openevaluation2016

INTERNATIONAL RTI POLICY EVALUATION CONFERENCE

PROGRAMME BOOKLET

24th - 25th November 2016

Tech Gate | Vienna

www.openevaluation2016.eu

#OE16

AUSTRIAN PLATFORM for Research and Technology Policy Evaluation ftEval

IFRIS Institut Francilien Recherche Innovation Société

MANCHESTER 1824 The University of Manchester

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INTRODUCTION TO THE CONFERENCE

ABOUT THE CONFERENCE

Open Evaluation 2016 is the largest conference in Europe dedicated to the evaluation of policies in the field of research, technology and innovation policy (RTI). It gathers academics, evaluators, research managers, authorities and RTI policy makers to debate challenging developments in RTI policy and their effects on evaluation theory and practice.

The conference addresses new actor settings, approaches and themes in RTI policy evaluation. Thus, the term OPEN EVALUATION signals openness towards new values, new stakeholders and beneficiaries and new approaches and themes in RTI policies and RTI evaluations. In the conference programme you can find also several sessions which deal with problems which are not new, but which point either to problems not yet resolved or which inform about progress in the respective thematic area.

The conference is jointly organised by the Austrian Platform for Research and Technology Policy Evaluation (FTEVAL), the Manchester Institute of Innovation Research (MIoIR) and the Institute for Research and Innovation in Society (IFRIS).

A special session of the conference is shared with the Danube-INCO.NET project, financed under FP7.

The conference organisers are thankful to the large support received by the community in Austria and abroad as well as from Science Europe. We are especially thankful to our key note speakers, the organisers of the panels, the panel discussants, the session chairs, the moderators and the paper presenters.

The conference organisers finally wish to warmly thank the sponsors of this conference:

- The Austrian Federal Ministry of Transport, Innovation and Technology (BMVIT)
- The Austrian Federal Ministry of Science, Research and Economy (BMWFW)
- The Vienna Science and Technology Fund (WWTF)
- The Austrian Science Fund (FWF)
- The Austrian Research Promotion Agency (FFG)
- Danube-INCO.NET, project funded under FP7

Without their support, this conference could not have been realised!

The organisers of this conference wish you a fruitful exchange and a good time in Vienna!

Klaus Schuch

Austrian Platform for Research and Technology Policy Evaluation (fteval)

Jakob Edler

Manchester Institute of Innovation Research (MIoIR)

Philippe Laredo

Institute for Research and Innovation in Society (IFRIS)

bmvit Bundesministerium für Verkehr, Innovation und Technologie

bmwfw Bundesministerium für Wissenschaft, Forschung und Wirtschaft

Danube-INCO.NET Advancing Research and Innovation in the Danube Region

FFG

FWF Der Wissenschaftsfonds.

WWTF

ABOUT THE ORGANISERS

AUSTRIAN PLATFORM FOR RESEARCH AND TECHNOLOGY POLICY EVALUATION

The Austrian Platform for Research and Technology Policy Evaluation (fteval) was founded in 1996 as an informal cooperation and aims at presenting approaches and methods of evaluation, discussing the current evaluation practice on an international level and thus contributing to the development of a culture of evaluation in Austria. In November 2006, its members re-founded the Austrian Platform for Research and Technology Policy Evaluation as a society. The mission of the platform is to encourage more, better and more transparent evaluations for an optimal strategic planning of RTD-policy in Austria and to develop a culture of evaluation together with decision-makers in the field of Austrian technology and research policy.

MANCHESTER INSTITUTE OF INNOVATION RESEARCH (MIOIR)

The Manchester Institute of Innovation Research is a centre of excellence in the field of innovation studies, which includes the overlap of innovation with science management and science policy. With over 50 full members, approximately 50 PhD researchers and a range of associated academics, MIoIR is Europe's largest and one of the World's leading research centres in its field. As a dedicated research centre, MIoIR is at the heart of innovation-related research in the Manchester Business School and The University of Manchester. The Institute's key strengths lie in the linkage and cross-fertilisation of economics, management and policy around innovation, science and technology.

INSTITUTE FOR RESEARCH AND INNOVATION IN SOCIETY

IFRIS – the Institute for Research and Innovation in Society – was created in 2007 and has been recongised as one of the 150 French 'laboratories of excellence' in the 2010- 11 national competition ('programme d'investissement d'avenir'). It is an interdisciplinary institute at the encounter of sociology, economics, history, political sciences and management, gathering together STS and SPS traditions. It gathers 180 researchers and doctoral students from seven research groups and has its headquarters in Cité Descartes at Université Paris-Est. Its present programme is built around four thematic priorities - Responsible innovation, changes of knowledge regimes and institutions, governing the earth system, the construction of futures - and two transversal activities around ST&I indicators and the construction of a digital platform for the semantic treatment of large textual corpuses – CORTEXT Manager - to support researchers in the characterisation and dynamic analysis of the problems they address. IFRIS also coordinates the EC research infrastructure on data supporting research and innovation studies, RISIS.

