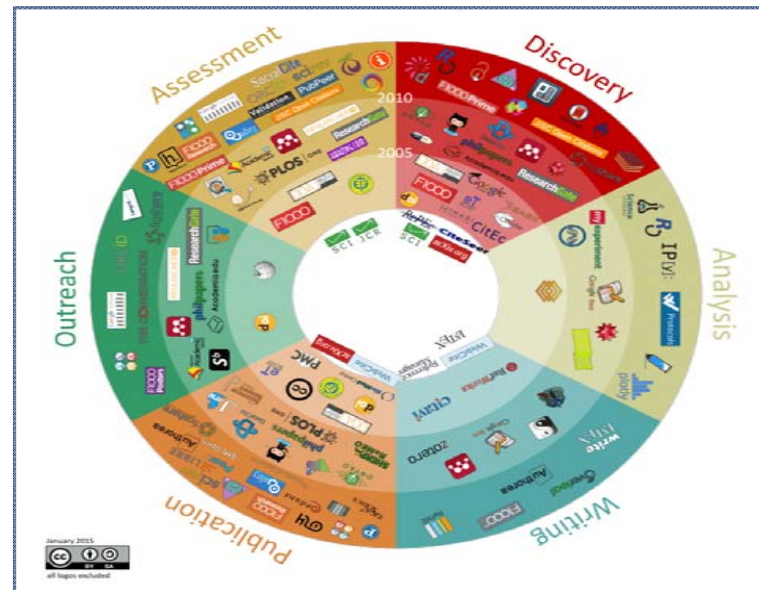


Changing research workflows at the University of Pretoria (UP) and the CSIR: results of an international survey

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Content

- Background of the international survey
- The survey (international, UP, CSIR)
- Example of the survey
- Examples of the results (data)
- International, UP and CSIR trends
- So what - what should the role of the research library be?

Background

- Many new **websites** and **online tools** have come into existence to support scholarly communication in all phases of the research workflow
- To what extent **researchers are using** these and more traditional tools has been largely unknown
- This 2015-2016 **survey** aimed to **fill that gap**
- Its **results may help decision making** by stakeholders supporting researchers and may also help researchers wishing to reflect on their own online workflows
- In addition, information on tools usage **can inform** studies of changing research workflows

