UTM UNIVERSITI TEKNOLOGI MALAYSIA | Malaysia-Japan International Institute of Technology (MJIIT)

RESEARCH TOOLS . RESEARCH VISIBILITY AND IMPACT . UNIVERSITY RANKINGS .
Ale Ebrahim NADER
TECHNOLOGY MANAGEMENT . VIRTUAL R&D TEAMS . COLLABORATIVE SYSTEMS .

Ways to Increase Research Visibility, Citation, and H-index

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https://publons.com/researcher/1692944
https://scholar.google.com/citation

All of my presentations are available online at:
https://figshare.com/authors/Nader_Ale_Ebrahim/100797

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8th September 2021

Abstract

H-index is a common index for assessing the output and impact of researchers, departments, and universities. H-index will increase by citation of academic papers that also can be influential in improving the university ranking. One of the key ways to increase citations is to expose the research output to the widest possible audience. Publishing a high quality paper in a scientific journal is only half the way of receiving citations in the future. The rest of the journey is advertising and disseminating the publications by using the proper "Research Tools". Citations to an article strongly depend on the visibility, rather than the merit of the article. Researchers have spent plenty of time and effort on writing their research for publication. However, most of the researchers stop their work after publication. Dissemination and archiving an article is an essential phase of the publication life cycle. There are tools that help to increase citation, H-index and research visibility. Effective use of these tools, which will be elaborated in this webinar, can result in increased visibility and, thus, improve the paper citations, sequentially researcher H-index, and university ranking.

Keywords: H-index, Improve citations, Research tools, Research visibility, Research impact, University rankings

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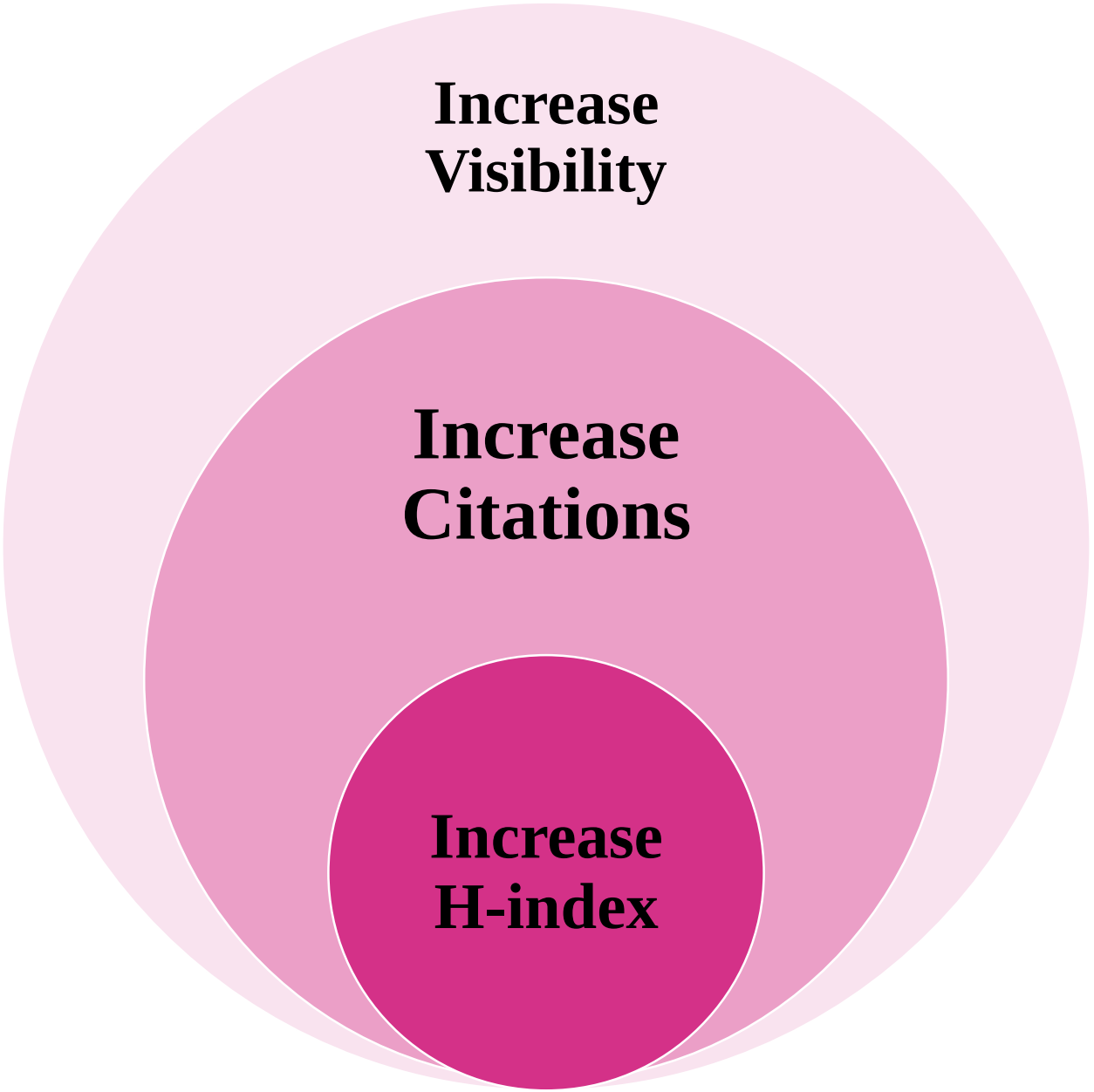
Increase Research Visibility, Citation, and H-index



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Visibility

Visibility refers to how well other scientists and/or the general public know your research and you as a researcher.

Source: Lantsoght, E. O. (2018). *The A-Z of the PhD Trajectory, A Practical Guide for a Successful Journey*: Springer, Cham. https://doi.org/10.1007/978-3-319-77425-1

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Citations

Citation shows that how many times an article has been cited by other articles

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H-Index

A scientist has index **h** if **h** of his/her Np papers have at least **h** citations each, and the other (Np-h) papers have no more than
h citations each.

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No.	Topic
1	Motivation
2	General Solutions
3	Use a standardized institutional affiliation and address
4	Assign keyword terms to the manuscript
5	Publish with international authors
6	Use academic social networks
7	Make an online CV.
8	Avoid unethical approaches
9	Q&A

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Motivation

Associate/Full Professor in Microbiomes

Associate/Full Professor in Microbiomes

Tampa, FL, United States

Posted about 5 days ago

Expires on July 06, 2019

Requirements:

- MD or MD/PhD
- 7-10 year history of continuous NIH funding or high profile grants
- Current NIH funding at the level of at least one R01 and greater than $350,000 in direct costs
- At least 5 papers with an impact factor above 15
- **H-Index greater than 35**
- 7-10 years of experience as a principle investigator

Source: https://www.nature.com/naturecareers/job/associatefull-professor-in-microbiomes-university-of-south-florida-usf-692705

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h-index importance

"Hirsch, who has a *h*-index of 49, says that a "**successful scientist**" will have an index of 20 after 20 years; an "**outstanding scientist**" will have an index of 40 after 20 years; and a "**truly unique individual**" will have an index of 60 after 20 years."

Source: Ball, P. (2005). Index aims for fair ranking of scientists. *Nature 436*(7053), 900-900.

