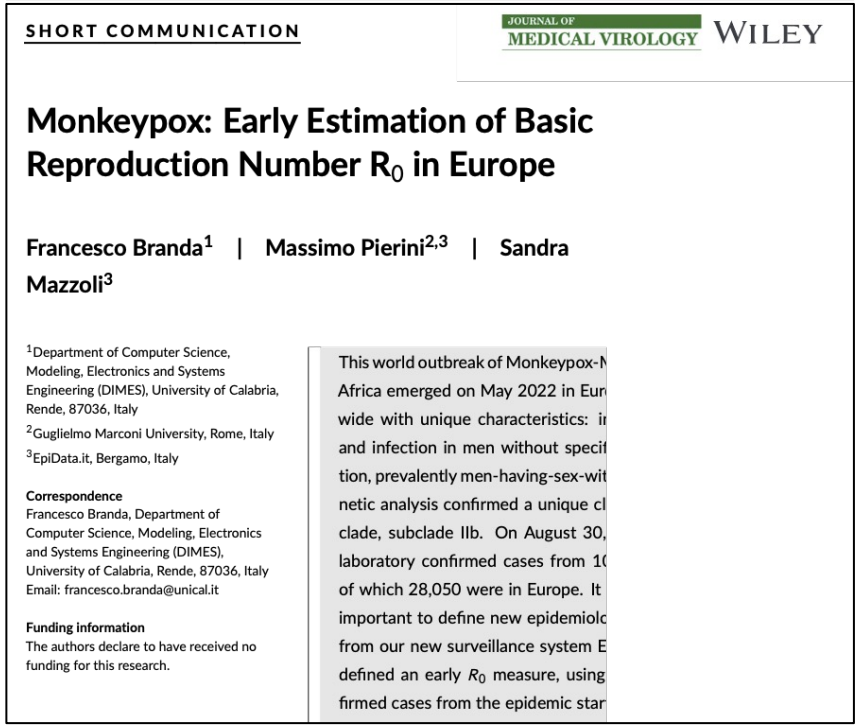
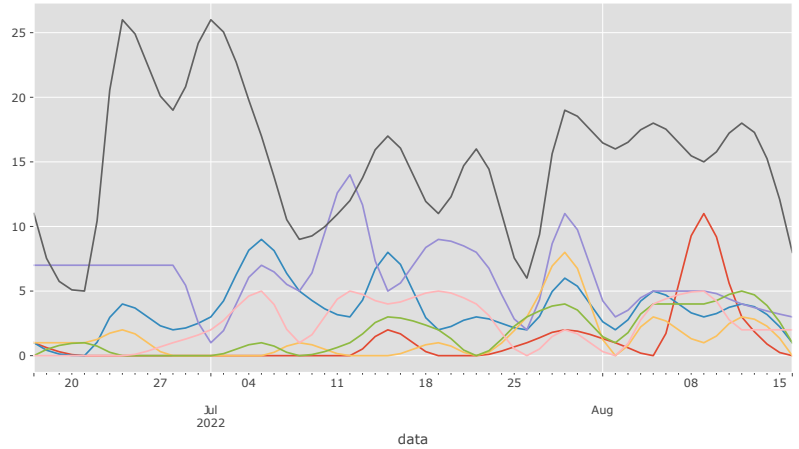
Vaiolo delle scimmie - Mpox


Joint ECDC-WHO Regional Office for Europe Mpox Surveillance Bulletin
Mpox
Esempio d'uso dei dati
Contributi
Licenza


Journal of Clinical Virology Plus 2 (2022) 100114
Contents lists available at ScienceDirect
Journal of Clinical Virology Plus
journal homepage: www.elsevier.com/locate/jcvp
Monkeypox: EpiMPX Surveillance System and Open Data with a Special Focus on European and Italian Epidemic
Francesco Branda, Massimo Pierini, Sandra Mazzoli


SHORT COMMUNICATION
JOURNAL OF MEDICAL VIROLOGY
WILEY
Monkeypox: Early Estimation of Basic Reproduction Number R0 in Europe
Francesco Branda | Massimo Pierini | Sandra Mazzoli
Correspondence
Funding information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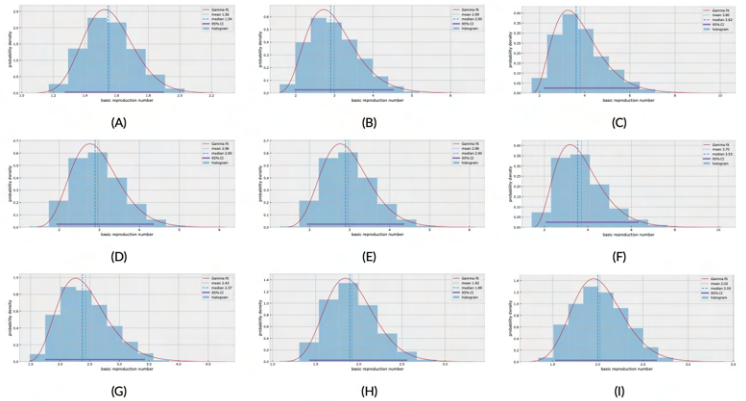
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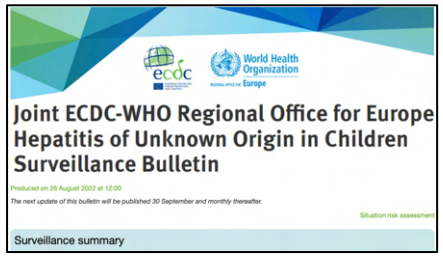
World Health Organization
Europe
Joint ECDC-WHO Regional Office for Europe Hepatitis of Unknown Origin in Children Surveillance Bulletin
Produced on 26 August 2022 at 12:00
The next update of this bulletin will be published 30 September and monthly thereafter.
Situation risk assessment
Surveillance summary