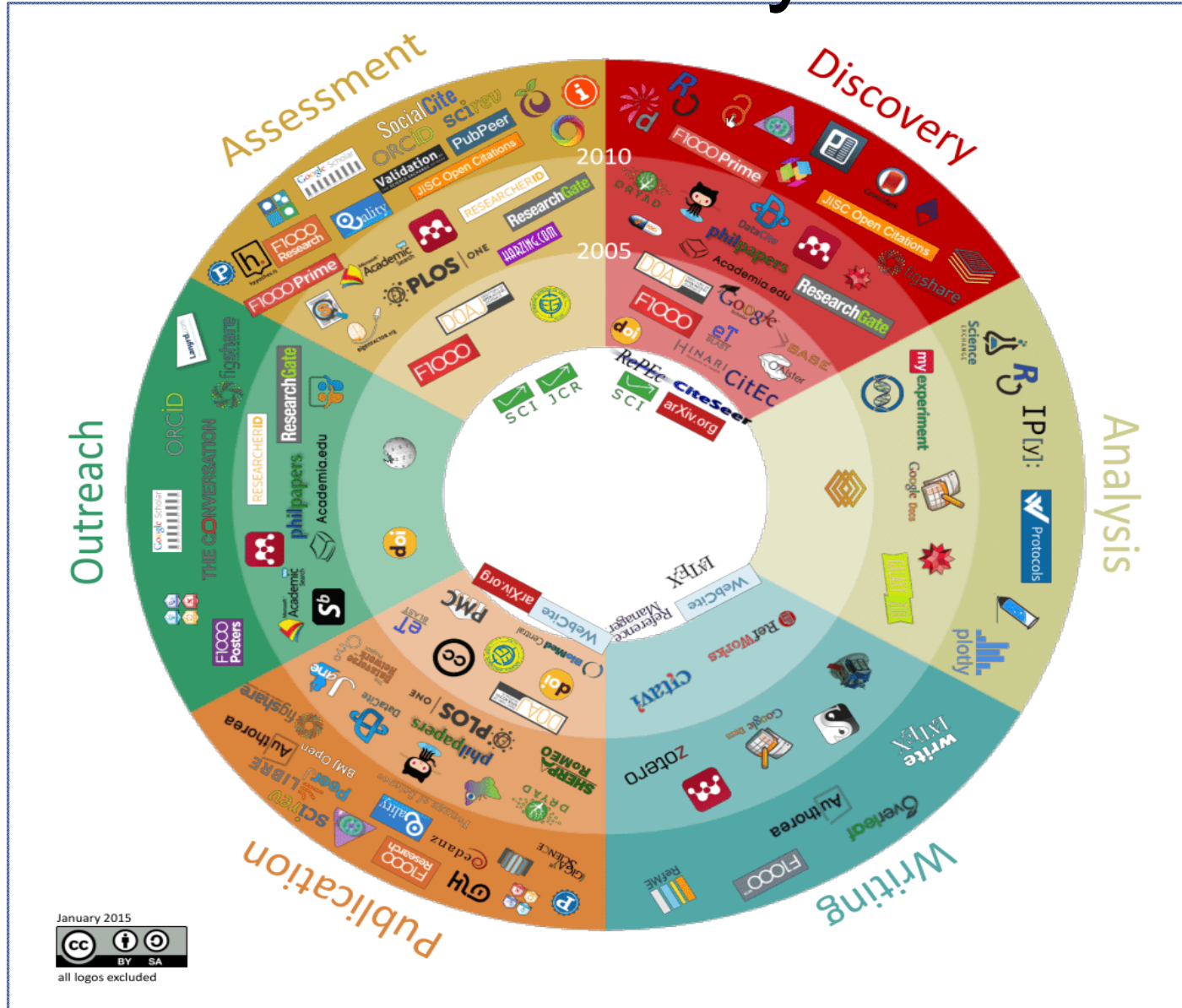
International survey

- The survey ran from the 10th of May 2015 to the 10th of February 2016
- In over 9 months the survey received **20 663 responses**
- More than **100 academic institutions** and **publishers** used the custom URL and distributed it to researchers in their institutions
- The survey was written in **7 languages** which contributed to the high response rate
- The **response rate** is estimated at 1.5%
- The survey is **part of an ongoing effort** to chart the changing landscape of scholarly communication
<http://f1000research.com/articles/5-692/v1>

UP & CSIR survey

- Both the UP and the CSIR took up the survey and were each given a unique **custom URL** which was then distributed to researchers
- 19 January - 10 February: period of the survey
- **UP** received 183 results (6.5% response rate)
- **CSIR** received 43 results (5.7% response rate)
- NB: This survey (international & local) is a **non-representative survey and results can not be generalised**: <http://www.sciencedirect.com/science/article/pii/S2212977413000331>
- This is an example of **big data research** where hypotheses can be deduced from the data for further research
- Interesting **trends and patterns** can also be identified

