



**AALBORG UNIVERSITY**

# Supporting research strategy related to the UN's Sustainable Development Goals at Aalborg University

**Zsófia Büttel** – Research Management Consultant, Elsevier

**Poul Meier Melchiorson** – Special Consultant, Aalborg University Library

**Birte C. Hornemann** – Chief Data Strategist, Aalborg University



# Content

- Elsevier's Research Intelligence portfolio
- Background to Sustainable Development Goals and methodology to the associated Scopus/SciVal data
- Aalborg University & Sustainability
  - Benchmarking SDG activity
  - SDG 4 – Quality Education at Aalborg University



# Research Intelligence – informed decisions for various stakeholders in the research ecosystem



## Research institutions

– *Management, Administration, Libraries & Research Staff*

Providing a sharp, panoramic view of research activities on various levels. Mapping the relevant scientific landscape and developing strategic research collaborations.



## Funders

Help assessing the effectiveness of the research projects they fund, find reviewers and identify trends across key research areas.



## Policy makers

Helping policy makers assess research performance and collaboration trends, effectiveness of research policies and showcase research excellence.



## Industry

Providing an overview of the institution's R&D activities and tools for competitive landscaping.

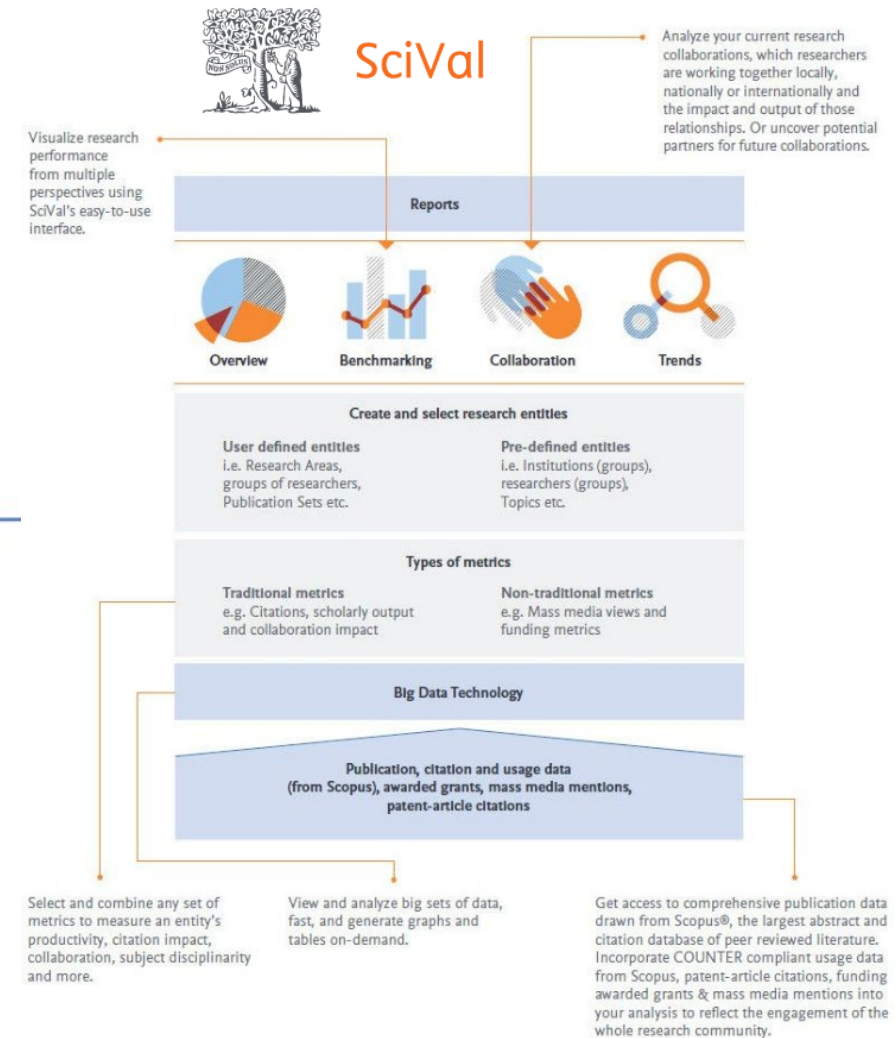
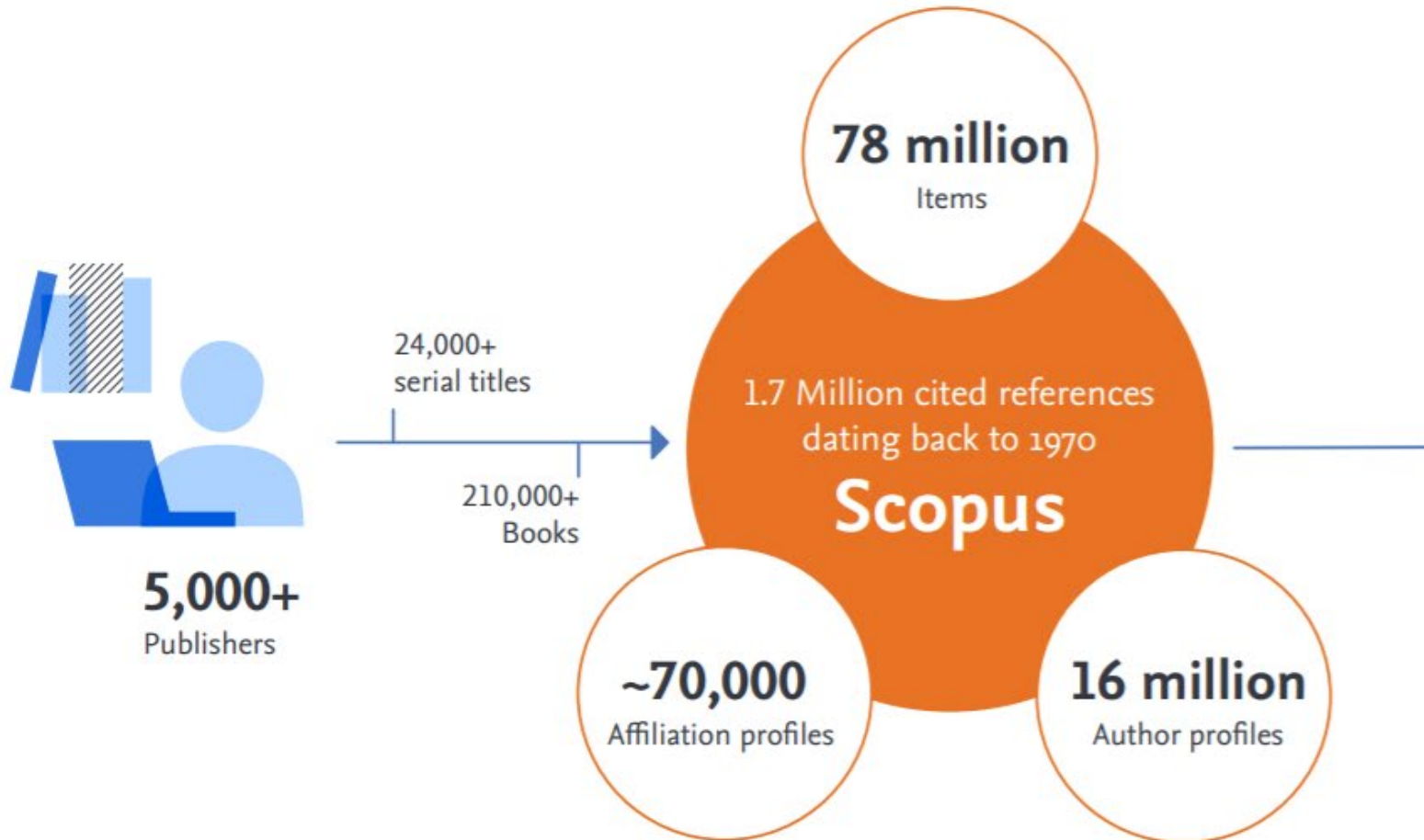


## Ranking organizations

Providing reliable data on an institution's research activities and tools to benchmark with meaning.



