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Meaningful metrics

Responsible research assessment: Experiences from the Netherlands

Ludo Waltman
Centre for Science and Technology Studies (CWTS), Leiden University

Rectors' Conference of the Republic of Slovenia
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Universiteit Leiden

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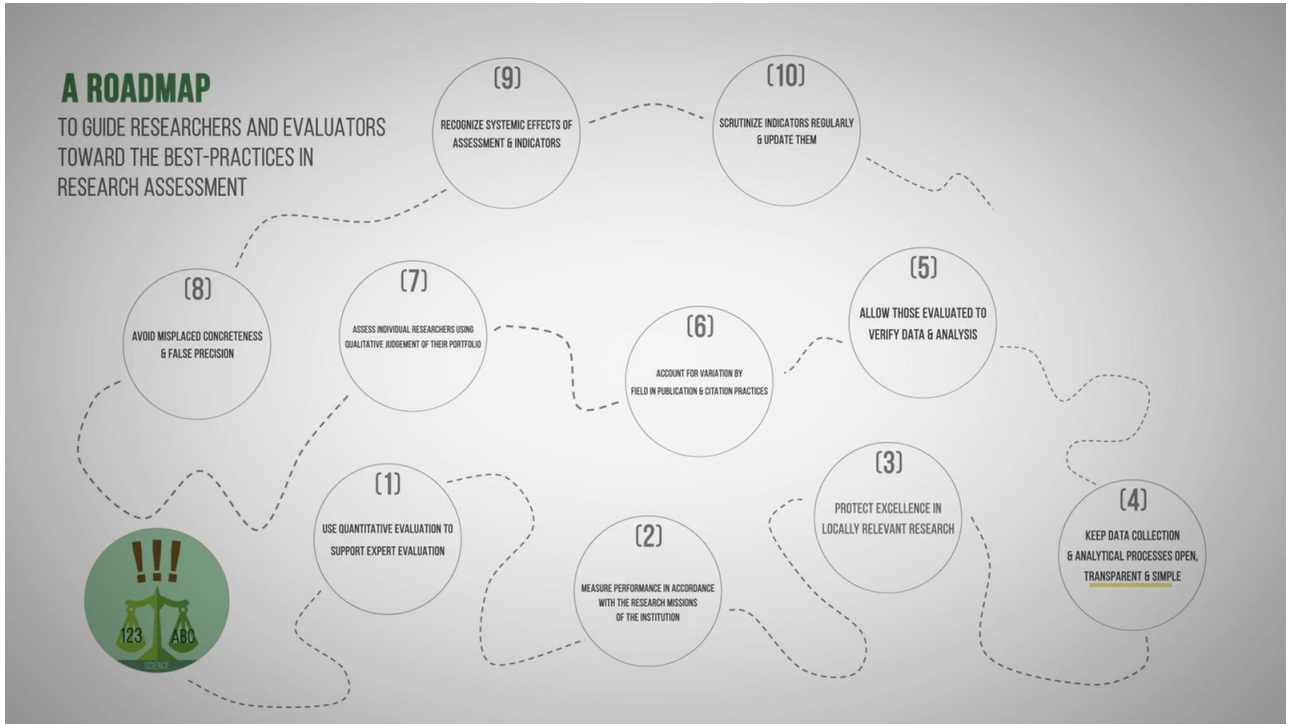
Centre for Science and Technology Studies (CWTS)

- Research center at Leiden University in the Netherlands
- Studies research and its connections to technology, innovation and society
- Develops scientometric tools
- Shares expertise in research evaluation

The Leiden Manifesto for research metrics

Use these ten principles to guide research evaluation, urge **Diana Hicks**, **Paul Wouters** and colleagues.



We would like to thank the volunteers who translated the Leiden Manifesto into 25 languages: Chinese, Spanish, French, Brazilian Portuguese, Persian, Catalan, German, Korean, traditional Chinese, Basque, Russian, Japanese, Finnish, Swedish, Slovak, Serbian, Danish, Czech, Indonesian, Italian, Galician, Estonian, Lithuanian, Turkish and Bulgarian.

Utrecht University will no longer use the impact factor in hiring and promotion decisions.

LARS FORTUIN/GETTY

UNIVERSITY DROPS IMPACT FACTOR

Staff at Utrecht University will be assessed through commitment to open science.

