



# **Characteristics of Professionals Involved in Open Science in Ecology and Evolution**

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# Importance of Open Science in Ecology and Evolution



Group 6

13 CLIMATE ACTION



14 LIFE BELOW WATER



15 LIFE ON LAND



● to address the **triple planetary crisis**

to reach the **Sustainable Development Goals**

in the **emergence of new diseases**

in **agricultural sustainability** and food security

in **urbanisation and habitat loss studies** (wildlife corridors, green spaces in cities)

# Importance of Open Science in Ecology and Evolution



Source: <https://islwi.com/2019/11/11/the-ict-sector-can-make-evidence-based-policy-making-a-reality-for-africa/>

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# Knowledge Mobilisation

Refers to the process of making research findings accessible, understandable, and usable by various stakeholders.

- **Importance:** to maximise the impact of research investments, address real -world issues, inform evidence -based policy, and increase public understanding.



Source: <https://islwi.com/2019/11/11/the-ict-sector-can-make-evidence-based-policymaking-a-reality-for-africa/>

# The Science - Policy Landscape



# **In order to unlock the potential of open science for Knowledge Mobilisation, stakeholders should:**

- 1. have a good familiarity of open science**
- 2. have a positive association with open science and benefit from following open science practices**
- 3. actively engage in open science practices**
- 4. acknowledge the potential of open science to address global challenges, enhance public trust, and contribute to the broader society**



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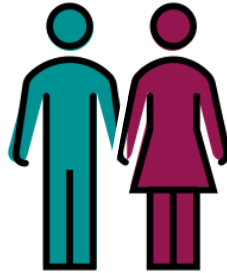
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# Characteristics and demographics



Years of Experience



Gender



Stakeholder  
Group



# Stakeholder Group



## Knowledge creators:

- Research Institutions

## Knowledge mobilisers in academia:

- Research Funders
- Publishers
- Journals
- Learned Societies
- Repositories

## Knowledge mobilisers outside academia:

- Governments
- Industry/Commercial
- Other (e.g., charities)



Source: Zagrodzka et. al., 2024

# Unlocking potential of open science: the survey



## 1) Familiarity with Open Science

Does the effect of the **years of experience** on familiarity vary by **gender** or by **stakeholder group**?



## 2) Positive – negative perceptions

Does the effect of **years of experience** with open science influence **positive and negative perceptions** of open science and varies by **gender** or **stakeholder group**?

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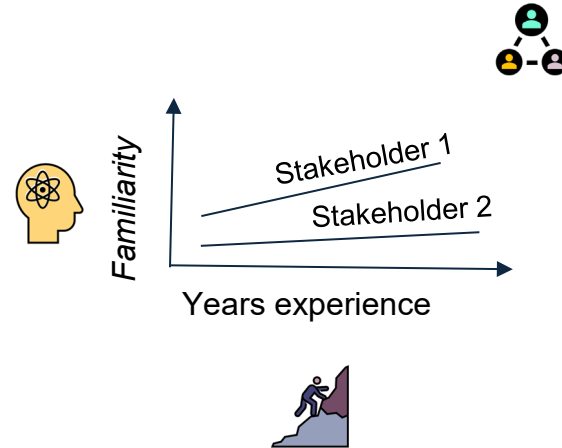
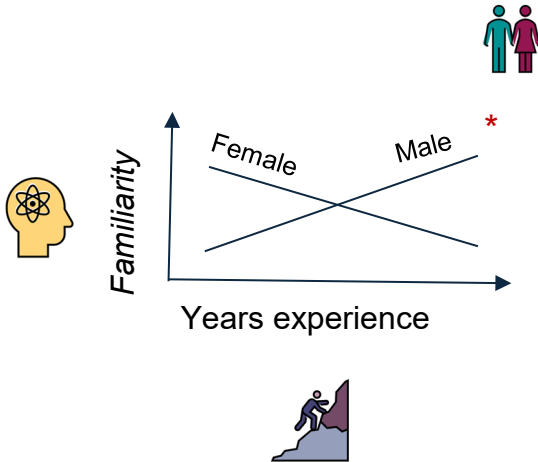


