Research Intelligence

SciVal
Quick Reference Guide

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SciVal offers quick, easy access to the research performance of over 16,200 research institutions and 230 nations worldwide–so you can visualize research performance, benchmark relative to peers, develop collaborative partnerships and analyze research trends.

SciVal offers quick, easy access to the research performance of over 16,200 research institutions and 230 nations worldwide. A ready-to-use solution with unparalleled power and flexibility, SciVal enables you to navigate the world of research and devise an optimal plan to drive and analyze your performance.

Data source

SciVal is based on output and usage data from Scopus, the world's largest abstract and citation database for peer-reviewed publications.

SciVal uses Scopus data from 1996 to current date, which covers over 48 million records:

- 21,000 serials from 5,000 publishers. These include:
- 22,000+ peer-reviewed journals
- 360 trade publications
- 1,100 book series
- 5.5 million conference papers

Metrics

SciVal offers a broad spectrum of industry-accepted and easy-to-interpret metrics including Snowball Metrics which are global standard metrics defined and agreed by higher education institutions for institutional strategic decision making through benchmarking.

Metrics in SciVal help the institutions to measure an institution's or a country's productivity, citation impact, collaboration, subject disciplinarity and more.

For further information about the metrics available in SciVal and how to use them together please see the Research Metrics Guidebook

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Build your views on the world's research

Visualize research performance

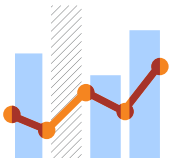
Access comprehensive research performance summaries of any desired research entities, identify their unique research strengths and multidisciplinary research areas.

- Retrieve at-a-glance, standardized reports instantly
- Access competency maps for all institutions and countries
- Topics allow you to create a complete portfolio overview in a matter of minutes

Develop collaborative partnerships

Identify and analyze existing and potential collaboration opportunities based on publication output and citation impact.

- Explore your institution's current and prospective partnerships on the map view
- Identify your top collaborative institutions and co-authorship by drilling into specific subject areas and self-defined research topics



Benchmark your progress

Compare the performance of any institutions, countries, and pre-defined groups, or create your own research areas and monitor progress over time.

- Perform in-depth analyses to meet your specific objectives by selecting any combination of 7 subject areas and metrics from a comprehensive set
- Identify your relative strengths and weaknesses to optimize your strategy

Analyze research trends

Analyze the research trends of any Research Area, Topic or Topic Cluster to create a complete portfolio overview in a matter of minutes with citation and usage data, to discover the top performers, rising stars and current developments in the field.

- View the overall performance of a Research Area, Topic or Topic Cluster, then dig deeper into the activity and impact of the institutions, countries, authors and journals involved and adjust your research strategy accordingly
- Usage information complements citation data to give a more complete picture of research performance

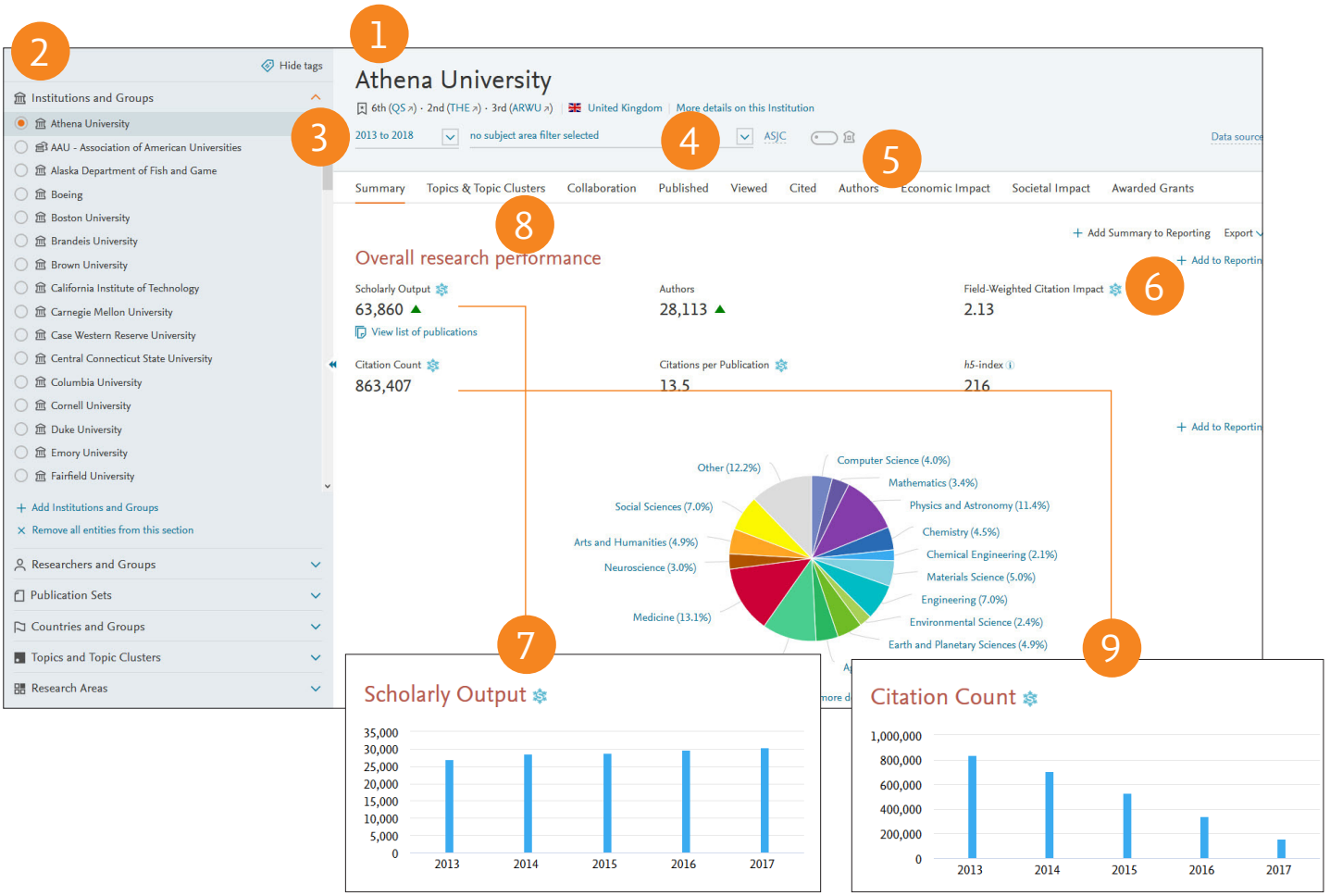
Create customized Reports

Create analyses from across the modules, combine a selection of analyses to create uniquely tailored Reports. Save your most utilized reports in SciVal to export and share whenever you need it.

- Edit the analyses, adding and removing entities, changing the year range and/or selecting more metrics and save.
- Share Reports with other SciVal users within your Institution.

Visualize research performance

Comprehensive summaries of any desired research entities such as institutions, countries, research groups and topics.



1. Overview tab provides you with at-a-glance research performance overviews of any selected institutions, countries, research topics and more.
2. Select entity panel allows you to select any research entities from:
   - Institutions and Groups
   - Researchers and Groups
   - Countries and Groups
   - Research Areas and Topics

   Add an institution or a country by typing the name in the search box, and SciVal will provide you with a list of pre-defined institutions, countries and groups to select from.
3. Select year range from:
   3 years*
   5 years*
   * + current year and beyond
4. Filter subject area using 27 top level and 334 lower level subject areas based on Scopus All Subject Journal Classification (ASJC). You can additionally filter by Fields of Research (FoR) , Field of Science and Technology (FOS), Research Excellence Framework (REF), QS, THE or KAKEN.
5. Filter by 'home institution' to include only the publications affiliated with the home institution

