

ESTDev  
From the people of Estonia

# University Rankings

UKRAKORG Webinar 20.12.2023

Ülle Must

[ulle.must@harno.ee](mailto:ulle.must@harno.ee)

# **We will talk today**

- What are university rankings: definition and aim
- The rankings in timeline
- The use of different criteria
- Typology of University Rankings
- The impact of rankings
- The characteristics of the major players (selected list)
- How to Interpret University Rankings
- A path to university excellence

# What are university rankings

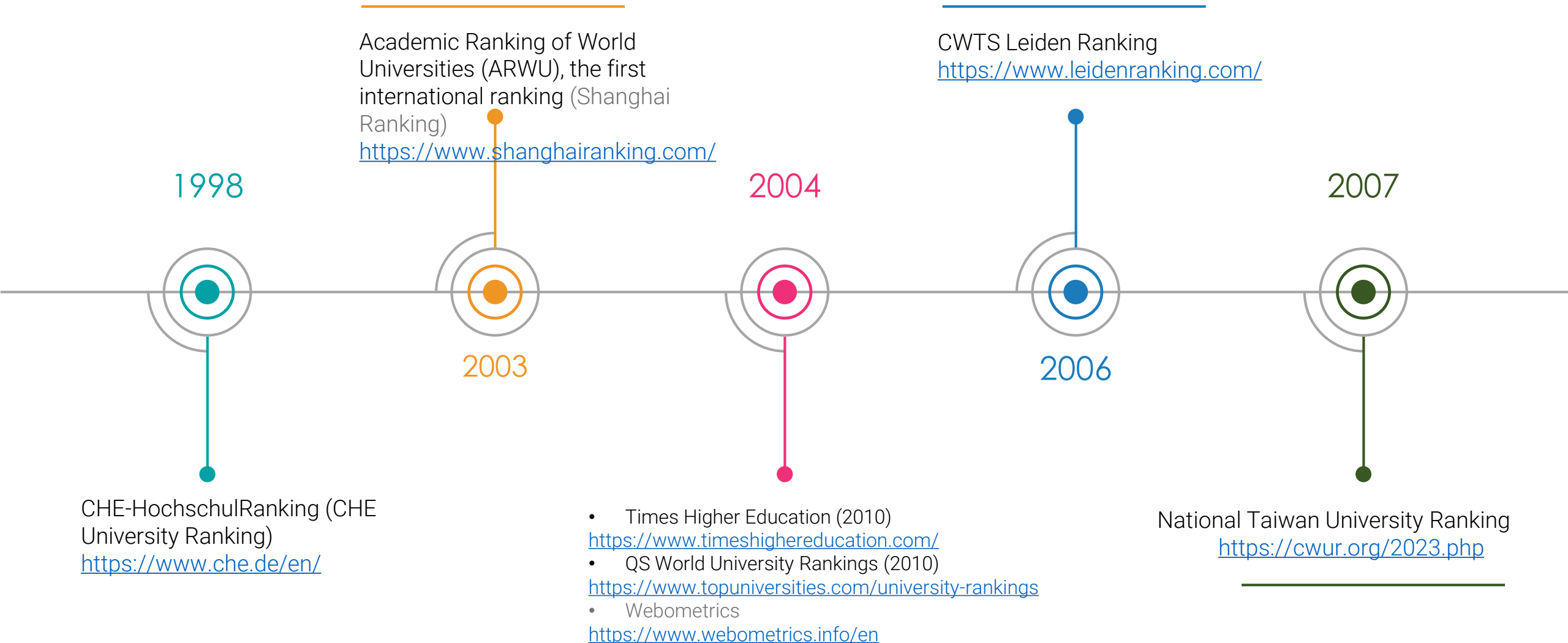
- Definition

University rankings are lists or league tables that are issued by various publishers and compiled according to a ranking aim, methodology, scope and frequency with the intent to assess the relative performance and quality of universities around the world or in a specific region, country or local area.

- Aim

The primary purpose of university rankings is to guide prospective students, researchers, employers and other interested stakeholders, as well as to inform policy decisions related to higher education.

# Rankings in timeline



# Rankings in timeline

Round University Ranking (RUR)  
<https://roundranking.com>

US News Best Global Universities Rankings  
<https://www.usnews.com/education/best-global-universities>

