



ANALYSIS OF SEMI-STRUCTURED POLICY DATA AND ITS POTENTIAL USES IN EVALUATION: THE CASE OF THE STIP COMPASS DATABASE

Impact of R&I Policy at the Crossroads of
Policy Design, Implementation and Evaluation

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Andrés Barreneche

Economist / Policy Analyst

OECD Directorate for Science, Technology and Innovation



- A **joint initiative** of the EC and the OECD to collect together in one place quantitative and qualitative data on national trends in **STI policy**.
- Officially **launched on April 2018** in Brussels. It is **publicly available** at stip.oecd.org
- Its **history can be traced back 20 years** to the start of biennial OECD surveys of countries' STI policies in support of the OECD STI Outlook.
- STIP Compass is a **new generation semantic platform** for storing, accessing and linking country policy data.



The EC/OECD STIP Survey

- The **main data source** for STIP Compass
- Prior to 2017 **the survey was difficult for countries to complete** on account of IT limitations (though response rates were always around 95%) and the **data was difficult for analysts to use** and only theoretically open for re-use beyond the STI Outlook
- Since 2015, the survey is run jointly with the **European Commission**. As part of this arrangement, the EC agreed to use H2020 funding to invest in a **new infrastructure for collecting, storing and accessing** country STI policy information.



The 2017 STIP taxonomy

A data model was more firmly **structured** by **taxonomies**, making responses more **comparable** and **facilitating analysis**.

- An **STI Policy Model** (thematic taxonomy) that structures the questions of the 2017 STIP Survey
- **Taxonomies** built to characterise policy initiative (unit of analysis)
 - Basic fields for textual data (e.g. name, start/end date short description, objectives)
 - A **policy instrument** taxonomy built based on Lit. review and OECD workshops
 - A taxonomy for **target groups** and list of **budget ranges**
- For textual data, keywords are identified based on an **innovation policy vocabulary** of +1300 concepts.



Policy instruments taxonomy v2017

Direct financial support

- Institutional funding for public research
- Project grants for public research
- Grants for business R&D and innovation
- Centres of excellence grants
- Procurement programmes for R&D and innovation
- Fellowships and postgraduate loans and scholarships
- Loans and credits for innovation in firms
- Equity financing
- Innovation vouchers

Indirect financial support

- Corporate tax relief for R&D and innovation
- Tax relief for individuals supporting R&D and innovation
- Debt guarantees and risk sharing schemes

Guidance, regulation and other incentives

- Technology transfer and business advisory services
- Labour mobility regulation and incentives
- Intellectual property regulation and incentives
- Science and innovation challenges, prizes and awards

Collaborative platforms and infrastructure

- Clusters and other networking and collaborative platforms
- Dedicated support to new research infrastructures
- Information services and databases

Governance

- National strategies, agendas and plans
- Creation or reform of governance structure or public body
- Policy intelligence (e.g. evaluations, reviews and forecasts)
- Formal consultation of stakeholders or experts
- Horizontal STI coordination bodies
- Standards and certification for technology development and adoption
- Public awareness campaigns and other outreach activities



Policy instrument facets (example 1)

Project grants for public research

Facet	Facet choices	Selection criteria
Maximum grant duration	<ul style="list-style-type: none"> 12 months or less 13-24 months 25-36 months More than 36 months 	<ul style="list-style-type: none"> Track record of applicant Feasibility of project Anticipated return on investment Societal impact anticipated Geographical location (to promote regional or cluster policy) Social inclusion (e.g. gender and other under-represented groups) Alignment with national strategic priorities (e.g. targeted business sectors and technologies) Other
Maximum amount of grant awarded in euros	<ul style="list-style-type: none"> Less than 100K 100K-500K 500K-1M More than 1M 	
Type of activity	<ul style="list-style-type: none"> Basic research Applied research Experimental development Non-technological innovation 	
Requires a form of collaboration	<ul style="list-style-type: none"> No With academic partners With industry partners With international partners With other partners (please specify) 	<ul style="list-style-type: none"> Contribution (e.g. matching funds) required from beneficiary
		<ul style="list-style-type: none"> Yes No



Policy instrument facets (example 2)