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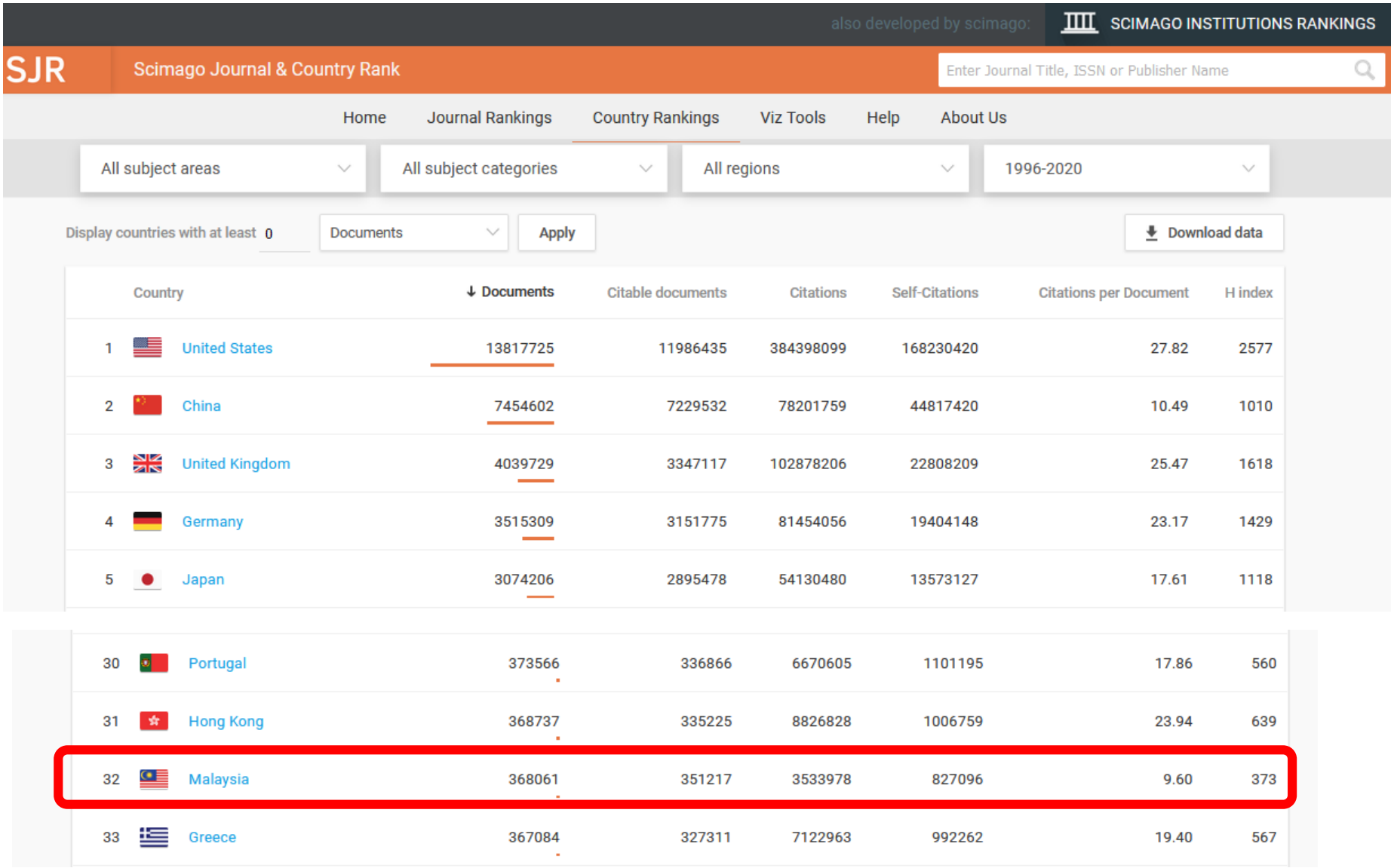

	Country	Documents	Citable documents	Citations	Self-Citations	Citations per Document	H index
1	United States	13817725	11986435	384398099	168230420	27.82	2577
2	China	7454602	7229532	78201759	44817420	10.49	1010
3	United Kingdom	4039729	3347117	102878206	22808209	25.47	1618
4	Germany	3515309	3151775	81454056	19404148	23.17	1429
5	Japan	3074206	2895478	54130480	13573127	17.61	1118
30	Portugal	373566	336866	6670605	1101195	17.86	560
31	Hong Kong	368737	335225	8826828	1006759	23.94	639
32	Malaysia	368061	351217	3533978	827096	9.60	373
33	Greece	367084	327311	7122963	992262	19.40	567

Source: https://www.scimagojr.com/countryrank.php

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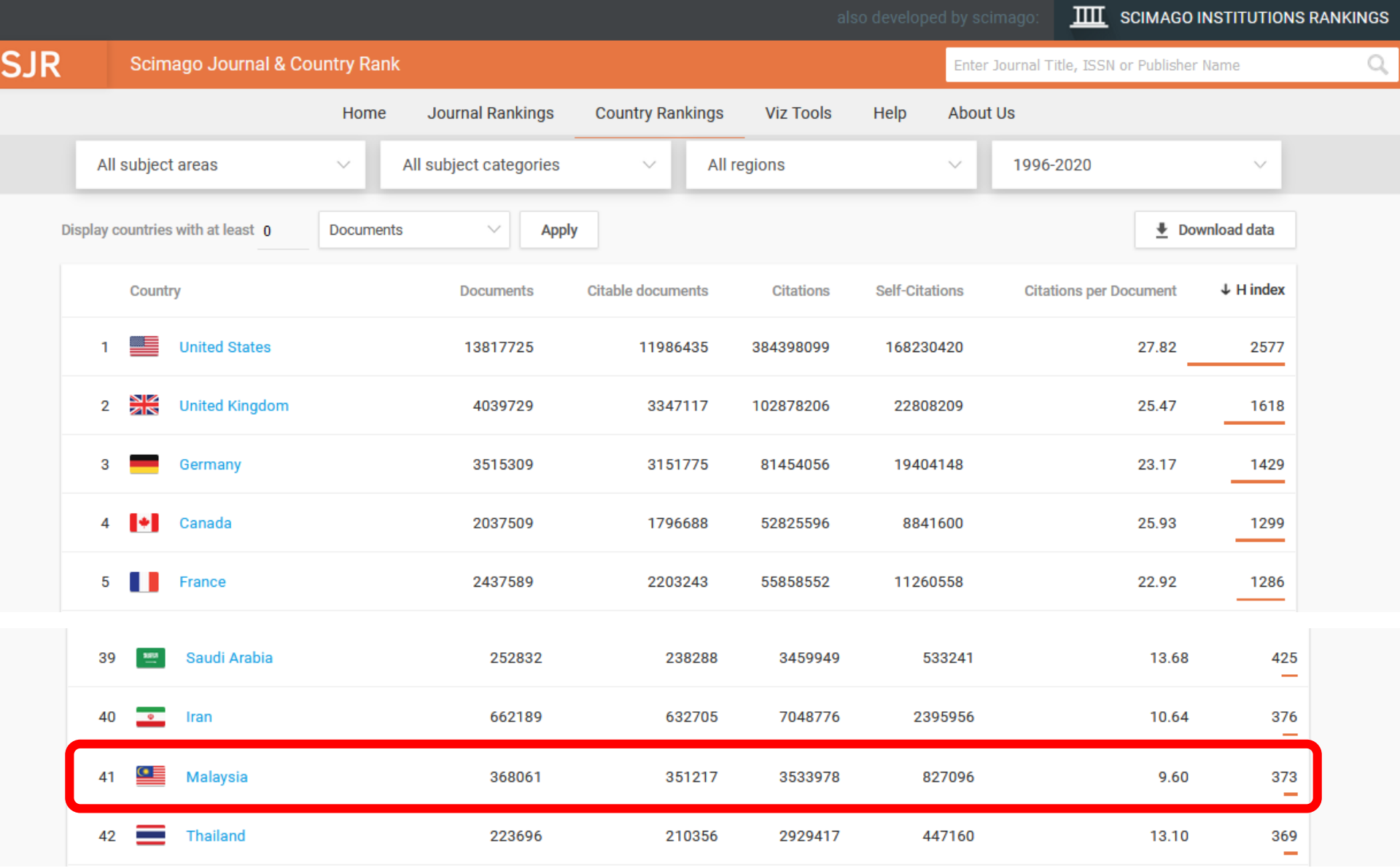

