

ULiège Open Science Day, Nov 27th, 2025

Neuroscience Researchers' Perception of Preprints and Practice of Citing Preprints: Preliminary Results

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Presentation Agenda

 **Context:** The Rise of Preprints

 **The Dilemma:** To Cite or Not to Cite?

 **Research Objectives**

 **Survey:** Questionnaire and Data

 **Preliminary Findings**

 **Discussion**

Preprints in the Open Science Ecosystem

- ❑ Complete manuscript shared [free of charge] without peer review
- ❑ Often also submitted for peer review and publication in a traditional journal
- ❑ Accelerating scholarly communication and facilitating public access

Transparency

Early sharing increases the transparency of the research lifecycle, not just final results.

Collaboration

Early & open sharing encourages global feedback and collaboration before the "final" version is out.

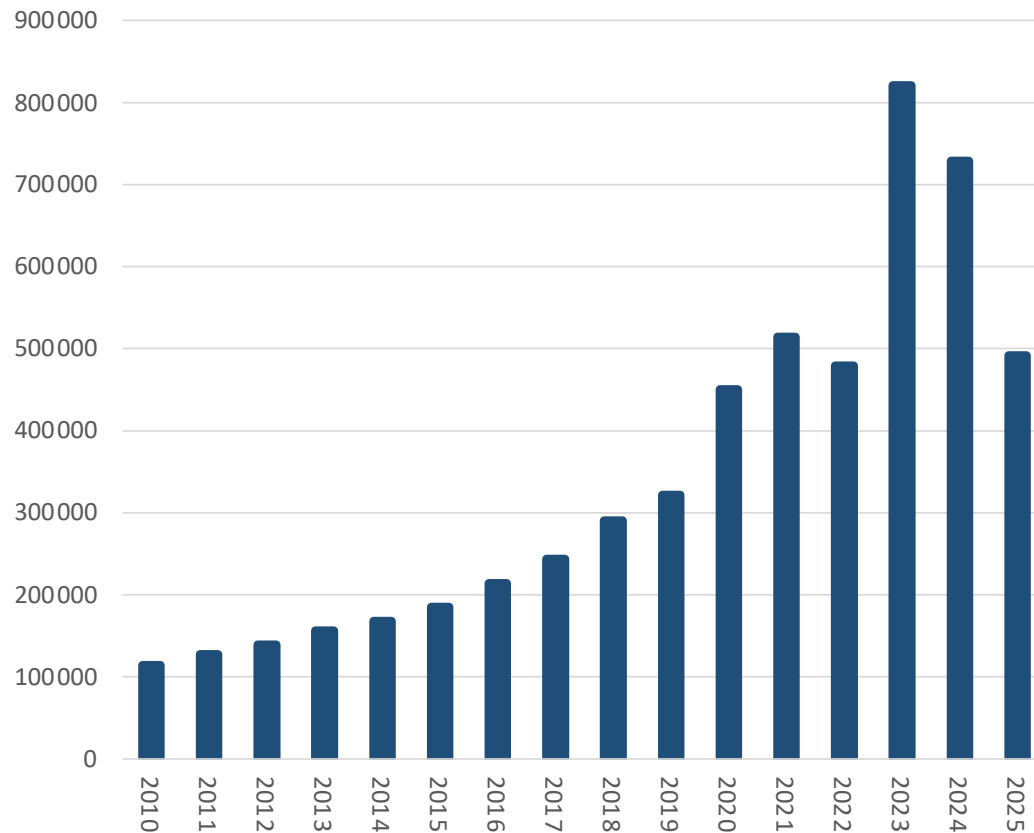
Accessibility

Open sharing Removes paywalls, giving access to researchers from low-resource institutions.

Efficiency

Reduces the "file drawer" problem and accelerates scientific discovery.