2009

2010

2011

2014

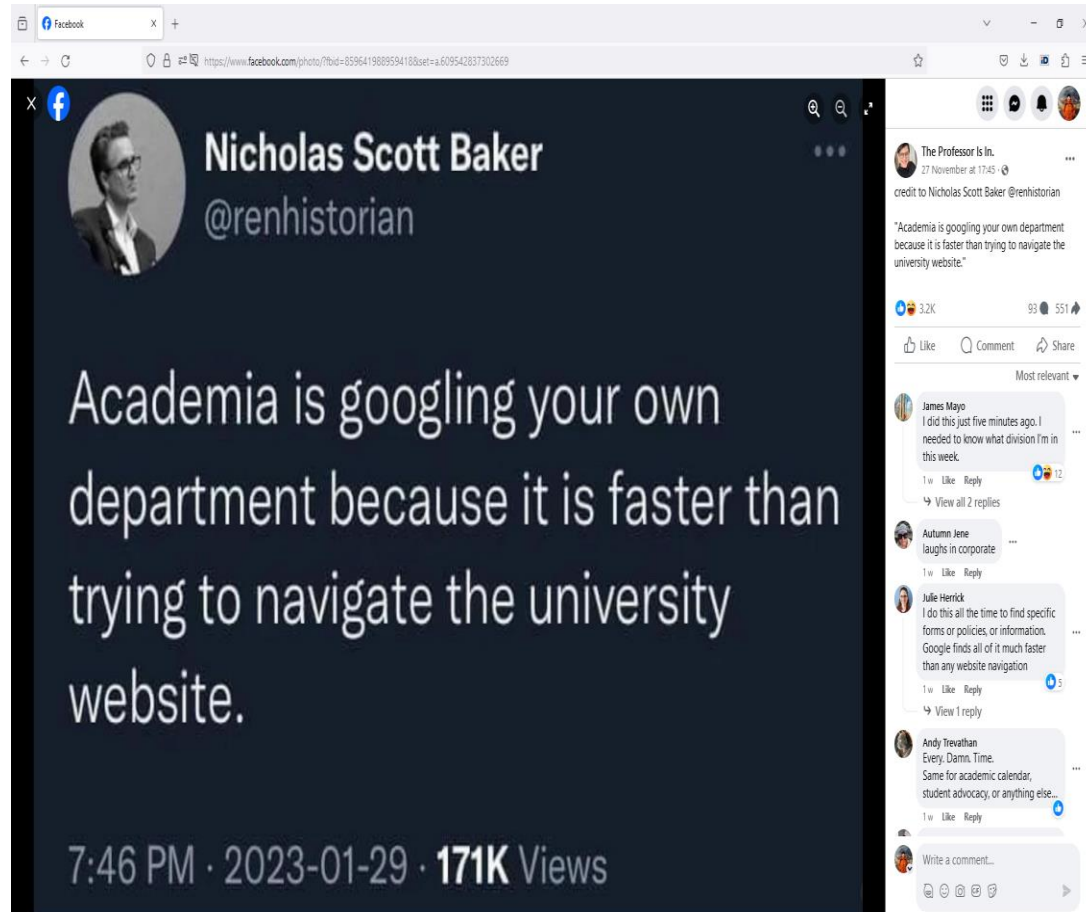
2019

SCImago Institutions Rankings  
<https://www.scimagoir.com/>

U-Multirank  
<https://www.che.de/en/ranking-international/>

Aggregate Ranking of Top Universities (ARTU)  
THE+ARWU+QS  
<https://research.unsw.edu.au/artu/overview>

# Ranking lists



[https://en.wikipedia.org/wiki/College\\_and\\_university\\_rankings](https://en.wikipedia.org/wiki/College_and_university_rankings)

Search: „university rankings 2023„

# The use of different criteria and indicators

## Research

- No of publications in indexed journals
- Number / ratio of 1% most cited publications
- Reputation among research peers (regional / international)
- Staff / alumni with Nobel prizes or the Fields medal
- Number of conference proceedings
- Number of Highly Cited Researchers™
- Citations per faculty
- No of publications cited in Science / Nature
- No / percentage of 10% most cited publications
- No of published books
- No / percentage of publications with international co-authors
- No of citations
- Average no of citations

# The use of different criteria and indicators

## Industry and Innovation

- Industry article citation impact
- % of articles that contain one or more industrial co-authors
- % of patents cited
- No of basic patents filed by the organization
- Ratio of patent applications to grants over the assessed timeframe
- Avg. no of times a journal has been cited by patents
- Research income from industry
- % of patents sought with the U.S., European and Japanese patent offices

## Teaching

- Doctorate to Bachelor students ratio
- Proportion of international staff
- Proportion of international students
- Reputation among colleagues / students
- University income
- Student reputation among companies
- % of academic staff possessing a doctorate degree



# Typology of University Rankings

## 1) The Market Model

the purpose of this type of list is to support the market for higher education. This was, indeed, the original purpose of the ARWU ranking. In this model, universities are ranked for the benefit of students, considered as consumers of educational services provided by universities and institutes of higher education;

## 2) The Podium Model

ranking is the result of a yearly “World Championship”. The “best university in the world” features at the top. Even if students had no choice at all, this model would still exist as university leaders want their university to be the best in the world. The podium value can be used as a sales argument for attracting prospective students. Obviously, no university leader can ignore this function of university rankings;

## 3) The Input-output Model

those responsible for the resources devoted to universities and institutes of higher education need another type of list. They are not only interested in an absolute scale of accomplishments but in the efficiency with which universities handle the means entrusted to them. Not all universities start on an equal footing: some have more supporting staff; some are situated in a more attractive part of the country (or of the world), and so on. Policymakers want to know how a university transforms means into relevant accomplishments.