	Country	Documents	Citable documents	Citations	Self-Citations	Citations per Document	↓ H index
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3	Germany	3515309	3151775	81454056	19404148	23.17	1429
4	Canada	2037509	1796688	52825596	8841600	25.93	1299
5	France	2437589	2203243	55858552	11260558	22.92	1286
39	Saudi Arabia	252832	238288	3459949	533241	13.68	425
40	Iran	662189	632705	7048776	2395956	10.64	376
41	Malaysia	368061	351217	3533978	827096	9.60	373
42	Thailand	223696	210356	2929417	447160	13.10	369

Source: https://www.scimagojr.com/countryrank.php

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QS World University Rankings – Methodology

- Academic reputation (40%)
- Employer reputation (10%)
- Faculty/Student Ratio (20%)
- Citations per faculty (20%)
- International faculty ratio/International student ratio (5% each)

Source: https://www.topuniversities.com/qs-world-university-rankings/methodology

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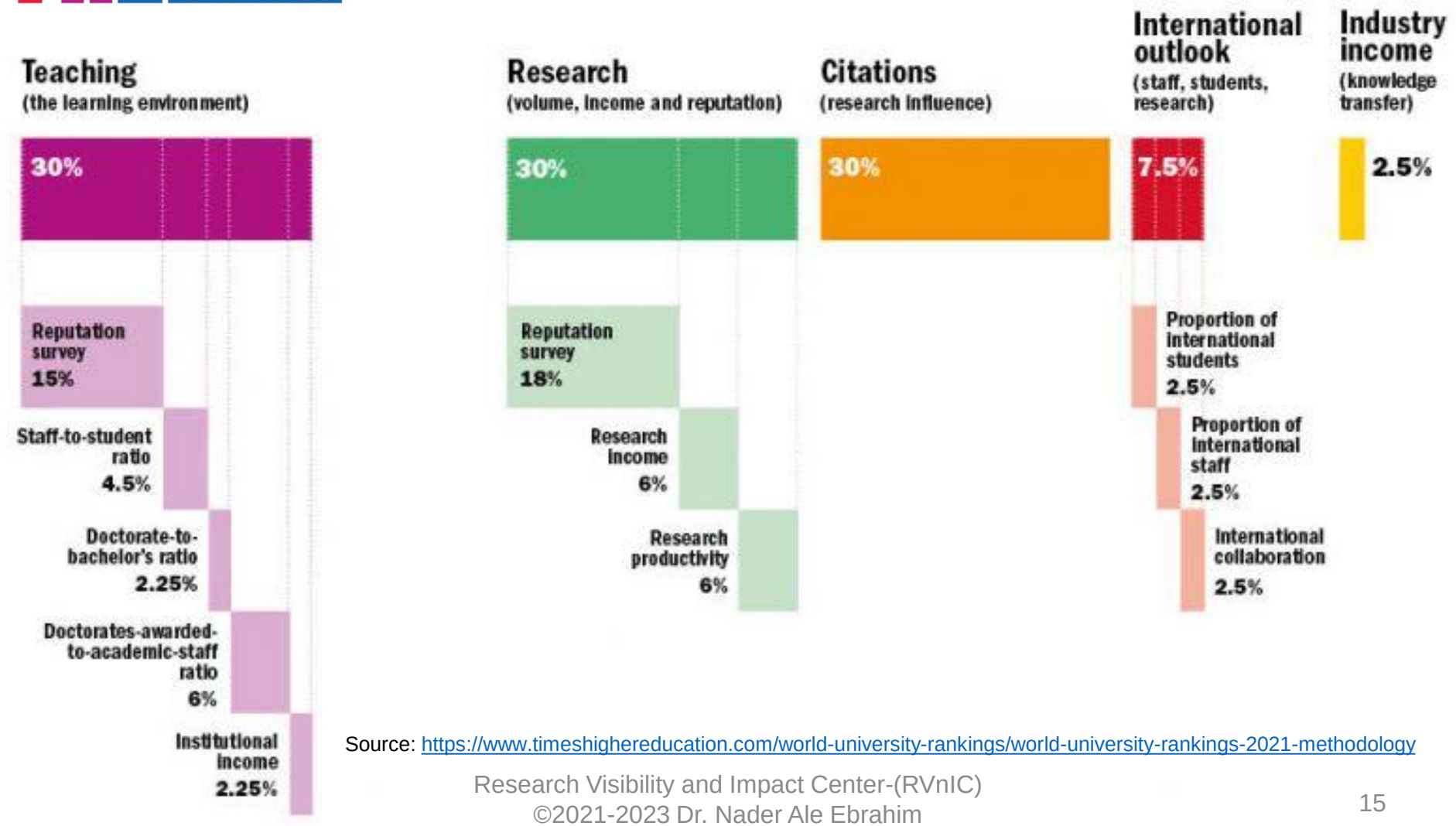
THE World University Rankings 2021: methodology



Source: https://www.timeshighereducation.com/world-university-rankings/world-university-rankings-2021-methodology

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Shanghai Ranking's Academic Ranking of World Universities Methodology 2020

Criteria	Indicator	Code	Weight
Quality of Education	Alumni of an institution winning Nobel Prizes and Fields Medals	Alumni	10%
Quality of Faculty	Staff of an institution winning Nobel Prizes and Fields Medals	Award	20%
Quality of Faculty	Highly Cited Researchers	HiCi	20%
Research Output	Papers published in Nature and Science*	N&S	20%
Research Output	Papers indexed in Science Citation Index-Expanded and Social Science Citation Index	PUB	20%
Per Capita Performance	Per capita academic performance of an institution	PCP	10%
Total			100%

