



Bibliometric analysis based on Scopus

Overview and recommendations

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Consultant, Research Intelligence

27 August 2019, Leibniz Universität Hannover





Bibliometrics in Germany

Still in pioneering stage vs. UK, Nordics or BeNeLux



Bibliometrics – perspectives from Germany

Bibliometrie: Instrument mit begrenzter Aussagekraft

Wie misst man wissenschaftliche Qualität? Und wie können Wissenschaftsförderorganisationen oder Berufungskomitees herausfinden, welche Kandidatinnen und Kandidaten tatsächlich zu den Besten weltweit gehören? Diese Fragen hat das Forum zur Internationalisierung der Wissenschaft in Berlin diskutiert.

Ein immer häufiger genutztes Instrument zur Bewertung wissenschaftlicher Literatur. Dabei werden von welcher Wissenschaftler wie viele Artikel in anderen Publikationen zitiert. Dies gibt einen Blick eine objektive Einschätzung

Tatsächlich seien diese Zahlen jedoch ein schlechtes Maß für die Qualität der Wissenschaft insgesamt. Zu diesem Zweck hat das Internationales Zentrum für Hochrangige Wissenschaftler und Wissenschaftlerinnen die Überschrift „Beyond Bibliometrics“ gewählt.

Die Teilnehmenden waren sich einig, dass die Bewertung wissenschaftlicher Qualität ganzer transnationaler Kollaborationen gerade in der Zeit der Digitalisierung von Wissenschaftler zu bewerten, müssen. Bibliometrische Größen wie etwa die Zitationsrate sind willkürlich, da sie auf fragwürdigen Kriterien basieren. Die Qualität der Veröffentlichungen ein

Die steigende Verbreitung von Bibliometrie im wissenschaftlichen Weltweite Wissenschaftssystem. So werden von Forschenden, die zu Mainstream- und populären Themen veröffentlichen können. Das halte

Das International Advisory Board hat die zentralen Fragen fortsetzen: Wie definiert man „die Besten“? Und mit welchen Methoden jenseits der Bibliometrie kann man sie finden?

Mit dem International Advisory Board hat die Stiftung 2007 ein beratendes Gremium geschaffen. Es greift auf dem jährlichen Forum zur Internationalisierung der Wissenschaft aktuelle Entwicklungen auf den global ausgerichteten Wissenschaftsmärkten auf. Die Stiftung macht so ihr internationales Netzwerk hochrangiger Persönlichkeiten für die wissenschaftspolitische Strategieplanung in Deutschland nutzbar.



247
BIB
201

Responsible Metrics - Verantwortlicher Umgang mit Metriken

Dr. Reingis Hauck, Leibniz Universität Hannover



Abstract: In the recent past, there has been an increasing investment in the implantation of current research information systems (CRIS) at research institutions. The question of how the research information can be used for university management - particularly based on bibliometric indicators - has not (yet) been addressed in Germany. Internationally, the discussion on how to deal with metrics in university governance and research assessment is much more dynamic. The paper takes up this discussion process and explains the current recommendations for responsible use of metrics. In the area of reporting from research information systems, it is absolutely necessary to ensure bibliometric expertise in order to avoid misapplications and instead gain real insight through extended analysis possibilities. The author points to the necessary professionalisation in the development of bibliometric services as part of research management and recommends further training and

untersuchen. Dafür gibt es zwei Gründe: (1) Da Wissenschaftler nahezu aller Fächer ihre Forschungsergebnisse in Publikationen präsentieren, und es zum guten Stil beim Publikationsprozess gehört, alle anderen Arbeiten mit Einfluss auf die eigene Arbeit zu zitieren, sind bibliometrische Daten eng mit dem Forschungsprozess in diesen Fächern verbunden. (2) Darüber hinaus liegen große Datensätze mit bibliometrischen Daten in Literaturdatenbanken für die Auswertung vor. Für die Erstellung einer bibliometrischen Studie müssen demnach die Daten in der Regel nicht aufwendig erzeugt werden.

„Mehr Licht“

Was kann die Bibliometrie in der heutigen Zeit?

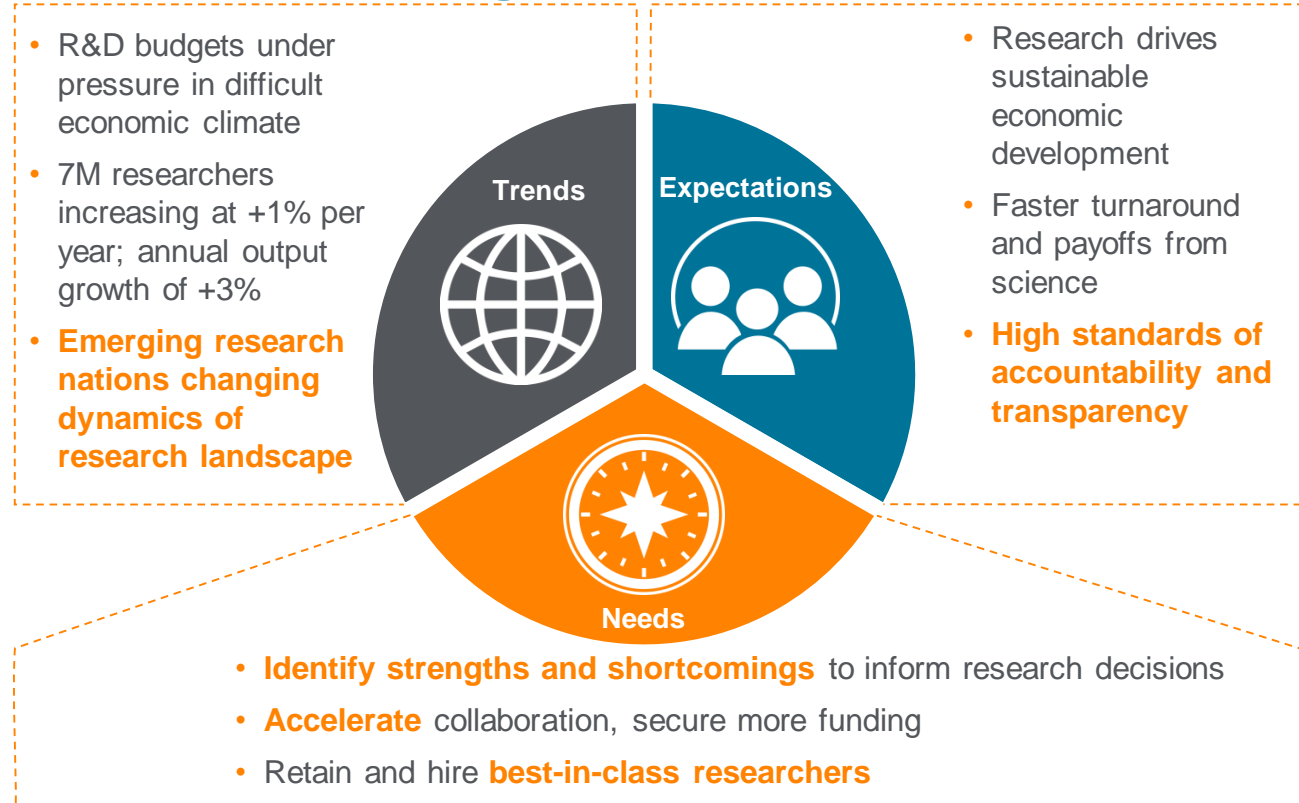
Von Lutz Bornmann, München



GUTACHTEN
2019 2020 2021
2022 2023 2024
2025 2026 2027

GUTACHTEN ZU FORSCHUNG, INNOVATION UND TECHNOLOGISCHER LEISTUNGSFÄHIGKEIT DEUTSCHLANDS

The world of research is becoming more competitive leading to challenges for research management