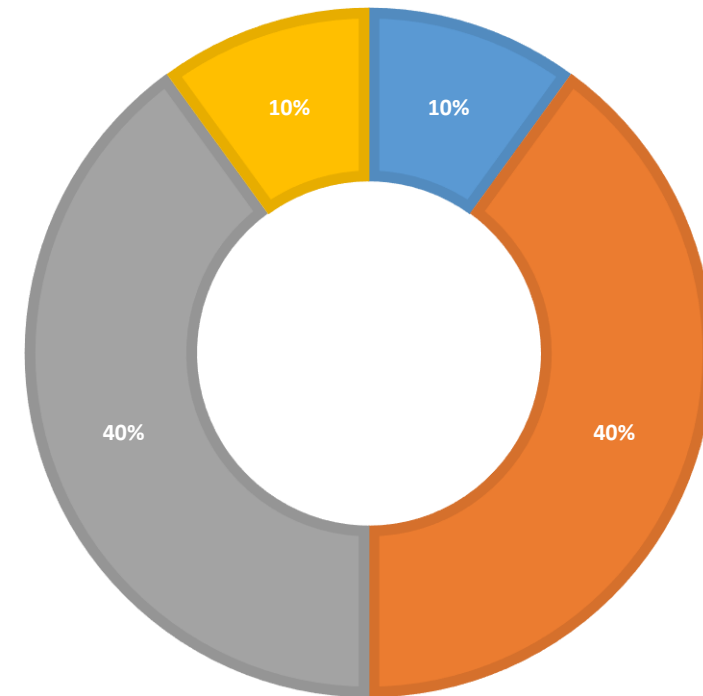
# **The characteristics of the major players**

# Academic Ranking of World Universities (ARWU)

<http://www.shanghairanking.com>

- **Publisher:** Shanghai Jiao Tong University
- **Criteria for inclusion:**
  - every university that has any Nobel Laureates, Fields Medalists, Highly Cited Researchers, or papers published in Nature or Science
  - Universities with a significant amount of papers indexed by Science Citation Index-Expanded (SCIE) and Social Science Citation Index (SSCI)
  - In total, more than 1800 universities are ranked and the best 1000 are published
- **Criteria, indicators and weight:**
  - a) Quality of Education
    - Alumni of an institution winning Nobel Prizes and Fields Medals (10%)
  - b) Quality of Faculty
    - Staff of an institution winning Nobel Prizes and Fields Medals (20%)
    - Highly cited researchers in 21 broad subject categories (20%)
  - c) Research Output
    - Papers published in Nature and Science (not for institutions specialized in humanities and social sciences) (20%)
    - Papers indexed in Science Citation Index-expanded and Social Science Citation Index (20%)
  - d) Per Capita Performance
    - Per capita academic performance of an institution (10%)

■ Quality of Education ■ Quality of Faculty ■ Research Output ■ Per Capita Performance

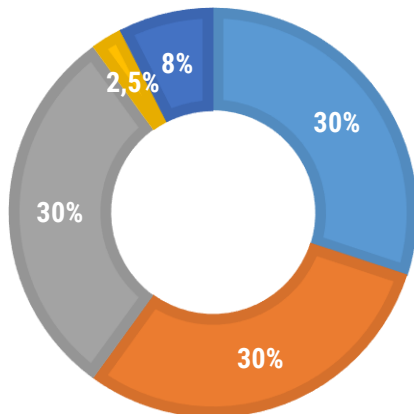


# Times Higher Education (THE) World University Rankings

<https://www.timeshighereducation.com/world-university-rankings>

- **Publisher:** UK Times Higher Education (THE)
- **Products:** World University Rankings, Young University Rankings, World Reputation Rankings
- **Criteria for inclusion:**
  - Universities that teach undergraduates
  - Universities with research output with a minimum of 150 a year
  - 80 percent or more of their research output is not exclusively in one of THE 11 subject areas

■ Teaching ■ Research ■ Citations ■ Industry income ■ International outlook



- **Criteria, indicators and weight:**

- a) **Teaching**

- Reputation (15%)
    - Staff-to-student ratio (4.5%)
    - Doctorate to Bachelor ratio (2.25%)
    - Doctorates awarded to academic Staff (6%)
    - Institutional income (2.25%)

- b) **Research**

- Reputation (18%)
    - Research income (6%)
    - Research productivity (6%)

- c) **Citations (Scopus)**

- Average number of times a university's published work is cited (30%)

- d) **International outlook**

- Proportion of international students (2.5%)
    - Proportion of international staff (2.5%)
    - International collaboration (2.5%)

- e) **Industry Income**

- Research income an institution earns from industry scaled to the number of academic staff (2.5%)

