Evaluation and impact assessment of STI policies

Rationale and objectives

In the field of STI as in other policy areas, the role of evaluations and impact assessments is to provide an informed assessment of public policy interventions in terms of their efficiency, their effectiveness and, often to a lesser extent, their relevance. The results of these exercises can contribute to the policy-making process in different ways, from supporting the accountability of public spending to enhancing policy learning.

Although less visible, evaluations and impact assessments can also have important "process uses", generating ex-ante effects on the efforts and behaviours of managers and decision makers who anticipate that their programme or policy will be subject to an evaluation or impact assessment. Another potential "by product" is to stimulate debates and interactions among these actors during the process of designing the exercise, contributing to its implementation or following up on its recommendations. Finally, these exercises can be used strategically to establish or strengthen the legitimacy and credibility of specific STI interventions, for instance, in the context of negotiations between line ministries and central administrations such as treasuries or heads of government (OECD, 2010).

Evaluations and impact assessments overlap to a great extent in terms of objectives and process. As the name suggests, impact assessments focus specifically on the effect of a policy, including its longer-term impact. This is increasingly understood in the narrow sense of a robust quantification of the amount and types of outputs, outcomes and impact, using counterfactual analysis (Stern, 2012). Although, while many of these exercises still focus on effects, they also go beyond this and come closer to full evaluation exercises. An evaluation is a more comprehensive exercise that also includes a judgement on the intervention objectives and the process through which effects are produced. At the heart of evaluation exercises is tracing back the causal relationships that link impacts on output and outcome measures (e.g. economic growth, improvements in health or the environment, or broader societal changes) to inputs (e.g. investments in R&D). Before engaging in fieldwork, evaluations more or less explicitly use a theory of change to map the various possible pathways for the effects.

Evaluations and impact assessments may result in significant improvements in policy, including greater transparency of achievements and limitations or a strengthened network around the interventions. Based on their recommendations, they may also prompt a re-positioning of policies and programmes, shape the allocation or re-allocation of public funding (e.g. more generous block grants to top-performing universities) and inform the development of national STI strategy. However, despite the growth of the institutionalisation and reach of evaluations, the limited use of their results is still one of the main weaknesses in the policy cycle (Stern, 2015).

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Major aspects and instruments

Evaluations and impact assessments can take many forms according to their purposes, scope, timing and the broader institutional setting in which they are embedded. They can, for instance, take place at different stages of the policy cycle (ex ante, mid-term, ex post) or be implemented as part of a contract (e.g. R&D programme funding) or be imposed by law (e.g. the US Government Performance and Results Act). Individuals, projects, organisations (e.g. universities, funding agencies), programmes, policies and even the overall STI policy mix or system can be evaluated. They use a wide range of qualitative and quantitative methods.

Many of the challenges that affect evaluations and impact assessments in general are particularly salient when it comes to evaluating STI policies, due to some specific features of knowledge and, more generally, of research and innovation processes (see Table 1). The so-called "project fallacy", for instance, whereby outcomes that are in reality cumulative and dependent upon the interaction of several factors are wholly or mostly attributed to the intervention assessed, can be particularly strong, as can the tendency to underestimate the effects of an intervention because of the narrow focus of the evaluation or because of the timing of the assessment, as the full effects might not yet be felt.

Table 1: Features of research and innovation processes and related assessment challenges

Specific features of research and innovation	Related evaluation and impact assessment challenges
High uncertainty of outcomes, skewness of project performances	Difficulty to set success benchmarks Sampling problems
Cumulativeness of results of innovation	Attribution problems due to the limited scope and period of evaluations Necessity to adopt a dynamic and longer-term perspective
Importance of knowledge spillovers (including cross-sectoral)	Attribution problems due to the limited scope of evaluations
Intangibility of inputs and outputs (knowledge capital)	Lack of appropriate data and indicators
Long time lag between inputs and outcome	Necessity to adopt a dynamic and longer-term perspective Trade-off to be made between accuracy and usefulness of evaluation
Specificity of beneficiaries (for instance, young innovative enterprises meeting stringent criteria)	Difficulty to construct relevant control groups, imperfect "matching" with treatment group
High context heterogeneity (importance of institutional setting)	Difficulty to apply counterfactual approaches Reduced added value of benchmarking
Circular causality (endogeneity)	Leads to erroneous assessment

