

LAND OF THE CURIOUS



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WE ARE



LUT



 DOKOR 2025, LEVOČA

ON THE „ACADEMIC CURRENCY“

...what makes or breaks a good researcher these days

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”

Good research!



THANK YOU FOR YOUR ATTENTION

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”

Good research!

...if it only were so simple...

”

What exactly are we supposed to do as researchers?

And what is the measure of „goodness“ in that?



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WHAT EXACTLY IS RESEARCH?

» Asking questions?

- » Correct ones?
- » Random ones?
- » Sufficiently stupid ones?

» Questioning?

- » What has been done?
- » Motives?
- » Results?
- » Methods?
- » Contexts?



» Finding answers?

- » Correct ones?
- » Achievable ones?
- » Simple ones?

» Getting results?

- » Positive results? (confirmation bias?)
- » Negative ones?
- » Difficult to explain ones?
- » Expected ones?

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GOODNESS DEFINED BY PURPOSE (OF DOING RESEARCH)

- » As a calling
- » As a hobby
- » As a form of distraction of other activities
- » As a habit
- » To earn a living
- » To show what we can do – to ourselves and to others
- » To change the world (improve?)
- » To advance our understanding
- » To do damage control
- » ...
- » Self-realization
- » Having fun
- » Distracted, more productive in other tasks
- » No tension, no compulsion
- » Salary received
- » Self-fulfillment, higher position in a ranking than XY
- » To change the world (improve?)
- » Better understanding, more questions,...
- » A few errors corrected, some dead ends closed
- » ...

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SO WHAT APPEARS IN RANKINGS, PROMOTION REQUIREMENTS?

- » Number of publications
- » Quality of publications
 - » IF
 - » AIS
 - » SJR
 - » Cite Score
 - » ...
- » Number of citations
- » H-index
- » Research funding received
- » Applied reserach (spinoff) value



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“

There seems to be a mismatch between
„individual purpose goodness measures“
and „institutional goodness measures“.

Why?



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AN INSTITUTION NEEDS

- » Funding to get the research done (and individual purpose realized)
- » Credit/fame to attract good researchers, students, ... (and to fulfill its purpose)

THUS

- » Quantity to show the critical mass (to get people and funds)
- » Quality to show contribution (to get people and funds)
- » Positive reception of the research results to show relevance (to get people and funds)
- » Application of the results to show their value (to get people and funds)
- » Respect, consistency, reliability, trustworthiness, accountability, ethics, ...

And there „has to be“ a quantification or a proxy for these criteria...

”

Once you get the driver's licence for the academia (Ph.D.), you can start paying it back.

Publications are your new currency and value equivalent now*

*All outputs of the creative, research and development process actually count...

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WHAT METRICS/PROXIES ARE AVAILABLE (EXAMPLES)

» Number of publications

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» Number of papers

- » Peer reviewed or not
- » In journals, proceedings, books, ...
- » In journals indexed in a specific database
- » In journals relevant/important in the field
- » In journals highly valued by a specific system

» Significant authorship in papers

» Order of authorship

» Authorship share

» Specific features (interdisciplinarity, intenrationality)

» Number of retracted papers?

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- » Measured through quality of medium (journal/Publisher)?

- » Measured as a quality of the paper?

- » Peer review?
- » Number of citations of the paper?
- » Paper-level citation scores?
- » Citations by authorities and high quality research papers?

- » Number of downloads?

- » Number of recommendations?

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Thanks to <https://clarivate.com/academia-government/essays/impact-factor/>


Academia & Government

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Librarians and information scientists have been evaluating journals for at least 75 years. Gross and Gross conducted a classic study of citation patterns in the '20s.¹ Others, including Estelle Brodman with her studies in the '40s of physiology journals and subsequent reviews of the process, followed this lead.² However, the advent of the Clarivate citation indexes made it possible to do computer-compiled statistical reports not only on the output of journals but also in terms of citation frequency. And in the '60s we invented the journal "impact factor." After using journal statistical data in-house to compile the Science Citation Index (SCI) for many years, Clarivate began to publish [Journal Citation Reports \(JCR\)](#)³ in 1975 as part of the SCI and the Social Sciences Citation Index (SSCI).

