

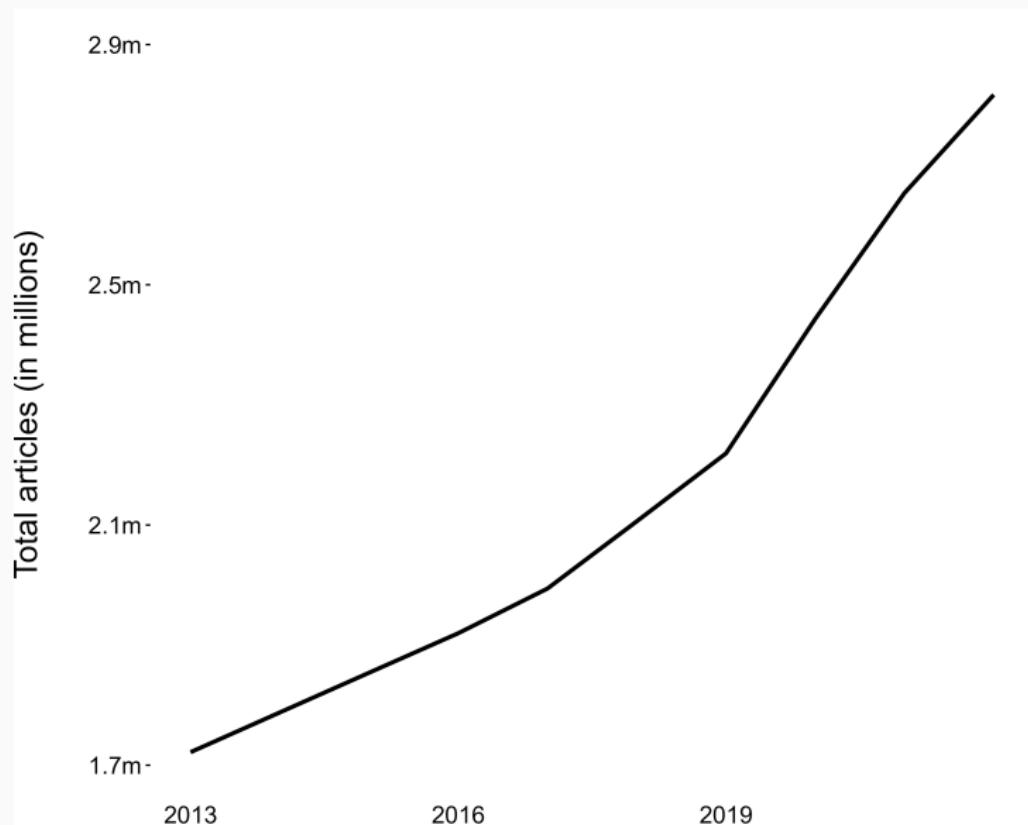
L'editoria scientifica sotto pressione

Crescita esponenziale, business model e punti critici

M. A. Hanson, P. Gómez Barreiro, **P. Crosetto**, D. Brockington

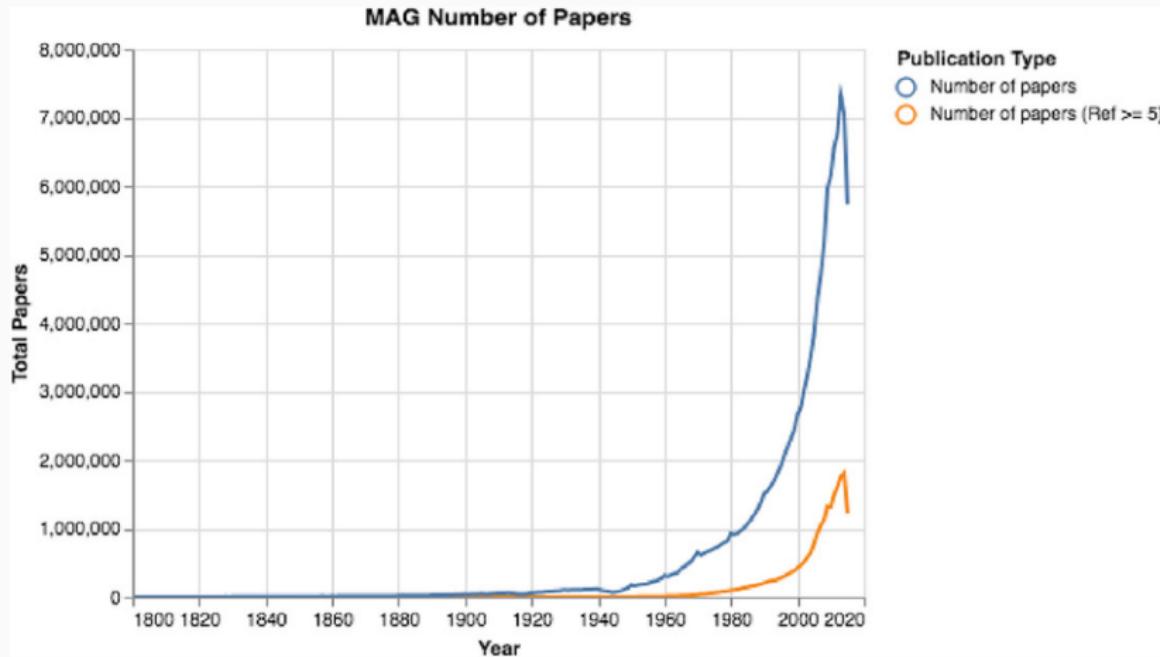
Incotro sulla comunicazione scientifica – Milano - 13 settembre 2024

L'editoria scientifica ha avuto una crescita esponenziale



Source: N papers -- Scimago website data; N PhDs - OECD

Non è davvero una novità



Fonte: Fire & Guestrin 2019

In 1958, when James D. Watson worked his way up to the rank of associate professor at Harvard, the young biochemist had on his curriculum vitae 18 papers. One of them, published 5 years earlier, described the structure of deoxyribonucleic acid.

Today, the bibliography of a candidate facing a similar climb often lists 50 or even 100 papers.

As the comparison suggests, paper inflation has become a fact of academic life during the past two decades. This is

Science, Marzo 1981

ance and impudence.

Aristotle, when he enumerated the purposes (by which an author must be guided) and had come to the last one, therefore said: 'Everything else is either superfluousness or greed', by which he meant ignorance and insolence.

34 The great number of scholarly works available is an obstacle on the path to attaining scholarship

It should be known that among the things that are harmful to the human quest for knowledge and to the attainment of a thorough scholarship are the great number of works available, the large variety in technical terminology (needed for purposes) of instruction, and the numerous methods (used in those works). The student is required to have a ready knowledge of all that. Only then is he considered an accomplished scholar.

Thus, the student must know all the works, or most of them, and observe the methods used in them. His whole lifetime would not

OLD MAN YELLS AT CLOUD



Dickens Abraham Lincoln
is a... a... a... a... a... a... a...

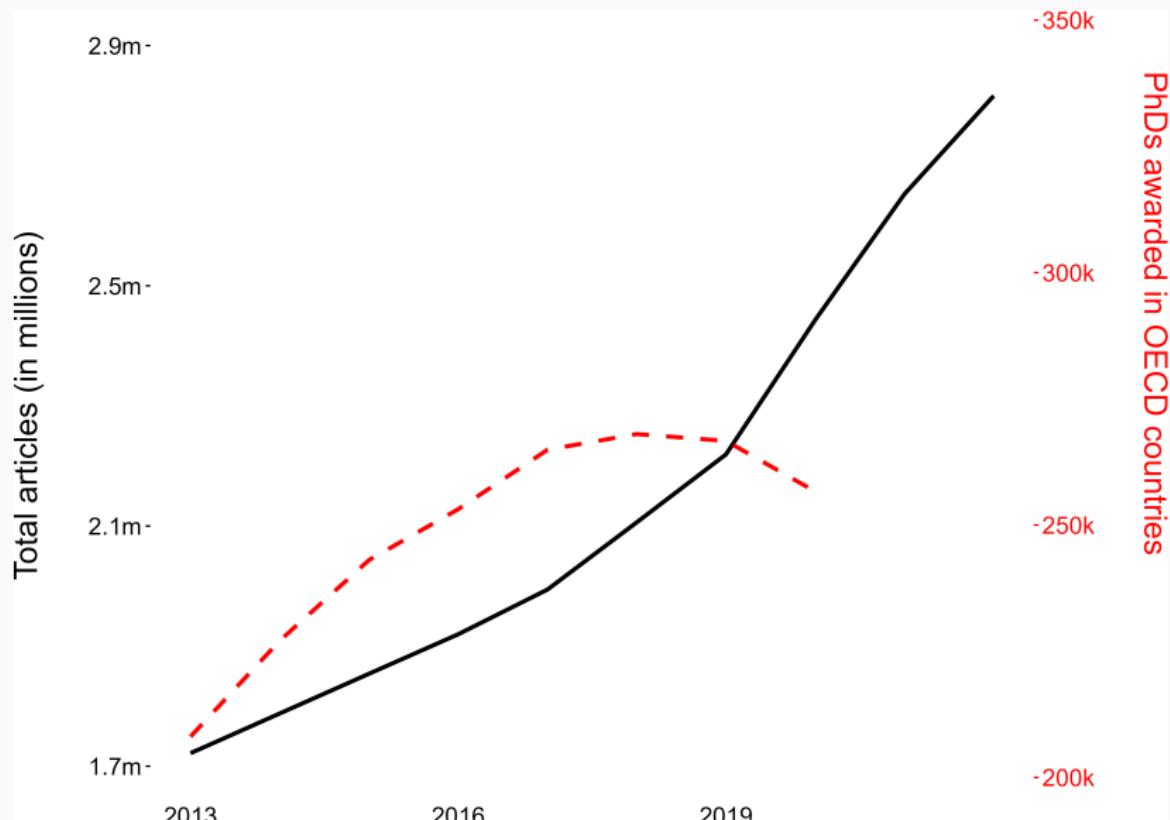
Wad giv' me a per
net, if or, like self:
jer, had elated, w
mischief, Kat, j
d' My giv' sue jol
sc - ueme us, or a
wim, ne, easow, a
162
172
me,

I f m o m
lax, elated
xw, clear, cris

In gran parte, questa è una buona notizia

- Abbondanza di **fondi** per la ricerca
- Open Access: risultati disponibili per **tutti**
- Web: **diffusione** più rapida
- Meno articoli **nei cassetti**
- Più **replicazioni**, meta-analisi...
- Partecipazione attiva di ricercatori del **sud** del mondo

Ma: il numero di ricercatori non cresce altrettanto



Source: N papers -- Scimago website data; N PhDs - OECD

...e c'è una **crepa** in ogni cosa

Dimissioni di editor

Chris Chambers @chrisdc77 · 16h

Following Elsevier's decision to raise the APC for NeuroImage to \$3,450, all editors (inc. EiCs [@fmrib_steven](#) [@tobermann](#) [@BirteUta](#)) from NeuroImage and NeuroImage:Reports have resigned, effective immediately. I am joining this action and have also resigned [imaging-neuroscience.org/Announcement.p...](#)

Elsevier: NeuroImage transition - all editors have resigned over the high publication fee, and are starting a new non-profit journal, Imaging Neuroscience

Summary: NeuroImage has long been the leading journal focusing on imaging neuroscience, with both the highest impact factor and the largest number of papers published annually. NeuroImage's editorial team has tried to convince Elsevier to reduce the publication fee from \$3,450, as we believe large profit is unethical and unsustainable. Elsevier is unwilling to reduce the fee; therefore, with great regret, all editors (more than 40 [ALTc](#) editors) of NeuroImage and NeuroImage:Reports have resigned. We are starting a new non-profit Open Access journal, *Imaging Neuroscience*, intended to replace NeuroImage as our field's leading journal.