Although the methods and practices of evaluation and impact assessment evolve slowly, some positive tendencies can be observed. With regard to measurement, continuous progress in STI indicators and the promising use of micro data (Galindo-Rueda and Millot, 2015) and "Big Data" (Jensen and Lane, 2013) can lead to improvements. The growing availability of data stemming from the digitalisation of basically all human activities and the enhanced capacity to automatise its treatment make evaluation easier to perform in principle, although the use of such data in evaluation is still in its infancy.

Quantitative approaches (in particular, quasi-experimental methods such as random control trials used for impact assessment), although still rare, are starting to be used in the area of STI (Warwick and Nolan, 2014). This is the case, for instance, in the Netherlands, where control groups and experimental design methods are being tried in evaluations of business-oriented instruments. There has also been a renewed interest in understanding the long-term impacts of STI policies (Arnold, 2013), as well as a growing number of attempts to broaden the scope of these exercises to include a larger portfolio of policy instruments (policy mix evaluation, system evaluation, evaluation of national strategies, etc.) (OECD, 2015).

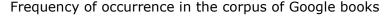
Recent policy trends

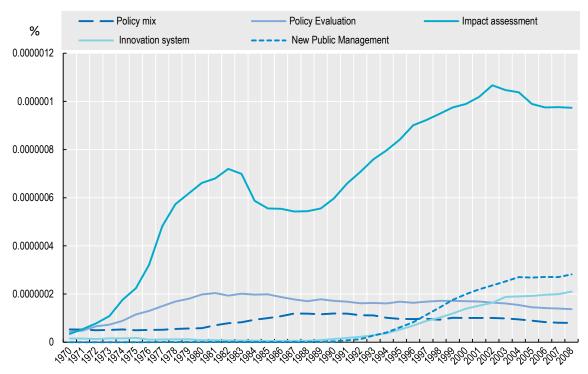
Changes in STI policy evaluations and impact assessments are generally at the crossroads of two dynamics that operate within different timeframes.

In the long run, these changes follow the overall evolution of the practice of evaluation in their respective country of origin. These movements are very slow, as any progress on this front calls for structural and cultural changes in the way public policy is conducted. Although such progress is barely visible on a biennial basis, evaluation and impact assessment agendas tend to continue to move forward in most countries. The slow pace of these developments explains the persisting strong heterogeneity in the level of development of evaluation and impact assessment among countries (see Table 2). The ability to carry out evaluation and impact assessment is poorly developed in some countries, and evaluation practices are not widely embedded (e.g. Colombia, Malaysia [OECD, 2016b], Russian Federation, South Africa). In other countries, evaluation and impact assessment is part of the culture and is institutionalised to a greater or lesser extent and in different ways (through a dedicated committee, as in Korea and Mexico, or by law, as in Spain and Peru, etc.).

Since the 1980s, one key driver of this long-term trend has been the diffusion of New Public Management concepts (Figure 1). Research policy has been among the latest areas affected by this overall trend. Along with the increase in evaluations and impact assessments to feed into evidence-based policy making, this trend has also resulted in a multiplication of competitive schemes to allocate project funding as well as performance-based mechanisms to distribute institutional "block" funding (for instance in Croatia, France, Lithuania, Sweden [OECD, 2016a and 2016c], etc.).

Figure 1. Popularity of terms related to policy evaluation and innovation policy in the literature since 1970





Note: The Google Books Ngram Viewer allows quick inquiries into the usage of words or small sets of phrases in a corpus of 5.2 million books published between 1500 and 2008. The underlying datasets were generated in July 2012 (Version 2) and July 2009 (Version 1) on the basis of book scanning by optical character recognition. Although the Google text corpora include texts in various languages, including French, German, Spanish, Russian, Hebrew and Chinese, the Google Books Ngram Viewer is biased towards the English language. The composition of the corpus has also changed over time to give more emphasis to scientific literature. More detailed discussions on the limitations of the Google Ngram Viewer are available online (see S. Zhang (2015), "The Pitfalls of Using Google Ngram to Study Language", Wired.com magazine, www.wired.com/2015/10/pitfalls-of-studying-language-with-google-ngram/. This chart has been plotted with the terms "policy mix", "policy evaluation", impact assessment", "innovation system" and "new public management" and variations with upper cases.