Source: https://www.shanghairanking.com/methodology/arwu/2020

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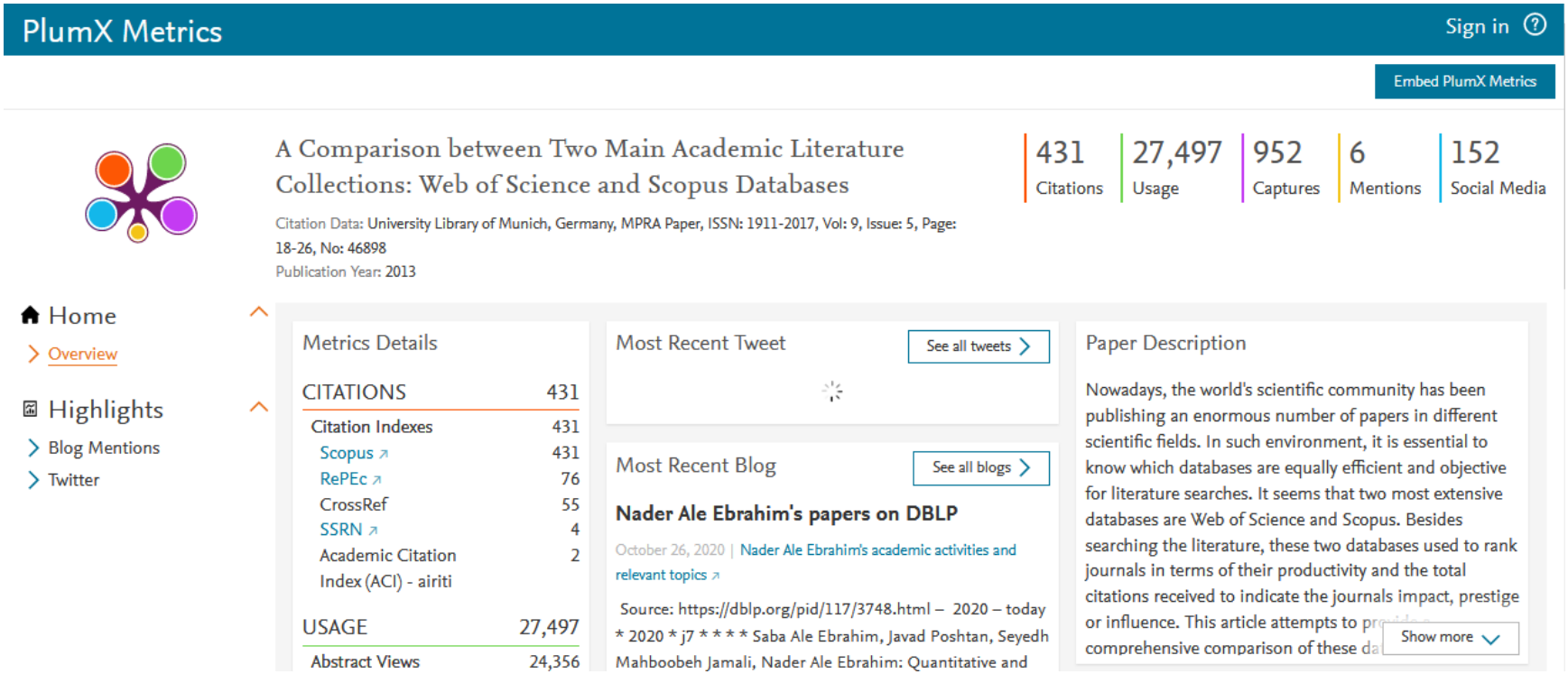

Source: https://plu.mx/a/-0W0mV-BwcDBGWszZh9g5QWUxaCt3qJ-0VTve5So9rA

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This article https://link.springer.com/article/10.1007/s11192-021-03961-8 used public tweets in English to analyze how scholars discuss the *h*-index in public

According to this paper: "The most prolific *h*-index tweeters were Nader Ale Ebrahim (233 tweets, 0.5% of all *h*-index tweets), a bibliometrician at Alzahra University, Tehran"

Results

There were 30,681 non-duplicate English-language tweets containing "*h*-index" or "*h* index" between the start of Twitter in 2006 and the end of 2020 (Fig. 1). The first tweet was from December 2007. The tweets with a known location were mainly from the USA (6640, 21.6%), the UK (3809, 12.4%), Australia (1476, 4.8%), and Canada (1388, 4.5%), with other countries contributing less than 2% each and 38.6% being from an unknown location. The most prolific *h*-index tweeters were Nader Ale Ebrahim (233 tweets, 0.5% of all *h*-index tweets), a bibliometrician at Alzahra University, Tehran, and DrugMonkey (167 tweets, 0.5%), an anonymous academic medicine blogger apparently from the USA. Everyone else had 80 or fewer tweets in the set (0.3%).

Source: M. Thelwall, and K. Kousha, "Researchers' attitudes towards the h-index on Twitter 2007–2020: criticism and acceptance," *Scientometrics*, 2021/04/26, 2021.

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General Solutions

Publish a high-quality paper

1- Ale Ebrahim, Nader and Gholizadeh, Hossein and Lugmayr, Artur, **Maximized Research Impact: An Effective Strategies for Increasing Citations** (December 15, 2017). **Managing and Leading Creative Universities – Foundations of Successful Science Management: A Hands-On Guide for (Future) Academics** (pp. 29-51). Tampere, Finland: International Ambient Media Association (iAMEA); ISBN 978-952-7023-16-7, Available at SSRN: https://ssrn.com/abstract=3101575

2- Ale Ebrahim, Nader and Salehi, Hadi and Embi, Mohamed Amin and Habibi, Farid and Gholizadeh, Hossein and Motahar, Seyed Mohammad and Ordi, Ali, **Effective Strategies for Increasing Citation Frequency** (October 23, 2013). International Education Studies, Vol. 6, No. 11, pp. 93-99, 2013, Available at SSRN: https://ssrn.com/abstract=2344585

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3- Increasing Visibility and Enhancing Impact of Research

1. Manuscript preparation and submission

Source: https://pixabay.com/en/books-stack-learn-study-library-1015594/

2. Post-publication promoting

Source: http://fotomelia.com/?download=homme-megaphone-a-la-main-images-gratuites

3. After receiving mentions/citations (monitoring)

Source: http://fotomelia.com/?download=homme-bureau-ordinateur-images-gratuites

Source: Bong, Yiibonn and Ale Ebrahim, Nader, Increasing Visibility and Enhancing Impact of Research (April 24, 2017). Asia Research News 2017. Available at SSRN: https://ssrn.com/abstract=2959952

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Preparing for Publication – Writing

- Use a unique name consistently throughout academic careers;
- **Use a standardized institutional affiliation and address**;
- Repeat key phrases in the abstract while writing naturally;
- **Assign keyword terms to the manuscript**;
- Use more references;
- Write a longer paper;
- Write a review paper;
- Present a working paper;

Read more: Ale Ebrahim, N., Salehi, H., Embi, M. A., Habibi Tanha, F., Gholizadeh, H., Motahar, S. M., & Ordi, A. (2013). Effective Strategies for Increasing Citation Frequency. International Education Studies, 6(11), 93-99. doi: 10.5539/ies.v6n11p93

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Preparing for Publication – Collaboration & Journal Selection

- **Publish with international authors;**
- Publish papers with a Nobel laureates;
- Publish your article in one of the journals everyone in your discipline reads
- Open Access (OA) has a positive impact on growth of citations;
- Publish your work in a journal with the highest number of indexing

Read more: Ale Ebrahim, N., Salehi, H., Embi, M. A., Habibi Tanha, F., Gholizadeh, H., Motahar, S. M., & Ordi, A. (2013). Effective Strategies for Increasing Citation Frequency. International Education Studies, 6(11), 93-99. doi: 10.5539/ies.v6n11p93

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Dissemination 1/2

- Self-archive articles
- Keep your professional web pages and published lists up to date
- Make your research easy to find, especially for online searchers
- Deposit paper in Open Access repository
- Contribute to Wikipedia
- **Use academic social networks**

Read more: Ale Ebrahim, N., Salehi, H., Embi, M. A., Habibi Tanha, F., Gholizadeh, H., Motahar, S. M., & Ordi, A. (2013). Effective Strategies for Increasing Citation Frequency. International Education Studies, 6(11), 93-99. doi: 10.5539/ies.v6n11p93

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Dissemination 2/2

- Join academic social networking sites
- link your latest published article to your email signature
- Create a podcast describing the research project and submit the podcast to YouTube or Vimeo
- **Make an online CV**.