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History
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Fit Hepatitis.ipynb
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README.md
README_EN.md
hepatitis_model.drawio.png
README.md
Joint ECDC-WHO Regional Office for Europe Hepatitis of Unknown Origin in Children Surveillance Bulletin
Italiano - English
Epatite di origine sconosciuta nei bambini
Questo repository contiene i dati estratti dai bollettini ECDC-WHO/Europe.
Esempio d'uso dei dati
Download diretto (CSV): https://raw.githubusercontent.com/fbranda/dati-epidemiologici/main/epatite-di-origine-sconosciuta-nei-bambini/ECDC-WHO-Regional-Office-for-Europe/case-count.csv
Python (richiede pandas):
import pandas as pd
df = pd.read_csv("https://raw.githubusercontent.com/fbranda/dati-epidemiologici/main/epatite-di-origine-sconosciuta-nei-bambini/ECDC-WHO-Regional-Office-for-Europe/case-count.csv")
R (richiede httr):
library(httr)
df <- read.csv(text=content(GET("https://raw.githubusercontent.com/fbranda/dati-epidemiologici/main/epatite-di-origine-sconosciuta-nei-bambini/ECDC-WHO-Regional-Office-for-Europe/case-count.csv")))
Contributi
1. Branda F, Pierini M, Mazzoli S. Hepatitis of unknown origin in children: Why and how to create an open access database. Journal of Clinical Virology Plus. 2022 Aug 1;2(3):100102.