Informed and careful use of these impact data is essential. Users may be tempted to jump to ill-formed conclusions based on impact factor statistics unless several caveats are considered.

The JCR provides quantitative tools for ranking, evaluating, categorizing, and comparing journals. The impact factor is one of these; it is a measure of the frequency with which the "average article" in a journal has been cited in a particular year or period. The annual JCR impact factor is a ratio between citations and recent citable items published. Thus, the impact factor of a journal is calculated by dividing the number of current year citations to the source items published in that journal during the previous two years (see Figure 1).

Figure 1: Calculation for journal impact factor.

A= total cites in 1992

B= 1992 cites to articles published in 1990-91 (this is a subset of A)

C= number of articles published in 1990-91

D= B/C = 1992 impact factor

Also used to „punish“

» Clear and frequently used?

» Journal-level (at least we can get percentiles)

» Manipulable by the journal

» (In)stability – recent inclusion of ESCI journals

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Article Influence Score (AIS) určuje průměrný vliv článků v časopise za prvních pět let od jejich publikování. Průměrné AIS je rovno hodnotě 1,00. Hodnota vyšší než 1,00 znamená, že každý článek v daném časopise má nadprůměrný vliv. Hodnota nižší než 1,00 znamená, že každý článek v daném časopise má podprůměrný vliv. AIS je vypočítán na základě Eigenfactoru, který představuje míru důležitosti časopisu pro vědeckou komunitu. Kladnou stránkou AIS je to, že nezapočítává autocitace.

Vzorec pro výpočet AIS

$$AIS = \frac{0,001 \times \text{Eigenfactor Score}}{X},$$

kde X = počet článků v časopise za 5 let dělený celkovým počtem článků za 5 let ve všech časopisech obsažených v JCR (Journal Citation Reports)

Hodnotu AIS daného časopisu nalezneme v databázi [Journal Citations Reports](#), v části „Additional metrics“.

» Clear and frequently used?

» Journal-level (percentiles difficult to get)

» Less manipulable by the journal

» „Quality of journals“ reflected, no self-citations

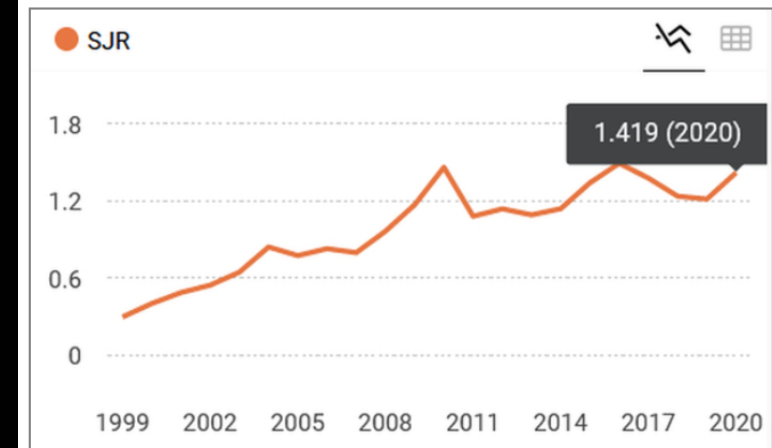
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Thanks to uvis.mendelu.cz/metriky-casopisu

SCImago Journal Rank (SJR) stanovuje průměrný vliv článků v časopise v průběhu 3 let (princip jejího stanovení je velmi podobný stanovení metricky AIS v JCR). SJR je vypočítáno podílem prestiže časopisu a celkového počtu článků v časopise, přičemž prestiž časopisu je závislá na počtu článků a počtu citací. Metrika zohledňuje obor časopisu a váhu citací. Autocitace zahrnuje do max. míry 33 %. Průměrné SJR je 1,00.