**Scopus** is a source-neutral abstract and citation database curated by independent subject matter experts.



**SciVal** is a web-based analytics tool offers quick, easy access to research performance data, collaboration and trends analysis.

Adopted in 2015 as part of the UN's 2030 Agenda for Sustainable Development, the 17 Sustainable Development Goals and their associated 169 targets are considered as areas of critical importance for humanity.

The SDGs challenge the global community to build a world where no one is left behind.



<https://sustainabledevelopment.un.org/sdgs>



# SDGs in Research

- Societal relevance of research
- Influence policymaking
- Grants related to SDGs
- Rankings



<https://eua.eu/issues/24:sustainable-development-goals.html>

## Sustainable Development Goals

EUA is dedicated to international cooperation. Likewise, universities in Europe and around the world are crucial to global sustainable development. Therefore, it is natural that the Association is an active part of the worldwide agenda for achieving the **United Nations' Sustainable Development Goals (SDGs)**.

NEWS

### Funding Science for Sustainability

With just over 10 years to go to achieve the 17 ambitious goals of the UN's 2030 Agenda, more than 80 science funders, representing international development aid agencies, private foundations and national research councils have called for greater collaboration among science funders and the research community to address the world's most pressing challenges, as exemplified by the Sustainable Development Goals (SDGs).

# LERU highlights role of institutions of higher education to advance the SDGs

08.10.2018

[Home](#) > [News](#) > LERU highlights role of institutions of higher education to advance the SDGs

The League of European Research Universities (LERU), a member institution of the [United Nations Academic Impact \(UNAI\)](#), created an ad hoc group on university development cooperation, in order to find ways to embed the Sustainable Development Goals (SDGs) in the policies on education, research and outreach of the institutions of higher education. During its first meeting recently held at KU Leuven, the group came to the conclusion that research-intensive universities without any doubt are well equipped to contribute to the implementation of the 2030 Agenda for Sustainable Development.

[Read the full article](#)

<https://www.leru.org/news/leru-highlights-role-of-institutions-of-higher-education-to-advance-the-sdgs>

THE WORLD UNIVERSITY RANKINGS

PROFESSIONAL JOBS EVENTS RANKINGS STUDENT ABOUT US

### Impact Rankings 2020

The Times Higher Education Impact Rankings are the only global performance tables that assess universities against the United Nations' Sustainable Development Goals (SDGs). We use carefully calibrated indicators to provide comprehensive and balanced comparisons across three broad areas: research, outreach and stewardship.

This second edition includes 766 universities from 85 countries.

Read more...

EXPLORE IMPACT RANKINGS FOR INDIVIDUAL SDGS

OVERALL RANKING	1 NO POVERTY	2 ZERO HUNGER	3 GOOD HEALTH AND WELL-BEING	4 QUALITY EDUCATION	5 GENDER EQUALITY	6 CLEAN WATER AND SANITATION	7 AFFORDABLE AND CLEAN ENERGY	8 DECENT WORK AND ECONOMIC GROWTH
9 INDUSTRY INNOVATIONS AND INFRASTRUCTURE	10 REDUCED INEQUALITIES	11 SUSTAINABLE CITIES AND COMMUNITIES	12 RESPONSIBLE CONSUMPTION AND PRODUCTION	13 CLIMATE ACTION	14 LIFE BELOW WATER	15 LIFE ON LAND	16 PEACE, JUSTICE AND STRONG INSTITUTIONS	17 PARTNERSHIPS FOR THE GOALS



Figure 1. From Challenges to Missions Image: RTD - A.1 based on Mazzucato (2017)

[https://ec.europa.eu/info/sites/info/files/mazzucato\\_report\\_2018.pdf](https://ec.europa.eu/info/sites/info/files/mazzucato_report_2018.pdf)

# SDG mapping - transparency

- Scopus queries related to 16 out of the 17 SDGs have been generated
- The results are available in SciVal as pre-defined Research Areas
- The queries and documentation supporting the search query methodology are **freely available in Mendeley Data**



The screenshot shows the Mendeley Data interface for a dataset. At the top, there is a navigation bar with links for Feed, Library, Suggest, Groups, Datasets (highlighted), Careers, Funding, Zsofia, and a user profile icon. Below this is a secondary navigation bar with links for Find Research Data, My Datasets, My Collections, New Dataset, and FAQ. The main title of the dataset is "Identifying research supporting the United Nations Sustainable Development Goals". Below the title, it states "Published: 22 Oct 2019 | Version 1 | DOI: 10.17632/87txkw7khs.1" and lists the contributors: Bamini Jayabalasingham, Roy Boverhof, Kevin Agnew, and Lisette Klein. The "Description of this data" section explains that Elsevier generated a set of Scopus queries related to each of the SDGs, and the dataset contains documentation for each query along with a collated list. The "Experiment data files" section lists four PDF files: SDG10\_Query\_documentation\_20191010\_v1.pdf (1004 KB), SDG11\_Query\_documentation\_20191010\_v1.pdf (1 MB), SDG12\_Query\_documentation\_20191010\_v1.pdf (1 MB), and SDG13\_Query\_documentation\_20191010\_v1.pdf (930 KB). Each file has a "Cite" button and a download icon. A "Download all files (17)" button is also present. On the right side, the "Latest version" section shows "Version 1" published on 2019-10-22 with the same DOI. A "Cite this dataset" box provides the citation: "Jayabalasingham, Bamini; Boverhof, Roy; Agnew, Kevin; Klein, Lisette (2019), 'Identifying research supporting the United Nations Sustainable Development Goals', Mendeley Data, v1" and the DOI link: <http://dx.doi.org/10.17632/87txkw7khs.1>







