# Publish to be recognized!!



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Workshop "Open science, a landscape under construction with a horizon of possibilities" CIEM, Castro Urdiales, 11-13 Nov. 2022



## Academic and research careers in Spain

- Initial → PhD: in most doctoral programs it is mandatory to publish 1 or 2 indexed papers (JCR) in order to have the PhD degree.
- Carreer → "Acreditación": to become a university professor, there are different levels, whose evaluation criteria are supported mainly on indexed publications.
- Consolidation → "Sexenios": measurement of productivity basis of the scientific evaluation system. It implies a remunteration supplement. Also supported by indexed papers.

In a context in which open science permeates the discourse of national and international organizations



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## Universities

- Rankings
- Quality assessment and research agencies:
  - accredited teachers are mandatory to support teaching in programs,
  - sexenios are mandatory to participate in evaluation committees, doctoral programs, to access to research grants etc.

Publication in indexed journals (Q1) is encouraged (recognition, awards and economic incentives).

The impact of research is measured by the university institutions themselves.





## **General context**

- **Pressure** to publish in indexed journals (JCR, SJR)
  - Rewards
    - Professional promotion
    - Economic incentives
    - Reputation or status
    - Recognition



- Mandatory to publish in Open Access (public founds)
  - Institutional repositories
  - Thematic repositories
  - Open Access journals





#### Evaluation conditions how scientific results are communicated

## RESEARCH = PUBLISH

#### 2012-2021

- from 9th place with 3.42% of world production to 10th place with 3.69%;
- Spanish scientific production has increased by 30.7%.