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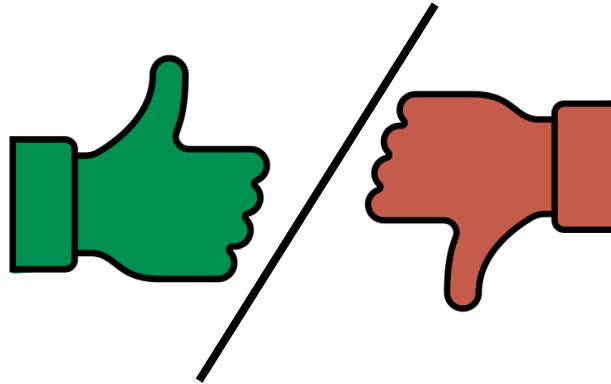
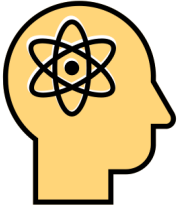


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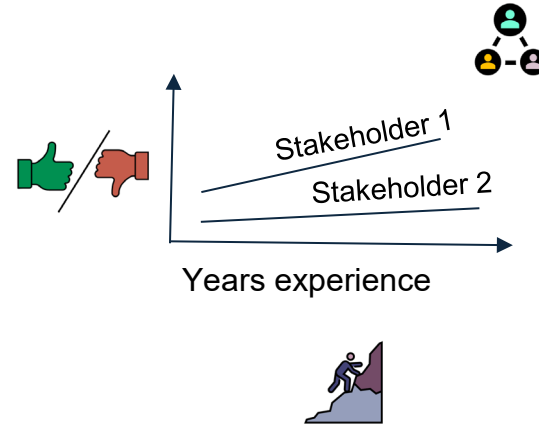
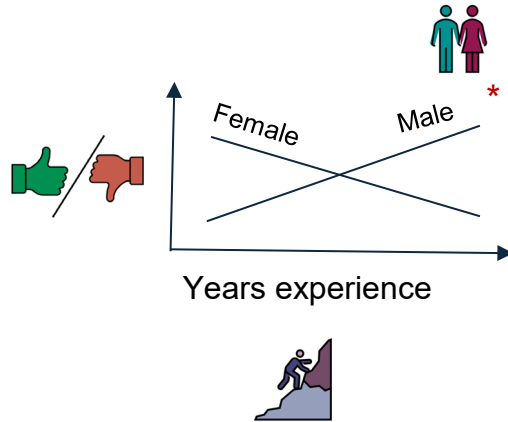


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# Years of Experience: Gender



## **Expectations:**

Familiarity and positive associations with open science to increase with age and experience.

## **Gender Differences:**

We expected women to show greater familiarity, more positive associations, and stronger support for open science than men.

## **Why Women May Be Drawn to Open Science?**

**Shared Values:** Promotes collaboration, empathy, and inclusivity.

**Greater Visibility:** Advocates for transparency and recognition, e.g., open access can help increase citations and recognition.

**Equity - Focused:** Aligns with goals of fairness and access, especially meaningful for those facing bias or exclusion.

# Years of Experience: Stakeholder Group



Expected:

**Familiarity:** Increase across all groups, highest among researchers, followed by academic mobilisers.

**Associations:**

- **Knowledge creators** : Positive associations expected to remain stable over time - benefits and challenges tend to balance out.  
**Mobilisers in academia** : Positive associations expected to grow with experience.  
**Mobilisers outside academia** : Associations expected to remain mostly flat, with slight growth over time.