# SDGs in SciVal - <https://scival.com/sdg>



## UN Sustainable Development Goals



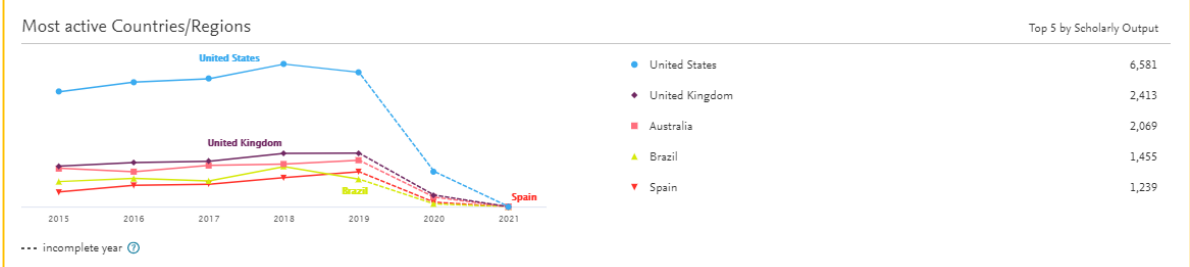
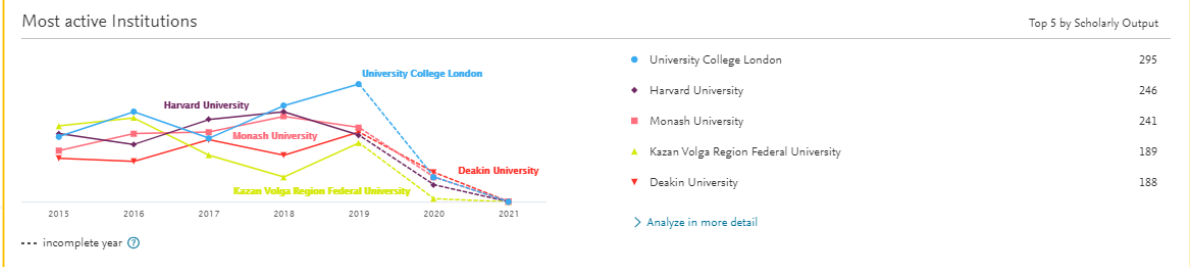
The United Nations Sustainable Development Goals (SDGs) challenge the global community to build a world where no one is left behind.

Adopted in 2015 as part of the 2030 agenda for sustainable development, the SDGs comprise of 17 goals and the associated 169 targets as areas considered of critical importance for humanity.

### Explore the most active contributors

In 2019, Elsevier's data science teams built search queries for 16 of the SDGs. They used a targeted and expert-informed approach to ensure the queries reflected the specific targets and indicators of each SDG. These search queries – which are free to download from [Mendeley Data](#) – have been loaded into SciVal and can help researchers and institutions track and demonstrate progress towards the targets of the SDGs. Why not take a look!

Click on the SDGs below to see who's making a difference



# RELX SDG Resource Centre - crowdsourcing



Help identify research that advances sustainable development goals



Back to Home

- 1 NO POVERTY
- 2 ZERO HUNGER
- 3 GOOD HEALTH AND WELL-BEING
- 4 QUALITY EDUCATION
- 5 GENDER EQUALITY
- 6 CLEAN WATER AND SANITATION
- 7 AFFORDABLE AND CLEAN ENERGY

Advancing the 17 sustainable development goals (SDGs) is vital to the success of the United Nations' 2030 Agenda for Sustainable Development. Research and funding institutions have a vital supportive role in this historic task. Here, individual researchers like you can also play a part by helping to identify publications relevant to each SDG.

### Why it is important to identify relevant publications

This task will show which of the SDGs are supported by a strong body of research and ensure this knowledge is available for reference. It will also highlight any gaps in the knowledge base, helping inform decisions about future lines of investigation.

### How you can help

Help us qualify relevance based on a given publication's relationship to the SDG indicators, which were developed by the Inter-Agency and Expert Group on SDG Indicators (IAEG-SDGs) as a way of showing progress towards a target. Here's how:

1. Select an SDG from the menu to the left.
2. Click *Match to indicators* for any publication of interest in the list. You will see information about the publication and the list of indicators relevant to the SDG.
3. Select the indicators that you believe apply to this publication or click *Not applicable* at the bottom of the page.
4. Click *Submit feedback* and return to the SDG page.
5. You may then select another publication to review.
6. At any time, you can refresh the SDG page to see a different set of publications.

The data we collect will be made publicly available to support efforts to generate publication sets that are representative of the SDGs. Further details about the data that are collected will be posted here as it becomes available.

### How the publications were selected

Elsevier's data science teams worked with experts to create a *Scopus* search query for each SDG. Full details of the methodology and results for each SDG search query are [freely available on Mendeley](#) and the research publications retrieved by these queries can be analyzed in [SciVal](#).

- 1 NO POVERTY
- 2 ZERO HUNGER
- 3 GOOD HEALTH AND WELL-BEING
- 4 QUALITY EDUCATION
- 5 GENDER EQUALITY
- 6 CLEAN WATER AND SANITATION
- 7 AFFORDABLE AND CLEAN ENERGY
- 8 DECENT WORK AND ECONOMIC GROWTH

Selected publications			
Morris K. (2015). <b>Legally speaking: What hoteliers need to know about child labor laws.</b> <i>Hotel Management</i>	0 citations	<a href="#">Match to indicators</a>	
Fiszbein A., Kanbur R., Yemtsov R. (2014). <b>Social protection and poverty reduction: Global patterns and some targets.</b> <i>World Development</i>	35 citations	<a href="#">Match to indicators</a>	
Druzica K. (2015). <b>Social protection policymaking in Nepal.</b> <i>Journal of Social Research and Policy</i>	3 citations	<a href="#">Match to indicators</a>	
Moonga F., Green S. (2016). <b>Risks and vulnerabilities of children in Zambia: Mooting responsive social protection interventions.</b> <i>Social Work (South Africa)</i>	0 citations	<a href="#">Match to indicators</a>	

To learn more about our plans for sharing the data we collect, please visit [identifying research that supports the SDGs](#).

Powered by Scopus

Scopus and an

### Legally speaking: What hoteliers need to know about child labor laws

— No abstract —

[Click to see more information about this publication...](#)

What to do next:

- Select as many indicators as you believe apply to this publication.
- To indicate that this publication does not support any targets or indicators related to this SDG, select the Not applicable option near the bottom of the form.
- Once you are happy with your selection, press the Submit feedback button at the bottom of the form.

Targets & Indicators

Target 1.1: By 2030, eradicate extreme poverty for all people everywhere, currently measured as people living on less than \$1.25 a day

Indicator 1.1.1: Proportion of population below the international poverty line, by sex, age, employment status and geographical location (urban/rural)

Supports target but not specifically the indicators listed above

Target 1.2: By 2030, reduce at least by half the proportion of men, women and children of all ages living in poverty in all its dimensions according to national definitions

Indicator 1.2.1: Proportion of population living below the national poverty line, by sex and age

Indicator 1.2.2: Proportion of men, women and children of all ages living in poverty in all its dimensions according to national definitions

Supports target but not specifically the indicators listed above



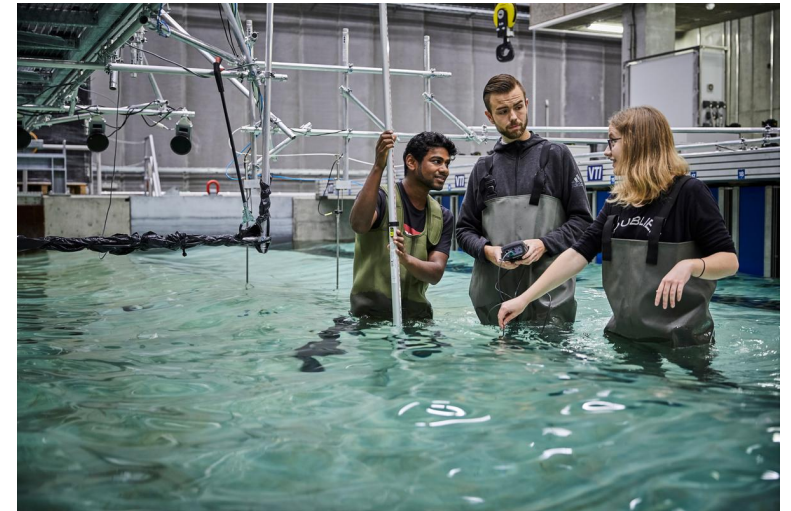
<https://sdgresources.relx.com/match-research-to-sdgs>

