



**torressalinas**

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# Bibliometrics in practice

## how to generate reports for institutions





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**2021**  
**ONLINE**

**by torressalinas**  
**presented by Arroyo Machado**



# Objectives

- ★ **Learn how to design bibliometric reports at the institutional level (e.g., universities, hospitals, research centers).**
- ★ **We are going to concentrate in a specific report: the annual memory of the University of Granada - UGR). Elaborate by the Research evaluation Unit**

# Main points

- ◆ **Information sources**
- ◆ **Content and selection of bibliometrics indicators**
  - **Contextualization of performance**
  - **Benchmarking & comparisons**
  - **Non bibliometric Indicators: funding**
  - **Fields and disciplines**
- ◆ **Making data available online**
- ◆ **Responsible Metrics Issues**
- ◆ **Examples of different reports**



# Introduction

# Type of bibliometric Reports

If you are working for a bibliometric unit or research evaluation unit  
What kind of bibliometric reports can you offer to your institution?

**Annual  
memory**

**Reports on a  
specific topics  
relevant to  
the institution**

**Reports on  
demand by  
policy  
managers**

# Case Study: University of Granada

## Indicadores y estadísticas de investigación UGR 2018

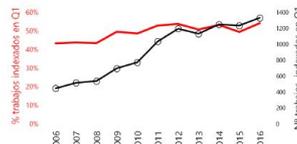
MEMORIA DE INVESTIGACIÓN



Tabla 2 Número y porcentaje de trabajos citables UGR en revistas Web of Science distribuidos según cuartil de publicación – impacto de la revistas

	Nº y % Trabajos en Q1 JCR	Nº y % Trabajos en Q2 JCR	Nº y % Trabajos en Q3 JCR	Nº y % Trabajos en Q4 JCR
2006	447 - 43.4%	386 - 27.7%	182 - 17.6%	115 - 11.17%
2007	518 - 47.7%	338 - 23.7%	201 - 16.9%	126 - 10.6%
2008	539 - 43.4%	365 - 29.4%	213 - 17.1%	123 - 9.8%
2009	698 - 49.6%	325 - 23.1%	235 - 16.7%	148 - 10.5%
2010	773 - 49.6%	424 - 26.6%	230 - 14.4%	162 - 10.2%
2011	1006 - 52.8%	455 - 23.3%	264 - 13.8%	204 - 10.4%
2012	1195 - 53.7%	510 - 22.8%	325 - 14.6%	194 - 8.7%
2013	1132 - 50.1%	531 - 23.8%	298 - 13.8%	207 - 11.9%
2014	1249 - 52.2%	539 - 22.7%	281 - 11.9%	282 - 12.0%
2015	1284 - 49.5%	614 - 24.0%	382 - 15.1%	251 - 10.0%
2016	1311 - 54.1%	595 - 24.2%	320 - 13.0%	212 - 8.6%
Total	10150-50.37%	4976-24.69%	2941-14.59%	2044-10.34%

Gráfica Evolución del número y porcentaje de trabajos citables de la UGR indexados en la Web of Science en revistas indexadas en el Primer Cuartil – Q1 del JCR



23

For this course we are going to take as a case study the annual memory from the University of Granada

“Indicators and statistics at the University of Granada”

BONUS VIDEO

Download at: <https://investigacion.ugr.es/ugrinvestiga/pages/cifras>

# Structure of a bibliometric report

For an annual memory we have to consider at least the following sections:

Indicadores y estadísticas  
de investigación UGR 2018

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## Contenido

1. Fuentes e indicadores
3. Resumen
4. Indicadores generales
5. Indicadores por especialidades
6. Indicadores comparados
  - 6.1. Comparativa general
  - 6.2. Comparativa por áreas
  - 6.3. Comparativa por especialidades
7. Indicadores de excelencia
8. Resultados en ARWU
9. Proyectos de investigación
10. Personal y sexenios
11. Investigadores destacados
12. Presencia redes

## Main sections

- 1) Information sources and indicators
- 2) General indicators
- 3) Indicators by fields and disciplines
- 4) Benchmarking and comparisons
  - a) General - with other universities
  - b) Comparisons by field and disciplines
- 5) Grant and funding information
- 6) Researchers

# SUPER recommended article



## Bibliometric Reports for Institutions: Best Practices in a Responsible Metrics Scenario



### Preliminary Matters

Define the Objectives

Provide a Socioeconomic Context for the Institution

### Methodological Aspects

Select and Describe the Used Indicators

Use the Appropriate Sources, Databases and Tools

Control the Methods

Compare and Contextualize the Results

### Responsible Metrics Issues

Obtain Validation

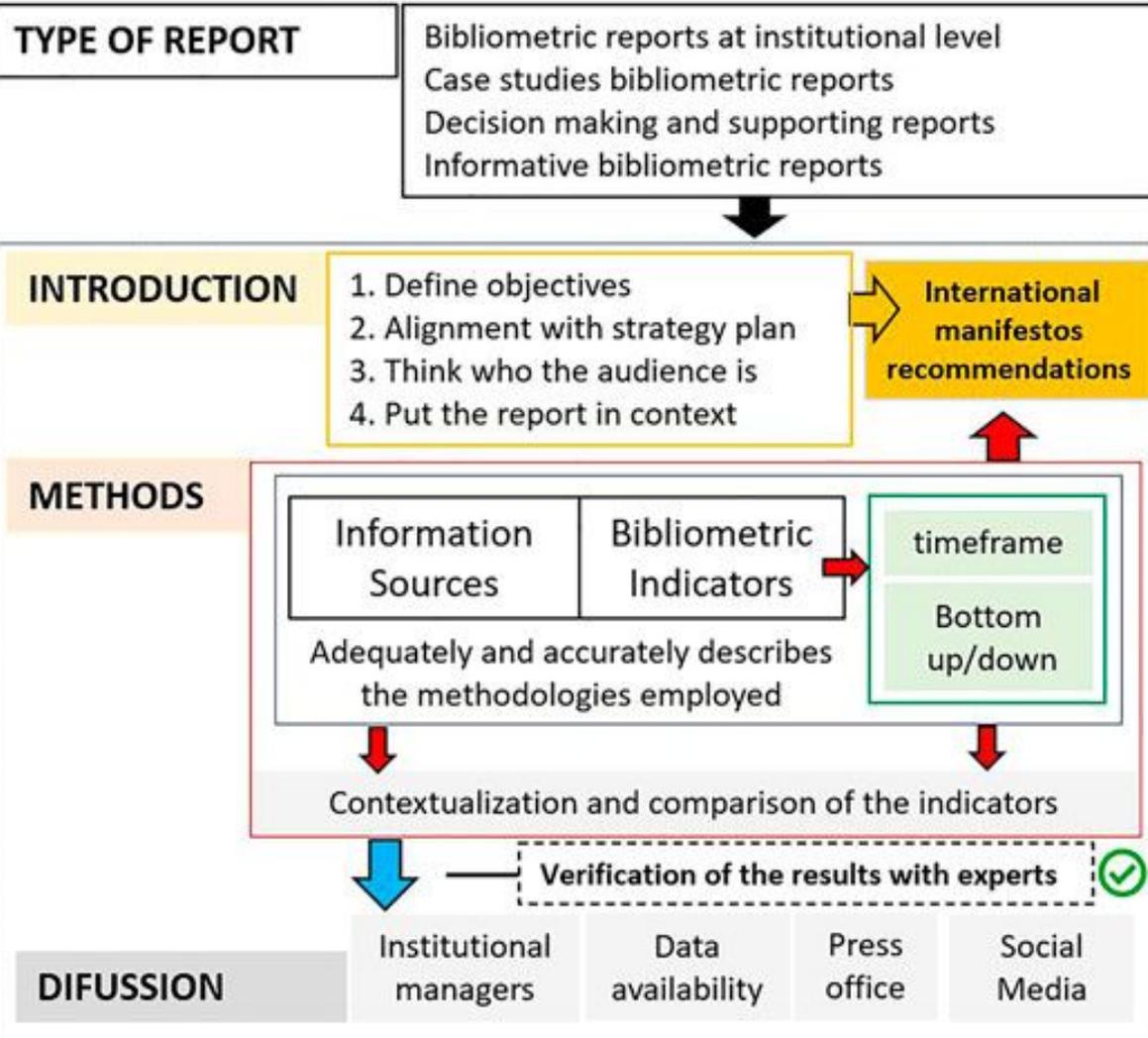
Pay Attention to Diversity

Apply Ethical, Integrity and Equality Principles

Make the Report Public and Open Your Data



**Main processes**



Flowchart of the main processes and decisions for bibliometric reporting at an institutional level



# Information Sources

# Types of sources - UGR



## ★ External databases

- Bibliographic databases and Citation Indexes
- Bibliometric suites: Incites or Scival

## ★ Internal databases

- Current Research Information Systems (CRIS)
- Institutional administrative databases (grants, staff, etc...)