By Chris Woolston

A Dutch university says it is formally abandoning the impact factor — a standard measure of scientific success — in all hiring and promotion decisions. By early 2022, every department will have to develop its own systems and strategies to identify researchers and academics who are making the most meaningful contributions to their fields. The process might involve interviews with other researchers in a given field, he says. "There are alternative ways to evaluate individuals on their quality."

Still, doing away with standard metrics could be a risky move for the university and its faculty and staff members. As long as other universities continue to rely on impact factors and other productivity metrics for hiring and promotion, researchers who come up through

become a very sick model that goes beyond what is really relevant for science and putting science forward," he says.

The new scheme is part of Utrecht's Open Science programme, a multi-track effort to make research more transparent and cooperative. Open-science fellows embedded within

report called the impact factor "an inadequate measure for assessing the impact of scientists" and concluded that failure to modify the current assessment system is likely to lead to "continued bandwagon behaviour that has not always resulted in positive societal behaviour" (D. Moher *et al. PLoS Biol.* **16**, e2004089; 2018). Despite this, a 2019 study found that 40% of research-intensive universities in the United States and Canada specifically mention impact factors or closely related terms in documents related to tenure, review and promotion (E. C. McKiernan, *et al. eLife* **8**, e47338; 2019). Only a few of those references strike a note of caution, and most suggest that a high impact score would be necessary for career advancement.

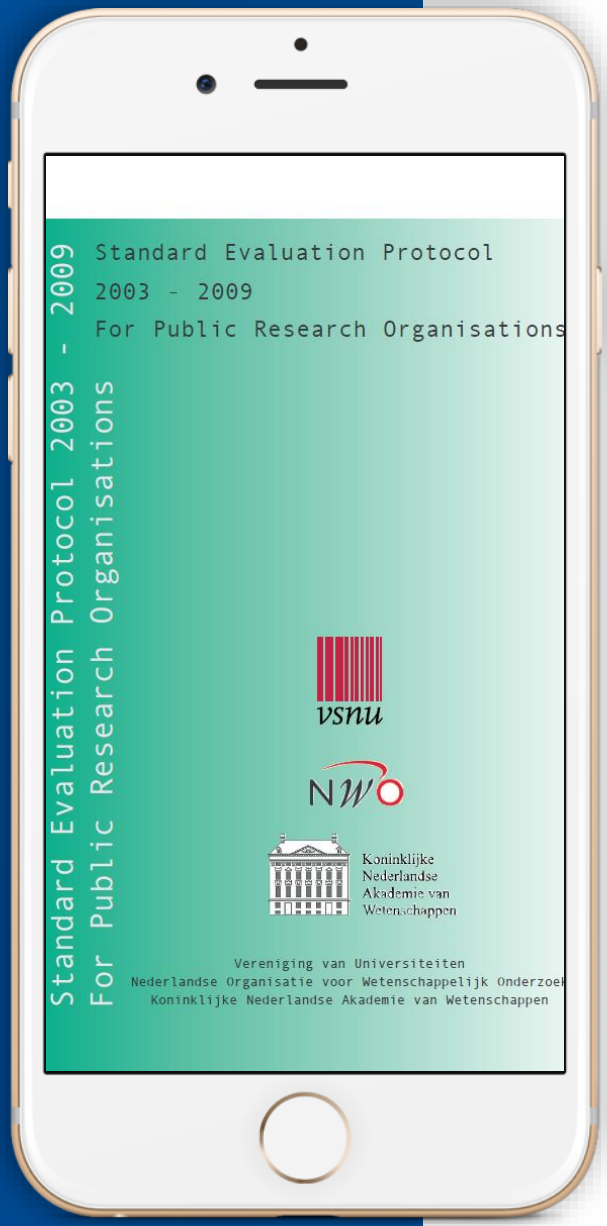
Every university in the Netherlands, Utrecht included, has signed on to 'Room for Everyone's Talent', a 2019 position paper led by the VSNU, the employee association for Dutch universities. That paper calls for a system of recognition and rewards that "enables the diversification and vitalization of career paths".

