OPEN RESEARCH EVALUATION

IS "OPEN ERA" FEASIBLE?

HIGHER EDUCATION RESEARCH EVALUATION AS AN EXAMPLE

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CHARLES DARWIN UNIVERSITY AUSTRALIA

Charles Darwin University acknowledges all First Nations people across the lands on which we live and work, and we pay our respects to Elders both past and present.

- Research evaluation trends
- Open research evaluation
- OpenAlex
- ERA2018, Scopus, and OpenAlex
- HERD, Scopus, and OpenAlex
- HERD: Distant reading
- Challenges and prospects

Research evaluation trends

HARNESSING THE METRIC TIDE:
indicators, infrastructures and priorities for responsible research assessment in the UK

Stephen Curry, Elizabeth Gadd and James Wilsdon

Responsible research indicators	Use research indicators responsibly
	Consider a broad range of research outputs and activities
Responsible assessment culture	Show committment towards responsible research assessment
	Make research assessment processes transparent (e.g., using transparent and open indicators)
	Train assessors and foster diversity
	Mitigate biases
Data infrastructure	Enable reuse, verifiability, and interoperability
Efficiency and coordination	Consider efficiency of assessment processes
	Coordinate and engage in mutual learning
Evidence building	Build evidence on research assessment
Target: University-level and higher-level assessment	
Target: Researcher-level assessment	

TRUSTING AUSTRALIA'S ABILITY:

REVIEW OF THE AUSTRALIAN RESEARCH COUNCI ACT 2001

Future ERA Directions

The ARC is prioritising development of a modern data driven approach for Excellence in Research for Australia (ERA) informed by expert review, for implementation from 2024-25.

Recommendation 2: The National Research Landscape

We recommend that the ARC Act be amended to provide a legislative basis for those functions through which the ARC actively shapes the research landscape over and above the impact from the NCGP.

These include:

- evaluation of the excellence, quality, and impact of research in Australian universities;
- evaluation of the depth and capability of researchers in Australian universities, within and across disciplines;
- promoting and upholding research integrity;
- promoting ethical conduct of research;
- promoting accessibility of publications and research data;
- promoting excellence, equity, and diversity in Australian universities;
- supporting significant, long term research collaborations; and
- partnering with other Government agencies that use ARC systems and processes to deliver peer-reviewed and other research grant programs.

Recommendation 10: Evaluation of Excellence and Impact

We recommend that:

i. the role of the ARC in relation to evaluation of excellence, impact and research capability within Australian universities be re-affirmed by inclusion in the ARC Act.

ii. the Excellence in Research for Australia (ERA) and Engagement and Impact (EI) exercises be discontinued.

We do not recommend that ERA and EI be replaced by a metrics-based exercise because of the evidence that such metrics can be biased or inherently flawed in the absence of expert review and interpretation.

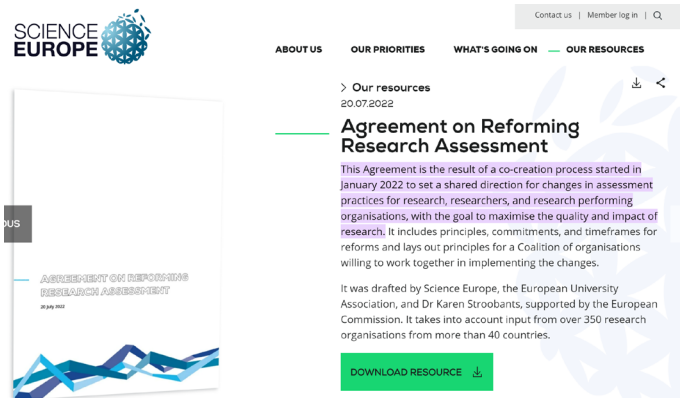
Open research evaluation

National assessment by institutions & fields of research (FoR)

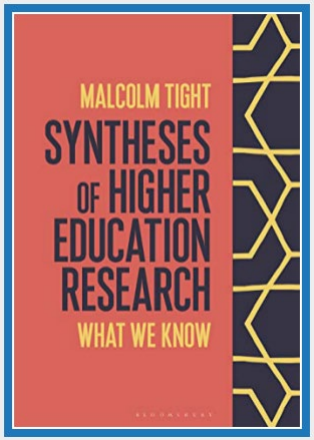
Distant Reading of Higher Education Research Journals