## ★ Other complementary sources

- World University Rankings
- Online academic profiles

# Types of sources - UGR



UNIVERSIDAD  
DE GRANADA

## ★ External databases

- In-Cites for bibliometric indicators - 60% of the report
- Web of Science and Scopus

## ★ Internal databases

- e-proyecta: internal management database for projects

## ★ Other complementary sources

- ARWU (Shanghai) - Verification of scientific policies
- Google Scholar Profiles
- Information from the spanish government

# Type of sources - Incites for reports



- ★ At the University of Granada we use InCites from Clarivate Analytics. We recommend this bibliometric suite if:
  - you are working in large and multidisciplinary institutions
  - you don't have time for normalization and data cleaning

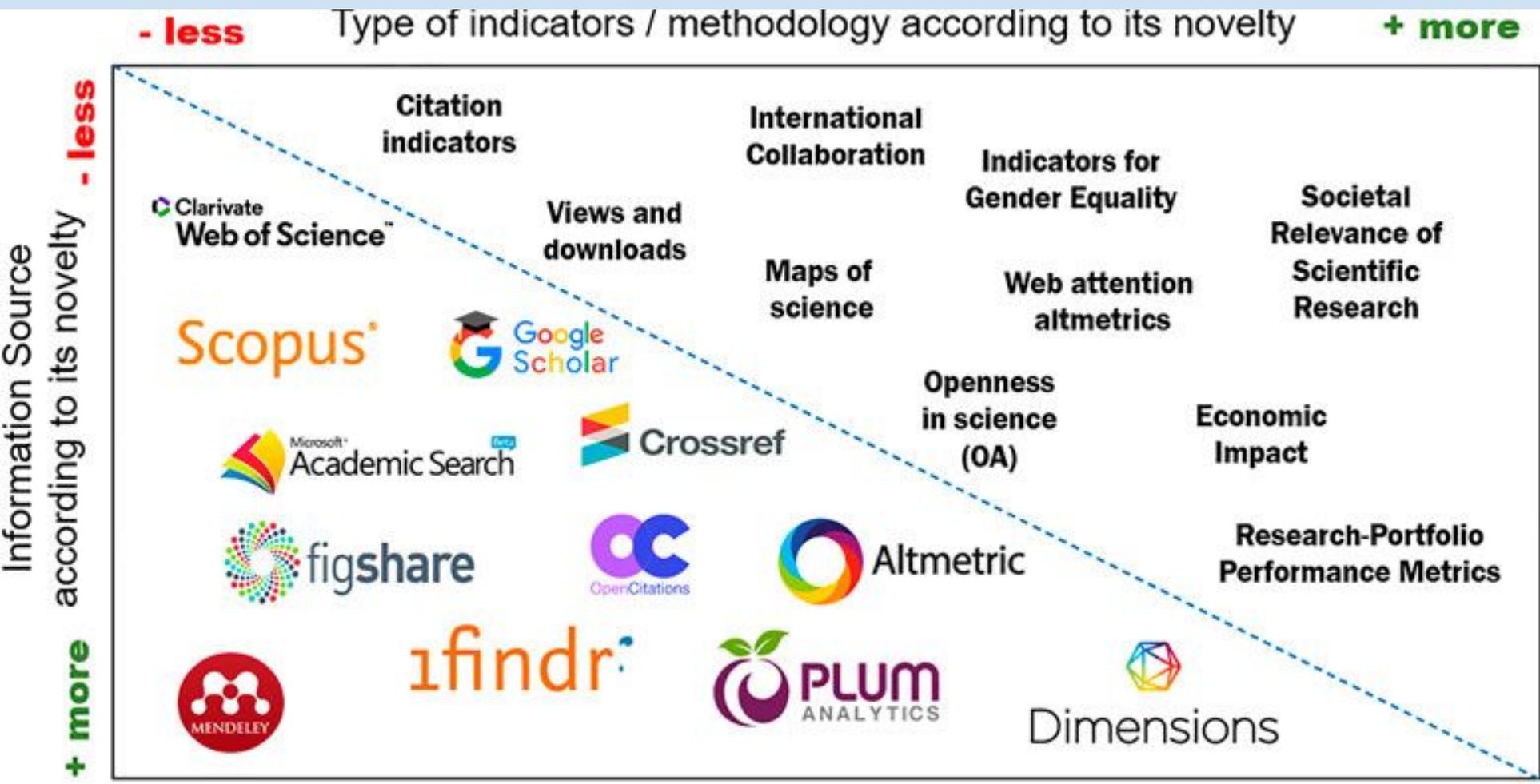
- ★ **Advantages:** indicators are already calculated, you can download raw data and use them for your report

- ★ **Disadvantages:** non-normalization for authors, inaccurate information for institutions due to errors in the organization enhanced field...

- ★ **Bibliometric suites (Incites or Scival) are expensive (between 35.000-60.000 Euros) depending on the institution's size.**

**BONUS  
VIDEO**

# Main information sources and indicators





# Content & Indicators

# What indicators

## Which bibliometric indicators should you use?

- **Easy interpretation.** Complex indicators are difficult to comprehend and should be avoided.
- **Standard indicators** approved by the international community.
- They have to reflect the **different dimensions** of research performance

# What indicators

Indicators at the UGR. **Four types of dimensions seven indicators**

<b>01</b>	<b>Production</b>	<ul style="list-style-type: none"><li>• Number of documents</li><li>• Number of citable documents</li></ul>
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<b>02</b>	<b>Collaboration</b>	<ul style="list-style-type: none"><li>• Number of documents with international collaboration</li></ul>
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<b>03</b>	<b>Impact</b>	<ul style="list-style-type: none"><li>• % of papers in first quartile journals</li><li>• Category Normalized Citation Impact</li></ul>
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<b>04</b>	<b>Excellence</b>	<ul style="list-style-type: none"><li>• % Highly Cited Papers</li><li>• Papers in top journals (Science &amp; Nature)</li></ul>
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# What indicators

Commercial suppliers propose and include a large number of indicators in SciVal and InCites.

## InCites

**InCites has a total of 64 indicators classified into:**

- Collaboration
- Published
- Viewed
- Cited
- Economic Impact
- Societal Impact
- Awards

## SciVal

**SciVal offers 29 bibliometric indicators classified into:**

- Collaboration
- Published
- Viewed
- Cited
- Economic Impact
- Societal Impact
- Awards

# What indicators

**Definition.** Include in your report always a precise definition of the indicators. Describe: calculations/formula, advantages and shortcomings and examples

You can find a beautiful way to define indicators for reports in:

## [BIBLIOMETRIC INDICATORS – DEFINITIONS AND USAGE AT KAROLINSKA INSTITUTET](#)

UNIVERSITY LIBRARY BIBLIOMETRIC TEAM 2014  
CATHARINA REHN, DANIEL WADSKOG, CARL  
GORNITZKI & AGNE LARSSON

### 1.6 RELATIVE ACTIVITY INDEX

Designation	Relative activity index
Denotation	RAI
Description	The relative effort a unit of analysis devotes to a specific field measured in publications.
Calculation	The analysed unit's world share of publications in a given field divided by the unit's world share of publications overall.
Formula	$RAI = \frac{WS_f}{WS}$ <p><math>p_f</math> = The unit's world share of publications in a given field <math>p_w</math> = The unit's world share of publications in all fields</p>
Data Requirements	Requires data from a comprehensive bibliographic database such as the Thomson Reuters citation indices.
Advantages	-
Disadvantages	The indicator is not normalized with regard to document type or publication year. The classification used for domains and subdomains is the journal classification scheme supplied by Thomson Reuters.
KI usage	At Karolinska Institutet this indicator is not used at present.
Reference	Frame, J. D (1977). Mainstream research in Latin America and the Caribbean. <i>Interciencia</i> , 2, 143.  Read more about the method: <a href="http://link.springer.com/article/10.1007/BF02017249">http://link.springer.com/article/10.1007/BF02017249</a>

# What indicators

## 4.1 THOMSON REUTERS JOURNAL IMPACT FACTOR

Designation	Thomson Reuters Impact Factor
Denotation	Karolinska Institutet: $I_{wos}$ , JIF CWTS: IF
Usage	Used to measure the impact of scientific journals.
Description	The impact factor is a number that corresponds to the average number of citations a publication in a specific journal has received during the two years following the year of publication.
Calculation	The impact factor for a specific journal (J), one specific year (Y) is calculated by counting the number of citations to articles in that journal the two preceding years (Y-1 and Y-2) from publications in year Y and dividing this with the number of publications defined by Thomson Reuters as "citeable" in journal J the two preceding years (Y-1 and Y-2).
Formula	$I_{wos} = C / P$ where: $I_{wos}$ = the impact factor for journal J in year Y C = the number of citations from publications in year Y to publications in journal J published Y-2 and Y-1 P = total number of citeable publications in journal J in year Y-2 and Y-1
Data Requirements	No own data is required; Thomson Reuters journal impact factor is available through the service Journal Citation Reports.
KI Usage	The JIF is a regular part of analyses at Karolinska Institutet since this indicator is well known within the Medical scientific community.
Reference	The Thomson Reuters Impact Factor: <a href="http://wokinfo.com/essays/impact-factor/">http://wokinfo.com/essays/impact-factor/</a>

