

국제외과학 분야에서 한국 학술지 및 논문의 위치

양희진

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발표 내용

- Journal Metrics
 - JCR (Journal Citation Reports)
 - SJR (SCImago Journal and Country Rank)
 - Other Indexes
- Status of Korean Medical Journal, Papers
- Considerations for Journal Metrics





참고 자료

- 2017 의편협 심포지엄 – Journal metrics, DORA (최인홍)
- 2017 의편협 편집인 아카데미 - 2015년 의편협 학술지의 JCR 및 SJR Impact Factor 변화 (최인홍)
- 대한민국 의학한림원 – 한국의학연구업적 보고서 2006, 2010



JIF (Journal Impact Factor)

- Clarivate Analytics (Thomson), JCR (Journal Citation Reports)
- 12,120 journals listed in SCI(E), SSCI
- JIF 2017

$$\frac{\text{Number of citations from articles 2015,2016}}{\text{Number of citable items 2015,2016}}$$

- Citable items
 - Review, original article, case report, letter
 - Editorial

SJR (SCImago Journal Rank)

- Elsevier
- Scopus DB (28,606)
- CiteScore 2017

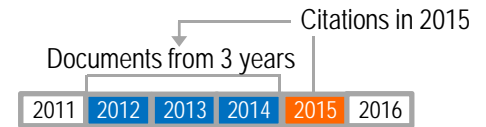
Number of citations from articles 2014,2015,2016
Number of all articles 2014,2015,2016

- $SJR = \text{Avg. No. of weighted citations}/3\text{yr}$
(Citations from highly ranked journals are weighted)
- Self citation limit 33%
- SNIP (Source Normalized Impact per Paper)
journal's citation count per paper/citation potential
in its subject area

CiteScore Metrics <https://journalmetrics.scopus.com>

Journal Metrics

Introducing CiteScore metrics for serials
 We are proud to introduce CiteScore metrics from Scopus – comprehensive, current and free metrics for serial titles in Scopus. Search or filter below to find the sources of interest and see the new metrics. Report using these annual metrics and track the 2016 metrics via the links to each title's Scopus source details page.
 Be sure to use qualitative as well as the below quantitative inputs when presenting your research impact, and always use more than one metrics for the quantitative part.



Showing 22,618 titles

CiteScore metrics calculated on 7 November, 2017.

Title	CiteScore	SJR	JIF
1 Ca-A Cancer Journal for Clinicians <i>Hematology</i>	89.23	39.285	187.040
2 Chemical Reviews <i>General Chemistry</i>	42.79	19.282	47.928
3 Annual Review of Immunology <i>Immunology and Allergy</i>	35.11	27.631	28.396
- Journal of Korean Medical Science <i>General Medicine</i>	1.46	0.621	1.459
- Yonsei Medical Journal <i>General Medicine</i>	1.52	0.593	1.537



JIF vs. SJR

	JIF	SJR
Provider	Clarivate Analytics	Elsevier
Population	SCI, SSCI	Scopus
Year	2	3
Denominator	Citable items	All articles
		Weight by citing journal ranking Limitation of self citation
Charge	+	-