<https://www.elsevier.com/connect/7-ways-you-can-use-our-sdg-resource-centre>



# Aalborg University – Knowledge for the world

- Founded in 1974, the “Aalborg Model”
- Close partnership of the local business community, local institutions and a strong international research network
- AAU has five major faculties:
  - Technical Faculty of IT and Design
  - Faculty of Engineering and Science
  - Faculty of Humanities
  - Faculty of Social Sciences
  - Faculty of Medicine



“The perception of a university as an institution that merely conducts research and provides education is a narrow and unambitious view. As a university, it is also our job to help advance knowledge while solving the major challenges facing society.” Per Michael Johansen – Rector, AAU

# Sustainability at AAU



## SUSTAINABILITY IN RESEARCH AND EDUCATION



## SUSTAINABILITY IN COOPERATION WITH AAU



## SUSTAINABILITY IN THE DAILY OPERATIONS AT AAU



## Impact Rankings 2020

The *Times Higher Education* Impact Rankings are the only global performance tables that assess universities against the United Nations' Sustainable Development Goals (SDGs). We use carefully calibrated indicators to provide comprehensive and balanced comparisons across three broad areas: research, outreach and stewardship.

This second edition includes 768 universities from 85 countries.

[Read more...](#)

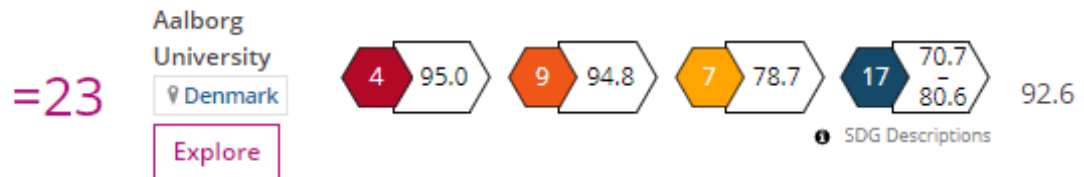


2020

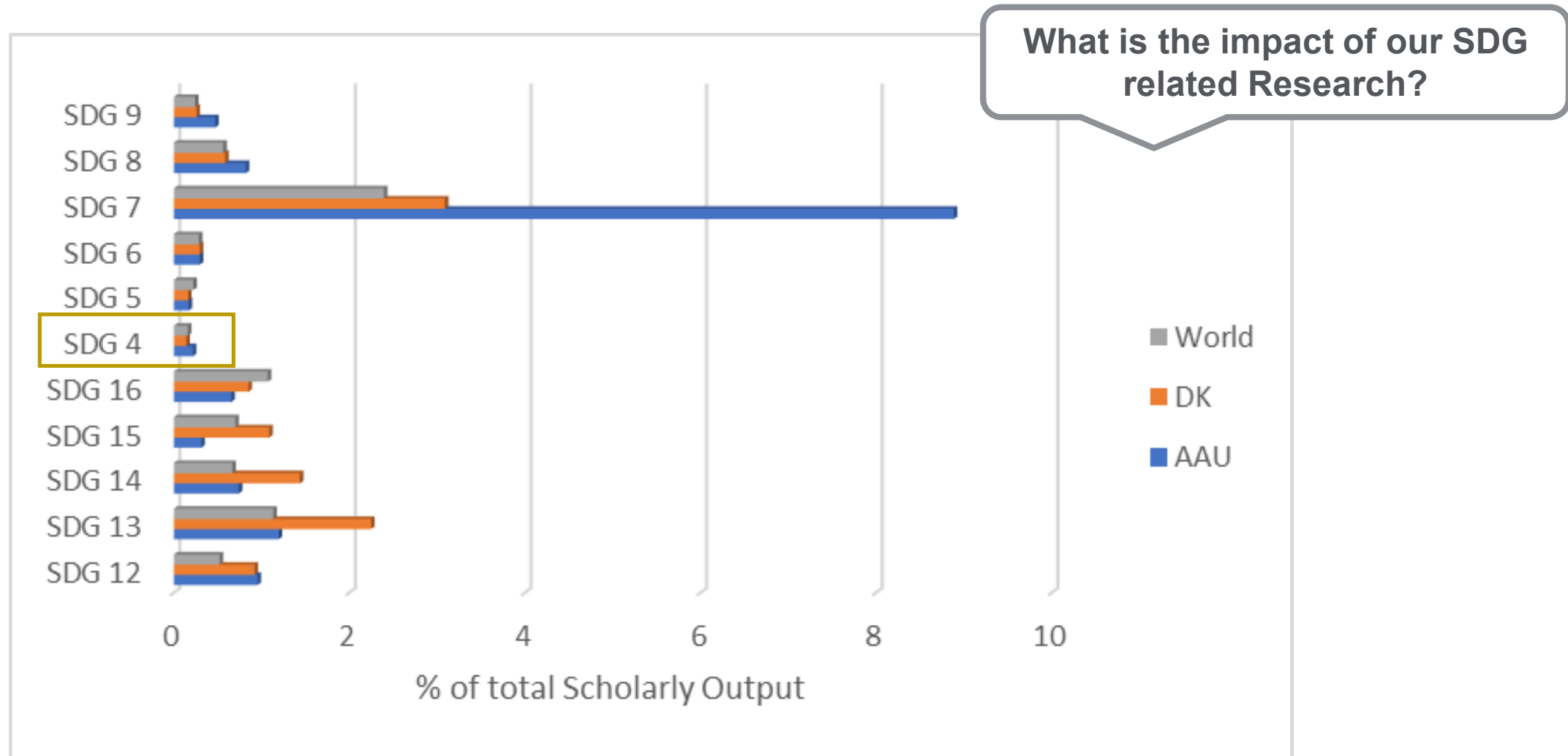
[How to get your uni ranked](#)

