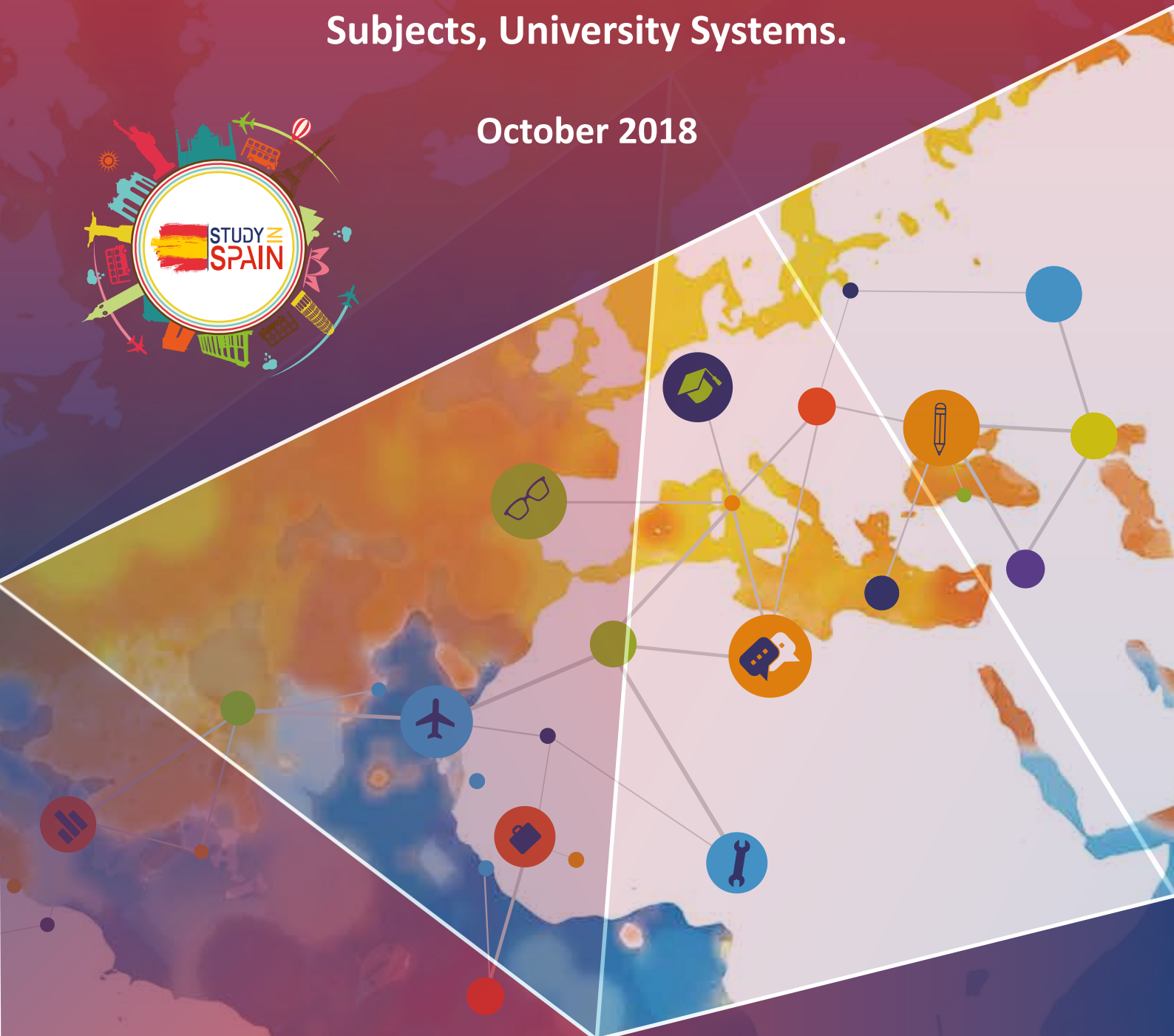# PRISUE Report 2018

International Positioning and Recognition of the Spanish University System 2018

RGeneral Rankings, Subject Areas, Subjects, University Systems.

October 2018

STUDY IN SPAIN

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Internationalisation of the Spanish Higher Education Unit

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1. Introduction

The 2018 Report on the International Positioning and Recognition of the Spanish University System (PRISUE, by its Spanish acronym) shows the overall General rankings and rankings by Subject Area and by Subject appearing in the following rankings: the THE ranking (Times Higher Education World University Rankings, 2019) , the QS ranking (Quacquarelli Symonds World University Ranking, 2019) and the Shanghai - ARWU ranking (Academic Ranking of World Universities 2018)[3] .

It should be noted that, although the rankings were all published in 2018, the QS and THE rankings indicate that they are for 2019, given that they are valid for the 2018-19 academic year.

Since it was launched in 2017 the PRISUE project , implemented by the SEPIE Internationalisation Unit of Higher Education, aims to systematise and analyse the information found in the global rankings with the strongest academic and media impact on Spanish universities.

Thus, a greater understanding of these classifications is sought, in order to enable universities and all of their potential users (students, scholars, companies, the administration, civil society, etc.) to make better use of these university leagues for their specific goals.

The report includes a brief description of its methodology, showing the main features of the 3 rankings used in terms of classification criteria, the number and the type of universities considered in both the overall rankings per university and in the classifications by subject areas and by specific subjects.

The classification criteria and the assessment thereof are discussed and critically analysed, grouped according to the criteria used in the three rankings.

Based on the overall positions and scores of the Spanish universities in the three rankings, the universities are classified by their overall rank, the subject areas and the specific subjects considered in each ranking.

In terms of university systems overall, the QS HESSR rankings (QS Higher Education System Strength Ranking 2018)[5] , the country ranking of the U21 group (U21 Ranking of National Higher Education System 2018)[6], aand the country statistics of the ARWU 2018 ranking are used.

Finally, as in the past, certain conclusions are outlined with recommendations for universities in terms of indicators that could be improved and ways of doing so to bolster their positioning in these international rankings.

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[1] Times Higher Education World University Ranking 2019.
[2] QS Higher Education System Strength Rankings 2019.
[3] Shangai-ARWU. Academic Ranking of World Universities 2018.
[4] Report on International Positioning and Recognition of the Spanish University System. PRISUE Report. SEPIE 2017 and 2018 Preliminary Report.
[5] QS Higher Education System Strength Rankings 2016 y 2018.
[6] U21. U21Ranking of National Higher Education Systems 2018.

2. Methodology

Table 1 shows the characteristics of the QS, THE and ARWU rankings published in 2018 based on classification type: overall, young universities, by subject area and by subject, as well as the number of universities classified in each ranking.