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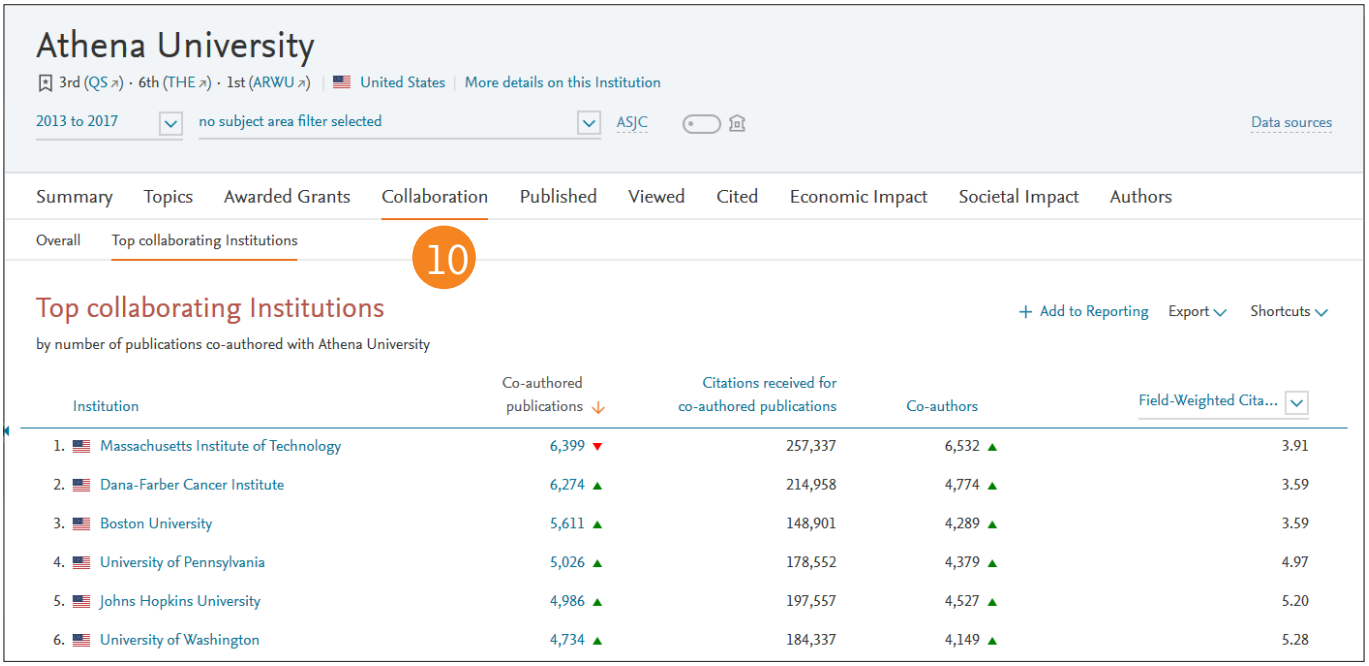
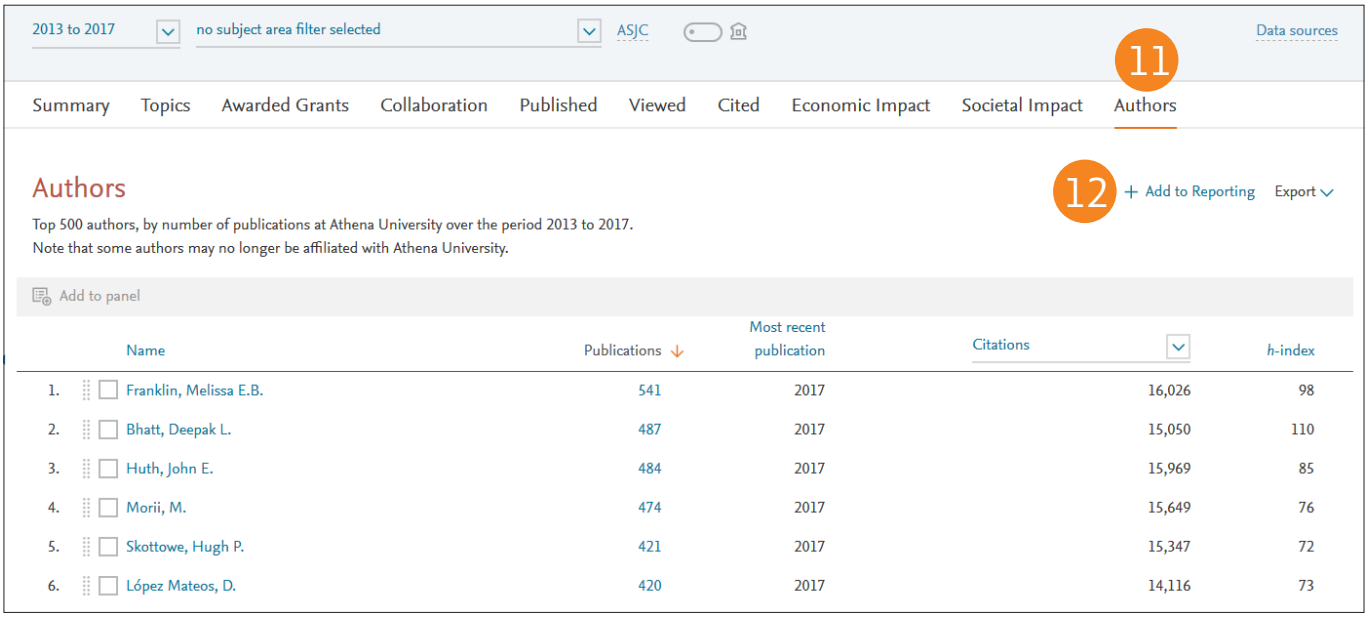


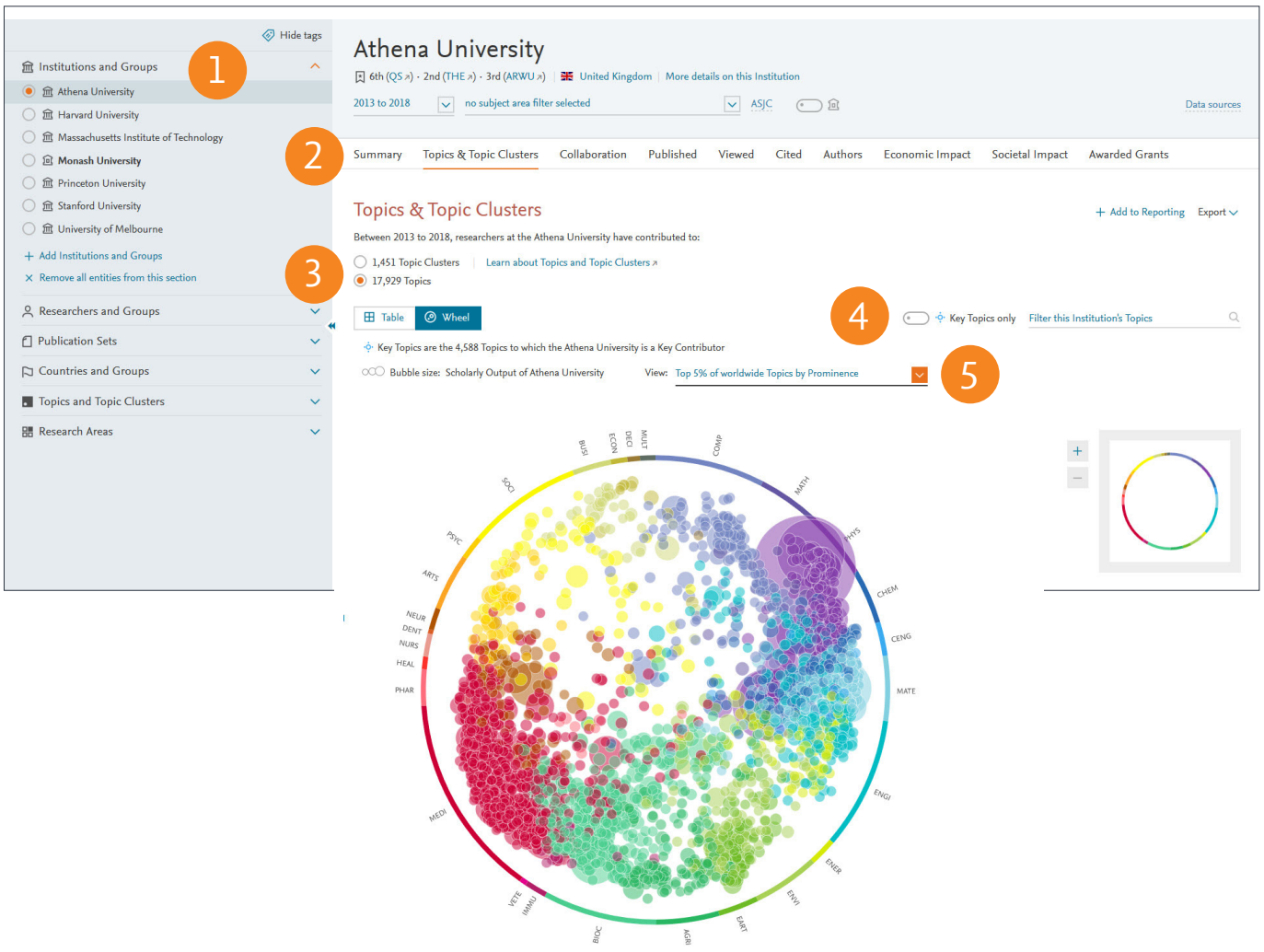


6. Metric themes' tabs provide comprehensive understanding of the selected research entity based on:
   - Summary
   - Topics & Topic Clusters (8)
   - Publications (7)
   - Citations (9)
   - Authors (for Institutions and Research Areas) (11)
   - Collaboration (10)
   - Institutions (for countries)
   - Economic Impact
   - Viewed
   - Societal Impact (for institutions)
   - Awarded Grants (for institutions and countries)

12. Add to Reporting to create a Report based on several Analyses

Conduct a complete portfolio analysis

See which Topics your institution is currently active in, and which Topics have high momentum, therefore more likely to be well-funded. Get insight into which researchers are active in specific Topics, which Topics peers and competitors are active in and the related Topics of which you should be aware.



1. Start in the Overview module and select an institution
2. Go to the Topics & Topics Clusters section to see which Topics an institution has contributed to
3. Using the toggle you can either analyze the individual Topics or the higher-level Topic Clusters
4. Use the Key Topics filter to see only the Topics where an institution is considered to be a key contributor.
5. Limit to view the top x% of worldwide Topics by Prominence