Source: Kergroach et al. (forthcoming), based on the Google Ngram Viewer, accessed on 28 April 2016, https://books.google.com/ngrams.

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In the short- to mid-term, the practice and use of evaluation and impact assessment are heavily influenced by changes in STI policies themselves. Since governments devoted significant resources to R&D and innovation during the economic and financial crisis as a form of countercyclical policy, STI policy evaluation and impact assessment have logically gained more policy attention in the few years afterwards. This growing demand has been all the more pronounced since tightening fiscal constraints have heightened the need to demonstrate value for public money. Although in some countries evaluations remain geared toward policy learning (formative evaluations), a shift toward more summative evaluations – where the focus is put on measuring the outcomes of an intervention against its objectives – has been seen in recent years. It has, for instance, become more important to motivate ongoing measures and increase their effectiveness in Sweden. The financial constraints have also limited the resources available for evaluation and impact assessment exercises and, reciprocally, increasing evaluation costs have weighed on the actual budget allocated to public support for innovation. Evaluations in New Zealand not only have become more focused on the outcomes and impacts of STI policy in order to justify spending within the STI area, but they have also shifted toward smaller and quicker exercises. Furthermore, they have made more intensive use of public administrative data and online technology, including for collecting qualitative data. Even in countries like Brazil and Chile, where evaluation is not yet well institutionalised and by tradition is more formative

than summative, expectations of use for public accountability have been growing. For the same reasons, there has been a change toward a more strategic use of evaluation.

One challenge facing STI policy evaluation and impact assessment is the increasing complexity and scope of the policies being assessed. STI policies deal with multiple objectives, arrangements, targets and instruments; they involve a growing number of actors, interlinked through various forward and feedback loops; and they are aimed at covering a broadening range of needs, including critical social challenges. Evaluation is therefore also affected by the growing interest in innovation systems (Figure 1) and the resulting call for a better understanding of the effectiveness of a larger portfolio of policy interventions (OECD, 2015). The "policy mix" concept has become central to policy discourse and has pervaded the STI policy evaluation sphere (Kergroach et al., forthcoming).