**UA 42 Universities**

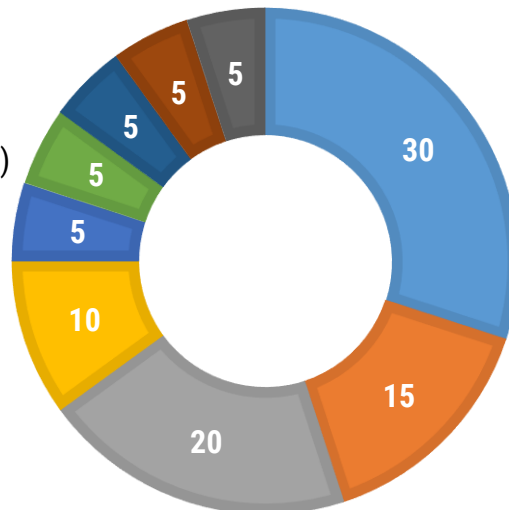
# QS World University Rankings

<https://www.topuniversities.com>

- **Publisher:**Quacquarelli Symonds
- **Criteria for inclusion:**
  - A university must teach at multiple study levels (i.e. both undergraduate and postgraduate)
  - Conduct work in at least two of five possible faculty areas (Arts and Humanities; Engineering and Technology; Social Sciences and management; Natural Sciences; Life Sciences and Medicine)

- **Products:**

- ☐ QS World University Rankings
- ☐ QS World University Rankings by Subject (54 subject area)
- ☐ QS Sustainability Rankings
- ☐ QS Best Students Cities
- ☐ QS Business Master's Rankings
- ☐ QS Global MBA Rankings
- ☐ QS International Trade Rankings



- **Criteria and weight:**

- Academic reputation from Global Survey (30%)
- Employer reputation from Global Survey (15%)
- Citations per faculty from Scopus (20%)
- Faculty student ratio (10%)
- Proportion of international students (5%)
- Proportion of international faculty (5%)
- Internation Research Network\* (5%)
- Employment Outcomes (5%)

+**Graduate Employment Rate** is defined as the percentage of graduates who go on to paid (non-voluntary) work within 15 months of finishing their degree.

+**Alumni Impact**

- Sustainability (5%)
  - **Social impact** ([Equality](#), [Knowledge Exchange](#), [Impact of Education](#), [Employability and Opportunities](#), [Quality of Life](#))
  - **Environmental impact** ([Sustainable Institutions](#), [Sustainable Education](#), [Sustainable Research](#))

**UA 11 Universities**

\* **Margalef Index IRN Index** =  $L / \ln(P)$ , where  $\ln(P)$  is the distinct count of international partners (higher education institutions) and  $L$  is the distinct count of international countries/territories represented by them.

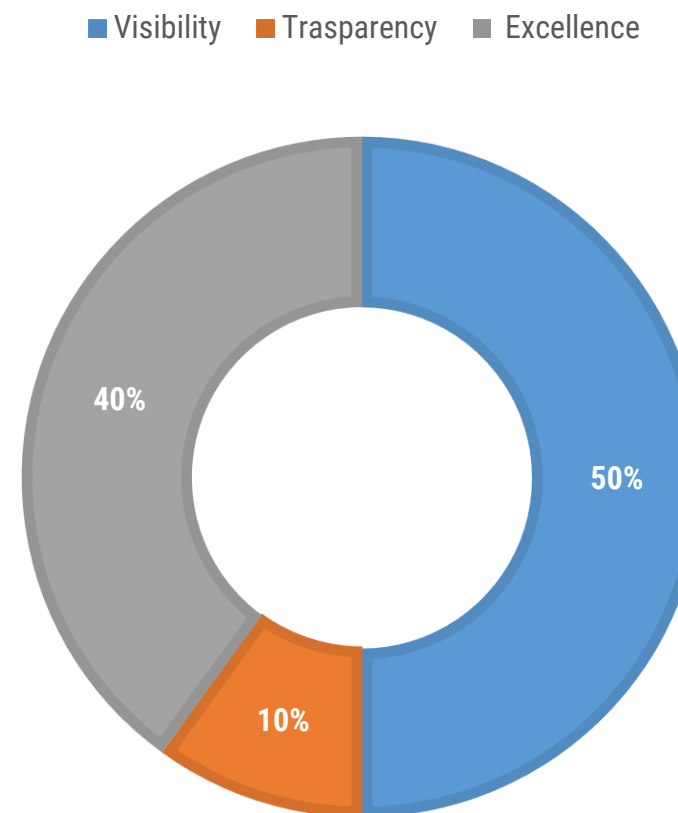
# Webometrics Ranking of World Universities

<https://www.webometrics.info/en>

- **Publisher:** Cybermetrics Lab of the Spanish National Research Council (CSIC)
- 31 000 HEIs from more than 200 countries
- Objective: to promote Open Access to the knowledge generated by the University. Best strategy to improve your rank is to increase quantity and quality of your webcontents
- **Criteria for inclusion:**
  - ☐ Universities with full 24/7 webserver availability
  - ☐ all the main web domains of the university are ranked, but only the one with the better web indicators is published

## Criteria and weight:

- ☐ Visibility (50%)
  - ☐ Number of external networks (subnets) linking to the institution's webpages ([Ahrefs](#), [Majestic](#))
- ☐ Trasparency (10%)
  - ☐ No of citations from 310 top authors (excluding the top 20 outliers) ([Google Scholar](#))
- ☐ Excellence (40%)
  - ☐ Number of papers amongst the top 10% most cited in each one of the all 27 disciplines of the full database ([Scimago](#))