### EXPLORE IMPACT RANKINGS FOR INDIVIDUAL SDGS

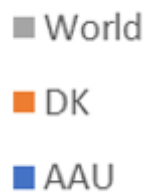
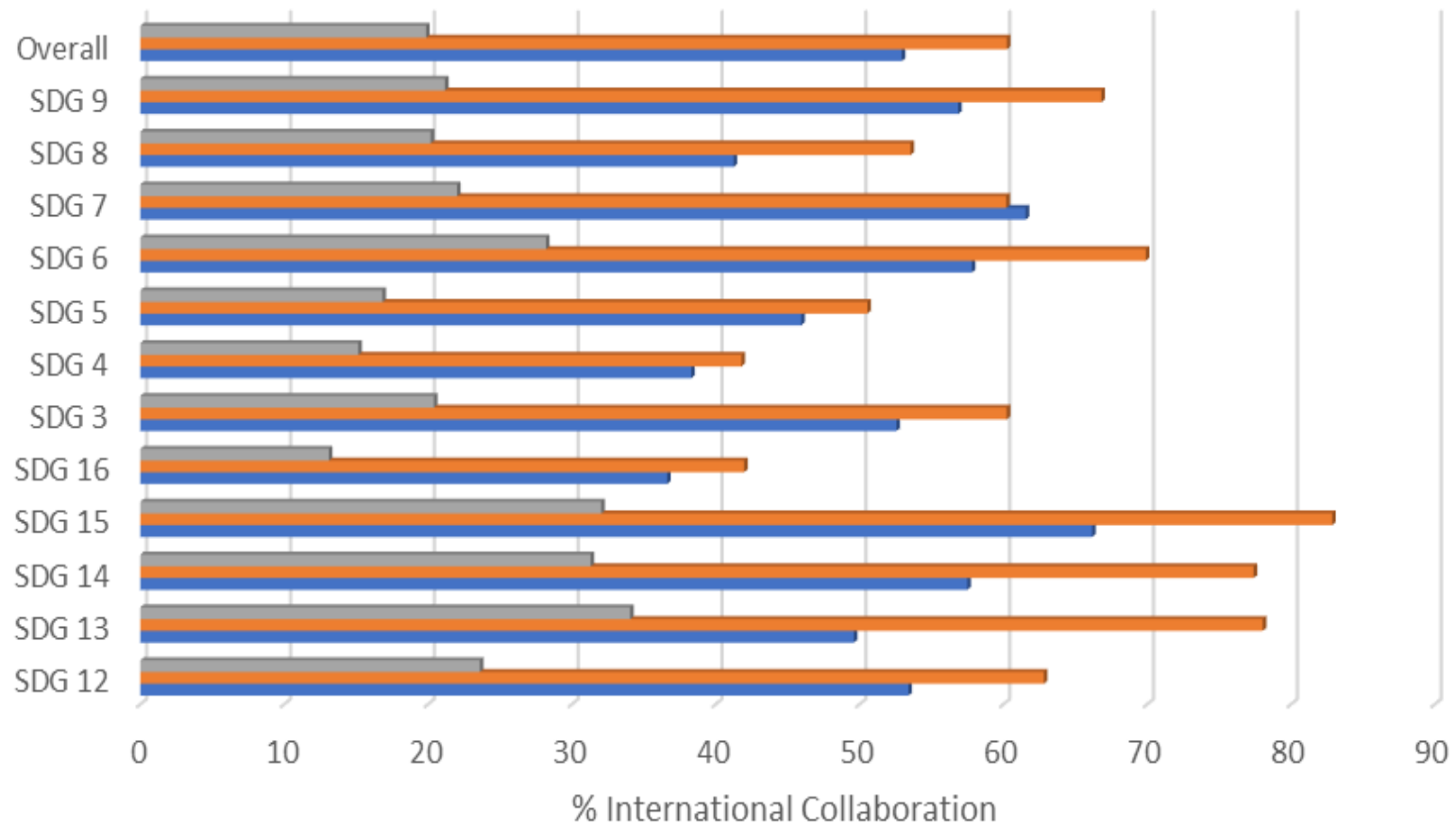
<b>OVERALL RANKING</b>	<b>1</b> NO POVERTY	<b>2</b> ZERO HUNGER	<b>3</b> GOOD HEALTH AND WELL-BEING	<b>4</b> QUALITY EDUCATION	<b>5</b> GENDER EQUALITY	<b>6</b> CLEAN WATER AND SANITATION	<b>7</b> AFFORDABLE AND CLEAN ENERGY	<b>8</b> DECENT WORK AND ECONOMIC GROWTH
<b>9</b> INDUSTRY INNOVATIONS AND INFRASTRUCTURE	<b>10</b> REDUCED INEQUALITIES	<b>11</b> SUSTAINABLE CITIES AND COMMUNITIES	<b>12</b> RESPONSIBLE CONSUMPTION AND PRODUCTION	<b>13</b> CLIMATE ACTION	<b>14</b> LIFE BELOW WATER	<b>15</b> LIFE ON LAND	<b>16</b> PEACE, JUSTICE AND STRONG INSTITUTIONS	<b>17</b> PARTNERSHIPS FOR THE GOALS