Table 2. The institutionalisation of STI assessment – country profiles

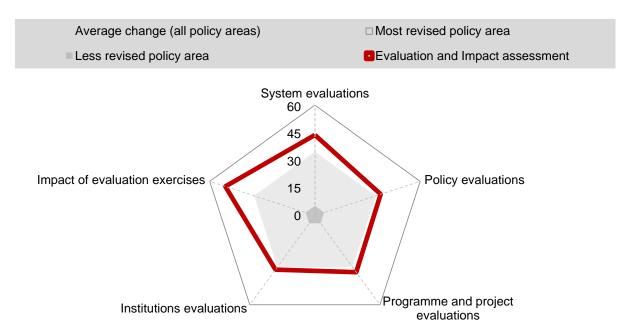
STI evaluation		Examples of related recent initiatives
Limited institutionali Evaluation and mainly limited to ad	sation impact assessment	Malaysia: Evaluation practice is mainly limited to ex-ante review of research proposals and some studies and reviews performed by international organisations (World Bank, OECD). Brazil: Ad-hoc evaluations are undertaken mainly for policy learning and legitimisation purposes.
Institutionalisation via an advisory / consultative committee	STI-related committee also in charge of evaluation and impact assessment Dedicated committee for evaluation and impact assessment	Korea: Third analysis, evaluation and budget review on national R&D in 2015 by the National Science and Technology Council (NSTC). Germany: The Expert Commission for Research and Innovation was established to provide annual evaluations of federal policies on research, innovation and technological productivity. Mexico: The National Council for the Evaluation of Social Development Policy is in charge of policy evaluation, including in the STI area.
Institutionalisation via individual organisations	STI-related ministry/agency level	United Kingdom: The Department for Business, Innovation and Skills (BIS) published its evaluation strategy 2015-16, which set out the principles to follow as well as a programme of work to improve the consistency, quality and use of its evaluations (including for instance a skills audit on evaluation techniques to identify training needs and an evaluation external peer review panel). France: The National Commission for the Evaluation of Innovation Policies (CNEPI) has been in charge of the evaluation of innovation policy since November 2013.
	Dedicated body for evaluation and impact assessment	Lithuania: The Research and Higher Education Monitoring and Analysis Centre (MOSTA) is in charge of high-level STI monitoring and evaluation.
Institutionalisation via a law / executive order	STI-related law	Spain: The Science, Technology and Innovation Act (14/2011) established the evaluation mechanisms for STI policies conducted by federal ministries and for all actions included in the National (State) Plan for Scientific and Technical Research and Innovation.
	Dedicated law on evaluation and impact assessment	Peru: A 2014 Presidential Resolution mandates that a methodology for monitoring and evaluation has to be included in the design of each new financial instrument, including in the STI area. Sweden: Article 170 of the Federal Constitution demands the evaluation of federal policies and instruments, including in the STI area.
Evaluation and impact assessment conducted in the framework of the European programmes	Portugal: Under the Framework programme initiative (2007-2013), a quantitative analysis of the performance of innovation and internationalisation public policy instruments (IIPPI) was performed in 2013. Greece: Most of the programmes and initiatives supported by EU structural funds over the 2014-2020 programme period ought to be the object of ex-ante and ex-post evaluations, as was the case for the preceding 2007-2013 programme.	

Source: Based on EC/OECD (forthcoming), International Science, Technology and Innovation Policy (STIP) Database; and OECD (2014), Science, Technology and Industry Outlook Policy Database; (2016a), OECD Reviews of Innovation Policy: Sweden; (2016b), OECD Reviews of Innovation Policy: Malaysia; (2016c), OECD Reviews of Innovation Policy: Lithuania.

This trend toward more systemic evaluations has developed markedly around the world albeit differently according to countries (Figure 1 and Table 3). In some countries, this shift has been limited to developing a common framework for evaluations. The United States and Japan have been particularly active in taking initiatives in the field of Science of science and innovation policy (SciSIP) which are aimed at developing, improving and expanding models, analytical tools, data and metrics that can be applied in STI policy decision-making processes. Norway has also had a SciSIP research programme since 2010, currently called "FORINNPOL". The United Kingdom is home to a movement to try and improve the comparability of impact assessment on economic growth across a range of measures. In other countries, grouped evaluations have been carried out on related schemes, sometimes in the context of spending review exercises, as in Greece and Colombia. In Ireland, a grouped evaluation attempted to capture the interactions between different combinations of enterprise supports and reach conclusions about their effectiveness. Less commonly, evaluations have covered the whole STI system or a component of it (for instance, all technology transfer policies). Given their broad scope, these exercises have been mostly performed by international organisations and in all cases have remained one-off initiatives.

Figure 2. Evaluation and impact assessment among other areas of STI policy change, 2014-16

Percentage of policy initiatives that have been newly introduced, revised or repealed over the period



Note: The EC/OECD STI Policy survey 2016 aims to review major changes in national policy portfolios and governance arrangements for STI. The survey builds on the conceptual work carried on under the aegis of the OECD Committee for Scientific and Technological Policy (CSTP) for mapping the policy mix for innovation and therefore covers a broad range of policy areas (Kergroach et al., forthcoming-a). 52 economies participated in 2016, including OECD countries, key emerging economies (e.g. Argentina, Brazil, the People's Republic of China, Colombia, Costa Rica, Egypt, India, Indonesia, Malaysia, Peru, the Russian Federation, South Africa and Thailand), non-OECD EU Member States, and the European Commission. Taken together, the countries covered in the STIP survey 2016 account for an estimated 98% of global R&D. The responses are provided by CSTP Delegates and European Research and Innovation Committee (ERAC) Delegates for EU non-OECD countries.