**Note:** As positive associations increase, negative associations are expected to decrease.

**Why?**

**Knowledge creators:** requires extra time and skills (senior researchers); efforts often not recognised or rewarded (ECRs)

**Mobilisers in academia:** cost savings, improved research quality, increased reusability

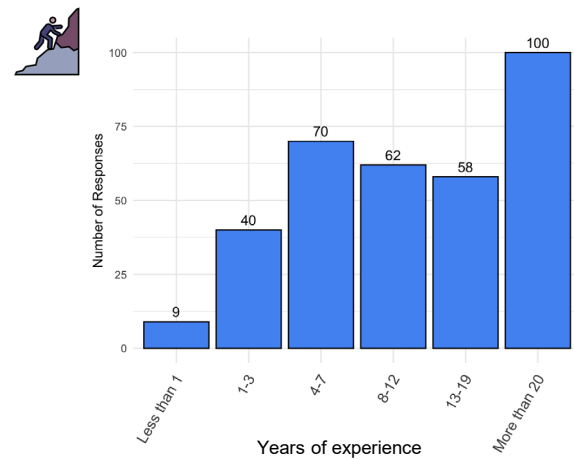
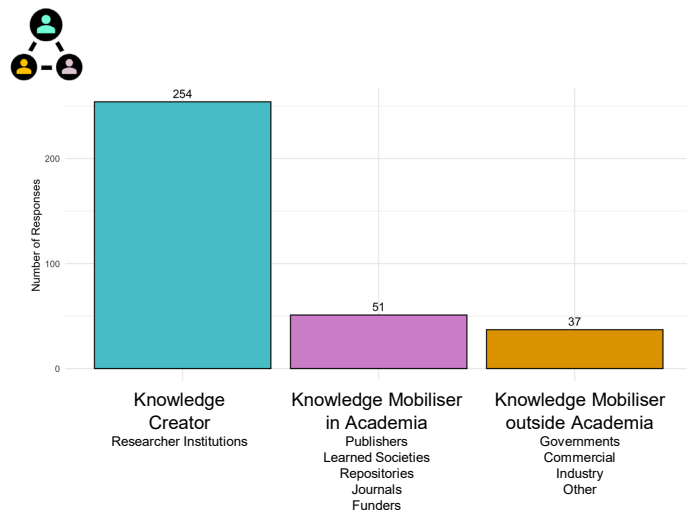
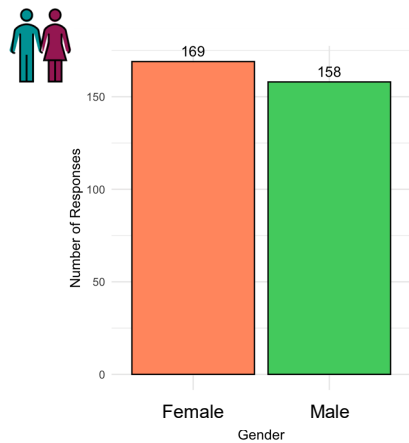
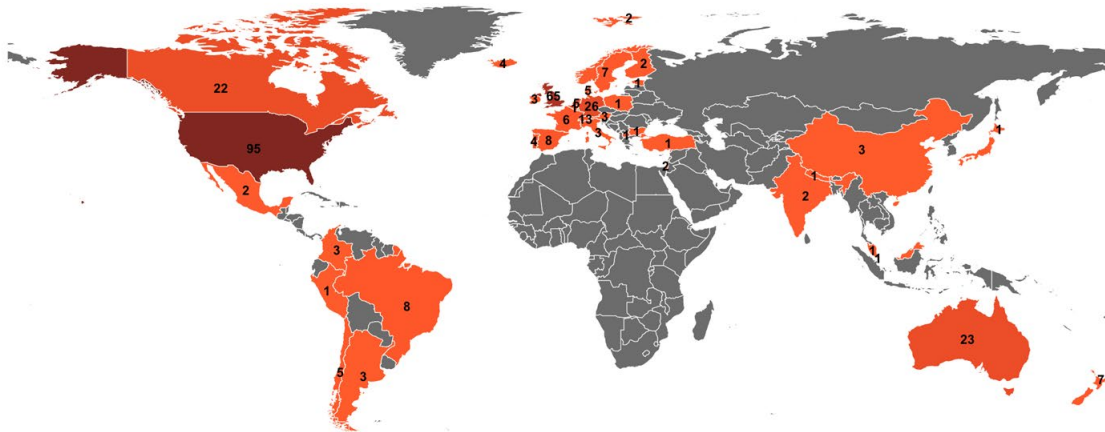
**Mobilisers outside academia:** solely benefits of open research, no trade-offs (career, business)