On a practical level, evaluating researchers on qualities beyond easy-to-measure metrics can be messy and complicated. "It's going to be quite challenging to apply," Boselie says. He explains that each department will have

Outline

- Strategy Evaluation Protocol (SEP)
- Recognition and Rewards
- Beyond the Netherlands

Strategy Evaluation Protocol (SEP)



SEP evaluation

- Introduced in 2003
- Focus on research units (i.e., institutes, departments, groups)
- Starts from the context and mission of a unit
- Focus on learning rather than accountability (i.e., formative evaluation)
- Flexible instrument for a productive conversation

Strategy Evaluation Protocol

2021-2027

VSNU KNAW NWO

Strategy Evaluation Protocol (SEP) 2021-2027

- Joint protocol:
  Association of Universities in the Netherlands (VSNU)
  Royal Netherlands Academy of Arts and Sciences (KNAW)
  Netherlands Organisation for Scientific Research (NWO)
- Describes aims and process of the evaluation of a research unit
- Goal of a SEP evaluation: to evaluate a research unit in light of its own aims and strategy

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SEP evaluation in a nutshell

- Each unit is evaluated once every 6 years
- 3 criteria: quality, relevance, viability
- 4 additional aspects: open science, PhD policy and training, academic culture, human resources policy
- Aims, strategy and context of unit are key
- Evidence:
  - Self-evaluation report
  - Site-visit
- Dedicated committee formulates assessment and provides recommendations

Categories of evidence

- The unit chooses, presents and explains indicators
- Choice depends on aims and strategy
- “The research unit should take into account that it is not allowed to use the Journal Impact Factor in a SEP evaluation”
- “The use of the h-index is advised against”