RANKING TYPE AND SIZE BASED ON NUMBER OF UNIVERSITIES CLASSIFIED				
RANKING	General	Universities under 50 years old	Broken down by Subject Area	Broken down by Subject
QS	1,000 universities	150 universities	5 areas with 499 to 504 universities - Arts and Humanities - Engineering and Technology - Life Sciences and Medicine - Natural Sciences - Social Sciences and Management	48 subjects with 50 to 502 universities each
ARWU GRAS Shanghai	1,000 universities		Not updated in 2018	54 subjects with 50 to 500 universities each
THE	1,258 universities	Not updated in 2018	11 areas with up to 500 universities - Arts and Humanities -Education - Law - Psychology - Business and Economics - Clinical, Pre-Clinical and Health - Computer Science - Engineering and Technology - Life Sciences - Physical Sciences - Social Sciences	

Table 1. Features of the ARWU, THE and QS rankings published in 2018

All three rankings have increased the number of universities included in their general lists in 2018, up to 1,000 in the case of QS and ARWU, and 1,258 for THE. The rankings by Subject Area and by Subject cover up to around 500 universities, while the QS ranking of young universities under 50 years old lists 150 universities.

As noted in the Preliminary version of the 2018 PRISUE Report, the subject areas used in the rankings does not exactly coincide with the 5 subject areas in the Spanish university system> Arts and Humanities, Sciences, Health Sciences, Social and Legal Sciences, and Engineering and Architecture.

Thus, the THE ranking considers 11 broad subjects, including fields such as Psychology, Education, Law, and Business and Economics, which in the Spanish system would be included in the area of Social and Legal Sciences, and others such as Clinical, Pre-Clinical and Health, and Life Sciences, which would be included in the Health Sciences area under the Spanish system, while also considering Computer Science and Physical Sciences as areas themselves, which would be categorised within other broad subject areas under the Spanish system.

The same is true in terms of subjects, which often do not coincide with the specific degrees offered at Spanish universities, but would instead be considered groups of degrees, or there are other cases, such as Architecture, which appears in the category of Arts and Humanities in the rankings while it is classified in a specific area along with Engineering in the Spanish system.

Table 2 shows the classification indicators used in the rankings.

QS		ARWU-Shanghai		THE	
		Quality of Education 30%		**Teaching (learning environment) 30%**	
Faculty/Student Ratio	20%	Alumni winning Nobel Prizes and Fields Medals	10%	Staff to Student Ratio	4.5%
		Staff winning Nobel Prizes and Fields Medals	20%	Reputation	15%
				Doctorate to Bachelor's Ratio	2.25%
				Doctorates awarded to Academic Staff Ratio	6%
				Institutional Income	2.25%
Citations		**Quality of Faculty / Research 60%**		**Research + Citations 60%**	
Research Citations by Faculty in 5 years	20%	Researchers cited in 21 broad subject categories	20%	Reputation	18%
		Papers published in "Nature" and "Science"	20%	Research Income	6%
		Papers indexed in SCI and SSCI	20%	Research Productivity	6%
				Citations (Research influence)	30%
Reputation					
Academic Reputation	40%				
Employer Reputation	10%				
				International Outlook	
International faculty ratio	5%			International/domestic student ratio	2.5%
International student ratio	5%			International/domestic staff ratio	2.5%
				International collaboration	2.5%
		Other		**Other**	
		Per capita academic performance of the institution	10%	Industry Income (Knowledge Transfer)	2.5%

Table 2. Assessment criteria in the QS, ARWU and THE rankings. Source: Prepared by the authors

As shown in Table 2, the indicators used by the rankings have been grouped according to the criteria used in each ranking, reflecting the two basic missions of a university: teaching and research, including citations, in addition to reputation survey and internationalisation criteria, both of which are applied in QS and THE, but not in ARWU and others such as industry income (THE) and the synthetic per capita academic performance indicator (ARWU).

From the weighting of the indicators shown in Table 2, it can be gleaned that the QS ranking is based mainly on academic reputation (40%) and employer reputation (10%), assessing opinions gathered from the academic and scientific communities and employers, whereas the ARWU and THE rankings give more weight to research and citations (60%) and to teaching (30%) based on both the bibliometric indicators (ARWU, THE) and on other factors such as surveys, income and productivity (THE).

The rankings broken down by Subject Area (QS, THE, Shanghai ARWU-Fields) assess universities in the subject areas and specific subjects considered in each ranking, according to the criteria in Table 2.

Among the rankings broken down by subjects, the Shanghai GRAS (Global Ranking of Academic Subjects)[2] ranking looks at 5 main indicators: number of papers published in the subject, normalised impact, percentage of articles published with international collaboration, number of articles published in the top journals in the subject and total number of staff winning recognition in the subject.

[2] Shangai GRAS (Global Ranking of Academic Subjects) 2018.

In the QS ranking by subject, two further indicators are included besides the academic and employer reputation criteria in the general rankings: research citations per paper and the H-Index. The weighting of the indicators varies depending on the specific subject area to reflect the different cultures and publication rates in each area, so that, in Medicine for example, research criteria and H-Index are given a weight of 40% whereas in other areas such as History, they only account for 15%, and in areas like art and design in which few papers are published, the ranking is based solely on the surveys taken among scholars and employers.

Table 3 summarises the criteria for assessing university systems in the QS HESS and U21 rankings from 2018.

Criteria in the QS HESS and U21 University System rankings					
QS HESS	U21	QS HESS Indicators	U21 Indicators	Weight	
				QS	U21
System Strength	Resources	• Performance in international rankings • Score based on the number of institutions ranked in the top 700 of the QS WUR ranking, divided by the average position of those institutions	• Government expenditure and total expenditure on tertiary education institutions and on R&D (% GDP) • Annual expenditure per full-time equivalent student and expenditure for R&D by tertiary education institutions at USD purchasing power parity	25%	20%
Access	Environment	• Number of places available at universities within the top 500, divided by an indicator of population size: Number of full-time students at universities in the top 500, divided by the square root of the population	• Proportion of female students and professors in tertiary education • Data quality and policy environment quality • Satisfaction in meeting the needs of a competitive economy	25%	20%
Flagship Institutions	Connectivity	• Performance of leading universities in global ranking • Top university's position in the general QS ranking	• Proportion of international students in tertiary education • Proportion of articles co-authored with international collaborators • No. of open access documents on the website per capita • External links received from third parties per capita • Development of knowledge transfer based on company opinions • Papers published in collaboration by university and industry	25%	20%
Economic Context	Output	• Impact of national investment in higher education, by comparing with performance in global rankings	• Total and per capita numbers of papers published • Average impact of articles published • Average number of institutions in the top 500 and the best three in the ARWU ranking • Percentage of enrolled students and percentage of the population with a tertiary qualification • Number of full-time researchers per million inhabitants • Unemployment rates among graduates	25%	40%

Table 3. Assessment criteria for the QS – HESSR and U21 university system rankings
Source: Prepared by the authors based on QS HESS and U21 data

These two rankings approach the national university systems as a whole, assessing the system based on the indicators shown in Table 3 and, in the case of U21, adjusting the results based on the country's economic and cultural development.