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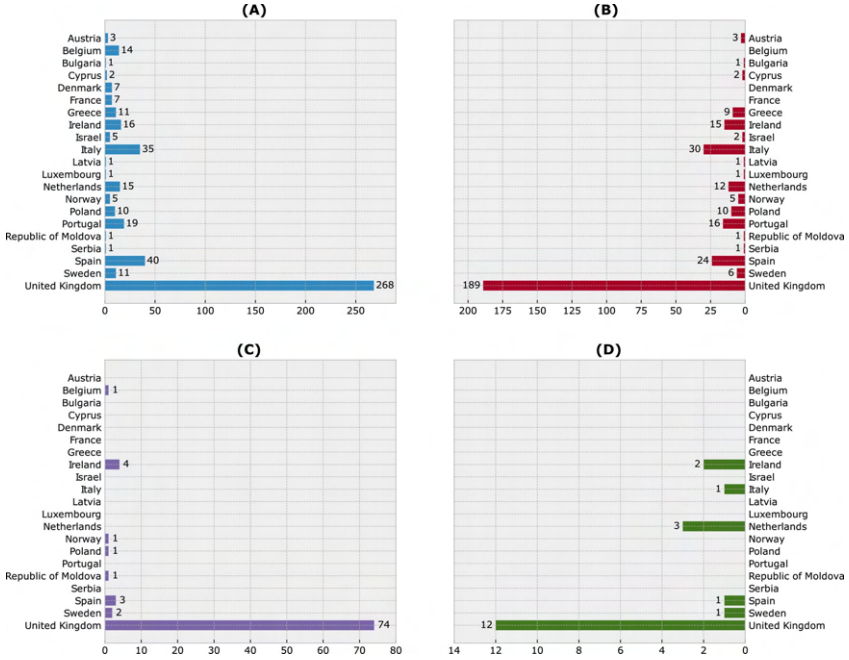
Journal of Clinical Virology Plus
Volume 2, Issue 3, August 2022, 100102
CLINICAL VIROLOGY PLUS
Hepatitis of unknown origin in children: Why and how to create an open access database
Francesco Branda [a], Massimo Pierini [b, c], Sandra Mazzoli [b]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Bulgaria 1
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Greece 11
Ireland 16
Israel 5
Italy 35
Latvia 1
Luxembourg 1
Netherlands 15
Norway 5
Poland 10
Portugal 19
Republic of Moldova 1
Serbia 1
Spain 40
Sweden 11
United Kingdom 268
0 50 100 150 200 250
(B)
Austria 3
Belgium 1
Bulgaria 2
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Italy 30
Latvia 1
Luxembourg 1
Netherlands 12
Norway 5
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Serbia 1
Spain 24
Sweden 6
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(C)
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Poland 1
Portugal
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Spain 3
Sweden 2
United Kingdom 74
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(D)