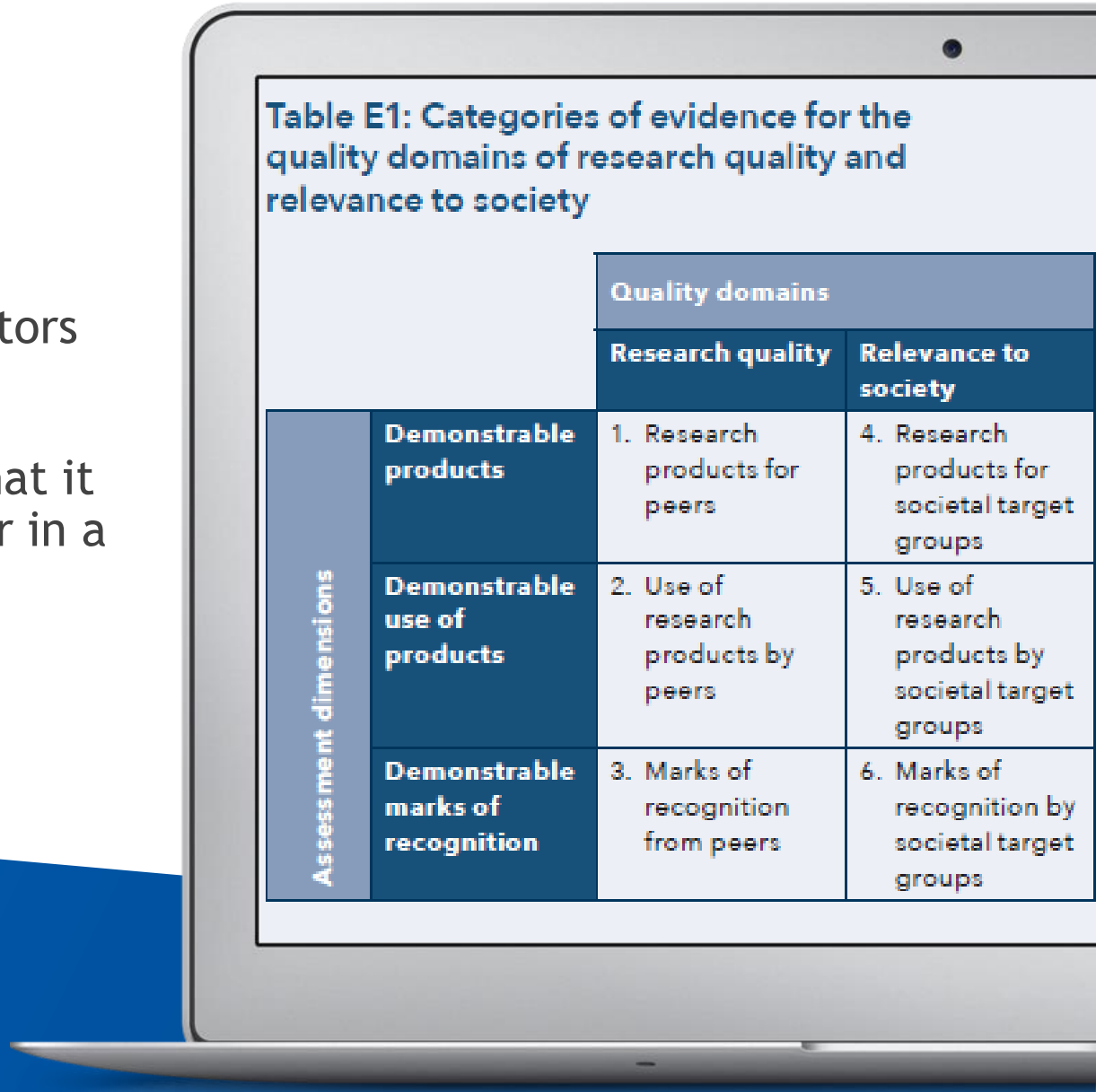

Table E1: Categories of evidence for the quality domains of research quality and relevance to society

		Quality domains	
		Research quality	**Relevance to society**
Assessment dimensions	**Demonstrable products**	1. Research products for peers	4. Research products for societal target groups
	Demonstrable use of products	2. Use of research products by peers	5. Use of research products by societal target groups
	Demonstrable marks of recognition	3. Marks of recognition from peers	6. Marks of recognition by societal target groups

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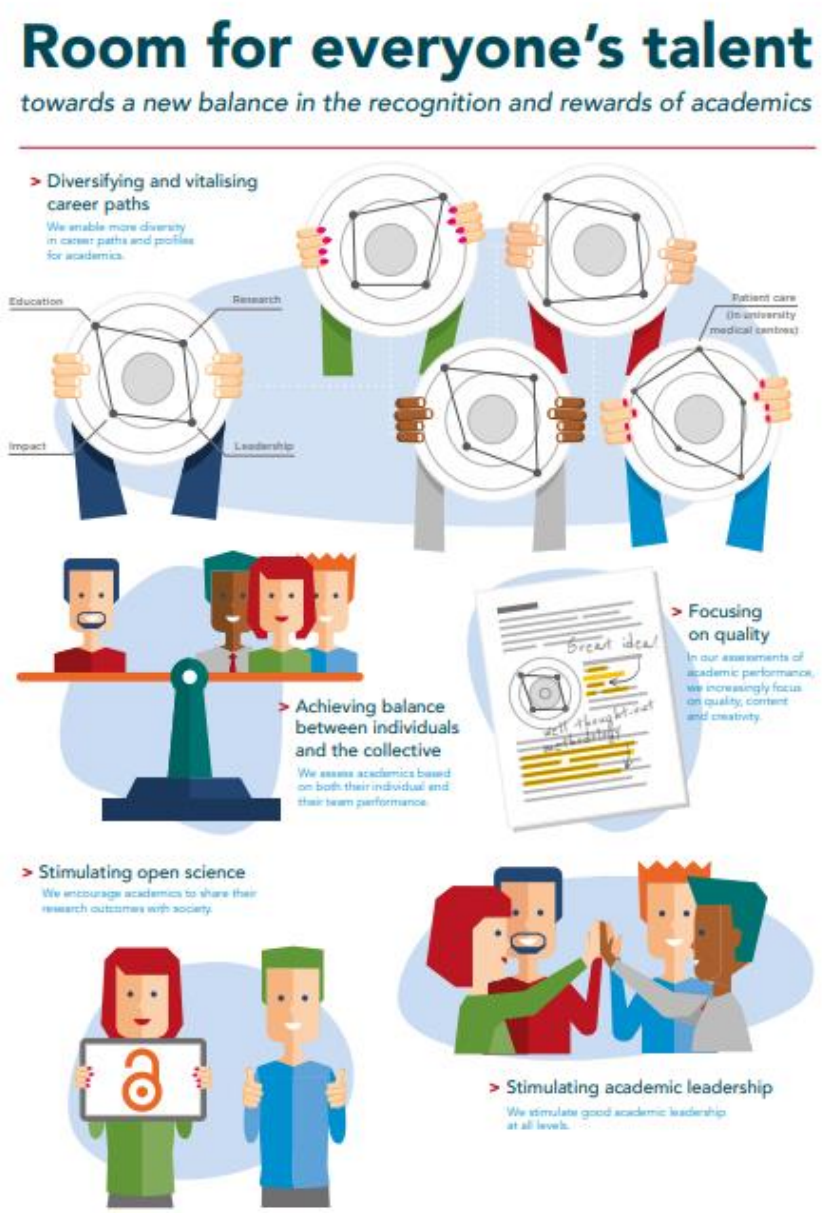
Recognition and Rewards



- Diversification and vitalisation of career paths
- Achieving balance between individuals and the collective
- Stimulating open science
- Stimulating academic leadership
- Focusing on quality
  - "assessment of academics will see a reduced emphasis on quantitative results (e.g., number of publications) and a greater emphasis on quality, content, scientific integrity, creativity, contribution to science, academia and/or society"

What is Recognition & Rewards and why do we need a change?