Framework & Reference: ERA2018

FoR Code	FoR Name	Assessed UoEs*	Research Outputs	Weighted** Research Outputs	Research Income ($)	FTEs
01	**Mathematical Sciences**	**27**	**11,809.4**	**11,866.3**	**185,875,273**	**926.0**
0101	Pure Mathematics	15	2,938.7	2,995.6	49,594,472	243.6
0102	Applied Mathematics	25	4,175.9	-	69,295,651	261.5
0103	Numerical and Computational Mathematics	4	1,144.5	-	6,155,169	95.0
0104	Statistics	17	2,402.9	-	48,654,298	235.5
0105	Mathematical Physics	4	657.8	-	10,135,788	43.0
0199	Other Mathematical Sciences	0	489.7	-	2,039,894	47.4
02	**Physical Sciences**	**25**	**19,542.7**	**-**	**388,704,990**	**1,039.2**
0201	Astronomical and Space Sciences	16	6,144.0	-	103,376,084	304.0
0202	Atomic, Molecular, Nuclear, Particle and Plasma Physics	9	3,137.4	-	43,779,949	133.6
0203	Classical Physics	5	827.2	-	6,339,907	46.2

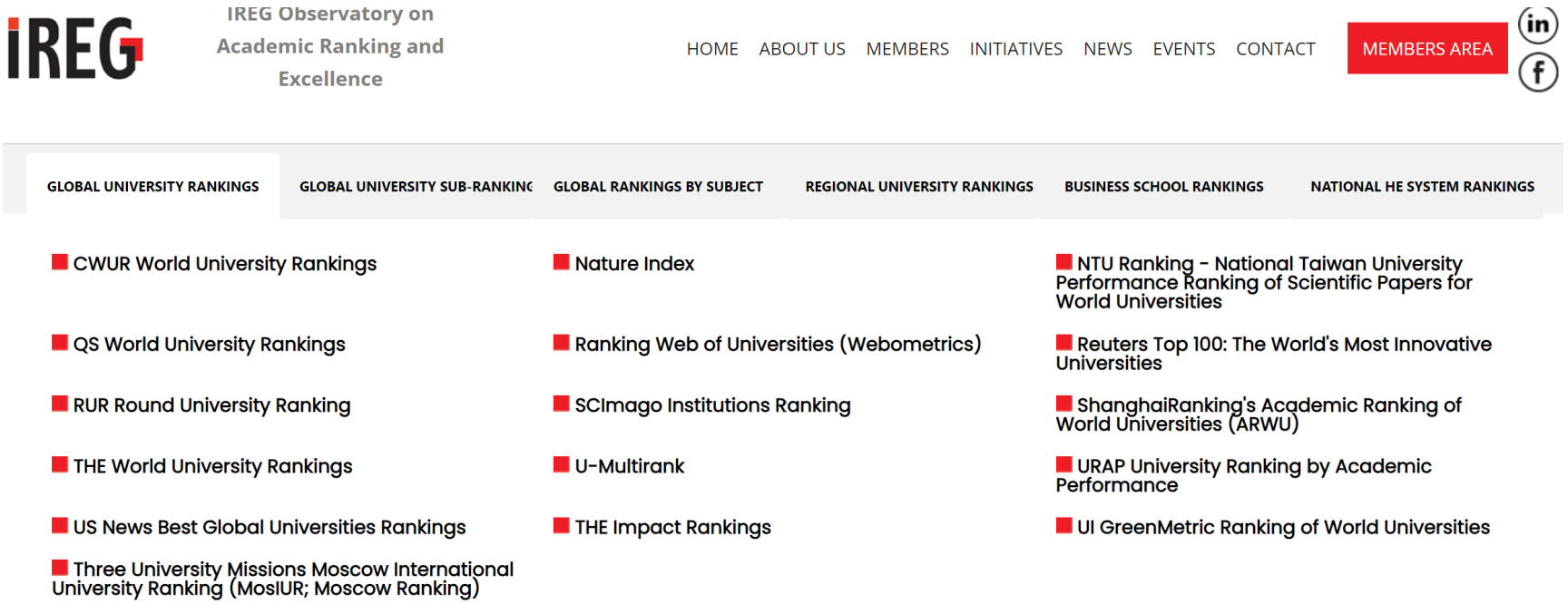


Framework & Reference: HERD



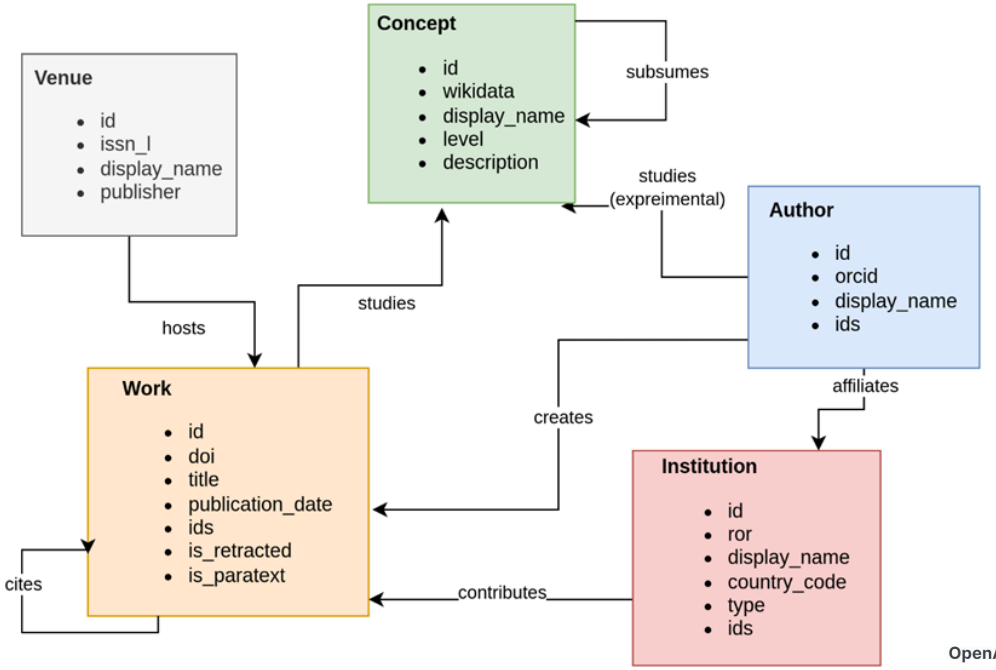
Open research evaluation

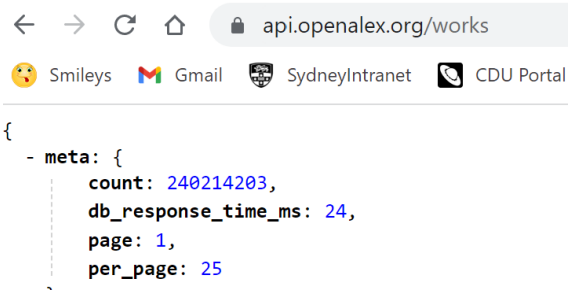
- Google Scholar, Publish-or-Perish [individual]….
- Leiden, URAP, NTU, Scimago [institutional]….
- Rankings - Shanghai, THES, QS [epistemically indifferent]



OpenAlex

- Priem, J., Piwowar, H., & Orr, R. (2022). *OpenAlex: A fully-open index of scholarly works, authors, venues, institutions, and concepts*. ArXiv. https://arxiv.org/abs/2205.01833