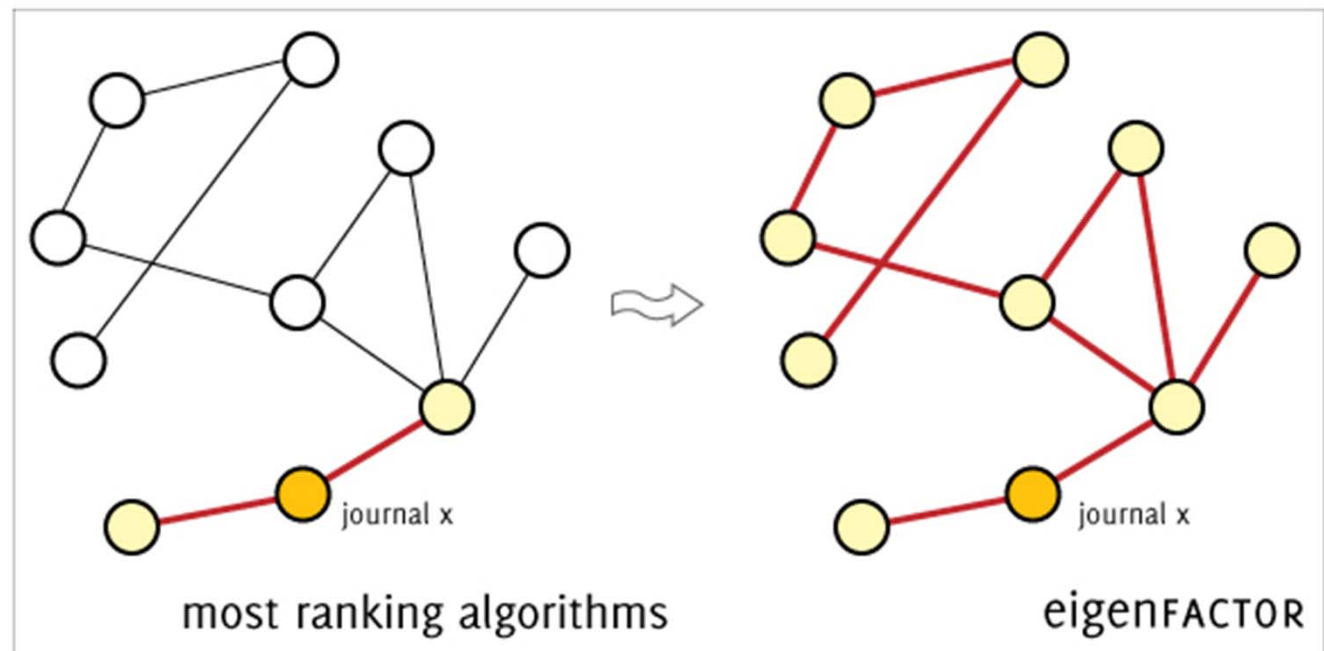
Eigenfactor

- Academic research project co-founded by Carl Bergstrom and Jevin West
- January 2007
- West Lab at the Information School
Bergstrom Lab in the Department of Biology at the University of Washington.



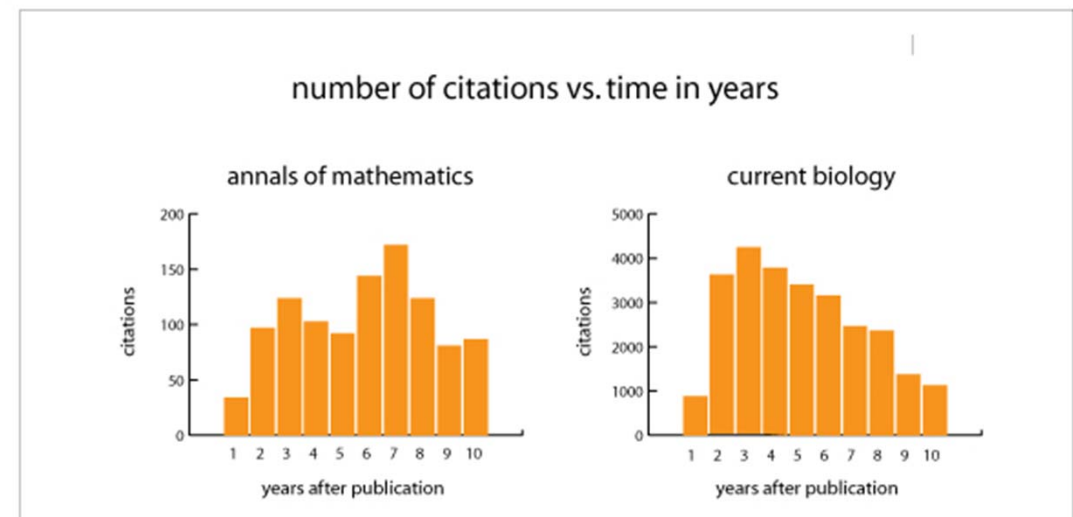
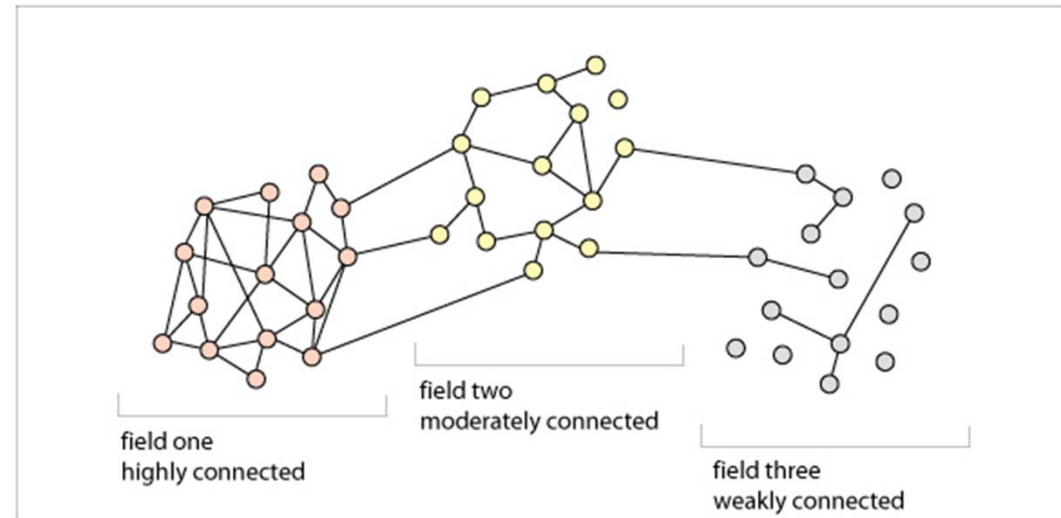
Eigenfactor

