

Article

Bibliometrics of Vietnam Publications in the Science Citation Index: general trends and comparison with other tropical countries

Authors

Nguyễn Thị Nha Trang¹, Julián Monge-Nájera² & Yuh-Shan Ho^{3*}

1. Department of Biotechnology, College of Health Science, Asia University, No. 500 Lioufeng Road, Wufeng, Taichung 41354, Taiwan; nhatrangnguyen113@gmail.com

2. Laboratorio de Ecología Urbana, Vicerrectoría de Investigación, Universidad Estatal a Distancia, 2050 San José, Costa Rica; julianmonge@gmail.com

3. Trend Research Centre, Asia University, No. 500 Lioufeng Road, Wufeng, Taichung 41354, Taiwan; ysho@asia.edu.tw

*Correspondence

Digital Appendix 1 Nomenclature and Additional Tables

Countries with changing status or names

Articles from England, Scotland, Northern Ireland, and Wales were marked as United Kingdom. Affiliations in Hong Kong prior to 1997 were included under China. Affiliations in the Union of Soviet Socialist Republics were marked as Russia or Belarus depending on their origin. Affiliations in Czechoslovakia were checked and re-categorized as in Czech Republic. Affiliations in the Neth Antilles (Netherlands Antilles) were marked as being from the Netherlands. Affiliations in Fr Polynesia (French Polynesia), French Guiana, New Caledonia, and Reunion were re-categorized as France. Affiliations in Rep Congo were marked as Congo (Republic of the Congo). Affiliations in Zaire were re-categorized as Dem Rep Congo (The Democratic Republic of the Congo). Affiliations in Greenland were marked as Denmark. Affiliations in Puerto Rico were marked as USA. Affiliations in United Ara and United Arab were re-categorized as U Arab Emirates (United Arab Emirates).v Acad Sci USSR and USSR Acad Sci (USSR Academy of Sciences) were marked as Russian Acad Sci (Russian Academy of Sciences).

TABLE 3
Top ten most productive journals

Journals	<i>TP</i> (%)	<i>IF</i> ₂₀	Web of Science category	<i>TC</i> ₂₀₁	<i>CPP</i> ₂₀
		18		8	18
PLoS One	393 (1.3)	2.77 6	Multidisciplinary sciences	5 054	13
Zootaxa	265 (0.85)	0.99 0	Zoology	1 798	6.8
Journal of Magnetism and Magnetic	202	2.68	Multidisciplinary materials science	2 320	11

Materials	(0.65)	3			
			Condensed matter physics		
Journal of Electronic Materials	194 (0.62)	1.67 6	Electrical and electronic engineering	346	1.8
			Multidisciplinary materials science		
			Applied physics		
Advances in Natural Sciences- Nanoscience and Nanotechnology	172 (0.55)	N/A	Nanoscience and nanotechnology	796	4.6
			Multidisciplinary materials science		
			Applied physics		
Journal of Mathematical Analysis and Applications	164 (0.53)	1.18 8	Applied mathematics	1 381	8.4
			Mathematics		
Journal of the Korean Physical Society	163 (0.52)	0.63 0	Multidisciplinary physics	692	4.2
Journal of Optimization Theory and Applications	158 (0.51)	1.60 0	Operations research and management science	1 824	12
			Applied mathematics		
Journal of High Energy Physics	155 (0.5)	5.83 3	Particles and fields physics	2 661	17
Physical Review B	148 (0.47)	3.73 6	Multidisciplinary materials science	2 679	18
			Applied physics		
			Condensed matter physics		

TP (%): rank and the percentage of number of articles; *IF2018*: journal impact factor in 2018; *TC2018*: the total number of citations from Web of Science Core Collection since publication to the end of 2018; *CPP2018*: number of citations (*TC2018*) per publication (*TP*).

TABLE 4
14 most frequently collaborative countries with $TP > 1\ 000$

Country	<i>TP</i>	<i>TP R (%)</i>	<i>FP R (%)</i>	<i>RP R (%)</i>	<i>CPP</i> ₂₀₁₈
USA	3 949	1 (13)	4 (4.6)	4 (5.0)	30
Japan	3 866	2 (12)	1 (7.1)	1 (7.6)	18
South Korea	3 431	3 (11)	2 (5.8)	2 (7.0)	17
France	3 343	4 (11)	3 (4.8)	3 (5.1)	23
United Kingdom	2 565	5 (8.2)	10 (1.9)	10 (2.2)	39
Germany	2 543	6 (8.1)	6 (3.0)	6 (3.1)	27
Australia	2 430	7 (7.8)	5 (3.3)	5 (3.6)	25
China	2 342	8 (7.5)	7 (2.8)	7 (2.5)	30
Netherlands	1 503	9 (4.8)	11 (1.9)	11 (1.9)	37
Russia	1 457	10 (4.7)	12 (1.7)	12 (1.8)	28
Thailand	1 308	11 (4.2)	14 (1.2)	14 (1.2)	32
Taiwan	1 296	12 (4.2)	8 (2.2)	8 (2.4)	25
Belgium	1 253	13 (4.0)	9 (1.9)	9 (2.2)	23
Italy	1 155	14 (3.7)	16 (0.67)	16 (0.77)	40

TP R (%): total number of articles and rank; *FP R (%)*: total number of first-author articles and rank; *RP R (%)*: total number of corresponding-author articles and rank; *CPP*₂₀₁₈: citations per publication ($CPP_{2018} = TC_{2018}/TP$).