## EXAMPLE

**Description** for the Impact Factor include in:

BIBLIOMETRIC INDICATORS  
DEFINITIONS AND USAGE  
AT KAROLINSKA INSTITUTET

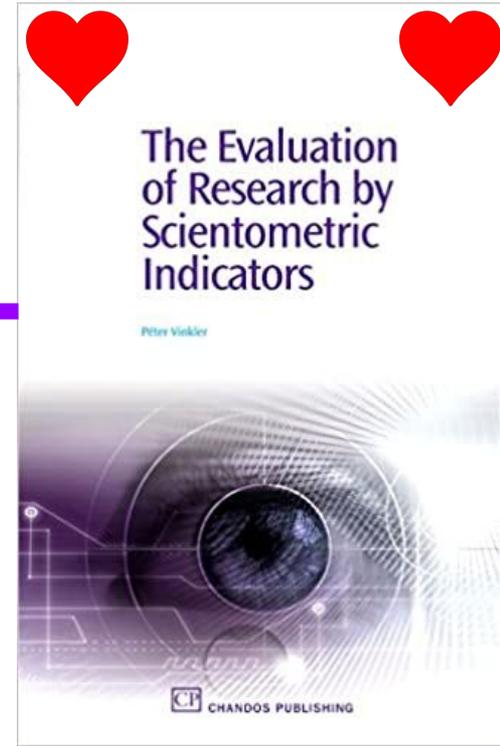
# What indicators

To help you choose the right indicator you can also draw inspiration from handbooks such as

**“The Evaluation of research by Scientometric Indicators”**  
(Vinkler, 2010)

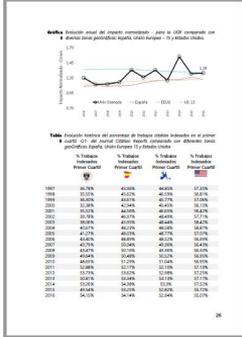
**“Applied Evaluative Infometrics”** (Moed, 2017)

**“Handbook of Bibliometric Indicators: Quantitative Tools for Studying and Evaluating Research”** (Todeschini and Baccini, 2017)



# Contextualization of performance

★ **Bibliometric indicators make sense when comparing with different aggregation levels**, i.e. compare university with the national average. How is our institution performing in comparison with the national average?



★ **Some indicators for benchmarking** are the Category Normalized Citation Impact (InCites), relative indicators like percentage of papers in first quartile journals or percentage of papers in international collaboration

★ In Granada, we compare different indicators with three geographical regions: Spain, European Union and USA

★ **Without contextualization there is no meaning!**

# Contextualization of performance

## Example for the publication profile in high impact factor journals

- ★ Indicator > Percentage of papers in first quartile journals

				
2011	52.88%	52.17%	52.10%	57.19%
2012	53.73%	53.62%	52.98%	57.25%
2013	50.81%	53.34%	53.13%	57.17%
2014	53.26%	54.38%	53.3%	57.52%
2015	49.54%	53.25%	52.82%	55.72%
2016	54.15%	54.14%	52.94%	55.07%

- ★ The publication profile of the University of Granada is quite similar to the national and international standards

# Contextualization of performance

## Comparing UGR with different baselines and institutions

### 1.A. Example of contextualization of the University of Granada with three baselines

	Web of Science Documents	Category Normalized Citation Impact	% Documents in Q1 Journals
University of Granada	21,312	1.26	53.11%
Global Baseline	15,834,230	0.96	47.33%
EU-27 Baseline	4,031,472	1.1	50.20%
Spain—Baseline	548,508	1.2	55.46%

### 1.B. Example of comparison of the University of Granada with three universities

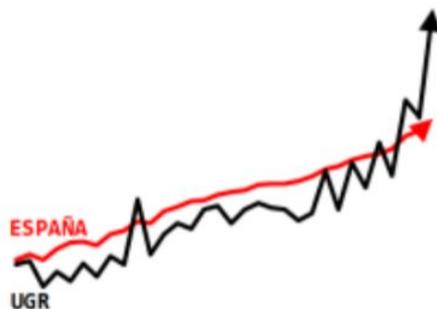
	Web of Science Documents	Category Normalized Citation Impact	% Documents in Q1 Journals
University of Barcelona	45,919	1.68	62.70%
University of Granada	21,312	1.26	53.11%
University of Seville	18,890	1.05	53.40%
Complutense University of Madrid	26,902	1.12	52.29%

# Contextualization of performance

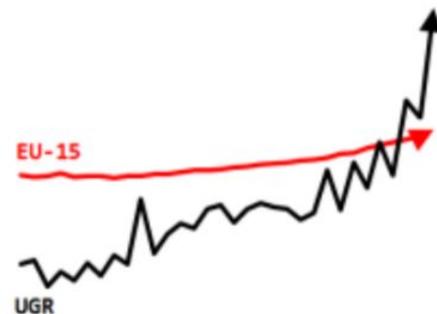
Impacto  
Normalizado  
UGR



Impacto  
Normalizado  
España



Impacto  
Normalizado  
Unión Europea 15

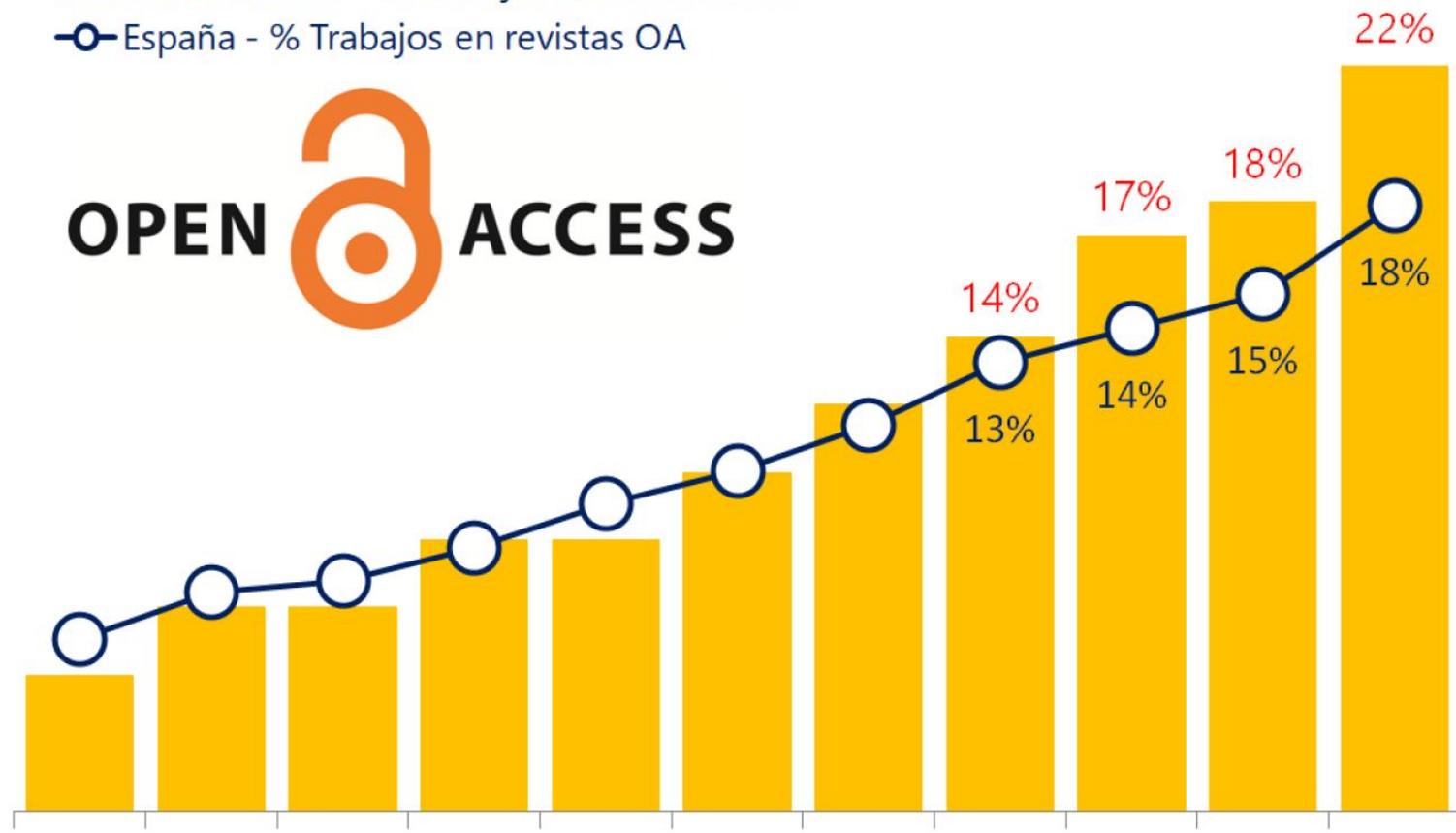


# Contextualization of performance

■ Univ Granada - % Trabajos en revistas OA

● España - % Trabajos en revistas OA

OPEN  ACCESS

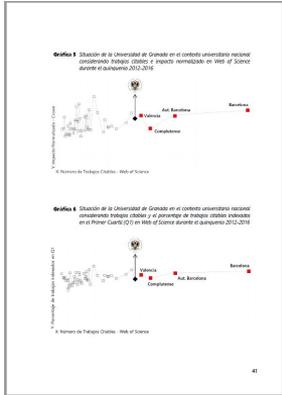


# Benchmarking & Comparisons

It is important to compare also our institution with other similar institutions. We have to **select a coherent and homogeneous benchmarking group** taking into account at least this variables:

- **Similar size**
  - Research output or research staff
- **Same institutional objectives**
  - Focus on teaching or research?
- **Similar disciplinary profile**
  - Humanities, Life Sciences...?