The TU Delft Recognition & Rewards committee distinguishes five levels of Recognition & Rewards and proposes guidelines for each level (see below).
At TU Delft, changes are needed in the way we recognise and reward academics. Accomplishments in research and in the quantitative results are often overemphasised, for example the number of articles, citations or H-index. Whereas accomplishments in education, valorisation and leadership are underappreciated. Also, to create impact for a better society, Delft engineers work on a wide spectrum of products and outputs, therefore putting excessive emphasis on research articles might be counter-productive.
Excellent research, education and valorisation are frequently the result of a team effort. Team members from within and outside the university contribute to the common goal (new insights and solutions, learning goals, innovations) with their talents, ideas and efforts. However, at TU Delft we tend to look mainly at individual accomplishments, for example in our Results & Development cycle and in our funding and awards.
People have different talents and people who excel in all academic areas are rare. Recognising different talents and allowing people to build on their talents is important to give academics the opportunity to flourish in different stages of their careers at the TU Delft or elsewhere.
Open science and education can play an important role in improving the quality of our work and stimulating the use of our knowledge and findings by others.

Perceive behaviour and contribution (1)

To perceive the behaviour and contribution of individual scientists and teams of scientists in the areas of education, research, societal relevance and leadership.

Guidelines

- Give each other better and more frequent feedback on personal leadership and way of working
- Evaluate both individual behaviour, group dynamics and teamwork regularly
- Be future focussed and create a safe and inclusive environment where all of us can flourish

Acknowledge 'products'* (2)

To acknowledge the "products" of an academic or team in the areas of education, research, societal relevance and leadership.

Guidelines

- Acknowledge a wide spectrum of products
- Acknowledge successful and "failed" products like non-funded proposals, lab tests with unexpected results, rejected articles etcetera
- Adhere to the FAIR data principles (Findable, Accessible, Interoperable, Re-usable)
- Practice open science
- Introduce more peer review and intervision in education

Reward academics (5)

To reward academics by giving them advantages.

Guidelines

- As a team leader, take the responsibility to reward individuals and teams seriously
- Become more creative in creating advantages that fit the needs of team members
- Make the options to reward more visible and offer more possibilities in terms of training, mobility, sabbaticals and exchange programmes

Value the use of 'products' (3)

To value the use of these "products" by students, colleagues, fellow scientists, lecturers, companies, public organisations and society.

Guidelines

- Create a mix of indicators and qualitative narratives to get a good insight into this value
- Discuss those both university-wide and discipline-specific
- Revise and update the Scientific Staff Performance criteria accordingly
- Adhere to the DORA declaration: do not use journal-based metrics
- Evaluate the value of your "products" regularly

Appreciate academics (4)

To appreciate, praise, admire and respect an individual or team achievement.

Guidelines

- Celebrate the successes of both individuals and the team regularly in team meetings
- Put more emphasis on team success and the contribution of others in individual successes
- Review TU Delft awards structure to ensure a good balance in appreciating contributions to research, education, society and organisation both on individual and team level

*Although the word "product" may sound a bit "industrial", we'll continue to use it as a term in this context. A "product" can be many things: an article, a new design, a course, a prototype or working product like a house, bridge or satellite, or a start-up. Products refer to the results of the work (production) and ideas of individuals and teams. Products are often tangible, but we use "quotation marks" as it can also be non-tangible like a supervised student, an event or a contribution to the organisation.


Thed van Leeuwen
Senior Researcher


Ludo Waltman
Professor of Quantitative Science Studies

Practicing what we preach: Our journey toward open science

September 28, 2021 · CWTS development · 8 min read

CWTS just published its open science policy. The development of this policy was coordinated by Thed van Leeuwen and Ludo Waltman. In this blog post, they reflect on the journey CWTS is making toward more open ways of working.