The Flagship Institutions indicator in QS HESS and the Output indicator in U21 cover the indicators on total and per capita number of papers published by an institution and their impact, and the institution's place in the ARWU ranking, supplemented by other indicators on the system overall. Both rankings have an influence on the positioning in the general rankings of leading universities in each country.

3. General Rankings

Table 4 shows the 43 Spanish universities listed in the general rankings published by QS, ARWU and THE, and in the QS ranking of young universities in 2018, arranged according to the highest position they hold in any of the three general rankings.

University	QS		ARWU-Shanghai	THE
	General	< 50 years old		
Universidad Pompeu Fabra	298	29	201-300	135
Universidad Autónoma de Barcelona	193		301-400	145
Universidad Autónoma de Madrid	159		301-400	351-400
Universidad de Barcelona	166		151-200	201-250
Universidad Complutense de Madrid	206		201-300	401-500
Universidad de Granada	495		201-300	601-800
Universidad de Navarra	242		901-1000	251-300
Universidad Carlos III de Madrid	253	22	901-1000	601-800
Universidad Politécnica de Cataluña	275	26	601-700	501-600
Universidad Politécnica de Valencia	310		401-500	601-800
Universidad del País Vasco	601-650	91-100	301-400	601-800
Universidad de Santiago de Compostela	581-590		401-500	601-800
Universidad de Valencia	561-570		401-500	401-500
Universidad Rovira i Virgili			701-800	401-500
Universidad de Zaragoza	412		501-600	601-800
Universidad Politécnica de Madrid	470	61-70	501-600	601-800
Universidad de Alcalá	481	61-70	801-900	601-800
Universidad de Sevilla	601-650		501-600	601-800
Universidad de Oviedo	801-1000		501-600	601-800
Universidad de Vigo	801-1000		501-600	601-800
Universidad de las Islas Baleares			501-600	501-600
Universidad Jaume I de Castellón			501-600	601-800
Universidad de La Laguna			601-700	501-600
Universidad Ramón Llull	541-550	81-90		
Universidad de Salamanca	591-600		701-800	601-800
Universidad Miguel Hernández de Elche			601-700	601-800
Universidad de Deusto				601-800
Universidad de Las Palmas de Gran Canaria				601-800
Universidad Abierta de Cataluña				601-800
Universidad de Murcia	801-1000		701-800	801-1000
Universidad de Jaén			701-800	801-1000
Universidad de Córdoba			701-800	
Universidad de Castilla la-Mancha	801-1000		801-900	801-1000
Universidad de Alicante			801-900	801-1000
Universidad de Cantabria			801-900	
Universidad de Málaga			801-900	
Universidad de Valladolid			801-900	
Universidad de A Coruña	801-1000			801-1000
Universidad Rey Juan Carlos	801-1000			801-1000
Universidad de Almería				801-1000
Universidad de Burgos				801-1000
Universidad Pablo de Olavide				801-1000
Universidad de León				1001+

Table 4. 43 Spanish universities listed by position in general rankings

3. General Rankings

Compared to 2017, 10 new universities have been added to the list: León (ULE), Pablo de Olavide (UPO), Burgos (UBU), Valladolid (UVA), Málaga (UMA), Cantabria (UC), Abierta de Cataluña (UOC), Las Palmas de Gran Canaria (ULPGC), Deusto (UD) and Ramón Llull (URLL), all of which appear in these rankings for the first time.

22 of these universities, three more than in 2017, appear in all three rankings: Pompeu Fabra (UPF), Autónoma de Barcelona (UAB), Autónoma de Madrid (UAM), Barcelona (UB), Complutense de Madrid (UCM), Granada (UGR), Navarra (UNAV), Carlos III de Madrid (UC3M), Politécnica de Cataluña (UPC), Politécnica de Valencia (UPV), País Vasco (UPV/EHU), Santiago de Compostela (USC), Valencia (UV), Zaragoza (UNIZAR), Politécnica de Madrid (UPM), Alcalá (UAH), Sevilla (US), Oviedo (UNIOVI), Vigo (UVI), Salamanca (USAL), Murcia (UMU) and Castilla La Mancha (UCLM). UNAV and UC3M are listed in the ARWU ranking, and UVI in the QS ranking, for the first time in 2018.

9 universities, two more than in 2017, appear in two rankings: Rovira i Virgili (URV), Islas Baleares (UIB), Jaume I (UJI), La Laguna (ULL), Miguel Hernández (UMH), Jaén (UJA), Alicante (UA), A Coruña (UDC) and Rey Juan Carlos (URJC).

In general, the top places are the same as in 2017, with UB recovering the position it lost in 2017 in the ARWU top 200.

There are 5 Spanish universities in the top 100 universities under 50 years old (3 in the top 50: UC3M, UPC and UPF) of the QS rankings, one less than in 2017, since UAM, UAB and UPV are no longer eligible, but URLL has been added. The order is the same as in the general ranking since this ranking results from filtering the general ranking by the number of years since the university was founded.

3. General Rankings

3.1 Analysis of Scores in General Rankings

As regards the assessment criteria in the rankings, Tables 5, 6 and 7 show the scores received by the Spanish universities listed in the QS, THE and ARWU rankings, which range from 0 to 100, with 100 being the top score.