19 671 1 617 360,6 k

...e c'è una **crepa** in ogni cosa

Paper mills
che infiltrano
le riviste

NEWS FEATURE | 23 March 2021

The fight against fake-paper factories that churn out sham science

Some publishers say they are battling industrialized cheating. A *Nature* analysis examines the 'paper mill' problem – and how editors are trying to cope.

...e c'è una crepa in ogni cosa



Nick Wise
@nickwizzo

...

The guest editor of an open special issue in [@Symmetry_MDPI](#) on e-learning openly **selling authorship of papers on e-learning**
mdpi.com/journal/symmet...

Traduire le Tweet

You can join the team of authors, if you wish.

The paper will be indexed in both Scopus (Q4) and Web of Science.
1st position costs €390, 2nd position €290, positions 3 to 6 €200.
Payment is after acceptance.
Would you like to be a part of the team? Register at

* ICT

Papers will be published in a book series indexed in Scopus (Q4) and Web of Science.
1st position costs €390, 2nd position €290, positions 3 to 6 €200.
Payment is after acceptance.
If you wish to join, please register at
<https://rtsarev.ru/coauthor/>

**Call for Scopus
coauthors
E-learning and
Economics
200 euro**

If you wish to be in the list of co-authors, you are welcome to join.
1st position costs €390, 2nd position €290, positions 3 to 6 €200.
Payment is after acceptance.
Are you with us? Please, register at
<https://rtsarev.ru/coauthor/>

#scopus #webofscience #wos
#science #coauthor #coauthorship

8:29 PM · 4 mars 2023 · 35,6 k vues

**Posizioni da autore
in vendita**

...e c'è una **crepa** in ogni cosa

Autori iper-prolifici

EL PAÍS

ce & Tech

SILICON VALLEY - YOUTUBE - I

SCIENTIFIC ETHICS >

One of the world's most cited scientists, Rafael Luque, suspended without pay for 13 years

The prolific chemist, who has published a study every 37 hours this year, has been sanctioned by the University of Córdoba over his research work for other institutions in Russia and Saudi Arabia

Più paghi
prima pubblichi

Publish in 3 – 5 weeks from submission*

- Submission to acceptance: 2-3 weeks
 - 1-2 weeks for peer review†
 - 1 week for author revision
- Acceptance to online publication: 1-2 weeks, with proofs within 5 working days and 48 hours for author review

Cost per article: \$7000 / €6200 / £5500

Publish in 7 – 9 weeks from submission*

- Submission to acceptance: 5-6 weeks
 - 3-4 weeks for peer review
 - 2 weeks for author revision
- Acceptance to online publication: 2-3 weeks, with proofs within 10 working days

Cost per article: \$3900 / €3400 / £3000

...e c'è una **crepa** in ogni cosa

PHR Public Health Reviews

CiteScore 9.6 How to publish Submit

EDITORIAL

Public Health Rev. 17 November 2022
<https://doi.org/10.3389/phrs.2022.1605407>

«I Do Not Have Time»—Is This the End of Peer Review in Public Health Sciences?

Nino Künzl^{1,2,3*}, Anke Berger^{1,3}, Katarzyna Czabanowska⁴, Raquel Lucas⁵, Andrea Madarasova Geckova⁶, Sarah Mantwill⁷ and Olaf von dem Knesebeck⁸

Non si trovano
referee

...e c'è una **crepa** in ogni cosa

SCIENCEINSIDER | SCIENTIFIC COMMUNITY

Fast-growing open-access journals stripped of coveted impact factors

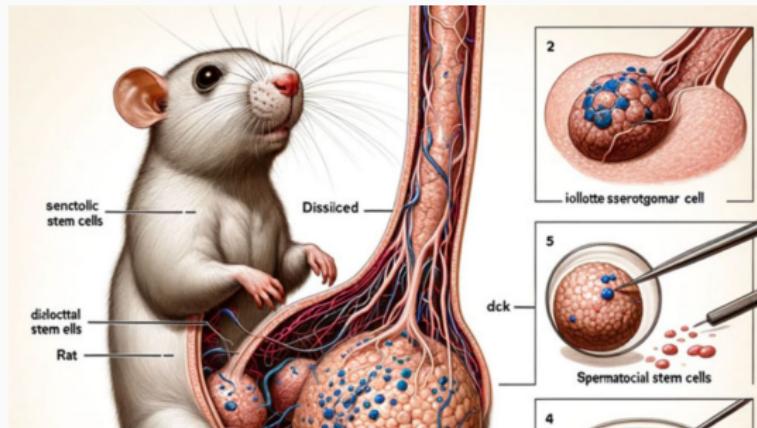
Web of Science delists some 50 journals, including one of the world's largest

28 MAR 2023 • 5:55 PM • BY JEFFREY BRAINARD



Riviste importanti
perdonano l'Impact
Factor

...e c'è una **crepa** in ogni cosa



...e tutto questo **prima**
dell'esplosione dell'IA!

Cosa sta succedendo?

- nuove pratiche
- nuovi *business model*
- nuovi incentivi
- nuovi vincoli
- nuovi **significati**

4 August 1972, Volume 177, Number 4047

SCIENCE

More Is Different

Broken symmetry and the nature of the hierarchical structure of science.

P. W. Anderson

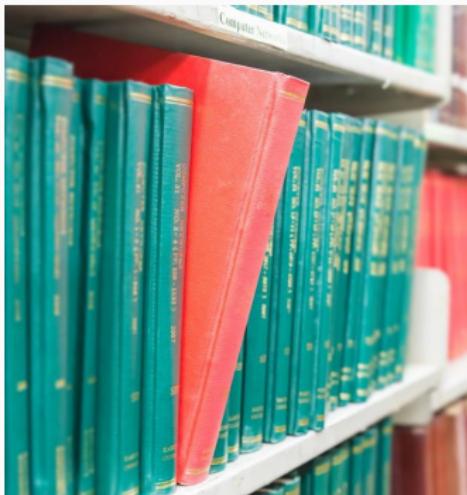
less relevance they seem to have to very real problems of the rest of science, much less to those of science.

The constructionist hypothesis is down when confronted with the difficulties of scale and complexity behavior of large and complex systems of elementary particles. It can not be explained by means of a simple extrapolation of the entities of a few particles. Instead each level of complexity entirely properties appear, and the understanding of the new behaviors require

Un cambiamento semantico

"Rivista"

voleva dire

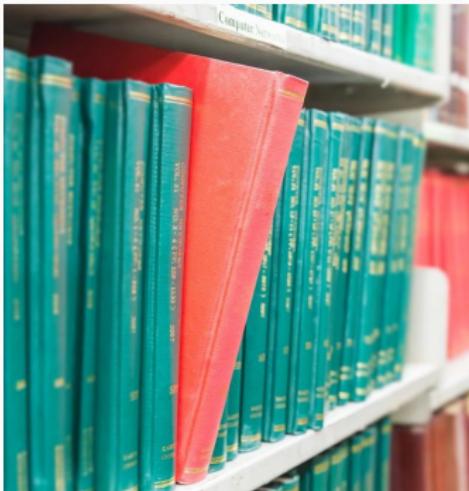


Un oggetto fisico dal
contenuto limitato

Un cambiamento semantico

"Rivista"

voleva dire



Un oggetto fisico dal
contenuto limitato

vuole anche dire

<https://doi.org/10.3390/prm2406082>
Published: 7 April 2023

Cite Details
View Versions in MDPI and ATM Genes
in a Young Patient with MSI-H in a
Precancerous Colonic Lesion
by Antonio Nolasco et al.
Open Access | Last revised: 10 April 2023
<https://doi.org/10.3390/prm2406082>
Published: 22 March 2023

Editor:
Molecular Analysis of KRAS G12C2 Somatic
Mutations Induced Endothelial Cell
Permeability and VEGF Secretion
by Yaxin Guo and Venkateswara Kameswarapalli
Open Access | Last revised: 10 April 2023
<https://doi.org/10.3390/prm2405064>
Published: 18 March 2023

Open Access | Review
CRIF1 siRNA-Encapsulated PLGA Nanoparticles Suppress Tumor Growth in MCF-7 Human Breast Cancer Cells
by Sungjoon Park, Kyung Lee, Seokjune Kim, Hyojun Park, Harsha Nagar, Se-Jeong Choi, Giang-Huong Vu, Miwon Kim, Eun-Ok Lee, Byung-Hwa Jeon, Joo-Young Kim, and Chang-Sub Kim
<https://doi.org/10.3390/prm2405043> (registering DOI) - 10 Apr 2023
Abstract Mitochondrial oxidative phosphorylation (OXPHOS) system dysfunction in cancer cells has been exploited as a target for anti-cancer therapeutic interventions. The downregulation of CRIF1 (cysteine-rich factor 1), an essential micro-RNA-binding factor, can impair mitochondrial function in various cell types. In this study, we investigated [...] Read more
[This article belongs to the Special Issue Nanobiomaterials in Nanomedicine and Nanomedicine]
► Show Figures

Open Access | Review
Detailed Protein-Bound Urease Toxin Interaction Mechanisms with Human Serum Albumin in the Pursuit of Designing Competitive Binders
by Vida Dehghani-Nestoroff and Lucy D. University
<https://doi.org/10.3390/prm2405042> (registering DOI) - 10 Apr 2023
Abstract Chronic kidney diseases are the greatest progression of kidney dysfunction and involves numerous co-morbidities, one of the leading causes of mortality. One of the primary complications of kidney dysfunction is the accumulation of toxins in the bloodstream, particularly protein-based toxins such as urea and uric acid. [...] Read more
[This article belongs to the Special Issue Macroscopic and Microscopic Thermodynamics: From Fundamentals to Practical Applications 2.0]
► Show Figures

Open Access | Review
Crosstalk between Metabolite Production and Signaling Activity in Breast Cancer
by Cagla Cetinkaya, Carlos Lasaosa, María Pello-Cistel and Joaquín Depaele
<https://doi.org/10.3390/prm2405041> (registering DOI) - 10 Apr 2023

Un archivio elettronico
illimitato

"Pubblicazione"

voleva dire

- poche riviste
- tempi lenti
- tassi d'accettazione bassi
- chi legge paga
- *publish and thrive*

"Pubblicazione"

voleva dire

- poche riviste
- tempi lenti
- tassi d'accettazione bassi
- chi legge paga
- *publish and thrive*

vuole **anche** dire

- migliaia di riviste
- tempi rapid(issim)i
- tassi d'accettazione alti
- chi scrive paga
- *publish or perish*

"Special Issue"

voleva dire

- 1-2 all'anno
- Su un tema limitato
- Controllo editoriale ++
- normale > speciale

"Special Issue"

voleva dire

- 1-2 all'anno
- Su un tema limitato
- Controllo editoriale ++
- normale > speciale

vuole **anche** dire

- 1-2 al *giorno*
- su qualunque tema
- Controllo editoriale --
- speciale > normale

"Business model editoriale"

voleva dire

- tante piccole riviste
- chi legge paga
- \$ con abbonamenti
- "*Fai brillare i tuoi gioielli*"

Incentivi: **qualità** ↑↑,
quantità? ...

