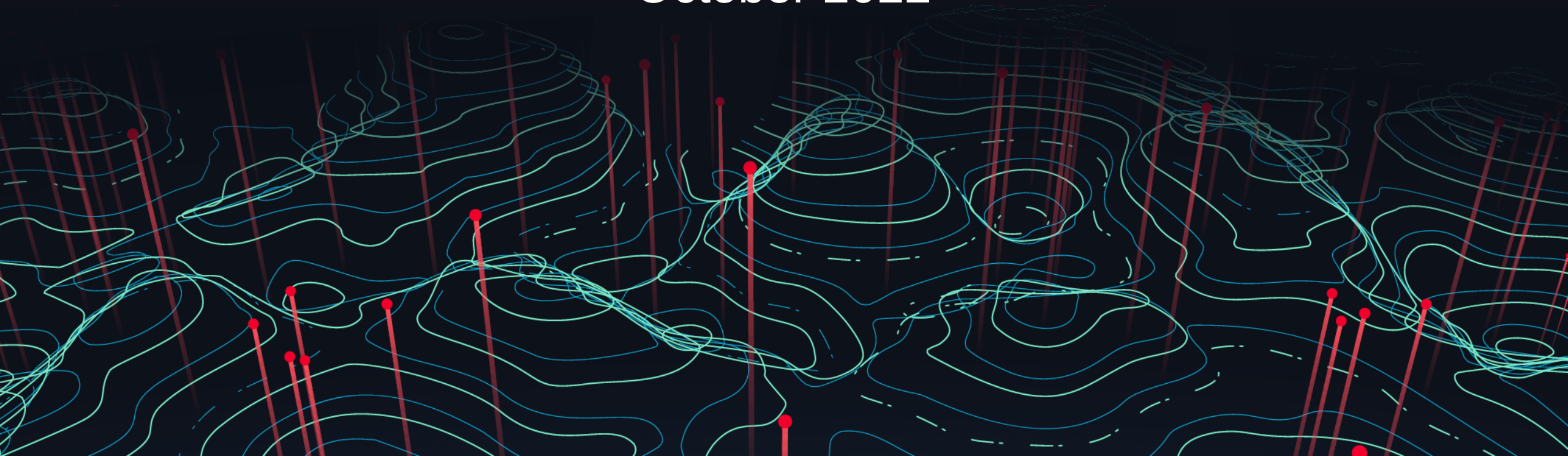
Times Higher Education

Germany Data Masterclass

October 2022



WUR 3.0 Methodology Overview

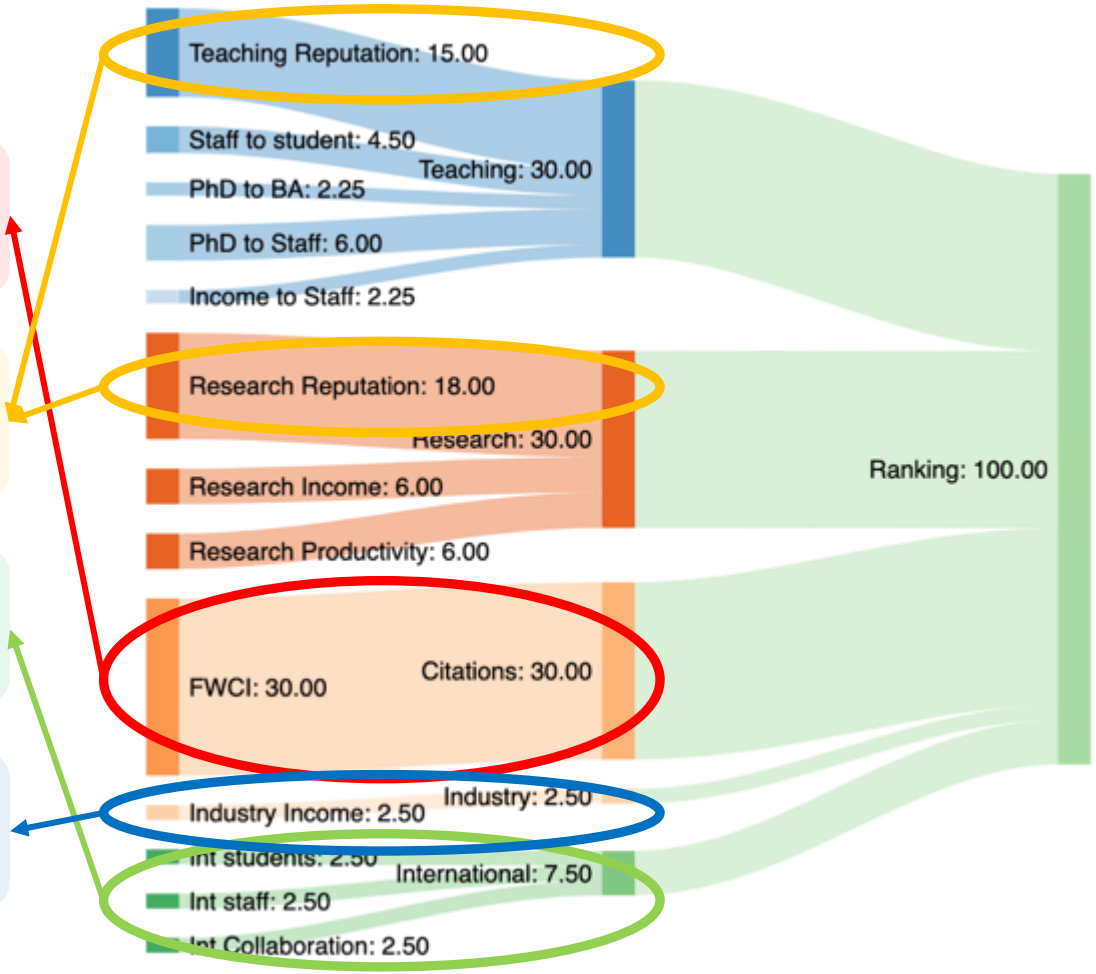
To cater for the large numbers of universities, WUR 3.0 sees some significant changes

Citations
- Moving to 3 bibliometrics designed to be more representative of quality output

Reputation
- Survey brought in-house resulting in three times as many votes

International outlook
- Adapted to have a better reflection of students, country size and diversity

Patents
- A new metric based on patents



Putting it all together

Current pillar name	Proposed pillar name	Metric code	Propsed metric name	*Subject weighted*	*Scoring algorithm*	WUR 2.1 metric weight	WUR 2.1 pillar weight	WUR 3.0 metric weight	WUR 3.0 pillar weight
Teaching	Teaching	t1	Teaching reputation	*FALSE*	*exponential_65*	15.00%	30.00%	15.00%	29.50%
		t2	Student staff ratio	*FALSE*	*normal_cdf*	4.50%		4.50%	
		t3	Doctorate bachelor ratio	*FALSE*	*normal_cdf*	2.25%		2.00%	
		t4	Doctorate staff ratio	*TRUE*	*normal_cdf*	6.00%		5.50%	