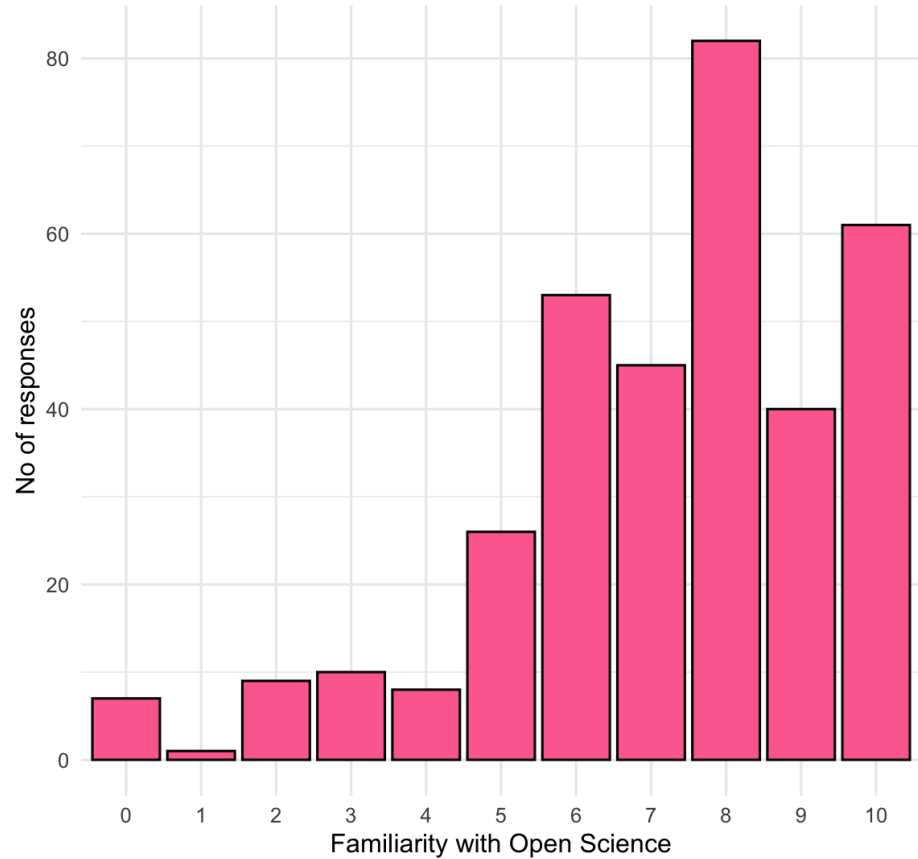
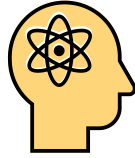
## Survey: Respondents