"Business model editoriale"

voleva dire

- tante piccole riviste
- chi legge paga
- \$ con abbonamenti
- "*Fai brillare i tuoi gioielli*"

Incentivi: **qualità** ↑↑,
quantità? ...

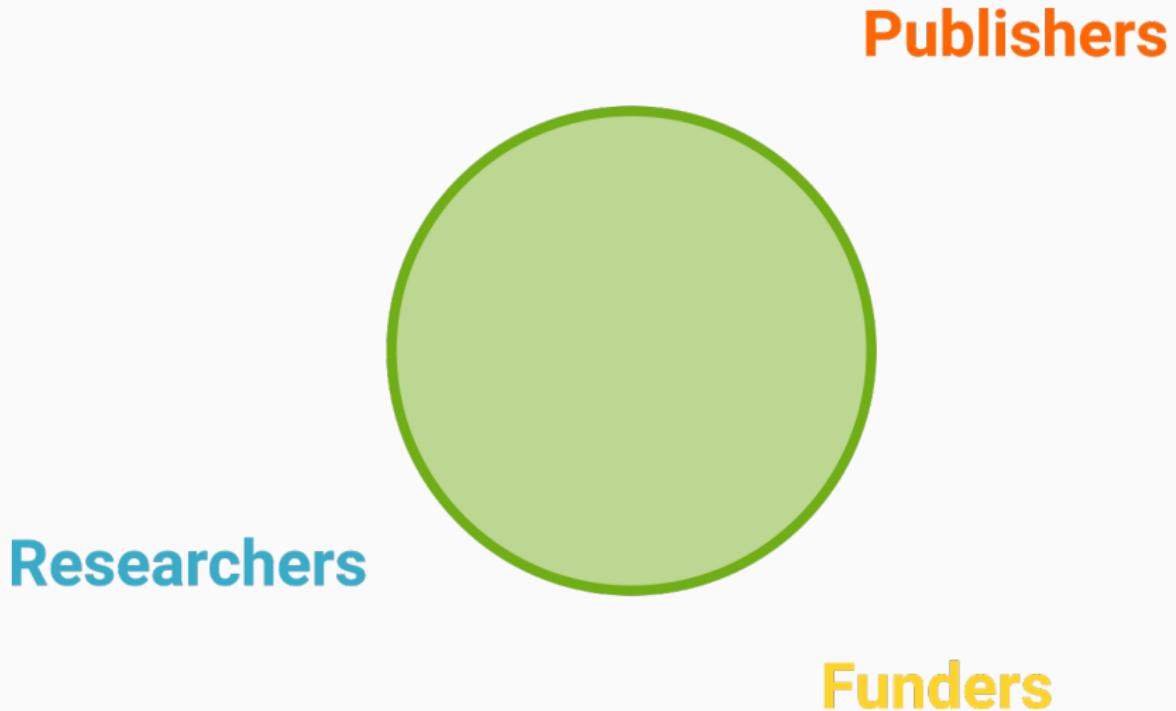
vuole **anche** dire

- poche mega-riviste
- chi scrive paga
- \$ con pubblicazione
- "*Attira più autori*"

Incentivi: **quantità** ↑↑,
qualità? ...

L'editoria scientifica come **sistema**

Un grafico complesso



Le funzioni del sistema per...