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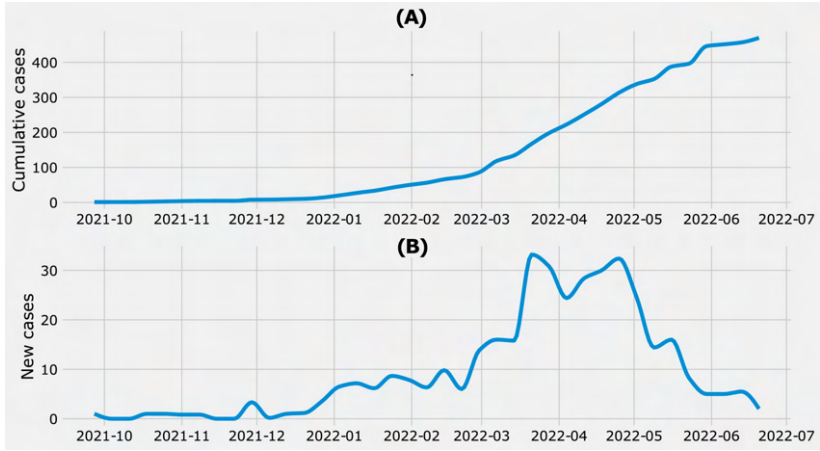
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0 100 200 300 400
2021-10 2021-11 2021-12 2022-01 2022-02 2022-03 2022-04 2022-05 2022-06 2022-07
(B)
New cases
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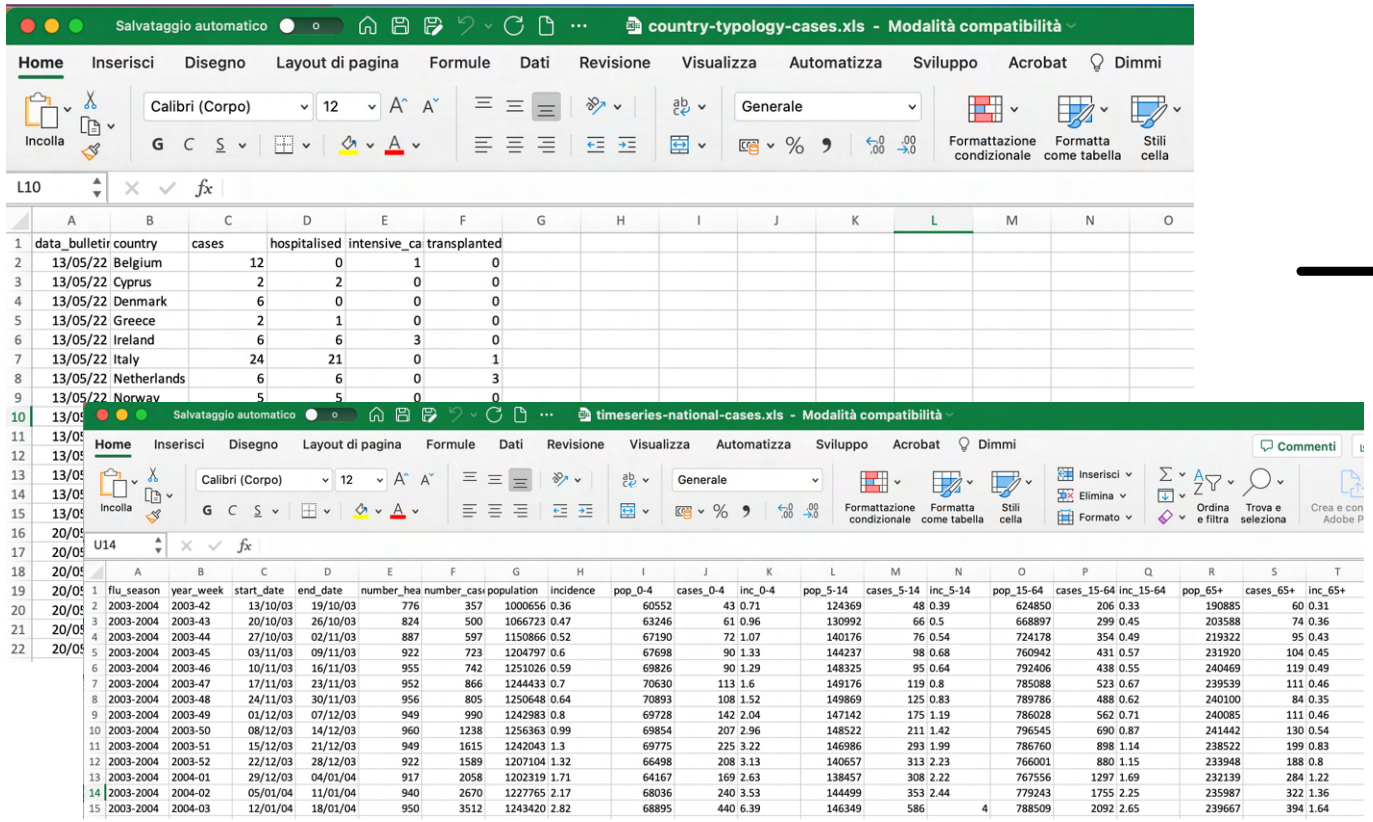
Open data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Stili cella
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13/05/22 Cyprus 2 2 0 0
13/05/22 Denmark 6 0 0 0
13/05/22 Greece 2 1 0 0
13/05/22 Ireland 6 6 3 0
13/05/22 Italy 24 21 0 1
13/05/22 Netherlands 6 6 0 3
13/05/22 Norway 5 5 0 0
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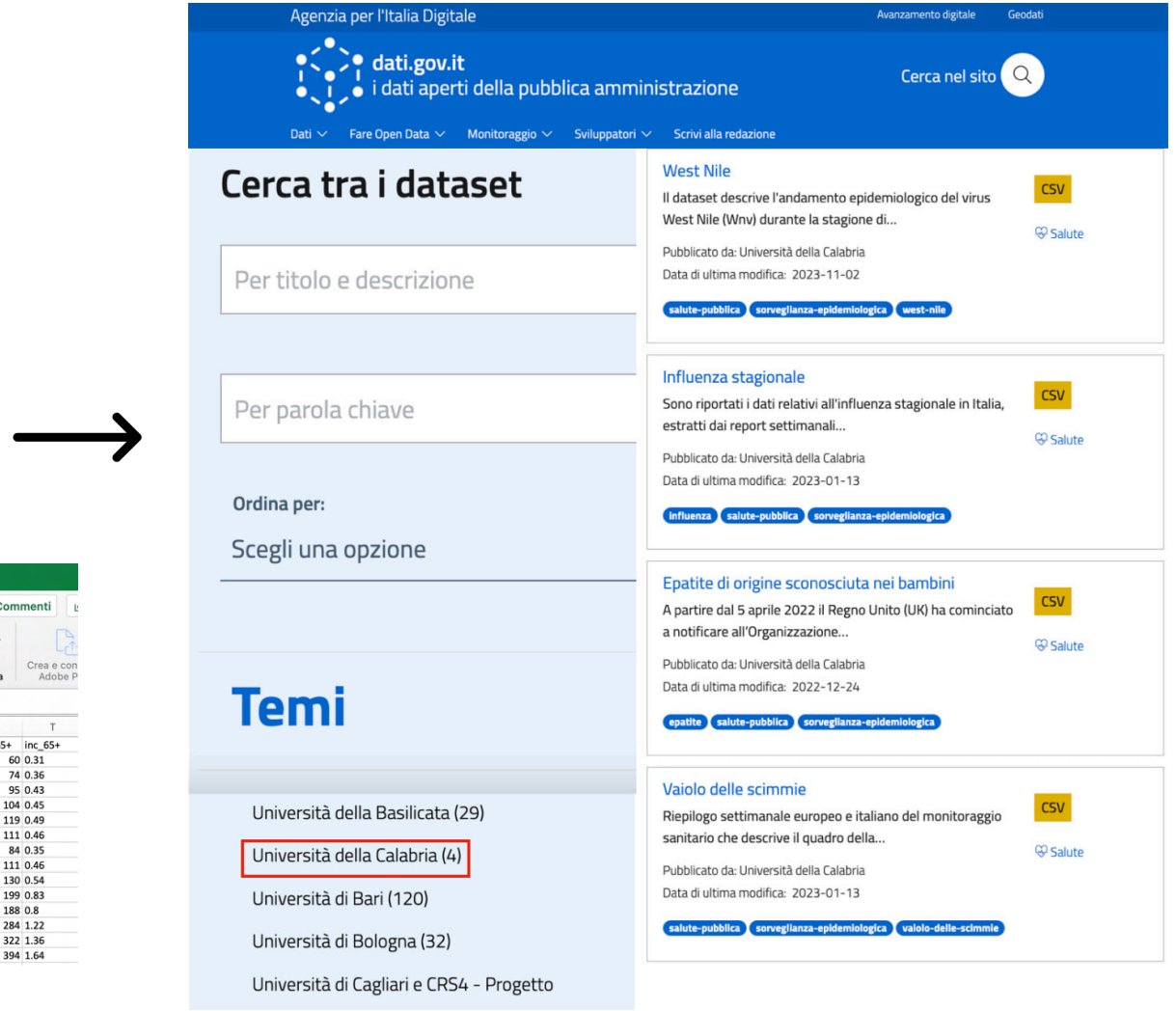
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Università della Calabria (4)
Università di Bari (120)
Università di Bologna (32)
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Data di ultima modifica: 2023-11-02
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Data di ultima modifica: 2023-01-13
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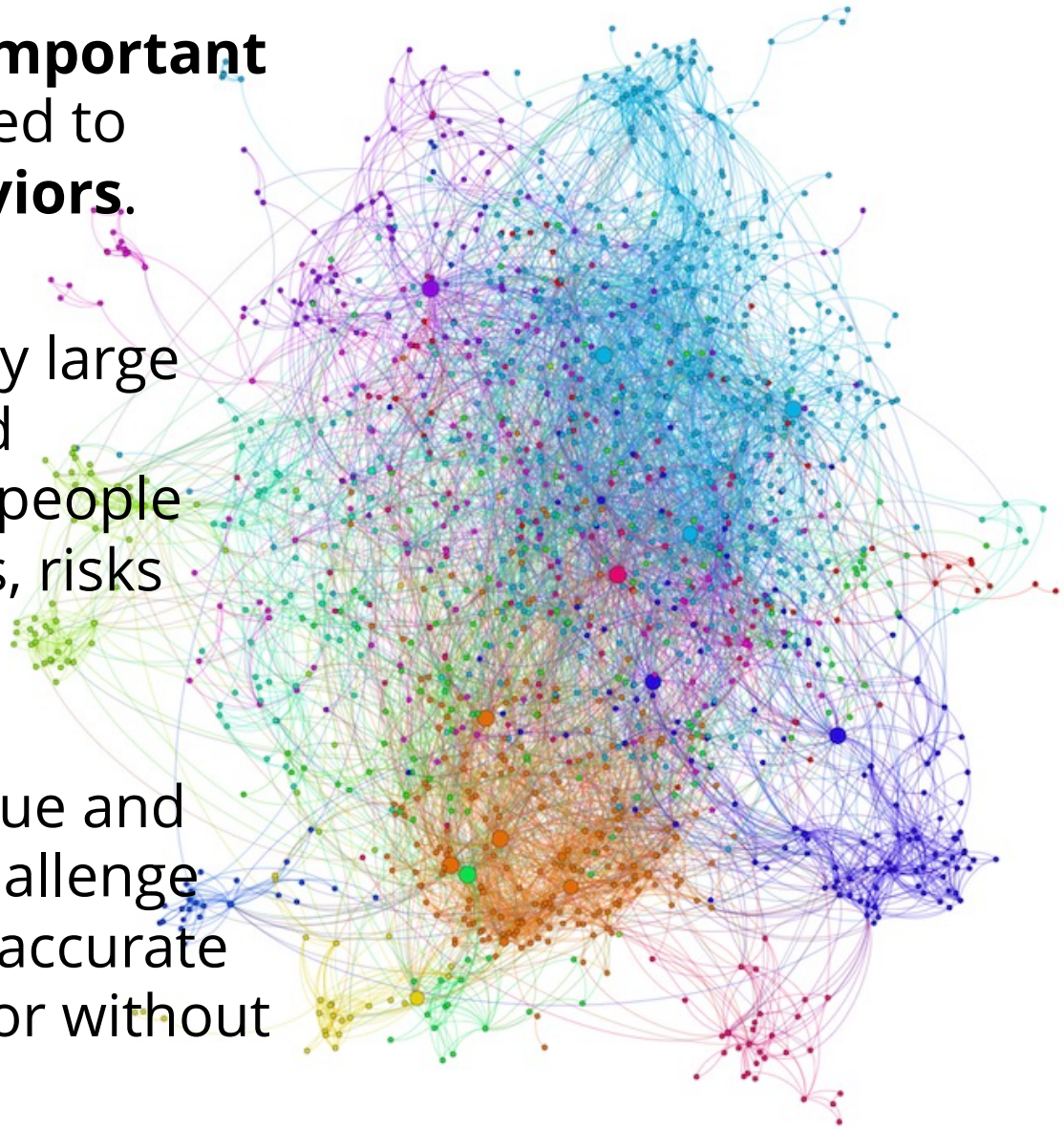
- Social media platforms have become an **important source** of information that can be exploited to understand **human dynamics** and **behaviors**.