Total responses: 327



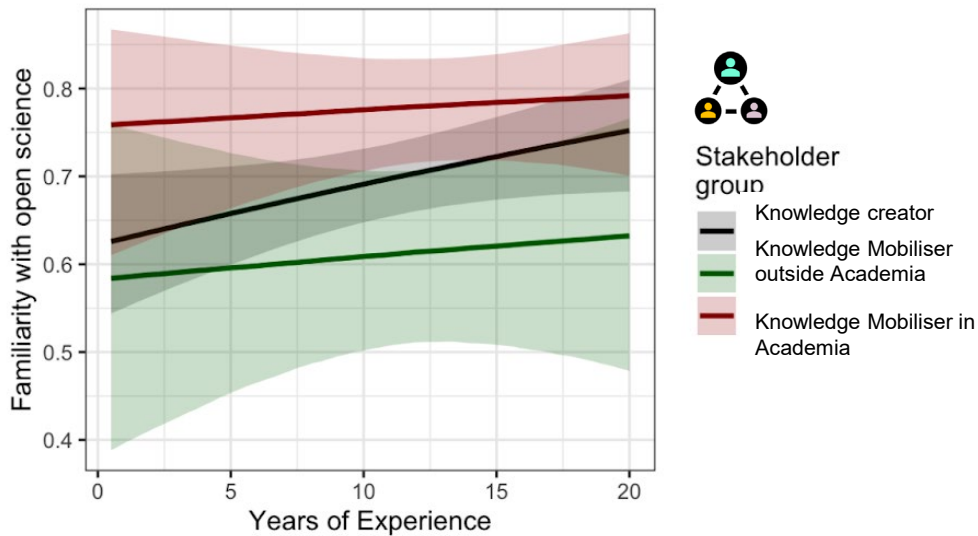
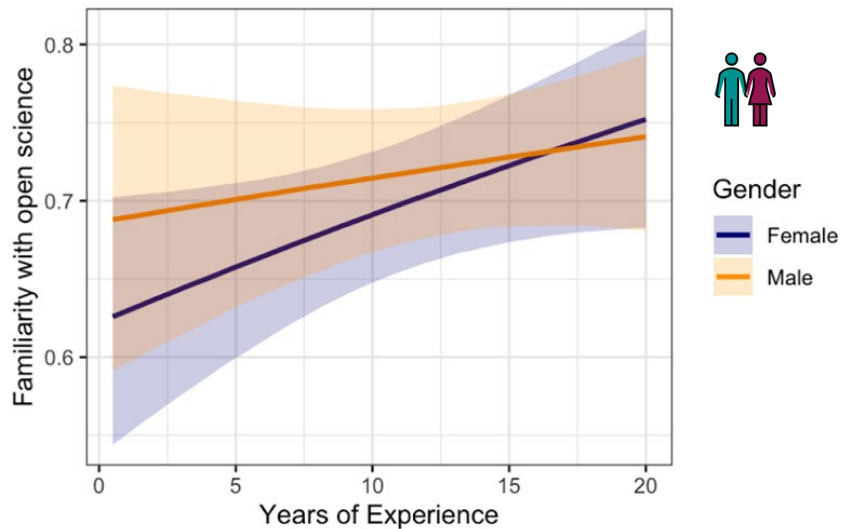
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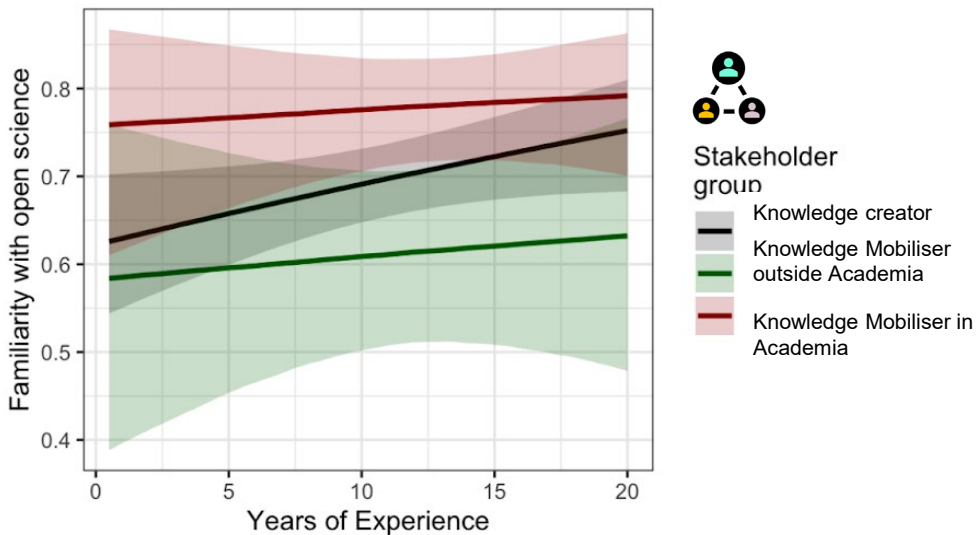
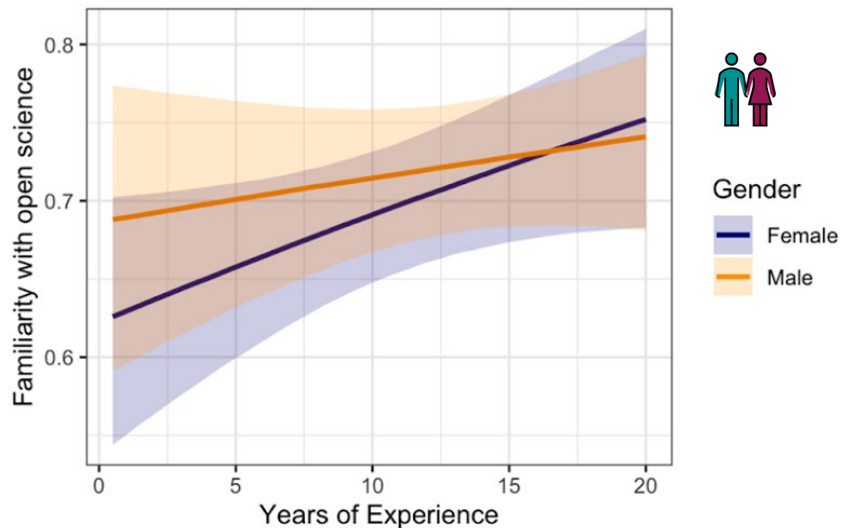