Read more: Ale Ebrahim, N., Salehi, H., Embi, M. A., Habibi Tanha, F., Gholizadeh, H., Motahar, S. M., & Ordi, A. (2013). Effective Strategies for Increasing Citation Frequency. International Education Studies, 6(11), 93-99. doi: 10.5539/ies.v6n11p93

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Things to do when a paper comes out: a checklist

1. Write a blog-post on SV-POW!
2. Create a new page about paper in the SV-POW! sidebar.
3. Add the full-resolution figures to the sidebar page.
4. Update my online publications list.
5. Update my University of Bristol IR page.
6. Update my ORCID page.
7. Update my LinkedIn page.
8. Mendeley, if you do it.
9. ResearchGate, if you do it.
10. Academia.edu, if you do it.
11. Keep an eye on the new taxon's Wikipedia page (once it exists).
12. Add the paper to the Paleobiology Database (or ask someone to do it for you if you're not authorised). [Credit: Jon Tennant]
13. Tweet about it! [Credit: Matt Hodgkinson]
14. Update Google Scholar, if it doesn't pick up on the publication on its own [Credit: Christopher Taylor]
15. Post on Facebook [Credit: Andy Farke]
16. Send PDF to the institution that hosts the material [Credit: Andy Farke]
17. Email colleagues who might be interested [Credit: Andy Farke]
18. Write short popular language account for your institution if applicable [Credit: Andy Farke]
19. Submit any silhouettes to PhyloPic [Credit: Mike Keesey]

Source: https://svpow.com/2015/06/04/things-to-do-when-a-paper-comes-out-a-checklist/

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Source: Elgendi, M. (2019). Characteristics of a Highly Cited Article: A Machine Learning Perspective. *IEEE Access, 7*, 87977-87986. doi:10.1109/ACCESS.2019.2925965

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Introduction to Research Tools

(Tools for supporting research and publication)

478.3k views

Research Visibility and Impact Center-(RVnIC)
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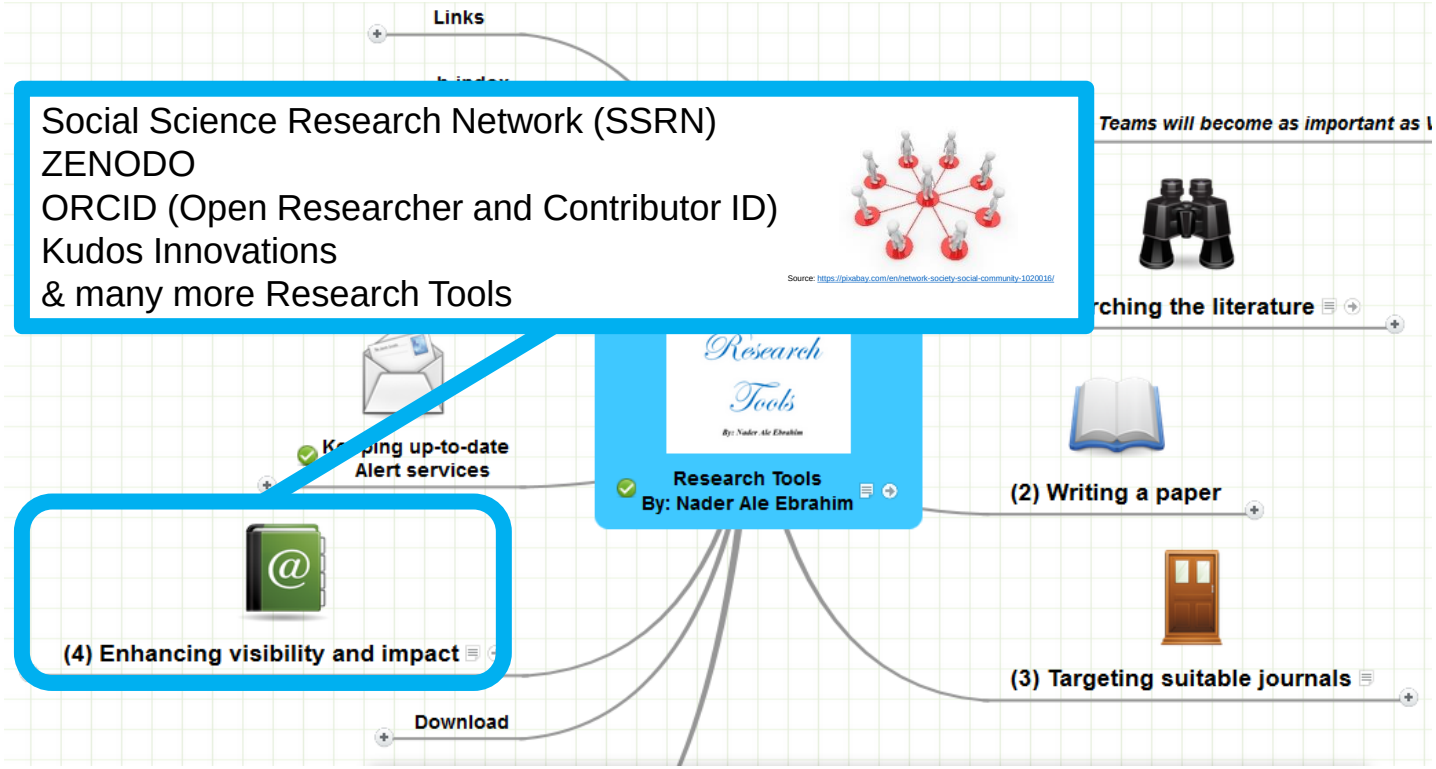
Source: https://www.mindmeister.com/39583892/research-tools-by-nader-ale-ebrahim?fullscreen=1

Introduction to Research Tools

(Tools for supporting research and publication)



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Source: https://visibilitycheck.library.uu.nl/

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Utrecht University

Visibility Check

Utrecht University Library

You have completed the check. Below you will find your score.

Planning (100%)

Research profiles (100%)

Academic social networks (100%)

Personal Channels (100%)

Open Access (100%)

The check helps you to gain insight into the extent of your academic visibility. Practical tips and advice can be found on the to-do list.

It could be that you have a specific question you need answered. If so, feel free to request a consultation with our team. Leave your details below and let us know what you need.

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Use a standardized institutional affiliation and address

Universiti Teknologi Malaysia Kuala Lumpur

Other name formats:

Azman Hashim International Business School

Razak Faculty of Technology and Informatics

Universiti Teknologi Malaysia

Universiti Teknologi Malaysia UTM

University of Technology Malaysia

Universiti Teknologi

Source: https://www.scopus.com

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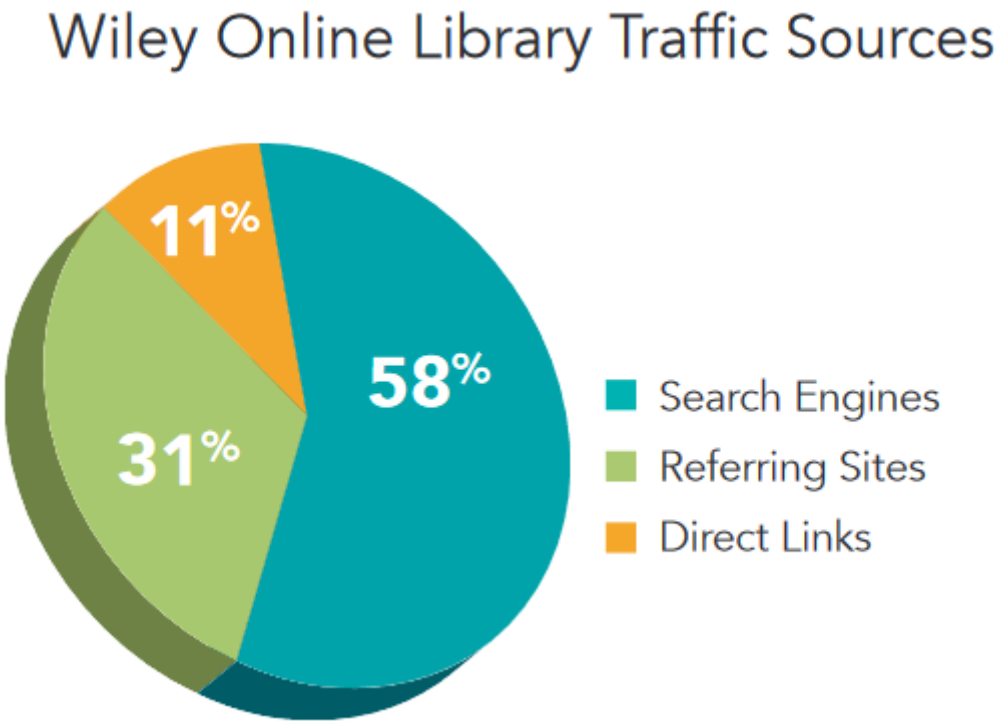
Assign keyword terms to the manuscript



Source: https://www.wiley.com/legacy/wileyblackwell/pdf/SEOforAuthorsLINKSrev.pdf

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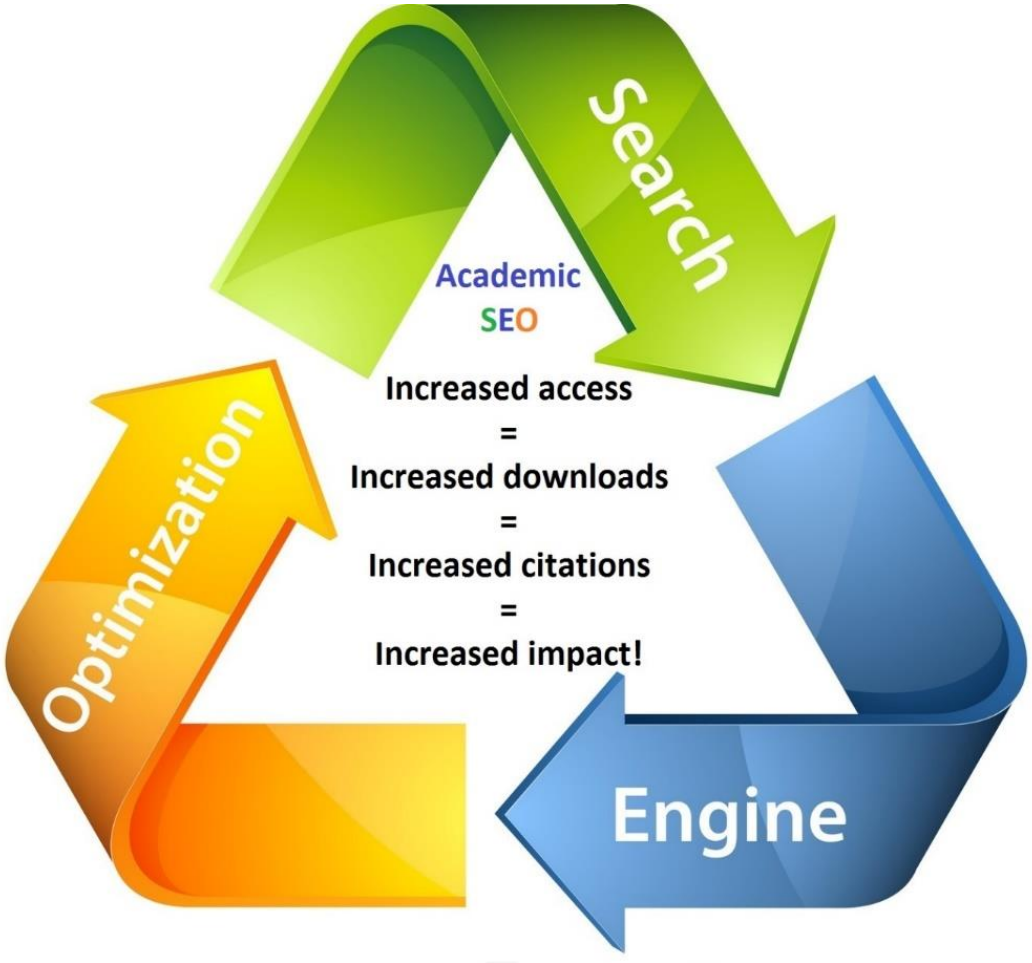

Ale Ebrahim, Nader, Optimize Your Article for Search Engine (December 23, 2014). University of Malaya Research Bulletin, Vol. 2, No. 1, 23, December 2014. Available at SSRN: http://ssrn.com/abstract=2588209

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9 Tips to Select a Research Brand Name

1. **Make it unique (invent your own research brand name)**
2. **Ensure you can make it Web-Friendly**
3. **Make it memorable**
4. **Ensure you can repeat in your publication's title and abstract**
5. **Test #**
6. **Pick a brand ..ame ..hat everybody is curious to know more about**
7. **Be careful not to choose a brand name that is too broad in scope**
8. **Can machine (like Cortana & Siri) spell it?**
9. **Make sure you can protect the research brand name**