THE Ranking

University	Overall	Teaching	R&D	Citations	Industry Income	International Outlook
Universidad Pompeu Fabra	**58.3**	40.0	39.1	**95.7**	42.4	**64.3**
Universidad Autónoma de Barcelona	**57.5**	43.9	36.5	**92.4**	41.3	**62.2**
Universidad de Barcelona	49.5	37.7	32.3	**85.1**	40.1	**52.6**
Universidad de Navarra	46.4-49.4	34.1	24.2	**82.0**	**66.6**	**63.2**
Universidad Autónoma de Madrid	41.7-43.9	33.9	28.4	**64.8**	37.8	**51.1**
Universidad Complutense de Madrid	37.1-41.6	42.4	28.4	42.7	35.6	44.3
Universidad Rovira i Virgili	37.1-41.6	24.2	20.2	**76.2**	36.0	49.1
Universidad de Valencia	37.1-41.6	28.0	19.6	**68.0**	36.3	49.1
Universidad Islas Baleares	33.5-37.0	19.7	12.9	**71.6**	34.7	45.5
Universidad de La Laguna	33.5-37.0	24.3	11.5	**62.3**	35.1	46.7
Universidad Politécnica de Cataluña	33.5-37.0	29.7	17.3	**53.7**	40.9	56.2
Universidad de Alcalá	26.0-33.4	30.4	14.5	37.5	41.0	61.6
Universidad del País Vasco	26.0-33.4	20.4	16.5	**50.0**	36.2	40.1
Universidad Carlos III de Madrid	26.0-33.4	26.4	16.0	37.3	37.8	58.6
Universidad de Deusto	26.0-33.4	29.3	24.8	29.8	38.2	46.9
Universidad de Granada	26.0-33.4	23.5	19.0	48.3	35.0	47.0
Universidad Jaime I	26.0-33.4	21.6	15.0	**55.5**	36.8	41.8
Universidad de Las Palmas de Gran Canaria	26.0-33.4	29.4	10.9	35.1	34.0	34.1
Universidad Miguel Hernández de Elche	26.0-33.4	24.4	12.4	43.2	36.9	31.4
Universidad Abierta de Cataluña	26.0-33.4	12.8	12.5	**71.3**	34.9	39.8
Universidad de Oviedo	26.0-33.4	25.5	14.7	**50.8**	38.0	34.1
Universidad Politécnica de Valencia	26.0-33.4	25.4	12.0	45.2	44.5	47.5
Universidad de Salamanca	26.0-33.4	27.8	15.2	33.6	35.6	49.5
Universidad de Santiago de Compostela	26.0-33.4	26.8	16.0	**50.5**	39.0	44.3
Universidad de Sevilla	26.0-33.4	27.0	18.8	38.7	36.6	38.4
Universidad Politécnica de Madrid	26.0-33.4	31.1	13.9	37.9	42.6	47.5
Universidad de Vigo	26.0-33.4	26.0	14.8	35.3	39.0	41.7
Universidad de Zaragoza	26.0-33.4	27.9	12.4	47.7	38.1	37.0
Universidad de A Coruña	19.0-25.9	22.8	12.4	26.1	35.6	30.9
Universidad de Alicante	19.0-25.9	23.6	13.6	28.4	36.5	39.9
Universidad de Almería	19.0-25.9	17.3	12.5	24.0	36.0	35.9
Universidad de Burgos	19.0-25.9	19.4	11.3	25.1	36.9	33.2
Universidad de Castilla La Mancha	19.0-25.9	20.3	11.7	31.1	35.9	35.2
Universidad de Jaén	19.0-25.9	18.4	13.0	36.1	35.2	34.9
Universidad Rey Juan Carlos	19.0-25.9	18.2	11.2	35.1	36.4	47.3
Universidad de Murcia	19.0-25.9	27.4	13.2	32.2	35.3	37.6
Universidad Pablo de Olavide	19.0-25.9	24.0	13.2	32.9	34.5	50.0
Universidad de León	9.8-18.9	17.4	10.1	23.6	35.7	34.1

Table 5. Spanish university scores in the 2018 THE ranking

3. General Rankings

Just two Spanish universities - UPF and UAB - earned more than 50 points out of 100 in the overall score. The highest scores are seen in Citations, with 15 universities exceeding 50 points, and in International Outlook, with 9 universities receiving more than 50 points.

However, no Spanish universities score more than 50 points in teaching or in research.

ARWU Ranking

University	Students winning Nobel/Fields	Faculty winning Nobel/Fields	Highly cited Researchers	Nature/Science papers	Papers in SCI SSCI	Academic Performance per capita
Universidad de Barcelona	0	0	27.1	12.5	53.3	23.2
Universidad Complutense de Madrid	19	0	0	12.2	44	14.5
Universidad Pompeu Fabra	0	0	13.5	20.1	28.5	39.4
Universidad de Granada	0	0	23.5	4.2	40.8	16.3
Universidad Autónoma de Barcelona	0	0	0	11.2	47.8	22.7
Universidad Autónoma de Madrid	0	0	9.6	12.8	40.3	19.5
Universidad del País Vasco	0	0	9.6	12.2	38.1	16.6
Universidad Politécnica de Valencia	0	0	9.6	8.9	32.4	15.1
Universidad de Santiago de Compostela	0	0	13.5	6.3	32.3	15.7
Universidad de Valencia	0	0	0	5.7	44.3	16.4
Universidad Politécnica de Madrid	0	0	0	6.6	31.7	13
Universidad Jaime I	0	0	16.6	15	20.6	19.9
Universidad de Oviedo	0	0	0	10.4	30.1	14.4
Universidad de Sevilla	0	0	0	7.1	35.5	12.8
Universidad Islas Baleares	0	0	13.5	6.5	17.2	17.4
Universidad de Vigo	0	0	9.6	15	25.6	15.6
Universidad de Zaragoza	0	0	0	7.4	33.8	14.4
Universidad Miguel Hernández de Elche	0	0	9.6	4.3	16.8	17.1
Universidad Politécnica de Cataluña	0	0	0	6	27.7	14.2
Universidad de La Laguna	0	0	0	8.3	24.5	13.4
Universidad de Córdoba	0	0	0	5.7	22.6	14.9
Universidad de Jaén	0	0	9.6	1.5	17.6	13.9
Universidad de Murcia	0	0	0	3.5	26.8	12.9
Universidad de Salamanca	0	0	0	4.9	26.1	13.4
Universidad Rovira i Virgili	0	0	0	4.6	23.3	20.3
Universidad de Alcalá	0	0	0	4.3	21.8	13.2
Universidad de Alicante	0	0	0	1.5	24.5	13.5
Universidad de Cantabria	0	0	0	4.2	21.3	15.3
Universidad de Castilla La Mancha	0	0	0	1.5	26.1	14.5
Universidad de Málaga	0	0	0	2.1	26.3	12.4
Universidad de Valladolid	0	0	0	3.5	23.9	11.8
Universidad Carlos III de Madrid	0	0	0	0	23.1	14.9
Universidad de Navarra	0	0	0	1.5	23.1	11.3

Table 6. Spanish university scores in the 2018 ARWU ranking

It is clear that the criteria used by ARWU penalise Spanish universities. Only the UB earns more than 50 out of 100 points in the indicator of papers indexed in SCI and SSCI. No Spanish universities score in the category of Staff winning Nobel Prizes and Fields Medals, and just the UCM earns points for Alumni winning Nobel Prizes.