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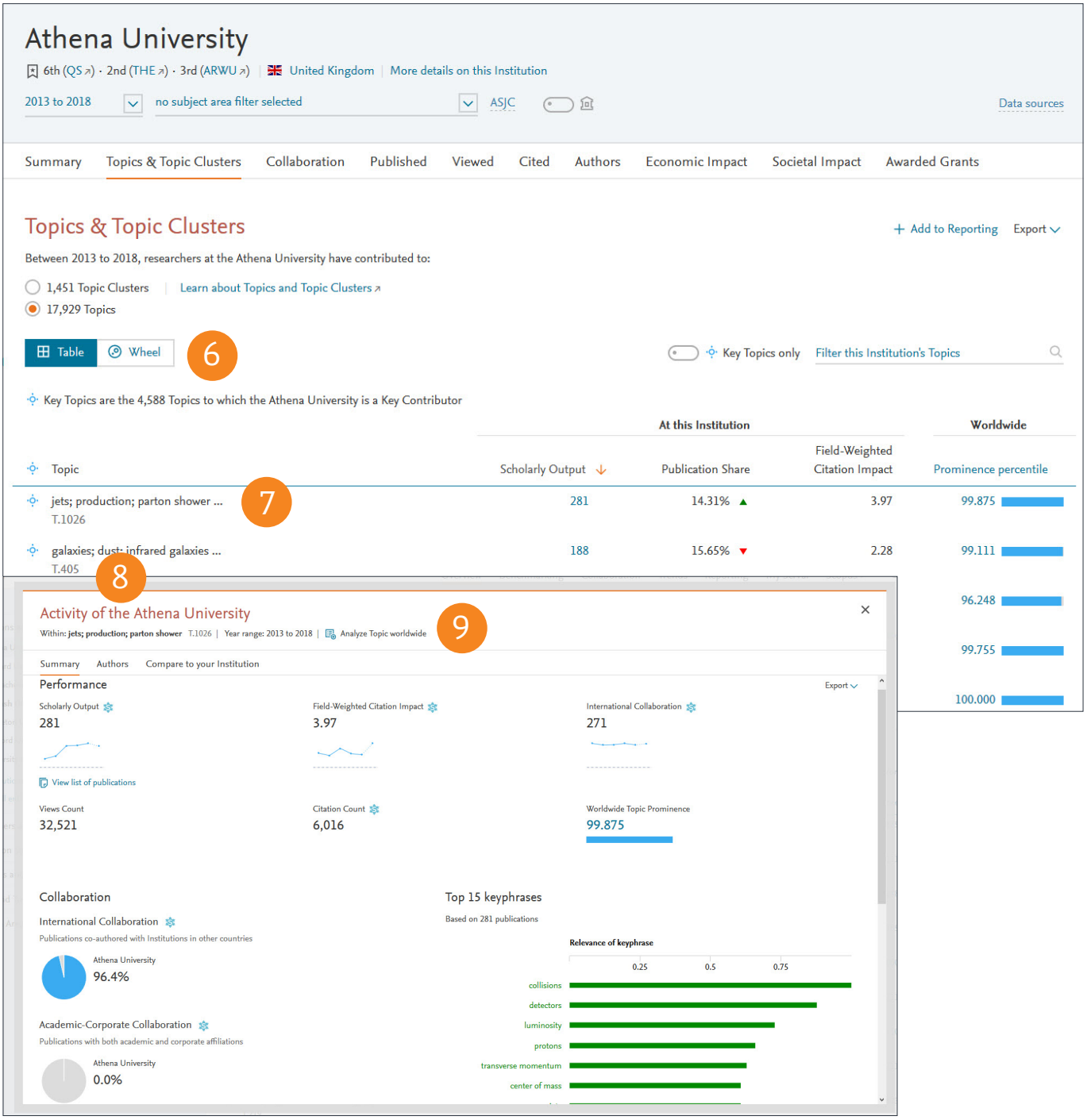
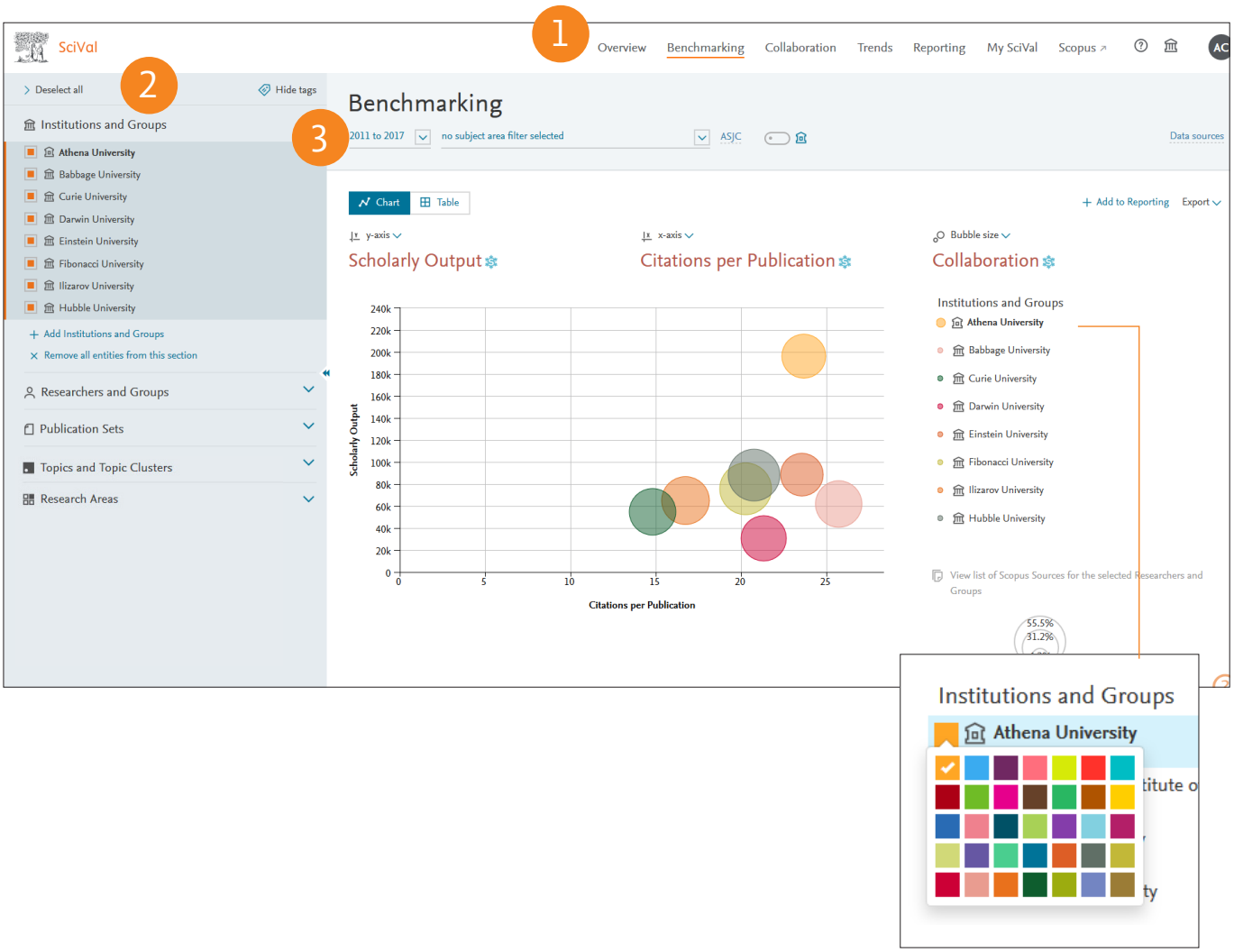


6. Select the Table view to get an overview of the Topics or Topic Clusters ranked by Scholarly Output
7. Select a Topic or Topic Cluster and analyze it in further detail for an institution
8. Get a quick overview of the Topic for an institution, the Field-Weight Citation Impact, the level of international collaboration and the underlying keyphrases sorted by relevance
9. Or analyze the Topic globally via the Trends module (see pg. 12)

Benchmark your progress

Assess your relative strengths and weaknesses by making custom selections of research groups, indicators and subject areas to compare and benchmark against.



1. Benchmarking tab provides advanced capabilities to perform in-depth analyses by combining flexible set of entities and metrics.
2. Using the entity panel, select any desired combination of research entities you wish to benchmark.

   Add institutions or countries by typing in the name, and SciVal will provide you with a list of pre-defined institutions and countries to select from.

   Add researchers, publication sets, research areas and groups by creating your own (see pages 8 and onwards).
3. Select year range between 1996 and the current year.

Select a country, region or "world" from Country and Groups to benchmark your relative performance, or create research areas using journals and subject classifications to benchmark against a research topic.

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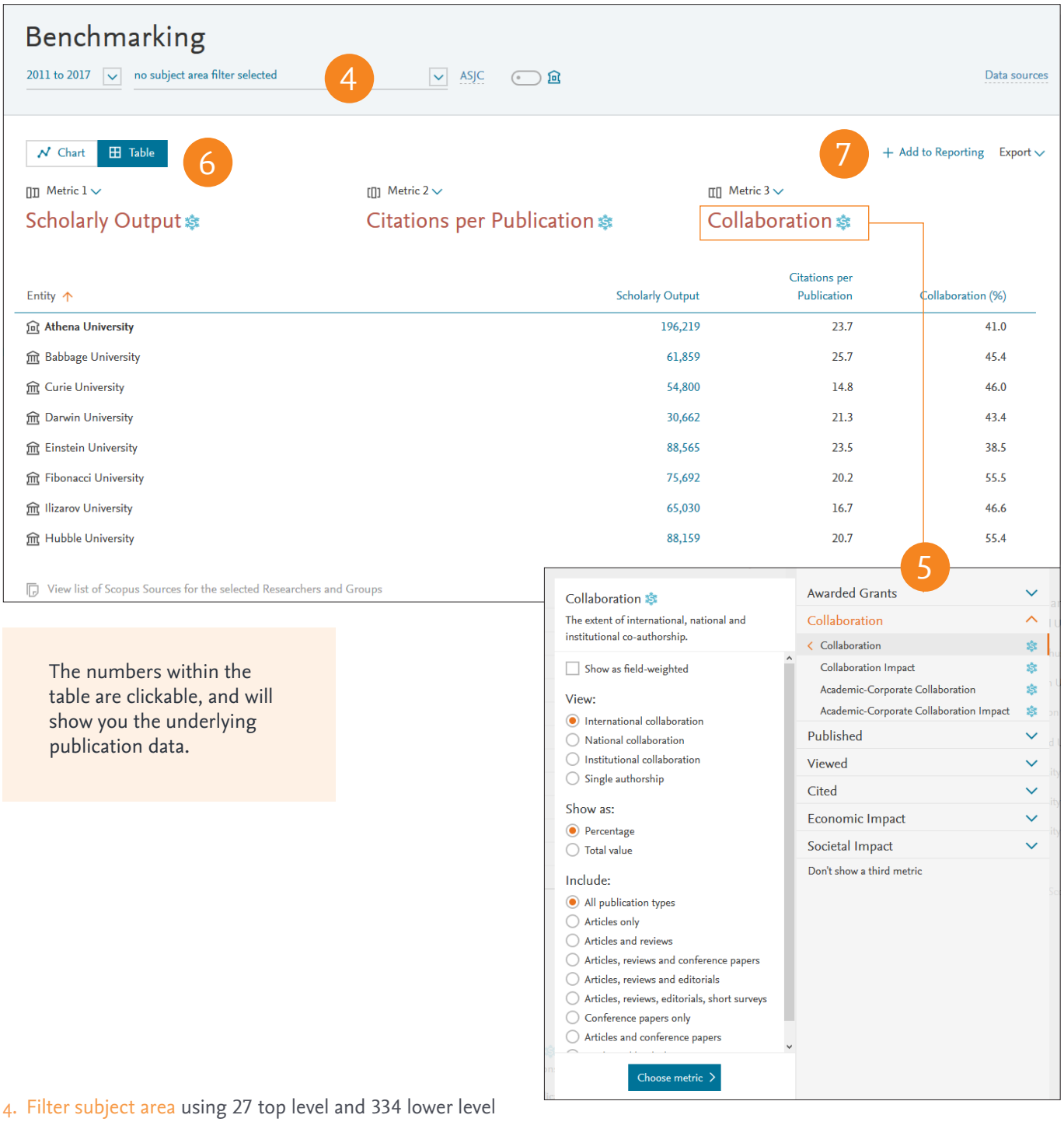
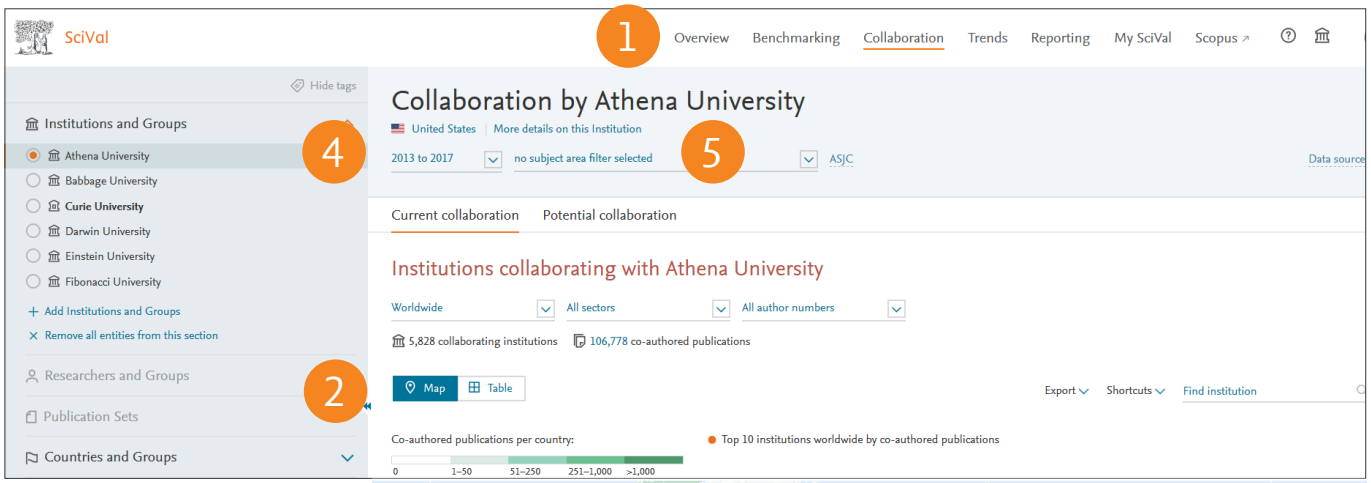