i Ricercatori

- diffusione
- reputazione
- segnali

gli Editori

- profitto
- diffusione
- sostenibilità

i Finanziatori

- segnali
- priorità
- accesso pubblico

Gli obiettivi dei giocatori

Ricercatori

- alta reputazione
- basso sforzo
- segnali stabili

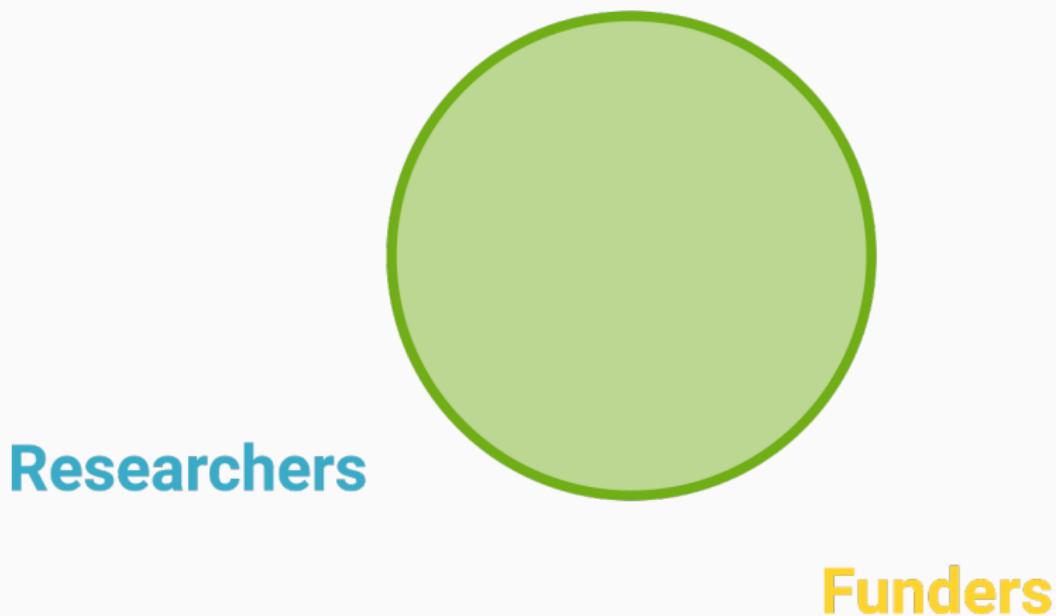
Editori

- alta reputazione
- quantità
- profitto

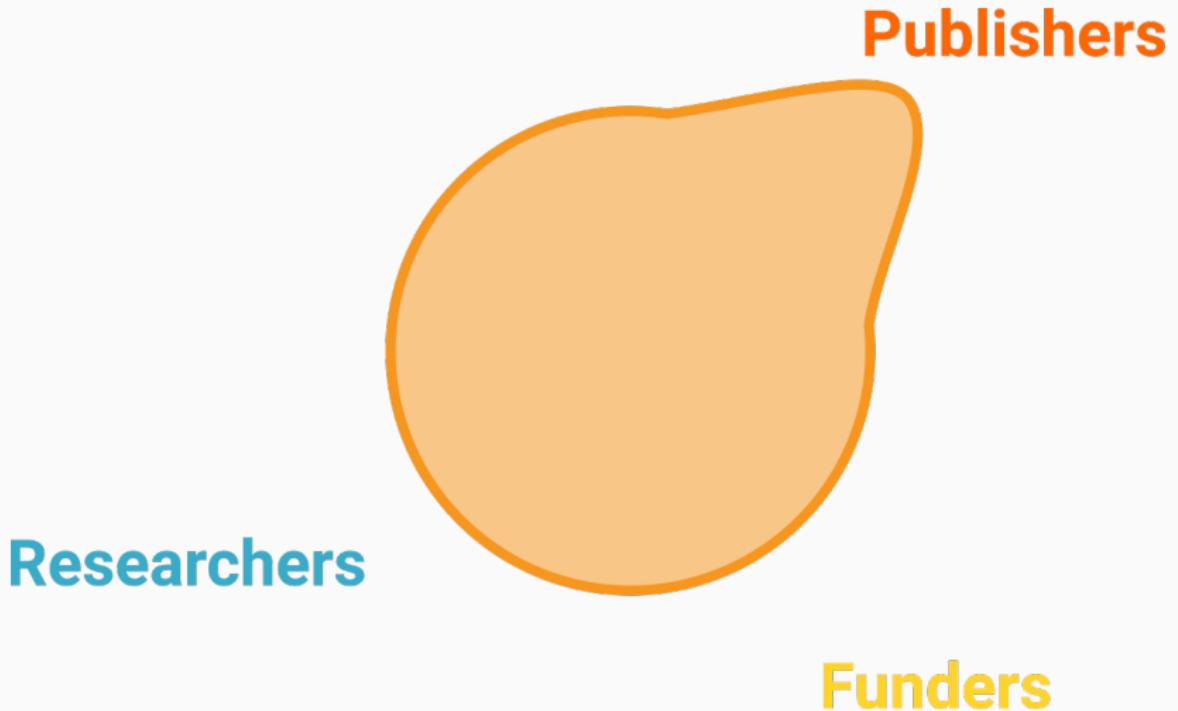
Finanziatori

- stabilità
- segnali
- costi contenuti

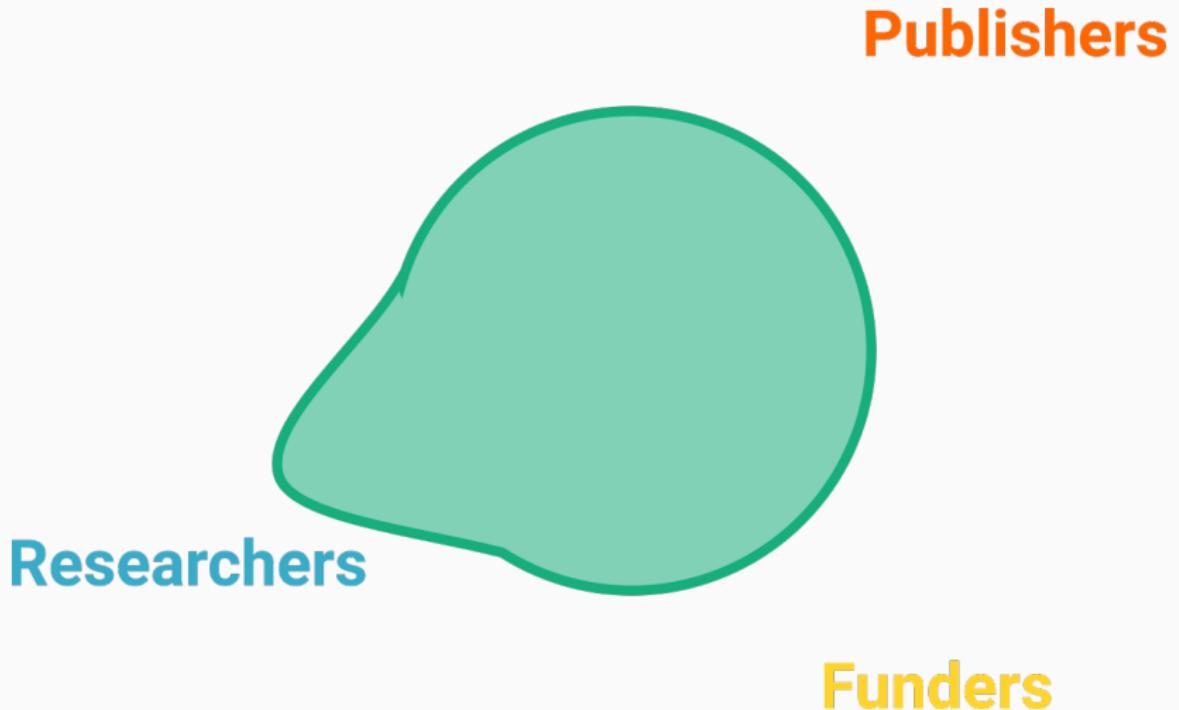
Il sistema sotto pressione



Il sistema sotto pressione



Il sistema sotto pressione

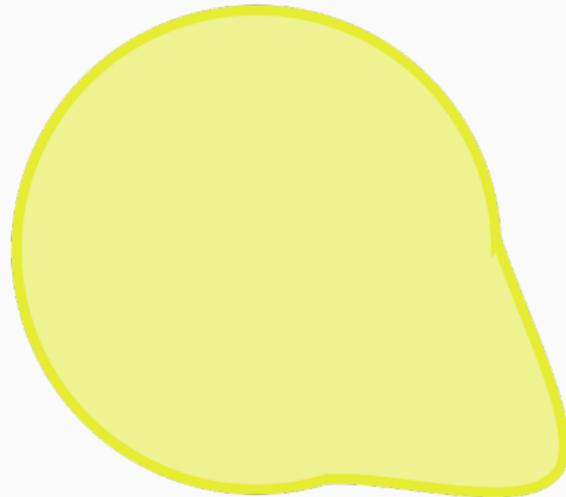


Il sistema sotto pressione

Publishers

Researchers

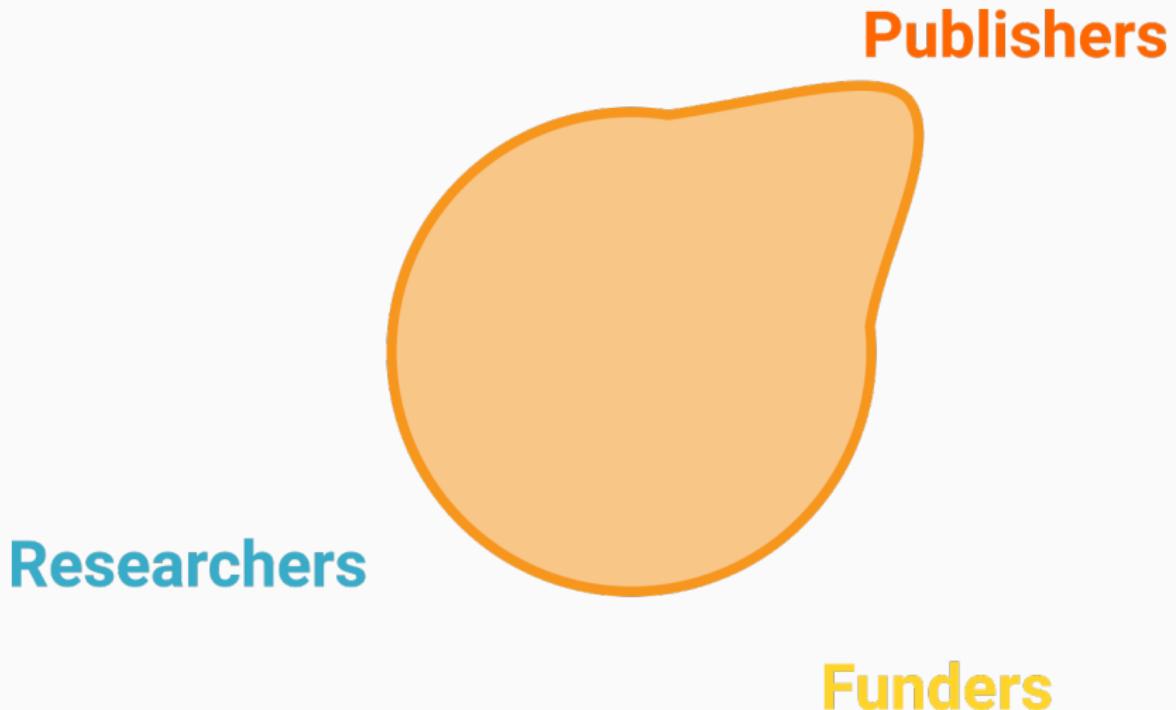
Funders



Il nostro contributo:

Comprendere la pressione imposta
dall'evoluzione delle pratiche degli editori

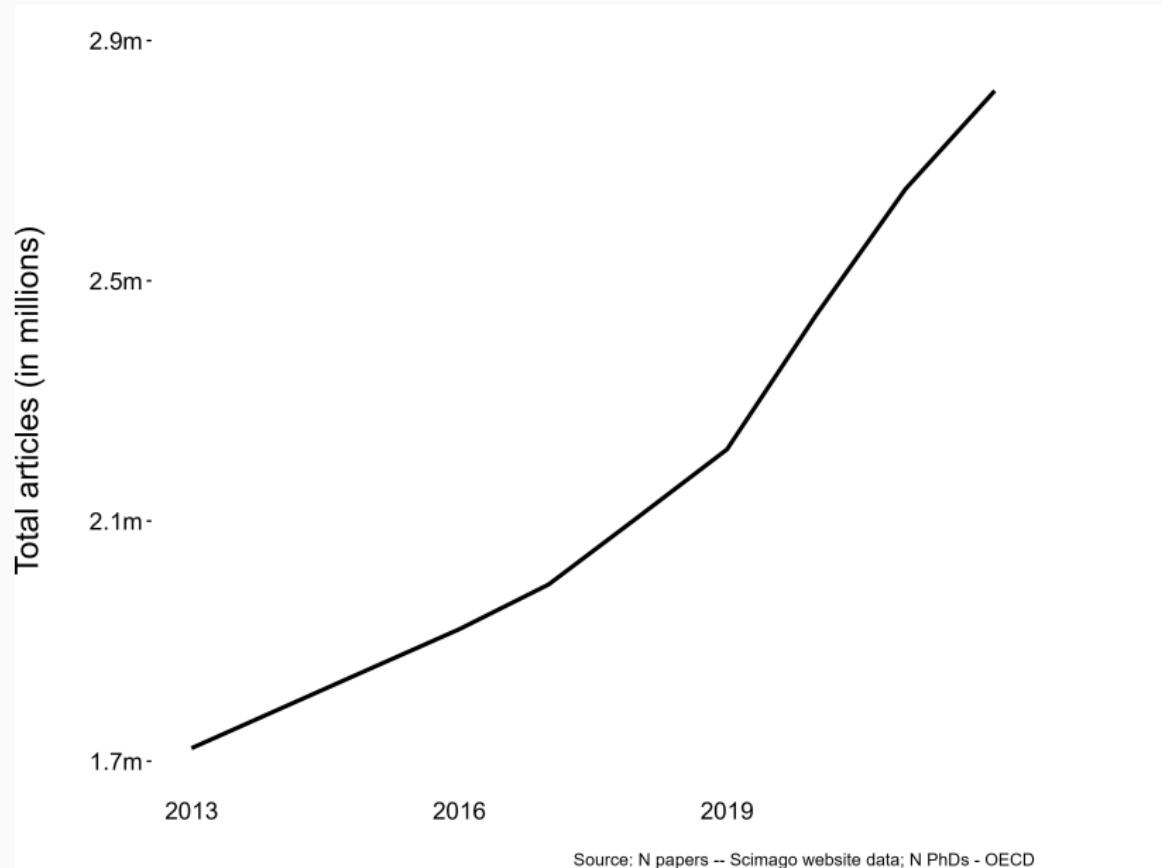
Cioé, questo



Utilizziamo dati da diverse fonti:

- I dati di **Scimago Journal Rankings**
per: confronto tra editori, IF, SJR rank...
- **Web scraping** dei siti degli editori
per: tempi editoriali, special issues
- Dati ottenuti direttamente dagli **editori**
per: tasso di rigetto

Quali tendenze possiamo identificare **dietro** questa crescita?