★ At the University of Granada we compare our results with Spanish historical universities with a multidisciplinary profile.



# Benchmarking & Comparisons

Example: benchmarking of the univ. Granada with Spanish universities

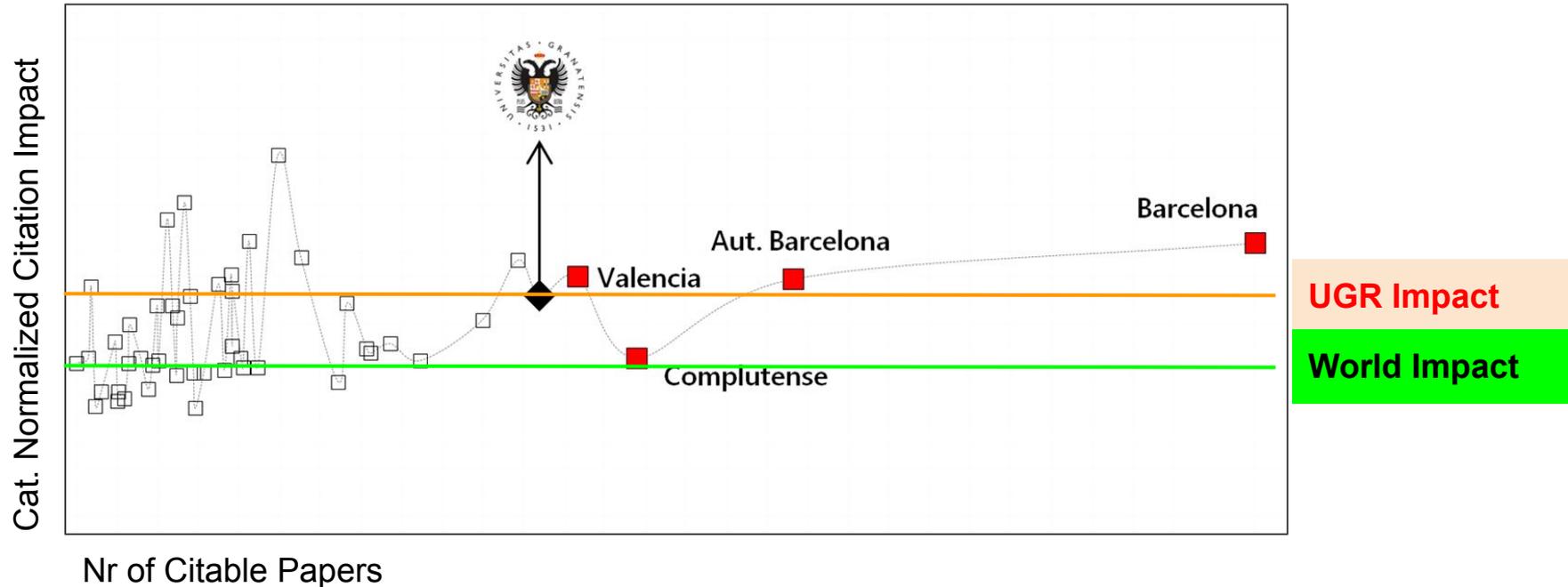
Nombre Universidad	Nr of Citable Papers	Category Normalized Citation Impact	% International Collaboration	% First Quartile
University of Barcelona	30047	1.54	52.40%	60.53%
Autonomous University of Barcelona	18647	1.39	50.98%	58.50%
Complutense University of Madrid	14802	1.06	43.58%	53.39%
University of Valencia	13332	1.40	50.88%	56.74%
<b>University of Granada</b>	<b>12393</b>	<b>1.32</b>	<b>48.39%</b>	<b>52.28%</b>
Autonomous University of Madrid	11860	1.47	54.33%	62.04%
University of Basque Country	10984	1.22	50.25%	57.63%
Universitat Politècnica de Valencia	8217	1.08	41.77%	55.26%
University of Santiago De Compostela	7642	1.29	50.88%	56.50%
Pompeu Fabra University	5942	1.91	59.95%	66.13%

All universities perform better than Granada according based on the percentage of papers in First Quartile Journals

- ★ UGR performs well according citation impact and international collaboration, but has to improve the share of papers in first Quartile journals

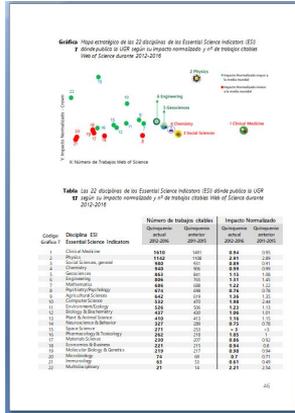
# Benchmarking & Comparisons

- ★ If we are working at universities it is important also to represent in a bivariate graph the position of our institution within our national university system

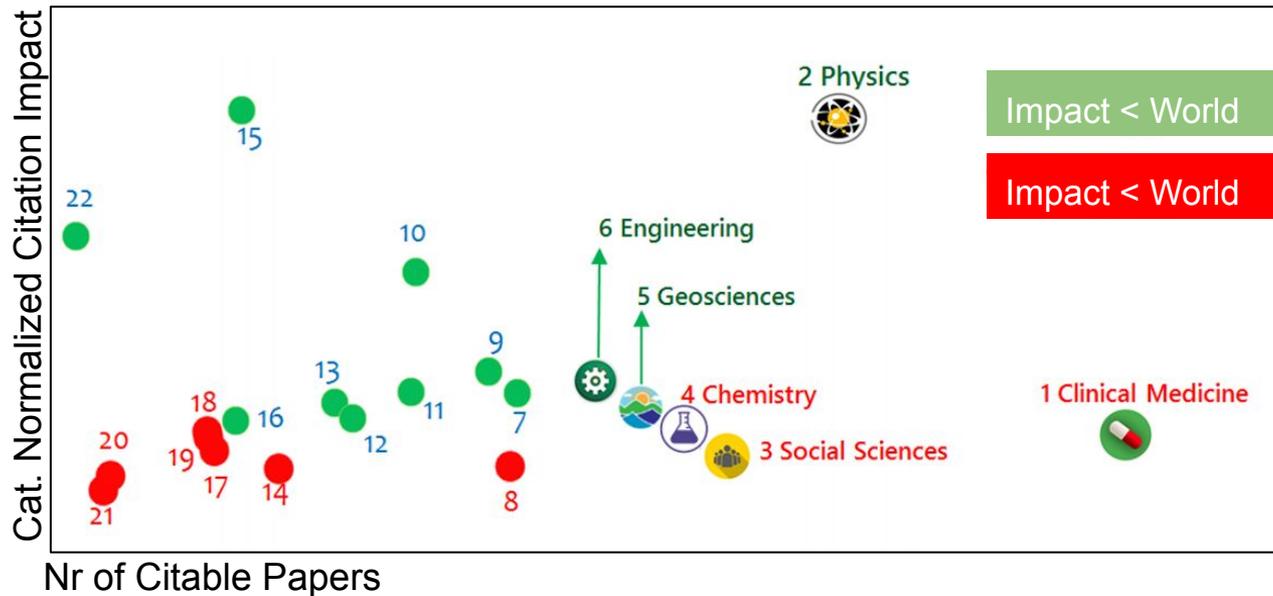


# Fields and disciplines

- ★ Another question that we have to address in our report is the thematic profile of our institutions; **detecting best fields and disciplines**
- ★ For this we must consider the use of **different aggregation levels**. Select at least one general level for an overview of the fields (for example Essential Science Indicators, 22 fields) and a more specific discipline level (for example Web of Science Categories, more than 200 categories).
- ★ **Differentiate always between Science and Social Sciences / Humanities**