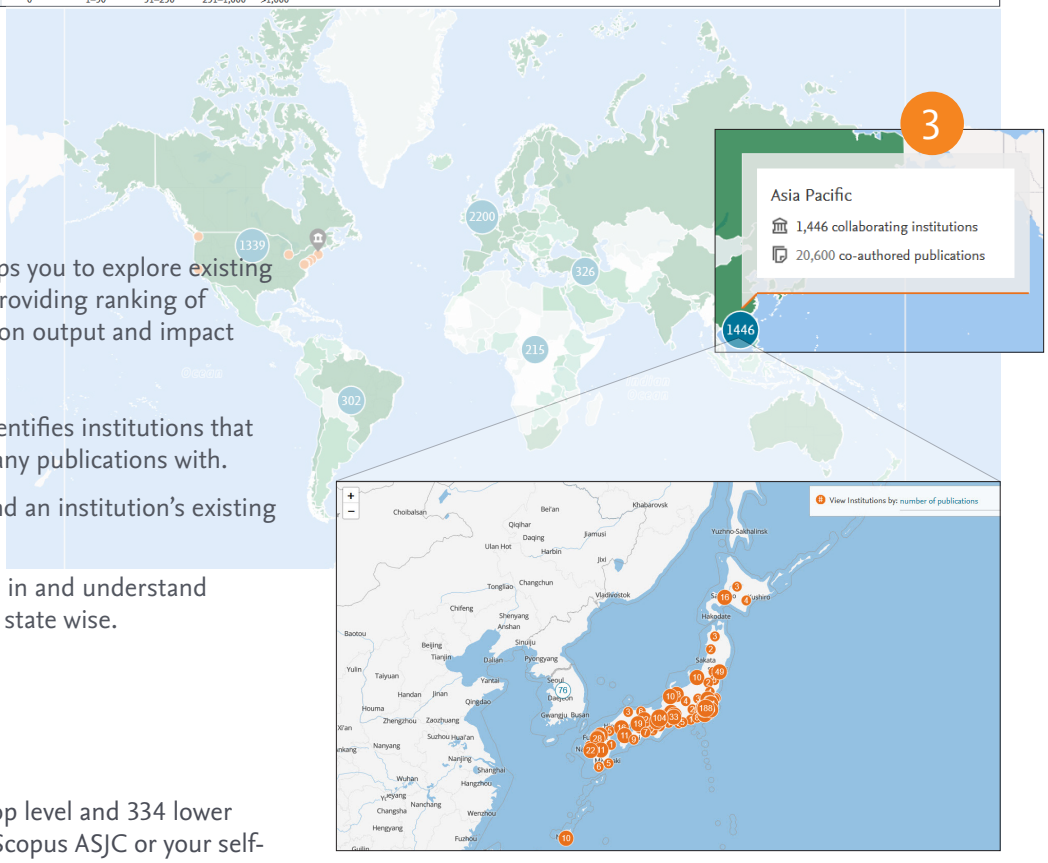
The numbers within the table are clickable, and will show you the underlying publication data.

4. Filter subject area using 27 top level and 334 lower level subject areas based on Scopus ASJC. You can additionally filter by Fields of Research (FoR) , Field of Science and Technology (FOS), Research Excellence Framework (REF), QS, THE or KAKEN.
5. Select any combination of metrics from the pull down list. You can add up to an extra 20 metrics which will be displayed in a table.
6. Switch view between chart and table.
7. Add to Reporting to create a Report based on several Analyses

Identify and evaluate existing and potential collaboration partners

Get access to a list of institutions that you collaborate or have the potential to collaborate with. Start with a worldwide view of your institution's collaboration landscape, and then zoom in to individual collaborating institutions and researchers anywhere in the world.





1. Current collaboration tab helps you to explore existing collaboration opportunities providing ranking of institutes and authors based on output and impact related metrics.

   Potential collaboration tab identifies institutions that you haven't yet co-authored any publications with.
2. Select map view to understand an institution's existing collaboration landscape.
3. Click on each region to zoom in and understand collaboration country wise or state wise.
4. Select year range from:
   3 years*
   5 years*
   * + current year and beyond
5. Filter subject area using 27 top level and 334 lower level subject areas based on Scopus ASJC or your self-defined Research Areas.

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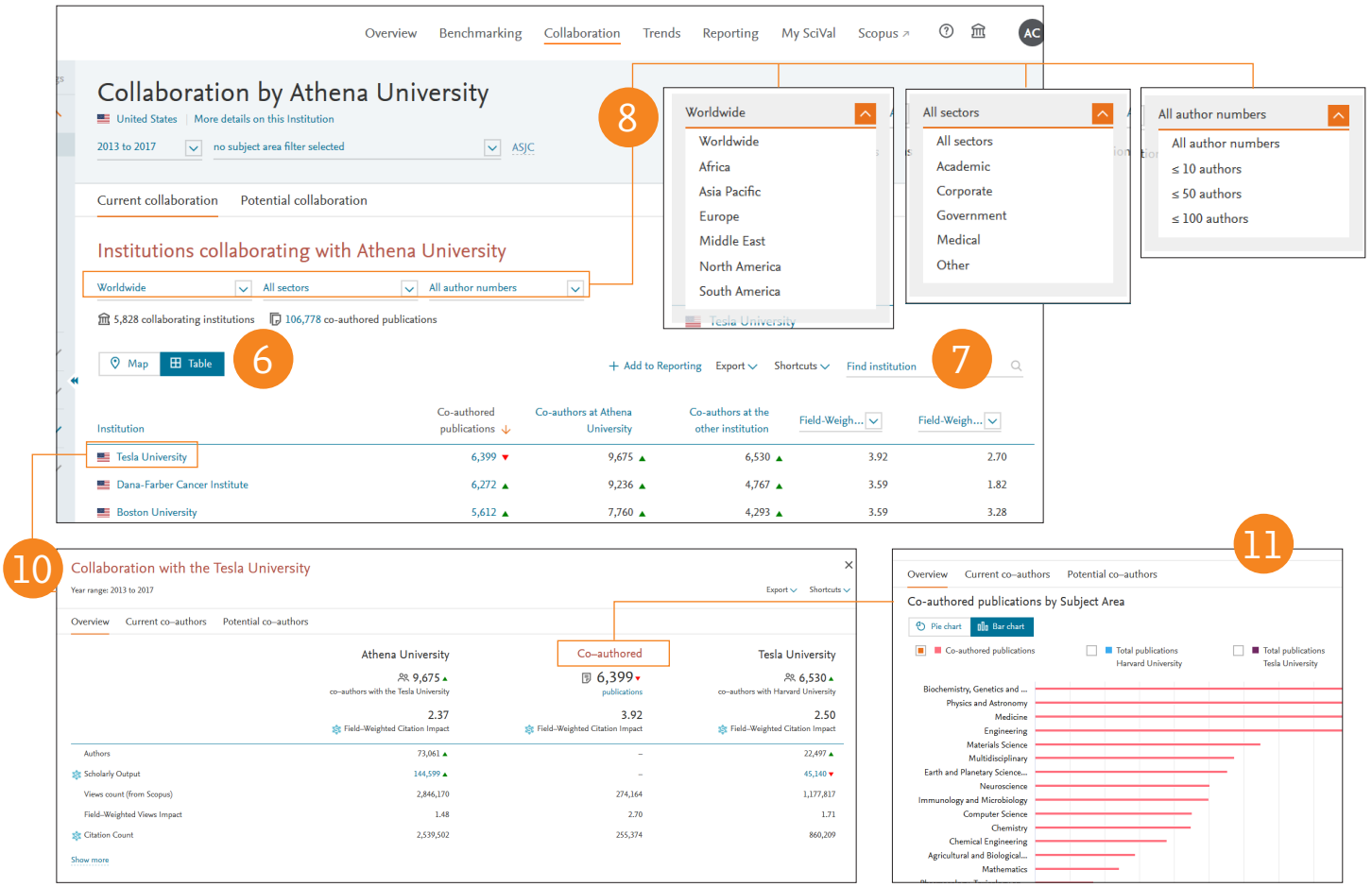