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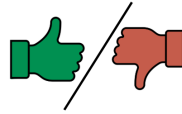
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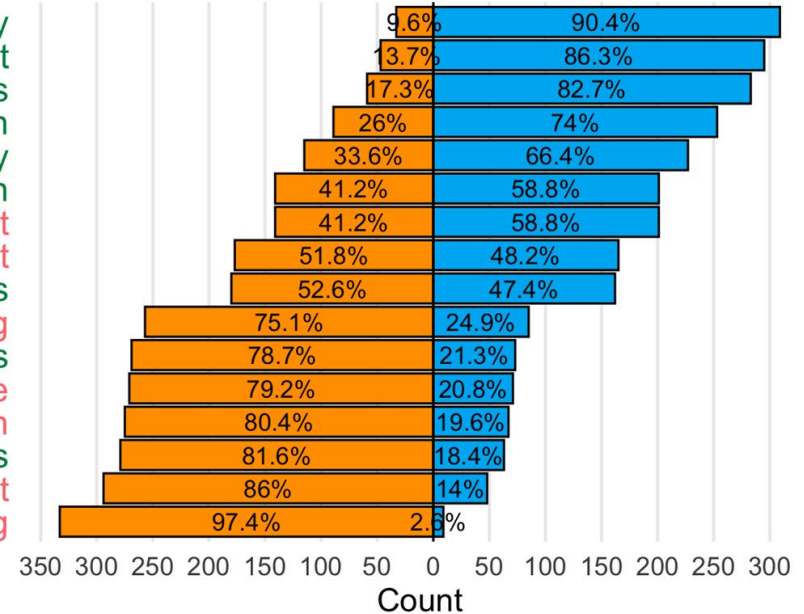
**\*Familiarity significantly increases with the years of experience, does not vary by group.**