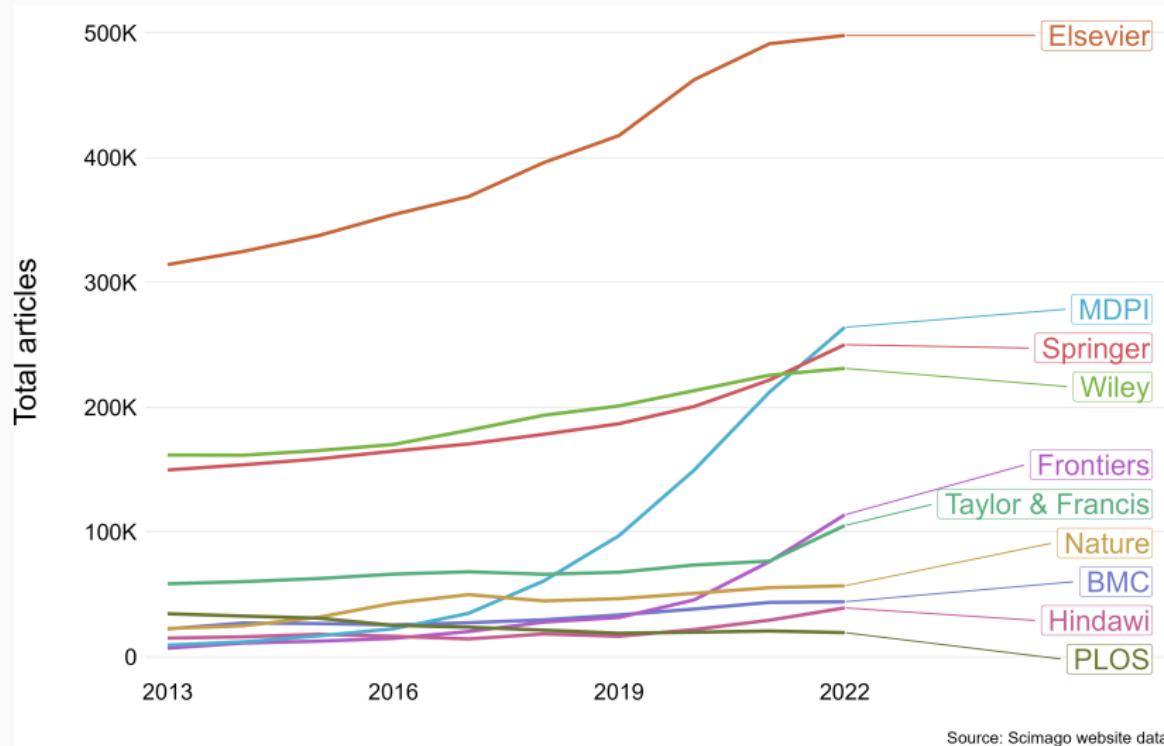
Sviluppiamo **cinque** indicatori di pressione sul sistema:

- Numero d'articoli e **grandezza** delle riviste
- Numero e ruolo delle **Special Issues**
- Tempi **editoriali** (submission >> accettazione)
- Tassi di **rigetto**
- **Inflazione** dell'Impact Factor

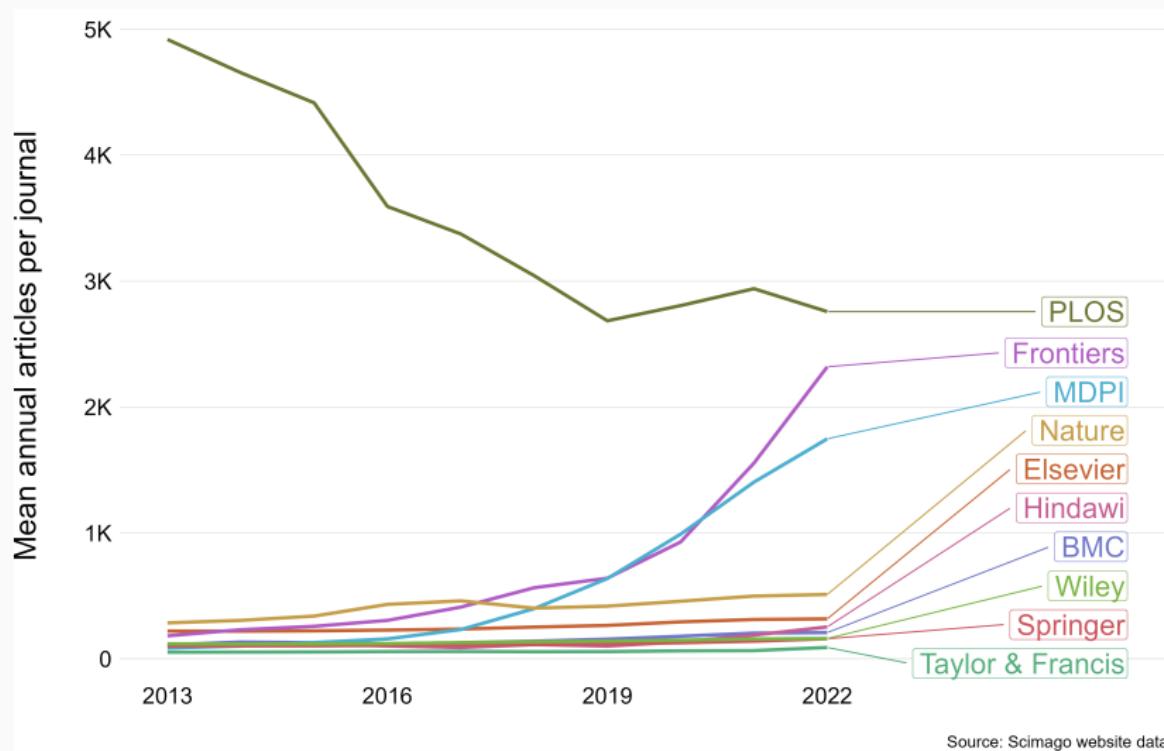
Nessuno degli indicatori è cruciale per se presi tutti insieme, indicano la **pressione esercitata dagli editori**

Numero d'artcioli e *grandezza* delle riviste

La scalata dei nuovi editori



Riviste sempre più grandi



Source: Scimago website data

Riassumendo

Tendenze:

- Crescita vuol dire **concentrazione**, specie in OA

Perché?

- I ricercatori cercano **reputazione**
- Reputazione ⇒ concentrazione (specie in OA)

Rischi

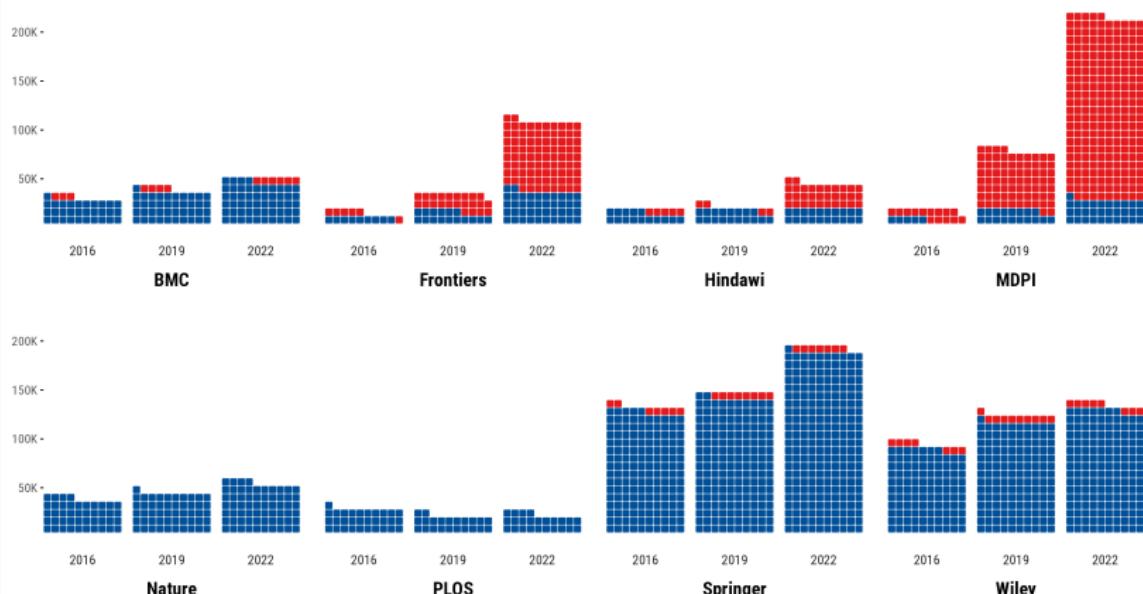
- Quanto si può crescere prima di **perdere** reputazione?
- Rischio d'instabilità dei **segnali** di qualità del mercato

Special Issues

Non poi così speciali

Number of papers published in **regular** vs **special** issues, 2016-22

One square = 800 articles



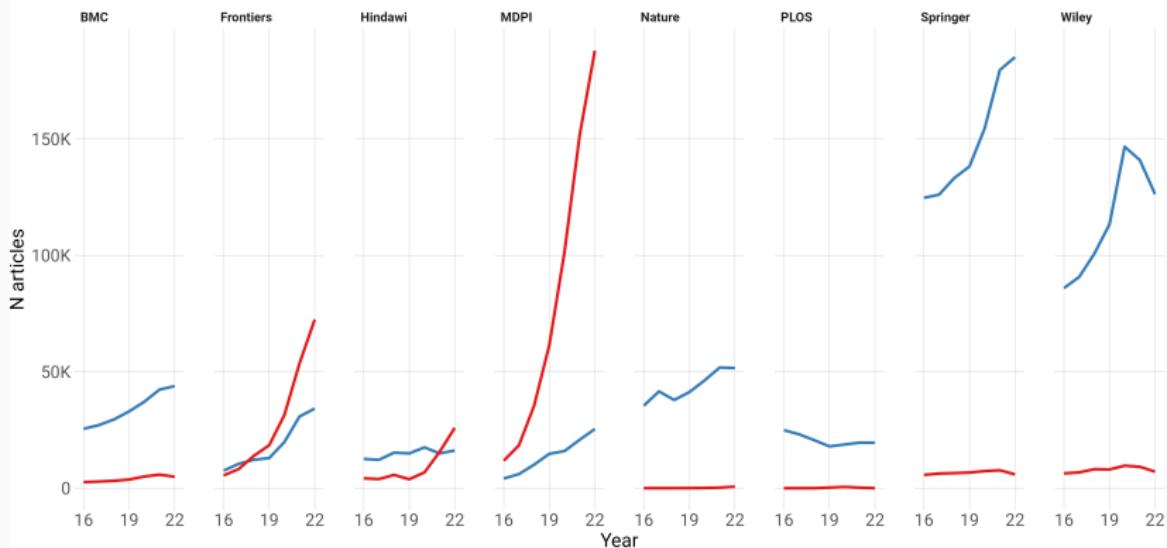
Source: data scraped from the publisher's website

Note: Special Issues are called Collections at PLOS and Topics at Frontiers. For MDPI Collections, Sections and Topics not shown.