## Where Spanish researchers publish?

Rank	ELSEVIER	SPRINGER NATURE		URE	WILEY		MDPI	MDPI TAYI		AYLOR 6 FRANCIS IEEE		SAGE			FRONTIERS		OXFORD UNIV PRESS		LIPPICONRT WILLIAMS & V	
	Países	% doc	Países	% doc	Países	% doc	Países	% doc	Países	% doc	Países	% doc	Países	% doc	Países	% doc	Países	% doc	Países	% doc
1	CHINA	27.581	CHINA	20.103	USA	26.696	CHINA	16.623	USA	23.222	CHINA	36.652	USA	33.808	CHINA	39.122	USA	37.591	USA	51.726
2	USA	22.624	USA	19.598	CHINA	18.237	USA	12.930	CHINA	15.326	USA	21.147	CHINA	12.134	USA	20.707	ENGLAND	15.084	CHINA	9.879
3	INDIA	6.275	GERMANY	8.143	ENGLAND	8.995	ITALY	10.018	ENGLAND	9.049	INDIA	6.132	ENGLAND	10.218	GERMANY	7.844	CHINA	8.615	CANADA	4.987
4	ENGLAND	6.013	INDIA	7.979	GERMANY	6.910	SPAIN	7.898	INDIA	6.275	ENGLAND	5.237	CANADA	5.768	ENGLAND	6.135	GERMANY	7.228	ENGLAND	4.898
5	GERMANY	4.877	ENGLAND	6.139	AUSTRALIA	6.472	SOUTH KOREA	6.776	AUSTRALIA	5.487	SOUTH KOREA	4.818	AUSTRALIA	5.732	ITALY	6.032	ITALY	5.933	ITALY	3.637
6	FRANCE	4.539	JAPAN	4.769	JAPAN	5.253	GERMANY	6.770	CANADA	4.372	CANADA	4.779	INDIA	4.178	SPAIN	4.015	CANADA	5.242	GERMANY	3.307
7	ITALY	4.290	ITALY	4.744	CANADA	4.556	POLAND	6.616	GERMANY	3.551	GERMANY	4.767	GERMANY	4.046	FRANCE	3.944	AUSTRALIA	4.939	JAPAN	3.262
8	CANADA	4.108	CANADA	3.819	ITALY	4.110	ENGLAND	4.404	ITALY	3.223	JAPAN	4.618	ITALY	3.376	CANADA	3.920	FRANCE	4.845	AUSTRALIA	2.963
9	AUSTRALIA	4.019	FRANCE	3.733	INDIA	3.968	JAPAN	3.824	TURKEY	2.979	AUSTRALIA	3.718	NETHERLAND	2.532	AUSTRALIA	3.714	JAPAN	4.751	FRANCE	2.834
10	SPAIN	3.774	IRAN	3.451	FRANCE	3.768	FRANCE	3.703	IRAN	2.930	ITALY	3.691	SPAIN	2.451	JAPAN	3.108	SPAIN	4.402	SPAIN	2.497
11	JAPAN	3.693	AUSTRALIA	3.381	SPAIN	3.282	AUSTRALIA	3.154	SPAIN	2.700	FRANCE	3.229	TURKEY	2.225	NETHERLAND	3.010	NETHERLAND	4.171	SOUTH KOREA	2.362
12	BRAZIL	3.077	SPAIN	2.985	NETHERLAND	2.844	TAIWAN	3.136	BRAZIL	2.402	TAIWAN	2.534	JAPAN	1.959	SWITZERLAND	2.519	SWITZERLAND	2.815	NETHERLAND	2.280
13	SOUTH KOREA	2.861	BRAZIL	2.946	BRAZIL	2.409	RUSSIA	3.021	JAPAN	2.271	SPAIN	2.468	FRANCE	1.883	BRAZIL	2.511	SWEDEN	2.350	INDIA	1.994
14	IRAN	2.633	RUSSIA	2.893	SOUTH KOREA	2.344	CANADA	2.884	FRANCE	2.242	SINGAPORE	2.029	SOUTH KOREA	1.756	INDIA	2.250	SCOTLAND	2.240	BRAZIL	1.613
15	NETHERLAND	2.323	NETHERLAND	2.558	SWITZERLAND	2.007	SAUDI ARABI	2.814	NETHERLAND	2.202	BRAZIL	1.811	SWEDEN	1.647	SOUTH KOREA	1.962	BELGIUM	2.222	SWITZERLAND	1.526
16	TURKEY	1.716	TURKEY	2.539	TURKEY	1.944	PORTUGAL	2.315	SWEDEN	1.983	SAUDI ARABI	1.651	IRAN	1.573	SWEDEN	1.888	INDIA	2.138	TURKEY	1.392
17	SAUDI ARABI	1.621	SOUTH KOREA	2.289	SWEDEN	1.899	INDIA	1.992	SOUTH AFRIC	1.900	NETHERLAND	1.539	SWITZERLAND	1.500	BELGIUM	1.601	BRAZIL	2.103	BELGIUM	1.230
18	SWITZERLAND	1.600	SWITZERLAND	2.001	IRAN	1.674	BRAZIL	1.960	SOUTH KOREA	1.840	IRAN	1.533	BRAZIL	1.446	TAIWAN	1.448	DENMARK	1.950	TAIWAN	1.209
19	RUSSIA	1.546	SWEDEN	1.649	DENMARK	1.495	NETHERLAND	1.938	BELGIUM	1.363	RUSSIA	1.470	SCOTLAND	1.387	NORWAY	1.393	RUSSIA	1.352	SWEDEN	0.999
20	SWEDEN	1.413	EGYPT	1.412	BELGIUM	1.446	ROMANIA	1.811	NORWAY	1.271	SWEDEN	1.309	DENMARK	1.309	AUSTRIA	1.344	PORTUGAL	1.327	PORTUGAL	0.876

*Table 1:* Percentage of publications from the top 20 countries in the top 10 publishers indexed in the Web of Science core collection in 2021. Source: Delgado & Martín-Martín (2022)

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### Where Spanish researchers publish?