Reference: International Comparative Performance of the UK Research Base 2013

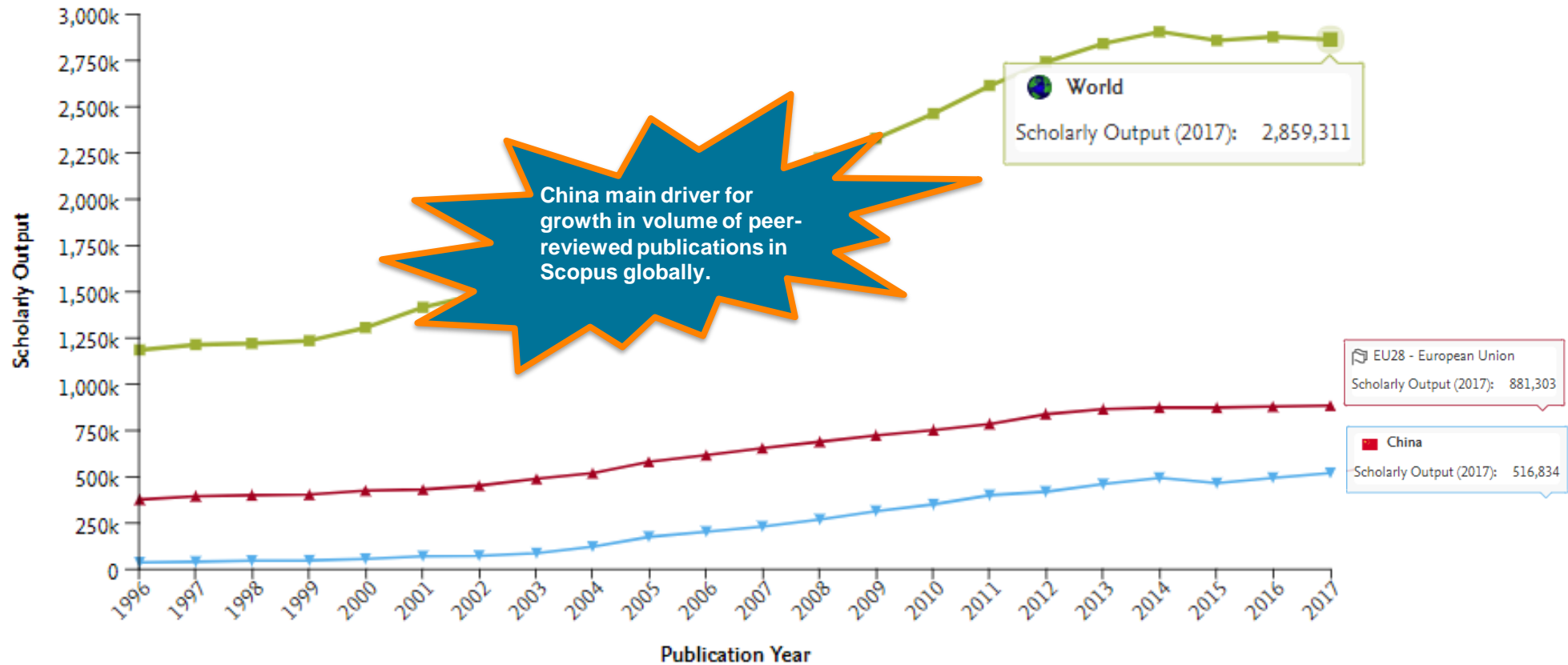
Global Trend #1 - Increase in Volume of Total # Publications in Scopus

y-axis

Scholarly Output

x-axis

Publication Year



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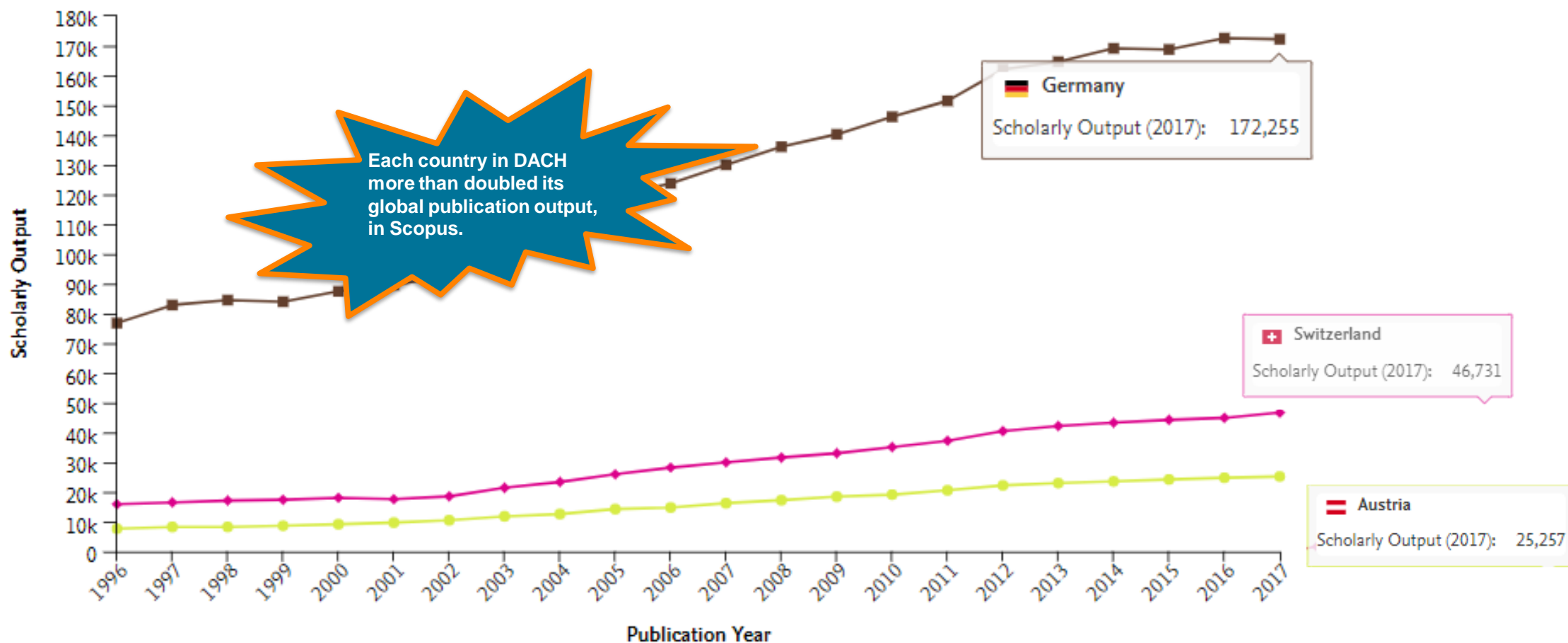
Global Trend #1 – Increase in Volume of Publications in Scopus (DACH)

y-axis

Scholarly Output

x-axis

Publication Year



Global Trend #2 – Increased Impact of Publications (by FWCI)