- Use the structure of the entire network (instead of purely local citation information) to evaluate the importance of each journal
- Information about price and value for thousands of scholarly periodicals



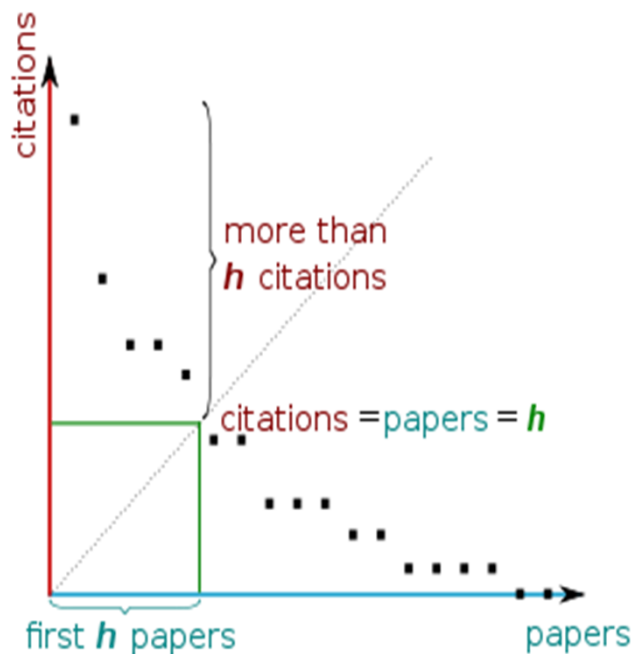
Eigenfactor

- Adjust for citation differences across disciplines
- 5-year citation data
- Freely available



H-index

- 2005 by Jorge E. Hirsch, a physicist at UCSD
- Measure both the productivity and citation impact
- Journal, group of scientists such as a department or university or country



<https://en.wikipedia.org/wiki/H-index>

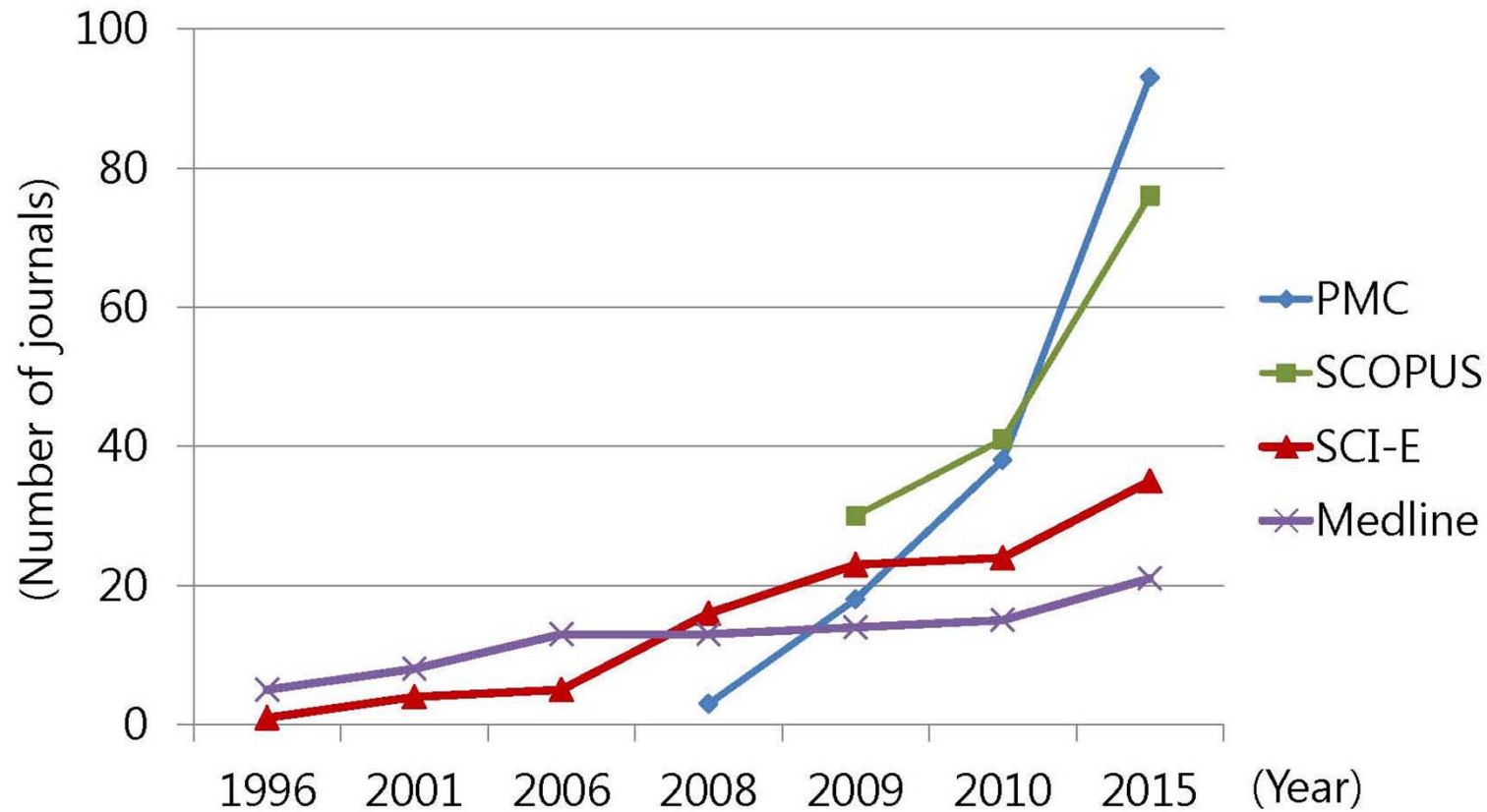
피인용수 (# of Citation)	논문 수 (No.)
47	1
42	2
32	3
28	4
24	5
22	6
17	7
15	8
10	9
10	10
8	11