Dedicated support to new research infrastructures

Facet

Facet choices

Geographic scope of the infrastructure

National

International

Funding used for

Acquiring major scientific equipment

Building new facilities

Renewing or modernising existing facilities

Gaining access to existing international infrastructures

Hiring research and technical staff

Training research and technical staff

Building knowledge repositories of scientific data and archives

Building computing systems and virtual infrastructures

Other

Infrastructure accessible by users from

Public research institutes

Higher education institutes

Business

Others



Online survey tool built on taxonomies

National S

 STIP MONITORING AND ANALYSIS

 OECD
BETTER POLICIES FOR BETTER LIVES

 European Commission

International survey on science, technology and innovation policies 

Governance 

Public research system 

Innovation in firms and innovative entrepreneurship 

Public-private knowledge transfers and linkages 

Human resources for research and innovation 

Research and innovation for society 

Digitalisation 

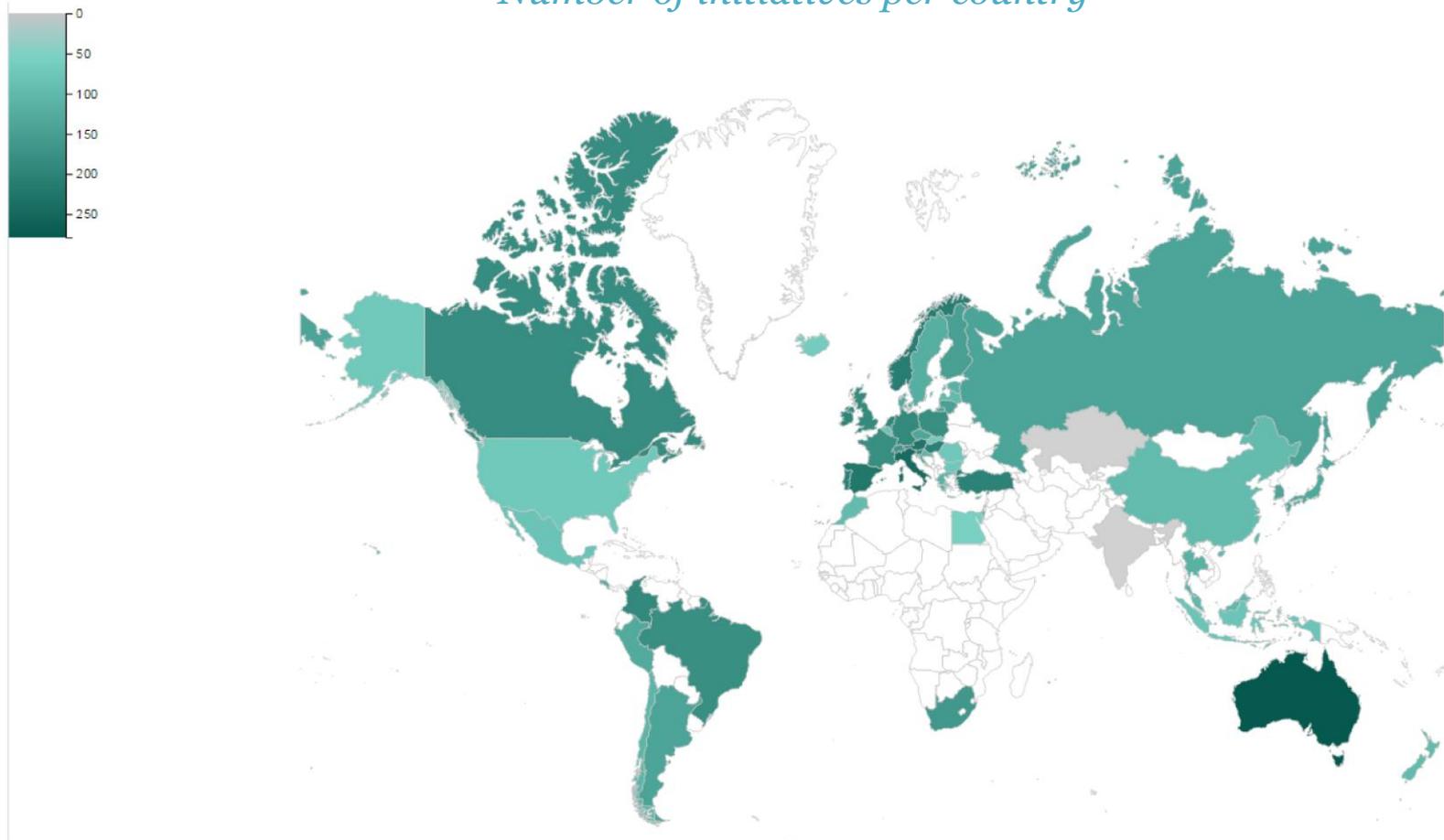
ERA-related initiatives 

as complete



+6000 policy initiatives
collected from +50 countries

Number of initiatives per country

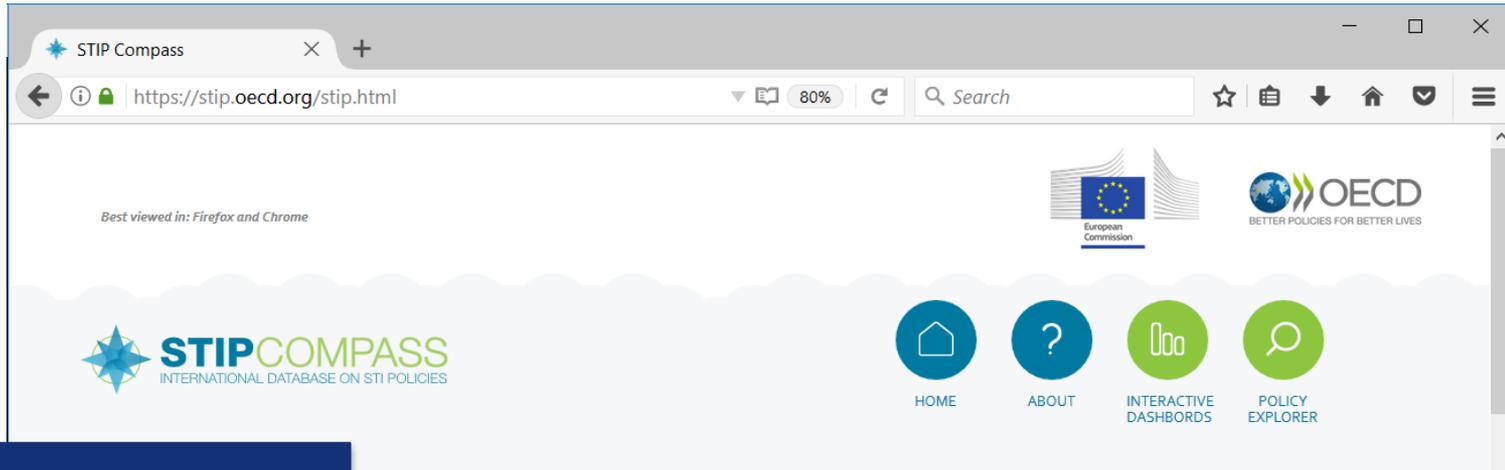


Taken together, countries covered in the STIP survey/STIP Compass database account for an estimated 97% of global R&D

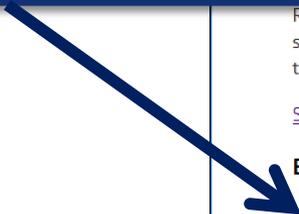


STIP Compass Portal

stip.oecd.org



Explore data using:
Interactive dashboards and
policy explorer



A powerful tool to support policy analysis for better decision-making

...ive of the European Commission and the OECD to collect together in one
...ive data on national trends in science, technology and innovation (STI)