**UA 300 universities**

# Different ranking systems results on the example of Ukraine (Top 10)

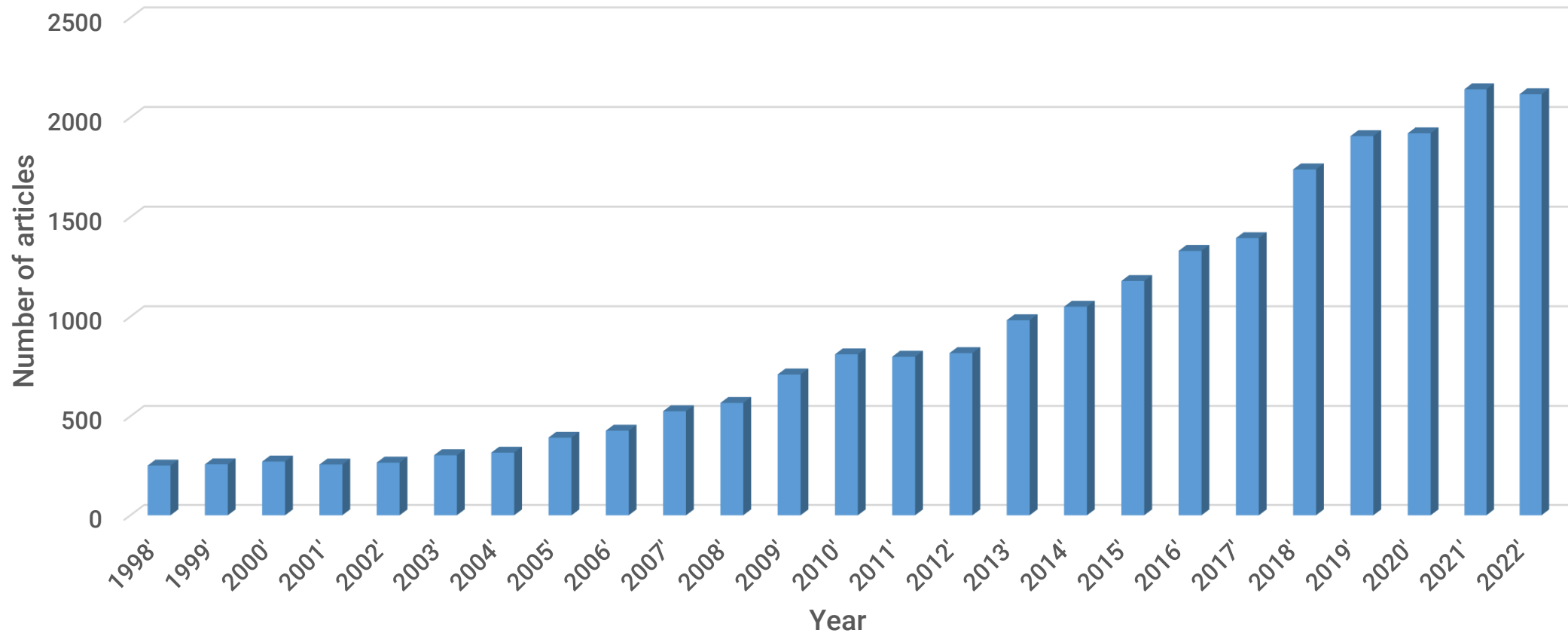
Rank	QS World University Rankings	THE	RUR	US Global Universities	Webometrics Ranking
1.	Taras Shevchenko National University of Kyiv	Sumy State University	Taras Shevchenko National University of Kyiv	Taras Shevchenko National University of Kyiv	National Technical University of Ukraine Kyiv Polytechnic Institute
2.	V. N. Karazin Kharkiv National University	Lviv Polytechnic National University	National Technical University "Kharkiv Polytechnic Institute"	V. N. Karazin Kharkiv National University	Sumy State University
3.	National Technical University of Ukraine "Igor Sikorsky Kyiv Polytechnic Institute,"	Kharkiv National University of Radio Electronics	Kharkiv National University of Radio Electronics		National University of Life and Environmental Sciences of Ukraine
4.	National Technical University "Kharkiv Polytechnic Institute"	Ivan Franko National University of Lviv	National Technical University of Ukraine "Igor Sikorsky Kyiv Polytechnic Institute,"		National Aviation University
5.	Lviv Polytechnic National University	Kharkiv Aviation Institute	Sumy State University		Vasyl Stefanyk Precarpathian National University
6.	Sumy State University	National Technical University "Kharkiv Polytechnic Institute"	National University of Ostroh Academy		National Taras Shevchenko University of Kyiv
7.	National University of Kyiv-Mohyla Academy	National Technical University of Ukraine "Igor Sikorsky Kyiv Polytechnic Institute,"	V. N. Karazin Kharkiv National University		Kharkiv National University of Radio Electronics
8.	Odessa I.I.Mechnikov National University	Oles Honchar Dnipro National University	Odessa National Academy of Food Technologies		National Technical University Kharkiv Polytechnical Institute
9.	Ivan Franko National University of Lviv	Taras Shevchenko National University of Kyiv	Kyiv National Economic University		Kharkiv National University VN Karazin
	Kharkiv National University of Radio				