PROGRAMME & INFORMATION

CONFERENCE OVERVIEW

DAY 1: THURSDAY | NOVEMBER 24TH

08:15	Registration and warm-up coffee			
09:00	**Welcome and impulse** by **Katharina Warta** (fteval) & **Jakob Edler** (MIoIR)			
09:15	**Key Note** by **Steven Hill** (HEFCE): Research impact and its assessment - lessons from the UK experience			
10:00	**PANEL 1:** Trends and challenges in systematic impact evaluation in science and innovation funding agencies			
11:00	Coffee break			
11:30	1 Science system evaluations (AU)	2 Advancing research policy & programme evaluation practice (CS)	3 Societal impact of agricultural research (1.2)	4 RTI agency evaluation based policy learning & challenges (3.1)
13:00	Lunch break			
13:50	5 European challenges & large scale policy initiatives (AU)	6 Stakeholder involvement in evaluation processes (CS)	7 Evaluation of public research organisations (1.2)	8 Innovation taxonomy, designs & assessment approaches (1) (3.1)
15:20	Coffee break			
15:45	9 Evaluation of mission oriented research (AU)	10 Measuring responsible research and innovation (CS)	11 Participation in EU programmes (1.2)	12 Innovation taxonomy, designs & assessment approaches (2) (3.1)
17:45	**PANEL 2:** The changing challenges of RTI evaluation in Europe			
19:00	Bus leaves to Heuriger (dinner)			

Room acronyms

AU Auditorium (ground flr) · CS City Stage (ground flr)

LA Lunch Area (ground flr) · 1.2 Business Stage 1.2 (1st flr) · 3.1 Business Stage 3.1 (3rd flr)

DAY 2: FRIDAY | NOVEMBER 25TH

09:00 — **Key Note** by **Pierre-Benoît Joly** (INRA): Challenges of Research Impact Assessment for addressing Societal Challenges

09:45 — **PANEL 3:** Radical ways to select risky research and create new programmes

10:45 — Coffee break and snacks

11:10

- 13 — Individuals & career trajectories — AU
- 14 — Concepts & approaches towards openness — CS
- 15 — New evaluation approaches, tools & sources — 1.2
- 16 — Evaluating smart specialisation & regional innovation — 3.1

13:10 — Lunch break

14:00 — **Launch** of the **SIPER Evaluation Interactive STI Evaluation Database**

14:30 — **Key Note** by **Liz Allen** (F1000 & King's College London): Accelerating science, understanding its impact - the promise of open science

15:20 — Coffee break

15:45

- 17 — Evaluating impacts of SSH — AU
- 18 — Stakeholder involvement in research production & citizen science — CS
- 19 — Evaluation of innovation regulations, programmes & instruments — 3.1
- 20 — Poster Session — LA

17:10 — **Wrap-up** and **goodbye** by **Philippe Laredo** (IFRIS) & **Klaus Schuch** (fteval)

Room acronyms

- AU Auditorium (ground flr)
- CS City Stage (ground flr)
- LA Lunch Area (ground flr)
- 1.2 Business Stage 1.2 (1st flr)
- 3.1 Business Stage 3.1 (3rd flr)

DETAILED CONFERENCE PROGRAMME

DAY 1: THURSDAY | NOVEMBER 24TH

08:15 - 09:00 | **REGISTRATION AND WARM-UP COFFEE**

Lobby

Registration and distribution of conference materials by the Open Evaluation 2016-team

09:00 - 09:15 | **WELCOME AND IMPULS**

Katharina Warta (Austrian Platform for Research and Technology Policy Evaluation, fteval)

Jakob Edler (Manchester Institute of Innovation Research, MIoIR)

AU Auditorium - ground floor

09:15 - 10:00 | **KEY NOTE**

Steven Hill (Higher Education Funding Council for England, HEFCE)

Research impact and its assessment - lessions from the UK experience

AU Auditorium - ground floor

10:00 - 11:00 | **PANEL DISCUSSION 1**

Trends and challenges on systematic impact evaluation in science and innovation funding agencies

Chair: **Sergio Salles-Filho** (University of Campinas, São Paulo)

AU Auditorium - ground floor

Erik Arnold (Technopolis Group)

Jakob Edler (Manchester Institute of Innovation Research, MIoIR)

Rupert Pichler (Austrian Federal Ministry of Transport, Innovation and Technology)

Nicholas Vonortas (George Washington University, Washington D.C.)