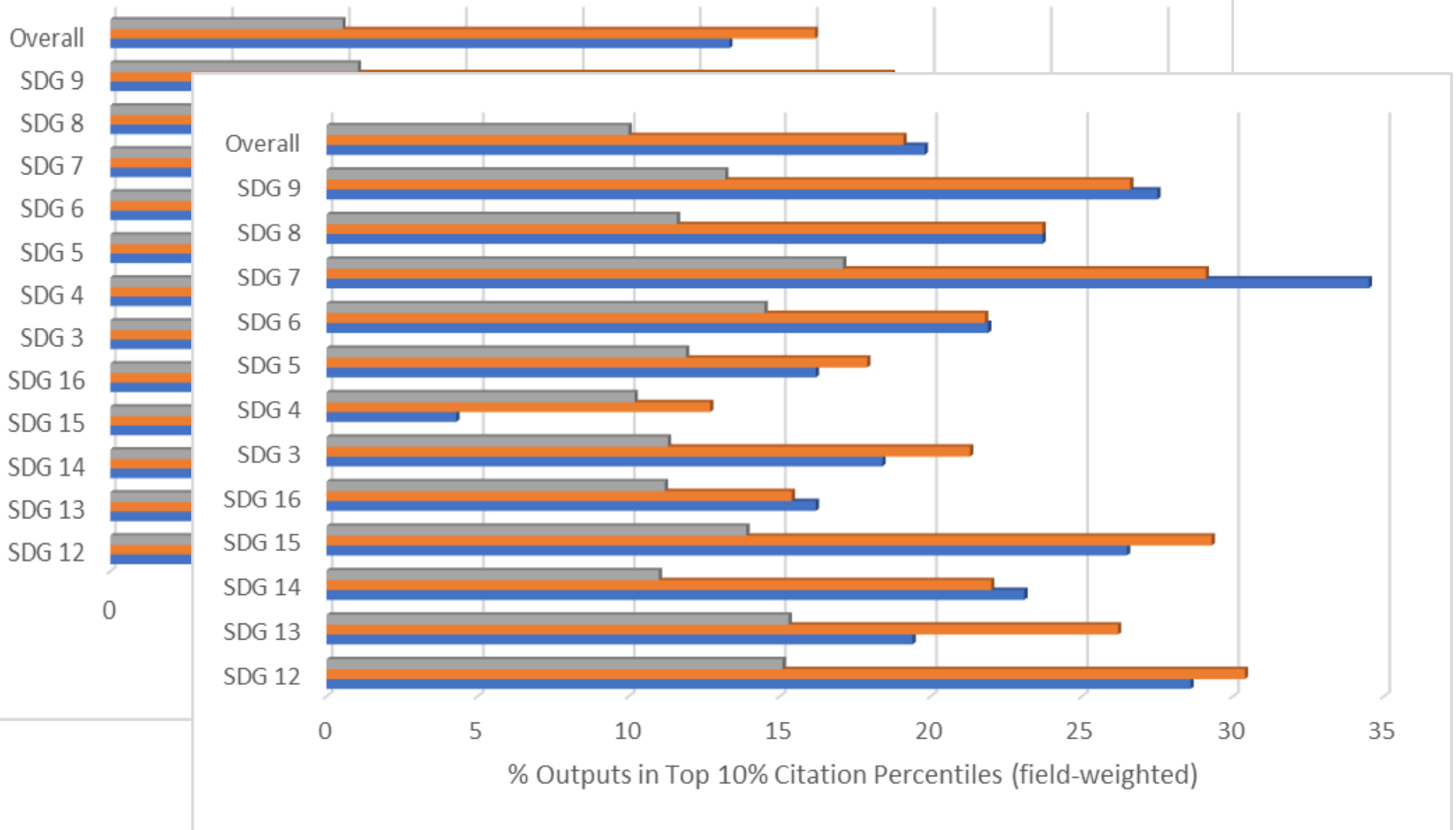


# AAU's contribution to relevant SDGs by Scholarly Output & Impact

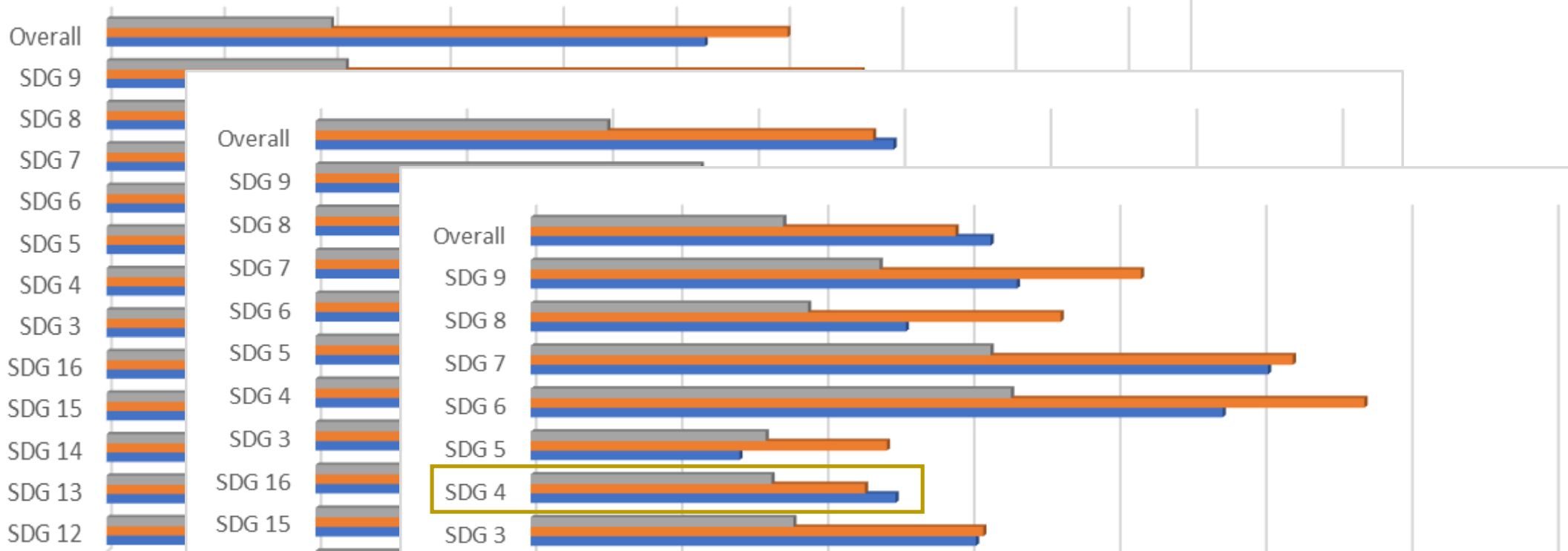


Not showing SDG 3, 23.8% of research at AAU falls under SDG 3 (30.9% for DK; 21.5% for the World)  
SDG 4 contribution World 0.16% DK 0.14% AAU 0.22%