- In the context of natural disasters, the very large use of social media platforms has enabled eyewitnesses and other disaster-affected people to share information about their damages, risks and emergencies in real time.

- The use of social media posts to help rescue and intervention activities remains an open challenge as users often publish posts containing inaccurate information, slang or abbreviated words, or without using geolocalization.



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Journal of Big Data

RESEARCH Open Access

Using social media for sub-event detection during disasters

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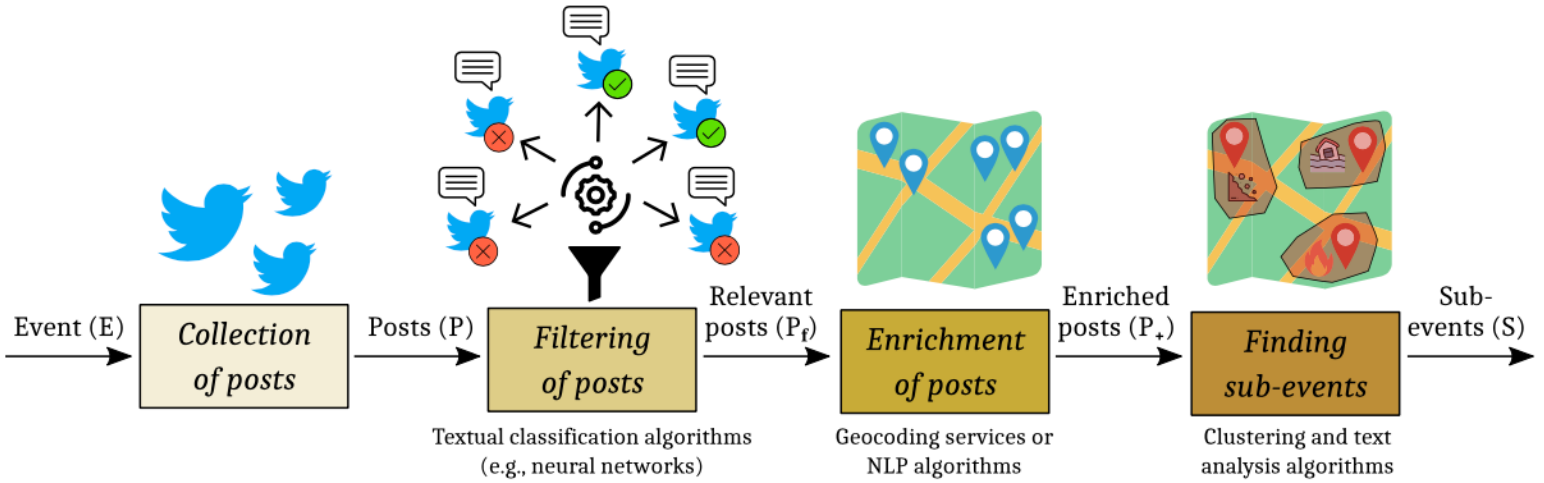
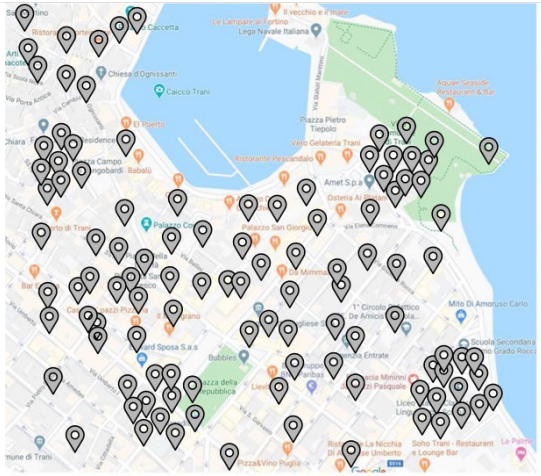
Abstract

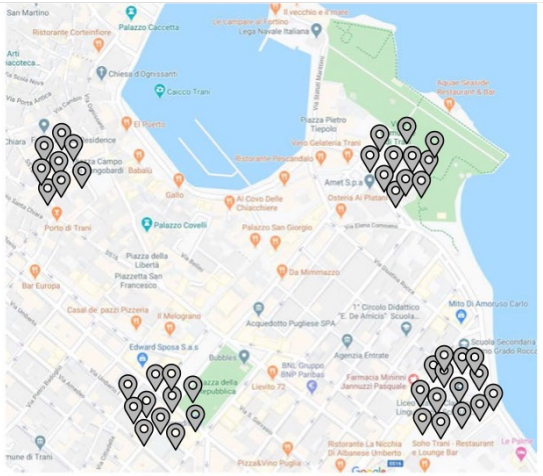
Social media platforms have become fundamental tools for sharing information during natural disasters or catastrophic events. This paper presents SEDOM-DD (Sub-Events Detection on sOcial Media During Disasters), a new method that analyzes user posts to discover sub-events that occurred after a disaster (e.g., collapsed buildings, broken gas pipes, floods). SEDOM-DD has been evaluated with datasets of different sizes that contain real posts from social media related to different natural disasters (e.g., earthquakes, floods and hurricanes). Starting from such data, we generated synthetic datasets with different features, such as different percentages of relevant posts and/or geotagged posts. Experiments performed on both real and synthetic datasets showed that SEDOM-DD is able to identify sub-events with high accuracy. For example, with a percentage of relevant posts of 80% and geotagged posts of 15%, our method detects the sub-events and their areas with an accuracy of 85%, revealing the high accuracy and effectiveness of the proposed approach.