QS Ranking

University	Overall	Academic Reputation	Employer Reputation	Faculty/Student Ratio	International Staff Ratio	International Student Ratio	Citations by Faculty
Universidad Autónoma de Madrid	48.5	63.2	69	47.8	11.6	25.7	23.7
Universidad de Barcelona	47.8	69.9	48.9	34	6.4	32.7	30.1
Universidad Autónoma de Barcelona	44.7	63	35.9	21	26.4	28.3	44.1
Universidad Complutense de Madrid	43.2	65.6	73	24.8	3.4	29.5	14.9
Universidad de Navarra	38.8	33	81.7	45	20.9	60.1	21.5
Universidad Carlos III de Madrid	37.9	34.4	59.4	68	38.7	14.9	9.2
Universidad Politécnica de Cataluña	35.9	36	38	55.4	9.9	29.5	22.7
Universidad Pompeu Fabra	34.6	32.8	31.1	21.5	73	26.2	45
Universidad Politécnica de Valencia	33.7	24.1	25	83.1	6.5	32	14.6
Universidad de Zaragoza	27.5	22.2	15.9	69.1	4.3	6.7	12.7
Universidad Politécnica de Madrid	25.1	28.7	51.9	21.4	3.3	32.6	11.6
Universidad de Alcalá	24.4	13.4	19.7	47.1	25.9	80.9	11.3
Universidad de Granada	23.7	34.9	14	12.8	5.1	23.7	21.4
Universidad Ramón Llull	-	-	53.8	-	96.5	45.1	-
Universidad de Valencia	-	29.1	-	-	-	-	21.8
Universidad de Santiago de Compostela	-	22.9	-	27.2	-	-	22.5
Universidad de Salamanca	-	25.9	-	23.4	-	29.3	-
Universidad de Sevilla	-	33.4	-	-	-	-	-
Universidad del País Vasco	-	18.5	-	47.6	-	-	-
Universidad de Castilla La Mancha	-	-	-	25.6	-	-	-
Universidad de Murcia	-	-	-	-	-	-	-
Universidad de Oviedo	-	-	-	-	-	-	16.9
Universidad Rey Juan Carlos	-	-	22.3	-	-	16.9	-
Universidad de A Coruña	-	-	-	41.1	-	-	-
Universidad de Vigo	-	-	-	-	-	-	22.8

Table 7. Spanish university scores in the 2018 QS ranking

In the overall score and in Citations by Faculty, no Spanish universities earn more than 50 points. There are 4 universities (UAM, UB, UAB and UCM) that achieve more than 60 points in the Academic Reputation indicator. In the Employer Reputation indicator, 6 universities (UAM, UCM, UNAV, UPM, UC3M and URLL) score above 50.

Only URLL exceeds 50 points in the International Faculty Ratio, with 96.5, the highest score achieved by a Spanish university, whereas two universities score above 50 in the International Student Ratio - UAH (80.9) and UN (60.1).

The results shown for subject areas in the Preliminary PRISUE Report 2018 have not changed, given that the 2016 ARWU ranking, which focuses on subjects rather than on subject areas, has not been updated since the subject ranking (Global Ranking of Academic Subjects, GRAS) first came out in 2017. Therefore, all the data from the Preliminary PRISUE Report 2018 remain valid.

Table 8 shows the Spanish universities listed in the top 100 of the 2018 QS and THE rankings by subject area.

	2018 Rankings by Subject Area												
	Arts and Humanities		Engineering & Technology		Computer Science	Life Sciences Medicine		Clinical, Pre-Clinical and Health	Natural Sciences	Physical Sciences	Social Sciences	Business & Economics	Law
	QS	THE	QS	THE	THE	QS	THE	THE	QS	THE	QS	THE	THE
UPF											81	40	
UAM									54				63
UB	91					75			70				
UNAV											75		
UPM			76										
UAB		96						78	89			92	
UCM	79												95
UPC			81										
UC3M											90		

Table 8. Spanish universities listed in the top 100 of the QS and THE rankings by Subject Area

There are 9 universities (UPF, UAM, UB, UNAV, UPM, UAB, UCM, UPC and UC3M) among the top 100 in 8 areas.

Expanding to the top 500, 29 universities are seen in 10 areas, in which the following can be highlighted:

- **Engineering and Technology:** 25 universities in the top 500, with UPM scoring 76 and UPC 81, in the QS top 100

- **Life Sciences and Medicine:** 20 universities in the top 500, with UB scoring 75, in the QS top 100

- **Social Sciences:** 19 universities in the top 500, with UNAV scoring 75, UPF 81 and UC3M 90, in the QS top 100

- **Natural Sciences:** 11 universities in the top 500, with UAM scoring 54, UB 70 and UAB 89, in the QS top 100

- **Business and Economics:** 4 universities in the top 500, with UPF scoring 40 and UAB 92, in the THE top 100

- **Law:** 2 universities, UAM scoring 63 and UCM 95, in the THE top 100

4.1 Analysis of Scores in Subject Areas

Table 9 shows the number and the universities that scored more than 50 out of 100 points in the subject areas used in the THE ranking, in which the scores are, in general, lower than in the QS ranking.

	Arts and Humanities	Engineering and Technology, Computer Science	Life Sciences, Clinical, Pre-Clinical and Health	Physical Sciences	Law, Business and Economics
Overall	-	1: UPC	3: UAB, UPF, UB	1: UAB	2: UPF, UAB
Citations	6: URV, UPF, UAB, UB, UPC, UPV/EHU	11: UJA, UGR, URJC, ULL, URV, UCLM, UA, UVIGO, UPV(/EHU, UAB, UPC	11: URV, UAB, UB, UV, UAM, UNIOVI, UPV, UNIZAR, UGR, USC, USAL	3: UAM, UAB, UB	2: UPF, UAB
Industry Income	2: UPC, UV	1: US	2: UV, UAB	1: UAB	2: UPF, UAB
International Outlook	5: UAB, UPF, UPC, UC3M, URV	3: UAB, UPF, URV	1: UB	3: UAB, UGR, ULL	4: UNAV, UPF, UC3M, UAB
Research	-	-	-	1: UPV	-
Teaching	-	-	-	6: UPC, UPF, UB, UAM, ULL	4: UNAV, UPF, UC3M, UAB

Table 9. Spanish universities with more than 50 points in the THE ranking by Subject Areas

As seen above, no Spanish universities score more than 50 out of 100 points in the categories of research or teaching in the areas of Arts and Humanities, Engineering and Technology, Computer Science, Life Sciences, or Clinical, Pre-Clinical and Health.

However, there are Spanish universities with high scores in excess of 50 points for research and teaching in Physical Sciences and for teaching in Law, Economics and Business. Where a higher number of Spanish universities scores more than 50 points is in Citations, Industry Income and International Outlook.

Regarding the QS ranking by subject area, Table 10 shows the Spanish universities that scored higher than 70 out of 100 points in the QS indicators.