		t5	Institutional income	*FALSE*	*normal_cdf*	2.25%		2.50%	
Research	Research Environment	r1	Research reputation	*FALSE*	*exponential_65*	18.00%	30.00%	18.00%	29.00%
		r2	Research income	*TRUE*	*normal_cdf*	6.00%		5.50%	
		r3	Research productivity	*TRUE*	*normal_cdf*	6.00%		5.50%	
Citations	Research Quality	c1	Citation Impact	*FALSE*	*normal_cdf*	30.00%	30.00%	0.00%	30.00%
		c2	Research strength	*FALSE*	*normal_cdf*			10.00%	
		c3	Research excellence	*TRUE*	*exponential_cdf*			10.00%	
		c4	Research influence	*TRUE*	*exponential_cdf*			10.00%	
Industry	Industry	e1	Industry income	*FALSE*	*normal_cdf*	2.50%	2.50%	2.00%	4.00%
		e2	Patents	*TRUE*	*exponential_cdf*			2.00%	
International Outlook	International Outlook	i1	International students	*FALSE*	*normal_cdf*	2.50%	7.50%	2.50%	7.50%
		i2	International staff	*FALSE*	*normal_cdf*	2.50%		2.50%	
		i3	International co-authorship	*TRUE*	*normal_cdf*	2.50%		2.50%	
		i4	Studying abroad	*FALSE*	*normal_cdf*			0.00%	
TOTAL						**100.00%**	**100.00%**	**100.00%**	**100.00%**