<http://www.ibric.org/myboard/read.php?id=270333&Board=news>

H-index

- Pros
 - Balance between productivity and citation
- Cons
 - Cannot evaluate between different fields (same as IF, SJR)
 - Self-citation, co-authorship

Korean Medical J in International DB



SCIE Journals (2017)


















- 총 12,090종 (한국 102)

미국	2,973
영국	2,834
네덜란드	926
독일	729
러시아	356
일본	250
프랑스	204
중국	199
이탈리아	131

KAMJE Journals, IF

	2015	2016	
Allergy Asthma & Immunology Research	2.309	2.957	↗
Annals of Dermatology	1.325	1.472	↗
Annals of Laboratory Medicine	1.870	2.174	↗
Annals of Surgical Treatment and Research	0.730	1.491	↗
Asian Nursing Research	0.849	0.768	↘
Biomolecules & Therapeutics	2.127	2.075	↘
Cancer Research and Treatment	4.245	3.772	↘
Clinical and Experimental Otorhinolaryngology	0.855	1.149	↗
Clinical Psychopharmacology and Neuroscience	1.500	2.000	↗
Experimental and Molecular Medicine	5.164	5.063	↘
Gut and Liver	2.000	2.663	↗
International Neurourology Journal	1.344	1.739	↗
Journal of Advanced Prosthodontics	0.844	1.027	↗
Journal of Breast Cancer	1.854	2.204	↗
Journal of Clinical Neurology	1.876	2.593	↗
Journal of Gynecologic Oncology	2.522	3.140	↗
Journal of Korean Academy of Nursing	0.549	0.521	↘

KAMJE Journals, IF

	2015	2016
Journal of Korean Medical Science	1.256	1.459 
Journal of Korean Neurosurgical Society	0.599	0.708 
Journal of Neurogastroenterology & Motility	1.771	2.457 
Journal of Periodontal and Implant Science	1.108	1.230 
Journal of Stroke	4.795	5.576 
Journal of Veterinary Science	1.076	1.164 
Korean Circulation Journal	0.706	1.252 
Korean Journal of Internal Medicine	1.679	1.729 
Korean Journal Orthodontics	1.162	1.182 
Korean Journal of Parasitology	1.027	0.889 
Korean Journal of Physiology & Pharmacology	1.544	2.062 
Korean Journal of Radiology	1.592	2.156 
Mycobiology	0.573	0.761 
Nutrition Research and Practice	1.416	1.679 
Psychiatric Investigation	1.500	1.406 
Tissue Engineering and Regenerative Medicine	0.941	1.169 
Yonsei Medical Journal	1.154	1.537 

KAMJE Journals, IF

	2015	2016
>5.0	1	2
4.0-5.0	2	0
3.0-4.0	0	2
2.0-3.0	4	10
1.0-2.0	18	15
<1.0	9	5

- 2017년 새로 등재: Experimental Neurobiology, Immune Network, International Journal of Stem Cells, Journal of Gastric Cancer, The World Journal of Men's Health, Diabetes & Metabolism Journal

Science and Engineering Indicators (S&EI)

- 2010 Report
- Number of Articles
 - US 209,694, Japan, UK, Germany, France, China
 - Korea 18,467 (10th)
 - 346.76 articles/1,000,000 population (26th)
- Category
 - Medicine 23%, BioSci 21%, Physics 14%, Chem 12.7%, Engineering 9.5%
 - Higher proportion of Medicine in US, UK, Germany, Netherland, Australia, Canada (25-35%)
 - Lower in Russia, China, India, Poland (<10%)
 - 17% in Korea (Taiwan, Spain)
8.8% (1995) 11.6% (1999) 13.0% (2003) 17.6%(2007)

Science and Engineering Indicators (S&EI)