Keywords: Social media, Events detection, Natural disasters, Catastrophic events, Crisis computing, Disaster management, Mass emergencies, Earthquake

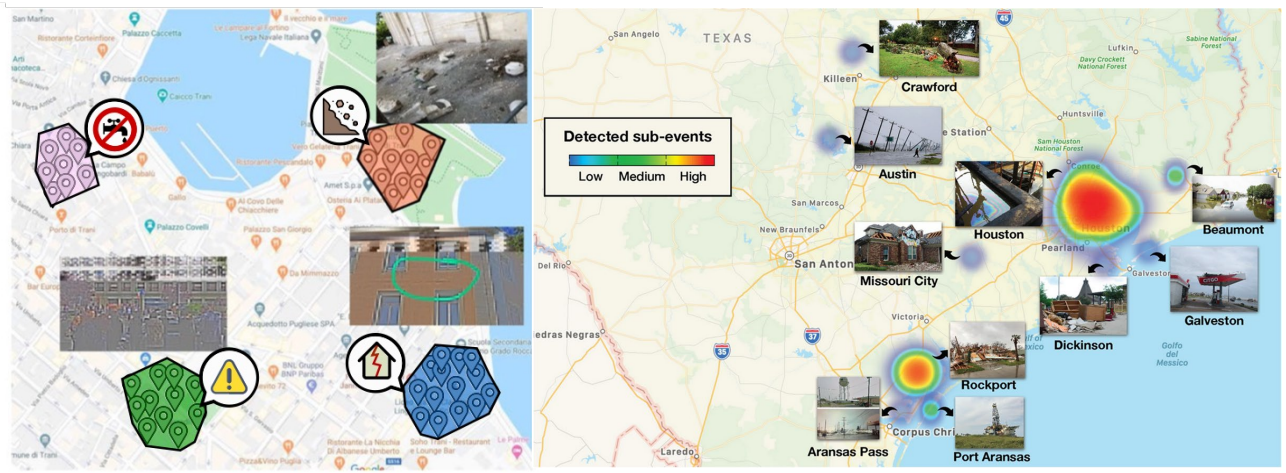




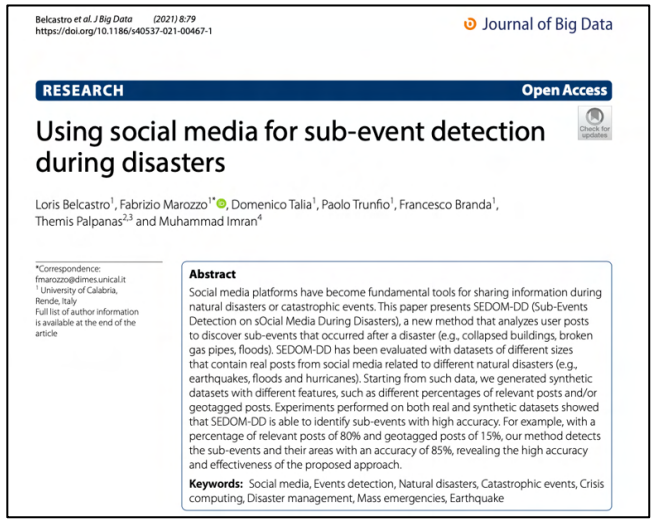
(a) Relevant posts.



(b) Filtering of posts related to sub-events.



(c) Sub-events detection.



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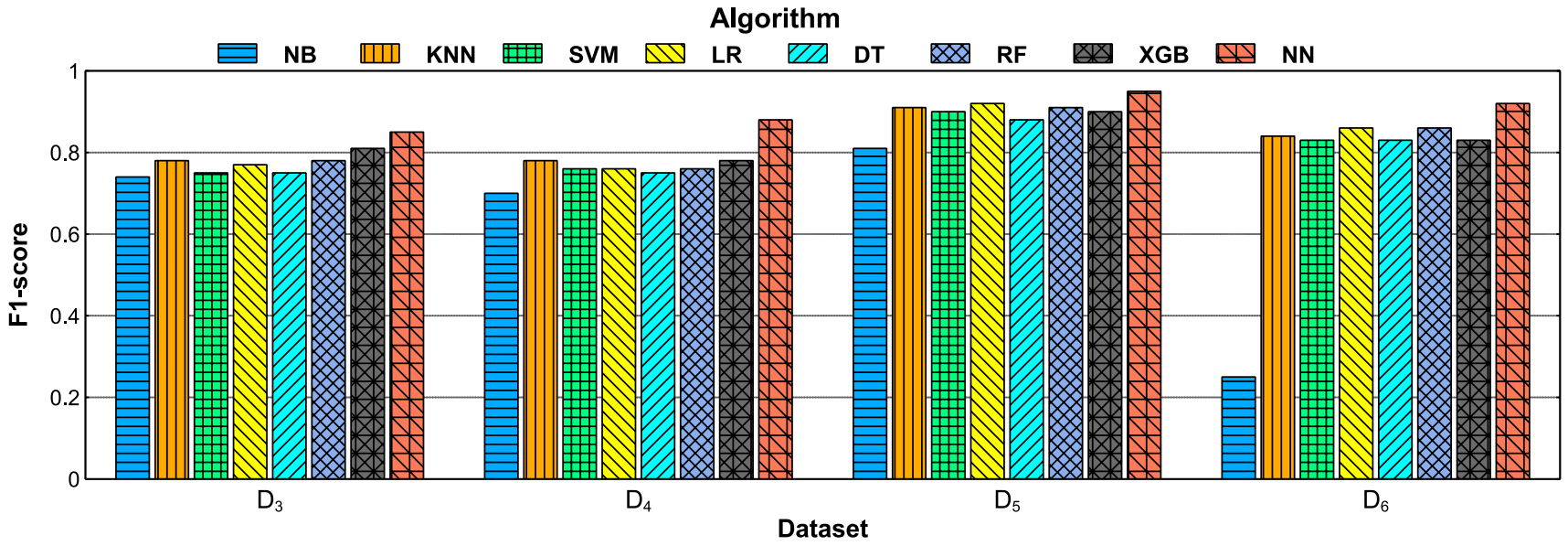
Keywords: Social media, Events detection, Natural disasters, Catastrophic events, Crisis computing, Disaster management, Mass emergencies, Earthquake