# Fields and disciplines



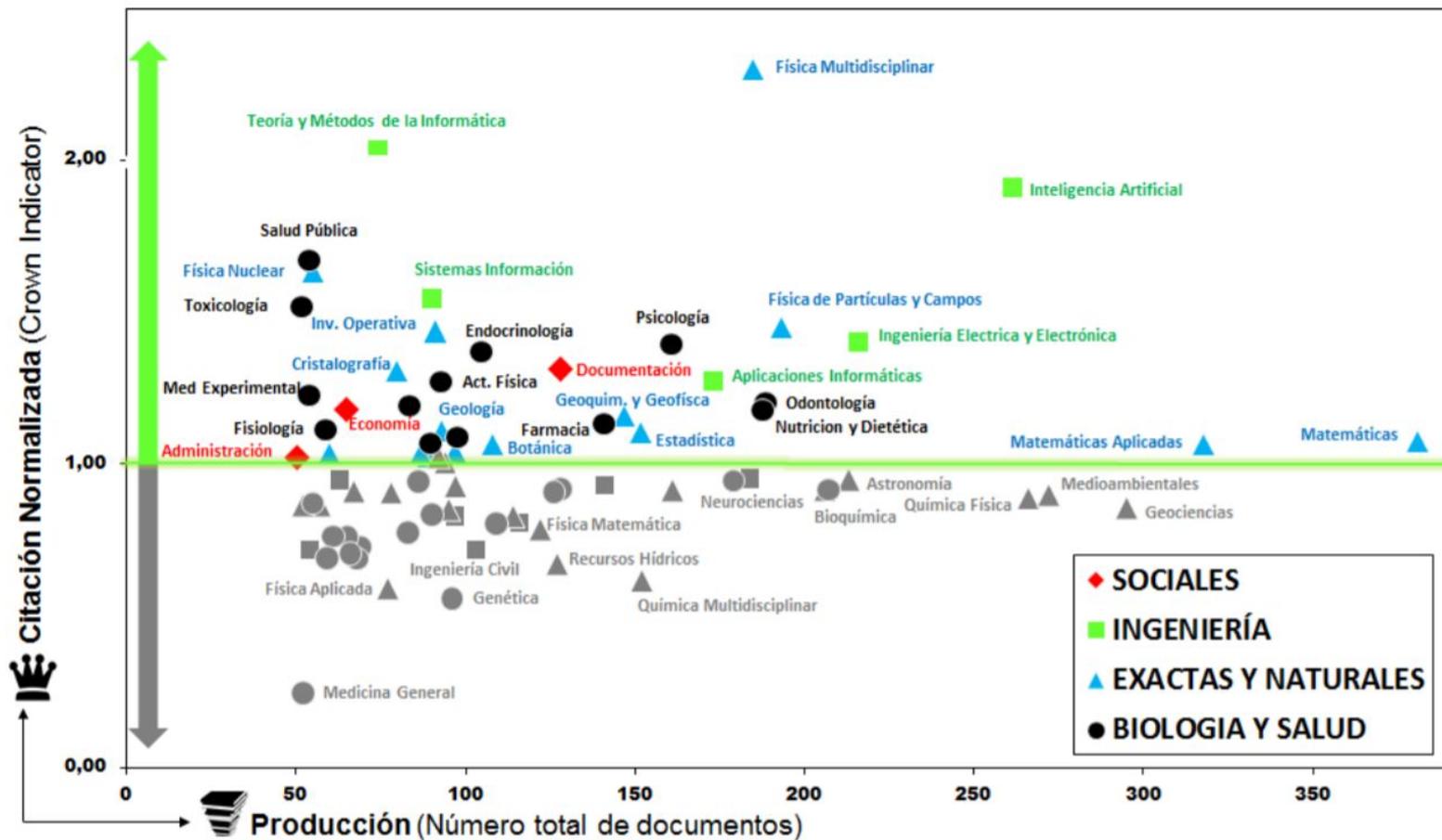
1 Clinical Medicine, 2 Physics, 3 Social Sciences, 4 Chemistry, 5 Geosciences, 6 Engineering, 7 Mathematics, 8 Psychology, 9 Agricultural Science, 10 Computer Sciences, 11 Ecology, 12 Biology, 13 Plant & Animal Science, 14 Neuroscience, 15 Space Science, ...

We can see the general scientific profile of the UGR according ESI classification.

In this case we can identify very productive but low impact areas (1, 3, 4); very productive and high impact areas (2); relatively productive but with high impact areas (15) and not productive and low impact areas (14, 17, ...)

Take care when choosing a classification, for example ESI does not have an specific field for the Humanities

# Fields and disciplines



# Fields and disciplines

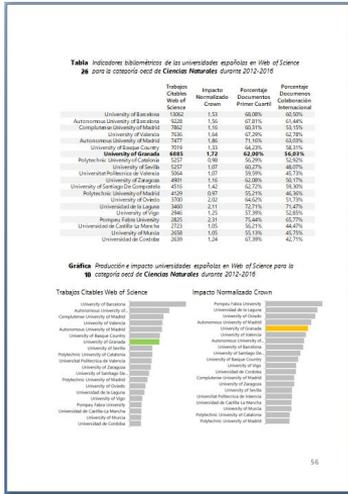
Web of Science Category	Nr Citable Papers	Category Normalized Citation Impact	% International Collaboration	% First Quartil Journals
Social Sciences and Humanities				
EDUCATION & EDUCATIONAL RESEARCH	193	0.82	26.94%	11.61%
INFORMATION SCIENCE & LIBRARY SCIENCE	172	1.07	25.58%	43.37%
ECONOMICS	138	1.10	52.90%	27.27%
MANAGEMENT	114	1.12	28.95%	23.91%
LANGUAGE & LINGUISTICS	102	0.62	22.55%	--
LINGUISTICS	101	 0.34	 28.71%	11.96%
BUSINESS	85	1.10	28.24%	18.18%
SOCIAL SCIENCES, INTERDISCIPLINARY	82	0.95	36.59%	51.25%
HISTORY	70	 0.51	 5.71%	5.00%

In this example we have the second level of presentation of the data at the disciplinary level, the WoS categories applied to the social sciences and the humanities.

# Combining fields and institutions

Another interesting option to complete the report is to compare the performance of our institution with other universities in different scientific fields.

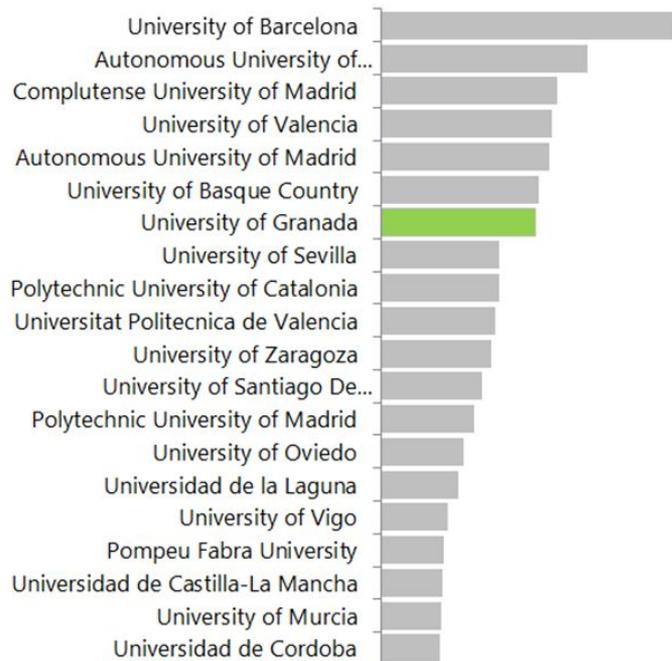
- ★ At University of Granada we check its position in five different fields (Natural Science, Engineering, Health Sciences, Social Sciences and Humanities) and compare its results with the Spanish university system.



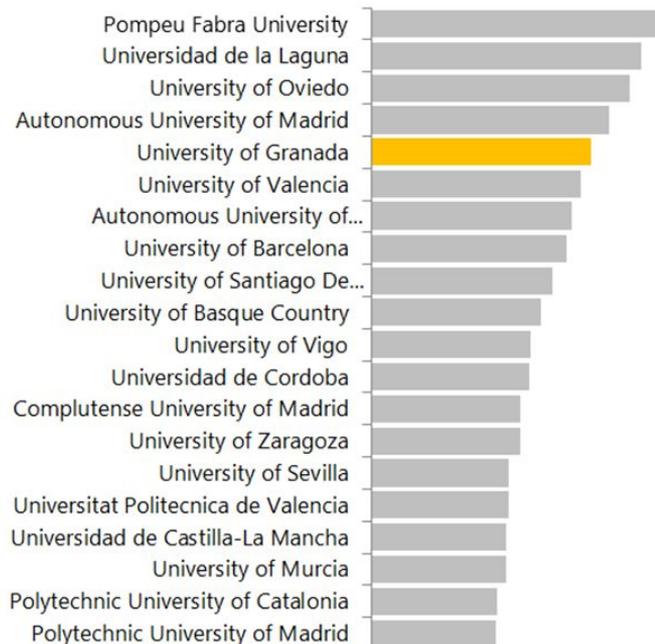
# Combining fields and institutions

For 5 five fields we have prepared two graphs

Nr of citable papers



Category Normalized Citation Impact



In this example we can see the position of the University of Granada in the field of Natural Sciences according to two different bibliometric indicators.