The Survey



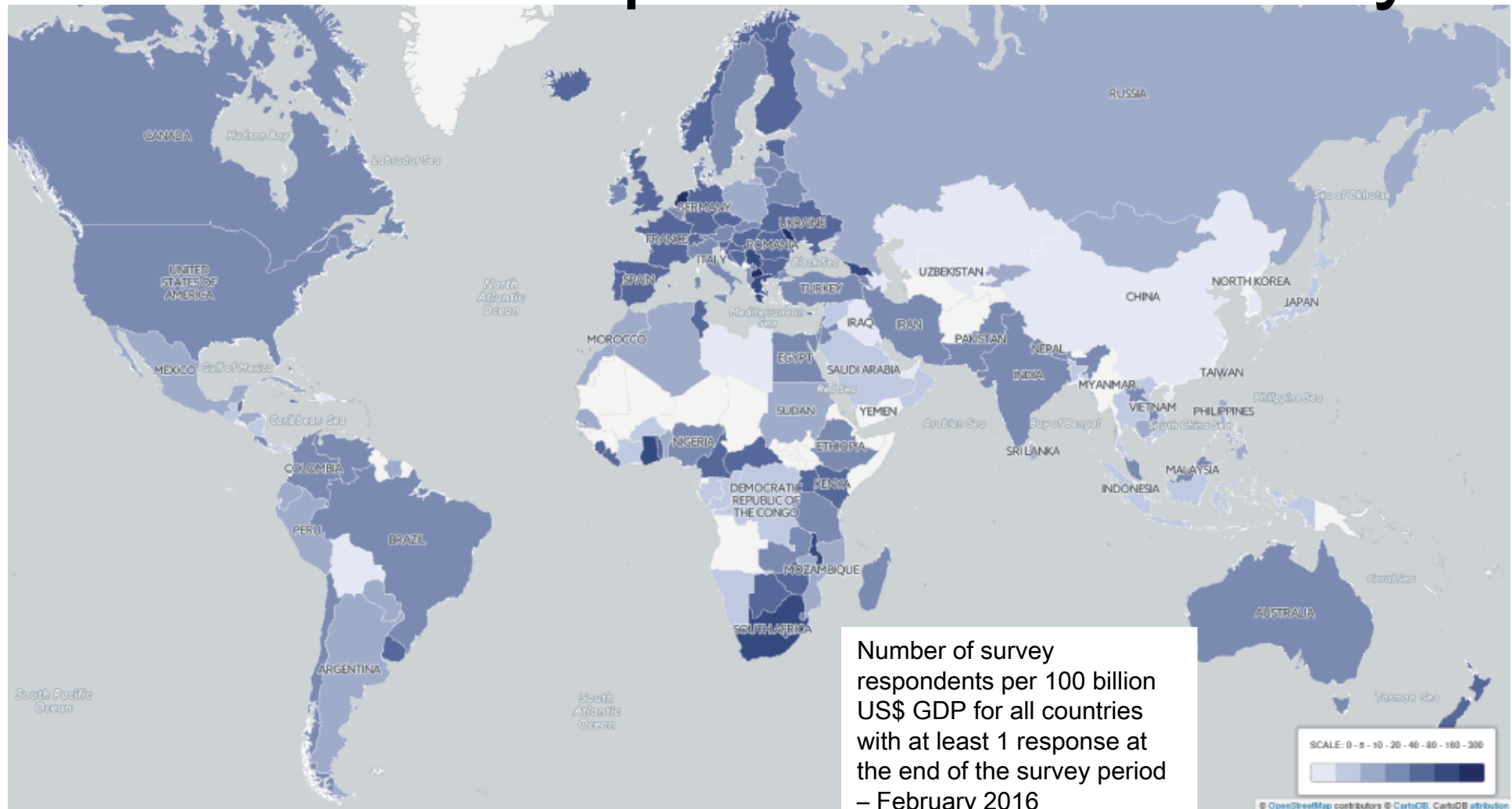
Research workflow tools

Six research workflow phases, with examples of research workflow tools & sites:

1. Discovery: [Google Scholar](#), Paperity, [ResearchGate](#), [Deepdyve](#), Browzine, Mendeley
2. Analysis: [R](#), SPSS, [Matlab](#), OpenSci, Benchfly
3. Writing: Word, Google, LaTeX, Scalar, Endnote, Zotero
4. Publication: arXiv.org, IR, bioRxiv, GitHub, Figshare, Dryad, BitBucket, Scopus, SherpaRomeo, Topical journal, Data journal
5. Outreach: SlideShare, Figshare, Speakerdeck, Wikipedia, Pint of Science, Famelab, ORCID, Academia.edu
6. Assessment: Peerage of Science, PubPeer, PaperCritic, [Altmetric](#), [ImpactStory](#), [Web of Science](#), [Scopus](#)

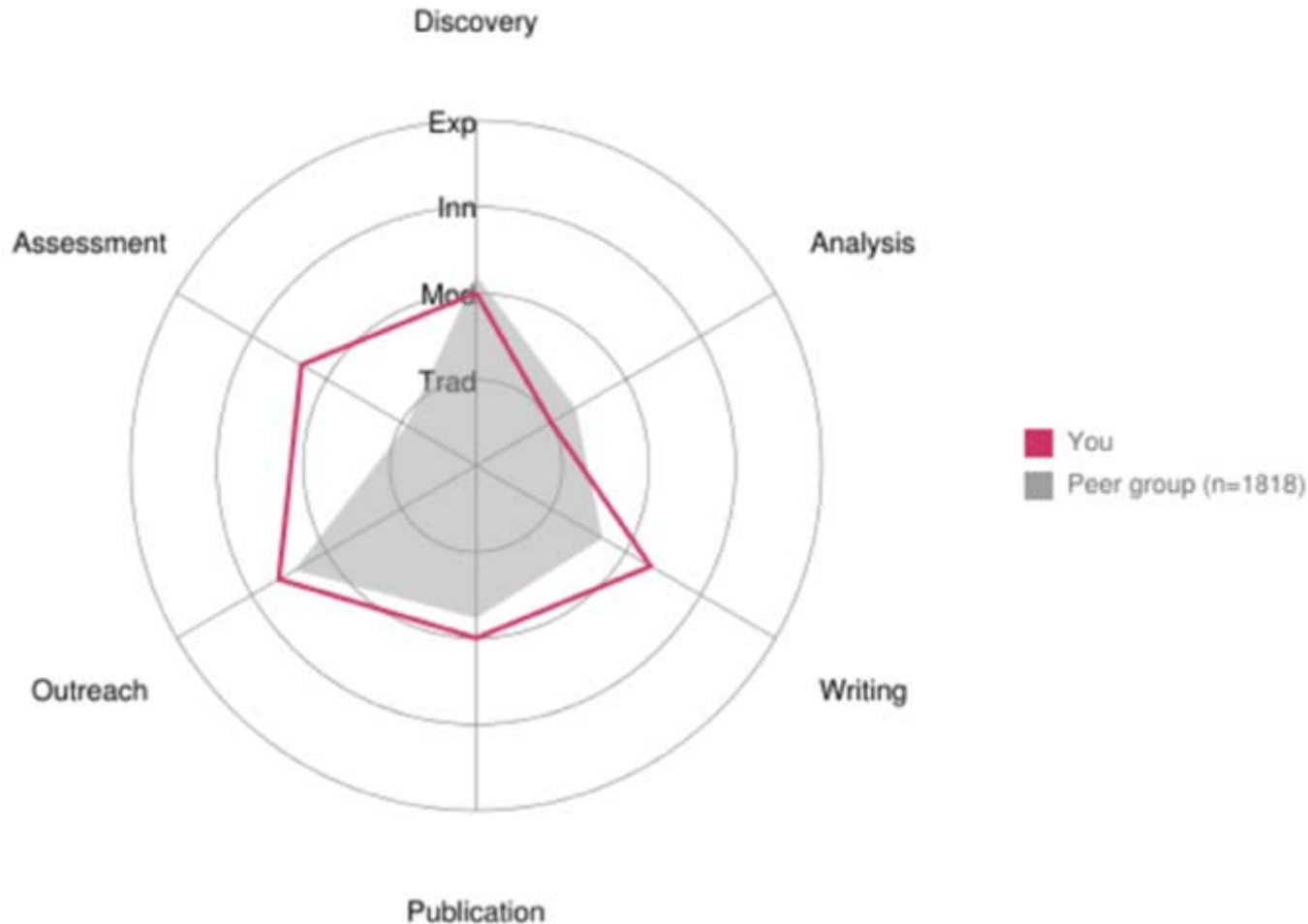
<https://101innovations.files.wordpress.com/2016/02/101-innovations-survey-english.pdf>