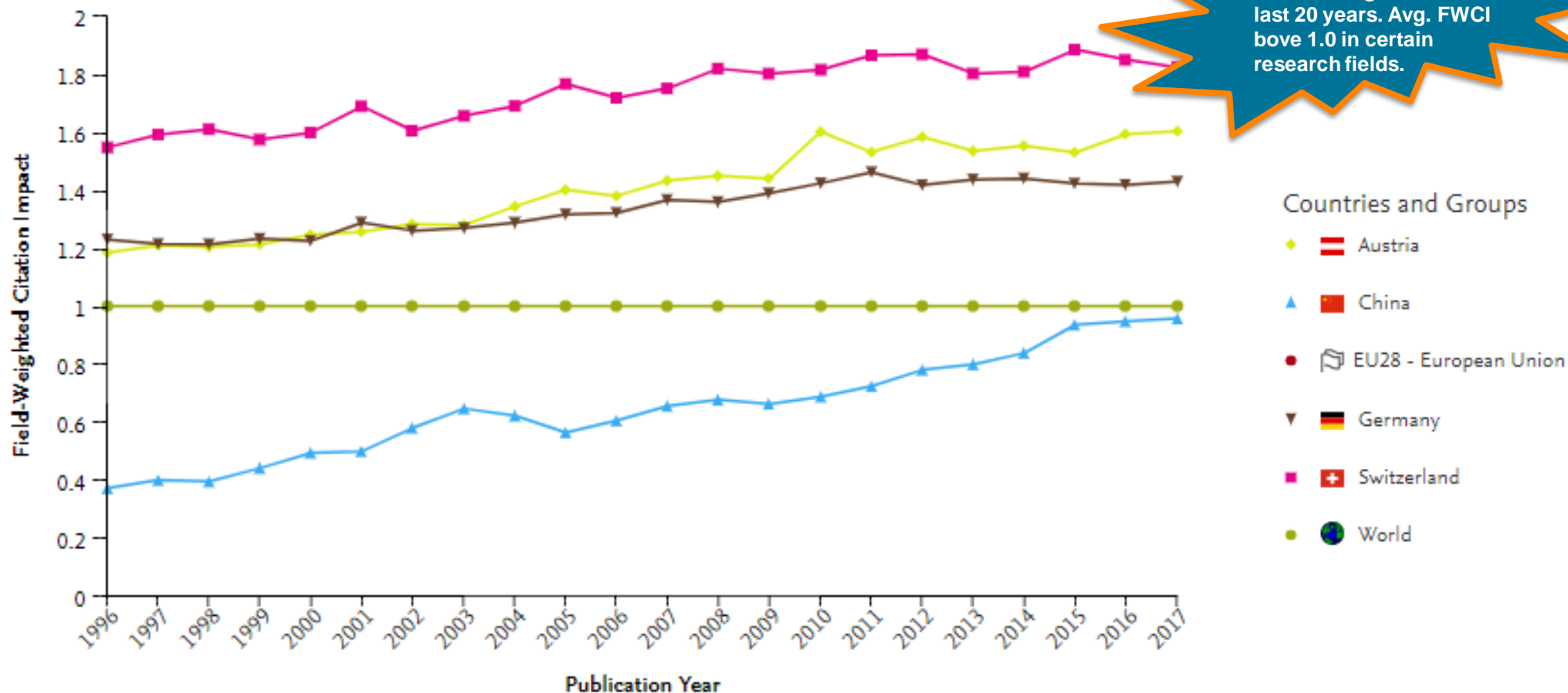
y-axis

Field-Weighted Citation

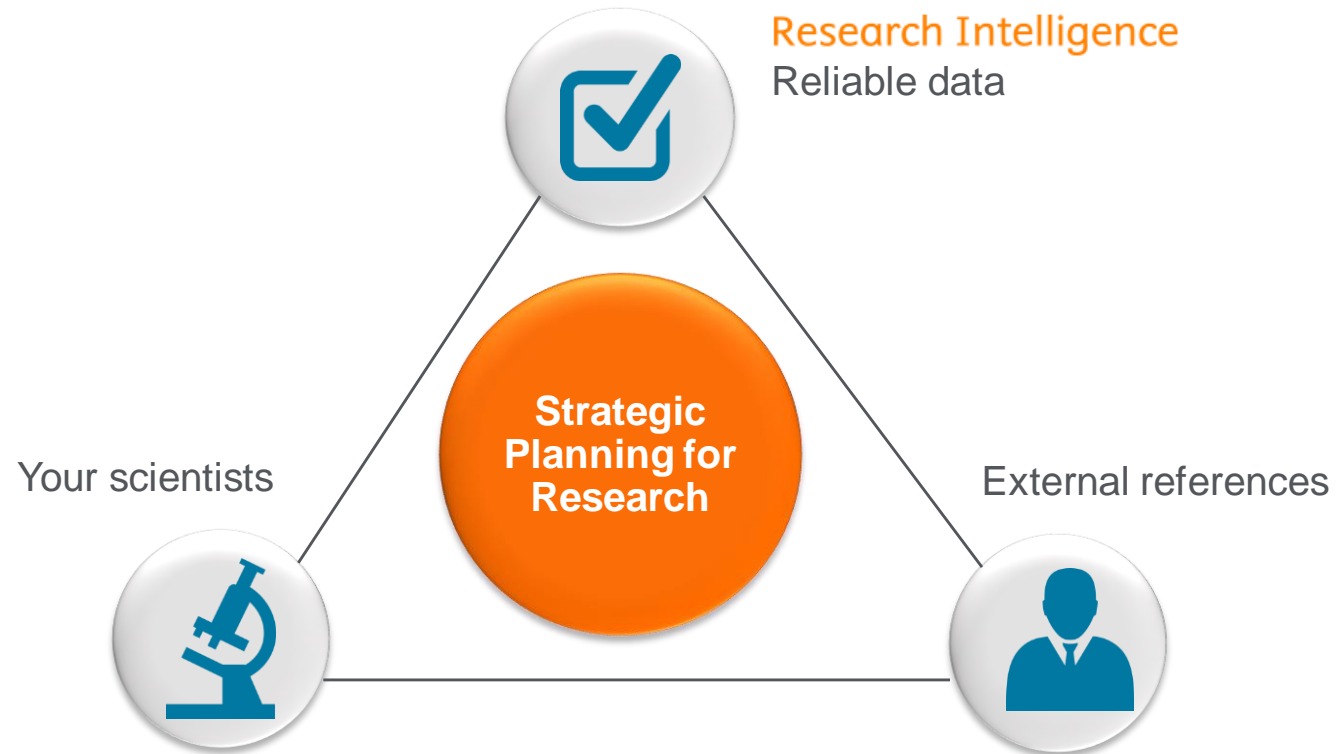
Impact

x-axis

Publication Year



Make decisions by “triangulating” information sources





Scopus: Publication, Author and Institutional level metrics



Publication level metrics

Wild pollinators enhance fruit set of crops regardless of honey bee abundance
(2013) Science, 340(6127), pp. 1608-1611

Scopus Metrics About Snowball Metrics

776 Citations
Total number of times this document has been cited in Scopus.

Date range: 2015 to 2019 Update

Include all citations
 Exclude self citations
 Exclude citations from books

Citation benchmarking ?
Shows how citations received by this document compare with the average for similar documents.

99th percentile in Medicine

Field-Weighted Citation Impact ?
Shows how well this document is cited when compared to similar documents. A value greater than 1.00 means the document is more cited than expected.

21.59

< Back to results | 1 of 3,639

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Science
Volume 340, Issue 6127, 29 March 2013

Wild pollinators enhance fruit set of crops regardless of honey bee abundance

Garibaldi, L.A.^a, Steffan-Dewenter, S., Afik, O.^k, Bartomeus, I.^l, Benjamin, G., Holzschuh, A.^b, Howlett, B.^c, ...

View additional authors ▾

^aSede Andina, Universidad Nacional de Bariloche, Río Negro, Argentina
^bDepartment of Animal Ecology and Conservation, Stellenbosch University, South Africa
^cDepartment of Ecology, Evolution and Systematics, Stellenbosch University, South Africa

View additional affiliations ▾

PlumX Metrics ?
[see details](#)

Citations	Usage	Captures	Mentions
CrossRef - Citation Indexes: 487	Bitty - Clicks: 87	CiteULike - Readers: 2	Blogs: 4
PubMed - Citation Indexes: 143	Bitty - Clicks: 3	EBSCO - Exports-Saves: 56	News: 22
	Bitty - Clicks: 1	Mendeley - Readers: 1517	Stack Exchange - Q&A Site Mentions: 2
	EBSCO - Abstract Views: 4912	Mendeley - Readers: 1511	Wikipedia - References: 3
	EBSCO - Link-outs: 246	Mendeley - Readers: 483	
	EBSCO - Full Text Views: 19	Mendeley - Readers: 249	
		Mendeley - Readers: ...	

Social Media

Facebook - Shares, Likes & Comments: 62
Twitter - Tweets: 175

Harder, L.D.^j, Klee, S.^g, Hipólito, J.^r, Motzke, I.^{m,w}, ...
San Carlos de Bariloche

View references (30)

Metrics ? View all metrics >

776 “ Citations in Scopus
99th percentile

21.59 ↗ Field-Weighted Citation Impact

PlumX Metrics ?
Usage, Captures, Mentions, Social Media and Citations beyond Scopus.