- » Clear and frequently used?
- » Journal-level (at least we get percentiles)
- » „Analogy to AIS“
- » SOPUS based (wider inclusion, less exclusivity???)

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WHAT METRICS/PROXIES ARE AVAILABLE (EXAMPLES)

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» ...

» Number of citations

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CiteScore měří citační dopad výzkumu v dokumentech. Vypočítá se jako podíl počtu citací dokumentů (článků, přehledových článků, konferenčních příspěvků, kapitol z knih, datových článků) získaných za 4 roky a celkového počtu těchto dokumentů indexovaných v databázi Scopus a publikovaných ve stejných čtyřech letech. CiteScore je pro aktuální rok zveřejňován každý měsíc, dokud se v květnu následujícího roku nestanoví jeho trvalá hodnota, což umožňuje sledovat vývoj v závislosti na přibývajících citacích.

Příklad: CiteScore 2020 dělí počet citací získaných v letech 2017-2020 a počtu dokumentů (článků, přehledových článků, konferenčních příspěvků, kapitol z knih, datových článků) v databázi Scopus publikovaných v letech 2017-2020. Konečný CiteScore 2020 byl zveřejněn cca v červnu 2021.

Hodnotu CiteScore konkrétního časopisu zjistíte přímo v databázi [Scopus](#) po vyhledání konkrétního časopisu, v Source details.

» Clear and frequently used?

» Journal-level (at least we get percentiles)

» Similarity to IF

» SOPUS based (wider inclusion, less exclusivity???)

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- » **Number of citations**

- » H-index

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- » Applied reserach (spinoff) value

- » Absolute number of times my research was cited

- » From WoS in WoS (Clarivate)
- » From Scopus in Scopus (
- » From anywhere?
- » By me+coauthors+others
- » By my coauthors+others
- » By others
- » Most highly cited papers (research results)

- » Context of citations (anything counts?)

- » In predatory journals
- » By low-level (???what is it???) research
- » Out of context or „Stoklasa (2025) was wrong again...”
- » By papermill-type publications, by citation rings

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The highest n such that n papers you have co-authored have been cited at least n times each.

- » Researcher-level
- » Journal level
- » What is a good value?
- » Should „popular publications“ be included?

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- » **Research funding received**
- » Applied reserach (spinoff) value

- » Amount of funding
- » Source of funding (SK, University, ERC, EU funds...)
- » Competitiveness of funding
- » Continuity of funding
- And in the background**
- » Strong research group
- » Critical mass, needed know-how
- » Needed infrastructure
- » Support in grant writing
- » Incentives, context

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- » **Applied research (spinoff) value**

- » Amount of money created
- » Number of Patents, ...
- » Number of spinoffs

And much more difficult to quantify

- » Societal relevance
- » Value created
- » Brand / Scientific brand created

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WHAT METRICS/PROXIES ARE AVAILABLE (EXAMPLES)

» Participation in papermill activity

- » Buying papers
- » Facilitating papermill activity

» Utilization of vanity press

» Utilization of predatory journals

» Research ethics violations

- » Plagiarism
- » Data manipulation
- » Claim/value exaggeration
- » ...

» ...

» No paper product being produced, just crappy research

- » Full papers for sale including co-authors
- » Fast-track publication process being offered
- » Short publication times offered
- » Citations can be bought
- » ...

» So what?

- » Papermill publications can destroy your career
- » Papermill publications can sink
 - Journals
 - Fields of science
 - Research groups

Papermills need researchers – DO NOT HELP!

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- » Data manipulation
- » Claim/value exaggeration
- » ...

» ...

» Author pays for the publishing of his/her book

» Too easy a way towards publication

- » If you have good results, there should be a better way to publish
- » If you need to go for a vanity press, maybe the results are not that good

» Might seem reasonable early stagem but it can bite back later on...