- 1,108,265 articles in 2009, 37,104 (3.3%) from Korea
- 675,400 medical articles 18,776 (2.8%) from Korea, 12th
- Total 91,541 medical articles since 1974
 - 6,750 (2004), 13,227 (2009)
 - 2001-2005 기간에 비해 2005-2009 논문수는 2배로 증가
- 한국 논문의 수
 - 기초: 생화학, 분자생물학
 - 임상: 약리학, 외과학, 종양학, 방사선 및 핵의학, 신경과학, 의학 및 일반 내과학, 임상신경학
- 한국 논문의 비율
 - 기초: 의약화학, 미생물학, 의공학
 - 임상: 보완의학, 약리학, 방사선 및 핵의학

Science and Engineering Indicators (S&EI)

- 피인용 비율

Country/region	Share of world articles (%)		Share of world citations (%)		Share of world/country/economy citations that are international (%)	
	1998	2008	1998	2008	1998	2008
World	100.0	100.0	100.0	100.0	60.2	66.3
United States	34.0	28.9	46.9	38.3	46.9	51.8
European Union	34.6	33.1	32.4	33.2	43.7	49.4
China	1.6	5.9	0.6	4.3	63.6	51.0
Japan	8.5	7.8	6.8	6.3	60.7	68.6
Asia-8	3.6	6.8	1.5	4.6	61.8	65.3

Source: National Science Foundation. *Science and Engineering Indicators 2010*. Table 5-22. S&E articles, citations, and international citations, by selected region/country: 1998 and 2008.













- 2000년 대비 2005년 논문수 1.83배 증가
피인용 회수는 2.13배 증가
- 50회 이상 피인용 논문: 201(2006), 857(2011)

SJR Journals (2017)














- 총 28,606종 (한국 216)

미국	10,132
영국	5,497
네덜란드	2,335
독일	1,762
중국	605
프랑스	581
이탈리아	483
일본	455
러시아	264

All Subject Area (1996-2016)

	Country	Documents	Citations per Document	H-index
1	 United States	10193964	23.58	1965
2	 China	4595249	7.16	655
3	 United Kingdom	2898927	21.04	1213
4	 Germany	2570206	19.07	1059
5	 Japan	236797	14.98	871
6	 France	1826708	18.56	966
7	 Canada	1468796	21.14	963
8	 Italy	1449301	17.50	839
9	 India	1302605	8.32	478
10	 Spain	1148258	15.89	723
11	 Australia	1111010	18.33	795
12	 South Korea	914572	11.75	536

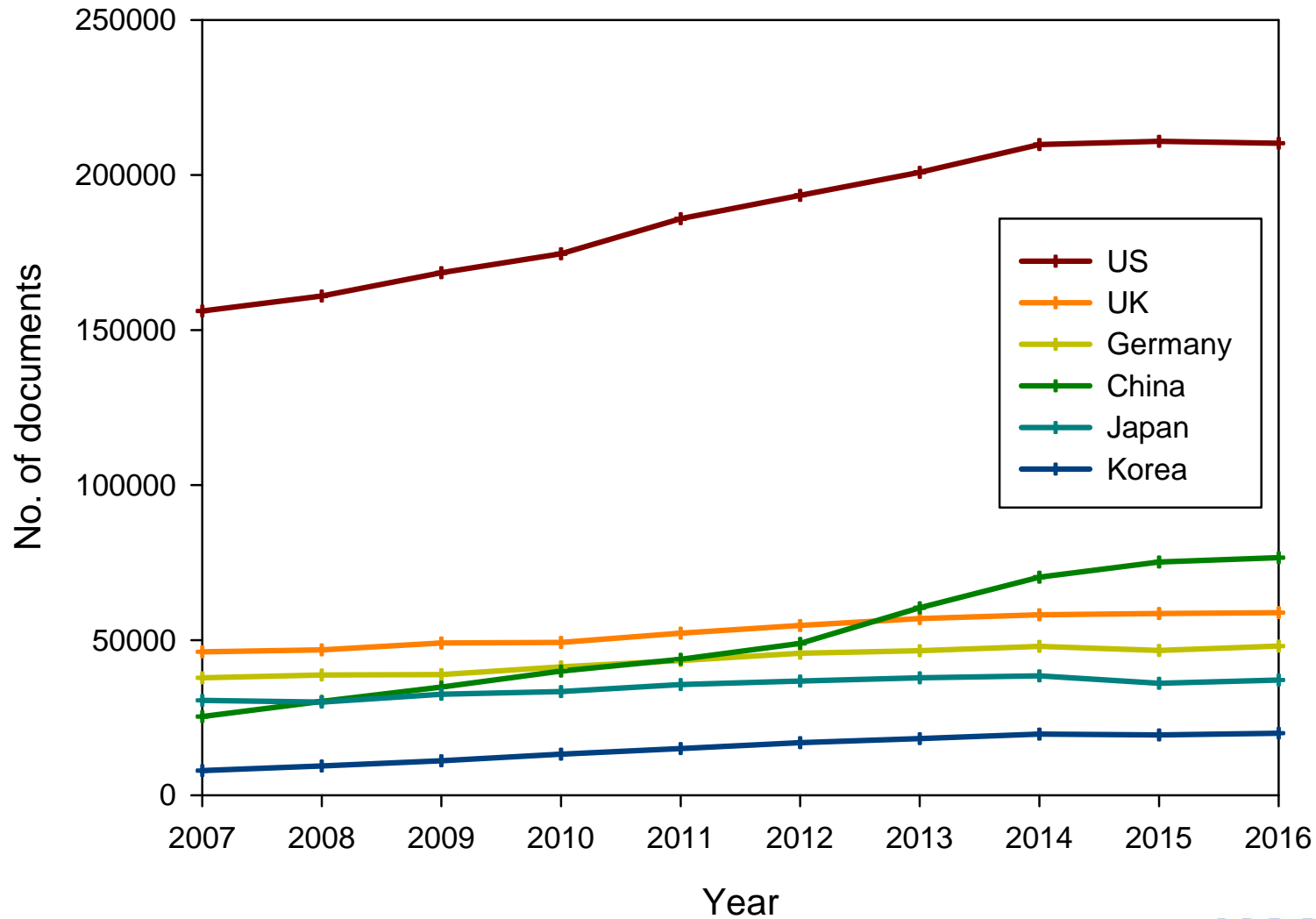
Medicine (1996-2016)