... continuous monitoring and analysis of countries' STI policies and aims to
... policy research and advice supporting government officials, analysts and
... following the FAIR principles (Findable, Accessible, Interoperable, and
... Re-usable). The STIP Compass incorporates more than 500 interactive dashboards and provides a
... sophisticated search tool with smart filtering that facilitates policy discovery. These interfaces allow users
... to seamlessly query the database to identify country policies on a wide range of STI policy issues.

[See the infographics](#) | [Read more](#)

Explore by:





Structured data → Semantic visualisation tools

Clu Commercialisation of public research results

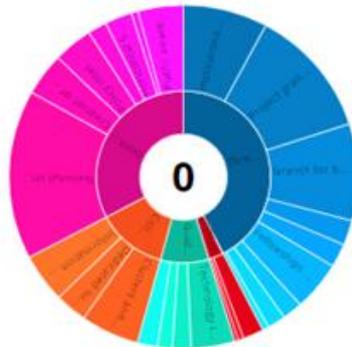
Countries



Themes



Policy instruments



Target groups





Policy explorer: search and discovery



STIPCOMPASS
INTERNATIONAL DATABASE ON STI POLICIES

En

Powered by **O.N.E** SIGHT

technology transfer



OPTIONS SAVED ITEMS SAVED QUERIES VIEW MODE

283 results for **technology transfer**

Results per page : 10 20 50

TECHNOLOGY TRANSFER OFFICE (TTO) SUPPORT PROGRAM (TUBITAK 1513)

STIP policy initiatives and instruments (2017) | Policy initiative

The Technology Transfer Office (TTO) Support Programme aims to support the TTOs for transferring university originated technologies to the market effectively

[- Show more details](#)

Flanders-TECHNOLOGY TRANSFERS OFFICES FLANDERS

STIP policy initiatives and instruments (2017) | Policy initiative

TTO Flanders support for the technology transfer offices (TTOs) of the universities of the Flemish Community. There is no overall "plan" for technology transfer stimulation, but rather a set of measures and networks that are active aimed towards ...