Key
Changed
New
Removed
Being finalised

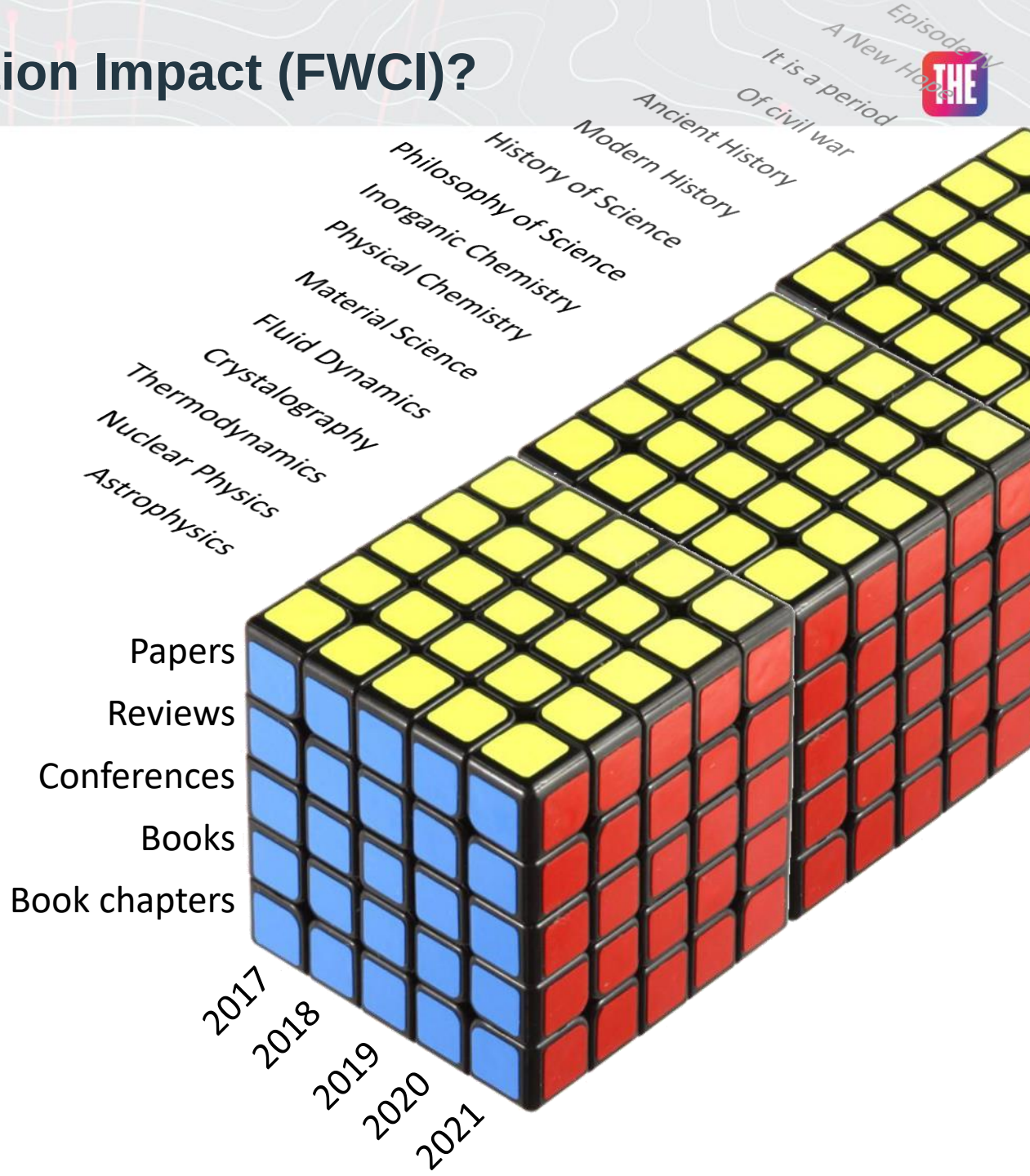
Weights shown are for the Overall subject

Citation: What is Field Weighted Citation Impact (FWCI)?