## 2) Positive and negative perceptions



I associate open science with...

increased visibility  
improved trust  
collaborations  
satisfaction  
efficiency  
challenging misinformation  
financial cost  
time cost  
positive reviews  
opportunities for scooping  
organisational awards  
opportunities to misuse  
frustration  
personal awards  
lack of acknowledgement  
shaming



Response

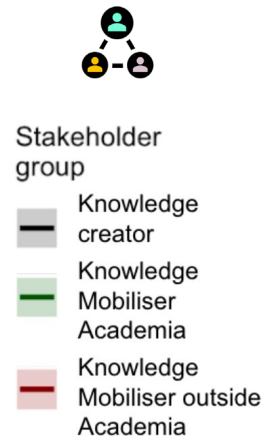
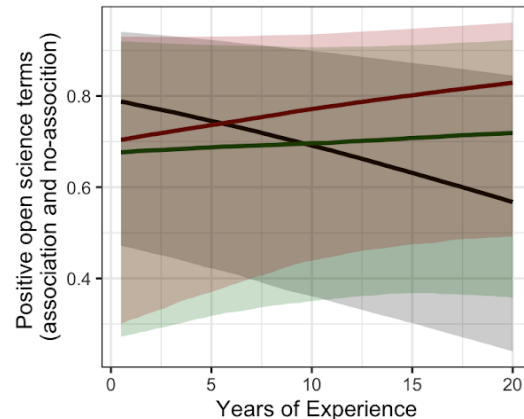
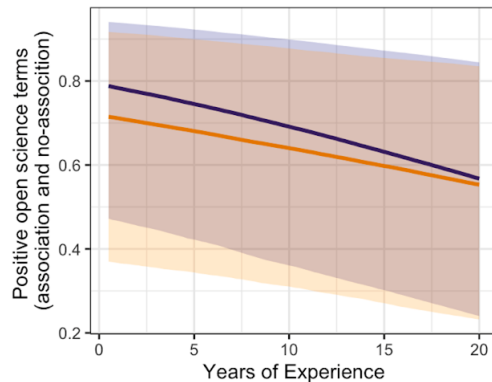


## 👍👎 2) Positive and negative perceptions on Open Science

Does the effect of years of experience\* influence positive and negative perceptions of open science terms and varies by stakeholder group or gender?

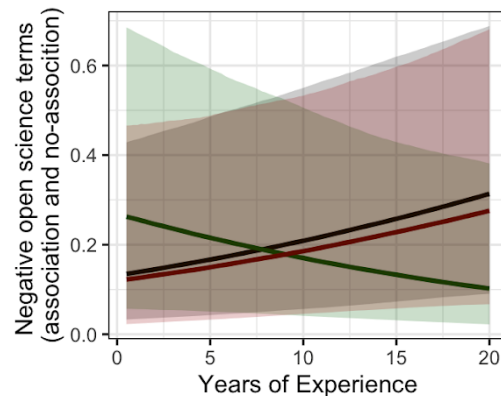
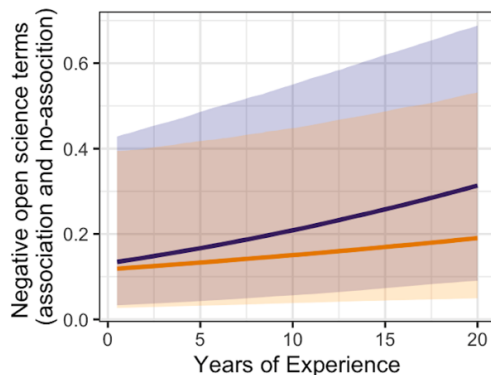
### Positive

satisfaction, efficiency, collaboration, positive reviews, organisational awards, increased visibility, personal awards, improved trust, challenging misinformation



### Negative

opportunities for misuse, opportunities for scooping, lack of acknowledgment, frustration, shaming, time cost, financial cost