# **The impact of universities rankings**



# Published articles on university ranking (WoS)

## „Rankings are *here to stay*“



Topic=(university rankings) and Publication Year= (1998-2023) and Document Types= Article  
WoS Core Collection, Session: December 13, 2023

# **The portrate of a leading university**

- at least 200 years old,
- faculty at least 2500,
- students at least 25000,
- admission to the university is highly selective,
- endowment capital at least one billion US\$.

**(3RD INTERNATIONAL SYMPOSIUM ON UNIVERSITY RANKING, 2009)**

# Users of rankings

- **Student and parents**

Reputation derived from league tables is a critical determinant for student applicants, especially for international students;

- **Universities & leadership**

University leadership can see the impact directly in the form of quality and number of students enrolled, which in turn affect their budget;

- **Employers**

Employers often seek out and prioritize candidates from the most highly respected universities;

- **Governments & funding agencies**

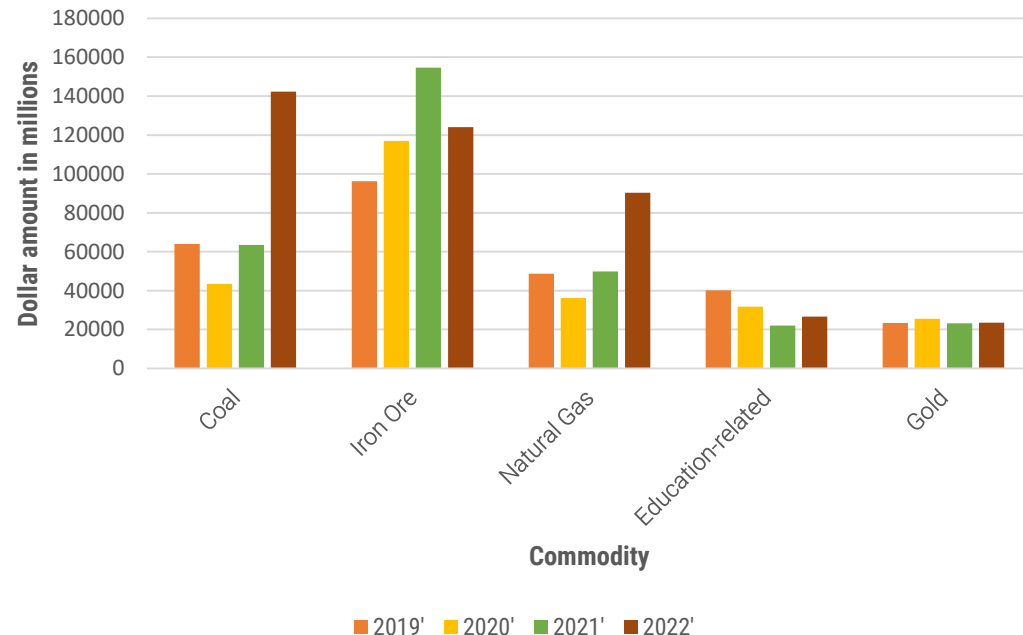
Governments and funding agencies are more favourably disposed to highly ranked universities;

- **Collaborators & partners**

Organizations and institutions use rankings as a benchmark when seeking out collaboration partners.

# Education export income

## Australia's top 5 export, goods and services (A\$ million)



## Australia

- International education is worth \$26.6 billion to the Australian economy.
- There was \$15.1 billion paid as Goods and Services and \$11.4 billion paid as Tuition fees.
- In 2022, there was \$2.8 billion paid as tuition fees from students studying outside Australia due to travel restrictions.

## UK

- In total, 381,000 first year international students enrolled into UK universities in 2021/22
- the intake of international students in the 2021/22 academic year contributed a £41.9 billion to the UK economy.

# LEIDEN MANIFESTO FOR RESEARCH METRICS (2015)

<https://www.nature.com/articles/520429a>

„Across the world, universities have become obsessed with their position in global rankings (such as the Shanghai Ranking and *Times Higher Education's* list), even when such lists are based on what are, in our view, inaccurate data and arbitrary indicators.“

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
6. Account for variation by field in publication and citation practices.
7. Base assessment of individual researchers on a qualitative judgement of their portfolio.
8. Avoid misplaced concreteness and false precision.
9. Recognize the systemic effects of assessment and indicators.
10. Scrutinize indicators regularly and update them