Exponential Growth in Preprints

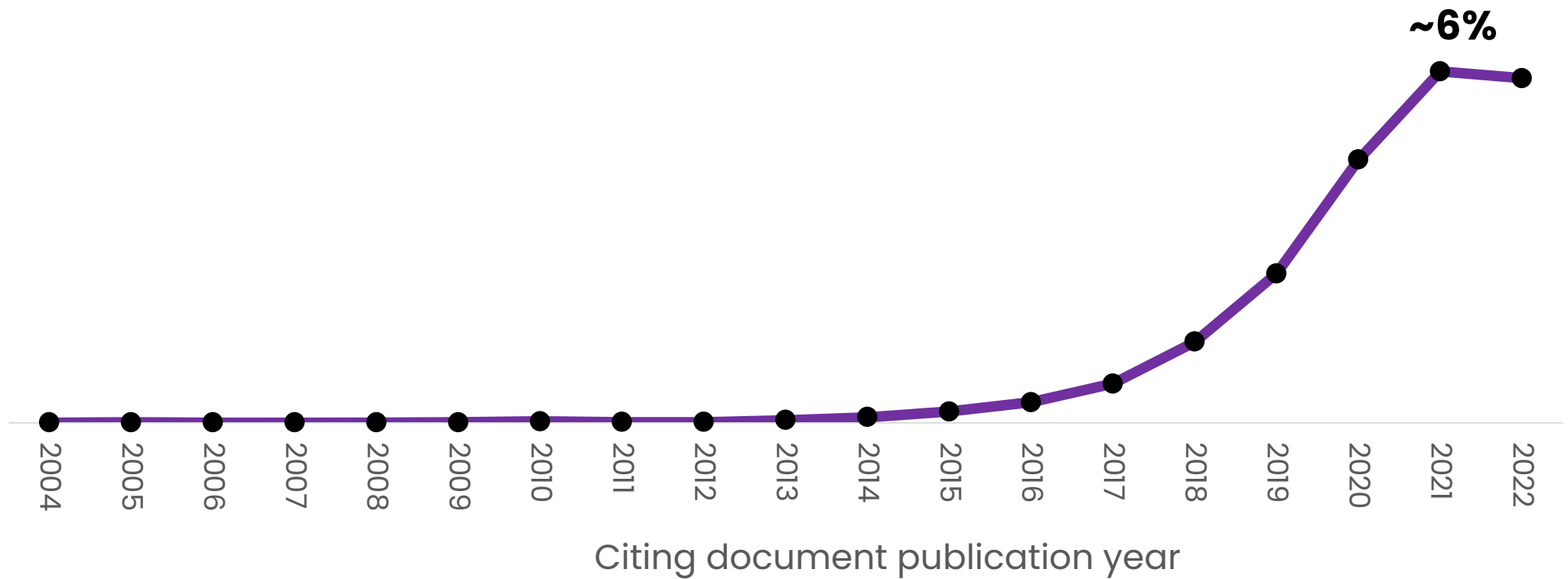


OpenAlex (Nov. 2025):

6,450,000 preprints



Citations to Preprints in Neuroscience Literature



Source: "Exploring Neuroscience Researchers' Trust in Preprints through Citation Analysis", <https://doi.org/10.1101/2024.04.29.591455>

The Citing Dilemma: To Cite or Not to Cite?

Arguments For:

- ❑ Acknowledges the original idea creator;
- ❑ Provides the most current evidence;
- ❑ Validates preprints as a legitimate output;
- ❑ "Interim Research Product" (NIH)

Arguments Against:

- ❑ Content hasn't been peer reviewed;
- ❑ Risk of citing incorrect/false data;
- ❑ "Dilution" of citation quality and credibility;
- ❑ Confusion if the paper changes significantly

Policies



Springer Nature:

"Preprints may be cited in the reference list... Authors should disclose details including DOI."



SLEEP Journal:

SLEEP does not allow citation of preprint manuscripts in final published articles.



eLife Journal:

"eLife only peer-reviews submissions that are available as preprints" and "reviewers' reports would be published alongside the paper, together with a short editorial assessment of the work's significance and rigor" to combine "the immediacy and openness of preprints with the scrutiny of peer-review by experts".



NIH:

"The NIH encourages investigators to use interim research products, such as preprints, to speed the dissemination and enhance the rigor of their work."

Preprints Can be cited in: Grant Applications and Progress Reports (RPPR).

Research Objectives

- ? (1) Assessing neuroscience researchers' familiarity with preprints;
- ? (2) Quantifying self-reported vs. actual citations to preprints in previous publications;
- ? (3) Exploring researchers' perceptions of credibility and scientific rigor of preprints;
- ? (4) Identifying motivations (e.g., rapid dissemination, early priority claim) and concerns (e.g., lack of peer review, potential misinformation, intellectual scooping) that influence researchers' preprint citation decisions;
- ? (5) Examining how researchers navigate the ambiguity of journal policies regarding preprint citation;
- ? (6) Investigating how researchers' sociodemographic status (e.g., sex, research experience, career stage, specialization, geographic location) are associated with preprint citation practices

Methods – Survey Instrument



❑ A 31-item questionnaire

❑ Validated by five experts in:

Information Science, Open Science, Digital Literacy, Bibliometrics, Scholarly Communication, & Neuroscience

Sociodemographic info. & Use of Preprints

Sex, Research Experience, Affiliation Country, Professional Status, Area of Research, Familiarity and Use of Preprints

Preprints Credibility & Scientific Rigor

Level of agreement with statements on credibility and scientific rigor of preprints.

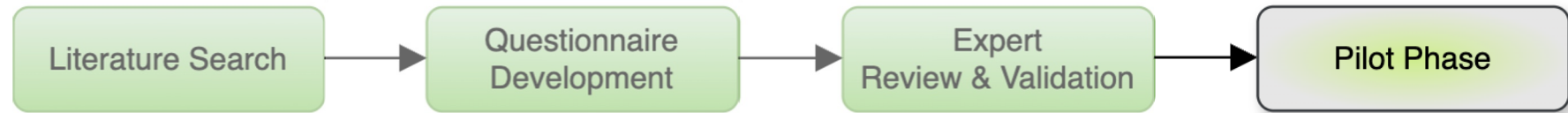
Motivations & Concerns Influencing Citation Decisions

Motivations for posting and citing preprints

Citation Practice & Policy Navigation

How of citing preprints & citation policies

Methods – Data Collection



❑ Search query on Scopus:

DOCTYPE (ar OR re) AND (LIMIT-TO (PUBYEAR , 2024) OR LIMIT-TO (PUBYEAR , 2025)) AND (LIMIT-TO (SUBJAREA , "NEUR")) AND (LIMIT-TO (SRCTYPE , "j")), on 13/11/25

❑ 158,494 publication records found

❑ Pilot phase with randomly selected 133 neuroscience researchers (20% of the total sample size; 139 records screened)

❑ First corresponding authors' emails extracted from Scopus

❑ Call for participation sent!