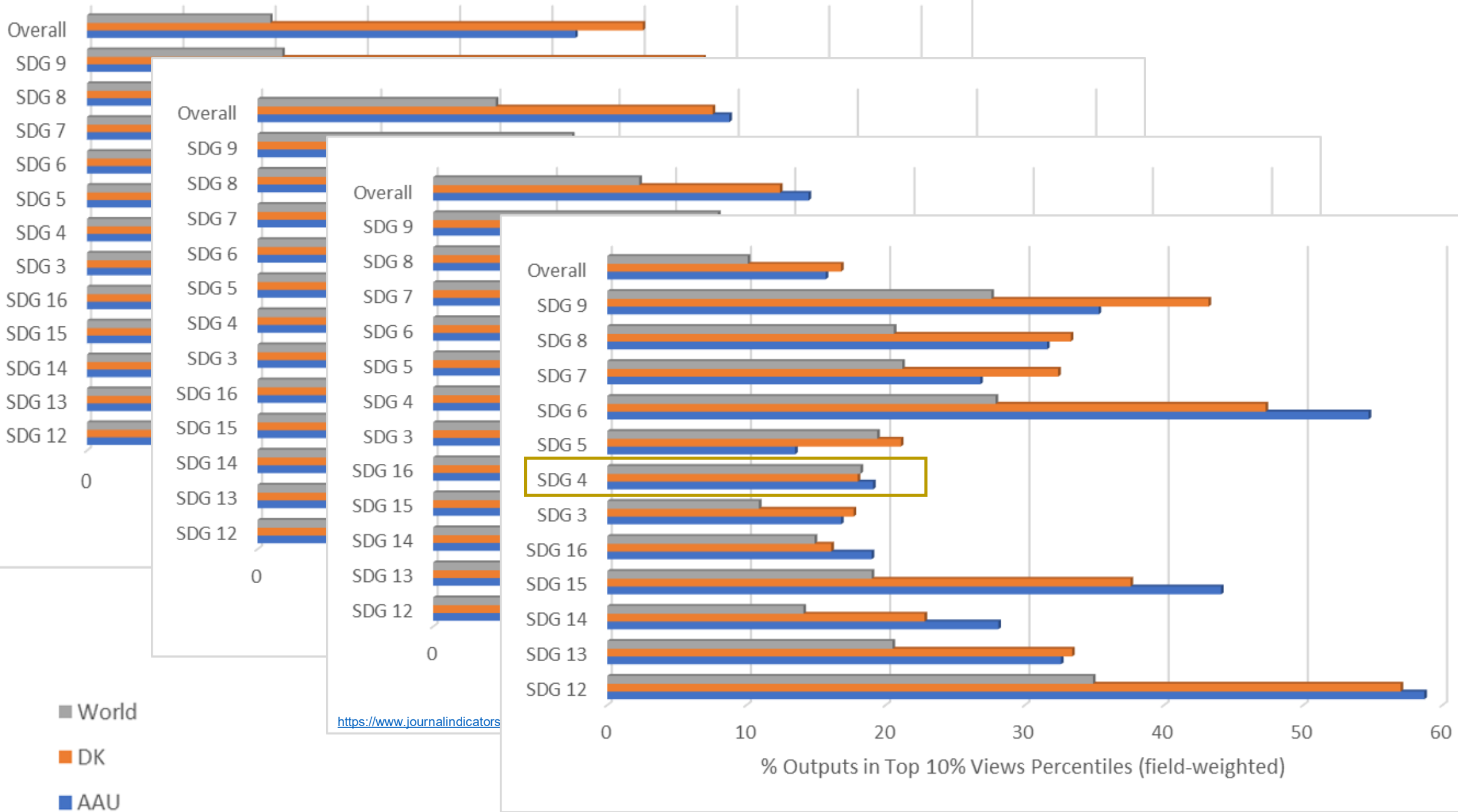
- World
- DK
- AAU



<https://www.journalindicators.com/methodology>

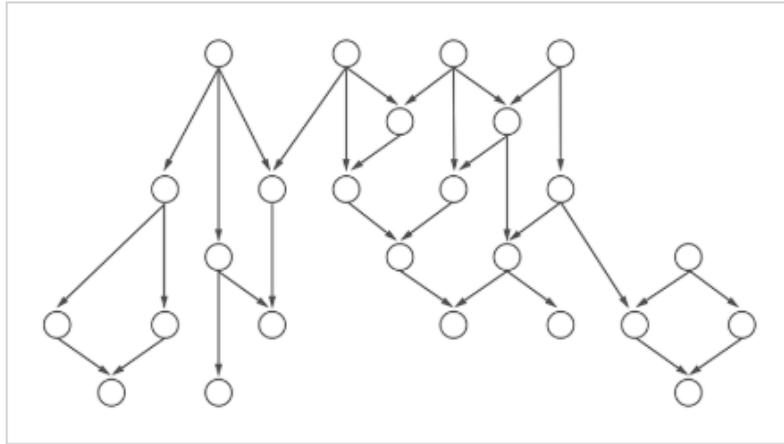
■ World  
 ■ DK  
 ■ AAU



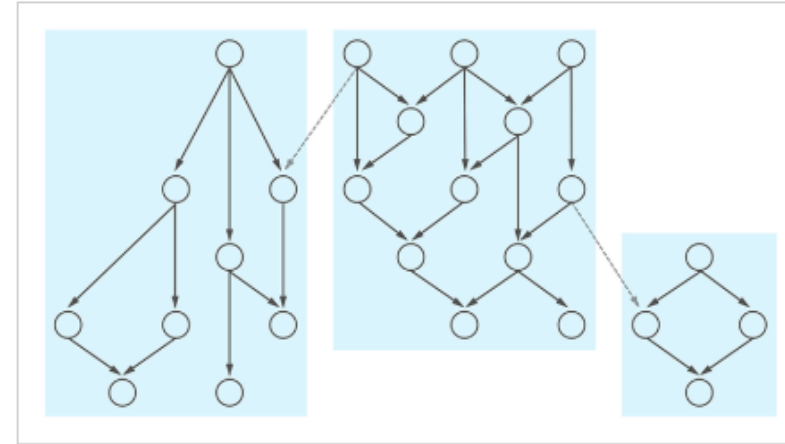


<https://www.journalindicators>

# Research Portfolio Analysis - Topic Prominence in Science



All Scopus publications are clustered into Topics using direct citation analysis (as opposed to co-citation analysis).



The borders between clusters (Topics) are identified by looking at where the citation links are weak. Where the links are weak, the clusters are split into separate Topics.

A Topic is a **collection of documents with a common intellectual interest** and can be large or small, new or old, growing or declining and most of them are **multidisciplinary**.

Over time, new Topics will surface, and as Topics are dynamic they will evolve. In addition, researchers themselves are mobile, and work in various different research areas, and thereby contribute to multiple Topics.

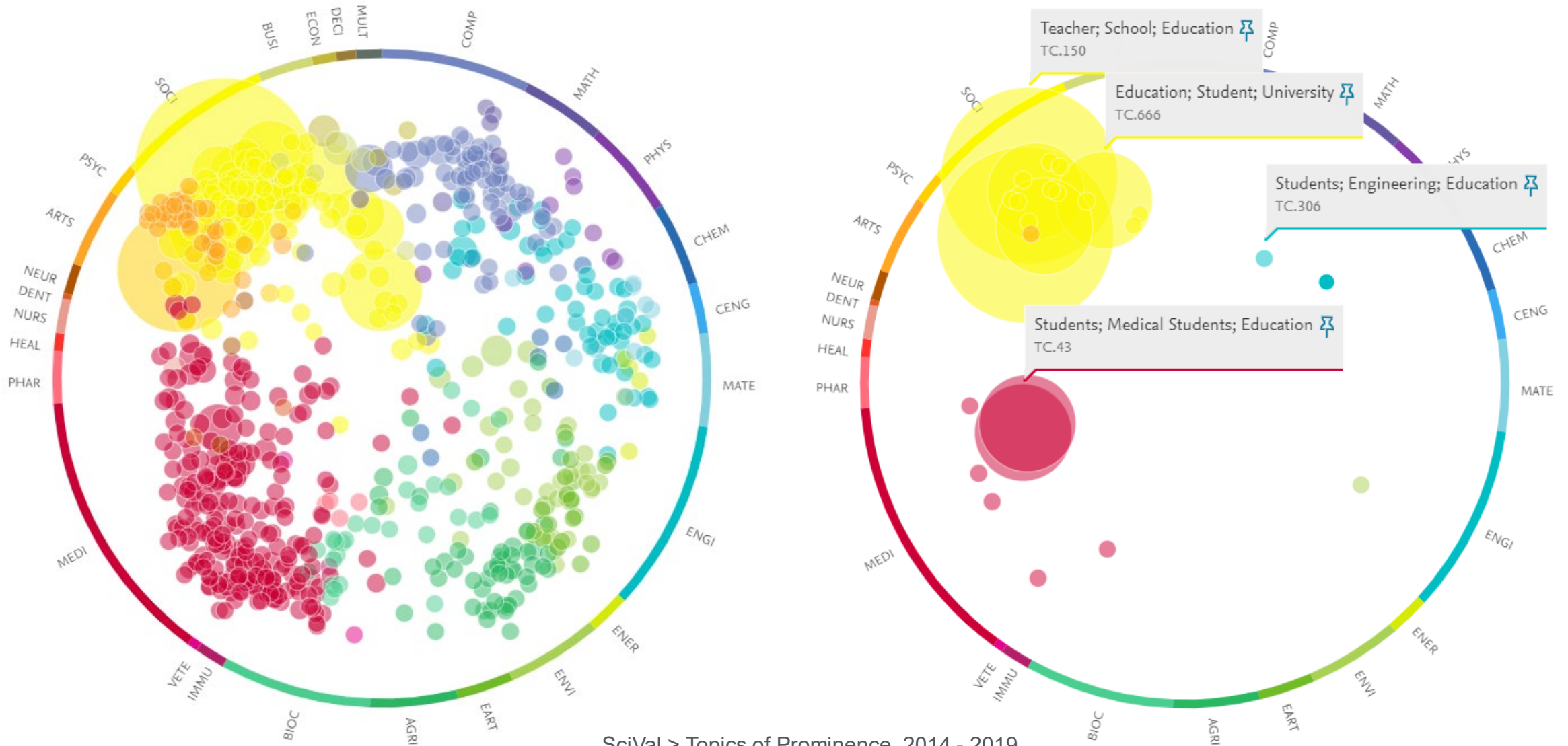


Klavans & Boyack, 2016 <https://doi.org/10.1002/asi.23734>

<https://www.elsevier.com/solutions/scival/releases/topic-prominence-in-science>

# SDG 4 & SDG 4 at AAU – Research Portfolio

How can we explore SDGs related fields  
globally and internally?  
Which Departments contribute to the SDGs?