Algorithms	Acc	Prec	Rec	F1
Naïve Bayes	0.753	0.735	0.753	0.739
KNN	0.807	0.803	0.807	0.781
SVM	0.776	0.765	0.776	0.751
Logistic Regr.	0.790	0.773	0.790	0.766
Decision Tree	0.744	0.755	0.744	0.753
Random For.	0.795	0.794	0.790	0.783
XGBoost	0.815	0.812	0.815	0.809
Neural Net.	**0.830**	**0.826**	**0.864**	**0.845**



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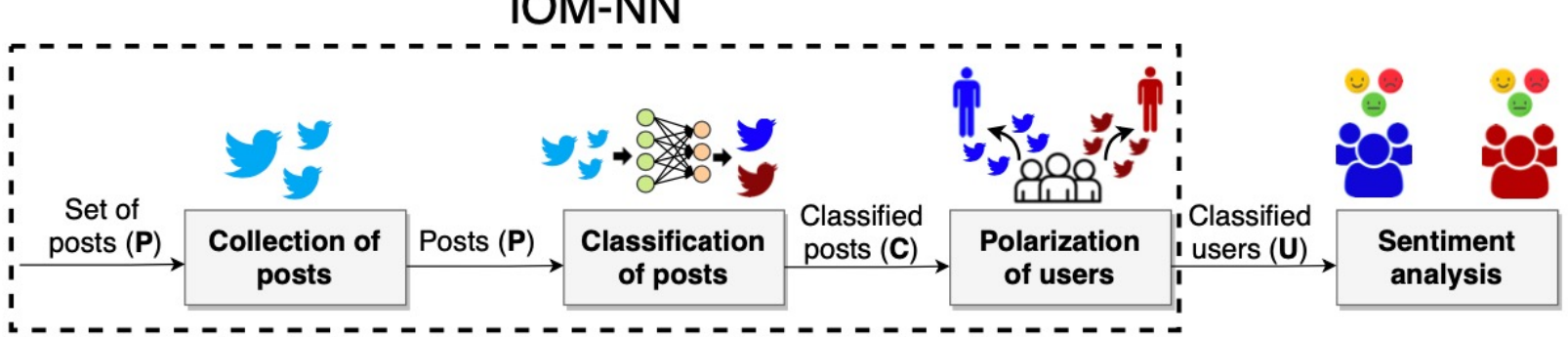
ORIGINAL ARTICLE

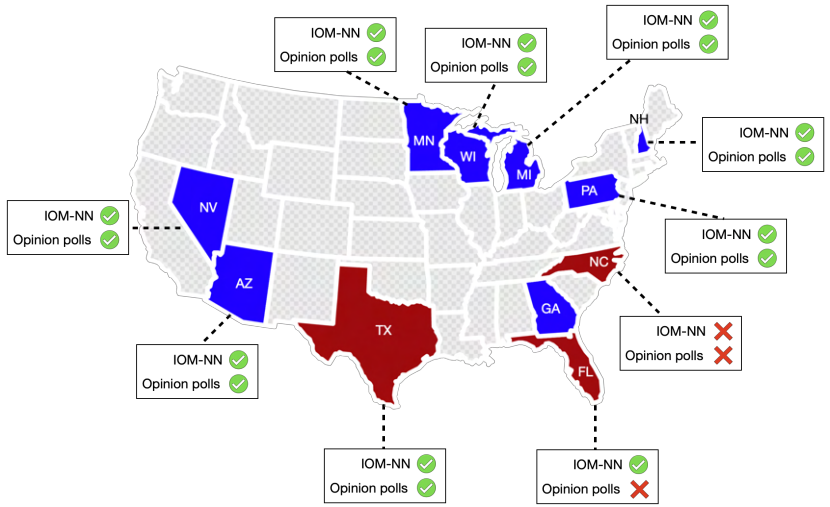
Analyzing voter behavior on social media during the 2020 US presidential election campaign

Loris Belcastro[1] · Francesco Branda[1] · Riccardo Cantini[1] · Fabrizio Marozzo[1] · Domenico Talia[1] · Paolo Trunfio[1]

Received: 20 January 2022 / Revised: 11 May 2022 / Accepted: 23 June 2022

Abstract
Every day millions of people use social media platforms by generating a very large amount of opinion-rich data, which can be exploited to extract valuable information about human dynamics and behaviors. In this context, the present manuscript provides a precise view of the 2020 US presidential election by jointly applying topic discovery, opinion mining, and emotion analysis techniques on social media data. In particular, we exploited a clustering-based technique for extracting the main discussion topics and monitoring their weekly impact on social media conversation. Afterward, we leveraged a neural-based opinion mining technique for determining the political orientation of social media users by analyzing the posts they published. In this way, we were able to determine in the weeks preceding the Election Day which candidate or party public opinion is most in favor of. We also investigated the temporal dynamics of the online discussions, by studying how users' publishing behavior is related to their political alignment. Finally, we combined sentiment analysis and text mining techniques to discover the relationship between the user polarity and sentiment expressed referring to the different candidates, thus modeling political support of social media users from an emotional viewpoint.