❑ 5 responses received within two weeks

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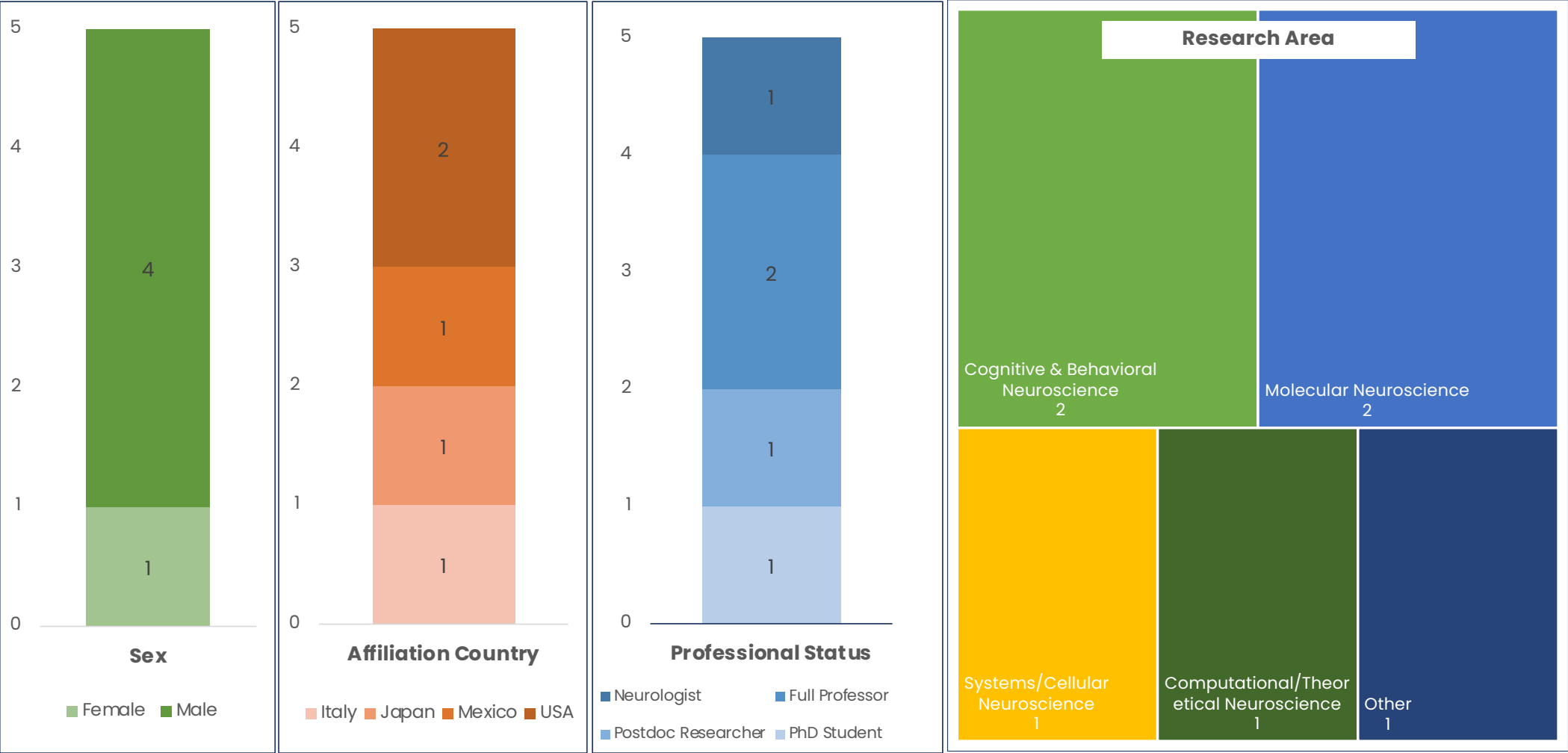
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Preliminary Findings: Demographics