## Developing students' collaborative skills in interdisciplinary learning environments (Article)

Gnaur, D.<sup>a</sup> ✉, Svidt, K.<sup>b</sup> ✉, Thygesen, M.K.<sup>b</sup> ✉

<sup>a</sup>Aalborg University, Department of Learning and Philosophy, Aalborg, Denmark

<sup>b</sup>Aalborg University, Department of Civil Engineering, Aalborg, Denmark

### Abstract

[View references \(17\)](#)

In the light of increasing demands on engineering curricula to integrate the development of professional skills in engineering education, this paper focuses on characteristics of effective educational environments and experiences for preparing students for future challenges by exploring ways in which professional learning is encouraged. The study is empirically grounded in a 3-day annual workshop that brings together students from all areas in the building sector including industry exponents to engage collaboratively in the processes of design and construction of a new building. The workshop is based on the principles of Building Information Modeling (BIM), which facilitate the coordination and collaboration between parties of a building design and construction team, and in this process, essential communication and interpersonal skills are mobilized and developed. Data about the students' learning outcome are collected through observation, interviews and online questionnaires. The present investigation points at the dual effect of experiential learning in problem-based, interdisciplinary environments with regard to both actualizing core knowledge, skills and competences through solving complex real life problems and having to employ and thereby develop professional skills in the process of solving these problems. © 2015 TEMPUS Publications.

# AAU Collaboration network within SDG 4 & potential collaborators

Who are we collaborating with within SDG related research? Who could we potentially collaborate with?

Co-authoring institutions AAU SDG 4 related research

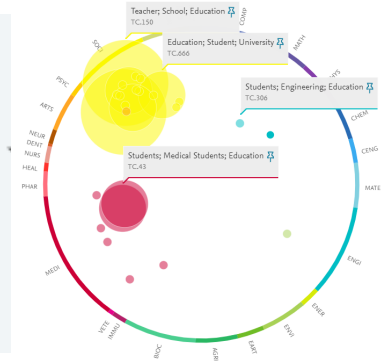


Institutions that cited AAU SDG 4 related research



# Students; Engineering; Education

2017 to 2020



Who could we potentially collaborate within SDG related research?

## Top authors within Europe

Author	Affiliation	Scholarly Output ↓	Views Count ↓
Williams, Bill	University of Lisbon	9	154
Contero, M.	Polytechnic University of Valencia	7	150
Bowe, Brian	Technological University Dublin	6	65
Chuchalin, Alexander I.	Tomsk Polytechnic University	6	96
Company, Pedro	Jaume I University	6	144
de Laet, Tinne	KU Leuven	6	48
Heywood, John	Trinity College Dublin	6	32

## Top authors within Africa

Author	Affiliation	Scholarly Output ↓	Views Count ↓
Kahn, Kathleen	University of the Witwatersrand	15	318
MacPhail, Catherine	University of Wollongong	13	249
Pettifor, Audrey E.	University of North Carolina	12	233
Gómez-Olivé, Francesc Xavier	University of the Witwatersrand	11	206
Asongu, Simplicé	Covenant University	10	205

### MacPhail, Catherine

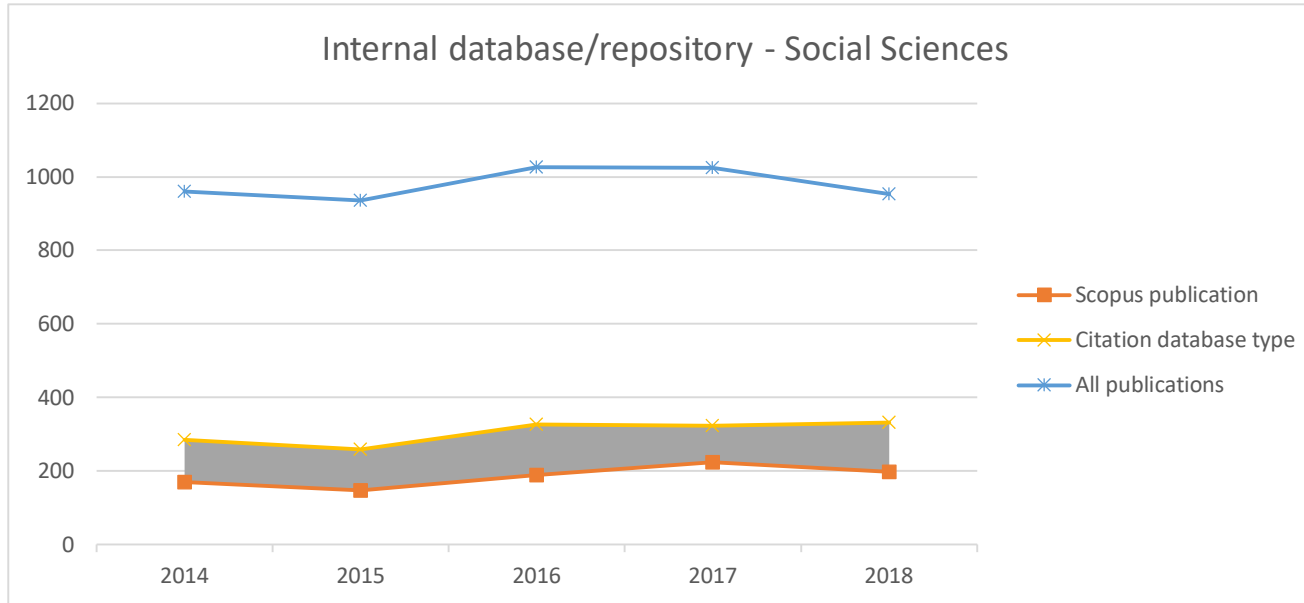
Author ID: 13605039000 ⓘ

Affiliation(s): ⓘ

- 2017-2020 University of Wollongong, Wollongong, Australia
- 2001-2020 South African Medical Research Council, Tygerberg, South Africa
- 1997-2020 University of Witwatersrand, Johannesburg, South Africa



# Challenges & outlook



Scopus coverage - Focus on SocSci, A&H

**12.464** Social Sciences Journals indexed

**59.7K** Individual book series volumes

**223.3K** Stand-alone books

**1.85M** Total book items

- Gap → locally published titles / local language & focus
- Expanding local language coverage
- While keeping an international focus (English abstract!)
- Curated peer-reviewed content selected by an independent board of experts

# Conclusions & considerations



- Research Intelligence data can help **mapping SDG related fields** and **specific contributions** of research institutes
- RI data can help connecting research activities to the **international and interdisciplinary research landscape**
- Quantitative analysis is not meant to replace, but to **support qualitative analysis** and research narrative



# Any questions?

Contact:

[z.buttel@elsevier.com](mailto:z.buttel@elsevier.com)

 <https://orcid.org/0000-0003-0138-7553>