World Participation in the survey



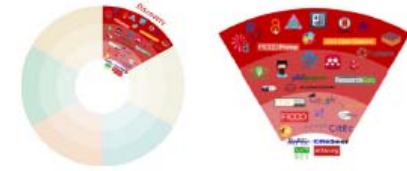
Automatic feedback received by survey participants

Innovative and more traditional tools in your workflow and that of your peer group (PhD student)



Questionnaire example

2 Discovery




a. What tools/sites do you use to search literature / data / etc.?



Google Scholar



Web of



Scopus



Mendeley



WorldCat



PubMed



Paperity

(and also)
others

(and also)

Data example

What tool/sites do you use to search literature/data?

Innovations in Scholarly Communication survey - dashboard



Made with Silk 

PAGES
▼

DATA CARDS
▼

EXPLORE
▼

SHARE  

Research activities

Discovery



Search literature / data etc.

Get access to literature / data etc.

Get alerts / recommendations

Read / view / annotate

PAGES
▼

DATA CARDS
▼








EXPLORE
▼

SHARE  

1. Search

What tools/sites do you use to search literature / data / etc.?

Choose as many as you like

 <input type="checkbox"/> A Google Scholar	 <input type="checkbox"/> B Web of Science	 <input type="checkbox"/> C Scopus	 <input type="checkbox"/> D Mendeley
 <input type="checkbox"/> E WorldCat	 <input type="checkbox"/> F PubMed	 <input type="checkbox"/> G Paperity	<input type="checkbox"/> H (and also) others

Filtering example

Search literature / data / etc (PRESET ANSWERS)

Search literature / data / etc (OTHERS)

SHARE & EMBED
EXPLORE

Filter by Research role ▼

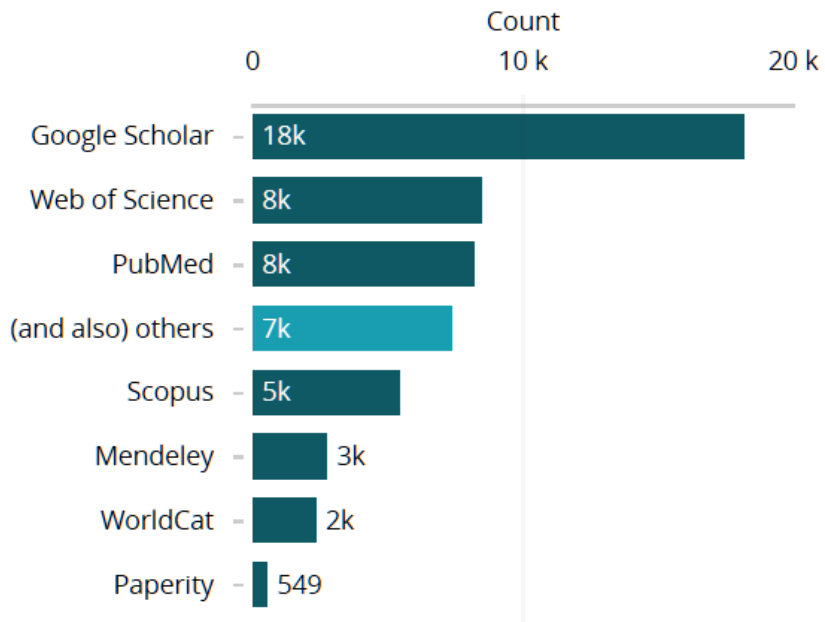
Filter by Year of first scholarly publication ▼