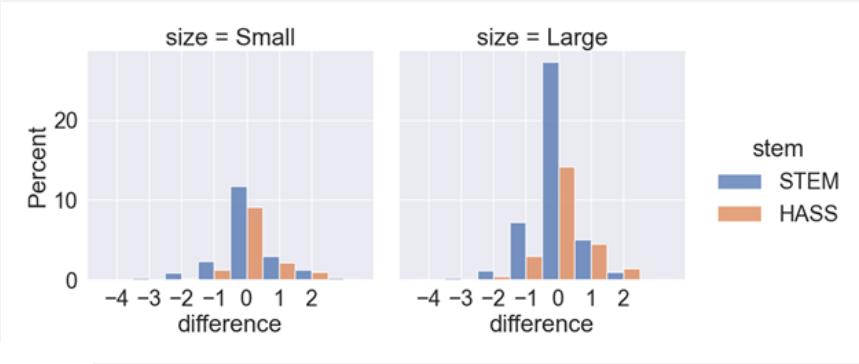


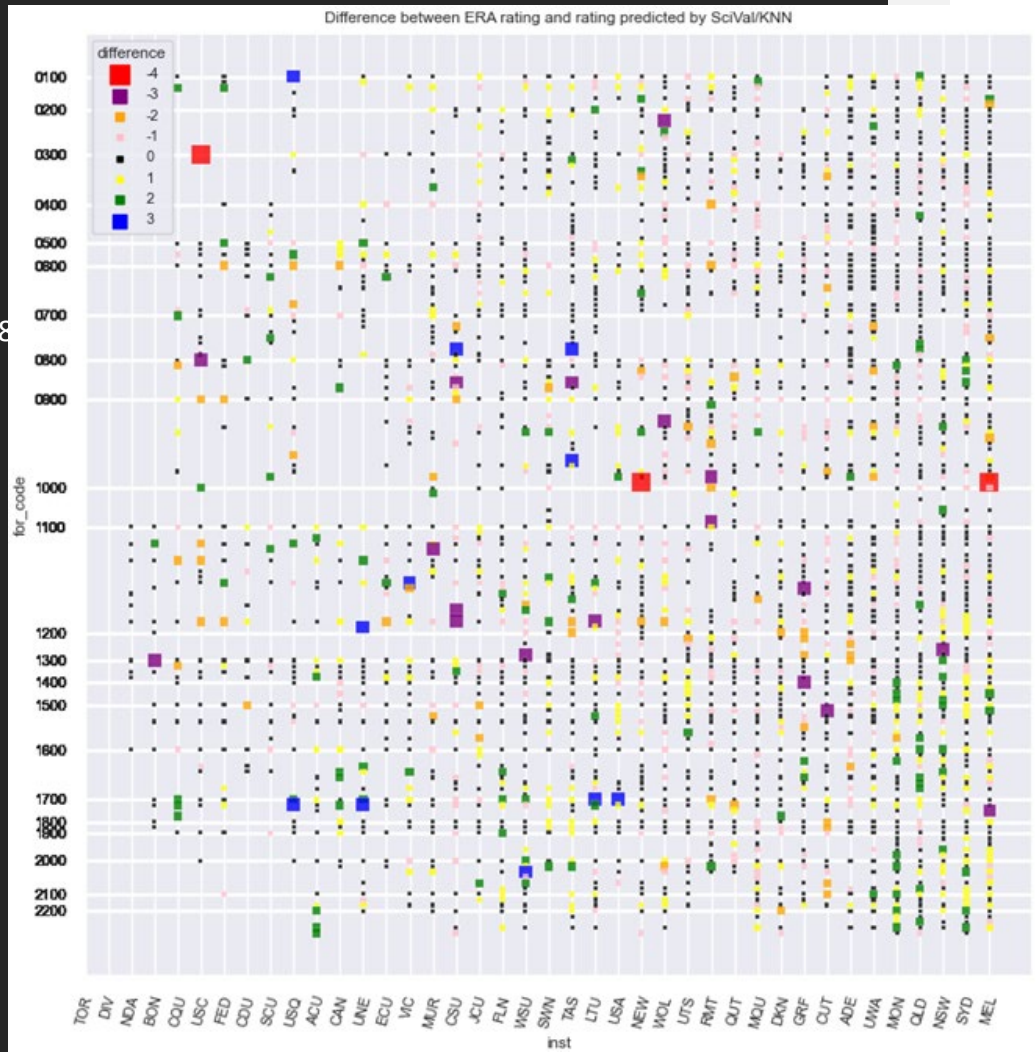


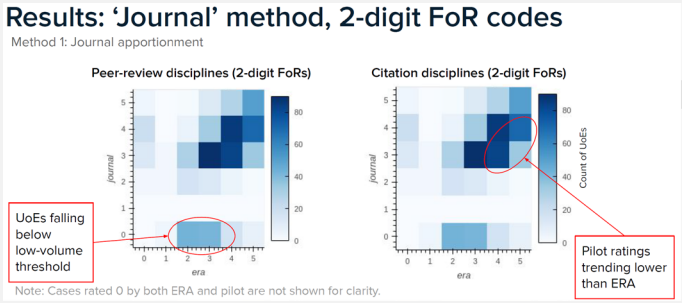
OpenAlex

OpenAlex is a fully open catalog of the global research system. It's named after the ancient Library of Alexandria and made by the nonprofit OurResearch.

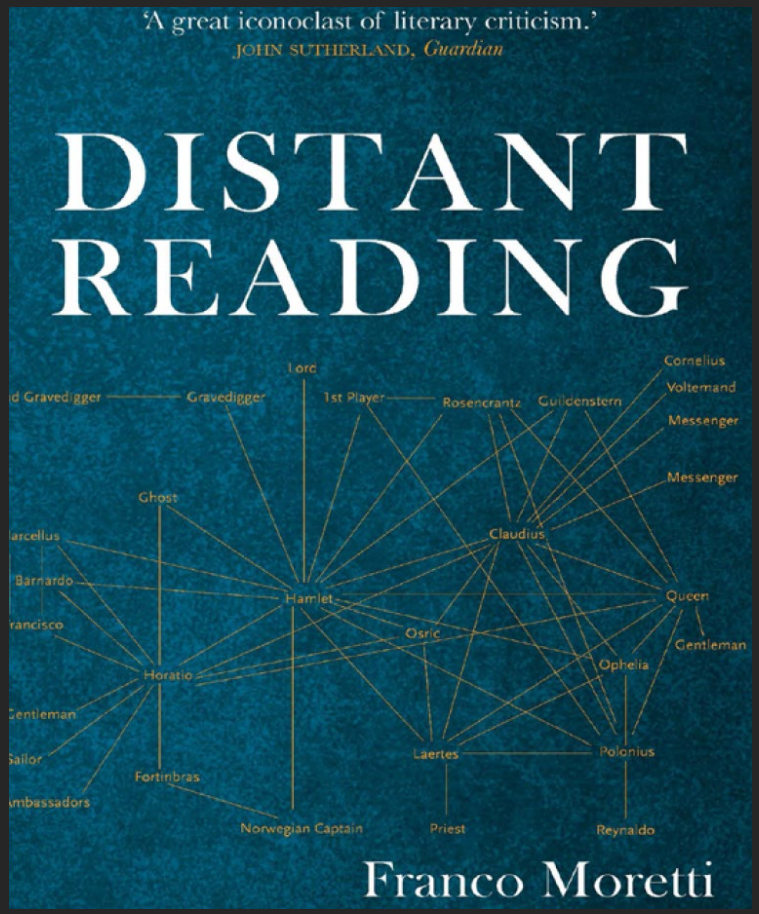
ERA2018, Scopus, and OpenAlex







HERD: distant reading



DHQ: Digital Humanities Quarterly
2017
Volume 11 Number 2

A Genealogy of Distant Reading

Ted Underwood <tunder_at_illinois_dot_edu>, University of Illinois, Urbana-Champaign

Topic models do not model topics: epistemological remarks and steps towards best practices