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WHAT METRICS/PROXIES ARE AVAILABLE (EXAMPLES)

- » Participation in papermill activity
 - » Buying papers
 - » Facilitating papermill activity
- » Utilization of vanity press
- » **Utilization of predatory journals**
- » Research ethics violations
 - » Plagiarism
 - » Data manipulation
 - » Claim/value exaggeration
 - » ...
- » ...

» If this is done deliberately, just one comment:

???WHY???

- » If done by accident, maybe OK, but potentially jeopardizes the credibility of the published results.
- » It can be a huge problem, if you need these publications for career advancement...

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WHAT METRICS/PROXIES ARE AVAILABLE (EXAMPLES)

» No discussion on this

» Participation in papermill activity

» Buying papers

» Facilitating papermill activity

» Utilization of vanity press

» Utilization of predatory journals

» **Research ethics violations**

» Plagiarism

» Data manipulation

» Claim/value exaggeration

» ...

» ...

!!!SIMPLY DO NOT!!!

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SO A GOOD RESEARCHER ...

- » Has published many papers
 - » Publishes papers that are open-access
 - » Creates methods/research data for others to use (shares,
 - » Has been cited many times
 - » Has published in esteemed/respected journals
 - » Has attracted funding
 - » Has managed to get his/her results used
 - » Has won prizes and recognition
 - » Is well known for the results/expertise
 - » Has power/means to influence where the research is/will be heading
- » **Has not sold him/herself out?**
 - » No publications bought
 - » No publications in predatory journals
 - » No pay-per-publish and vanity press publications
 - » No association with authors that did the above?
 - » No support of these practices during review process

High scientific credit in your field

High h-index, high citation potential

High IF, High AIS

Serious review process

Number of retractions

Reasonable number of
papers published

Topic-wise relevance

Trusted publisher

”

So, where DO we publish?



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LET US TALK TRADEOFFS NOW

- »» Quality of journal vs. Publication time
- »» Number of papers vs. Quality of papers
- »» Topic-wise relevance (correct audience) vs. Speed of publication
- »» Open access vs. Subscription based vs. Pay-per-access
- »» ...

In the context that

- »» You will need SOME papers (a specific number)
- »» You need SOME GOOD papers
- »» You need (and will need) to have a GOOD NAME to survive in the academia

”

After all this, who is a
good researcher?



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SO AFTER ALL THIS, WHO IS A GOOD RESEARCHER?

- » Someone who has the needed expertise or asks the correct questions
- » Someone who is able to find the answers or find someone to find them
- » Someone who does research in an open, replicable, rigorous way
- » Someone who is able to communicate/explain the problems and their solutions

- » **Someone who inspires a generation of even better researchers**
- » Someone that makes his/her field credible, useful and respected
- » Someone whose motivation is curiosity rather than fame/money
- » Someone willing to admit mistakes and show negative results

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Is this guaranteed by high numbers of papers, citations, high citation indices? Unfortunately not...

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- » Someone who is able to communicate/explain the problems and their solutions

But it can indicate the presence of the needed requirements to reach high numbers of papers, citations, ...

- » **Someone who inspires a generation of even better researchers**
- » Someone that makes his/her field credible, useful and respected
- » Someone whose motivation is curiosity rather than fame/money
- » Someone willing to admit mistakes and show negative results

”

Curiosity, integrity, skill, expertise, rigour,
criticality, novelty, courage, ability to
communicate, teamwork, sincerity, ...

Make a good researcher.

...and some luck and sufficient resources to do and disseminate
the results help also increase the real-life relevance and value...



”

BUT without good values of external metrics, the goodness might not be easily visible!



”

Cutting corners, disregard for ethics or
the very purpose of scientific enquiry,
insufficient (self)criticality

Can easily break a researcher*

*Note that in all these cases it is ultimately the researcher that breaks him/herself.



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