ARIA

Toward new forms of research intelligence

ARIA (Advancing Research Intelligence Applications) is a collaborative project of TU Delft, Erasmus University Rotterdam (EUR), Erasmus MC, and Leiden University's Centre for Science and Technology Studies (CWTS). Like other research organizations in the Netherlands, we are developing new approaches to recognition and rewards of researc
by new types of structured information about scholarly activities and outputs and
information. In other words, there is a need for new forms of research intelligence, tailor
In the ARIA project, we aim to find out how research intelligence can best be used to su
rewards that are currently being developed by our o

TU Delft

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www.aria-lde.nl

Tung Tung Chan

Gert Goris

Tjitske Holtrop

Rik Iping

Thed van Leeuwen

Alenka Princič

ScienceGuide

Nieuwe Erkennen en waarderen schaadt Nederlandse wetenschap

Opinie | door gastauteurs

19 juli 2021 | Een groep van 171 wetenschappers, waaronder 142 hoogleraren, waarschuwt in deze open brief dat het nieuwe Erkennen en Waarderen de Nederlandse wetenschap schaadt. Zeker de medische, exacte en levenswetenschappen dreigen door het nieuwe Erkennen en Waarderen hun internationale toppositie te verliezen omdat niet meer duidelijk is waarop wetenschappers worden beoordeeld.

- “Top journals consult the best experts and in that way they typically guarantee high impact and quality”
- “objective information about publications, citations, lectures, etc. has been replaced by a narrative … panelists have no idea how to compare candidates”
- “international numerical criteria should remain important. Otherwise we cannot keep up in international competition”

ScienceGuide

We moeten af van telzucht in de wetenschap

Opinie | door gastauteurs

21 juli 2021 | In antwoord op de kritische open brief van oudere wetenschappers over het nieuwe Erkennen en Waarderen verdedigen 113 jongere wetenschappers de gewenste veranderingen binnen de academie. In een open brief stellen zij dat wetenschappers tegenwoordig meer doen dan onderzoek. "Daarom is de wetenschappelijke publicatie naar onze mening niet langer de enige eenheid om kwaliteit uit te drukken; deze is immers niet representatief voor het takenpakket van de moderne wetenschapper."

- “responsibilities of scientists have broadened beyond doing research … the scientific publication is no longer representative of these responsibilities”
- “The new Recognition and Rewards challenges us to assess each other’s work based on substantive quality rather than quantity and venue of publication”
- “The Netherlands has chosen to take a leading role in adopting the new Recognition and Rewards. As young scientists we are proud of this”

Beyond the Netherlands

ROYAL SOCIETY OPEN SCIENCE

royalsocietypublishing.org/journal/rsos

Research

Cite this article: Šubelj L, Waltman L, Traag V, van Eck NJ. 2020 Intermediacy of publications. *R. Soc. open sci.* **7**: 190207.
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Intermediacy of publications