Non poi così speciali

Number of papers published in regular vs special issues, 2016-22

Wiley decrease in 2022 likely due to limited coverage of Wiley papers in 2022

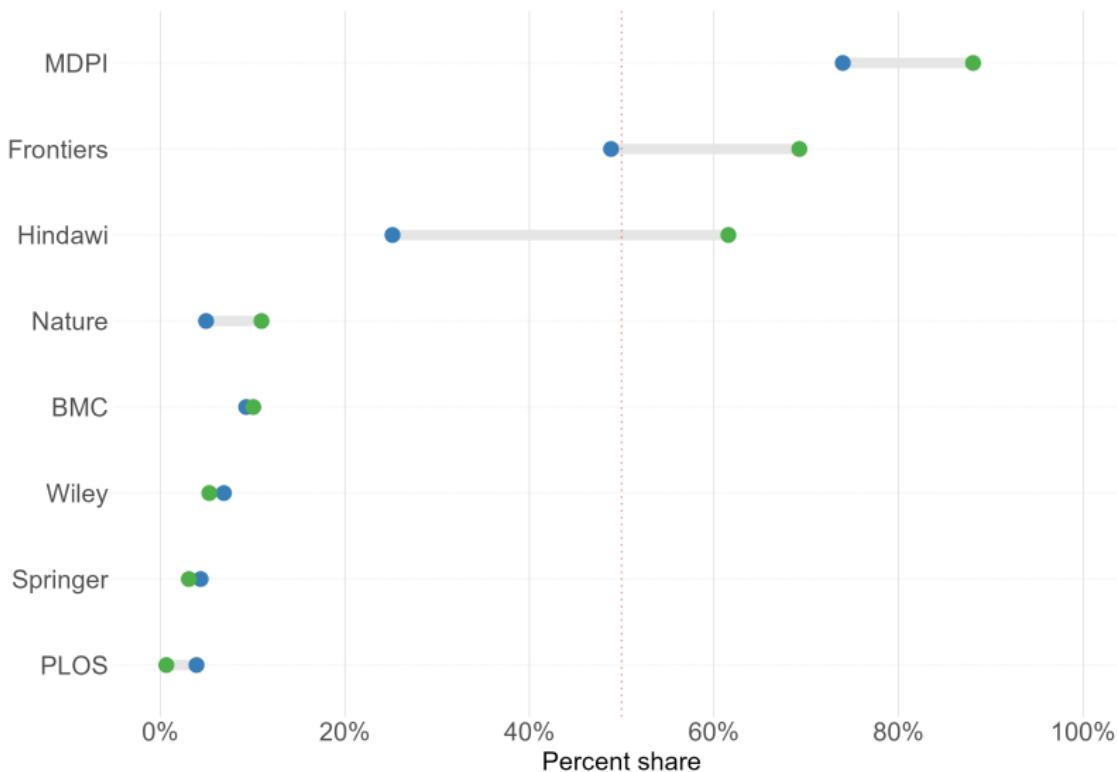


Source: data scraped from the publisher's website

Notes: Special issues are called Collections at PLOS and Topics at Frontiers. For MDPI Collections, Sections and Topics not shown.

Per alcuni editori le riviste sono quasi solo Special issues

Evolution of the share of papers appearing in Special Issues, 2016 to 2022



Source: data scraped from the publishers' website
Special issues are called Collections at PLOS and Topics at Frontiers. For MDPI Collections and Topics not shown.

Riassumendo

Tendenze:

- Special Issues ⇒ crescita eccezionale

Perché?

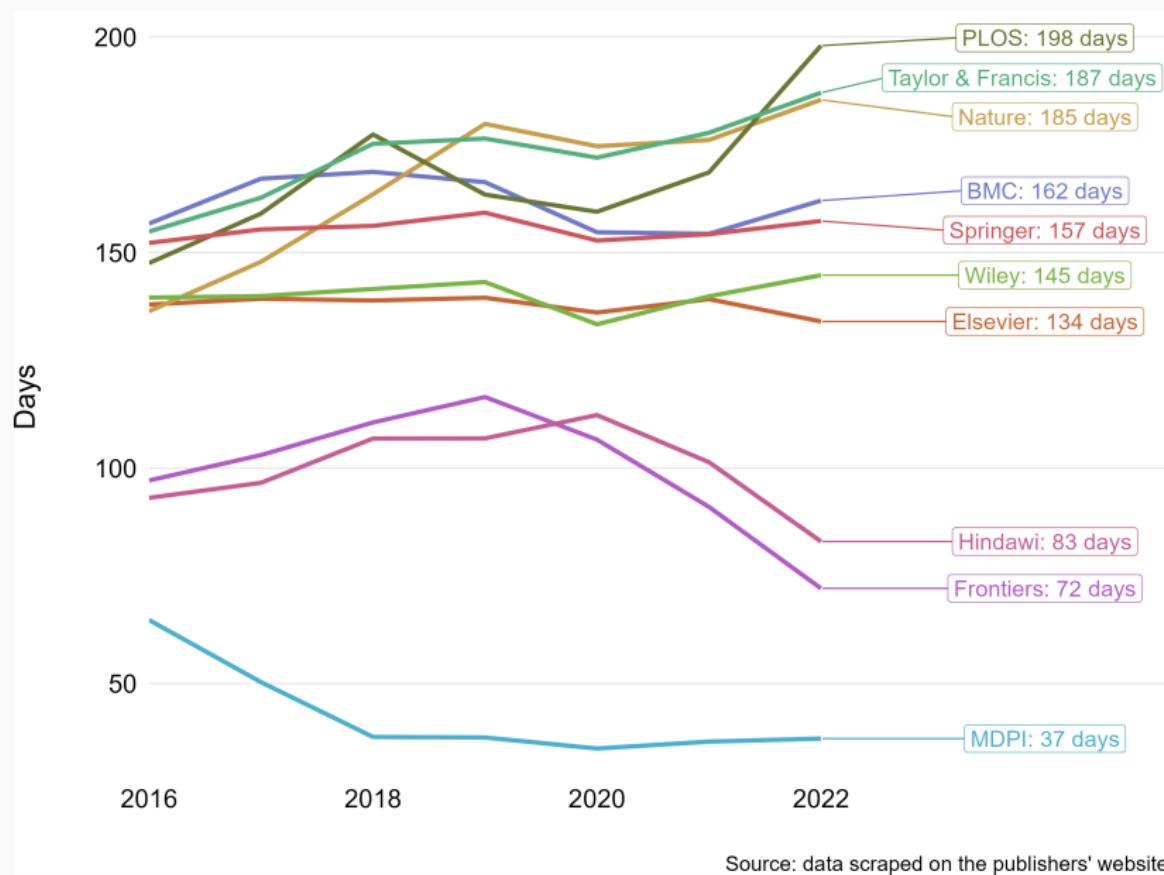
- Mobilità migliaia di guest editors e i loro colleghi

Rischi

- Meno controlli – probabilità più alta di infiltrazione
- Crisi e collasso delle riviste (Hindawi, IJERPH)

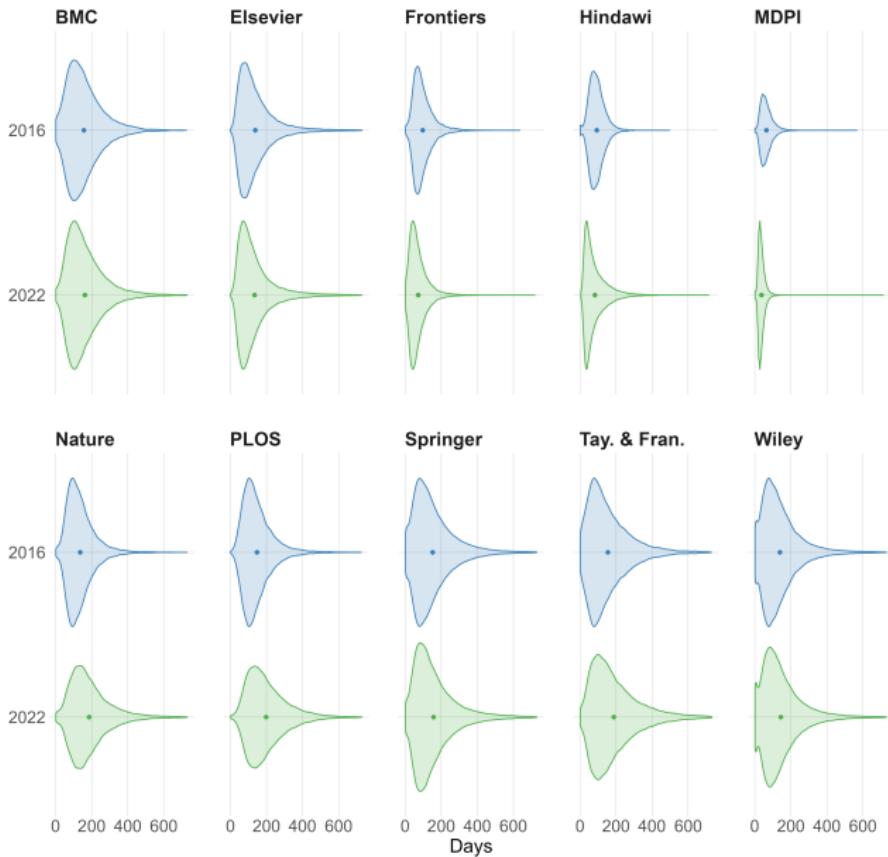
Tempi editoriali

Tempi editoriali si accorciano per gli editori OA commerciali

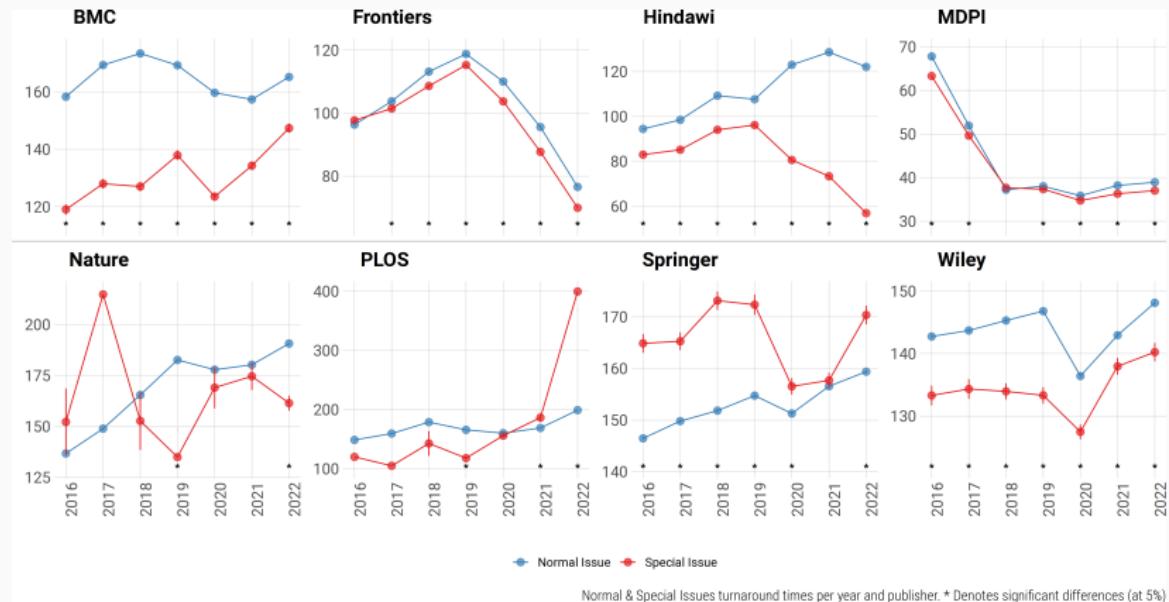


Tempi editoriali sempre più omogenei

Article heterogeneity in turnaround times by publisher, 2016-22



Tempi editoriali più brevi per le special issues



Riassumendo

Tendenze:

- Tempi rapidi: non necessariamente una brutta notizia

Perché?