Wolfgang Polt (Joanneum Research)

Pierre-Benoît Joly (French National Institute of Agronomic Research, INRA)

11:00 - 11:30 | **COFFEE BREAK & SNACKS**

FO Foyer - ground floor

11:30 - 13:00 | **PARALLEL SESSIONS 1 - 4**

1 **SCIENCE SYSTEM EVALUATIONS**

Chair: **Maria Nedeva** (Manchester Institute of Innovation Research, MIoIR)

AU Auditorium - ground floor

Erik Arnold (Technopolis Group)

Beyond the REF (Research Excellence Framework)? What does the evidence tell us about designing a future performance-based research funding system for the UK and other countries?

Shinano Hayashi (Japan Science and Technology Agency, JST)

Encouraging Evidence-based STI Policymaking in Japan: Overviewing Science for RE-designing Science, Technology and Innovation Policy (SciREX)

Koen Jonkers (Joint Research Centre, European Commission)

Research performance based funding systems in Europe

DAY 1: THURSDAY | NOVEMBER 24TH

11:30 - 13:00 **PARALLEL SESSIONS 1 - 4** (continuation)

2 ADVANCING RESEARCH POLICY AND PROGRAMME EVALUATION PRACTICE – SCIENCE EUROPE'S POLICY CONTRIBUTIONS

Chair: **Jordi Molas-Gallart** (Spanish Council for Scientific Research, CSIC)

CS City Stage - ground floor

Emily Gale (UK Medical Research Council)

Enhancing Interoperability of Research Activity Data

Katrin Milzow (Swiss National Science Foundation, SNSF)

The Use and Influence of Research Evaluation Studies

Tiago Santos Pereira (University of Coimbra)

Understanding and Assessing the Contributions of Science to Society

3 SOCIETAL IMPACT OF AGRICULTURAL RESEARCH

Chair: **Jakob Edler** (Manchester Institute of Innovation Research, MIoIR)

1.2 Business Stage 1.2 - 1st floor

Ariane Gaunand (French National Institute for Agronomic Research, INRA)

International practices of Agricultural Research Impact Assessment

Sylvain Quiédeville (Research Institute of Organic Agriculture, FIBL)

Contribution of Social Network Analysis for evaluating Impacts of Science-Based Research and Innovation Program: The example of the farmers' conversion to organic crop production in Camargue

Sergio Salles-Filho (University of Campinas, Sao Paulo)

RTI evaluation as governance and effectiveness tool: the case of EMBRAPII in Brazil

4 RTI AGENCY EVALUATION BASED POLICY LEARNING AND CHALLENGES

Chair: **Rupert Pichler** (Austrian Federal Ministry for Transport, Innovation and Technology)

3.1 Business Stage 3.1 - 3rd floor

Marc Barbier (Institute for Research and Innovation in Society, IFRIS)

Project Collaboration in Science. A research framework and an application in a context of research policy evaluation

Peter Biegelbauer (Austrian Institute of Technology, AIT)

How Do Innovation Agencies Evaluate and Select Projects? A Comparison of 12 European Agencies

Jari Hyvarinen (Finnish Funding Agency for Innovation, Tekes)

Instrument-specific Evaluation Methods of Tekes Activities

13:00 - 13:50 **LUNCH BREAK**

LA Lunch Area - ground floor

DAY 1: THURSDAY | NOVEMBER 24TH

13:50 - 15:20 | **PARALLEL SESSIONS 5 - 8**

5 EUROPEAN CHALLENGES AND LARGE POLICY INITIATIVES

Chair: **Sybille Hinze** (Deutsches Zentrum für Hochschul- und Wissenschaftsforschung)

AU Auditorium - ground floor

Helene Schiffbänker (Joanneum Research)

Evaluating 'Excellence' in the ERC peer review process

Manfred Spiesberger (Centre for Social Innovation, ZSI)

Measuring the impact of large scale European FTI Interventions: the EU Flagship projects

Inga Ulnicane (University of Vienna)

Challenges of evaluating complex European policy initiatives: Case of European Research Area

6 STAKEHOLDER INVOLVEMENT IN EVALUATION PROCESSES

Chair: **Sabine Pohoryles-Drexel** (Austrian Federal Ministry of Science, Research and Economy)

CS City Stage - ground floor

Morgane Fritz (Karl Franzens University, Graz)

How to identify stakeholders in the policy-making context?