TABLE 5
Top ten productive institutes

Institute	<i>TP</i>	<i>TP R (%)</i>	<i>IP R (%)</i>	<i>CP R (%)</i>	<i>FP R (%)</i>	<i>RP R (%)</i>	<i>SP R (%)</i>	<i>CPP</i> ₂₀₁₈
Vietnam Academy of Science and	5 673	1 (18)	1 (21)	1 (18)	1 (8)	1 (7.6)	1 (20)	8.3

Technology								
Vietnam National University	3 933	2 (13)	2 (14)	2 (12)	2 (4.9)	2 (4.7)	2 (7.7)	12
Hanoi University of Science and Technology	2 092	3 (6.7)	4 (8.1)	4 (6.5)	5 (3.0)	5 (2.9)	6 (3.7)	8.6
Ton Duc Thang University	2 023	4 (6.5)	6 (3.1)	3 (7.0)	4 (3.1)	3 (3.9)	5 (4.3)	4.9
Vietnam National University Ho Chi Minh City	1 999	5 (6.4)	3 (11)	5 (5.7)	3 (3.3)	4 (3.3)	3 (6.9)	8.5
Duy Tan University	1 038	6 (3.3)	10 (1.1)	6 (3.6)	8 (0.95)	8 (0.88)	8 (1.7)	9.9
Hanoi National University of Education	960	7 (3.1)	5 (5.5)	10 (2.7)	6 (1.7)	6 (1.6)	4 (4.7)	5.7
Can Tho University	869	8 (2.8)	11 (1.0)	7 (3.0)	10 (0.78)	10 (0.58)	12 (1.3)	11
Hue University	824	9 (2.6)	7 (1.9)	9 (2.7)	9 (0.91)	9 (0.77)	7 (2.3)	6.6
Oxford University Clinical Research Unit	782	10 (2.5)	81 (0.077)	8 (2.9)	7 (1.0)	7 (0.92)	87 (0.10)	58

TP: total number of articles; *TP R (%)*: rank of total number of articles and percentage; *IP R (%)*: rank of institute independent articles and percentage; *CP R (%)*: rank of inter institutionally collaborative articles and percentage; *FP R (%)*: rank of first-author articles and percentage; *RP R (%)*: rank of corresponding-author articles and percentage; *SP R (%)*: rank of single author articles and percentage; *CPP2018*: citations per publication ($CPP2018 = TC2018/TP$).

TABLE 6
Top ten collaborative institutions overseas

Institute	<i>TP</i>	<i>TP R (%)</i>	<i>FP R (%)</i>	<i>RP R (%)</i>	<i>CPP2018</i>
University of Oxford UK	1 151	1 (3.7)	24 (0.24)	16 (0.30)	52
Russian Academy of Sciences Russia	692	2 (2.2)	1 (0.90)	1 (0.93)	28
University of Liverpool UK	516	3 (1.7)	120 (0.080)	115 (0.091)	44

Polish Academy of Sciences Poland	515	4 (1.6)	67 (0.12)	44 (0.16)	25
University of Cambridge UK	504	5 (1.6)	206 (0.051)	103 (0.094)	46
University of Edinburgh UK	478	6 (1.5)	299 (0.035)	239 (0.049)	50
Heidelberg University Germany	461	7 (1.5)	831 (0.010)	381 (0.029)	63
University of Bristol UK	453	8 (1.5)	155 (0.064)	151 (0.071)	44
University of Genoa Italy	449	9 (1.4)	299 (0.035)	326 (0.036)	30
University of Glasgow UK	442	10 (1.4)	274 (0.038)	269 (0.042)	31

TP: total number of articles; *TP R (%)*: rank of total number of articles and percentage; *FP R (%)*: rank of first-author articles and percentage; *RP R (%)*: rank of corresponding-author articles and percentage; *CPP2018*: citations per publication ($CPP2018 = TC2018/TP$).