Cited by 776 documents

Habeetat: a novel monitoring platform for more efficient honey production

Sakanovic, S., Kevric, J.
(2020) IFMBE Proceedings

Author level metrics

Wriggers, Peter

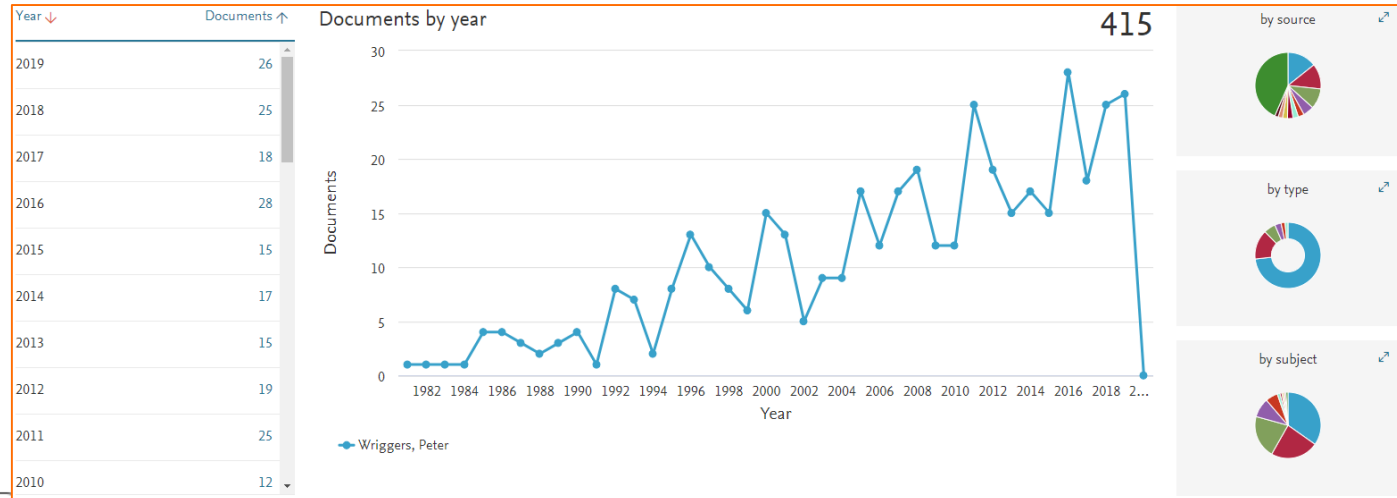
Gottfried Wilhelm Leibniz Universität, Hannover, Germany
 Author ID: 7005798313



<http://orcid.org/0000-0002-2676-1145>

Other name formats: Wriggers, P.

Subject area: Engineering Mathematics Computer Science Physics and Astronomy
Biochemistry, Genetics and Molecular Biology Chemistry Decision Sciences

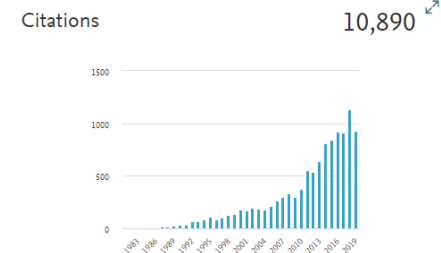
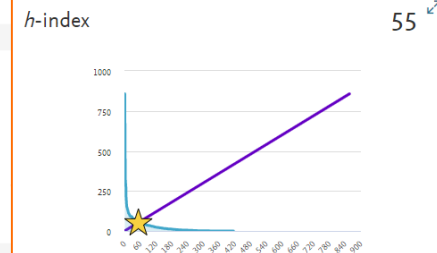


Documents by author
415

Analyze author output

Total citations
10890 by 6650 documents

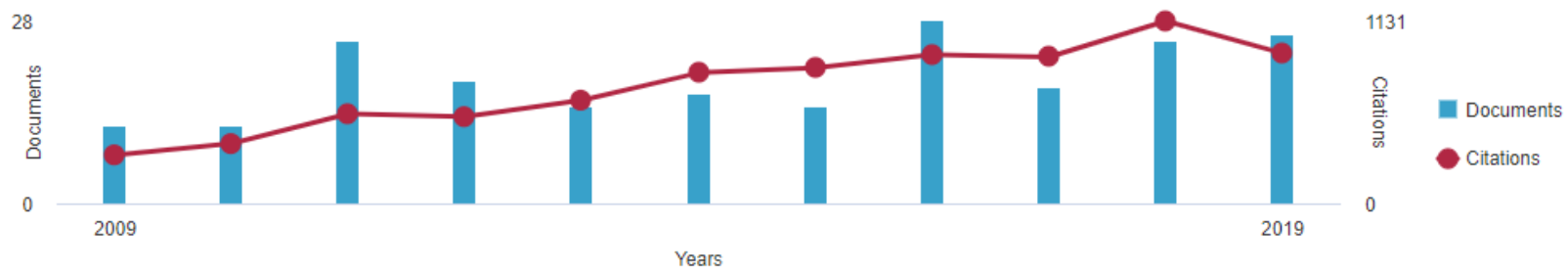
Click on cards below to see additional data.



150 co-authors

Author Name	Co-authored Documents
Temizer, I.	22
Zohdi, Tarek Ismail	21
Loehnert, Stefan	21

Document and citation trends:



Institutional level metrics

Affiliation details - Leuphana Universität Lüneburg

AF-ID ("Leuphana Universität Lüneburg" 60072202)

Edit Save Set alert Set feed

Search within results... Analyze search results

Refine results

Limit to Exclude

Year

2020 (1) >

Document title

1 Wild pollinators enhance fruit set of crops regardless of honey bee abundance

Leuphana Universität Lüneburg

Scharnhorststraße 1, Lüneburg
Niedersachsen, Germany
Affiliation ID: 60072202

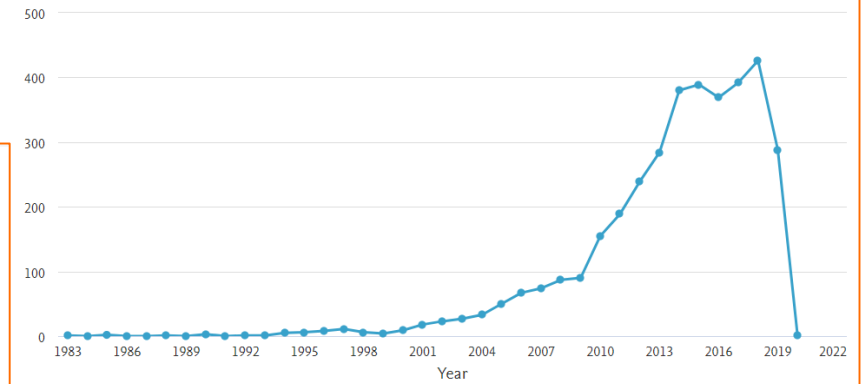
Other name formats:

Follow this affiliation

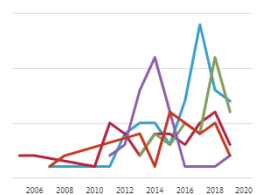
Documents, affiliation only
3,639

Year	Documents
2020	1
2019	288
2018	426

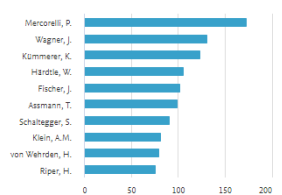
Documents by year



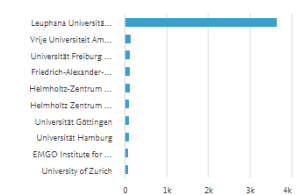
Documents per year by source



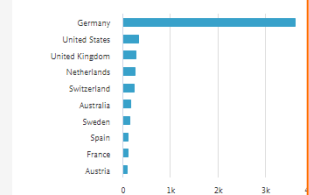
Documents by author



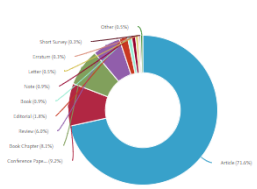
Documents by affiliation



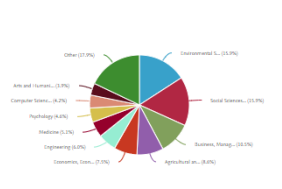
Documents by country/territory



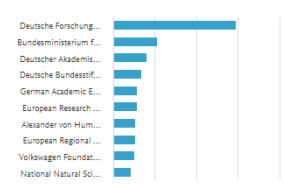
Documents by type



Documents by subject area



Documents by funding sponsor



114

108

106

90

Docume

Affiliation

Vrije Unive

Universit

Friedrich-A

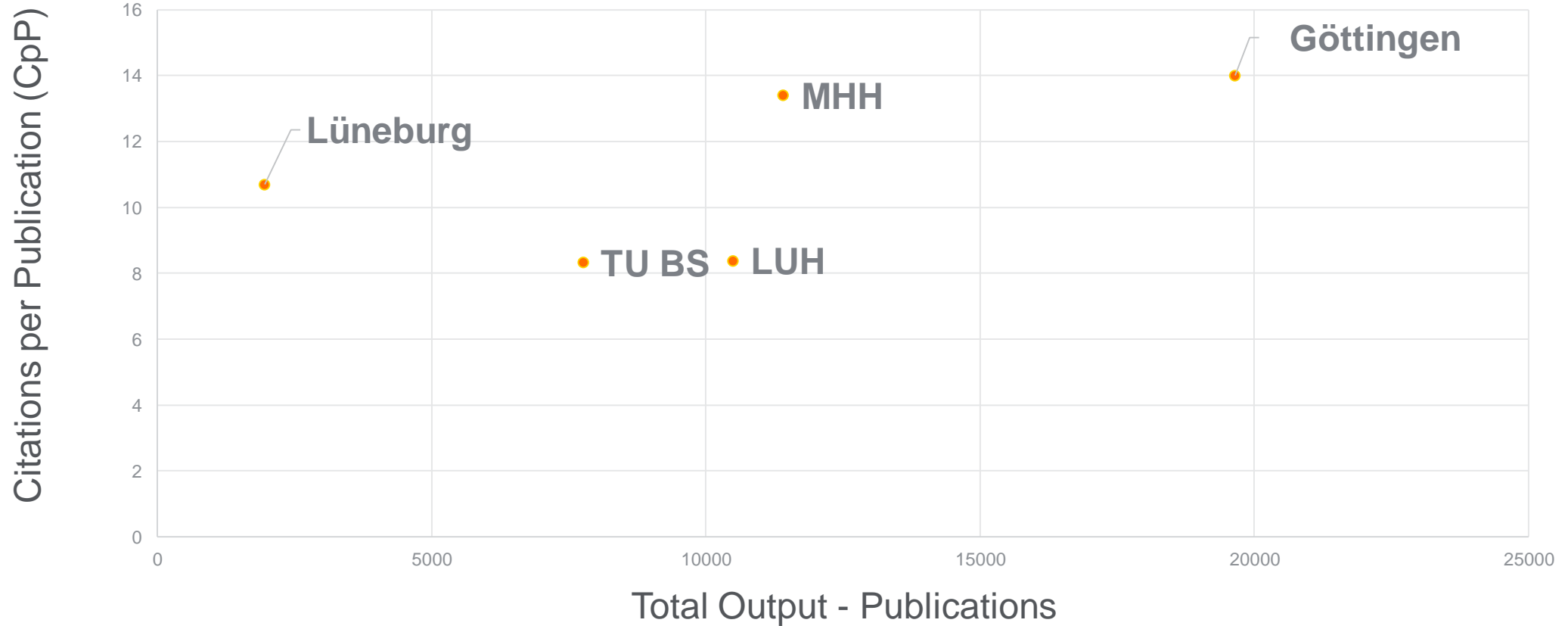
Helmholtz

Helmholtz Zentrum fur Umweltforschung

Benchmarking – via Scopus + Excel

(Total Output vs. CpP; 2014-2018)

Benchmarking - Output vs. CpP
- Scopus + Excel -





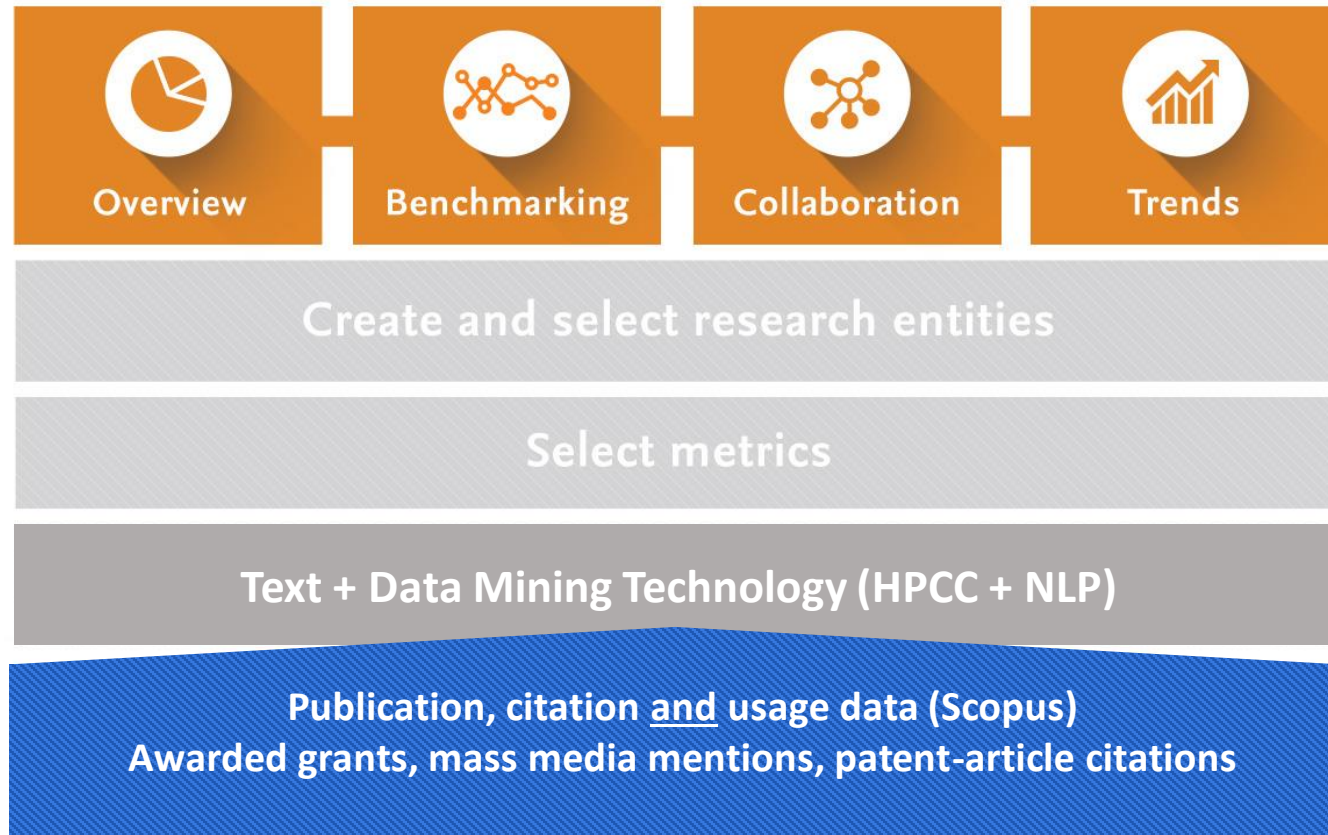
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SciVal: Big Data Analytics and Visualisation