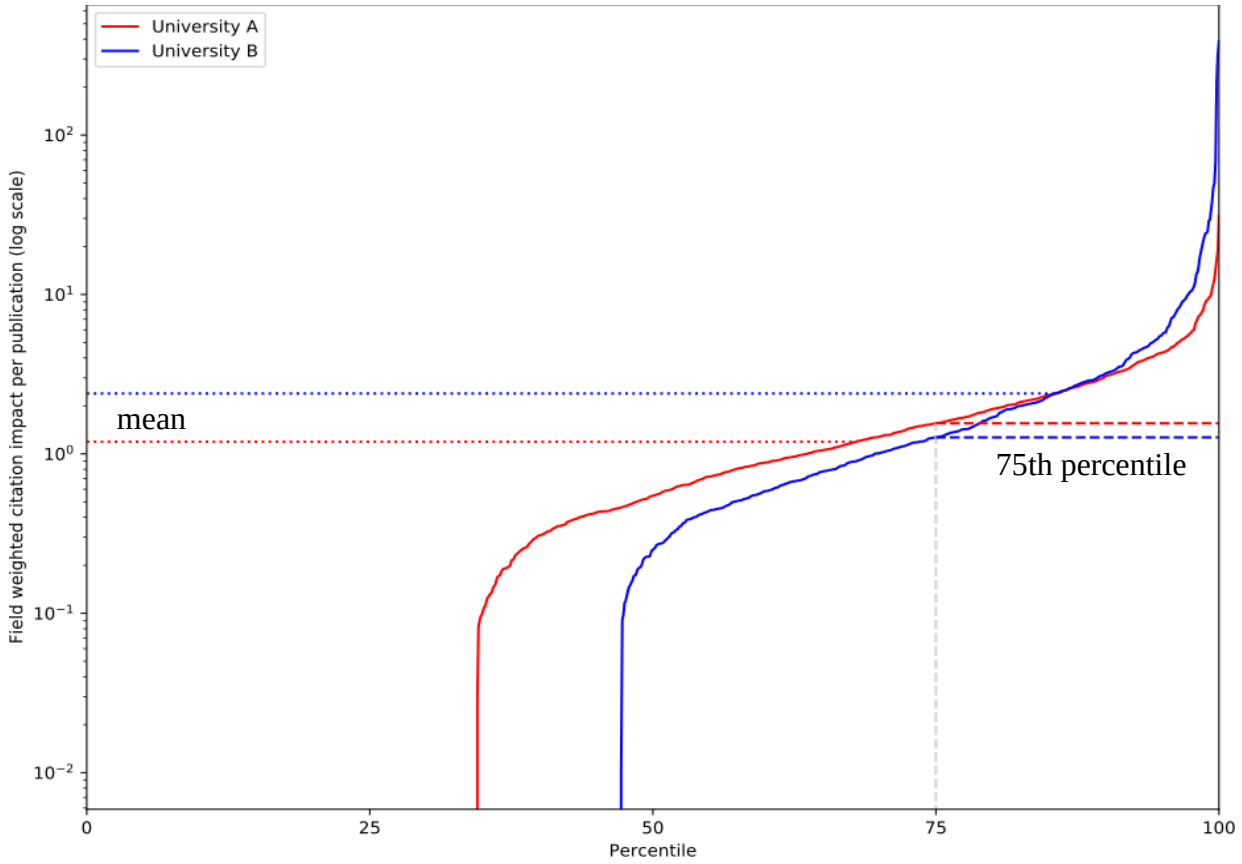
FWCI is the ratio of the number of citations a publication receives to the expected number of citation of the same