TABLE 7
The ten classic articles with TC2018 more than 1 000

Rank (<i>TC</i> ₂₀₁₈)	Rank (<i>C</i> ₂₀₁₈)	Article titles	references
1 (4 577)	2 (777)	Comprehensive molecular portraits of human breast tumors	Koboldt et al. (2012)
2 (2 742)	7 (628)	The global distribution and burden of dengue	Bhatt et al. (2013)
3 (2 719)	3 (754)	Global regional and national age-sex specific all-cause and cause-specific mortality for 240 causes of death 1990-2013: a systematic analysis for the Global Burden of Disease Study 2013	Naghavi et al. (2015)
4 (2 385)	1 (1 116)	A global reference for human genetic variation	Altshuler et al. (2015)
5 (1 934)	6 (632)	Global regional and national incidence prevalence and years lived with disability for 301 acute and chronic diseases and injuries in 188 countries 1990-2013: a systematic analysis for the Global Burden of Disease Study 2013	Vos et al. (2015)

6 (1 788)	119 (38)	A novel coronavirus associated with severe acute respiratory syndrome	Ksiazek et al. (2003)
7 (1 725)	15 (275)	Comprehensive genomic characterization of squamous cell lung cancers	Hammerman et al. (2012)
8 (1 174)	4 (734)	Global regional and national life expectancy all-cause mortality and cause-specific mortality for 249 causes of death 1980-2015: a systematic analysis for the Global Burden of Disease Study 2015	Wang et al. (2016)
9 (1 121)	17 (260)	Comprehensive molecular characterization of urothelial bladder carcinoma	Weinstein et al. (2014)
10 (1 011)	5 (700)	Global regional and national incidence prevalence and years lived with disability for 310 diseases and injuries 1990-2015: a systematic analysis for the Global Burden of Disease Study 2015	Vos et al. (2016)

*TC*2018: the total number of citations from Web of Science Core Collection since publication to the end of 2018; *C*2018: number of citations in 2018.b

TABLE 8
Characteristics of language

Language	<i>TP</i>	%	<i>AU</i>	<i>APP</i>	<i>TC</i> ₂₀₁₈	<i>CPP</i> ₂₀₁₈
English	31017	99	510506	16	402392	13
French	94	0.30	363	3.9	261	2.8
Russian	64	0.21	218	3.4	170	2.7
German	19	0.061	87	4.6	58	3.1
Chinese	8	0.026	47	5.9	26	3.3
Japanese	5	0.016	31	6.2	4	0.80
Czech	2	0.0064	2	1.0	0	0
Dutch	2	0.0064	7	3.5	0	0
Portuguese	1	0.0032	5	5.0	4	4.0

Korean	1	0.0032	5	5.0	3	3.0
Slovak	1	0.0032	2	2.0	3	3.0
Slovene	1	0.0032	2	2.0	1	1.0
English French	1	0.0032	2	2.0	2	2.0

TP: number of publications; *AU*: number of authors; *APP*: number of authors per publication; *TC2018*: the total number of citations from Web of Science Core Collection since publication to the end of 2018; *CPP2018*: number of citations (*TC2018*) per publication (*TP*).

TABLE 9
Yearly distribution of articles authors pages and references for Vietnam

Year	<i>TP</i>	<i>AU</i>	<i>AU/TP*</i>	<i>NR</i>	<i>NR/TP</i>	<i>PG</i>	<i>PG/TP</i>
1991	119	326	2.7	1 718	14	1 224	10
1992	146	454	3.1	2 373	16	1 366	9.4
1993	121	384	3.2	2 098	17	1 091	9.0
1994	127	429	3.4	2 143	17	1 199	9.4
1995	186	625	3.4	3 506	19	1 930	10
1996	208	788	3.8	3 846	18	1 582	7.6
1997	240	985	4.1	4 723	20	2 163	9.0
1998	226	1 025	4.5	4 637	21	1 967	8.7
1999	262	1 218	4.6	5 542	21	2 269	8.7
2000	316	1 382	4.4	7 228	23	3 058	10
2001	362	1 720	4.8	9 027	25	3 260	9.0
2002	351	1 778	5.1	8 388	24	3 390	10

2003	476	2 374	5.0	10 625	22	4 228	8.9
2004	441	2 721	6.2	11 033	25	4 514	10
2005	558	2 955	5.3	13 877	25	5 258	9.4
2006	637	3 542	5.6	16 201	25	5 861	9.2
2007	741	5 348	7.2	20 014	27	6 900	9.3
2008	920	6 560	7.1	24 421	27	8 466	9.2
2009	943	6 583	7.0	26 270	28	9 018	10
2010	1 194	9 688	8.1	36 128	30	11 742	10
2011	1 357	12 553	9.3	42 237	31	13 554	10
2012	1 711	35 293	21	54 373	32	17 371	10
2013	2 160	54 738	25	69 715	32	21 925	10
2014	2 439	60 020	25	82 847	34	26 507	11
2015	2 739	66 030	24	95 652	35	30 756	11
2016	3 312	63 967	19	124 386	38	38 115	12
2017	3 932	82 173	21	152 841	39	47 149	12
2018	4 992	85 618	17	203 165	41	60 534	12
Total	31 216	511 277		1 039 014		336 397	

Average

16

33

11

TP: number of articles; *TP**: number of articles with author information; *AU*: number of authors; *NR*: number of cited reference; *PG*: page counts.