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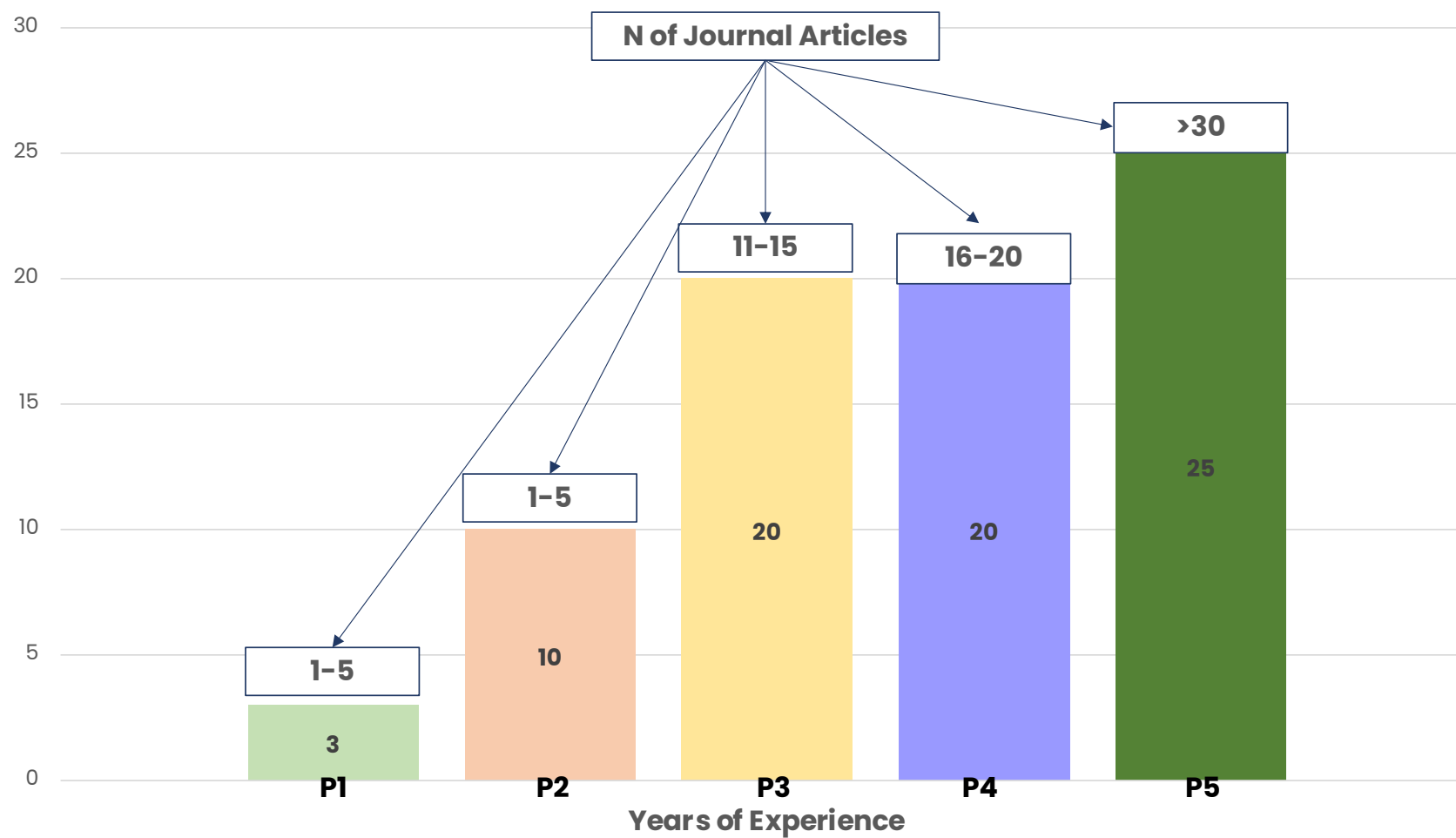
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