	Country	Documents	Citations per Document	H-index
1	 United States	3227211	27.37	1323
2	 United Kingdom	930273	24.98	884
3	 Germany	764081	20.78	736
4	 Japan	673105	16.25	535
5	 China	594791	8.60	356
6	 France	526067	20.71	708
7	 Italy	495891	21.13	660
8	 Canada	436492	27.53	748
9	 Spain	358770	16.02	527
10	 Australia	339310	22.69	589
11	 Netherlands	312006	28.97	661
12	 India	264808	8.52	284
	⋮	⋮	⋮	⋮
16	 South Korea	190571	13.55	301

SJR Country Ranking

2007	2008	2009	2010	2011	2012	2013	2014	2015	2016
US	US	US	US	US	US	US	US	US	US
UK	UK	UK	UK	UK	UK	China	China	China	China
Germany	Germany	Germany	Germany	Germany	Germany	UK	UK	UK	UK
Japan	China	China	China	China	China	Germany	Germany	Germany	Germany
France	Japan	Japan	Japan	Japan	Japan	Japan	Japan	Japan	Japan
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Korea (17)	Korea (16)	Korea (15)	Korea (14)	Korea (14)	Korea (14)	Korea (13)	Korea (13)	Korea (13)	Korea (13)

SJR Country Ranking



IF - Problems

- Percentage of papers published below JIF value

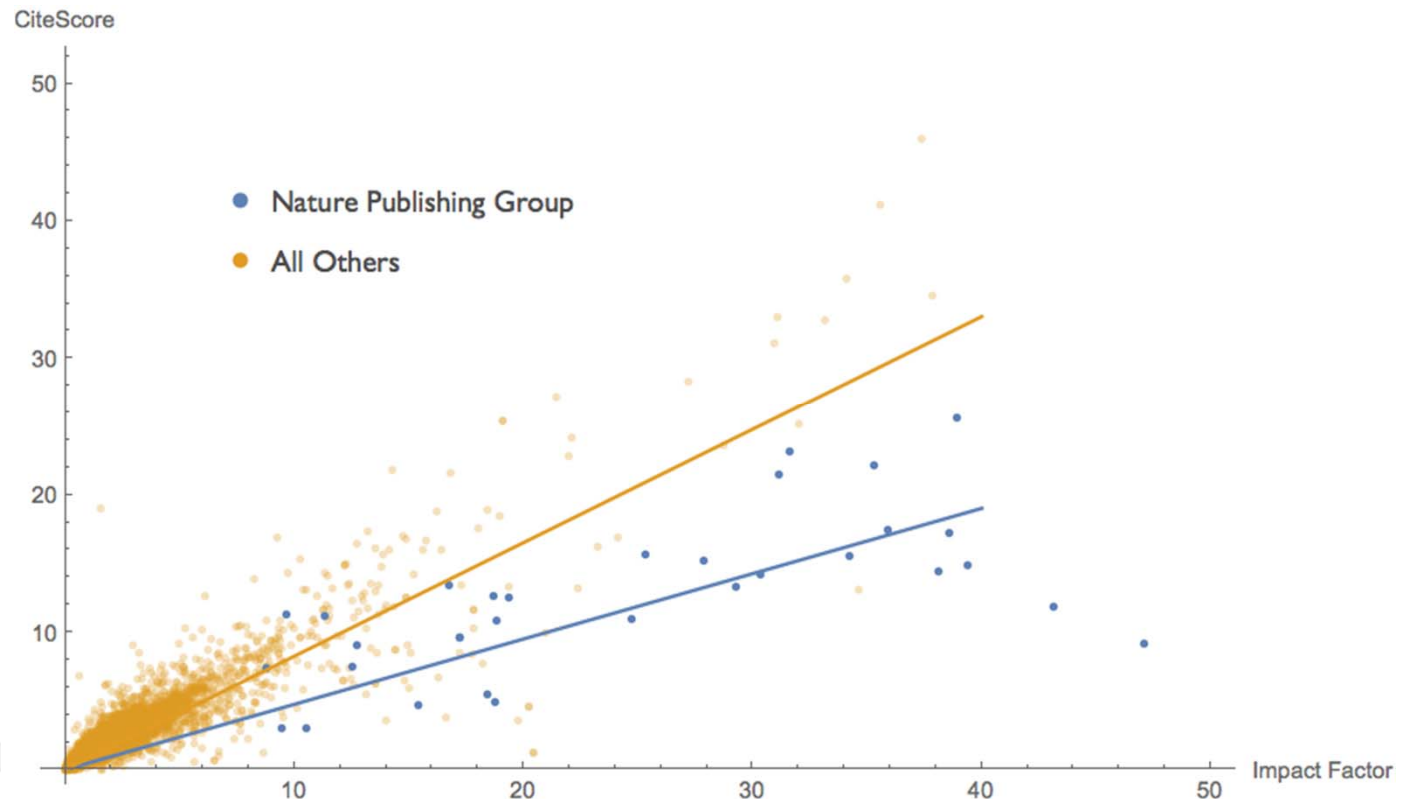
Journal	JIF	% Citable items below JIF
EMBO J	9.6	66.9
Nature	38.1	74.8
Nature Comm	11.3	74.1
PLoS One	3.1	72.2
Science	34.7	75.2
Sci Rep	5.2	73.2

IF - Problems

- EASE (European Association of Science Editors)
 - Because the impact factor is not always a reliable instrument, the EASE issued an official statement recommending "that journal impact factors are used only for measuring and comparing the journals, but not for the assessment of single papers, and certainly not for the assessment of researchers or research programs".
(November, 2007)
- DORA (Declaration on Research Assessment)
 - recognizes the need to improve the ways in which the outputs of scientific research are evaluated.
(December, 2012)

Possible Conflict of Interest

- Lower CiteScore in Nature Publishing Group journals (about 40%)
- Difference in denominator (all vs. citable)
Nature journals produce much more of this front material