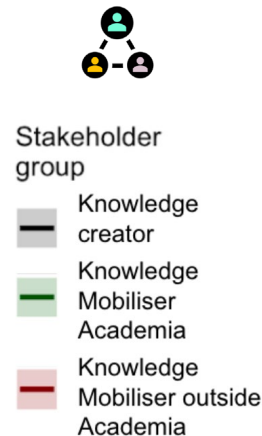
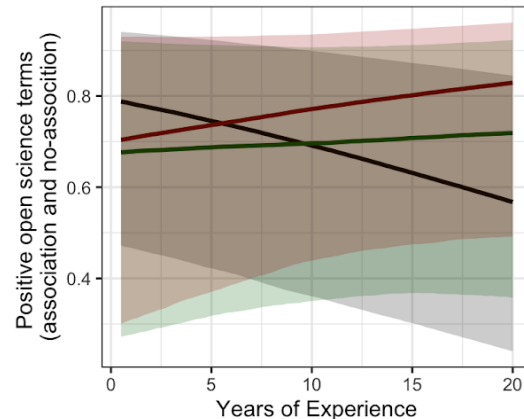
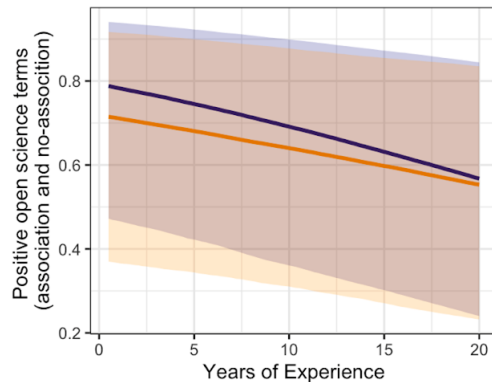


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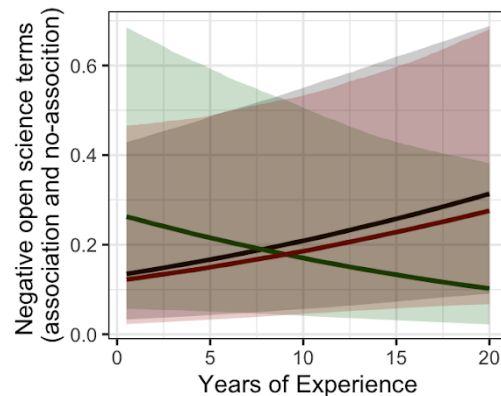
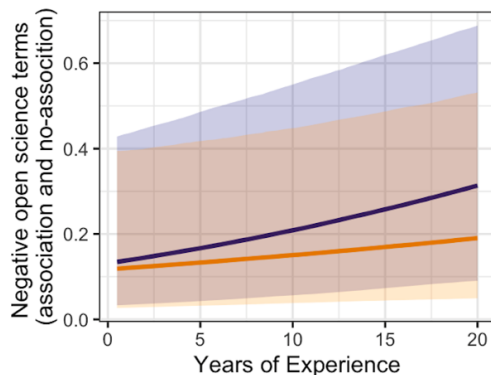
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\*With increased years of experience knowledge creators (researchers) perceive open science less positively

# Findings

1) Familiarity with open science increases with years of experience but does not vary by groups (overall high familiarity).

2) Positive perceptions: visibility, trust, collaboration, satisfaction, and efficiency

Negative perceptions : financial and time costs; lack of personal or organisational rewards .

With increased years of experience and familiarity with open science knowledge creators (researchers) associations are open science less positive.



# Conclusions

- 1) Develop targeted training programs for groups with lower familiarity to ensure broad adoption, particularly focusing on **early -career professionals**.
- 2) **Funders and institutions** should provide **recognition** , **awards** , and **incentives** to promote open science involvement, and **allocate resources** to address **time** and **financial barriers** , with particular attention to **late -career** and **senior researchers** .
- 3) Increase awareness of potential of open research outside the academia.

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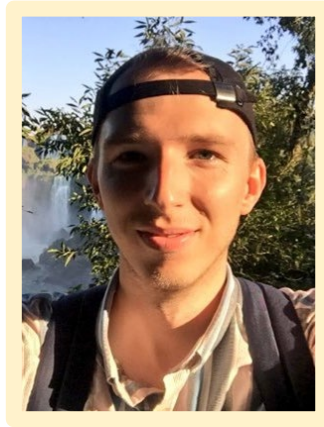
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