# Combining fields and institutions

Área Científica

Ciencias de la Salud
Ciencias de la Tierra
Ciencias Sociales y Derecho
Física
Humanidades
Ingeniería
Matemáticas
Psicología/ Psiquiatría
Química

9 fields

## CIENCIAS DE LA SALUD

SPORT SCIENCES	Rank	Trab.	Impacto	%Q1
<b>University of Granada</b>	<b>1</b>	<b>295</b>	<b>0.93</b>	<b>28.57%</b>
University of Basque Country	2	163	1.06	31.90%
Polytechnic University of Madrid	3	155	0.73	24.68%
Universidad de Castilla-La Mancha	4	140	0.94	37.14%
University of Barcelona	5	139	0.93	42.34%

## NUTRITION AND DIETETICS

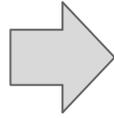
	Rank	Trab.	Impacto	%Q1
<b>University of Granada</b>	<b>1</b>	<b>503</b>	<b>0.95</b>	<b>37.08%</b>
University of Barcelona	2	437	1.79	58.82%
University of Navarra	3	374	1.84	51.52%
University of Zaragoza	4	275	1.11	49.21%
Universitat Rovira i Virgili	4	275	2.07	62.78%

## DENTISTRY, ORAL SURGERY & MEDICINE

	Rank	Trab.	Impacto	%Q1
Complutense University of Madrid	1	298	1.58	49.15%
<b>University of Granada</b>	<b>2</b>	<b>283</b>	<b>1.27</b>	<b>56.83%</b>
University of Valencia	3	216	1.12	23.36%
University of Barcelona	4	184	0.88	29.67%
Universitat Internacional de Catalunya (UIC)	5	161	1.32	44.37%

# Non bibliometric Indicators: funding

01	Production	<ul style="list-style-type: none"><li>• Number of documents</li><li>• Number of citable documents</li></ul>
02	Collaboration	<ul style="list-style-type: none"><li>• Number of documents with international collaboration</li></ul>
03	Impact	<ul style="list-style-type: none"><li>• % of papers in first quartile journals</li><li>• Category Normalized Citation Impact</li></ul>
04	Excellence	<ul style="list-style-type: none"><li>• % Highly Cited Papers</li><li>• Papers in top journals</li></ul>



In order to complement the information provided by bibliometric indicators we can include information on other inputs

★ **We use the number of projects and total funding in competitive programmes to contextualize our results.** We consider two calls a) Spanish R&D National programmes and b) European funding from the European Commission.

★ **Nr. of project** and **total funding** are important indicators but also **success rate** (Nr of applications / Proposals selected for funding). It is important also to compare these indicators with national or UE average and do benchmarking with other institutions

# Non bibliometric Indicators: funding

	Total Applications	Proposals selected for funding	Success Rate	Total Funding
UNIVERSIDAD DE BARCELONA	191	<b>125</b>	65%	13.194.445€
UNIVERSIDAD DE GRANADA	171	<b>99</b>	54%	8.533.404€
UNIVERSIDAD COMPLUTENSE DE MADRID	188	<b>99</b>	53%	9.422.754€
UNIVERSIDAD DE SEVILLA	189	<b>91</b>	48%	11.665.489€
..	...	...	...	...

- ★ In the University of Granada we focus on national research programmes. In this example we can see the results of four Spanish universities in the last year. We can see that the University of Granada is the second university in Spain with a larger number of projects conceded

# Indicators at author level

For authors we have included the researchers with the highest H-index in Web of Science for different scientific categories

			Nr of papers	H Index	Starting Year
				↓	↓
<b>Agriculture</b> AGRONOMY		GARCIA DEL MORAL GARRIDO, LUIS FERNANDO	58	23	1988
<b>Biology</b> ECOLOGY		ZAMORA RODRIGUEZ, REGINO	121	40	1990
ENVIRONMENTAL SCIENCES		OLEA SERRANO, NICOLAS	221	41	1979
FISHERIES		DE LA HIGUERA, MANUEL	76	26	1988
GENETICS & HEREDITY		MARTINEZ CAMACHO, JUAN PEDRO	180	28	1980
MICROBIOLOGY		VALDIVIA, EVA	127	40	1981
MICROBIOLOGY		MAQUEDA ABREU, MERCEDES	103	36	1982
ORNITHOLOGY		SOLER CRUZ, MANUEL	152	32	1988
ORNITHOLOGY		MARTIN VIVALDI, MANUEL	54	18	1998
ZOOLOGY		SOLER CRUZ, MANUEL	152	32	1988
<b>Health sciences</b> DENTISTRY & ORAL SURGERY MEDICINE		TOLEDANO PEREZ, MANUEL	196	39	1995
DENTISTRY & ORAL SURGERY MEDICINE		OSORIO RUIZ, RAQUEL	235	37	1993
....		....	...	...	....

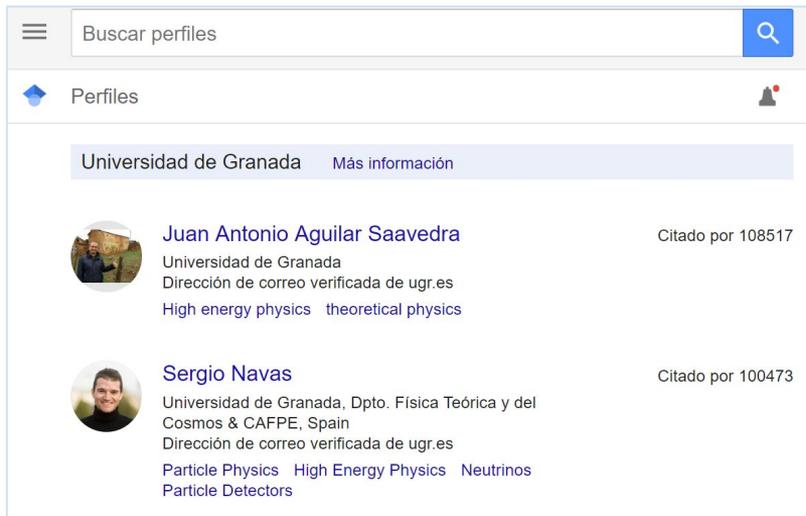
# Indicators at author level

★ Finally, we include the most outstanding researchers in "Google Scholar Profiles".

★ DATA CURATION:

★ We review all profiles and only include those with correct information. We have analyzed a total of 2500 University of Granada profiles and approved 1,700.

★ These profiles have been classified into five different scientific areas. In the report we present a summary of the 200 most cited researchers



Buscar perfiles

Perfiles

Universidad de Granada Más información

 **Juan Antonio Aguilar Saavedra** Citado por 108517  
Universidad de Granada  
Dirección de correo verificada de ugr.es  
High energy physics theoretical physics

 **Sergio Navas** Citado por 100473  
Universidad de Granada, Dpto. Física Teórica y del Cosmos & CAFPE, Spain  
Dirección de correo verificada de ugr.es  
Particle Physics High Energy Physics Neutrinos Particle Detectors

**FAKE**



Google Académico

 **Juan Ramón González González** SEGUIR  
PhD Researcher, [University of Granada](#)  
Dirección de correo verificada de decsal.ugr.es - [Página principal](#)  
[Artificial Intelligence](#) [Soft Computing](#) [Dynamic Optimization Prob...](#)

Citado por [VER TODO](#)

	Total	Desde 2014
Citas	23799	10975
Índice h	64	40
Índice i10	479	247

TÍTULO CITADO POR AÑO

Dependence on pseudorapidity and on centrality of charged hadron production in PbPb collisions at  $\sqrt{s_{NN}} = 2.76$  TeV 1742 \* 2011

S. Chatterjee, V. Khachatryan, A.M. Sirunyan, A. Tumasyan, W. Adam



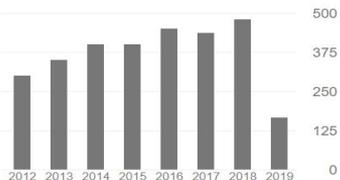
# Indicators at author level: national

## Top 25 ciencias de la salud

	Citas	h-index	Departamento	
1	ANGEL GIL HERNANDEZ	30007	76	Bioquímica y Biología Molecular – Farmacia
2	FRANCISCO B ORTEGA PORCEL	17434	67	Educación Física y Deportiva
3	NICOLAS OLEA SERRANO	16472	57	Radiología y Medicina Física
4	JONATAN RUIZ RUIZ	15143	71	Educación Física y Deportiva
5	DARIO ACUÑA CASTROVIEJO	11939	63	Fisiología
6	MANUEL JOAQUIN CASTILLO	11606	54	Fisiología
7	FATIMA OLEA SERRANO	8284	35	Nutrición y Bromatología
8	GERMAINE ESCAMES ROSA	8236	52	Fisiología
9	MARIANA FATIMA FERNANDEZ	7923	41	Radiología y Medicina Física
10	JESÚS GONZÁLEZ LÓPEZ	7541	45	Microbiología
11	JOSE LUIS QUILES MORALES	7435	49	Fisiología
12	JUAN LUPIAÑEZ CASTILLO	7290	47	Psicología Experimental
13	VICENTE ENRIQUE CABALLO	7104	38	Personalidad, Evaluación y Tratamiento Psicológico
14	JUAN MANUEL DUARTE PEREZ	7070	46	Farmacología
15	JULIO JUAN GALVEZ PERALTA	6670	44	Farmacología
16	CRISTINA CAMPOY FOLGOSO	6028	38	Pediatría
17	MANUEL SANCHEZ POLO	5840	39	Química Inorgánica
18	M ROSARIO RUEDA CUERVA	5822	21	Psicología Experimental
19	MARIA CARMEN RAMIREZ TORTOSA	5684	38	Bioquímica y Biología Molecular – Farmacia
20	MERCEDES MAQUEDA ABREU	5486	44	Microbiología
21	MIGUEL PEREZ GARCIA	5391	37	Personalidad, Evaluación y Tratamiento Psicológico
22	CARMEN CABRERA VIQUE	5366	33	Nutrición y Bromatología
23	LUIS CARLOS LOPEZ GARCIA	5195	43	Fisiología
24	FRANCISCO NOGALES FERNANDEZ	5094	38	Anatomía Patológica e Historia de la Ciencia
25	FRANCISCO J O'VALLE RAVASSA	4785	39	Anatomía Patológica e Historia de la Ciencia

Citado por VER TODO

	Total	Desde 2014
Citas	3405	2343
Indice h	33	29
Indice i10	76	62



# Indicators at author level: international

**Tabla 52.** “Ranking of the World Scientists: World’s Top 2% Scientists” donde aparecen 59 investigadores de la UGR ordenados según Índice H.