- Comunanza di incentivi tra autori ed editori (specie OA)

Rischi

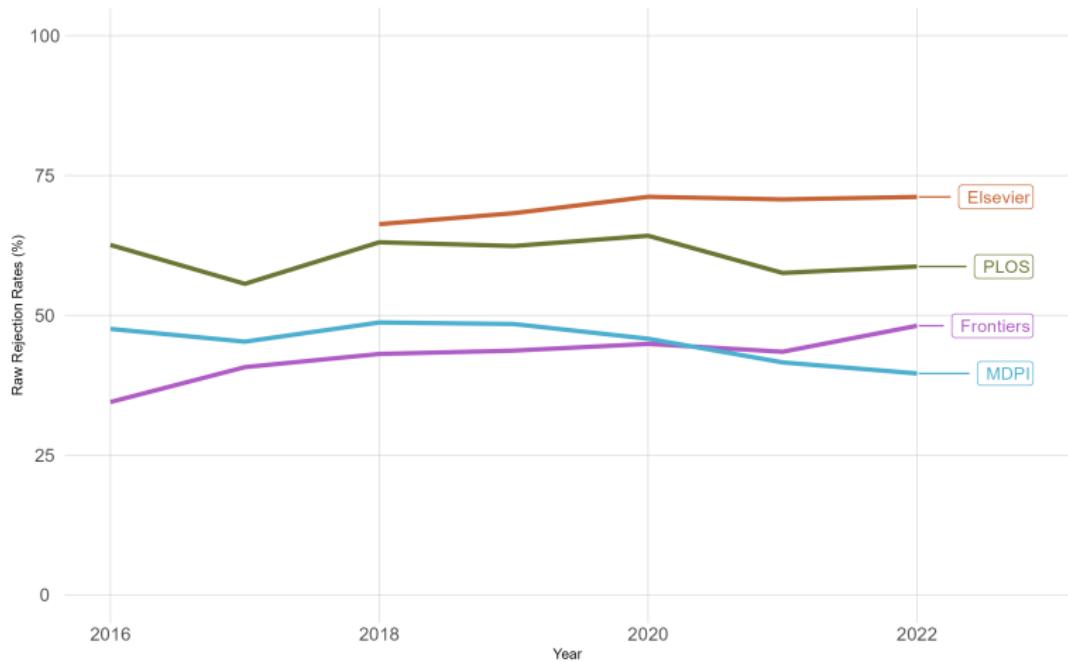
- Tempi così ridotti sono credibili?
- Convergenza tra gli indicatori SI e tempi editoriali

Tasso di rigetto

Rejections tra i diversi editori: valori assoluti

Evolution of raw rejection rates

Raw rejection rates calculated by publishers using own protocols (not standardised)

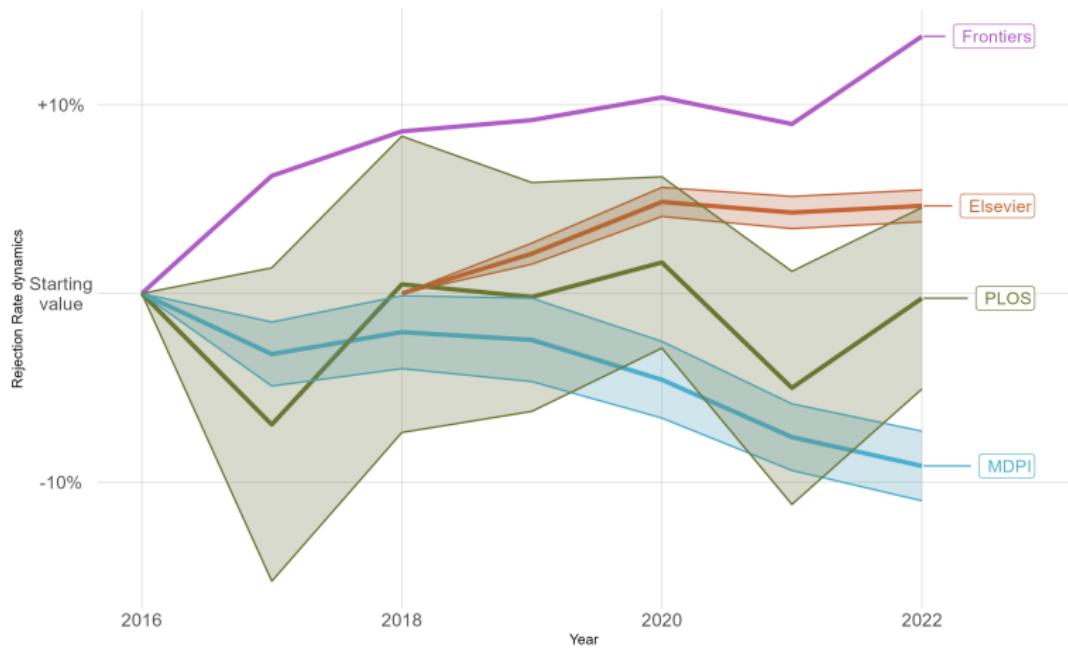


Source: web scraped data

Rejections tra i diversi editori: valori normalizzati

Evolution of normalised rejection rates

With respect to the first year in our dataset



Shaded areas represent 95% CI, Frontiers has no CI as Frontiers data are aggregate over all journals from annual reports
Source: web scraped data

Per dirla tutta: tassi di rigetto in netto rialzo a MDPI dal 2023

Monthly Rejection rates at MDPI, 2022-2023

Simple or weighted by the number of papers published in each journal



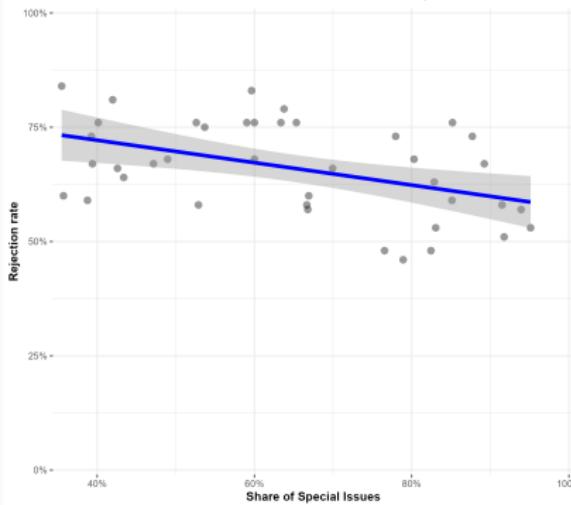
Più Special Issues, meno paper rigettati

Share of Special Issues and Rejection Rate at Hindawi and MDPI

92 MDPI journals with an IF as of January 2023, 72 Hindawi journals for which we have data

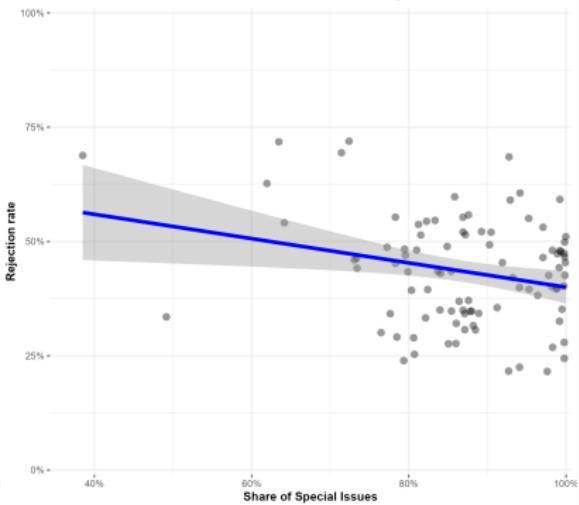
Hindawi

$t_{Student}(72) = -6.07, p = 5.51e-08, \hat{\rho}_{Pearson} = -0.58, CI_{95\%} [-0.72, -0.41], n_{pairs} = 74$



MDPI

$t_{Student}(92) = -2.53, p = 0.01, \hat{\rho}_{Pearson} = -0.26, CI_{95\%} [-0.44, -0.06], n_{pairs} = 94$



Riassumendo

Tendenze:

- Grande eterogeneità
- Variabile chiave, ma **pochi**, pochissimi dati

Perché?

- **Comunanza** di incentivi tra autori ed editori (specie OA)

Rischi

- Meno rigetti ⇒ minore qualità?
- Rischio d'instabilità dei **segnali** di qualità del mercato

Inflazione dell'Impact Factor(IF)

Indicatori d'impatto: Impact factor, Scimago Journal Rank

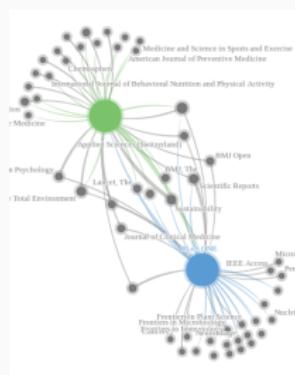
Misuriamo l'**inflazione dell'IF** come IF/SJR

Impact Factor:

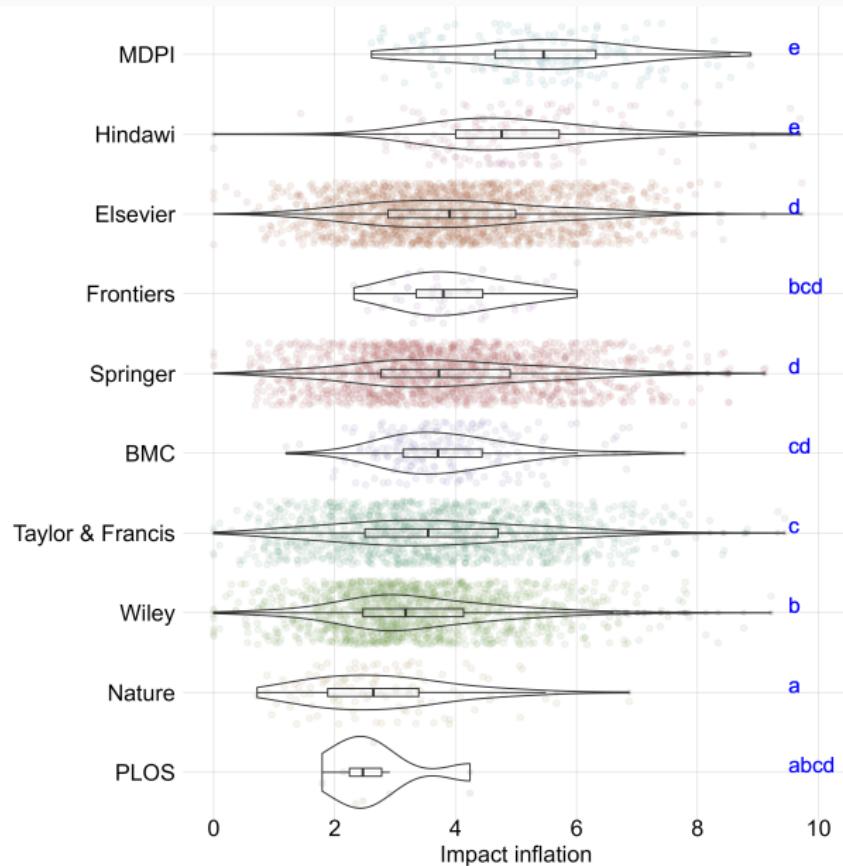
- citazioni/documento su N anni
- facilmente manipolabile