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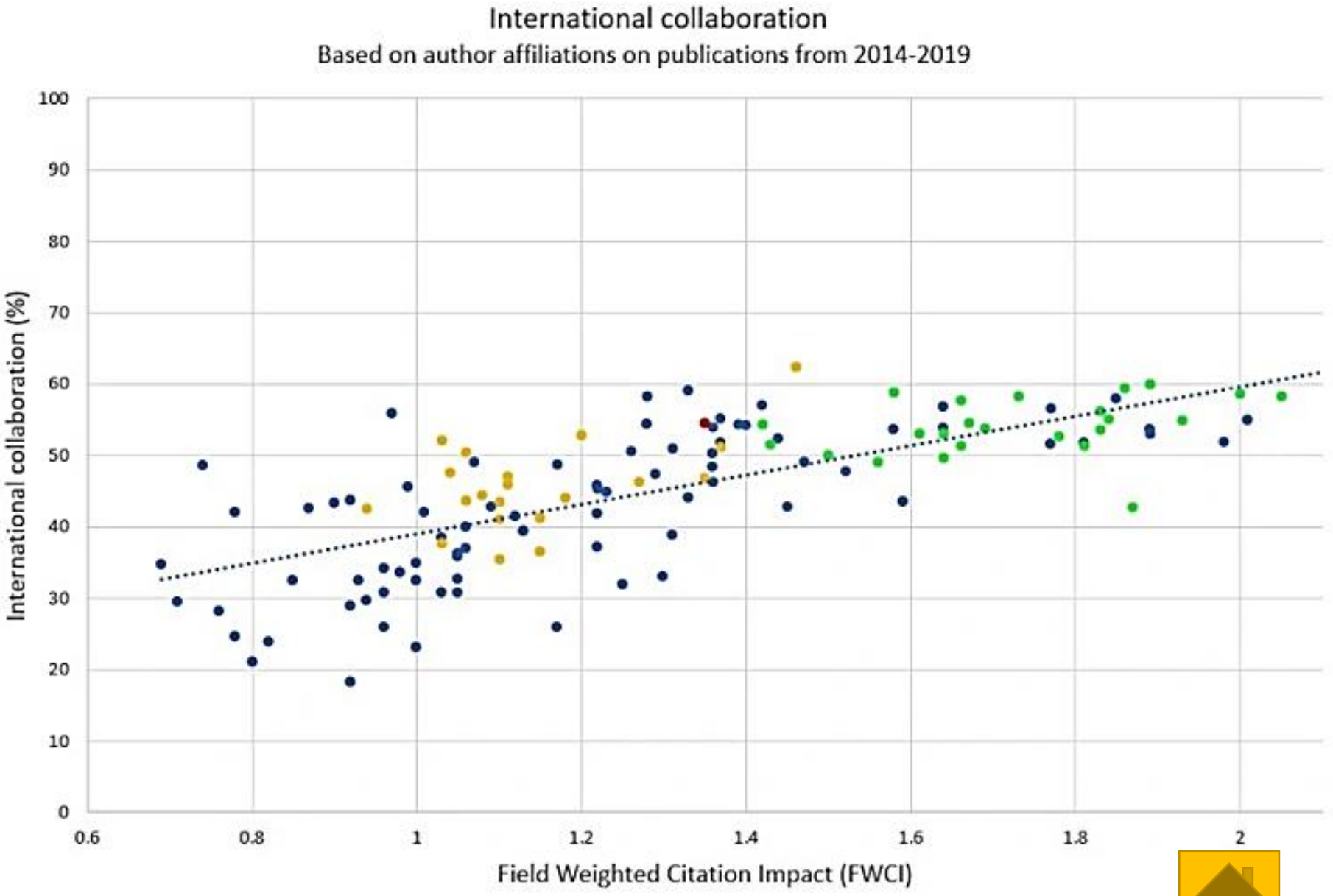
Publish with international authors



Source: https://researchandinnovationportsmouth.com/2019/09/06/international-collaboration-and-publication-citations/

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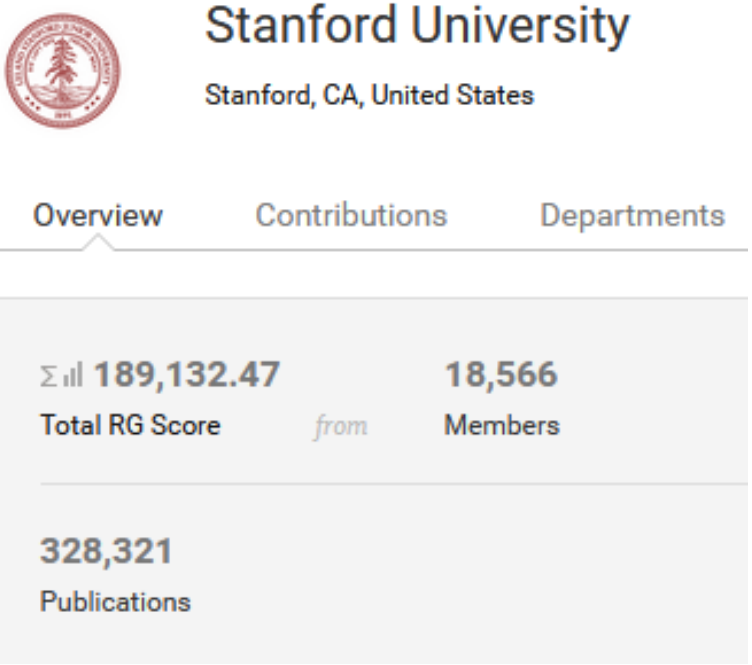
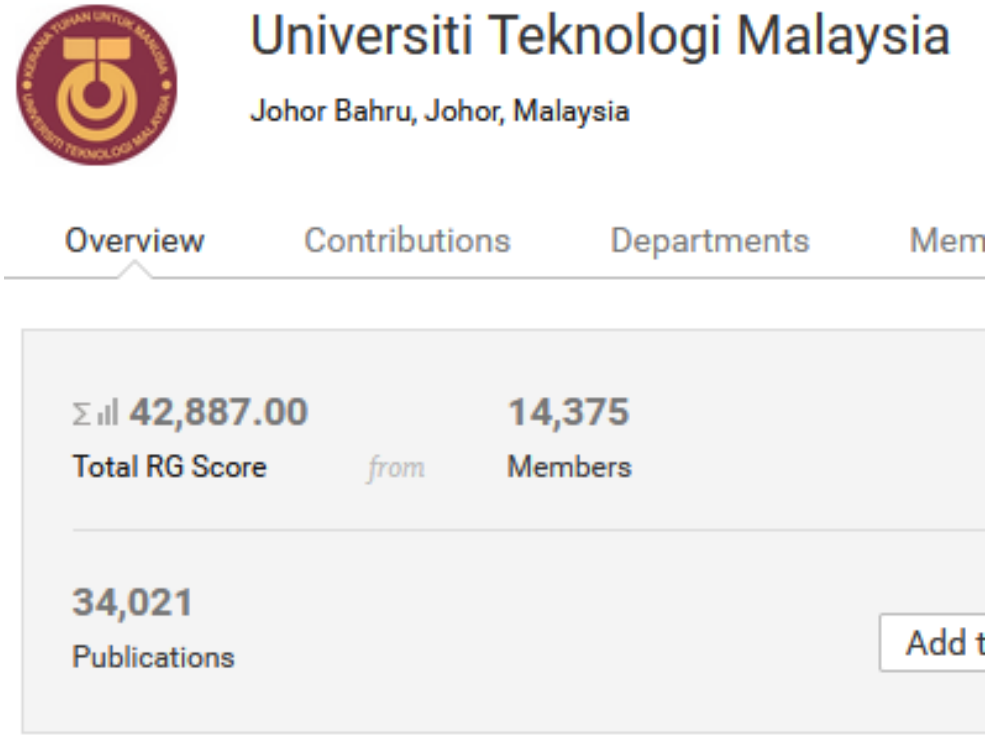
Use academic social networks





Source: https://www.researchgate.net/institution/Stanford-University

Source: https://www.researchgate.net/institution/Universiti-Teknologi-Malaysia

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Make an online CV.

ORCID
Connecting Research and Researchers

publons

Google Scholar

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Avoid unethical approaches

Source: http://wiki.lib.sun.ac.za/index.php/SUNScholar/Research_Article_Metrics

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NEWS · 14 AUGUST 2020

Signs of 'citation hacking' flagged in scientific papers

An algorithm developed to spot abnormal patterns of citations aims to find scientists who have manipulated reference lists.

Source: Van Noorden, Richard. "Signs ofcitation hacking'flagged in scientific papers." *Nature* 584.7822 (2020): 508-508, *doi: https://doi.org/10.1038/d41586-020-02378-2*

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NEWS FEATURE · 19 AUGUST 2019

Hundreds of extreme self-citing scientists revealed in new database

Some highly cited academics seem to be heavy self-promoters – but researchers warn against policing self-citation.

Richard Van Noorden & Dalmeet Singh Chawla

Source: Van Noorden, R., & Chawla, D. S. (2019). Hundreds of extreme self-citing scientists revealed in new database. *Nature*, *572*(7771), 578-580. *doi:* https://doi.org/10.1038/d41586-019-02479-7

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Q&A

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RESEARCH TOOLS . RESEARCH VISIBILITY AND IMPACT . UNIVERSITY RANKINGS .
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TECHNOLOGY MANAGEMENT . VIRTUAL R&D TEAMS . COLLABORATIVE SYSTEMS .

Thank you

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https://publons.com/researcher/1692944
http://scholar.google.com/citations

All of my presentations are available online at:
https://figshare.com/authors/Nader_Ale_Ebrahim/100797

CC BY NC ND

My recent publication

1. Zhang, B., Rahmatullah, B., Wang, S. L., Zhang, G., Wang, H., & Ale Ebrahim, N. (2021). A Bibliometric of Publication Trends in Medical Image Segmentation: Quantitative and Qualitative Analysis. Journal of Applied Clinical Medical Physics, 1-21. doi: https://doi.org/10.1002/acm2.13394

2. Ghorbani, Z., Kargaran, S., Saberi, A., Haghighinasab, M., Jamali, S. M., & Ale Ebrahim, N. (2021). Trends and patterns in digital marketing research: bibliometric analysis. Journal of Marketing Analytics, Accepted. doi: https://doi.org/10.1057/s41270-021-00116-9

3. Alireza Habibi, Maryamossadat Mousavi, Seyedh Mahboobeh Jamali & Nader Ale Ebrahim (2021) A bibliometric study of medical tourism, Anatolia, DOI: 10.1080/13032917.2021.1954042

4. Chen, W., Ahmed, M. M., Sofiah, W. I., Isa, N. A. M., Ale Ebrahim, N., & Hai, T. (2021). A Bibliometric Statistical Analysis of the Fuzzy Inference System - based Classifiers. *IEEE Access, 9*, 77811-77829. doi: https://dx.doi.org/10.1109/ACCESS.2021.3082908

5. Benkari, N., Jamali, S. M., Caldieron, J. M., & Ale Ebrahim, N. (2021). Research Trends in Vernacular Architecture: A bibliometric study. *ISVS e-journal, 8*(2), 72-91. doi: https://doi.org/10.6084/m9.figshare.14607585.v1

6. Ale Ebrahim, S., Poshtan, J., Jamali, S. M., & Ale Ebrahim, N. (2020). Quantitative and Qualitative Analysis of Time-Series Classification using Deep Learning. *IEEE Access, 8*, 90202 - 90215. doi: https://dx.doi.org/10.1109/ACCESS.2020.2993538

7. Ale Ebrahim, S., Ashtari, A., Pedram, M. Z., Sanati-Nezhad, A., & Ale Ebrahim, N. (2020). Publication Trends in Exosomes Nanoparticles for Cancer Detection. *International Journal of Nanomedicine, 15*, 4453–4470. doi: https://doi.org/10.2147/IJN.S247210

8. Mohammadi Ziarani, G., Mohajer, F., Jamali, S. M., & Ale Ebrahim, N. (2020). Quantitative and Qualitative bibliometric scope toward the Synthesis of Rose Oxide as a Natural Product in perfumery. *Current Organic Synthesis, 17*(8). doi: https://doi.org/10.2174/1872208314666200722161044

9. Nordin, N., Khalid, S.-N. A., Samsudin, M. A., & Ale Ebrahim, N. (2020). Bibliometric Analysis of Publication Trends in Family Firms' Social Capital in Emerging Economies *Journal of Entrepreneurship, Business and Economics, 8*(1), 144–179. doi: https://doi.org/10.6084/m9.figshare.12730967.v1

10. Samsudin, M. A., Jamali, S. M., Zain, A. N. M., & Ale Ebrahim, N. (2020). The Effect of STEM Project Based Learning on Self-Efficacy among High-School Physics Students. *Journal of Turkish Science Education, 17*(1), 94-108. doi: https://dx.doi.org/10.0.143.73/tused.2020.15

References

1. Lantsoght, E. O. (2018). *The A-Z of the PhD Trajectory, A Practical Guide for a Successful Journey*: Springer, Cham. https://doi.org/10.1007/978-3-319-77425-1
2. Ball, P. (2005). Index aims for fair ranking of scientists. Nature 436(7053), 900-900.
3. M. Thelwall, and K. Kousha, "Researchers' attitudes towards the h-index on Twitter 2007–2020: criticism and acceptance," Scientometrics, 2021/04/26, 2021.
4. Ale Ebrahim, Nader and Gholizadeh, Hossein and Lugmayr, Artur, Maximized Research Impact: An Effective Strategies for Increasing Citations (December 15, 2017). Managing and Leading Creative Universities – Foundations of Successful Science Management: A Hands-On Guide for (Future) Academics (pp. 29-51). Tampere, Finland: International Ambient Media Association (iAMEA); ISBN 978-952-7023-16-7, Available at SSRN: https://ssrn.com/abstract=3101575
5. Ale Ebrahim, Nader and Salehi, Hadi and Embi, Mohamed Amin and Habibi, Farid and Gholizadeh, Hossein and Motahar, Seyed Mohammad and Ordi, Ali, Effective Strategies for Increasing Citation Frequency (October 23, 2013). International Education Studies, Vol. 6, No. 11, pp. 93-99, 2013, Available at SSRN: https://ssrn.com/abstract=2344585
6. Bong, Yiibonn and Ale Ebrahim, Nader, Increasing Visibility and Enhancing Impact of Research (April 24, 2017). Asia Research News 2017. Available at SSRN: https://ssrn.com/abstract=2959952
7. Elgendi, M. (2019). Characteristics of a Highly Cited Article: A Machine Learning Perspective. *IEEE Access*, *7*, 87977-87986. doi:10.1109/ACCESS.2019.2925965
8. Ale Ebrahim, Nader, Optimize Your Article for Search Engine (December 23, 2014). University of Malaya Research Bulletin, Vol. 2, No. 1, 23, December 2014. Available at SSRN: http://ssrn.com/abstract=2588209
9. Van Noorden, Richard. "Signs ofcitation hacking'flagged in scientific papers." Nature 584.7822 (2020): 508-508, doi: https://doi.org/10.1038/d41586-020-02378-2
10. Van Noorden, R., & Chawla, D. S. (2019). Hundreds of extreme self-citing scientists revealed in new database. *Nature*, *572*(7771), 578-580. *doi: https://doi.org/10.1038/d41586-019-02479-7*