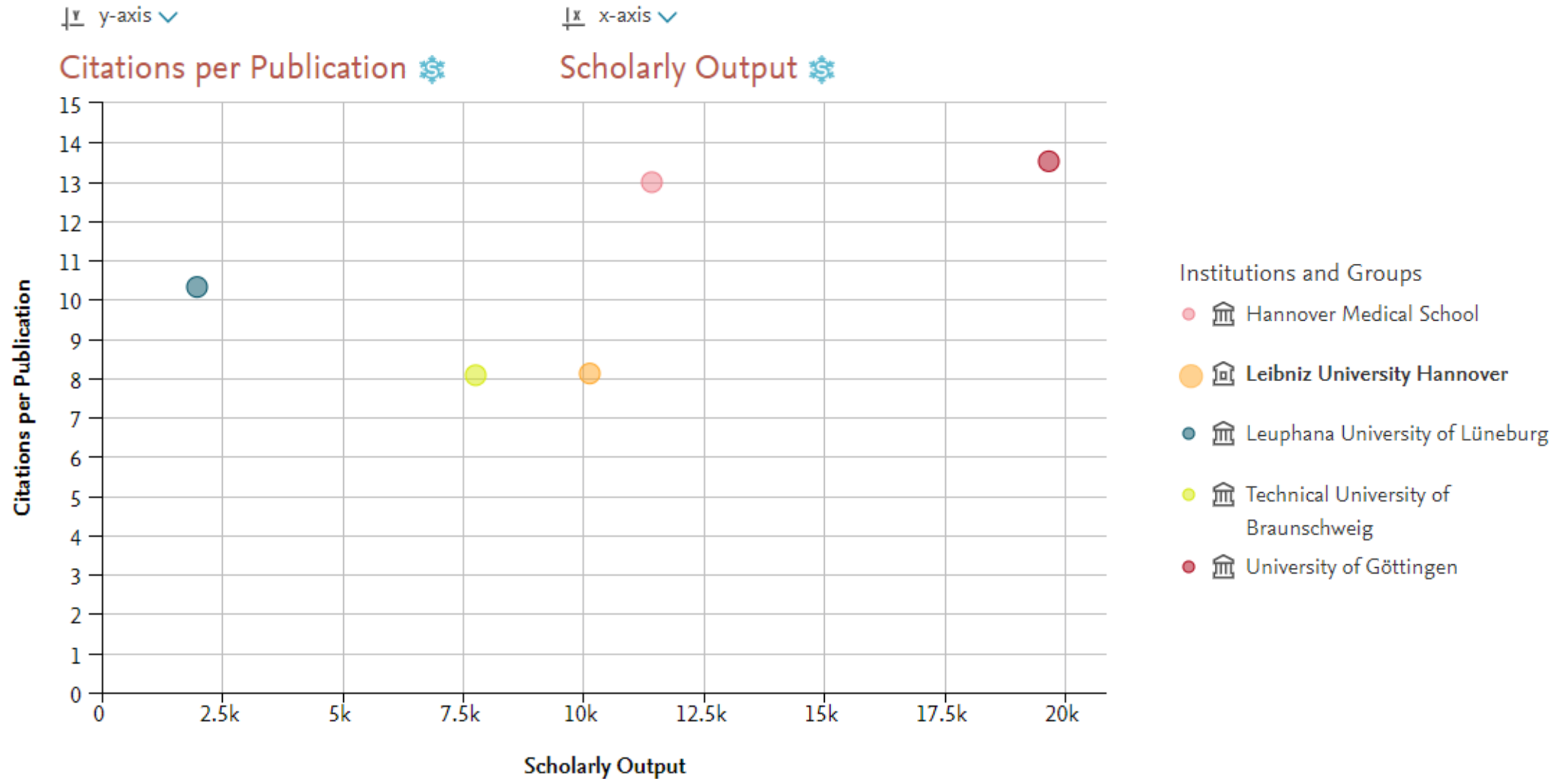


The layers of SciVal

Using advanced data analytics super-computer technology, SciVal allows you to instantly process an enormous amount of data to generate powerful data visualizations on-demand, in seconds.

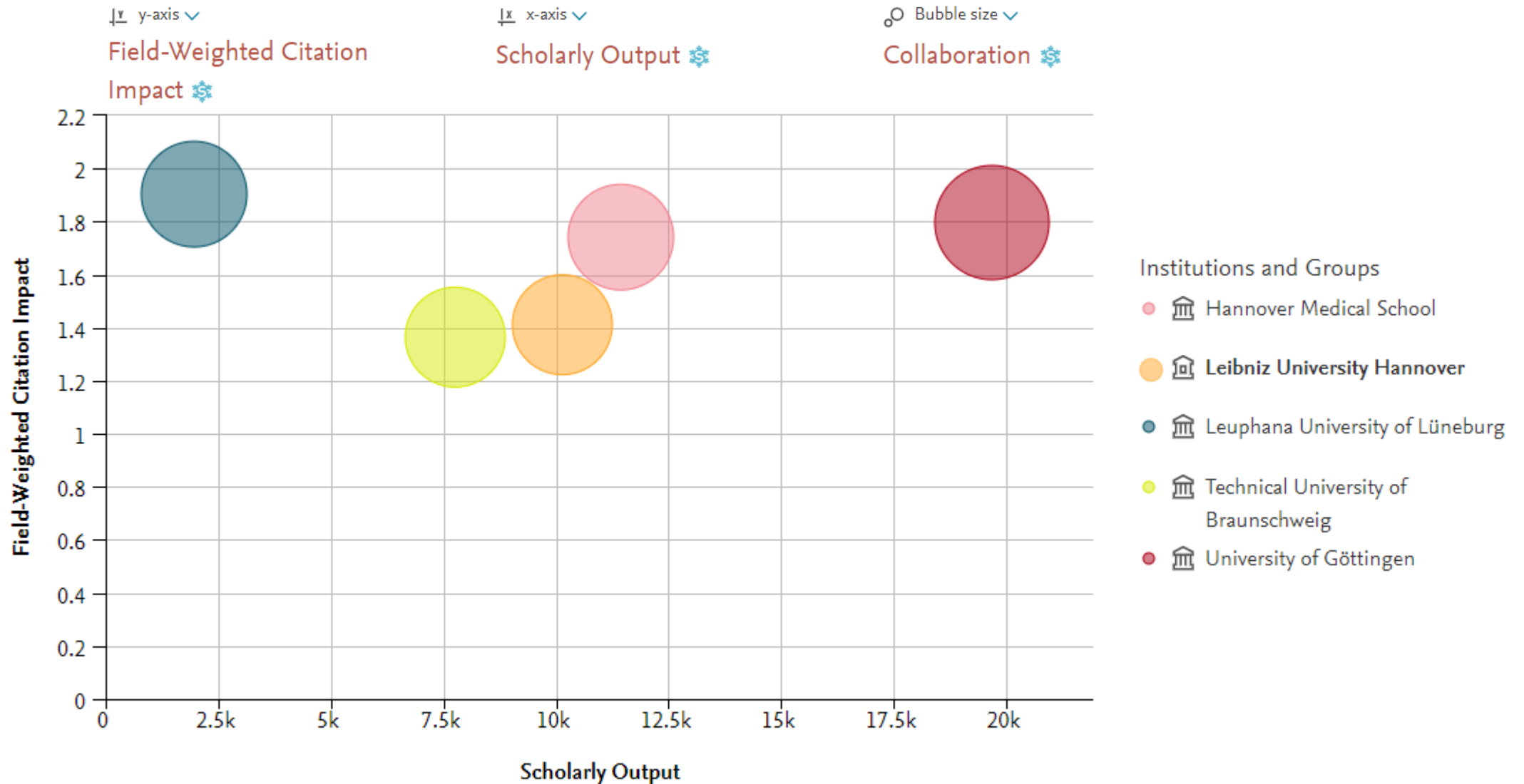


Benchmarking: Scholarly/Total Output vs. Citations per Publication (Period: 2014-2018)



Benchmarking: Total Output / FWCI / Int'l Co-Authorship

(Period: 2014-2018)



Leuphana University Profile



SciVal

Overview

Benchmarking

Collaboration

Trends

Reporting

My SciVal

Scopus ↗

Leuphana University of Lüneburg

Leuphana Universität Lüneburg

Germany | [More details on this Institution](#)