[- Show more details](#)

ENTERPRISE EUROPE NETWORK – CONSULTANCY AND TECHNOLOGY TRANSFER SERVICES

STIP policy initiatives and instruments (2017) | Policy initiative

Free of charge consultancy

TECHNOLOGY TRANSFER STRENGTHENING INITIATIVE, PHASE II

STIP policy initiatives and instruments (2017) | Policy initiative

The Technology Transfer Strengthening Initiative was initially introduced by

REFINE AND DISCOVER TOOLS

REFINE

DISCOVERY

LIBRARIES

STIP policy initiatives and instruments (2017) ⁽²⁸³⁾

STIP COUNTRY

DATES

YEARLY BUDGET

TOPICS IDENTIFIED FROM THE QUERY

TOPICS IDENTIFIED FROM THE RESULT SET

GEOGRAPHICAL AREAS IDENTIFIED FROM THE RESULT SET

ORGANISATIONS IDENTIFIED FROM THE RESULT SET

STIP TARGET GROUPS



Linking open data

- STIP Compass **semantically links** the country survey data to other open data sources.
- The ultimate goal is to semantically link to hundreds of **indicators** across the whole portal.
- STIP Compass already links to **EC/OECD** publications together with Science Direct and the **RePEc** EconPaper series.
- Planned links to RSS feeds (**periodical updates**) from country ministries, agencies and other bodies.

ScienceDirect

OECDiLibrary

RePEc



EU Publications



First note of caution

- Open data should be **reused responsibly**, and users should exercise care when using the 2017 EC-OECD STI Policy survey dataset.
- The data consists of **self-reported descriptions** of (mostly) national STI policy initiatives, collected through the biennial EC-OECD STI Policy survey of (mostly) government ministries.
- While the EC and OECD strive towards a harmonised approach for reporting policy initiatives, **countries still vary in the ways they report** their STI policies.
- Some countries have provided **complete and detailed information** on their policy initiatives, **others less so**.
- This is **essential to keep in mind** when doing cross-country comparisons.



Second note of caution

- Care should also be exercised when **interpreting the data**.
- For example, what **meaning** should be given to the fact that one country uses **twice as many** policy initiatives than another to address the same policy theme?
 - Does it mean the countries **vary in the policy attention** they give to the policy theme?
 - Or does it mean one country is **more efficient** than the other in addressing the policy theme?
- Such questions are **difficult to answer** even with detailed research and certainly cannot be answered using the STIP Compass dataset alone.



Potential uses of STIP Compass in evaluation

Evaluators could

- **Browse for similar programmes and policies** in other countries to explore how they are **designed** and **implemented** compared with the schemes under evaluation.
 - Similarities could be **defined** in terms of themes, policy instruments (and their design facets), target groups, and budget ranges.
- **Explore the national policy mix** of the programme or policy under evaluation.

Using STIP Compass as a STI policy resource

- **Explore the wider policy and institutional landscape** by analysing interactions with policy initiatives (complementary or contradictory).
- **Directing evaluators** to policy initiatives and other resources that are potentially useful for their analysis.



Download the data from the frontpage stip.oecd.org

Explore by:



INTERACTIVE
DASHBORDS



POLICY
EXPLORER



There are two ways to access the data in STIP Compass:

- (1) [Interactive dashboards](#) for viewing the data on countries, policy themes, policy instruments, and policy target groups. STIP Compass has more than 500 interactive dashboards, each incorporating several panels with related data.
- (2) [Policy explorer](#) for searching the data, using keywords and refinement criteria.

Resources

The STI policy analysis community can also analyse the data to answer its own questions. The EC and OECD are committed to open data access and have made the 2017 EC-OECD STI Policy survey data available [in Excel](#) and [in machine readable format](#). Since the EC and OECD are updating the dataset on a continuing basis, the data is not yet available in a machine readable format. The data model used to structure STIP Compass can also be viewed [here](#) and reused in other information management systems using [this machine readable format](#).