# Distribution according to different criteria

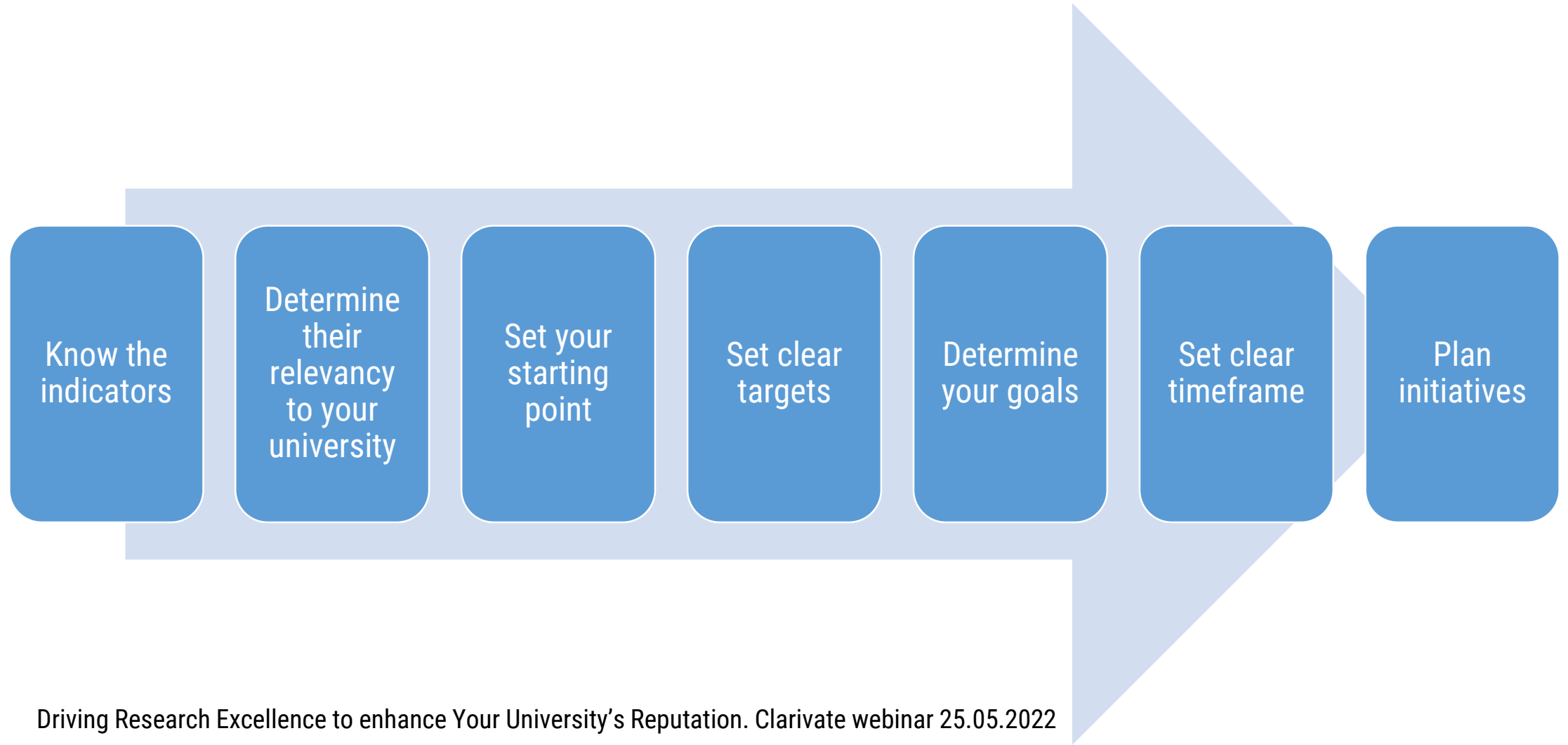
	ARWU	THE	QS	Leiden	Scimago
Field	AH				
SDG/RRI/Societal					
Reputation					
Operating time					
Visualisation					
Region					

# How to use University Rankings

- The exact place in the rankings doesn't matter. Think of them in terms of Top 10, Top 50, Top 100, and Top 500.
- Do the extra research
- Remember the strengths and differences of each ranking system:
  - QS focuses a lot on an institution's reputation among academics and employers,
  - ARWU on world-renowned research, and
  - THE tries to balance the two, taking more variables into account.
- Are you looking for an **international university**? Check QS and THE – they both take into consideration the international outlook of universities
- **Employability** after graduation? Check QS and THE - both have metrics to measure how good universities are as far as employability is concerned, but they have different approaches.
- If you want an **academic career**, check ARWU

# A path to university excellence

## Performance drives reputation





# Ways to improve the visibility of the university

- **Focus on Research**

- Invest in research facilities and recruit high-quality faculty to improve their research output. Not forget research that is relevant to local needs and has a positive impact on society.