Filter by Country of current (or last) affiliation? ▼

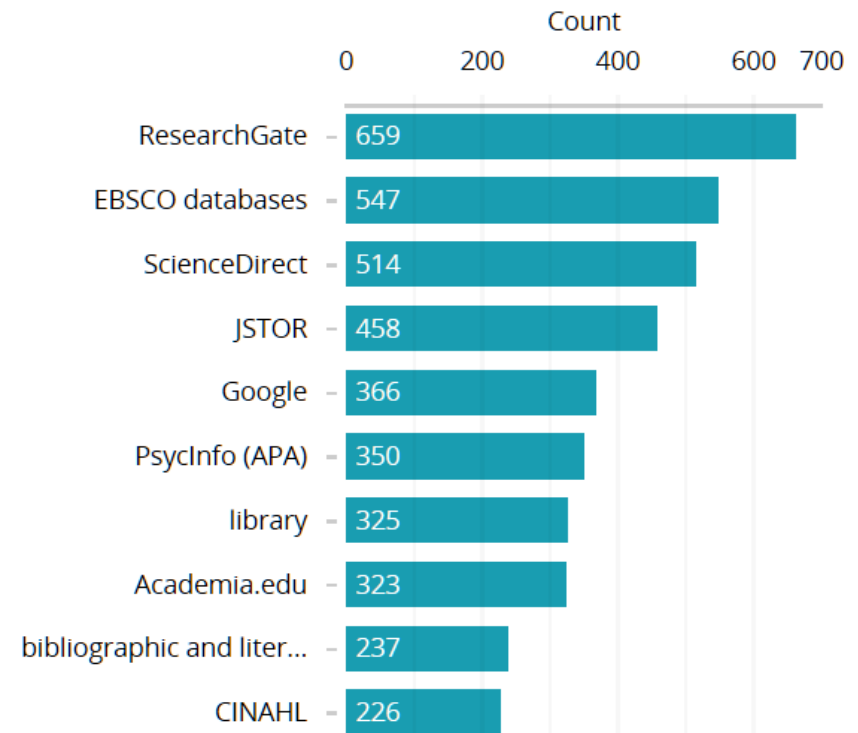
Filter by Discipline(s) ▼

Filter by Year of first scholarly publication ▼

Filter by Country of current (or last) affiliation? ▼



20427 of 20663 respondents answered this question



Most used tools & sites (preset answers)

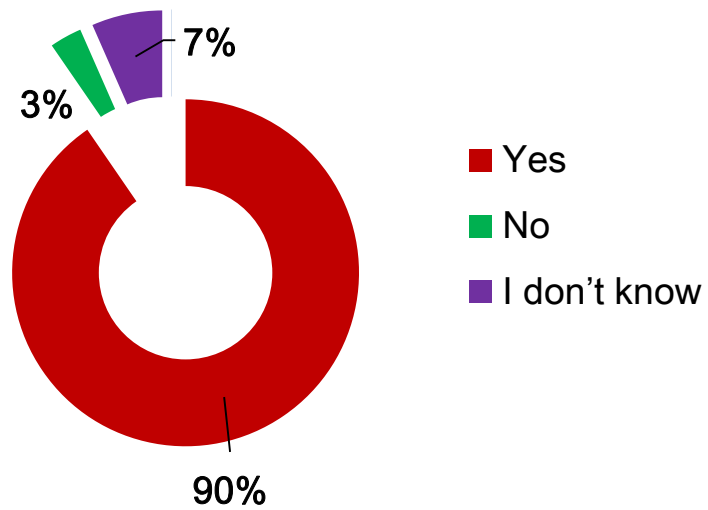
Research Phase	Research Activity	International	University of Pretoria	CSIR
Discovery	Search	Google Scholar	Google Scholar	Google Scholar
	Get access	Institutional Access	Institutional Access	Institutional Access
	Alerts	Google Scholar	Google Scholar	Google Scholar
	To read, view & annotate	Acrobat Reader	Acrobat Reader	Acrobat Reader
Analysis	Data & text	MS Excel	MS Excel	MS Excel
	Sharing notes, protocols & workflows	Other (OSF / Dropbox)	Other	Other
Writing tools	Write and prepare manuscripts	MS Word	MS Word	MS Word
	Reference management	EndNote	EndNote	Refworks

Most used tools and sites (preset answers)