6. Select table view to access list of collaborating institutions.
7. Search institutions by name.
8. Limit collaborating institutions by region, country, number of authors and sector.
9. Sort collaborating institutions by impact using:
    - Citations
    - Citations per Publication
    - Field-Weighted Citation Impact
    - Awarded Grants
    - Views
    - Views per Publication
    - Field-Weighted View Impact
10. Select institutions to: Assess output and impact of co-authored publications relative to performance of the entire institution and view the subject area spread of co-authored publications
11. Identify collaborating authors from each institution and identify which authors collaborate with each other.

Evaluate your potential collaboration partners

Once you have identified potential institutions and researchers to collaborate with, you can:

- Glance through the Overview module to:
    - gain a comprehensive overview of selected institutions
    - specify top authors per subject field of your interest
    - explore the institution's Topics and Topic Clusters
- Compare candidate institutions using the Benchmarking module to:
    - assess unique strengths of selected institutions by combining different metrics
    - test scenarios by modeling teams with selected researchers
    - benchmark performance against potential competitors
- Review their collaboration partners using the Collaboration module to:
    - find out if anyone from your institution have co-author relationships
    - understand the top collaborators per discipline and how beneficial those collaborations are

Analyze Research Trends

Analyze the research trends of any Research Area with citation and usage data, to discover the top performers, rising stars and current developments in the field.

1. Trends tab provides the ability to perform advanced Topics centric analysis of any Research Area, Publication Set or Topic with usage and citation data.
2. Using the entity selection panel, select the Research Area, Publication Set or Topic you wish to analyze. Either choose one you have defined or select from the 334 pre-defined Research Areas based on the Scopus journal classifications (ASJC).
3. Select year range from:
   3 years*
   5 years*
   * + current year and beyond
4. Summary tab provides an at-a-glance view of your Research Area, Publication Set or Topic. Key metrics at the top of the page highlight the overall research performance. The word cloud gives a visual description of the developments within the field.
5. Entity tabs provide comprehensive understanding of the selected Research Area, Publication Set or Topic based on:
   - Institutions
   - Countries
   - Authors
   - Journals
   - Keyphrases
   - Scopus Source
   - Related Topics (for Topics)
   - Funding Bodies (for pre-defined Research Areas)
6. The Representative publications toggle allows you to filter on the top 10 publications which are strongly linked to a Topic
7. Scroll down the page to see the top Institutions, top Authors, top Countries and top Scopus Sources related to the Topic, Topic Cluster and Research Area
8. Institutions tab shows you the global dispersion of the top 100 Institutions via the map view
9. Keyphrases tab allows you to analyze the top 50 keyphrases relating to the Topic or Research Area in further detail

How are keyphrases calculated?

SciVal uses the Elsevier Fingerprint Engine to extract distinctive keyphrases within the Research Area, Publication Set, Topic or Topic Cluster..

The text mining is done through applying a variety of Natural Language Processing techniques to the titles and abstracts of the documents in the Research Area, Publication Set, Topic or Topic Cluster in order to identify important concepts.

Concepts are matched against a set of thesauri spanning all major disciplines. For each document the distinctive keyphrases are selected based on Inverse Document Frequency (IDF), by incorporating a factor that diminishes the weight of words that occur frequently in the document set, and increases the importance of words that occur rarely. The top 50 keyphrases with the highest word weight are then selected to populate the word cloud for your chosen Research Area, Publication Set, Topic or Topic Cluster.

Each keyphrase is then given a relevance between 0 and 1 with 1 given to the most frequently occurring keyphrase. Remaining keyphrases are given a value based on their relative frequency. The relevancy value dictates the size of the keyphrase in the word cloud.discipline and how beneficial those collaborations are.

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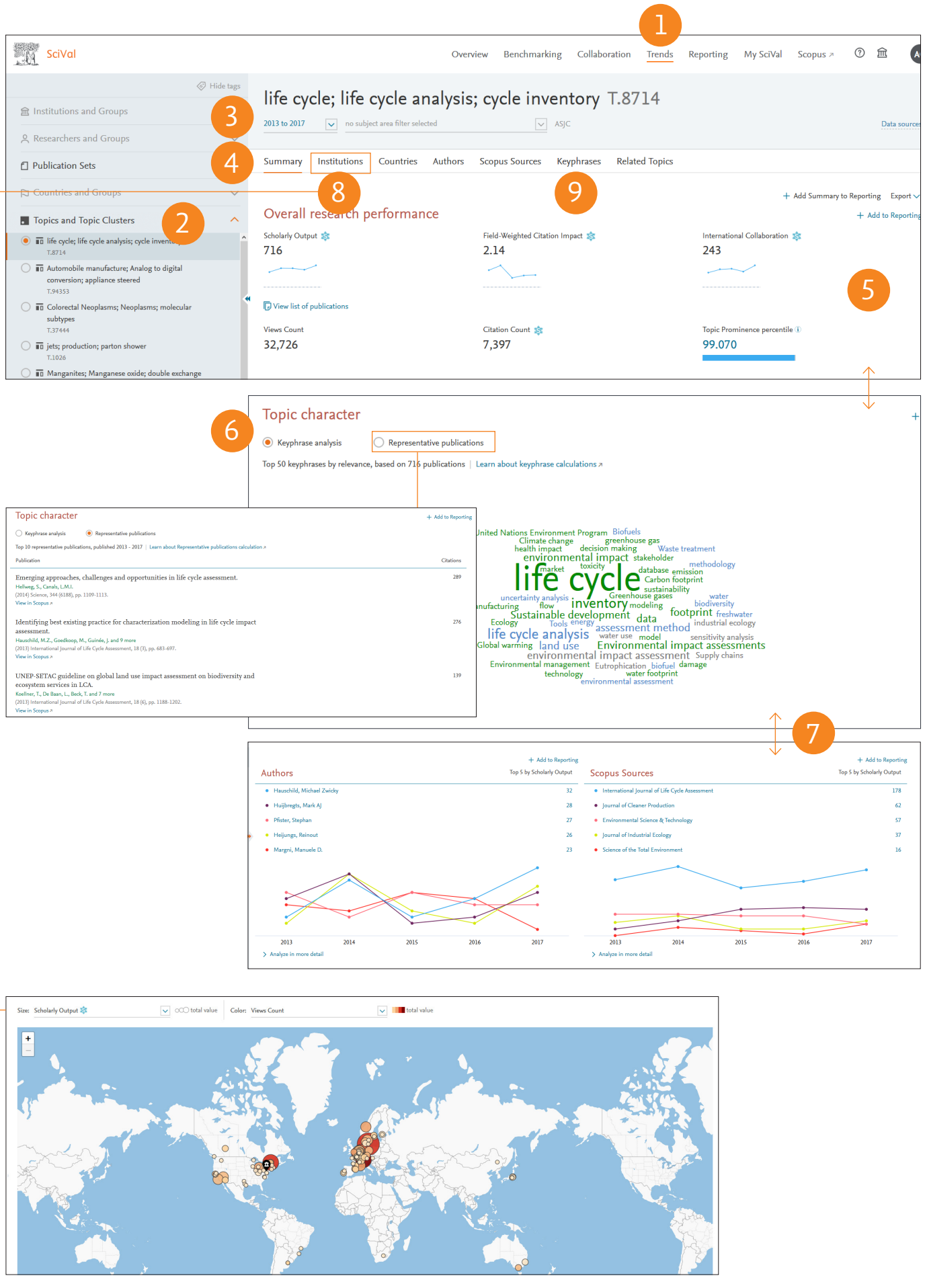
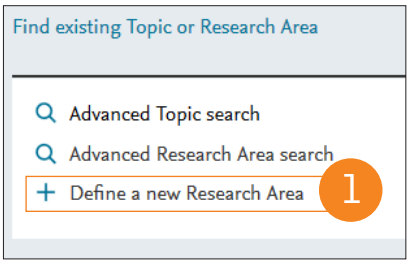