Nombre	Índice H	Nº docs	Citas	C Score	Área
1 Herrera, Francisco	101	712	44464	4,72	Artificial Intelligence & Image Processing
2 Herrera-Viedma, Enrique	73	463	19097	4,23	Artificial Intelligence & Image Processing
3 Aguilar-Saavedra, J. A.	72	979	29937	4,19	Nuclear & Particle Physics
4 Ruiz, Jonatan R.	55	356	12078	3,52	Sport Sciences
5 Gil, Ángel	52	389	10056	3,95	Nutrition & Dietetics
6 de Leon, Jose	51	347	9680	4,24	Psychiatry
7 Alarcón-Riquelme, M.	50	238	9259	3,63	Arthritis & Rheumatology
8 Rivera-Utrilla, J.	50	190	10183	3,59	Chemical Physics
9 Zarzuelo, Antonio	50	206	9459	3,20	Pharmacology & Pharmacy
10 Ortega, Francisco B.	48	325	9433	3,47	Sport Sciences
11 Moreno-Castilla, Carlos	46	185	10160	4,11	Chemical Physics
12 Olea, N.	44	234	11245	3,66	Toxicology
13 Zamora, Regino	44	129	6819	3,68	Ecology
14 Toledano, Manuel	43	228	5855	3,29	Dentistry
15 Colacio, Enrique	41	253	6035	3,71	Inorganic & Nuclear Chemistry
16 García-Campaña, Ana M.	40	205	4854	3,38	Analytical Chemistry
17 Sánchez-Polo, Manuel	39	125	5622	3,21	Chemical Engineering
18 Gálvez, Julio	37	144	4951	3,25	Pharmacology & Pharmacy
19 González, Felisa	37	124	4158	2,52	Mining & Metallurgy
20 Sanchez-Ruiz, Jose M.	37	136	4958	3,85	Biochemistry & Molecular Biology
21 Bea, Fernando	36	132	4508	3,87	Geochemistry & Geophysics
22 Rodríguez-Navarro, Carlos	36	102	4728	3,54	Geochemistry & Geophysics
23 del Aguila, Francisco	34	140	3237	3,52	Nuclear & Particle Physics
24 García, S.	34	129	8950	3,25	Artificial Intelligence & Image Processing
25 Pittau, Roberto	34	100	5043	3,50	Nuclear & Particle Physics
26 Hidalgo-Alvarez, R.	33	267	4732	3,49	Chemical Physics
27 Capitan-Vallvey, Luis Fermin	32	270	4072	3,39	Analytical Chemistry
28 Cordon, Oscar	32	220	4551	3,75	Artificial Intelligence & Image Processing
29 Maldonado-Hódar, Francisco J.	32	135	4088	3,44	Physical Chemistry
30 Muñoz Miguel A	32	180	4283	3,55	Fluids & Plasmas

[PLoS Biol.](#) 2020 Oct; 18(10): e3000918.

PMCID: PMC7567353

Published online 2020 Oct 16.

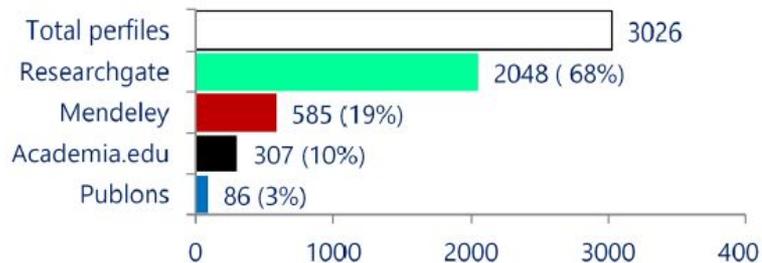
PMID: [33064726](#)

doi: [10.1371/journal.pbio.3000918](#)

## Updated science-wide author databases of standardized citation indicators

[John P. A. Ioannidis](#),<sup>1,2,3,4,\*</sup> [Kevin W. Boyack](#),<sup>5</sup> and [Jeroen Baas](#)<sup>6</sup>

# Extra chapter



Always I include all years and special chapter: For example last year I focus in the use of networks by teachers at the UGR

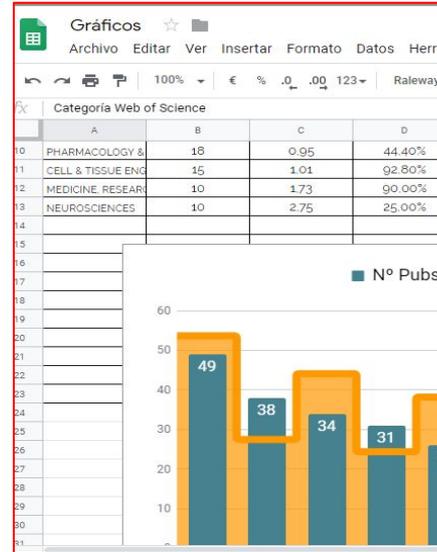


	Nº Total profesores	Nº total profesores con al menos 1 perfil	% total de profesores con al menos 1 perfil	Nº total de perfiles	A	MENDELEY	P	R <sup>G</sup>
CIENCIAS	614	362	● 59%	459	23	86	20	330
FILOSOFÍA Y LETRAS	394	125	● 32%	160	42	19	3	96
INFORMÁTICA Y DE TELECOM	177	122	● 69%	160	9	38	2	111
CIENCIAS DE LA EDUCACIÓN	257	124	● 48%	152	23	24		105
CIENCIAS ECONÓMICAS	238	117	● 49%	149	8	26	5	110
FARMACIA	189	86	● 46%	106	6	17	2	81

# Template for quick and nice reports



TEMPLATE



GRAPHS

# Transparency and availability of data

★ To promote institutional transparency, reproducibility, verification of results and data reuse by other departments, we share our data in an standardized way.

★ **Livemetrics Portal.** We have developed a portal that includes a dynamic version of the report with the main indicators





**Responsible Metrics Issues**

# Manifestos and recommendations

Bibliometric professionals should also [be aware of the Responsible Metrics movement and associated international manifestos and recommendations](#) calling for the responsible use of bibliometric indicators. Institutions are integrating some of these fundamental principles in their evaluation policies.

The two main documents defining the responsible use of evaluation indicators are:

- **San Francisco Declaration on Research Assessment** (DORA, 2012) sponsored by the American Society for Cell Biology
- **Leiden Manifesto for Research Metrics** (Hicks et al., 2015) issued by a number of renowned bibliometric experts



# Responsible Metrics Issues

## Obtain Validation

Early drafts should be revised by a scientific committee of experts working in your institution, which can provide useful insights to improve the quality of the report and detect possible errors and inconsistencies

## Pay Attention to Diversity

Consider research in local languages as well as activities that contribute to improve the socioeconomic environment in the area around the University or center analyzed. Avoid solely paper-focused reports

## Apply Ethical Principles

Any conflicts of interest that may arise should be disclosed.





**Additional free Resources**



# Author Level: Stanford ranking

[PLoS Biol.](#) 2020 Oct; 18(10): e3000918.

PMCID: PMC7567353

Published online 2020 Oct 16.