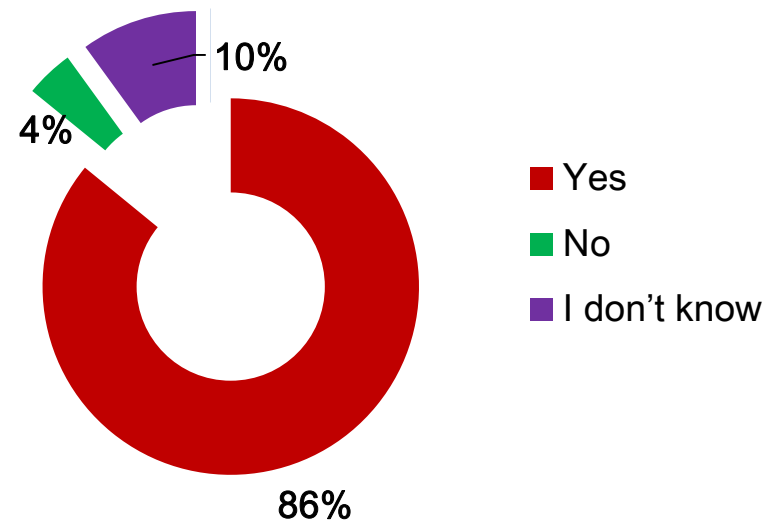
Research Phase	Research Activity	International	University of Pretoria	CSIR
Publication tools	Archive & share publications	ResearchGate	ResearchGate Institutional Repository	Institutional Repository ResearchGate
	Archive & share data & codes	Github	Other	Other Github
	Deciding which journal to submit a manuscript to	JCR (impact factors)	JCR	Scopus
	Publishing	Topical journal (traditional)	Topical journal (traditional)	Topical journal (traditional)
Outreach tools	Archive/share posters and presentations	Slideshare	Slideshare	Other
	Spreading research outside academia	Twitter	Twitter	Twitter
	Researcher profiles	ResearchGate Google Scholar Citations	ResearchGate Google Scholar	ResearchGate Google Scholar
Assessment tools	Peer review outside normal Journal peer review	PubMed Commons Peerage of Science	Publons PubMed Commons	PubPeer; Peerage of Science, PaperCritic
	Measure impact	Web of Science .JCR	Scopus	Scopus ¹⁵

UP

Do you support open access goals?

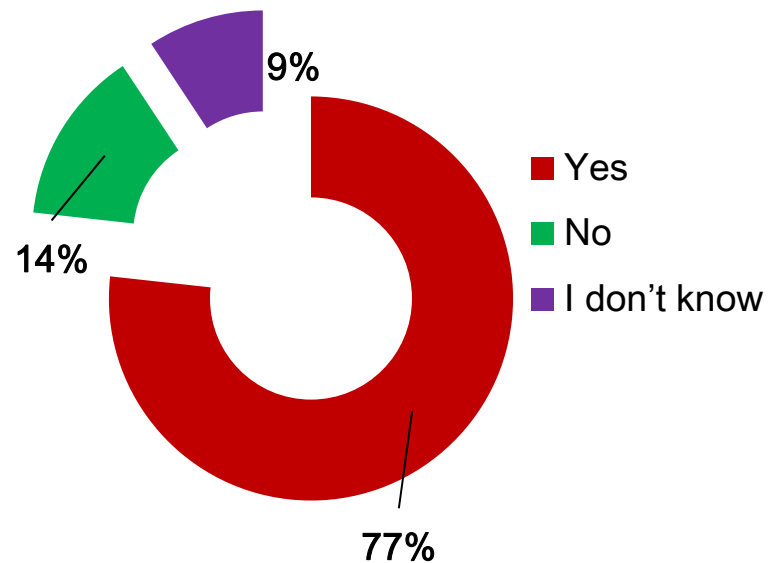


Do you support open science goals?

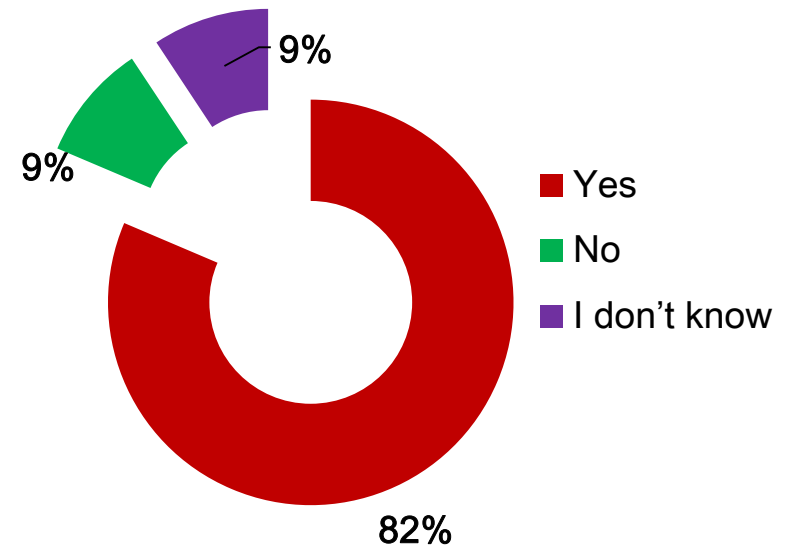


CSIR

Do you support open access goals?