1
SciVal
Overview
Benchmarking
Collaboration
Trends
Reporting
My SciVal
Scopus
Hide tags
Institutions and Groups
Researchers and Groups
Publication Sets
Countries and Groups
Topics and Topic Clusters
3
4
2
life cycle; life cycle analysis; cycle inventory T.8714
2013 to 2017
no subject area filter selected
ASJC
Data sources
Summary
Institutions
Countries
Authors
Scopus Sources
Keyphrases
Related Topics
8
9
+ Add Summary to Reporting
Export
+ Add to Reporting
Overall research performance
Scholarly Output
716
Field-Weighted Citation Impact
2.14
International Collaboration
243
5
View list of publications
Views Count
32,726
Citation Count
7,397
Topic Prominence percentile
99.070
life cycle; life cycle analysis; cycle inventory T.8714
Automobile manufacture; Analog to digital conversion; appliance steered T.94353
Colorectal Neoplasms; Neoplasms; molecular subtypes T.37444
jets; production; parton shower T.1026
Manganites; Manganese oxide; double exchange
6
Topic character
Keyphrase analysis
Representative publications
Top 50 keyphrases by relevance, based on 716 publications
Learn about keyphrase calculations
Topic character
+ Add to Reporting
Keyphrase analysis
Representative publications
Top 10 representative publications, published 2013 - 2017
Learn about Representative publications calculation
Publication
Citations
Emerging approaches, challenges and opportunities in life cycle assessment.
Hellweg, S., Canals, L.M.I.
(2014) Science, 344 (6188), pp. 1109-1113.
View in Scopus
289
Identifying best existing practice for characterization modeling in life cycle impact assessment.
Hauschild, M.Z., Goedkoop, M., Guinée, J. and 9 more
(2013) International Journal of Life Cycle Assessment, 18 (3), pp. 683-697.
View in Scopus
276
UNEP-SETAC guideline on global land use impact assessment on biodiversity and ecosystem services in LCA.
Koellner, T., De Baan, L., Beck, T. and 7 more
(2013) International Journal of Life Cycle Assessment, 18 (6), pp. 1188-1202.
View in Scopus
139
United Nations Environment Program
Biofuels
Climate change
greenhouse gas
health impact
decision making
Waste treatment
environmental impact
stakeholder
methodology
life cycle
market
toxicity
database
emission
Carbon footprint
sustainability
uncertainty analysis
Greenhouse gases
water
inventory
modeling
biodiversity
flow
Sustainable development
data
footprint
freshwater
Ecology
Tools
energy
assessment method
industrial ecology
life cycle analysis
water use
model
sensitivity analysis
Global warming
land use
Environmental impact assessments
environmental impact assessment
Supply chains
Environmental management
Eutrophication
biofuel
damage
water footprint
technology
environmental assessment
7
+ Add to Reporting
Authors
Top 5 by Scholarly Output
Hauschild, Michael Zwicky 32
Huijbregts, Mark AJ 28
Pfister, Stephan 27
Heijungs, Reinout 26
Margni, Manuele D. 23
2013
2014
2015
2016
2017
Analyze in more detail
+ Add to Reporting
Scopus Sources
Top 5 by Scholarly Output
International Journal of Life Cycle Assessment 178
Journal of Cleaner Production 62
Environmental Science & Technology 57
Journal of Industrial Ecology 37
Science of the Total Environment 16
2013
2014
2015
2016
2017
Analyze in more detail
Size: Scholarly Output
total value
Color: Views Count
total value

Define your own Research Areas

SciVal offers a flexibility to define your own Research Areas, representing a field of research defined by you.



1. Research Areas can represent a strategic priority, an emerging area of science, or any other topic of interest using below as the building blocks:
2. Search terms
   Search for publication sets using keyword(s)
3. Entities
   Select and combine any of the below
   - Institutions (+ groups)
   - Countries (+ groups)
   - Journal categories
   - Journals
   - Subject area
   - Scopus source
4. Topics
   Select and combine a number of Topics to create a new Research Area

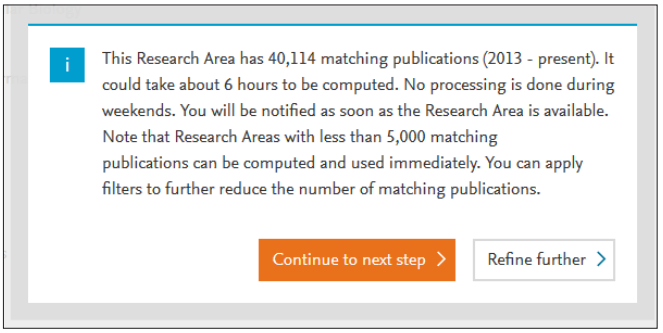
Note: Computation of Research Areas with more than 5000 publications will take up to 6 hours. There is a 100,000 publication limit. You will be notified when the Research Area is available.

Pre-defined entities

SciVal is a ready-to-use solution with access to pre-defined over 16,200 institutions, 230 nations and groups.

Several groups of institutions and countries are made available such as EU28, US states, German Bundesländer and more.

Pre-defined Research Areas are available using the 334 subject areas based on Scopus All Subject Journal Classification (ASJC)



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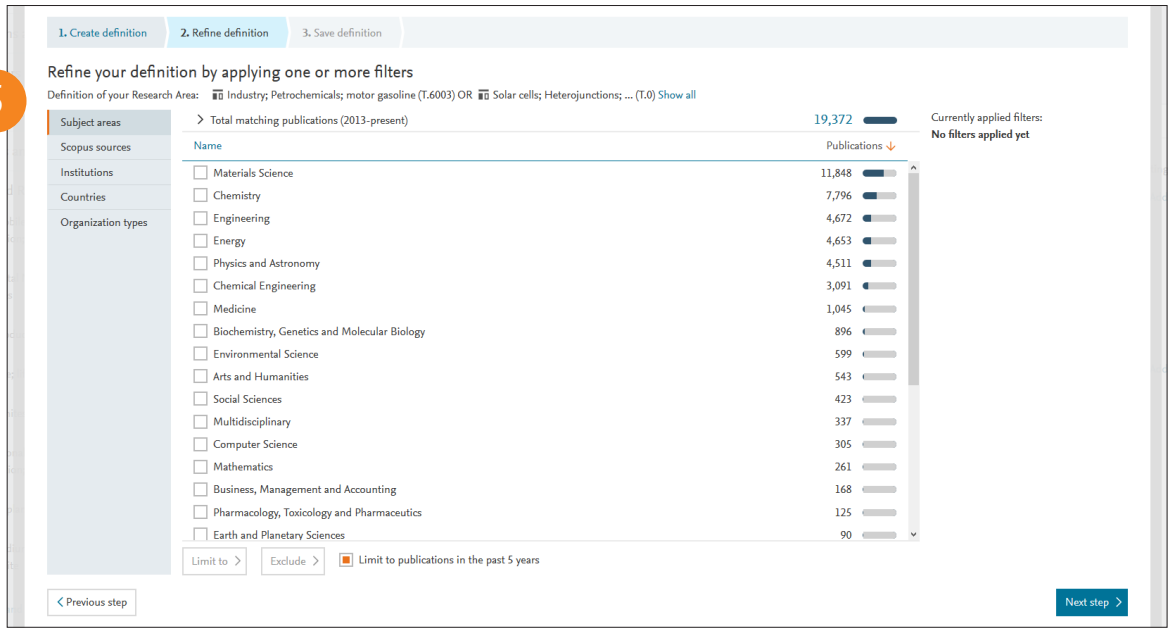

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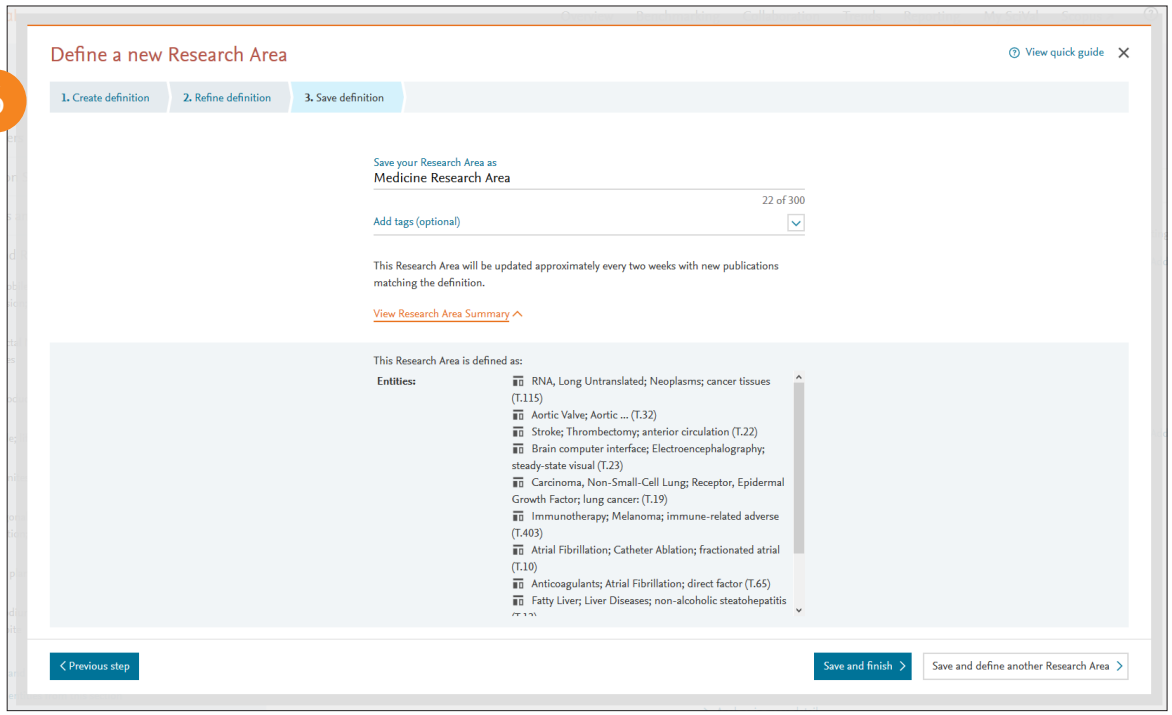
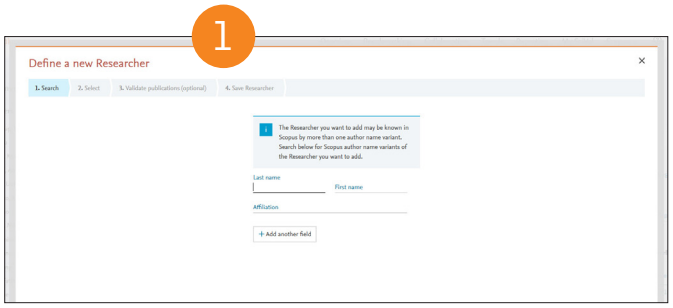