Anna Shadrova

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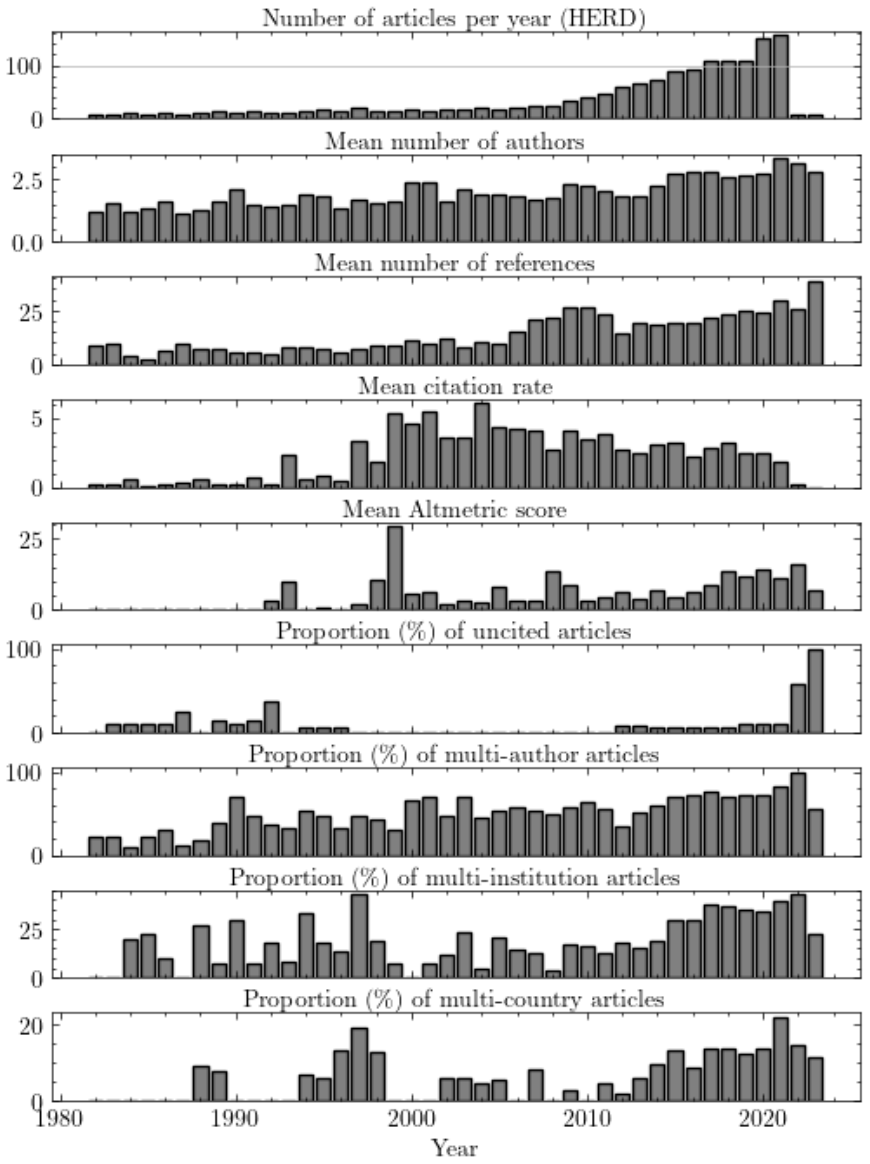
- Gleaning insights from large corpuses
- Drawing on social science methodologies
- Digital approaches to the Humanities

- POTENTIAL TO AVOID:
  - Colonisation by bibliometrics
  - Technical inaccessibility & specialisms
  - Objectifying authors' efforts
  - De-meaning authors' contibutions