_															
		2015		2016		2017		2018		2019		2020		2021	
	Mundo	% doc España	% doc Mundo	% doc España	% doc Mundo %	6 doc España	% doc Mundo	% doc España	% doc Mundo	% doc España	% doc Mundo	% doc España	% doc Mundo	% doc España	% doc
1	Elsevier	17.202 Elsevier	22.145 Elsevier	17.198 Elsevier	22.500 Elsevier 17	7.642 Elsevier	21.830 Elsevier	17.681 Elsevier	21.040 Elsevier	17.396 Elsevier	20.512 Elsevier	18.630 Elsevier	20.084 Elsevier	21.315 Elsevier	21.891
	Springer	11.774 Springer	11.032 Springer	r 11.927 Springer	11.454 Springer 12	2.072 Springer	11.692 Springer	12.128 Springer Na	11.469 Springer Na	12.148 Springer Na	11.647 Springer Na	12.818 <mark>Mdpi</mark>	11.228 Springer Na	12.108 Mdpi	14.606
3	Wiley	8.196 Wiley	8.558 Wiley	7.694 Wiley	7.594 Wiley 7	7.788 Wiley	8.279 Wiley	7.982 Wiley	8.033 Wiley	9.160 Wiley	8.789 Wiley	8.615 Springer Na	10.990 Wiley	9.027 Springer Na	a 9.686
4	IEEE	7.149 IEEE	4.980 IEEE	7.094 IEEE	4.530 IEEE 7	7.033 IEEE	4.401 IEEE	6.724 IEEE	4.258 IEEE	6.205 Mdpi	6.042 IEEE	4.997 Wiley	7.835 Mdpi	6.667 Wiley	7.865
5	Taylor & F	4.191 Taylor & F	3.069 Taylor &	F 4.535 Taylor & F	3.241 Taylor & F 3	3.967 Oxford Ur	2.971 Taylor & F	3.802 Mdpi	3.516 Taylor & Fra	4.805 IEEE	3.776 Mdpi	4.676 Taylor & Fra	3.372 Taylor & Fra	4.515 Taylor & Fra	a 3.258
6	Oxford Ui	2.249 Oxford Ui	2.621 Oxford U	Ji 2.361 Oxford Ui	2.968 Oxford Ui 2	2.293 Taylor & F	2.900 Oxford Ur	2.452 Oxford Univ	3.065 Mdpi	2.998 Taylor & Fra	3.622 Taylor & Fra	4.605 IEEE	3.285 IEEE	3.588 Oxford Univ	2.763
	Amer Che		1.818 Lippined	2.272 Amer Che	1.717 Amer Che :	2.281 Mdpi	1.902 Amer Che	2.385 Taylor & Fra	2.716 Sage	2.452 Oxford Univ	2.924 Sage	2.478 Oxford Univ	2.642 Sage	2.517 Frontiers M	
	Sage	1.967 Royal So						2.127 Amer Chemi	-		-		1.831 Frontiers M		2,421
	Lippincol		1.418 Sage	2.042 Sage		1.964 lop Publis	1.365 Sage		1.390 Amer Chemi			-	1.798 Lippincott \		1.658
			1.293 Royal Sc	-	-		1.357 Mdpi			-				2.263 Lippincott W	
	Royal So Public Lit		1.253 Royal So 1.254 lop Publ			1.472 Lippincol 1.149 Royal So	1.274 lop Publis				1.529 Amer Chemi			i 1.903 Amer Chemi	
						1.097 Sage	1.267 Royal So	-			1.147 lop Publishir 1.078 Frontiers M			1.287 Royal Soc C	
	-	-	1.218 Cambrid			_								•	
	•	1.071 Amer Phy				1.095 Univ Corr			1.081 Cambridge l		_	1.174 Cambridge l		1.037 NATURE PC	
		0.724 Univ Corr											1.045 Bmj Publishi		
	•	0.707 Edicione:						,		,			1.024 Cambridge l		
			0.871 Amer Ins										0.887 NATURE PC		
		0.614 Ferrata S		0.728 Ferrata S									0.841 Amer Physic		
		0.610 Cambridg 0.573 Bmi Publi									0.727 Amer Inst Pk 0.690 Hindawi Pub			: 0.609 Cambridge l : 0.597 Ediciones D	
		0,556 Frontier											0.624 Public Libra		
		0.543 Consejo							0.596 Routledge				0.550 Thieme Mec		
					0.567 Walter De 0								0.466 Walter De G		
	Karger	0.419 Hindawi F											0.453 Dove Medic		
				0.477 Edp Scie	0.493 Spie-Int { 0								0.395 Wolters Kluv		
25	Frontier	0.394 Edp Scie	0.452 Thieme	V 0.409 Edit Um-E	0.432 Hindawi F 0	0.438 Consejo	0.416 Karger	0.379 Consejo Suj	0.405 Spie-Int Soc	0.409 Edp Science	0.391 Amer Assoc	0.326 Edit Um-Edi	0.383 Optical Soc	0.292 lustel	0.321
			-										-		

*Table 2*. Evolution of the percentage of Spanish and world publications in the top 25 publishers indexed in the Web of Science core collection (2016-2021). Source: (Delgado & Martín-Martín 2022)



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## Where Spanish researchers publish?