PMID: [33064726](#)

doi: [10.1371/journal.pbio.3000918](https://doi.org/10.1371/journal.pbio.3000918)

## Updated science-wide author databases of standardized citation indicators

[John P. A. Ioannidis](#),<sup>1,2,3,4,\*</sup> [Kevin W. Boyack](#),<sup>5</sup> and [Jeroen Baas](#)<sup>6</sup>

### Files

-  Code
-  [Table-S10-maxlog-2019-career.csv](#)
-  [Table-S11-maxlog-2019-singlyr.csv](#)
-  [Table-S6-career-2019.xlsx](#)
-  [Table-S7-singlyr-2019.xlsx](#)
-  [Table-S8-Field-Subfield-Thresholds-career-2019.xlsx](#)
-  [Table-S9-Field-Subfield-Thresholds-singlyr-2019.xlsx](#)

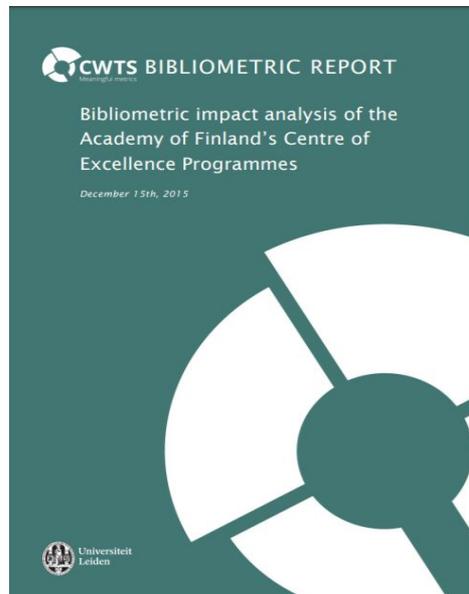
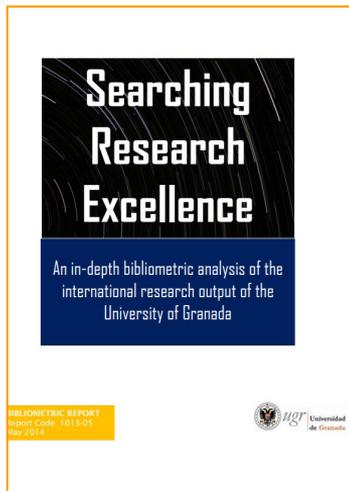


**Examples**

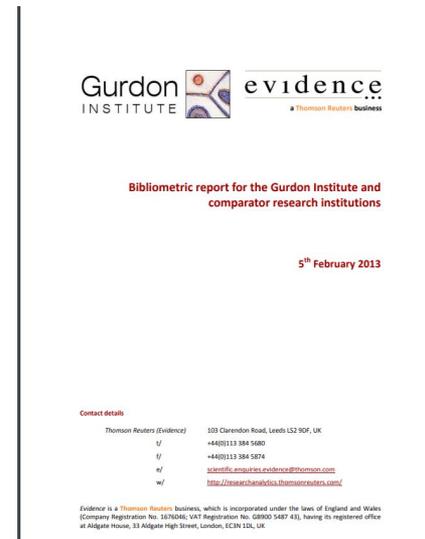
# Institutional reports: examples



UNIVERSITY OF GRANADA



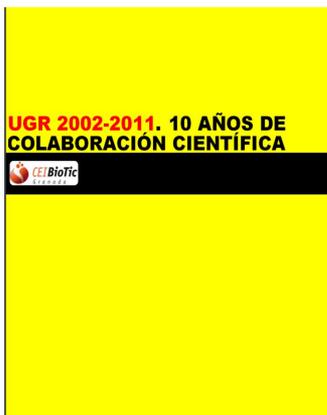
CWTS



EVIDENCE

# Institutional reports: examples

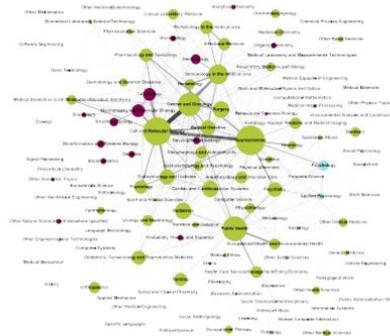
## Collaboration



UNIVERSITY  
OF GRANADA

MODENA

## Karolinska



### BIBLIOMETRIC HANDBOOK FOR KAROLINSKA INSTITUTET

UNIVERSITY LIBRARY BIBLIOMETRIC TEAM 2014

CATHARINA REHN, CARL GORNITZKI, AGNE LARSSON & DANIEL WADSKOG



### BIBLIOMETRIC INDICATORS – DEFINITIONS AND USAGE AT KAROLINSKA INSTITUTET

UNIVERSITY LIBRARY BIBLIOMETRIC TEAM 2014

CATHARINA REHN, DANIEL WADSKOG, CARL GORNITZKI & AGNE LARSSON

This appendix to the *Bibliometric handbook for Karolinska Institutet* lists indicators used, or considered for use, at Karolinska Institutet together with their definitions, some comments on advantages and shortcomings of the different indicators, and how/if they are implemented at Karolinska Institutet.

First, some general notes on the definitions and the calculation of indicators in the appendix:

- Inclusion or exclusion of self citations – see the handbook for more information – might affect the resulting indicator values, but not how the indicators are calculated. Self citations are therefore noted as a separate indicator, but not in the context of any of the other indicators. At Karolinska Institutet, we do not presently remove self citations when calculating our indicator values.
- Fractionalization or any other form of weighting of publications between the contributing authors – see the handbook for more information – will affect most indicators. It will, however, not affect the basic calculation principles, and, for reasons of clarity, this aspect has been left out in the indicator descriptions. At Karolinska Institutet, we do not currently use any fractionalization or weighting when calculating our indicator values.
- The validity of several of the indicators improves if the authors themselves validate or supply information about their publications before the indicator values are calculated. If the analysis is done on anything below university level it is particularly important.
- CWTs indicators and denotations are included in this indicator definition list where appropriate, since these are well known in the bibliometric community.

Note: The word *unit* is here to be interpreted as “unit of analysis”, unless in the context of “research unit”.



# Institutional reports: Examples

Scientific indicators of research performance for the European Centre for Medium-Range Weather Forecasts

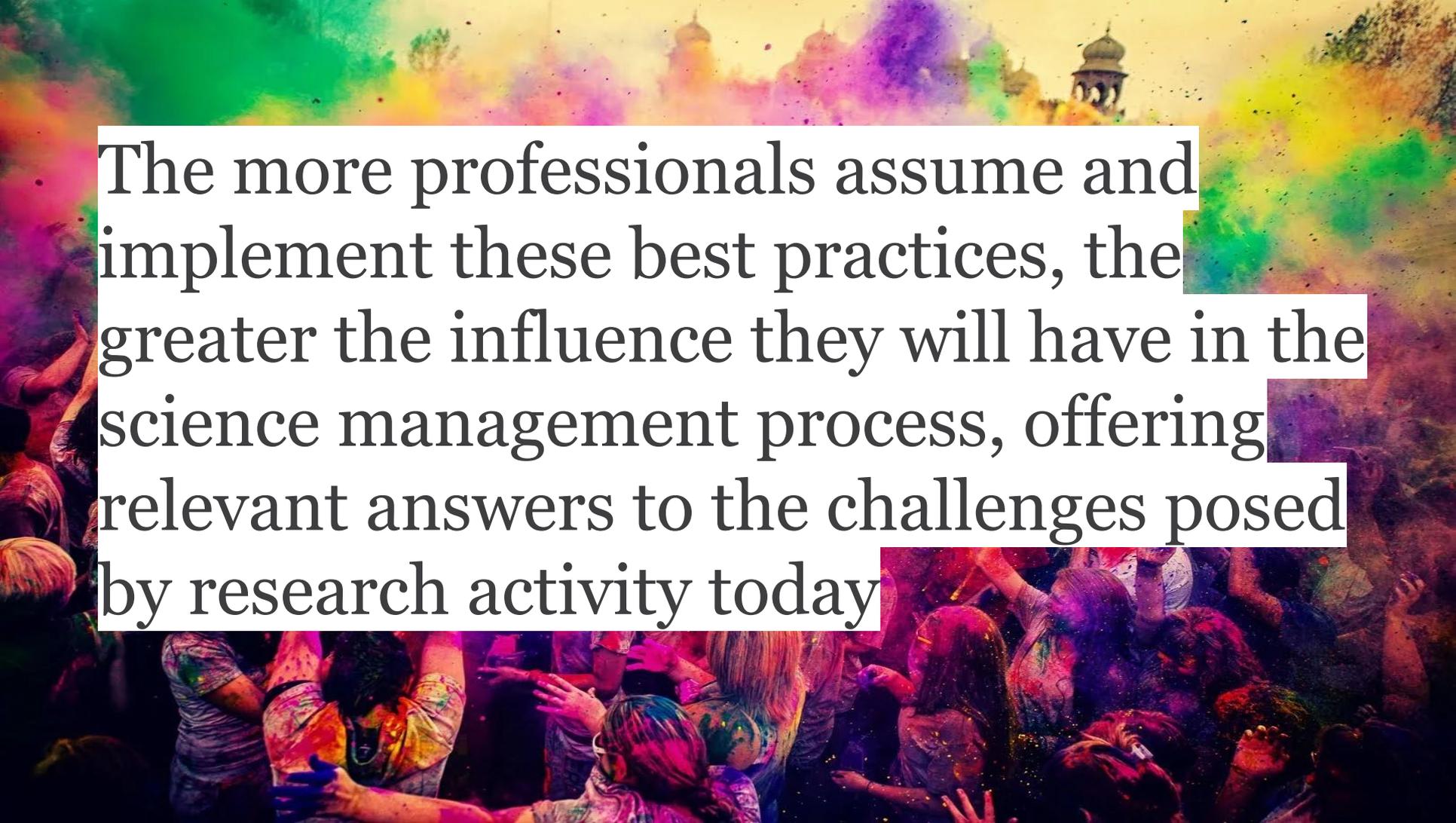
EC3metrics



Contextual Response Analysis of publications of the Netherlands Environmental Assessment Agency PBL

INGENIO





The more professionals assume and implement these best practices, the greater the influence they will have in the science management process, offering relevant answers to the challenges posed by research activity today



VERSION: 3.0 (September, 2021)

# Bibliometrics in practice

## how to generate reports for institutions