2014 to 2018



no subject area filter selected



ASJC



Summary

Topics & Topic Clusters

Collaboration

Published

Viewed

Cited

Authors

Economic Impact

Societal Impact

+ Add Summary to F

Overall research performance

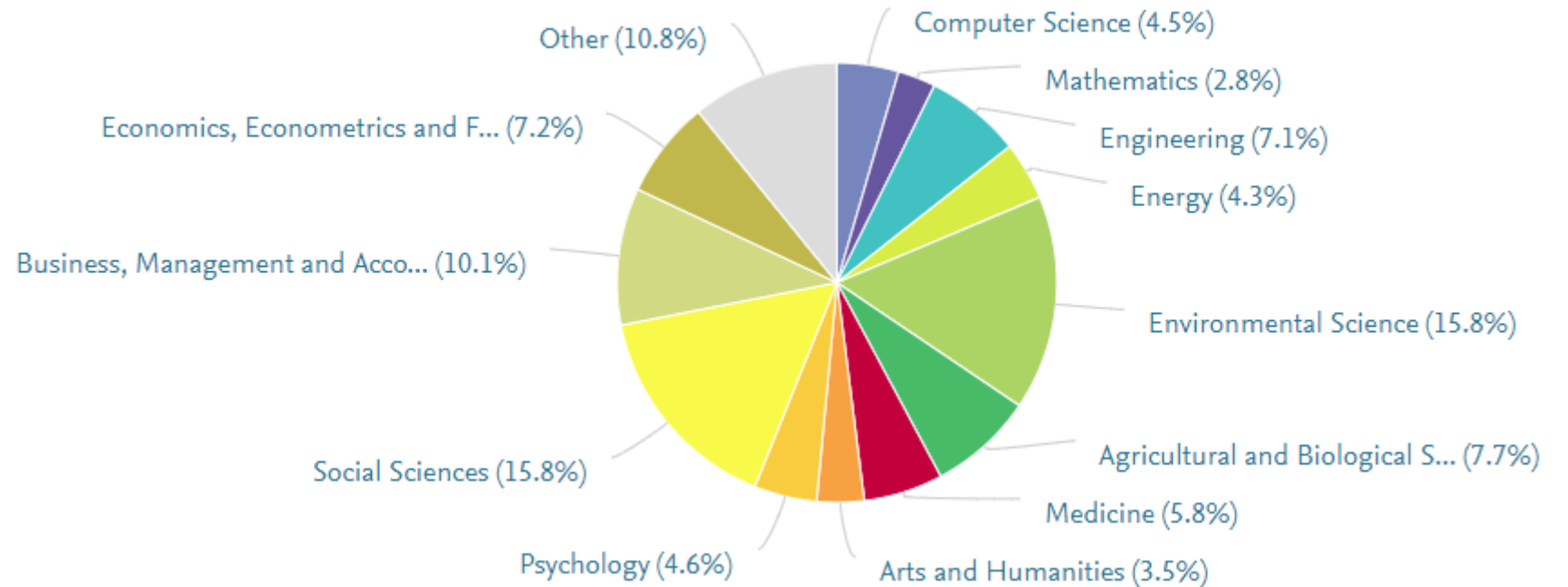
Scholarly Output

1,957

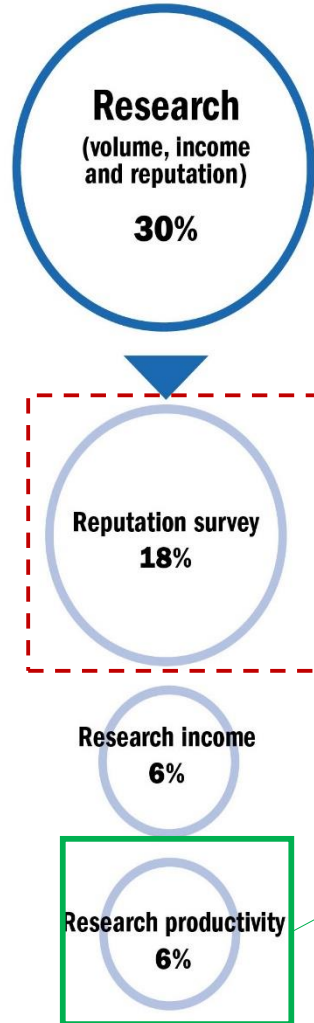
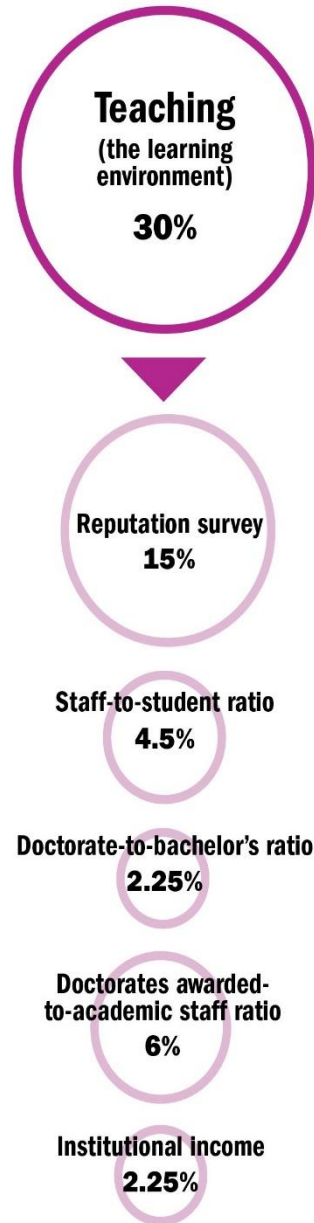
[View list of publications](#)

Citation Count

20,195



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International outlook
(staff, students, research)



International-to-domestic-student ratio

2.5%

International-to-domestic-staff ratio

2.5%

International collaboration

2.5%

Industry income
(knowledge transfer)