_	2015		2016		2017		2018		2019		2020		2021	
1	PLOS ONE	1.606	PLOS ONE	1.369	SCIENTIFIC REPORTS	1.378	PLOS ONE	1.182	SCIENTIFIC REPORTS	1.247	SUSTAINABILITY	1.458	INTERNATIONAL JOUR	1.792
2	ASTRONOMY ASTROP	0.600	SCIENTIFIC REPORTS	0.968	PLOS ONE	1.237	SCIENTIFIC REPORTS	1.069	PLOS ONE	0.946	INTERNATIONAL JOUR	1.396	SUSTAINABILITY	1.518
3	MONTHLY NOTICES OF	0.538	ASTRONOMY ASTROP	0.622	MONTHLY NOTICES OF	0.595	SCIENCE OF THE TOTAL	0.602	SUSTAINABILITY	0.800	SCIENTIFIC REPORTS	1.170	SCIENTIFIC REPORTS	1.130
4	SCIENTIFIC REPORTS	0.503	MONTHLY NOTICES OF	0.560	ASTRONOMY ASTROP	0.505	MONTHLY NOTICES OF	0.598	SCIENCE OF THE TOTAL	0.649	APPLIED SCIENCES BAS	0.771	APPLIED SCIENCES BAS	0.991
5	NUTRICION HOSPITAL	0.488	SCIENCE OF THE TOTAL	0.478	SCIENCE OF THE TOTAL	0.421	SENSORS	0.572	SENSORS	0.549	PLOS ONE	0.692	SENSORS	0.801
6	RSC ADVANCES	0.405	PHYSICAL REVIEW D	0.464	SENSORS	0.414	ASTRONOMY ASTROP	0.538	ASTRONOMY ASTROP	0.535	SENSORS	0.682	MATHEMATICS	0.680
7	PHYSICAL REVIEW D	0.393	RSC ADVANCES	0.435	PHYSICAL REVIEW D	0.353	SUSTAINABILITY	0.486	INTERNATIONAL JOUR	0.529	IEEE ACCESS	0.655	INTERNATIONAL JOUR	0.652
8	PHYSICAL REVIEW B	0.335	PHYSICAL REVIEW B	0.348	PHYSICAL REVIEW B	0.331	PHYSICAL REVIEW D	0.373	MONTHLY NOTICES OF	0.527	SCIENCE OF THE TOTAL	0.553	JOURNAL OF CLINICAL	0.630
9	ASTROPHYSICAL JOUR	0.318	PHYSICAL CHEMISTRY	0.317	PHYSICAL CHEMISTRY	0.313	JOURNAL OF HIGH ENE	0.330	IEEE ACCESS	0.507	MONTHLY NOTICES OF	0.551	IEEE ACCESS	0.624
10	JOURNAL OF HIGH ENI	0.313	SENSORS	0.311	JOURNAL OF HIGH ENI	0.312	NATURE COMMUNICA	0.312	ENERGIES	0.396	ASTRONOMY ASTROP	0.543	ASTRONOMY ASTROP	0.594
11	FOOD CHEMISTRY	0.296	ASTROPHYSICAL JOUR	0.310	ASTROPHYSICAL JOUR	0.298	ENERGIES	0.304	PHYSICAL REVIEW D	0.378	JOURNAL OF CLINICAL	0.438	MONTHLY NOTICES OF	0.583
12	CHEMISTRY A EUROPE	0.285	JOURNAL OF HIGH ENE	0.310	NATURE COMMUNICA	0.279	PHYSICAL REVIEW B	0.302	NATURE COMMUNICA	0.358	ENERGIES	0.425	SCIENCE OF THE TOTAL	0.565
13	PHYSICAL REVIEW LET	0.285	FOOD CHEMISTRY	0.298	CHEMISTRY A EUROPE	0.263	JOURNAL OF CLEANER	0.296	NUTRIENTS	0.356	FRONTIERS IN PSYCHO	0.420	FRONTIERS IN PSYCHO	0.522
14	SCIENCE OF THE TOTAL	0.271	NATURE COMMUNICA	0.284	PHYSICAL REVIEW LET	0.263	ASTROPHYSICAL JOUR	0.286	APPLIED SCIENCES BAS	0.340	MATHEMATICS	0.413	PLOS ONE	0.487
15	SENSORS	0.265	ONCOTARGET	0.263	FOOD CHEMISTRY	0.247	PHYSICAL REVIEW LET	0.281	FRONTIERS IN PSYCHO	0.325	NUTRIENTS	0.371	NUTRIENTS	0.447
16	PHYSICAL CHEMISTRY	0.262	CHEMISTRY A EUROPE	0.262	FRONTIERS IN PSYCHO	0.232	PHYSICAL CHEMISTRY	0.252	JOURNAL OF HIGH ENI	0.296	INTERNATIONAL JOUR	0.354	FOODS	0.442
17	NATURE COMMUNICA	0.241	PHYSICAL REVIEW LET	0.253	JOURNAL OF CLEANER	0.227	CHEMISTRY A EUROPE	0.250	PHYSICAL REVIEW LET	0.289	PHYSICAL REVIEW D	0.353	ANIMALS	0.432
18	JOURNAL OF PHYSICAL	0.215	JOURNAL OF PHYSICAI	0.205	ONCOTARGET	0.225	FRONTIERS IN PSYCHO	0.249	MATERIALS	0.269	FOODS	0.330	ENERGIES	0.407
19	PHYSICAL REVIEW E	0.212	PHYSICAL REVIEW A	0.205	FRONTIERS IN MICROB	0.206	IEEE ACCESS	0.249	ASTROPHYSICAL JOUR	0.266	MATERIALS	0.322	NATURE COMMUNICA	0.390
20	CHEMICAL COMMUNIC	0.209	PHYSICS LETTERS B	0.203	EUROPEAN PHYSICAL	0.198	METHODS IN MOLECU	0.246	MOLECULES	0.266	ANIMALS	0.311	POLYMERS	0.357
21	DALTON TRANSACTIO	0.181	JOURNAL OF CLEANER	0.198	JOURNAL OF PHYSICAL	0.198	FOOD CHEMISTRY	0.244	JOURNAL OF CLINICAL	0.256	NATURE COMMUNICA	0.310	MATERIALS	0.345
22	REVISTA DE NEUROLO	0.179	FRONTIERS IN PSYCHO	0.197	ENERGIES	0.196	FRONTIERS IN MICROB	0.226	PHYSICAL REVIEW B	0.244	REMOTE SENSING	0.298	CANCERS	0.336
23	OPTICS EXPRESS	0.177	NUTRICION HOSPITAL	0.193	SUSTAINABILITY	0.193	CONSTRUCTION AND E	0.212	INTERNATIONAL JOUR	0.235	AGRONOMY BASEL	0.281	AGRONOMY BASEL	0.329
24	PHYSICS LETTERS B	0.169	METHODS IN MOLECU	0.187	METHODS IN MOLECU	0.181	JOURNAL OF PHYSICAI	0.212	FOOD CHEMISTRY	0.219	MOLECULES	0.274	MOLECULES	0.308
25	CHEMICAL ENGINEERIN	0.165	DALTON TRANSACTION	0.184	NUTRICION HOSPITAL	0.180	MATERIALS	0.206	JOURNAL OF CLEANER	0.219	JOURNAL OF HIGH ENI	0.271	PHYSICAL REVIEW D	0.293