	Arts and Humanities	Engineering and Technology	Life Sciences and Medicine	Natural Sciences	Social Sciences
Overall	4: UCM, UB, UAB, UAM	8: UPM, UPC, UB, UCM, UPV, UAB, UC3M, UAM	2: UB, UAB	7: UAM, UB, UAB, UCM, UV, UPV, UGR	8: UNAV, UPF, UC3M, UCM, UB, UAM, UAB, URLL
Academic Reputation	6: UCM, UB, UAB, UAM, USAL, UGR	6: UPM, UPC, UB, UCM, UPV, UAB,	4: UB, UAB, UCM, UAM	5: UAM, UB, UAB, UCM, UV	4: UNAV, UPF, UC3M, UAB
Employer Reputation	9: UCM, UB, UAM, UPF, UAH, UPC, UC3M, UNAV, URLL	8: UPM, UPC, UB, UCM, UC3M, UAM, UNAV, URLL	4: UB, UCM, UAM, UNAV	4: UAM, UB, UCM, UPC	9: UNAV, UPF, UC3M, UCM, UB, UAM, URLL, UPC, UAH
Citations per paper	12: UCM, UB, UAB, UAM, UPF, USAL,UGR, UV, USC, UNAV, UNIZAR, UPV	16: UPM, UPC, UB, UCM, UPV, UC3M, UAM, UB, USAL, UGR, UNIZAR, UPF, USC, UV, UAH, UVIGO	2: UB, UAB,	11: UAM, UB, UAB, UCM, UV, UPV, UGR, UPC, USC, UNIZAR, US	14: UNAV, UPF, UC3M, UCM, UB, UAM, UAB, UV, UPC, UGR, US, UNIZAR, UPV, USC
H-index	-	10: UPM, UPC, UB, UPV, UAB, UC3M, US, UGR, UNIZARUPF	1: UB	7: UAM, UB, UAB, UCM, UV, UGR, USC	3: UPF, UAB, UV

Table 10. Spanish universities with more than 70 points in the QS ranking by Subject Areas

4. Rankings by Subject Area

In terms of both overall score and in the categories of academic and employer reputation and citations, Spanish universities with a score of more than 70 points are listed in all areas of the QS ranking.

Regarding the H-index, there are no Spanish universities with more than 70 points in Arts and Humanities, and just 1 (UB) in Life Sciences and Medicine. However, Spanish universities rate much better in terms of Engineering and Technology (10) and Natural Sciences (7).

The higher scores seen in QS than in THE could indicate a good overall reputation in all subject areas, which does not quite coincide with the specific criteria of teaching, research, citations, income and internationalisation in THE.

5. Rankings by Subject

Table 11 shows the Spanish universities listed in the top 50 of the 2018 QS subject ranking and the ARWU – GRAS ranking (underlined in the table).

21 universities appear in 25 subjects:

- **UPC in 6 subjects**: Architecture (22 in QS), Food Science and Technology (28 in ARWU-GRAS), Engineering Civil and Structural (34 in QS), Electrical and Electronic Engineering (41 in ARWU-GRAS), Telecommunication Engineering (36 in ARWU-GRAS) and Remote Sensoring (36 in ARWU-GRAS).

- **UB in 6 subjects**: Anatomy and Physiology (21 in QS), Archaeology (33 in QS), Human Biological Sciences (48 in ARWU-GRAS), Food Science and Technology (36 in ARWU-GRAS), Philosophy (46 in QS) and Education and Training (49 in QS).

- **UPM in 3 subjects**: Architecture (31 in QS), Aerospace Engineering (47 in ARWU-GRAS) and Engineering Civil and Structural (46 in QS and 5 in ARWU-GRAS). in QS).

- **UCM in 3 subjects**: Dentistry (30 in QS), Veterinary Science (33 in QS and 12 in ARWU) Classics and Ancient History (46)

- **UNAV in 3 subjects**: Business and Management (31), Communication and Media Studies (49) and Philosophy (50).

Listed in the top 50 by subject are the following:

- **Food Science and Technology**: 6 universities in ARWU-GRAS: UV (25), UPV (26), UB (36), UGR (38), UdL (41) and US (47).

- **Veterinary Science**: 3 universities: UAB (31 in QS and 9 in ARWU-GRAS), UCM (33 in QS and 12 in ARWU-GRAS) and UCLM (40 in ARWU-GRAS).

- **Hospitality, Leisure Management and Tourism**: ULPGC (40 in ARWU-GRAS) and EUTH-StPOL-UdG (40 in QS) and UA (41 in ARWU-GRAS).

- **Remote Sensoring**: 3 universities in ARWU-GRAS: UV (13), UEX (15) and UPC (36).

	UA	UAB	UAM	UB	UC	UC3M	UCLM	UCM	UEX	UGR	ULPGC	UdL	UNAV	UPC	UPM	UPV	UPF	URLL	US	UV	EUHT StPOL-UdG
Anatomy and Physiology				21																	
Archaeology				33																	
Architecture														22	31						
Library and Information Science										28											
Human Biological Sciences				48																	
Food Science and Technology				36						38		41				26			47	25	
Instruments Science and Technology															28		48				
Veterinary Science		31 / 9					40	33 / 12													
Communication and Media Studies													49								
Sports			49																		
Economics and Econometrics						50											38				
Education and Training				49																	
Philosophy				46									50								
Library and Information Management						22															
Classics and Ancient History								46													
Hospitality, Leisure Management / Tourism	41										40									48	
Aerospace Engineering															47						
Engineering Civil and Structural														34	46 / 5						
Electrical and Electronic Engineering														41							
Marine / Ocean Engineering					7																
Telecommunication Engineering														36							
Business and Management													31					27			
Dentistry								30													
Public Health																	28				
Remote Sensing										15				36						13	

Table 11. Spanish universities listed in the top 50 of the 2018 QS and ARWU-GRAS rankings by Subject Area

6. University System Rankings

Regarding the positioning of the Spanish university system as a whole, Table 12 shows the statistics per country in the top 21 places of the ARWU ranking.

Position	Country	Top 20	Top 100	Top 200	Top 300	Top 400	Top 500	501-1000
1	USA	16	46	69	95	117	139	78
2	United Kingdom	3	8	21	28	34	39	21
3	Switzerland	1	5	7	7	8	8	2
4	Australia	—	6	9	15	21	23	8
5	Germany	—	4	14	20	28	36	14
6	Canada	—	4	9	12	18	18	9
7	The Netherlands	—	4	9	10	11	11	2
8	China	—	3	15	30	43	62	84
9	France	—	3	8	14	17	19	15
10	Japan	—	3	7	9	12	16	29
11	Sweden	—	3	5	8	9	11	2
12	Belgium	—	2	4	6	7	7	1
13	Denmark	—	2	3	4	5	5	1
14	Israel	—	2	4	4	4	6	2
15	Singapore	—	2	2	2	2	2	1
16	Norway	—	1	2	3	3	3	3
17	Finland	—	1	1	1	3	4	5
18	Russia	—	1	1	1	2	4	8
19	Italy	—	—	1	8	10	15	32
20	South Korea	—	—	2	5	8	10	24
21	**Spain**	—	—	1	4	7	10	23

Table 12. Classification per country in ARWU ranking

The country statistics in the ARWU ranking, according to the number of universities in each segment of the ranking, are overwhelmingly dominated by the USA, and just 3 countries - USA, United Kingdom and Switzerland - with universities in the top 20, and 18 countries with universities in the top 100.