- Type
- Subject
- Year

Currently, Citation Impact of an institution is the mean FWCI of all of its eligible publications

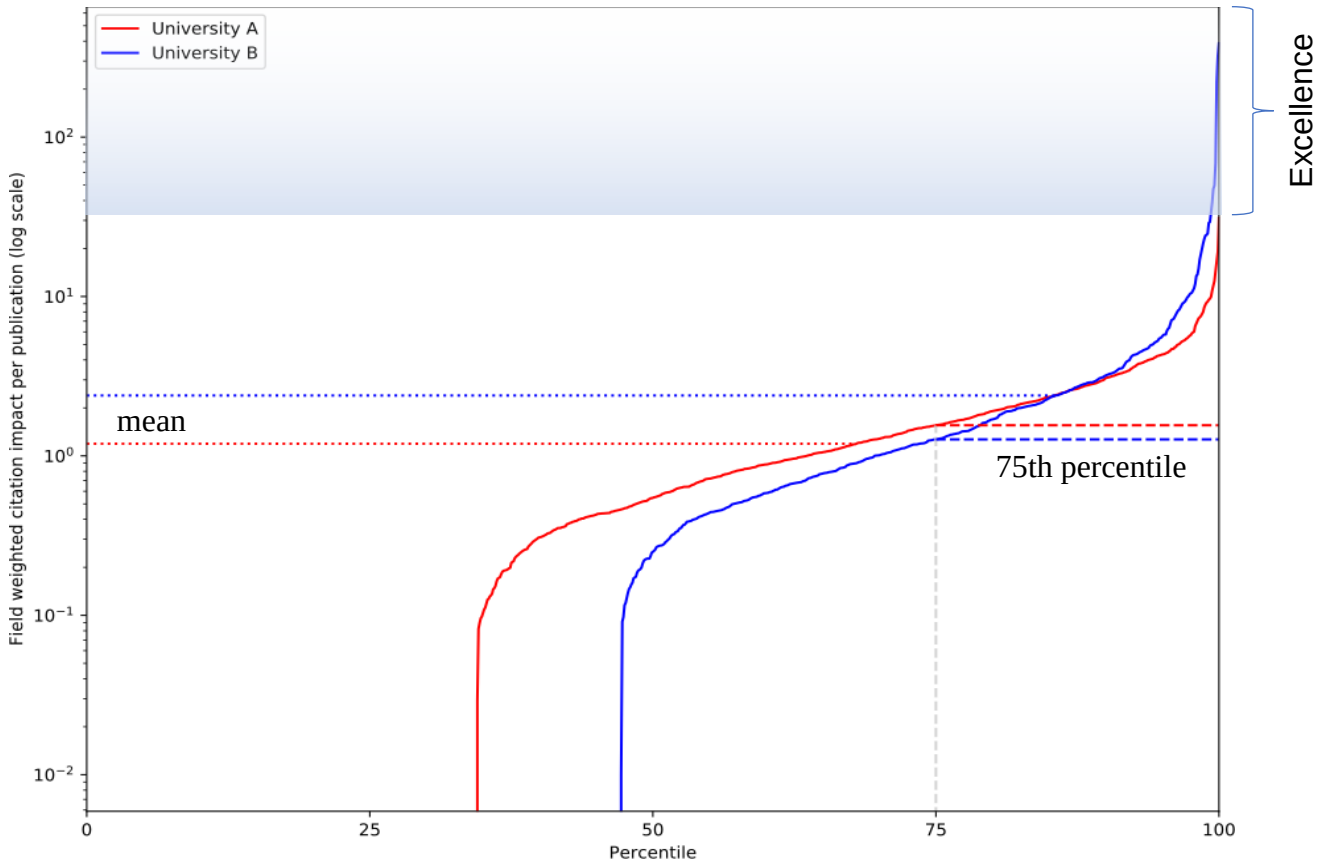


Citation: Research Quality



- FWCI at the 75th percentile for all publications for a university
- Replaces taking the mean average across all publications
- Avoids extreme papers having detrimental effect
- Removes the need for some fixes we had previously
  - Kilo author papers
  - Country normalisation