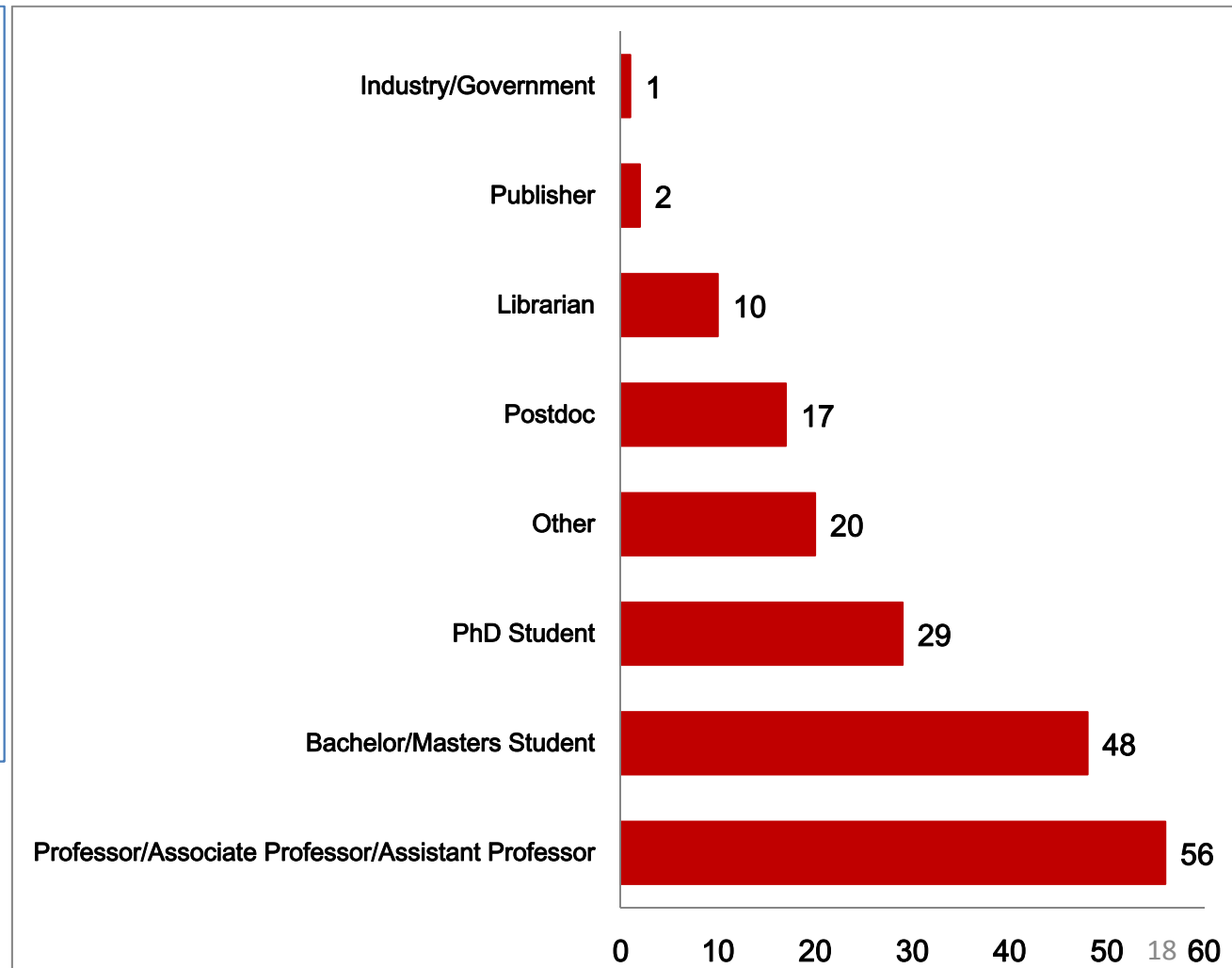
Do you support open science goals?



UP

What is your research role?