This is an experimental indicator that accounts for the number of major policy initiatives implemented, repealed or substantially revised during 2014-16 as a share of total policy initiatives active at the beginning of the period. Although simple counts do not account for the magnitude and impact of policy changes, this ratio reflects STI policy focus and activity in specific policy areas and over specific periods of time. The chart above shows the intensity of changes in the policy area(s) under review as compared to the whole policy mix for innovation. Changes in the whole mapping are represented by the smallest changes, the largest changes and the average changes observed in all policy areas taken together.

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Table 3. Type of "system" evaluations and impact assessments with related recent initiatives

STI evaluation and	Examples of related recent initiatives
impact assessment -	
Institutional setting	T / T
Grouped evaluations and impact assessments	Turkey: The Inter-governmental Coordination Council for R&D led the review of 62 R&D support mechanisms. Ireland: Evaluations of over 50 enterprise supports within the themes of start-ups, STI and business development. Colombia: Evaluation exercise that aims at establishing the governance and effectiveness of public spending on STI, covering 129 STI instruments. This exercise should also result in an evaluation framework for public spending on STI that will be used in the future to analyse public expenditure autonomously.
Evaluation and impact assessment of STI function (support to entrepreneurship, financing of innovative SMEs, etc.)	Netherlands: The Department of Economic Affairs has released a comprehensive evaluation of the Enterprise policy in May 2015, which covers innovation policy and entrepreneurship policy in the period 2009-2013.
Evaluation and impact assessment of STI system components	Lithuania: A comprehensive Research Assessment Exercise was performed in 2014-15 by international peer review panels in broad scientific disciplines. Italy: In 2012, the National Agency for Evaluation of Universities and Research Institutes performed an evaluation of the quality of research (VQR) in 95 universities, 21 research agencies or institutes, and 17 inter-university consortia.
Evaluation and impact assessment of entire STI systems	Kazakhstan, Lithuania, Luxemburg, Malaysia, Sweden: OECD Innovation Policy Reviews completed or ongoing in 2015-2016. Denmark, Iceland, Slovenia: Evaluations of the STI system carried out by the European Research Area and Innovation Committee (ERAC), an EU expert team, within the framework of Open Method of Coordination.
Programme and guidelines for the harmonisation and improvement of the evaluation and IA methodology and process	United States: The research programme in the Science of Science and Innovation Policy (SciSIP) funds research to improve the understanding and to document science policy outputs and outcomes more scientifically. A resulting Roadmap for Science of Science Policy has been implemented by federal agencies. Japan: The National Guidelines for Evaluating Government Funded R&D provide guidelines to R&D organisations on the design of an evaluation system and on how to use evaluation results. Austria: The guidelines of the 2012 Austrian Platform for Research and Technology Policy Evaluation (FTEVAL) aim to provide evaluators, institutions commissioning evaluations, funding institutions as well as those to be evaluated with a framework and a set of guidelines for the evaluation process in the field of research and technology.

Note: 1 .Defined as the utility to stakeholders of being involved in the planning and implementation of an evaluation (Forss, Rebien and Carlsson, 2002).

Source: Based on EC/OECD (forthcoming), International Science, Technology and Innovation Policy (STIP) Database, edition 2016, www.innovationpolicyplatform.org/sti-policy-database; OECD Reviews of Innovation Policy for Sweden, Malaysia and Lithuania, 2016; and OECD (2014), Science, Technology and Industry Outlook Policy Database, http://qdd.oecd.org/Table.aspx?Query=F05D932F-7523-4F2E-8631-ADBA30A7B056.