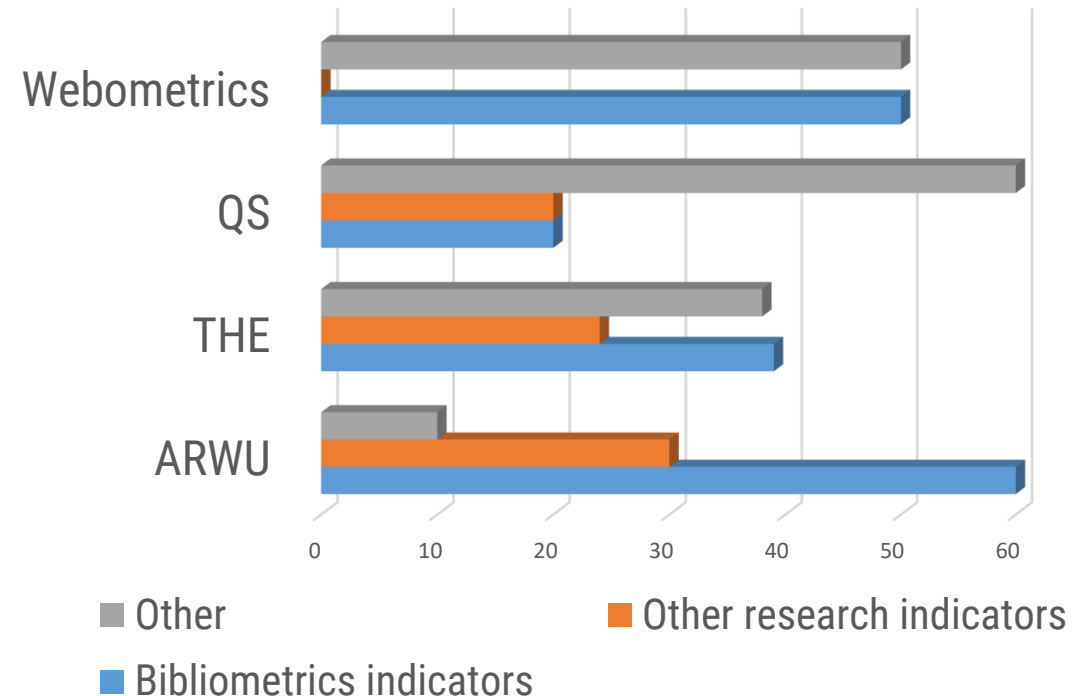
- **Internationalization**

- Recruit more international students and faculty, establish partnerships with foreign universities, and offer study abroad programs.

- **Reputation**

- publish in high-impact journals, attend conferences, and collaborate with other institutions. Establish strong relationships with industry and offer programs that are relevant to the needs of the job market.

Research is an important indicator for many ranking systems. Bibliometric indicators make up 50% of the weight.



# Ways to improve the visibility of the university

## - Faculty-to-Student Ratio

- a low faculty-to-student ratio, which is an indicator of the quality of teaching and student support. Institutions can hire more faculty and support staff to reduce class sizes and provide individual attention to students.

## - Quality of Teaching

- invest in teacher training and development programs to improve the quality of teaching. Institutions can also establish feedback mechanisms to understand the needs of students and improve the quality of teaching.

## - Student Experience

- positive student experience. This includes providing adequate support services, extracurricular activities, and a safe and inclusive campus environment. Institutions can also prioritize student feedback and take action to address student concerns and needs.
  - [International Student Barometer](#)
  - [Student Barometer](#)

# Tools

- <https://www.mendeley.com>
- <https://ahrefs.com>
- <https://majestic.com/>
- <http://www.epo.org>
- <https://www.nobelprize.org/>
- <https://scholar.google.com/>
- <https://clarivate.com/highly-cited-research>

Clarivate

English ▾ Products

Web of Science™

Sign In ▾ Register

You are accessing a free view of the Web of Science

Learn More

Author Profile

Author Profile

Share Submit a correction

IB

**Igor Bondarenko**<sup>®</sup>  
(Bondarenko, I.)  
Highly Cited Researcher  
State Institution "Dnipropetrovsk Medical Academy of the Ministry of Health of Ukraine"  
Web of Science ResearcherID: U-5156-2017

Published names

Bondarenko, Igor Bondarenko, I. Bondarenko, I. N. Bondarenko, Igor N. Bondarenko, I [Show more](#)

Published Organizations

Dnipropetrovsk City Multi Field Clin Hosp 4, Univ Clin, Dnipropetrovsk City Multiple Discipline Clin Hosp [Show more](#)

Subject Categories

Oncology; Respiratory System; General & Internal Medicine; Obstetrics & Gynecology; Immunology

Awards

Highly Cited Researcher in the field of Clinical Medicine - 2023

Highly Cited Researcher in the field of Clinical Medicine - 2022 [Show more](#)

Other Identifiers

<https://orcid.org/0000-0002-7071-2471>

Metrics

Open dashboard

Profile summary

438

Total documents

394

Web of Science Core Collection publications

0

Preprints

0

Dissertations or Theses

0

Verified peer reviews

0

Verified editor records

Web of Science Core Collection metrics

67

H-Index

394

Publications in Web of Science

37,032

Sum of Times Cited

28,914

Citing Articles

277

Sum of Times Cited by Patents

264

Citing Patents

# Comments

Denys Smolennikov

*Head of the Department for Benchmarking and Statistics/Associate Professor at Oleg Balatskyi  
Department of Management*

Sumy State University

## **POLL**

Which target group would you most like to influence?