SJR: il grafo delle citazioni conta

- prestigio della fonte
- meno peso se poche fonti
- normalizzato per campo
- più difficilmente manipolabile



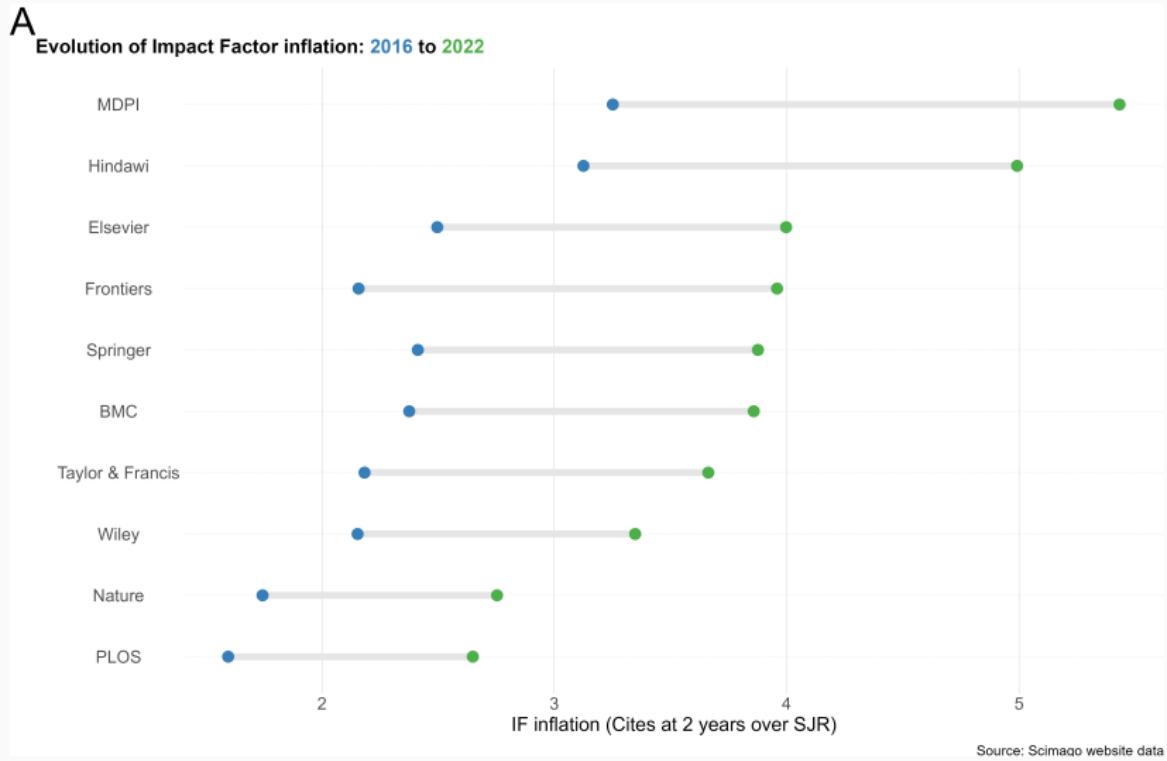
Inflazione dell'IF: 2021



The x-axis is limited at 10 to prevent the plot from stretching to show just a few major outliers

Source: Scimago website data

Inflazione dell'IF: evoluzione



Riassumendo

Tendenze:

- IF gonfiato per **tutti** gli editori – con alcuni picchi

Perché?

- **Goodhart's law:** quando un indicatore diventa un obiettivo, cessa di essere un buon indicatore

Rischi

- Rischio d'instabilità dei **segnali** di qualità del mercato

Una vista d'insieme

Il quadro complessivo

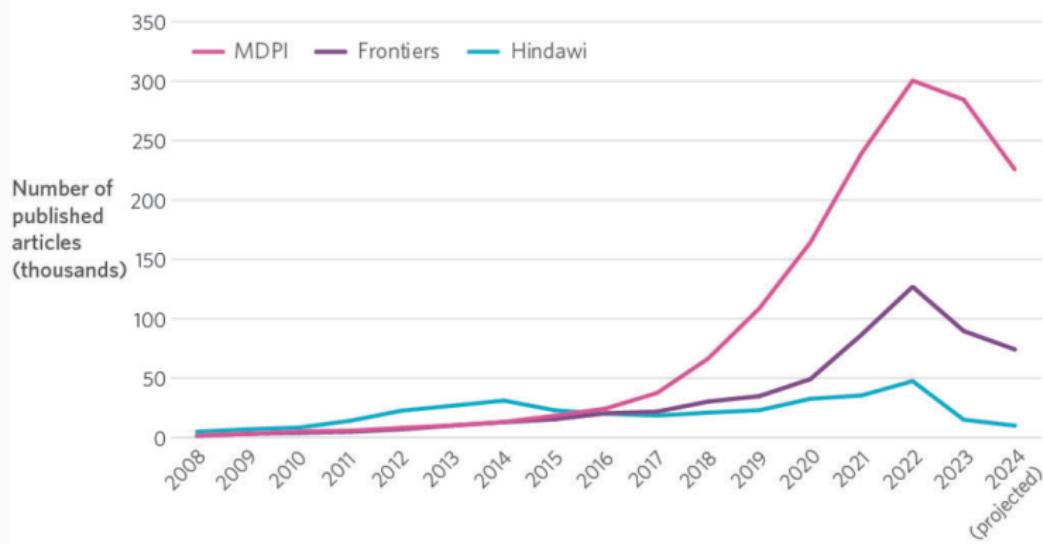
Strain indicators at a glance: 2022 and evolution 2016-22

	2022					Change 2016-22				
	TOTAL ARTICLES	SHARE SPECIAL ISSUE	TURNAROUND TIME (DAYS)	REJECTION RATE	IMPACT INFLATION	TOTAL ARTICLES	SHARE SPECIAL ISSUE	TURNAROUND TIME (DAYS)	REJECTION RATE	IMPACT INFLATION
Overall	2816k	38%	116	62%	3.3	+47%	+27pp	-23	-1pp	+1.1
Elsevier	498k	--	134	71%	4.0	+41%	--	-4	+5pp*	+1.5
MDPI	264k	88%	37	40%	5.4	+1080%	+14pp	-28	-8pp	+2.2
Springer	250k	3%	157	--	3.9	+52%	-1pp	+5	--	+1.5
Wiley	231k	5%	145	--	3.3	+36%	-2pp	+5	--	+1.2
Frontiers	114k	69%	72	48%	4.0	+675%	+20pp	-25	+14pp	+1.8
Taylor & Francis	105k	--	--	--	3.7	+59%	--	--	--	+1.5
Nature	57k	11%	185	--	2.8	+32%	+6pp	+49	--	+1
BMC	44k	10%	162	--	3.9	+73%	+1pp	+5	--	+1.5
Hindawi	39k	62%	83	74%	5.0	+139%	+36pp	-10	+3pp*	+1.9
PLOS	19k	1%	198	59%	2.6	-23%	-3pp	+50	-4pp	+1.1

E dal 2002?

Tanto tuonò, che piove

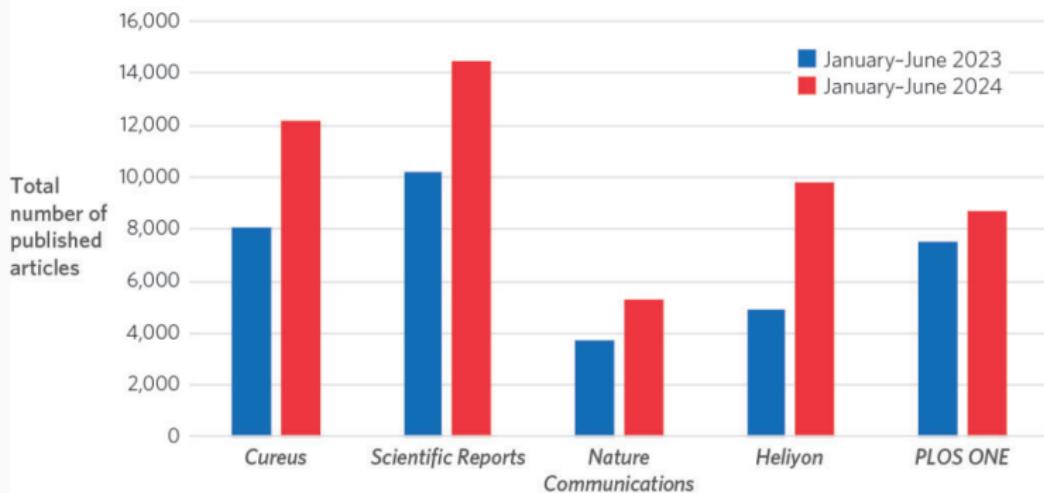
Published article volumes for MDPI, Frontiers, and Hindawi, 2008-2024



2024 projections extrapolated from first half year data. Results filtered to eliminate non-journal article content, such as conference abstracts, retraction notices, and front/back matter.
Source: Dimensions (www.dimensions.ai).

"Perché tutto rimanga come è, bisogna che tutto cambi."

Total published article volumes for selected megajournals, 2023 versus 2024



Results filtered to eliminate non-journal article content, such as conference abstracts, retraction notices, and front/back matter.

Source: Dimensions (www.dimensions.ai).

Che fare?

Qualche spunto di riflessione

- Incentivare la qualità più che la quantità (*vaste programme...*)
- Anticipare l'effetto perverso degli incentivi
- Navigare la tensione tra accessibilità e sostenibilità finanziaria del sistema
- Coordination game: ogni cambiamento deve probabilmente venire dall'alto – da chi finanzia il sistema (Gates foundation, NSF, ANR, DFG...)

Grazie – tutte le info qui:

