



## Locally produced, Globally connected

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## Context

A growing need for big data platforms for evaluating **impact** of research, promoting **visibility**, **collaboration** and **innovation** 



## Evidence based policy - sometimes legally mandated



#### Foundations for Evidence-Based Policymaking Act of 2018 (P.L. 115-435)

The bipartisan Foundations for Evidence-Based Policymaking Act of 2018, which includes the OPEN Government Data Act, sets the stage for major governmentwide reforms for making data accessible and useful for decision-making. The legislation incorporates recommendations from the U.S. Commission on Evidence-Based Policymaking, addresses priorities from the open data community, and adopts widely-accepted strategies for securely analyzing existing data.





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## Demonstrating Societal Impact from Research (increasingly in a quantifiable way)



**Research England** 

## Research Assessment - EU Reform



NEWS ARTICLE | 20 July 2022 | Directorate-General for Research and Innovation

### Reforming research assessment: The Agreement is now final



Coalition for Advancing Research Assessment Our vision is that the assessment of research, researchers and research organisations recognises the diverse outputs, practices and activities that maximise the quality and impact of research. This requires basing assessment primarily on qualitative judgement, for which peer review is central, supported by responsible use of quantitative indicators.



**455 signatories** (as of 27 January 2023

Rankings increasingly questioned

"We cannot blindly <u>follow others</u> or simply copy <u>foreign standards</u> and models when we build world-class universities of our own. Instead, we must proceed from <u>our country's realities</u> and blaze a new path to developing <u>world-class</u> universities based on Chinese conditions and with Chinese characteristics,"

China's President Xi Jinping at Renmin University on 26 April 2022



### Why are we not progressing?

Incomplete, fragmented and unconnected data

- Commercial citation databases often lack local language content
- Some disciplines (e.g. arts and humanities) focus on "non traditional" research outputs which are harder to find.
- Research and innovation data sources (and responsibilities) often disconnected
- Data standards often absent and have limited impact even where they exist - causing e.g. incorrect attributions.



These factors lead to the research community having less confidence in decisions and less trust in decision makers

## Scopus data evolution in ~20 years







## Opportunity

We are supporting the research community by addressing these drivers using National Research Evaluation Platforms

A tried and tested approach

## What is a National Research Evaluation Platform? A platform that provides a knowledge network to support high value decisions



The knowledge network delivers an integrated view of relevant research data, ensuring client high-value decisions are based on an inclusive, true and impartial picture of their nation's research ecosystem.

## A modular National Evaluation Big Data Platform



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## Case study 1: The Cabinet Office (CAO), Japan



Japanese Cabinet Office



## CAO's e-CSTI: An evidence based system to evaluate research in Japan

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Integration of J-Stage data has **significantly increased** the number of papers overall, profiles and citations to provide a **comprehensive overview** of the Japanese research landscape





Scopus profiles with J-STAGE document-authors
 J-STAGE-only profiles for J-STAGE document-authors

# Integration with J-Stage data has **significantly increased** the number of papers in many fields, especially in the **humanities and social sciences**



#### J-STAGEデータの追加による日本語論文を含めた書誌データの活用

- 書誌情報データベース(Scopus (Elsevier))にJ-STAGE(科学技術振興機構(JST))のデータを追加し、 分析対象を日本語論文にまで拡大
- J-STAGEの追加により、研究分野別では人文学・社会科学分野の論文数の捕捉率が大きく上昇

研究分野(科研費大区分)		論文数 Scopus のみ	論文数 Scopus +J-STAGE	増加率	[参考] 研究者数	
全分野		270,615	348,245	29%	79,535	
大区分A	人文学·社会科学	9,631	20,518	<b>113%</b>	15,223 (19%)	
大区分B	数物系科学	41,895	51,876	24%	6,653 (8%)	
大区分C	工学(機械、電気電子、土木等)	38,477	59,332	54%	5,949 (7%)	
大区分D	工学(材料、ナノ、応用物理等)	32,812	40,368	23%	3,774 (5%)	
大区分E	化学	26,862	29,402	9%	3,595 (5%)	
大区分F	農学	17,999	24,163	34%	4,182 (5%)	
大区分G	生物学	25,209	28,832	14%	5,757 (7%)	
大区分H	薬学	18,008	20,368	13%	3,213 (4%)	
大区分I	医·歯学	79,383	95,437	20%	22,569 (28%)	
大区分J	情報学	23,572	28,837	22%	3,236 (4%)	
大区分K	環境学	6,134	8,517	39%	982 (1%)	

#### <u>国立大学の論文数(2018-2020年)</u>

※論文数の数値は国立大学86大学の論文数(整数カウント)の合計であり、大学間の共著論文は複数回カウントされている。
※研究者数は2018-2020のいずれかの年度に予算執行があった国立大学86大学の研究者数である。
※A~Kの科研費大区分の分野名については文部科学省のホームページを参照。

# From data to metrics to Insights: Paper output distribution by researchers' age per funding size per institution

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Universities with a higher percentage of researchers under 40 also tend to have a higher percentage of Top 10%



#### (Percentage of young researchers and publication output (by institution) (fractional count)

Data collected based on the "Guidelines for the Promotion of Data Standardization to Contribute to the Analysis of Research Power" (2018-2020) and article data (articles with publication years 2018 at 2020, integrated Scopus and J-Stage data purchased from Elsevier (as of December 2021)) Prepared by the Cabinet Office using data. The data are for researchers affiliated with national universities. Researchers are classified into nine categories according to the main source of their research funds, of which four categories, "more than 50% by distribution for Scientific Research, more than 50% by other competitive funds, and more than 50% by government funds," are included in the analysis. 24



# Case study 2: Egyptian National Scientific & Technical Information Network [ENSTINET]



Egyptian Knowledge Bank بنك المعرفة المصري

### 3 main use cases in Phase 1 of the project





### Overview of Research Journals in Egypt (EKB + Scopus)







Top 10 Authors by Citations (FWCI) (Output)

#### Alvami H.

Citations 23 • FWCI 5.02 • Output 1 Bin Mohamed El Zahrani A. Citations 15 • FWCI 0.94 • Output 1 Mansour Ahmed Mansour M. Citations 12 • FWCI 1.78 • Output 1

## Comprensive profiles for stronger informed decisions



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View all Topics

This author profile is generated by Scopus. Learn more

#### Helal, Eman G.E.

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 Science, Cairo, Egypt
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Documents 0 Preprints 28 Co-Authors 3 Topics 0 Awarded Grant

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Scopus profile Most contributed Topics 2017-2021 () Diabetes Mellitus; 4-Hydroxyisoleucine; Diosgenin

(Documents (12)) (Cited by (12))

@ E N S T I N E T Mhamed Aisati **EKB** Dashboard Logout 287,747 🗸 Overview Journals Authors Organisations  $\sim$ Publications: OEKB OEKB + Scopus Metric overview All years (2013-2022) Author × Number of authors Average number of Average FWCI per author Average output per author citations per author Helal E. View full profile in Scopus 287,747 2 23.4 1.15 EKB + Scopus profile Search organisations Search authors Search by Author ID/ORCID Metrics Q Q × Apply Reset All nter organisation name Enter author name 56582061200 116 49 4 Author ID ORCID Outputs Citations 🛃 View Chart Citations over time Author name Current affiliation Output - Citations FWCI Output in top 10% 35 Helal E. Al-Azhar University 0.24 49 116 0

### Research Organisations in Egypt Ranked By Number of Outputs (EKB + Scopus)



EKB Dashboard			@ENSTINET					Mhamed Aisati			
erview Journals Authors Org	ganisations	All subjects			121 🗸	All years (2013-2022)	~	Publications	: •екв Оек	(B + Scopus)	
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								10963	0	715	
Organisation name		Output	<ul> <li>Citation</li> </ul>	s 🔶 FWCI	Researchers	Output in top 1%	¢C	Researchers	# 1% of highly cited	World University Rankings	
Ain Shams University		<u>14,238</u>	9,105	0.09	19,089	0	4	Citations over	r time		
Al-Azhar University		<u>12,947</u>	6,088	0.07	17,850	0	1	896		1.2	
Agricultural Research Cente	r	<u>11,627</u>	13,670	0.12	12,124	1	:	Citations			
Cairo University		<u>9,624</u>	5,405	0.09	11,540	0	1	ō			
Mansoura University		<u>8,660</u>	4,936	0.07	10,963	0	1				
Zagazig University		<u>8,553</u>	5,633	0.1	11,934	0	1	2012 2013	2014 2015 2010 2011 25	218 2019 2020 2021 2022	
] <u>Helwan University</u>		<u>8,197</u>	3,435	0.09	9,083	0	1				
Benha University		<u>7,158</u>	5,311	0.11	9,181	0	1	Top 10 Authors	s by Citations (F	WCI Output	
Alexandria University		<u>6,859</u>	4,240	0.09	7,826	0	1	El-Ghamry A.	Cl 0.38 • Output 24		
Assiut University 1 2 3 4 5 Export table	13 >	<u>6,538</u>	4,844	0.11	7,781	1	1	Mosa A. Citations 105 • FWA Afify A. Citations 87 • FWC Hauka F. Citations 65 • FWC	Cl 0.45 • Output 16		
📩 Export table									·		

## Bringing the Interplay between global and local impact to life





Source: https://www.timeshighereducation.com/blog/maximum-impact-universities-must-play-their-strengths



## Thank you

Questions?

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