HERD time series

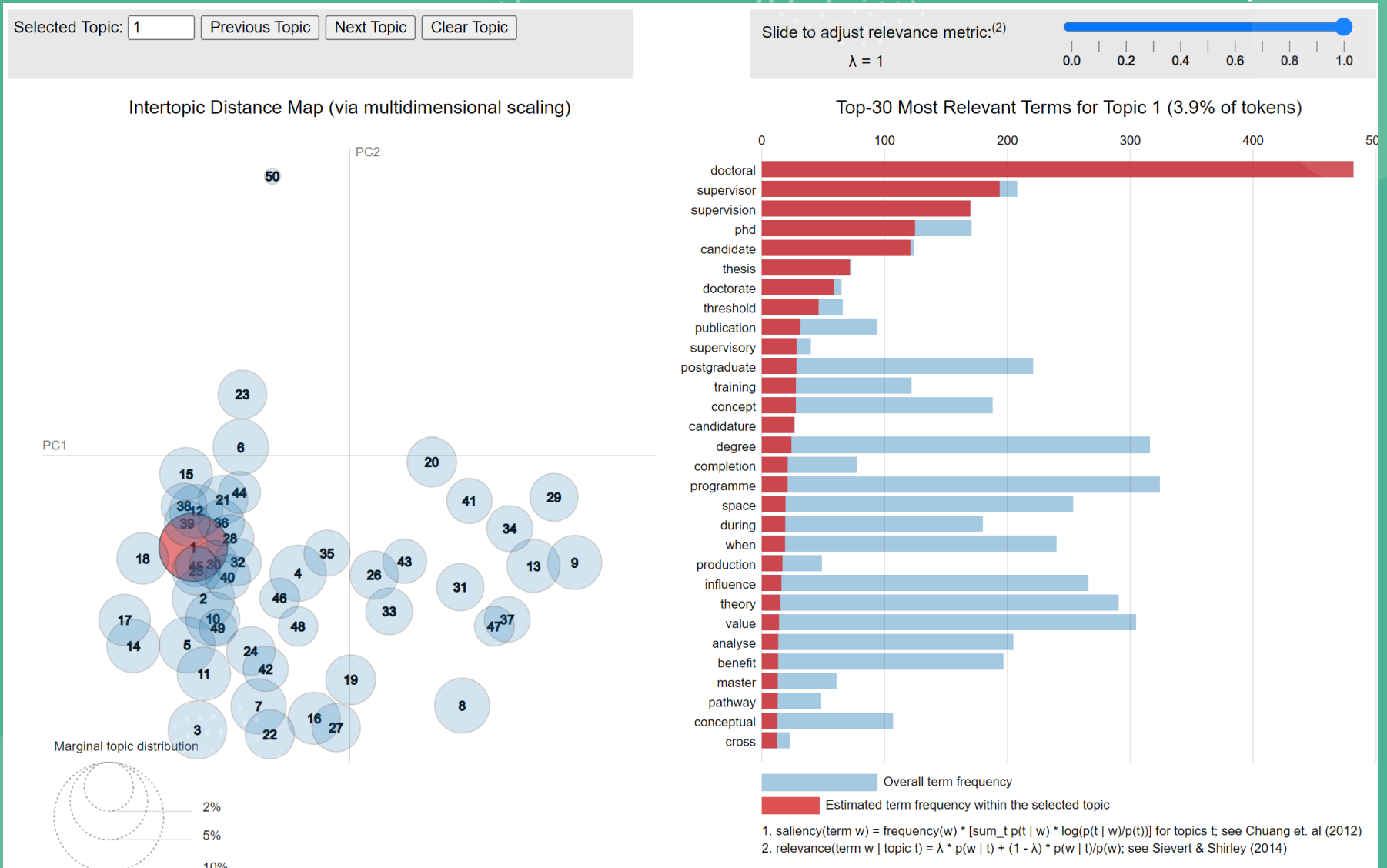


Publication teams in HERD

		Number of authors in component																
		1	2	3	4	5	6	7	8	9	10	11 to 18	22	25	28	554	total	%
Number of articles in component	1	384	234	141	79	38	16	3	4	6	0	5	0	0	0	0	2044	54.49
	2	39	16	22	18	8	11	6	5	0	2	5	1	0	0	0	500	13.33
	3	6	7	7	11	6	5	2	2	1	0	0	0	0	0	0	184	4.91
	4	0	1	2	4	5	4	0	0	1	1	4	0	0	0	0	141	3.76
	5	2	1	4	3	1	0	2	0	1	1	3	0	0	0	0	106	2.83
	6	0	1	0	1	1	0	0	0	0	0	1	0	0	0	0	26	0.69
	7	0	1	1	2	2	0	0	0	0	0	3	0	0	0	0	59	1.57
	8	0	0	1	0	0	0	1	0	0	0	1	0	0	0	0	21	0.56
	9	0	0	0	0	0	0	0	0	1	0	1	0	0	0	0	20	0.53
	10	0	0	0	0	0	1	0	0	0	0	2	0	0	0	0	39	1.04
	11	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0	53	1.41
	22	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	4	0.11
	321	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	554	14.77
	total	490	309	249	221	117	79	39	20	27	13	110	2	11	11	321		
	%	24.27	15.3	12.33	10.95	5.79	3.91	1.93	0.99	1.34	0.64	5.45	0.1	0.54	0.54	15.9		