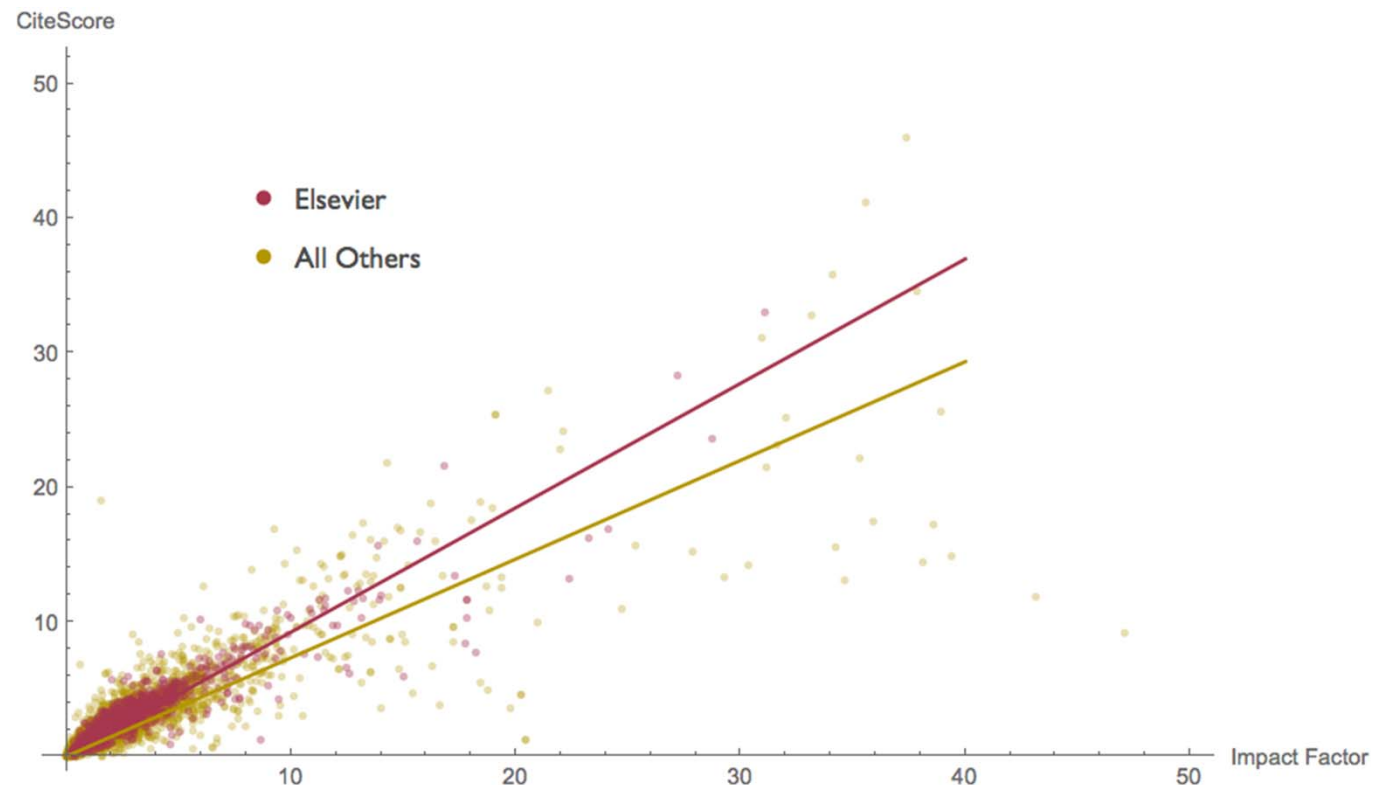


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한국 학술지, 논문의 위치

squares linear regression through the origin.

Possible Conflict of Interest

- Gap between Elsevier-published and other journals, higher CiteScore in Elsevier journals
- Possible selection of metrics favors the portfolio of journals held by its parent company Elsevier



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squares linear regression through the origin.

Possible Conflict of Interest

- (+) Merits in journal ranking of Elsevier, Emerald
(-) for NPG

Publisher	Number of Journals	Mean Change in Rank
American Chemical Society	39	48 ± 51
Annual Reviews, Inc.	35	223 ± 155
American Psychological Association	40	269 ± 228
Bentham	33	-118 ± 153
Cambridge University Press	192	-247 ± 185
Elsevier	1,462	127 ± 49
Emerald	45	1,317 ± 294
Hindawi	39	-410 ± 320
IEEE	129	1,294 ± 222
IOP Science	32	-701 ± 529
Karger	77	-177 ± 204
Maik Nauka/Interperiodica	75	-243 ± 97
Mary Ann Liebert	42	-556 ± 235
Oxford University Press	149	-123 ± 156
SAGE	357	452 ± 127
<i>Nature</i> journals	32	-173 ± 137
Springer Nature	1,177	-81 ± 55
Taylor & Francis	975	111 ± 69
Thieme	43	-479 ± 301



The San Francisco Declaration on Research Assessment (DORA), initiated by the American Society for Cell Biology (ASCB) together with a group of editors and publishers of scholarly journals, recognizes the need to improve the ways in which the outputs of scientific research are evaluated.

- Citation distributions within journals are **highly skewed**.
- The properties of the Journal Impact Factor are **field-specific**: it is a composite of **multiple, highly diverse article** types, including primary research papers and reviews.