Some of our extended analyses

Aims

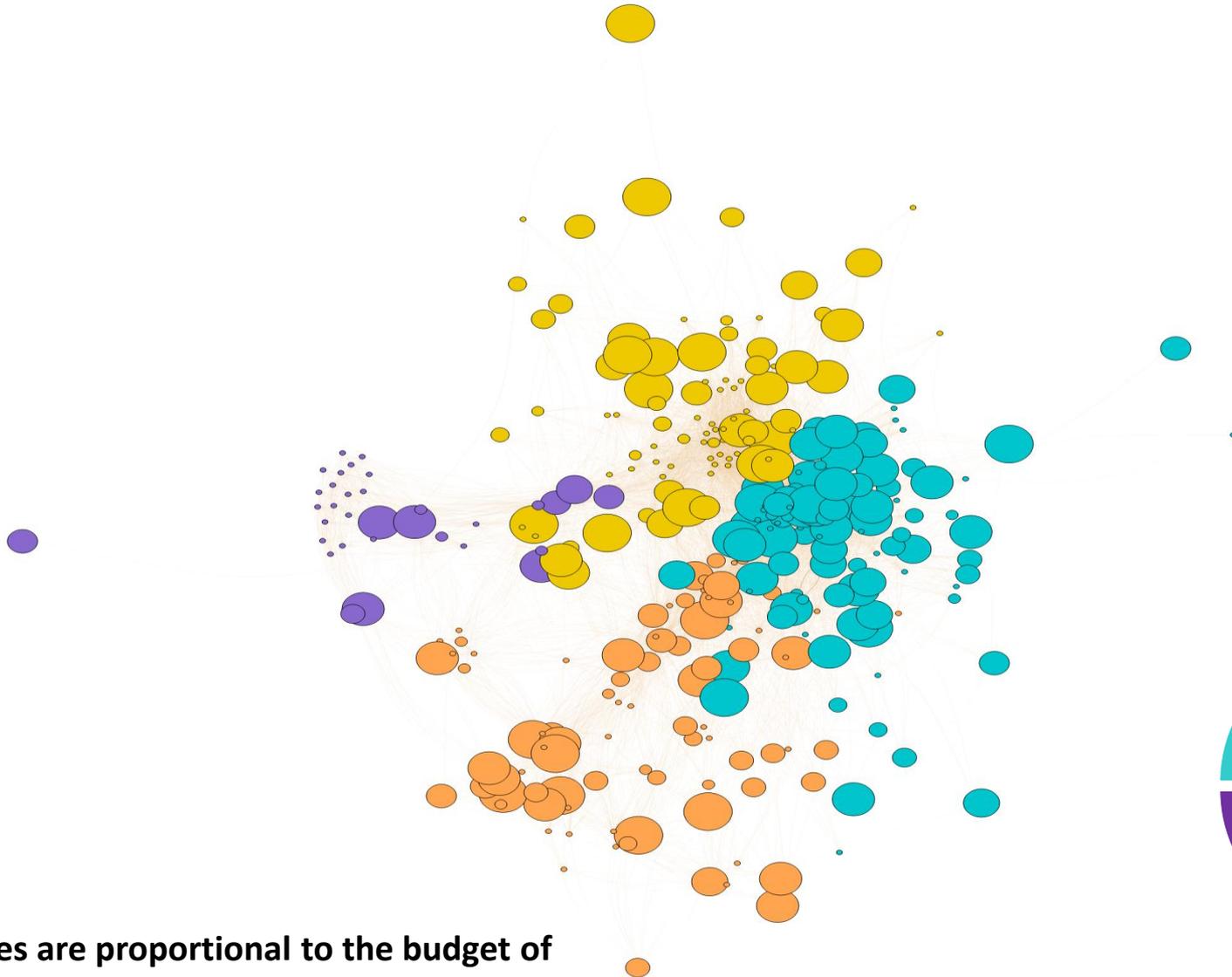
- A systematic and evidence-based identification of **common country approaches to research funding policy issues**.
- A better understanding of the **various uses (configurations) of STI policy instruments**.
- **Smart links** in STIP Compass (suggesting relevant initiatives).

Methodologies being explored:

- Measuring **similarities between policies** based on their attributes.
 - themes addressed, policy objective keywords, target groups, policy instruments and budget range.
- Measuring **similarities between instruments** based on their characteristics in design and implementation.

Preliminary Results

- Clusters for Institutional Funding for Public Research



Nodes are proportional to the budget of the policy instrument



Outlook: Upcoming developments

- ❖ Working together with countries to **improve the quality of the data**
- ❖ Interface **refinements**
- ❖ Extending the range of **linked open data**
 - Links to official statistics
 - Links to RSS feeds from funding agencies
- ❖ Developing **dashboards** for funding agencies and other responsible organisations
- ❖ Launching an **API** allowing specific queries and the **download of subsets** of the database



Thank you for your attention
Questions / comments?

stip.oecd.org

andres.barreneche@oecd.org

michael.keenan@oecd.org