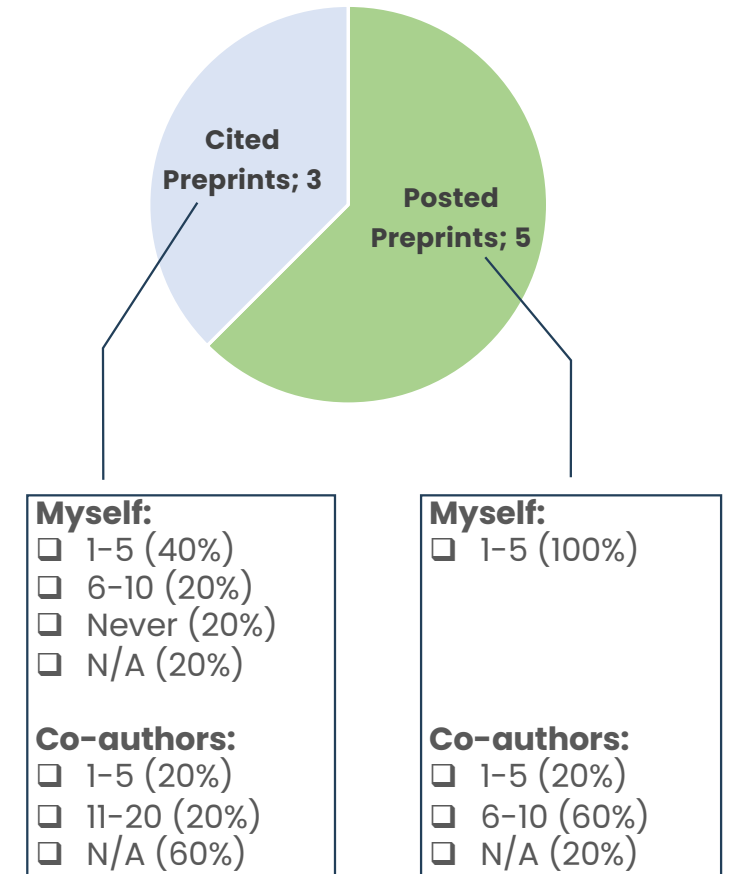
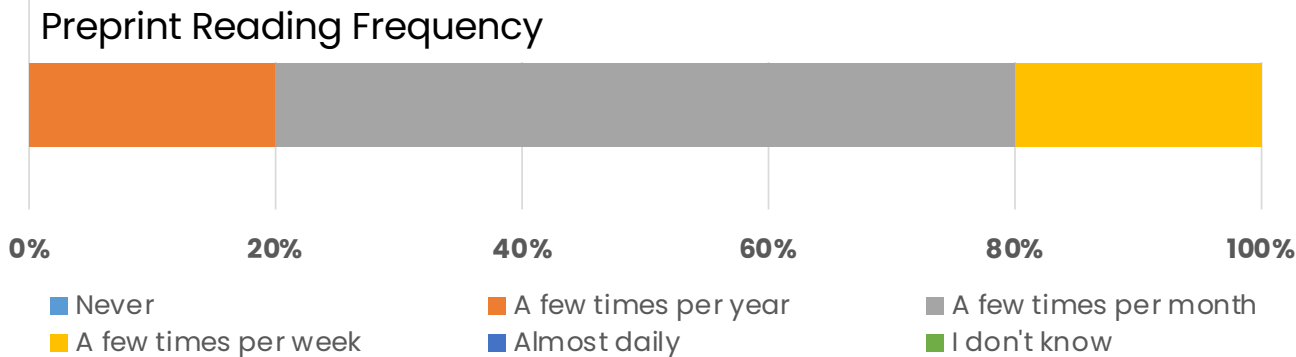
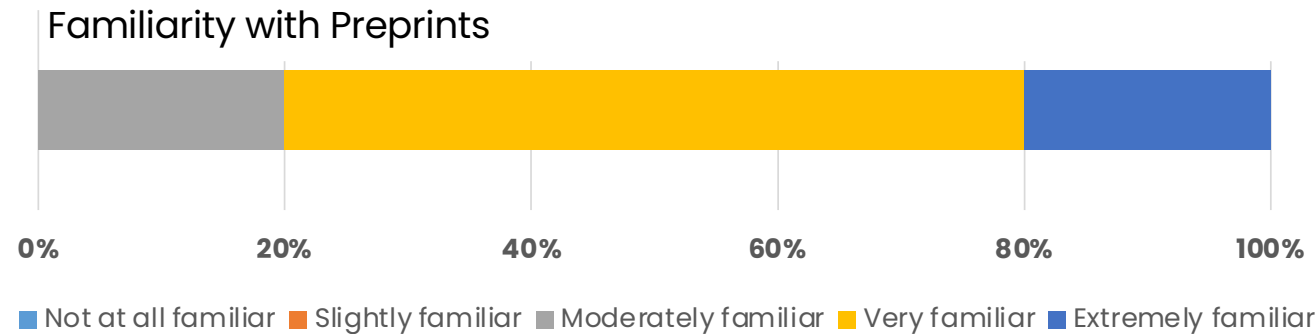