References and further reading

- Arnold, E. (2013), "A Trace of Hindsight: Evaluation and the Long-Term Impacts of R&D", Presentation at the CSTP workshop on STI impact assessment and evaluation, 25 March 2013, OECD, Paris.
- EC (European Commission)/OECD (forthcoming), International Database on Science, Technology and Innovation Policy (STIP), edition 2016, www.innovationpolicyplatform.org/sti-policy-database.
- Forss, K., C.C. Rebien and J. Carlsson (2002), "Process Use of Evaluations: Types of Use that Precede Lessons Learned and Feedback", Evaluation, Vol 8(1), pp. 29–45, http://evi.sagepub.com/content/8/1/29.full.pdf.

- Galindo-Rueda, F. and V. Millot (2015), "Measuring Design and its Role in Innovation", OECD Science, Technology and Industry Working Papers, No. 2015/01, OECD Publishing, Paris, http://dx.doi.org/10.1787/5js7p6lj6zq6-en.
- Jensen, P. and J. Lane (2013), "Australian Science, Technology and Research Assessment (ASTRA) Feasibility Study", Final report prepared for the Department of Industry, Innovation, Science, Research and Tertiary Education (DIISTRE), available at http://melbourneinstitute.com/downloads/reports/ASTRA TechnicalAppendices.pdf.
- Kergroach, S., J. Chicot, C. Petroli, J. Pruess, C. van OOijen, N. Ono, I. Perianez-Forte, T. Watanabe, S. Fraccola and B. Serve, (forthcoming-a), "Mapping the policy mix for innovation: the OECD STI Outlook and the EC/OECD International STIP Database", OECD Science, Technology and Industry Working Papers.
- Kergroach, S., J. Pruess, S. Fraccola and B. Serve, (forthcoming-b), "Measuring some aspects of the policy mix: exploring the EC/OECD International STI Policy Database for policy indicators", OECD Science, Technology and Industry Working Papers.
- OECD (2016a), OECD Reviews of Innovation Policy: Sweden 2016, OECD Publishing, Paris, http://dx.doi.org/10.1787/9789264250000-en.
- OECD (2016b), OECD Reviews of Innovation Policy: Malaysia 2016, OECD Publishing, Paris, http://dx.doi.org/10.1787/9789264255340-en (forthcoming).
- OECD (2016c), OECD Reviews of Innovation Policy: Lithuania, OECD Publishing, Paris (forthcoming).
- OECD (2015), The Innovation Imperative: Contributing to Productivity, Growth and Well-Being, OECD Publishing, Paris, http://dx.doi.org/10.1787/9789264239814-en.
- OECD (2014), Science, Technology and Industry Outlook Policy Database, edition 2014, Evaluation Practices, OECD Publishing, Paris, http://qdd.oecd.org/Table.aspx?Query=F05D932F-7523-4F2E-8631-ADBA30A7B056.
- OECD (2010), The OECD Innovation Strategy: Getting a Head Start on Tomorrow, OECD Publishing, Paris, http://dx.doi.org/10.1787/9789264083479-en.
- Stern, E. (2015), "What is evaluation use?", Introductory presentation to the UNESCO OECD French Evaluation Society European Evaluation Society Joint Conference: Making Effective Use of Evaluations in an Increasingly Complex World, 30 September 2015, Paris.
- Stern, E. (2012), "Broadening the range of designs and methods for impact evaluations", Working Paper 38, Department for International Development (DFID), London, http://r4d.dfid.gov.uk/Output/189575/.
- Warwick, K. and A. Nolan (2014), "Evaluation of Industrial Policy: Methodological Issues and Policy Lessons", OECD Science, Technology and Industry Policy Papers, No. 16, OECD Publishing, Paris, http://dx.doi.org/10.1787/5iz181jh0i5k-en.
- Zhang, S. (2015), "The Pitfalls of Using Google Ngram to Study Language", Wired.com magazine, www.wired.com/2015/10/pitfalls-of-studying-language-with-google-ngram/

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From:

OECD Science, Technology and Innovation Outlook 2016

Access the complete publication at:

https://doi.org/10.1787/sti in outlook-2016-en

Please cite this chapter as:

OECD (2016), "Evaluation and impact assessment of STI policies", in *OECD Science, Technology and Innovation Outlook 2016*, OECD Publishing, Paris.

DOI: https://doi.org/10.1787/sti_in_outlook-2016-13-en

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