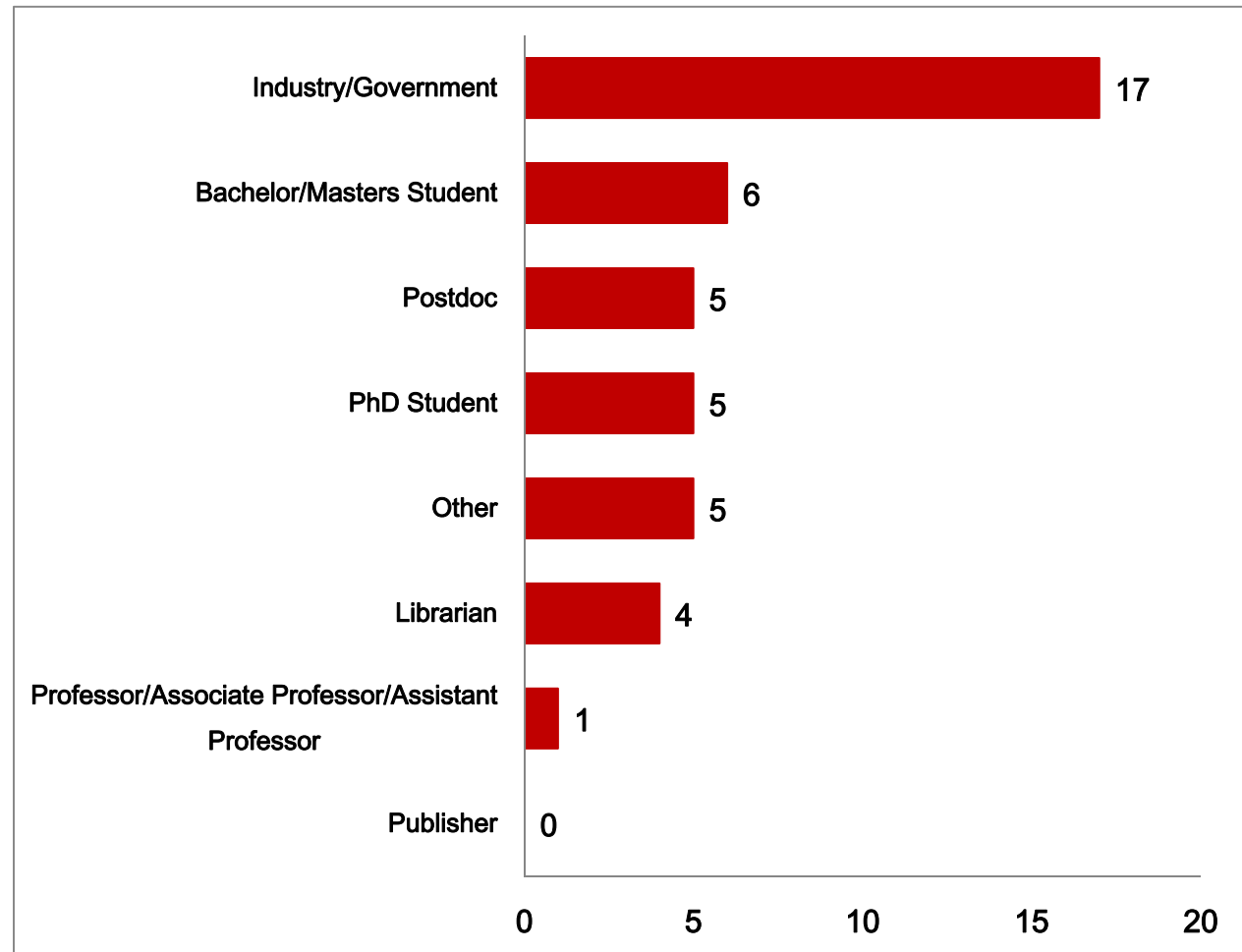
31% of the total respondent group identified themselves as professors/assistant professors, 26% as bachelor/masters students, 16% as PhD students, 9% as post-doctoral students, 5% as librarians and the remaining respondents identified themselves as “other”, publisher or industry/government employees.



CSIR

What is your research role?

39% of the total respondents identified themselves as industry/government, 14% as bachelor/masters students, 12% as postdoctoral students, 12% as PhD students, 12% as “other”, 9% as librarians and the remaining 2% identified themselves as professor/associate professor/assistant professor/assistant professor.



So what - what should the role of the research library be?

- Research libraries and research librarians should **tap into this** trove of **research workflow data** to identify what their researchers are doing
- **More** in-depth **surveys**, e.g. interviews and focus groups could be used to verify the results in your institution
- Should research libraries **take on the new role** of keeping tabs on new research tools and sites, and train researchers how to use it?

Bibliography

- Kramer B and Bosman J. Innovations in scholarly communication - global survey on research tool usage [version 1; referees: awaiting peer review]. *F1000Research* 2016, 5:692 (doi: [10.12688/f1000research.8414.1](https://doi.org/10.12688/f1000research.8414.1))