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Preliminary Findings: Research Experience



Preliminary Findings: Familiarity & Use



Preliminary Findings: Motivations for Preprinting

- ① ① ④ ★ ★ ★ ☆ ☆ Establishment of priority/early contribution
- ② ② ⑤ ★ ★ ★ ☆ ☆ Faster dissemination of findings
- ② ③ ★ ★ ☆ ☆ ☆ Enhanced reach and visibility
- ③ ④ ★ ★ ☆ ☆ ☆ Potential citation advantage
- ⑤ ⑥ ★ ★ ☆ ☆ ☆ Contribution to open science practices
- ① ★ ☆ ☆ ☆ ☆ Facilitation of feedback and improvement
- ③ ★ ☆ ☆ ☆ ☆ Rejections from one or more peer-reviewed journals

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Preliminary Findings: Credibility & Rigor*

Preprints generally contain content of similar scientific quality to peer-reviewed articles.



The lack of peer review makes me hesitant to rely on the findings reported in a preprint.



Preprints often contain errors or methodological flaws that peer-review would typically catch.



Findings in preprints are prone to being misinterpreted by non-experts (e.g., journalists, policymakers) due to their non-peer-reviewed status.



0% 10% 20% 30% 40% 50% 60% 70% 80% 90% 100%

Strongly disagree

Disagree

Neutral

Agree

Highly agree

*N = 4

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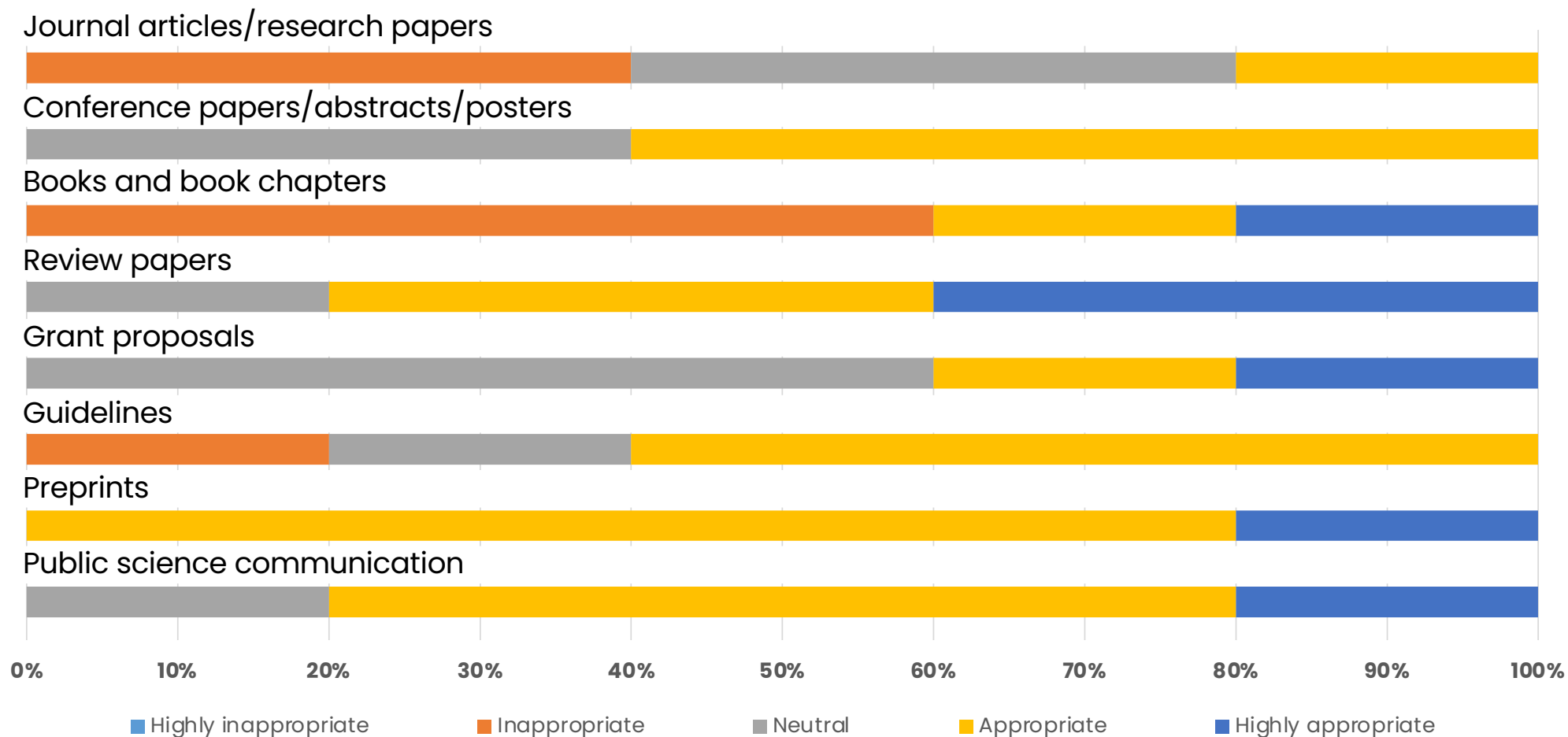
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Preliminary Findings: Citing Preprints



Preliminary Findings: Motivations for _(not) Citing Preprints

- ① ② ③ ★ ★ ★ ☆ ☆ Referencing emerging ideas/methods
- ③ ④ ④ ★ ★ ★ ☆ ☆ Accessing novel findings
- ① ③ ★ ★ ☆ ☆ ☆ Referencing the existing literature not published in peer-reviewed articles
- ① ⑥ ★ ★ ☆ ☆ ☆ Giving credit to early contributors
- ② ④ ★ ★ ☆ ☆ ☆ Engaging with the most up-to-date literature
- ② ⑤ ★ ★ ☆ ☆ ☆ Providing background information to support a claim in your scholarly work
- ⑤ ⑦ ★ ★ ☆ ☆ ☆ Supporting open science practices



Preferring to cite the peer-reviewed version if available
Lack of peer-review and concerns about credibility and rigor