State	Real percentages		Opinion polls		IOM-NN	
	B	*T*	*B*	*T*	*B*	*T*
Arizona	49.4	49.1	**48.0**	45.8	**50.2**	48.3
Florida	47.9	51.2	48.7	46.0	48.0	**51.1**
Georgia	49.5	49.2	**47.6**	47.4	**52.7**	46.0
Michigan	50.6	47.8	**49.9**	44.4	**55.4**	43.0
Minnesota	52.4	45.3	**51.6**	41.8	**55.1**	42.6
Nevada	50.1	47.7	**49.4**	44.4	**49.8**	48.0
New Hampshire	52.7	45.4	**53.4**	42.4	**50.9**	47.3
North Carolina	48.6	49.9	47.8	47.5	56.6	41.9
Pennsylvania	50.0	48.8	**49.4**	45.7	**55.7**	43.1
Texas	46.5	52.1	47.5	**48.8**	46.1	**52.5**
Wisconsin	49.4	48.8	**52.0**	42.8	**56.3**	41.9
Correctly classified	-		**9/11**		**10/11**	
Tweets	-		-		670,451	
Users	-		≈ 11,000		57,116	
Avg. Acc	-		0.82		0.91	

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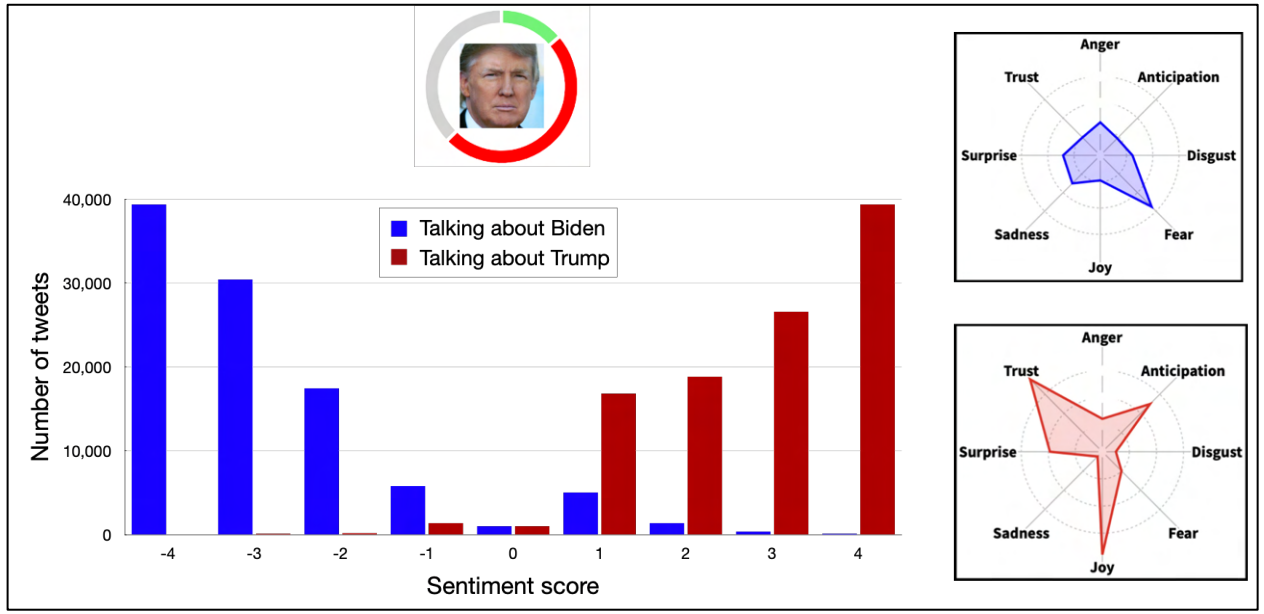

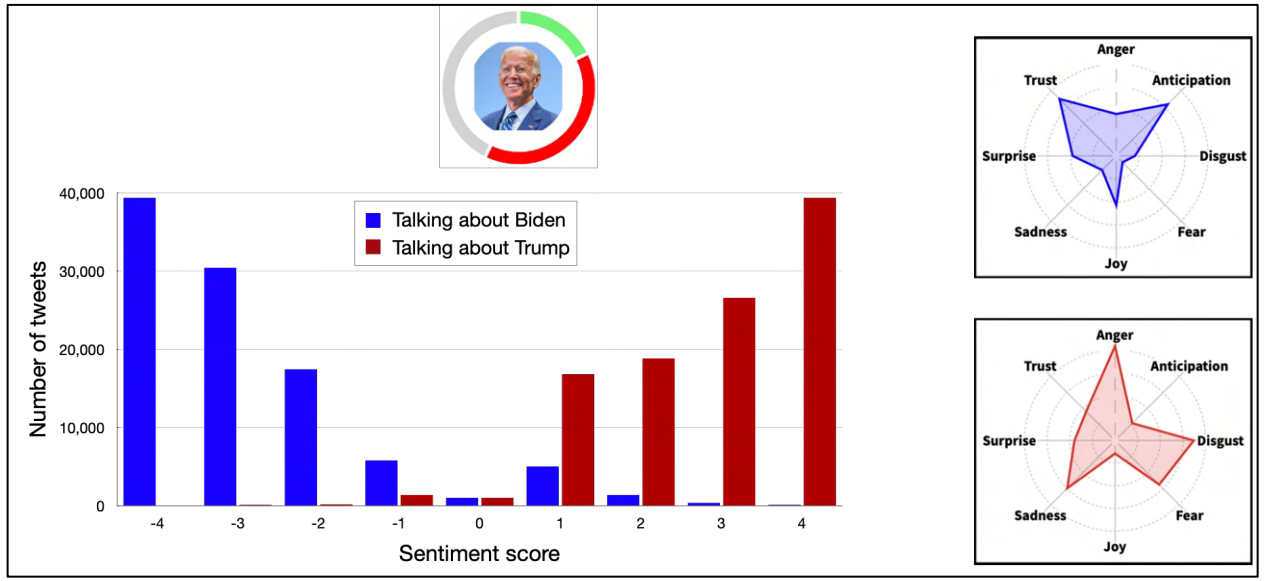

Publishing research without data is simply advertising, not science

Graham Steel

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