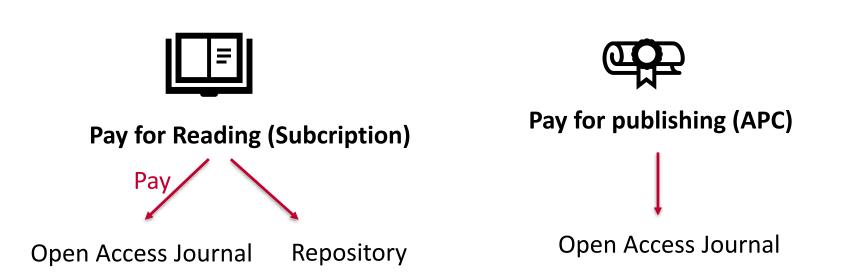
*Table 3*: Evolution of the publication percentage of the top 25 journals in the Web of Science core collection that published the most articles by Spanish authors (2015-2021). Source: (Delgado & Martín-Martín, 2022)



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Last year ANECA issues a report including "non-standard performance" journals in which it is not advisable to publish. Precisely many of those in which Spanish researchers were publishing.





## Conclusions

- The evaluation model and its assessment criteria impact on the way science is done and communicated
- The Spanish evaluation system implemented in the last century has had its positive effects
- But, ... the means (publishing) has become an end in itself
  - Quantity is imposed on quality
- Open Access is recommended and mandatory for public founded research
- Open Science practices (in its broadest sense) is (more or less) a hobby for researchers' weekends.



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## **Final remarks**

- Open science is an opportunity, but it must be supported by policies consistent with its principles,
- It is urgent to revise research evaluation
- Summarizing, Open Science is a landscape under construction with a horizon of possibilities





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