HERD topics

- R-package stm
- Structural Topic Modelling
- Latent Dirichlet Analysis



HERD citation network

- Bibliometric coupling
- Co-citation analysis

BIBLIOBICLUSTER: A Bicluster Algorithm for Bibliometrics

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https://doi.org/10.1007/978-3-030-79150-6_22

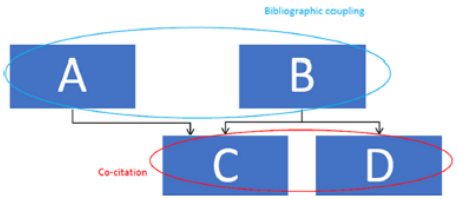

Fig. 1. Subdivision of a network into elements connected according to bibliographic coupling and those connected according to co-citation analysis

partition_1 — Filter in any column

index	journal_id	cited_title	ıal_ye	cite_id	display_name	:ation
Filter	Filter	Filter	Filter	Filter	Filter	Filter
5574	W2156247730	A Diversity Of Doctorates: Fitness for the ...	2002	W2078806515	Evidence-Based Marketing: A Perspective on the 'Practi...	2012
5548	W2156247730	A Diversity Of Doctorates: Fitness for the ...	2002	W1525043445	Changes in doctoral education	2012
5551	W2156247730	A Diversity Of Doctorates: Fitness for the ...	2002	W2136430163	Evaluating industry-based doctoral research programs: ...	2012
5545	W2156247730	A Diversity Of Doctorates: Fitness for the ...	2002	W2085152146	The role of the professional doctorate in Ireland	2012
5560	W2156247730	A Diversity Of Doctorates: Fitness for the ...	2002	W1583169277	Developing early stage researchers	2012
5540	W2156247730	A Diversity Of Doctorates: Fitness for the ...	2002	W2109287600	Professional Doctorates in Management: Toward a ...	2013
5581	W2156247730	A Diversity Of Doctorates: Fitness for the ...	2002	W2171198067	Formação de doutores no Brasil: o esgotamento do	2013
5543	W2156247730	A Diversity Of Doctorates: Fitness for the ...	2002	W2015810393	Leveraging value in doctoral student networks through ...	2013

Career pathways

- Authors in HERD
- Locate the OEUVRE of authors
- Trace publications
  - Academic age
  - Topics
  - Education-related

expertise

Filter in any column

ex	author_id	concepts	education
	Filter	Filter	Filter
0	https://openalex.org/A1012886586	Refugee| Sociology| Political science| Participatory action research| Psychology| ...	0
1	https://openalex.org/A1089983168	Narrative| Public relations| Sociology| Career development| Political science| Labo...	0
2	https://openalex.org/A1114866663	Microglia| Neuroinflammation| Neurotoxicity| Astrocyte| Inflammation| Cell biology	0
3	https://openalex.org/A1119561849	Humanities| Geography| Art| Social media| Political science| Computer science	0
8	https://openalex.org/A1178160141	Skepticism| Paranormal| Epistemology| Dialogic| Philosophy| Psychology	0
13	https://openalex.org/A1216118259	Gender studies| Sociology| Closet| Human sexuality| Queer| Zulu	0
15	https://openalex.org/A123390432	Chaperone (clinical)| Health science| Curriculum| Crystallin| Protein folding| Heat ...	0
4	https://openalex.org/A1123414535	Psychology| Early childhood education| Early childhood| Inclusion (mineral)| ...	1
5	https://openalex.org/A1129878574	Sociology| Pedagogy| Gender studies| Immigration| Political science| Psychology	1
6	https://openalex.org/A1158332331	Pedagogy| Sociology| Psychology| Inequality| Disadvantage| Social exclusion	1
7	https://openalex.org/A1172805422	Mathematics education| Psychology| Maceral| Quality (philosophy)| Syllabus| ...	1
9	https://openalex.org/A118414659	Psychology| Pedagogy| Mathematics education| Curriculum| Medical education| ...	1

Running the REF on a rainy Sunday afternoon: Can we exchange peer review for metrics?

Anne-Wil Harzing*