- Journal Impact Factors can be **manipulated** (or “gamed”) **by editorial policy**.
- Data used to calculate the Journal Impact Factors are **neither transparent nor openly available** to the public.

JIF보다 적게 Citation된 개별 Article

Journal	JIF	% citable items below JIF
eLife E	8.3	71.2%
MBO J	9.6	66.9%
Nature	38.1	74.8%
Nature Comm	11.3	74.1%
PLOS ONE	3.1	72.2%
Proc R Soc B	4.8	65.7%
Science	34.7	75.5%
Sci Rep	5.2	73.2%

2015년 JIF

For Publishers

- Cease to promote journals by Impact Factor;
provide an array of metrics
- Focus on article-level metrics
- Identify different author contributions
- Open the bibliographic citation data
- Encourage primary literature citations

For Funding Agencies

- State that scientific content of a paper, not the JIF of the journal where it was published, is what matters
- Consider value from all outputs and outcomes generated by research

For Research Institutions

- When hiring and promotion, state that scientific content of a paper, not the JIF of the journal where it was published, is what matters
- Consider value from all outputs and outcomes generated by research

For Researchers

- Focus on content
- Cite primary literature
- Use a range of metrics to show the impact of your work
- Change the culture!

For Organizations That Supply Metrics

- Be transparent
- Provide access to data
- Discourage data manipulation
- Provide different metrics for primary literature and reviews

요약

- 한국 학술지의 국제적 위상 제고
 - 국제 색인 등재 학술지의 증가
 - 인용 지수의 상승
 - 의편집의 성과
- Journal Metrics
 - 다양한 지표에 대한 고려
 - 관심의 대상, 맹목적인 추종은 지양 - 제반 기준 변경을 위한 노력
 - 개별 논문에 대한 평가

감사합니다

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Medical Journal Editors