Spain has moved up 5 places to 21st place (26th in 2017), and has managed to place one university (UB) among the top 200. Spain has more universities in the top 500 and in places 501-1000 than the countries ranking above it (except for Italy and South Korea) between 12th place (Belgium) and 18th (Russia). This confirms that Spanish universities are well-positioned on average, although they are not present in the upper segments of the ranking.

Table 13 shows the QS HESSR ranking with the criteria indicated in Table 3 on the strength of the university systems.

6. University System Rankings

Position	Country	Overall Score	System Strength	Access	Flagship Institutions	Economic Context
1	United States	100	100	100	100	100
2	United Kingdom	98.6	98.7	97.6	99.5	99
3	Australia	93.8	91.6	99.3	97.6	85
4	Germany	93.4	94.3	97.1	91.1	91.9
5	Canada	90.4	86.8	96.7	96.1	80.2
6	France	86.8	86.8	82.5	94.4	86.2
7	The Netherlands	84.9	89.3	87.7	92.7	71.8
8	China	84.5	88.9	52.7	96.9	99.9
9	South Korea	83.5	82.6	72.2	95.4	79.4
10	Japan	82.1	86.7	61.2	96.5	82.8
11	Italy	77.8	74.8	93.3	69.3	64.7
12	**Spain**	**75.7**	**74**	**81.1**	**72.7**	**73**

Table 13. University System Classification in QS HESS Ranking

In this ranking, based on objective quantitative indicators of the strength of the system beyond the number of most highly ranked universities, which is also considered here, Spain holds 12th place and 5th in Europe after United Kingdom, Germany, France, the Netherlands and Italy. Compared to 2017, Spain dropped one place, replaced by Italy.

Finally, within the university system rankings, Table 14 shows the U21 country ranking prepared following the criteria illustrated in Table 3.

Position	Country	Overall Score	Resources	Environment	Connectivity	Output
1	United States	100	93.5	100.0	75.9	100.0
2	Switzerland	88	100	84.1	100.0	64.4
3	United Kingdom	82.6	71.7	88.5	87.5	70.1
4	Sweden	82.4	99.3	82.7	80.4	62.1
5	Denmark	81.7	97.1	79.0	81.5	62.9
6	Finland	79.7	89.8	90.5	80.1	56.9
7	The Netherlands	79.7	83.1	87.4	84.2	59.7
8	Canada	79.6	96.6	81.5	71.6	62.1
9	Singapore	79.5	97.2	90.7	76.8	54.2
10	Australia	78.6	74.7	94.3	70.7	74.7
11	Austria	75.8	89.9	78.4	91.6	47.7
12	Norway	74.5	90.4	81	69.2	54.4
13	Belgium	73.3	72.0	85.1	77.6	54.7
14	New Zealand	71.1	63.6	93.9	80.9	47.6
15	Germany	69.2	66.7	76.7	71.4	55.0
16	France	68.5	69.0	78.3	65.4	54.4
17	Hong Kong	67.8	74.9	88.7	61.5	46.5
18	Israel	66.3	61.4	80.2	58.8	55.5
19	Ireland	64.8	58.7	80.7	70.4	50.1
20	Japan	61.9	59.6	79.4	52.4	49.6
21	Taiwan	60.2	55.9	87.4	54.5	43.9
22	South Korea	58.0	65.8	65.5	44.8	48.1
23	Saudi Arabia	57	89.6	64.8	51.3	30.9
24	Portugal	56.4	59.4	73.6	51.6	40.1
25	**Spain**	**56.2**	**53.1**	**74.6**	**48.3**	**43.9**

Table 14. Classification under the U21 Ranking of National Higher Education Systems

6. University System Rankings

In the U21 ranking, Spain holds 25th place, falling two places from 2017 due to the lower scores in connectivity and output, in which it does not achieve 50 out of 100 points, but scoring highest in environment, with 74.6 points.

After adjusting for the country's economic level, Spain drops to 30th place, losing 12 points, which indicates that, according to this ranking, the Spanish university system is below par for its economic level.

In these country rankings, it is interesting to observe the trends in Spain's position in recent years, as seen in Figure 16 for the ARWU, QSHESS and U21 rankings.
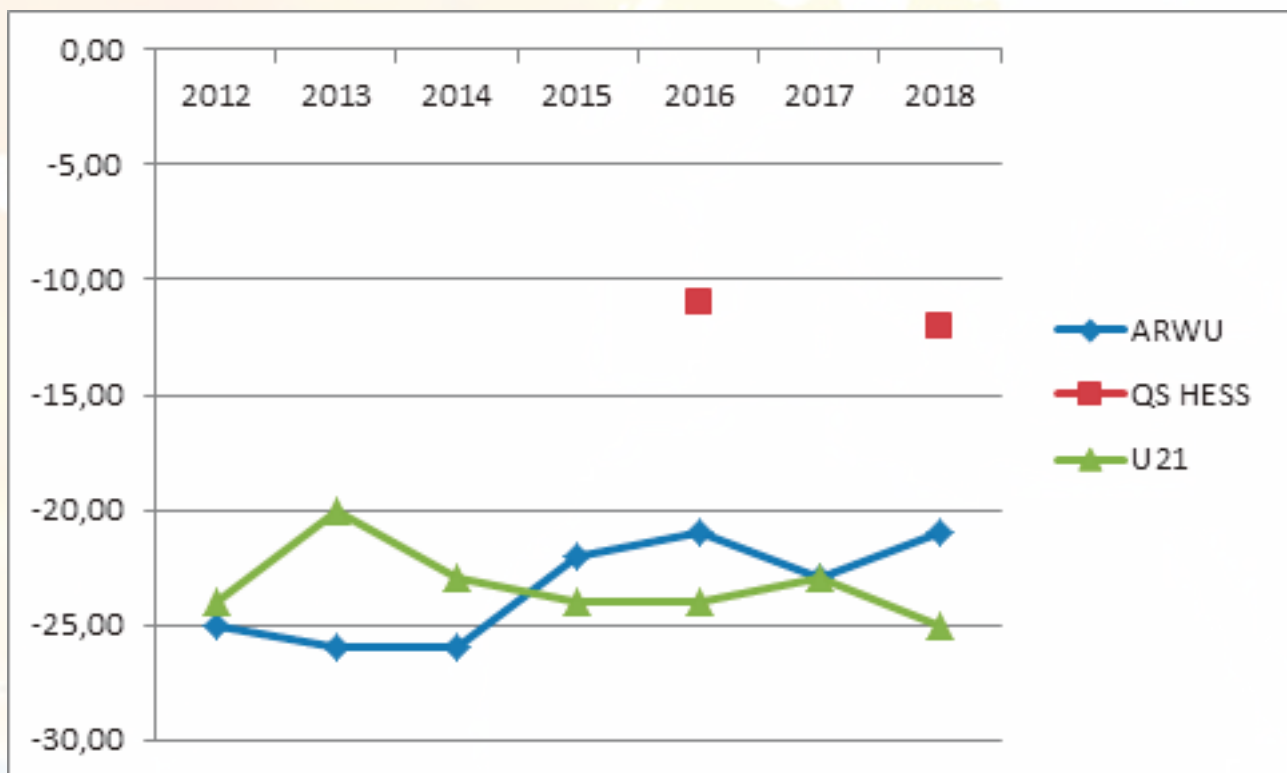
Figure 15. Evolution of the Spanish University System's position in ARWU, QSHESS and U21 rankings