Past, Ongoing, & Future Plans

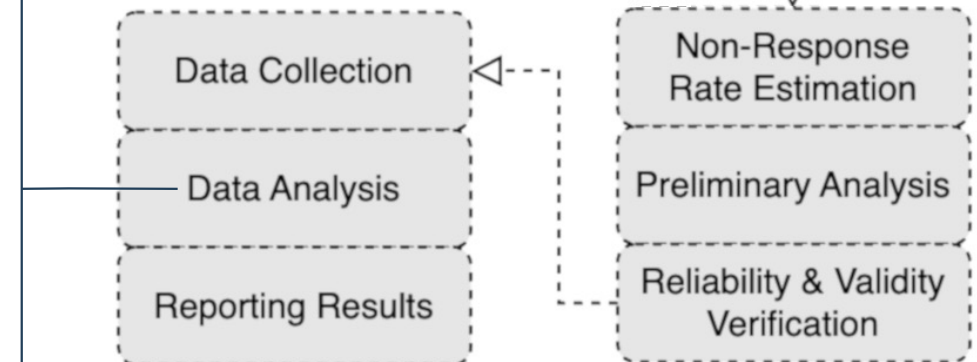


❑ Descriptive statistics:

- Study sample's sociodemographics
- Neuroscience researchers' perspective on citing preprints

❑ Inferential statistics:

- χ^2 test:
 - Do preprint citation practices differ between sociodemographic groups?
- Regression analysis:
 - Do sociodemographic factors predict preprint citation practices?
 - Do sociodemographic factors predict « preprint credibility » score?
 - Do sociodemographic factors predict researchers' general viewpoint on preprints?
 - Does research experience (No. of publications & years of experience) predict preprint citation practices?
 - Do journal policies predict preprint citation practices?
 - Do sociodemographics mediate?
 - Does research area predict preprint citation and section of citation?



Discussion

- ❑ Relatively positive attitude towards preprints
- ❑ Conventional doubts about preprints:
 - Preferring peer-review & concerns around lack of peer-review
- ❑ Importance of investigating citation practices

Limitations & Future Directions

- ❑ Surveying only corresponding authors;
- ❑ Limited to publications indexed in Scopus;
- ❑ Low response rate;
- ❑ Partial responses from 2/5 respondents
- ❑ Potential biases in survey respondents vs. non-respondents
- ❑ Conducting Qualitative research (e.g., interviews);
- ❑ Studying relevant policies in journals and funding institutions;
- ❑ Surveying researchers in other fields

FOUR LAST QUESTIONS!

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Thank You!

Questions?

 F.seyfazadeh@uliege.be

BACK UP!

Preliminary Findings: Citing Preprints*

If available, I tend to cite the journal version of an article rather than the preprint version.



I am more hesitant to cite a preprint by a less known author than by a highly recognized author.



I am more hesitant to cite a preprint originating from a less known institution than from a highly recognized one.

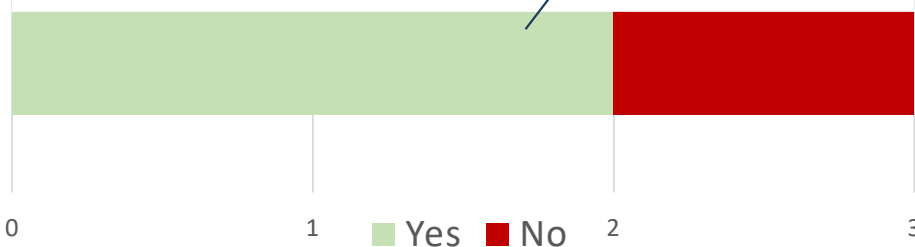


0% 10% 20% 30% 40% 50% 60% 70% 80% 90% 100%

*N = 3

Strongly disagree Disagree Neutral Agree Highly agree

Citing in certain sections?



Sections:

Discussion 2

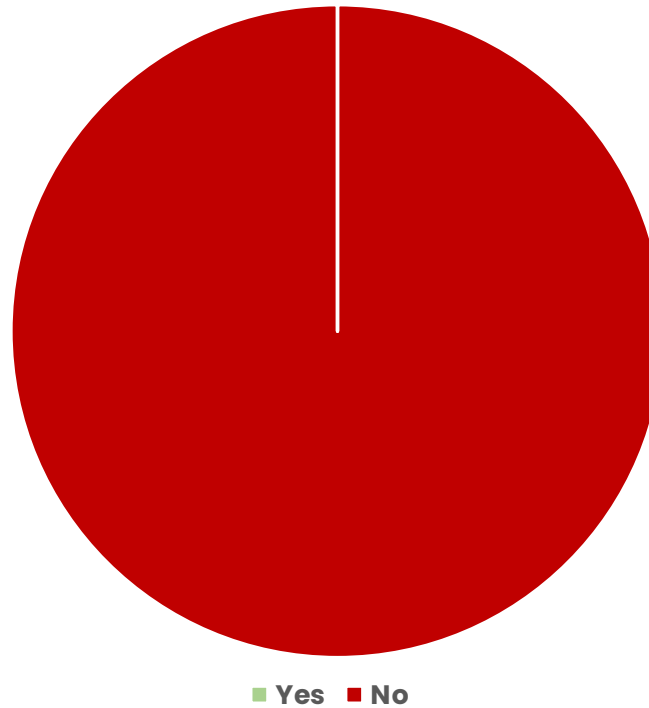
Methods 1

Referencing in:

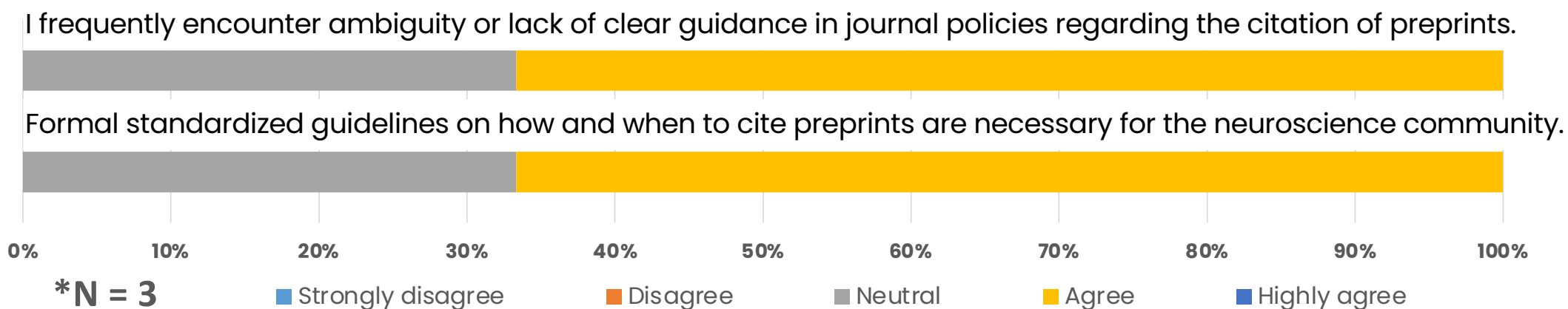
Main reference/bibliography list

Preliminary Findings: Citing Preprints*

Already encountered flaws in preprints?



Preliminary Findings: Policy Navigation*



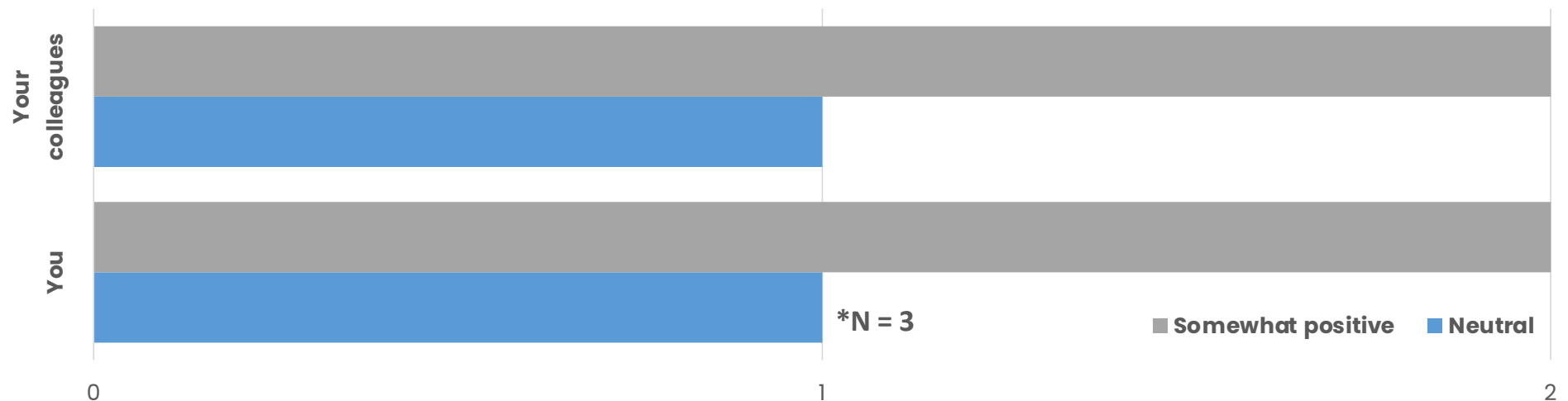
Ambiguous policy → Citing preprints & submitting to the same journal (N = 3)

Prohibition policy → Avoiding citations to preprints to avoid risk of rejection (N = 2*)

Missing data (N = 1)

Preliminary Findings: General Perspective*

"There are many opinions; some people consider them solid publications, while others are hesitant because they trust the peer review system. However, I must say that the peer review system varies from journal to journal. Some publishing houses, such as Frontiers, MDPI, Hindawi, and Sage, are very doubtful to me. Others vary by journal; for example, I do not trust the peer review system of Scientific Reports, published by NPG. That being said, a preprint that is put there while being peer reviewed by a high-impact journal with a very strict reviewing system, can be much more solid than publications that have passed a somewhat loose peer review."



"I have only published preprints that are ready for submission to high-impact journals. I normally submit to the journal immediately after the print is out. I have seen that this is a regular practice for nice, solid publications. PubMed is filled with articles that do not contribute to the advancement of knowledge; sorting good publications among all the trash has become cumbersome, and preprints do not escape this scenario either. One must always be very conscious about what sort of publications will be cited."