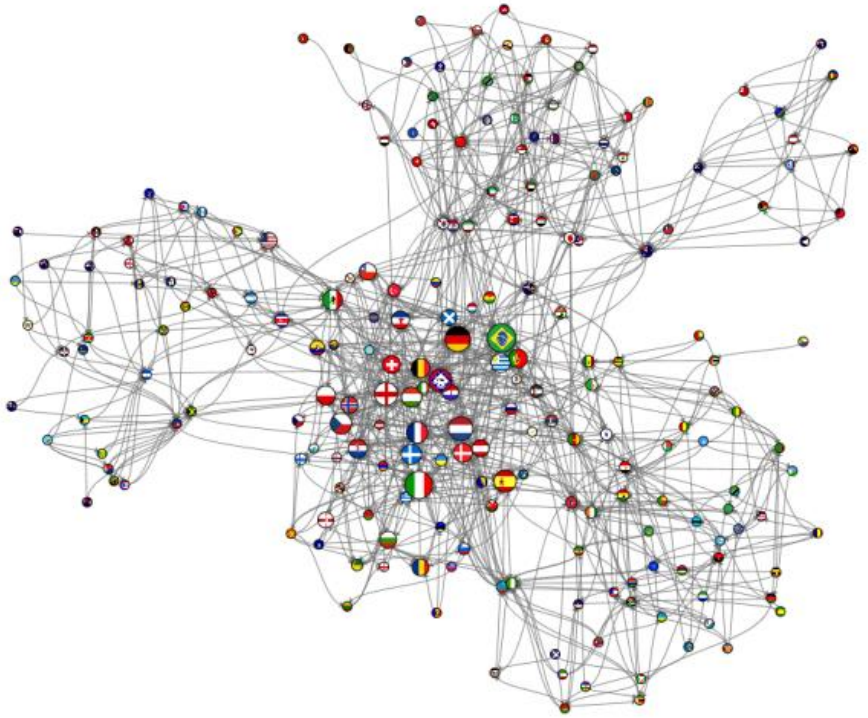
Citation: Research Excellence



- Number of papers in the top 10% worldwide
  - Based on FWCI
  - Normalised by year, subject, and staff numbers
- Recognises the institutions contribution to the best research in each subject, and overall
- NOT the top 10% of universities papers, but the number of papers they contribute to the top 10% of research by subject according to FWCI

Citation: Research Influence

- Similar to PageRank
- Importance of paper is based on if it is cited by important papers
  - This requires iteration to get to a conclusion
  - Subject based
  - Unique measure
- Rewards ‘good’ self-citations whilst ignoring ‘bad’ self-citations
- Challenge for younger institutions



Reputation: Survey format

Key participation criteria	• Strictly invitation-only (universities cannot make nominations or supply contact lists, and individuals cannot nominate themselves for participation) • Academics must have at least one cited research paper and have published in the last 5 years.
Survey	• Scholars are questioned at the level of their specific subject discipline and are asked to name up to 15 universities that they believe are the best in research and teaching, both in general and in their direct experience • The survey is translated into 12 languages
Fair representation	• Results are benchmarked using UNESCO data to ensure the ranking is representative of the global distribution of scholars, both by country and subject

Survey open now until 31 Jan 2023

Reputation: In house data collection

The teaching and research reputation metrics are unchanged in WUR 3.0. However, we are now conducting this survey ourselves (it was previously conducted by Elsevier).