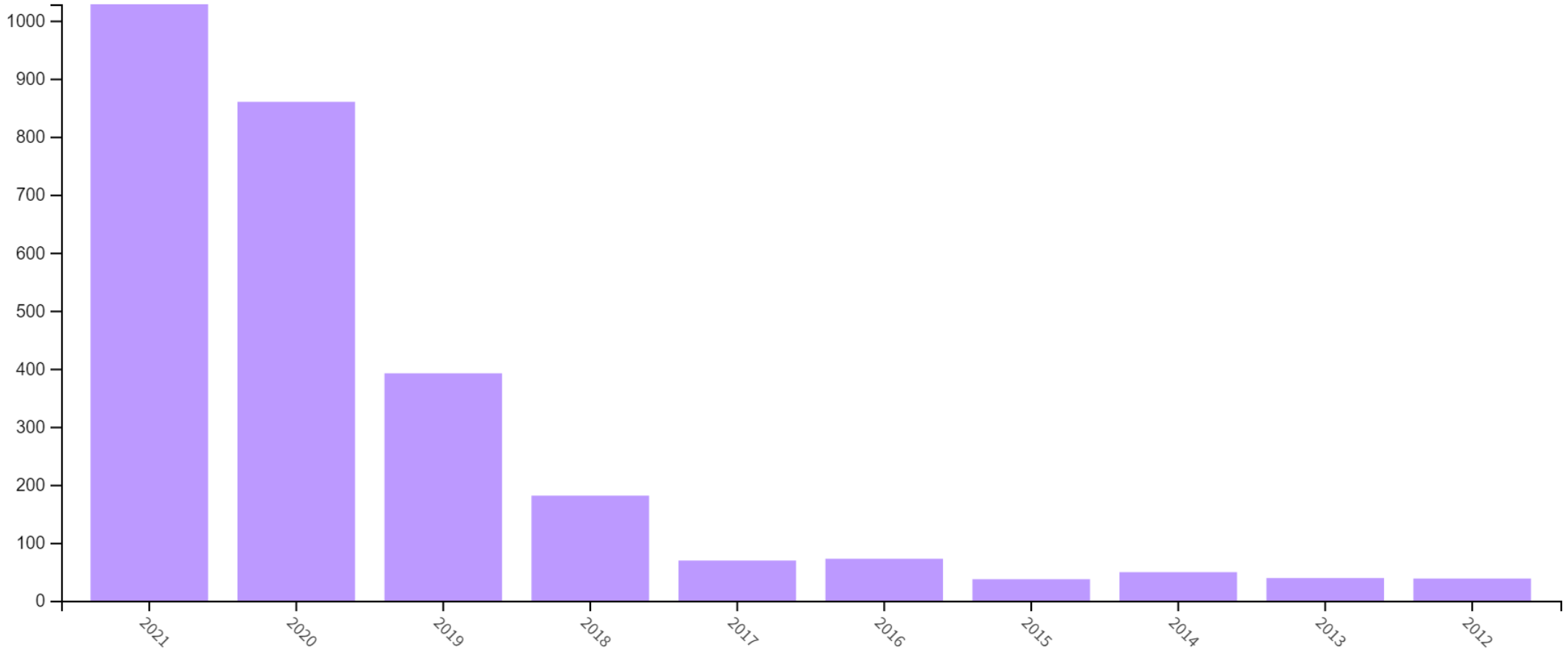
Lovro Šubelj[1], Ludo Waltman[2], Vincent Traag[2] and Nees Jan van Eck[2]

[1]University of Ljubljana, Faculty of Computer and Information Science, Ljubljana, Slovenia
[2]Leiden University, Centre for Science and Technology Studies, Leiden, The Netherlands

LŠ, 0000-0002-4161-2260

Citation networks of scientific publications offer fundamental insights into the structure and development of scientific knowledge. We propose a new measure, called intermediacy, for tracing the historical development of scientific knowledge. Given two publications, an older and a more recent one, intermediacy identifies publications that seem to play a major role in the historical development from the older to the more recent publication. The identified publications are important in connecting the older and the more recent publication in the citation network. After providing a formal definition of

Number of Slovenian publications in MDPI journals in Web of Science




28 October 2021, Thursday, 10:00-13:00 Eastern European Time (EET), in English
INCLUSION IN LOCAL AND INTERNATIONAL ACADEMIC COMMUNITIES
Open virtual seminar
Moderator
Prof. Dr Liudvika Leišytė
Professor of Higher Education, Centre for Higher Education, TU Dortmund University
Chair of the Board, Futura Scientia, Lithuania
Inclusion in international scientific communities as a governance issue
Prof. Dr Jochen Gläser
Technische Universität Berlin, Germany
Losing touch? Inclusion of unemployed researchers from a discipline-specific perspective
Susanne Wollin-Giering
Technische Universität Berlin, Germany
Including impact: the measurement and governance of societal impact in contemporary higher education
Markus Hoffmann,
Technische Universität Berlin, Germany
Inclusion aspects, arising from conversations with Lithuanian academics and politicians
Dr Guus Dix
The University of Twente, the Netherlands
This project of the Baltic-German University Liaison Office is supported by the German Academic Exchange Service (DAAD) with funds from the Foreign Office of the Federal Republic Germany.


29 October 2021, Friday, 14:00-16:00 Eastern European Time (EET) (in Lithuanian with simultaneous interpretation into English)
LOCAL AND INTERNATIONAL CIRCUMSTANCES THAT INFLUENCED THE DEVELOPMENT OF LITHUANIAN RESEARCH ASSESSMENT
The round table discussion
How Lithuanian policymakers have been operating over three decades in a highly unpredictable environment
Eleonora Dagienė
Mykolas Romeris University, Lithuania
CWTS (Centre for Science and Technology Studies), Leiden University, The Netherlands
Invited policymakers will reflect and discuss how the research evaluation has contributed to the international competitiveness of Lithuanian science:
Prof. Dr Artūras Žukauskas
Prof. Dr Dalius Serafinas
Prof. Dr Eugenijus Butkus
Prof. Dr Jochen Gläser
Prof. Dr Romas Baronas
Jurgita Petrauskienė
Prof. Dr Rūta Petrauskaitė
Dr Guus Dix
This project of the Baltic-German University Liaison Office is supported by the German Academic Exchange Service (DAAD) with funds from the Foreign Office of the Federal Republic Germany.