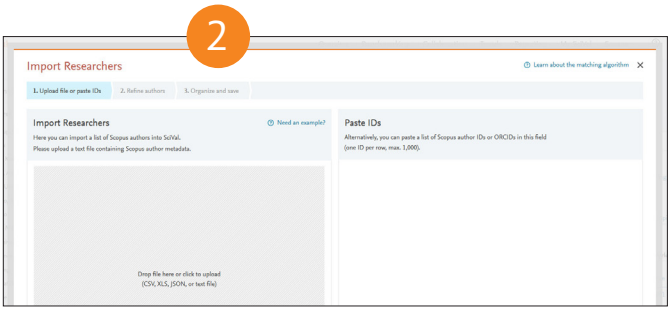
Refine the Research Area by limiting it to select subject areas, Scopus sources, Institutions, Counties or Organization types

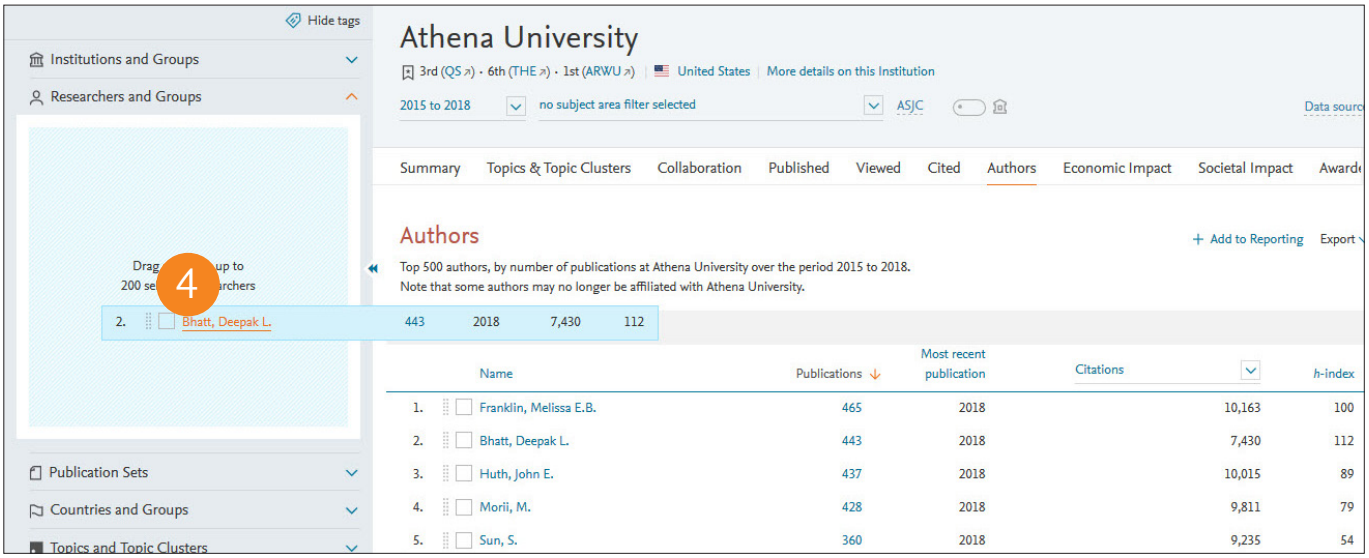
5. Save your new Research Area with a unique name and add relevant tags
6. Research Areas will be made available across the platform to:
    - Assess your institution's performance within the field
    - Identify top institutions and keywords
    - See the publication and citation trends

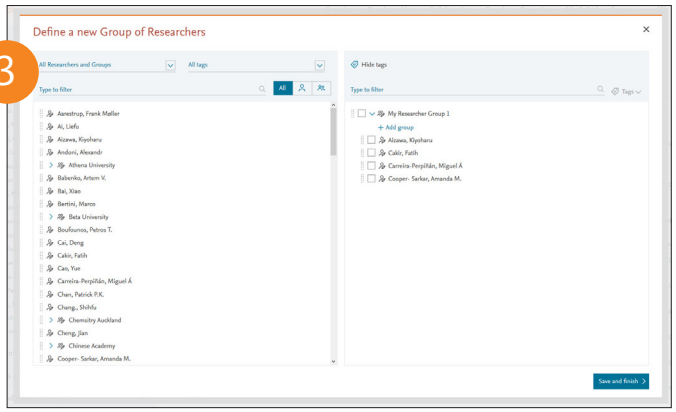
Define Researchers and Groups

Define one or many Researchers or Groups via a number of options:









1. Define a new Researcher
   - Search by name
   - Select the author name variant of the researcher you're looking for
2. Import Researchers
   - Import a list of up to 1,000 Scopus authors
   - Refine the profiles
   - Put the profiles into a group e.g. faculties and schools
3. Define new Group of Researchers
   - Select and combine your self-defined Researchers into one or more Groups
4. Drag and drop authors from the Authors tab across to the selection panel

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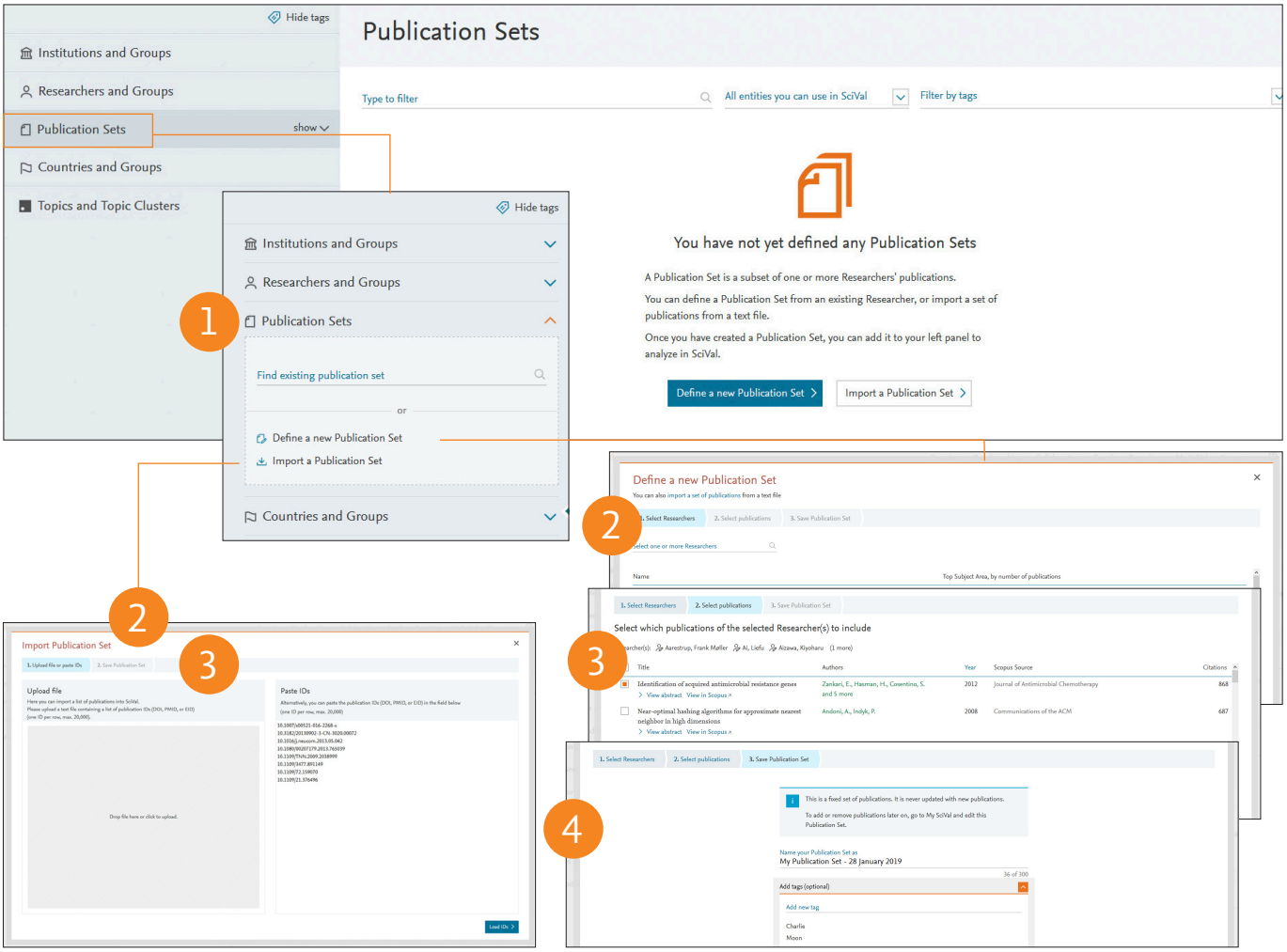
Define Publication Sets and Groups

You can create Publication Sets which you can use for grant applications, performance assessment and project management. Publication Sets are static.



Importing publication lists:

In case you have a set of publications that cannot be retrieved by keyword search, you can now upload them to SciVal.

1. Go to My SciVal, select Publication Sets from select-entity panel, then click Define a new entity and select Import a Publication Set.
2. Select ID format and upload text file.
   - **Scopus EID**
     Unique identifier assigned to all of Scopus records.
   - **PubMed ID**
     Unique identifier assigned to PubMed records.
   - **DOI (Digital Object Identifier)**
     Unique identifier assigned to a digital object such as journal articles.
3. Confirm publications and save.

Create a subset of Researcher's publications:

You can select publications from your researcher's publication history to create a group.