The new in-house survey attracts 3 times as many votes as the previous out-sourced survey, giving us far more representation, plus deeper insight as we know more about the respondents

	2021 (Elsevier)	2022 (In house)	Change
Respondents	10,963	29,606	+170%
Ranking votes	149,536	420,204	+181%
Experiential votes	107,169	309,167	+188%
Countries participating	128	159	
Response rate	1.6%	1.8%	

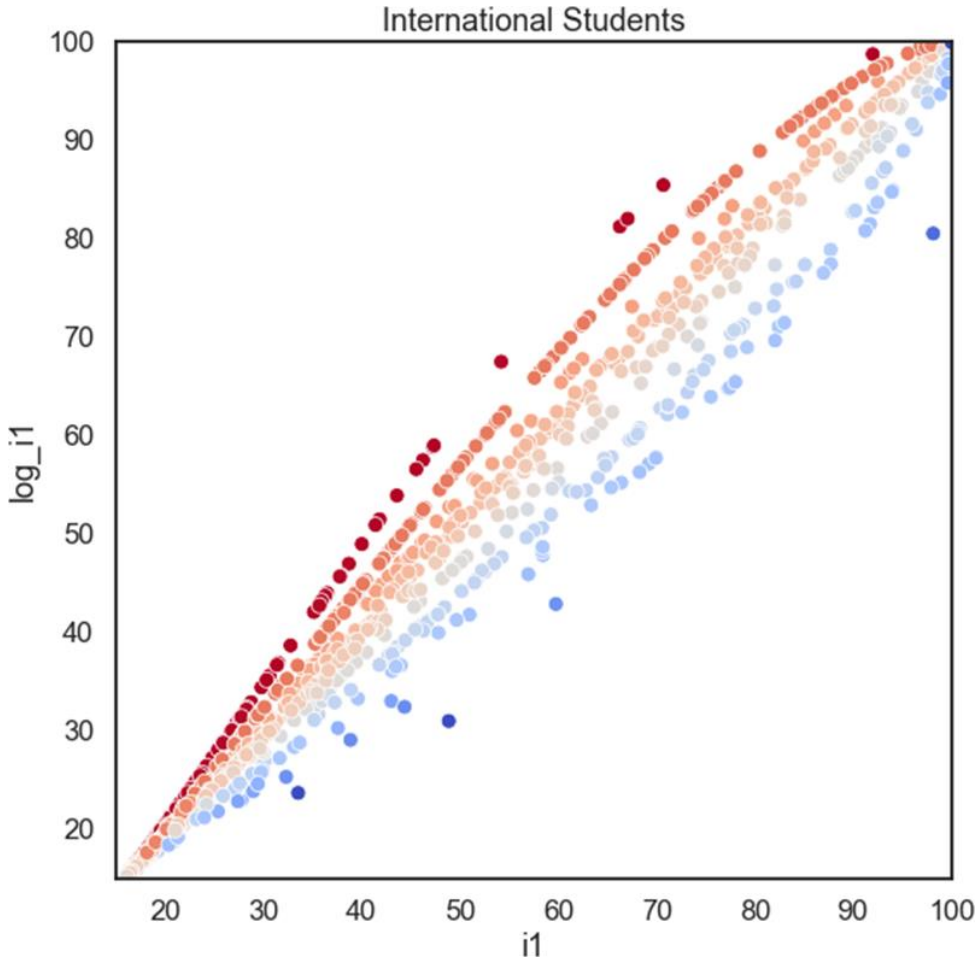
We are currently looking at restrictions on self-voting, and comparative voting alongside the current recall based voting

International Outlook: Accounting for country size

- Large countries have been disadvantaged compared to small countries in our international metrics, in that it is “easier” for staff and students in small countries to work/study abroad.

- In WUR 3.0, the existing metrics will be normalised to account for the populations size:
  - Proportion of international students
  - Proportion of international staff
  - Proportion of publications with at least one co-author from an international institution

- Additionally a new metric has been added to measure the level of outbound students



International Outlook: Studying abroad

- Additional metric - outbound exchange students
- Trialled data collection in WUR 2023
  - Most universities are able to supply data
- However, international student mobility was significantly affected by the COVID pandemic in 2020-2021
- The initial release of WUR 3.0 (WUR 2024) will introduce this field as mandatory but the metric will be given zero weight

Industry: Patents

- Directly measures research output, specifically how much an institution's research is cited by patents. This is similar to one that we already use within the THE Impact Rankings (in SDG 9: Industry, Innovation and Infrastructure).

- This measure is subject weighted to avoid penalising universities producing research in fields low in patents.

- This is a count of patents, normalised by staff numbers.