This article is more than **1 year old**

ANALYSIS | 2/07/20

Dear REF, please may we have a SEP?

What should replace the REF? Elizabeth Gadd is looking to the Netherlands

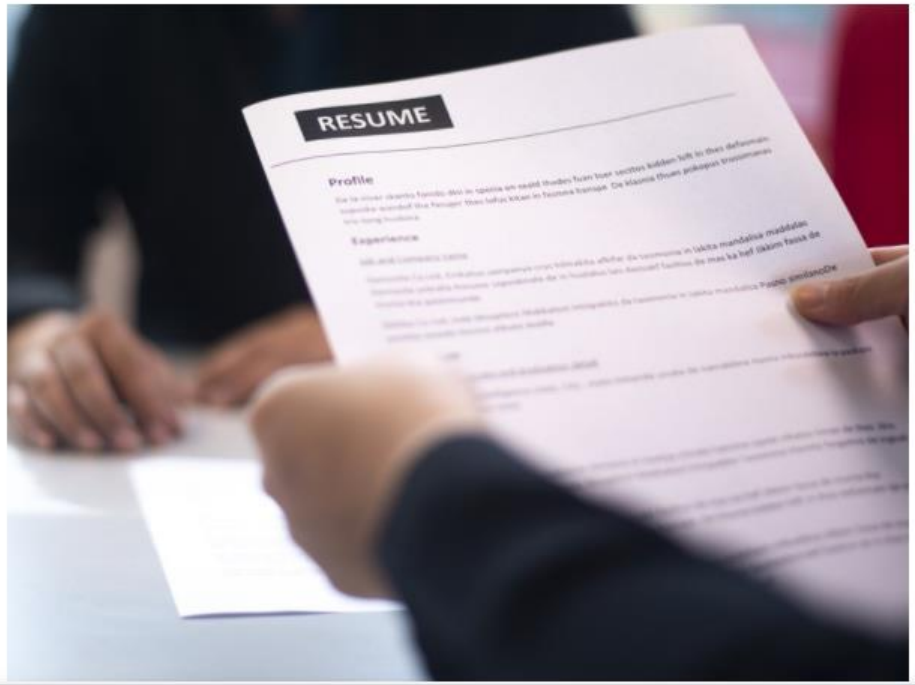
Image: Shutterstock

CAREER NEWS | 04 August 2021

Dashboard will track hiring and promotion criteria

International coalition aims to identify how universities use impact factors and related metrics.

Chris Woolston



Scholarly Assessment Reports

Zhang, L., & Sivertsen, G. (2020). The New Research Assessment Reform in China and Its Implementation. *Scholarly Assessment Reports*, 2(1): 3. DOI: https://doi.org/10.29024/sar.15

RESEARCH

The New Research Assessment Reform in China and Its Implementation

Lin Zhang[1] and Gunnar Sivertsen[2]

[1] School of Information Management, Wuhan University, CN

[2] Nordic Institute for Studies in Innovation, Research and Education, Oslo, NO

Corresponding author: Gunnar Sivertsen (gunnar.sivertsen@nifu.no)

A radical reform of research assessment was recently launched in China. It seeks to replace a focus on Web of Science-based indicators with a balanced combination of qualitative and quantitative research evaluation, and to strengthen the local relevance of research in China. It trusts the institutions to implement the policy within a few months but does not provide the necessary national platforms for coordination, influence and collaboration on developing shared tools and information resources and for agreement on definitions, criteria and protocols for the procedures. Based on international experiences, this article provides constructive ideas for the implementation of the new policy.

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Conclusions

Conclusions

- What kind of research system does our society need in the **21st century**?
- **Summative** vs. **formative** research assessment; **Quality** vs. **quantity**
- What does this mean for **career paths**, the role of **teams**, academic **leadership**, and **openness** in science?
- What does it take to be **internationally competitive**?

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Ludo Waltman

waltmanlr@cwts.leidenuniv.nl

https://orcid.org/0000-0001-8249-1752

@LudoWaltman