Spain's position in these rankings has fluctuated from 11th to 13th place in QSHESS, 21st to 25th in ARWU, and 21st to 26 in U21.

There is a stagnation, with certain annual fluctuations that indicate a stable situation, showing how difficult it is to progress in these rankings and country statistics, and there are no Spanish universities in the top 100 of any of the three rankings.

7. Conclusions

Spanish universities gained a stronger presence in 2018, with 10 universities more (43 in 2018 vs 33 in 2017) in the three general rankings - THE, QS and ARWU - while also improving their best position in THE (UPF 135 in 2018 vs 140 in 2017) and ARWU (UB 151-200 in 2018 vs 201-300 in 2017) yet falling in QS (UAM 159 in 2018 vs UB 156 in 2017).

Among young universities under 50, Spain continues with 7 universities in the top 100 (3 in the top 50) despite the fact that in 2018 the autonomous universities of Madrid and Barcelona (UAM and UAB) and the UPV, which were listed at the top of these rankings in 2017, are no longer eligible for this ranking, having celebrated their 50th anniversaries in 2018.

This situation shows the strength of the young universities created in the last 50 years in Spain, raising the number of universities to its current figure of 84, as well as the consolidation of the polytechnic schools of Madrid, Catalonia and Valencia through the integration of technical schools and the appearance of other young universities such as UC3M, UPF, UPV/EHU, URV, UAH, and URLL.

As in 2017, there are no Spanish universities in the top 100 of any of the three rankings. This circumstance is partly a result of the scores given to Spanish universities in the teaching and research indicators used in these rankings, particularly by THE and ARWU.

Thus, for the teaching and research indicators in THE (Table 6) no Spanish universities earned more than 50 points, and just one university (UCM, 19 points) scored in the quality of education criteria in ARWU (Nobel Prizes and Fields Medals won by alumni and staff).

There are no Spanish universities with more than 50 points in the ARWU ranking for highly cited researchers, papers published in Nature and Science, or per capita academic performance either. In fact, only the UB - with 53.3 points for papers indexed in SCI and SSCI - exceeds 50 points in the 6 indicators in ARWU.

In the Citations indicator (THE), however, there are 11 Spanish universities with more than 50 points, in line with Spain's rank in scientific output and in the index of the impact of the papers published. In addition, the score of Spanish universities improved for the International Outlook indicator (THE), showing the growing internationalisation of the system.

In the general QS ranking, no Spanish universities reached 50 points, although they do appear in the academic and employer reputation categories, with lower results except in the faculty/student ratio, international faculty and student ratios and citations by faculty.

The situation improves in rankings broken down by subject area, with a higher number of universities included in 2018 (29) than in 2017 (20) in all the subject areas considered in the QS and THE rankings. There are also 9 universities in the top 100, the results remaining the same as in 2017 despite the increase in the number of universities considered in these rankings.

7. Conclusions

As in 2017, the rankings broken down by subject are the ones in which Spanish universities stand out the most, with 21 universities listed in the top 50 in 25 subjects in the QS and ARWU-GRAS subject rankings (20 universities in 24 subjects in 2017) and even three universities in the ARWU-GRAS top 10 (UPM, 5th in Civil Engineering, UC, 7th in Marine Engineering and UAB, 9th in Veterinary Science).

As is the case with the general rankings, in the rankings broken down by subject area and by subject, the indicators for teaching, research and internationalisation offer Spanish universities the greatest room for improvement of their scores and for climbing in these rankings, which in general recognise their good performance in citations and reputation.

The subjects in which international recognition is achieved in the top 10 and top 50 could be noted as benchmarks for the other subjects.

As mentioned previously in the PRISUE Report 2017, it is this good standing of Spanish universities in terms of young universities, subject areas and subjects that must be better communicated and spotlighted, in contrast to the remarks in the media on the absence of Spanish universities in the top segments of the overall rankings.

By expanding these three rankings in terms of subjects and the number of universities listed, the competition in the upper segments of the rankings has increased, thus reducing the number of Spanish universities in these segments but increasing the total number of Spanish universities listed.

8. References

1.   THE. Times Higher Education. World University Rankings 2019.

https://www.timeshighereducation.com/world-university-rankings/2019/world-ranking#!/page/0/length/25/sort_by/rank/sort_order/asc/cols/stats

2.   Quacquarelli Symonds World University Ranking, 2019.

https://www.topuniversities.com/university-rankings/world-university-rankings/2019

3.   Academic Ranking of World Universities. Shangai Center for World-Class Universities of Shangai Jiao Tong University.

http://www.shanghairanking.com/ARWU2018.html

4.   Informe de Posicionamiento y Reconocimiento Internacional del Sistema Universitario Español. Informe PRISUE. SEPIE 2017 y Avance 2018.

http://sepie.es/doc/internacionalizacion/prisue2018.pdf
http://sepie.es/doc/comunicacion/publicaciones/prisue.pdf

5.   QS Higher Education System Strength Rankings 2018.

https://www.topuniversities.com/system-strength-rankings/2018

6.   U21 Ranking of National Higher Education Systems 2018.

https://universitas21.com/network/u21-open-resources-and-publications/u21-rankings/u21-ranking-national-higher-education

7.   Shangai GRAS (Global Ranking of Academic Subjects) 2018.

http://www.shanghairanking.com/Shanghairanking-Subject-Rankings/index.html

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