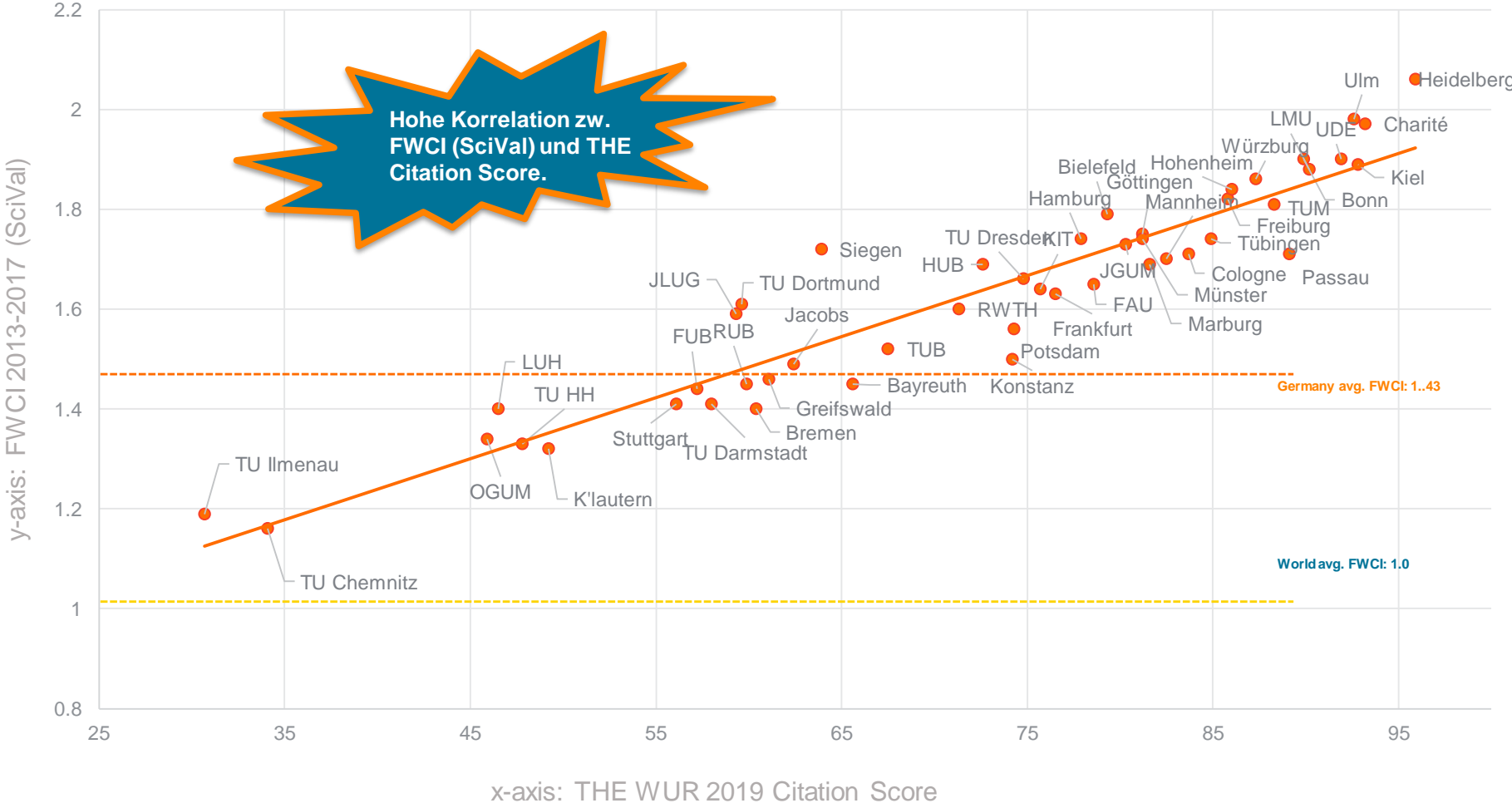


38.5% of the overall THE Ranking Score is affected by Scopus/SciVal data.



THE WUR 2019 – German Unis (THE Citation Score vs. FWCI)

THE WUR 2019 - German Universities – THE Citation Score vs. FWCI





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Responsible Use of Metrics



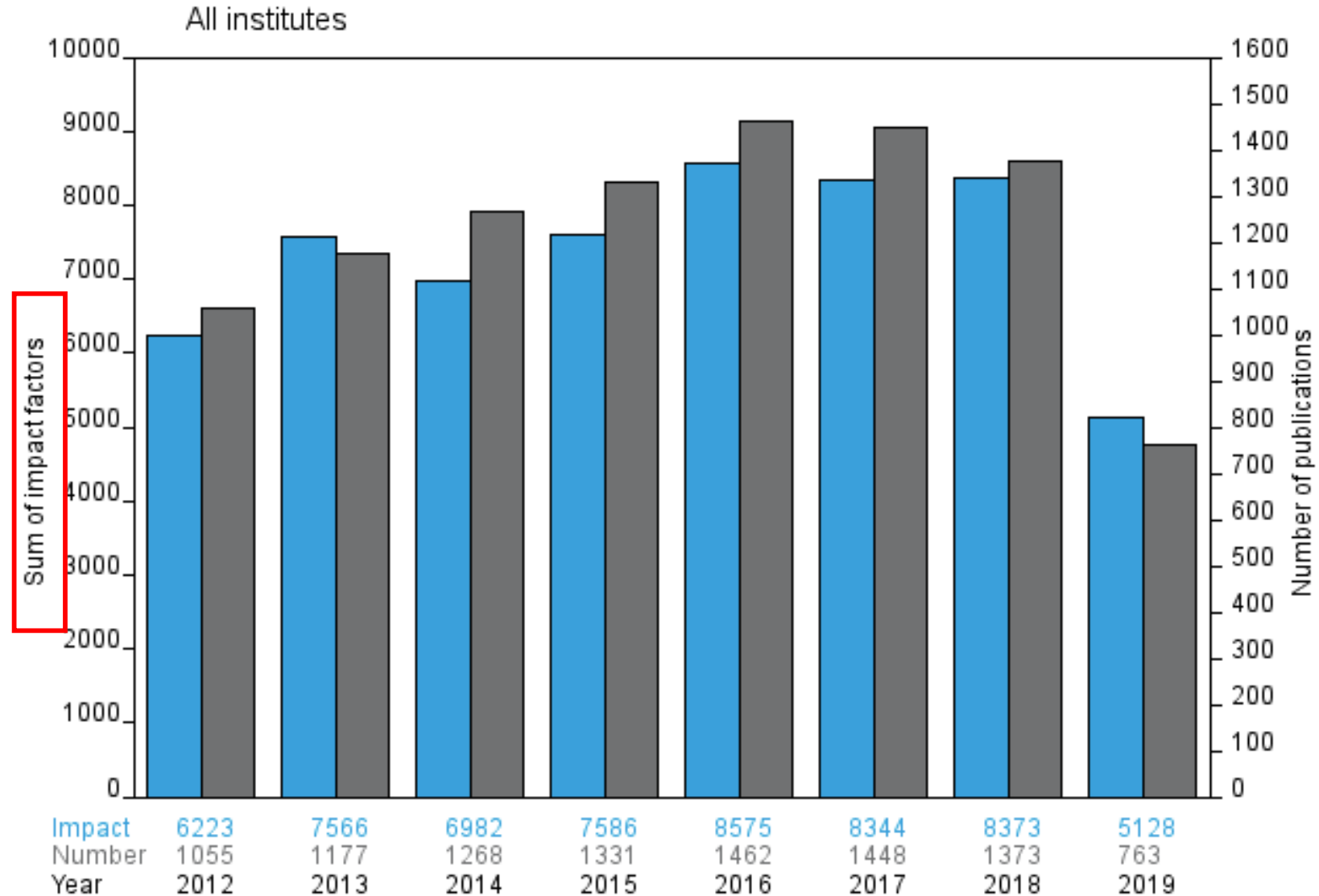
A global movement, being adapted in mature bibliometric markets



Leiden Manifesto

1. Quantitative evaluation should support qualitative, expert assessment
2. Measure performance against the research missions of the institution, group or researcher
3. Protect excellence in locally relevant research
4. Keep data collection and analytical processes open, transparent and simple
5. Allow those evaluated to verify data and analysis

Not a best practice, based on latest bibliometric/scientometric research



Elsevier enables and encourages a responsible use of metrics

Always use both qualitative and quantitative input into your decisions

Always use more than one research metric as the quantitative input

There are 6 factors, which can affect the value of a metric:

- Size
- Publication-type
- Manipulation
- Discipline
- Database coverage
- Time

	Size-normalized?	Field-normalized?	Publication-type-normalized?	Resistant to database coverage?	Difficult to manipulate?	Time-independent?
Scholarly Output						
Journal Count						
Journal Category Count						
Citation Count						
Cited Publications						
Citations per Publication						
Number of Citing Countries						
Field-Weighted Citation Impact						
Collaboration						
Collaboration Impact						
Academic-Corporate Collaboration						
Academic-Corporate Collaboration Impact						
Outputs in Top Percentiles						
Publications in Top Journal Percentiles						
<i>h</i> -indices						

Research Metrics Guidebook

This comprehensive metrics guidebook is intended to be a straightforward, practical companion for you to find the right metrics to meet your objectives.



- Understanding metrics
 - Scopus as data source
- Selection of appropriate metrics
 - What affects their values, besides performance?
- For each metric
 - Situations in which they are useful
 - Formulas and calculation examples
 - When to take care and how to address short-comings
 - Worked examples

A comprehensive approach to confidently assess and deliver on your strategic research investments



RESEARCH OUTCOMES

SciVal

Scopus®



Informs long term research strategy

- Should we invest in research areas?
- Is there white space?
 - What is the competitive landscape?
 - Do we have the capabilities?
 - Do our research areas make impact?



Supports daily research activity

- How will we do research?
- Who are the leading experts?
 - What is the latest research available?
 - Who has done this before?
 - How do I solve a research problem?

Relying on trusted Scopus data, but delivering unique insights

Metrics and analytics at unprecedented scale and precision

Questions, feedback?



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Danke schön!

Scopus info site: <https://www.elsevier.com/solutions/scopus/how-scopus-works>
Scopus blog: <http://blog.scopus.com>
Webinar series: <http://blog.scopus.com/webinars>
Twitter: www.twitter.com/scopus