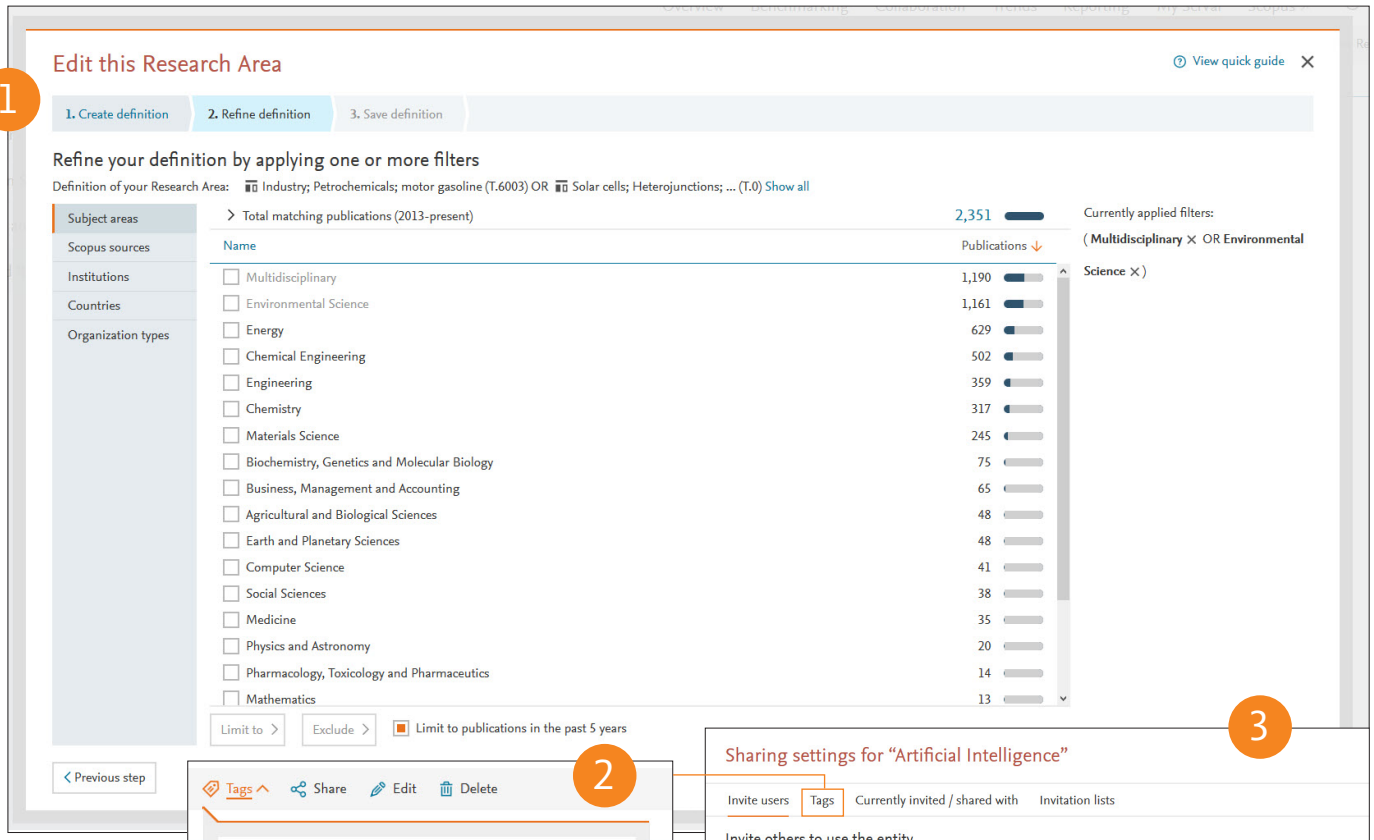
1. Click to Define a new Publication Set

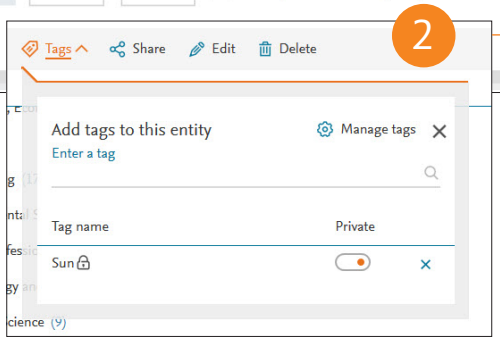
   Note: You need to have pre or self-defined researchers added to your select-entity panel to activate this menu.

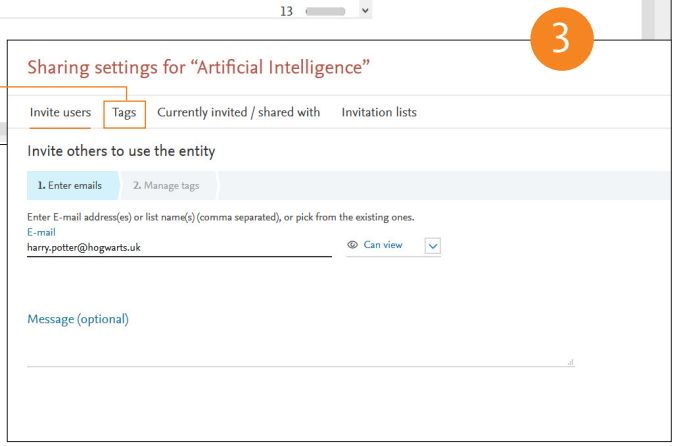
2. Select a Researcher from your list.
3. Select your desired publications.
4. Save publication set.

Managing My SciVal

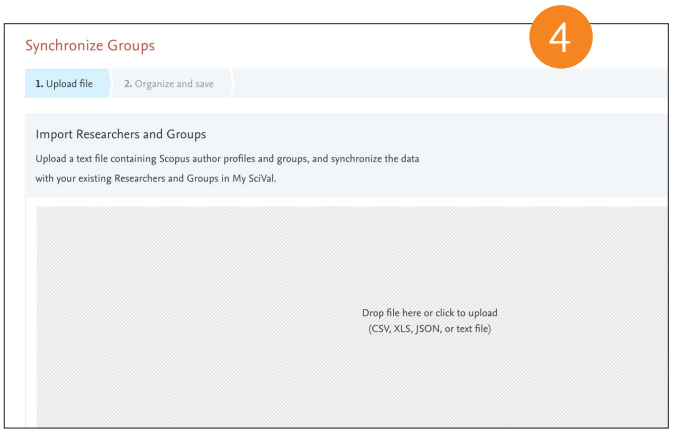
Within My SciVal you can do the same things as you can in each module plus you can also:







Entities can be deleted from the left panel, but will remain in my SciVal



1. Edit Research Areas by adding more research terms or applying more filters.
2. Add tags by departments or projects to manage Researchers and Groups of Researchers with ease. See all you tags in your Tag Manager, where entities can be untagged, or tags can be merged or deleted.
3. Share entities with other SciVal users
4. Synchronize a master spreadsheet with the existing hierarchy in SciVal

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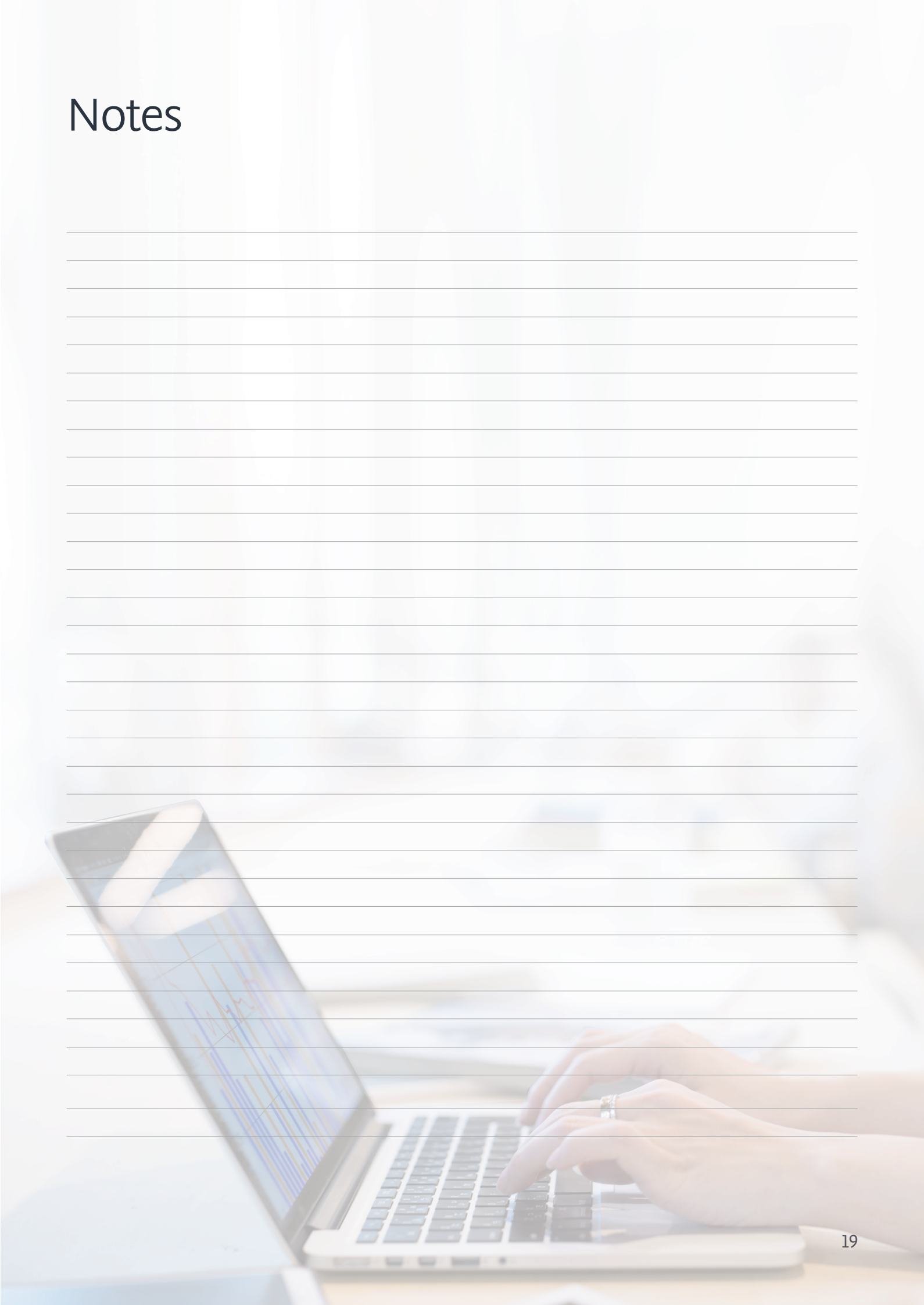
Notes



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