Florian Holzinger (Joanneum Research)

Evaluation from inside? Evaluating structural change processes to promote gender equality

Ad Prins (Support in Research Management)

Diversity among stakeholders and the evaluation of impact and relevance of public research

7 EVALUATION OF PUBLIC RESEARCH ORGANISATIONS

Chair: **Alexander Degelsegger** (Centre for Social Innovation, ZSI)

1.2 Business Stage 1.2 - 1st floor

Ariane Gaunand (French National Institute of Agronomic Research, INRA)

Measuring the impact of a public research organization on environment: a methodology based on case studies and an expert panel

Tracy Williams (New Zealand Institute for Plant & Food Research)

Evaluating the impacts of New Zealand's Crown Research Institutes – frameworks, forums and fostering developmental evaluation in research programs

Igor Yegorov (National Academy of Sciences of Ukraine)

Evaluation of Research Institutions of the National Academy of Sciences of Ukraine: Old and New Approaches

DAY 1: THURSDAY | NOVEMBER 24TH

13:50 - 15:20 **PARALLEL SESSIONS 5 - 8** (continuation)

8 INNOVATION TAXONOMY, DESIGNS AND ASSESSMENT APPROACHES (1)

Chair: **Matthias Weber** (Austrian Institute of Technology, AIT)

3.1 Business Stage 3.1 - 3rd floor

Jonathan Cook (SQW Group)

Using an assessment of ‚complicated' and ‚complex' characteristics to determine evaluation design of innovation policies

Marusca De Castris (University of Rome)

Evaluation of the Impact of R&D Subsidies Using a Matching Approach

Marco Mariani (Tuscany's Regional Institute for Economic Planning, IRPET)

Evaluating Public Supportsto the Investment Activities of Business Firms: A Meta-Regression Analysis of Italian Studies

15:20 - 15:45 **COFFEE BREAK & SNACKS**

FO Foyer - ground floor

15:45 - 17:45 **PARALLEL SESSIONS 9 - 12**

9 EVALUATION OF MISSION ORIENTED RESEARCH

Chair: **Erik Arnold** (Technopolis Group)

AU Auditorium - ground floor

Leonie van Drooge (Rathenau Institute)

Evaluation and governance - and why the twain shall meet

Magnus Gulbrandsen (University of Oslo)

Impact assessment and grand challenges

Peter Kaufmann (Austrian Insitute of SME Research)

Assessment of social impacts caused by mission-oriented funding programmes to support transport and mobility research

Matthias Weber (Austrian Institute of Technology, AIT)

Assessing and evaluating new mission-orientated R&D programs: requirements, frameworks and a review of recent experiences

DAY 1: THURSDAY | NOVEMBER 24TH

15:45 - 17:45 **PARALLEL SESSIONS 9 - 12** (continuation)

10 MEASURING RESPONSIBLE RESEARCH AND INNOVATION

Chair: **Matteo Razzanelli** (European Research Council, European Commission)

CS City Stage - ground floor

- **Johanna Ferretti** (Leibniz Centre for Agricultural Landscape Research, ZALF)
  Criteria for socially responsible research processes – Making a difference to research impacts
- **Sybille Reidl** (Joanneum Research)
  Establishing an evaluation framework for promoting gender equality in R&I
- **Emanuela Reale** (Research Institute on Sustainable Economic Growth, NRC)
  Responsible Research and Innovation: implications for research evaluation at universities
- **Maria Schrammel** (Centre for Social Innovation, ZSI)
  Measuring RRI – A shift of perspective on evaluation

11 PARTICIPATION IN EU PROGRAMMES

Chair: **Rosalinde van der Vlies** (European Commission)

1.2 Business Stage 1.2 - 1st floor

- **Teresa De Oliveira** (Centre for Social Innovation, ZSI)
  Indo-European Collaboration in Science, Technology and Innovation: Examining framework conditions and outcomes
- **Nicholas Harrap** (Joint Research Centre, European Commission)
  International research links of EU13 countries and the consequences for EU research project participation: FP7 participation dynamics and the prerequisites to EU research funding success
- **Emilia Primeri** (Research Institute on Sustainable Economic Growth, RNC)
  Evaluating participation of top class universities in European research programmes: what insights for policy debate?

12 INNOVATION TAXONOMY, DESIGNS AND ASSESSMENT APPROACHES (2)

Chair: **Attila Havas** (Hungarian Academy of Science)

3.1 Business Stage 3.1 - 3rd floor

- **Seweryn Krupnik** (Jagiellonian University, Krakow)
  Explaining the success (and failure) of the intervention with the use of sampling based on propensity score matching
- **Manfred Paier** (Austrian Institute of Technology, AIT)
  Ex-ante evaluation of research policy: An agent-based model of Austrian biotechnology
- **Nikolay Zudin** (Russian Science Foundation)
  Assessing the impact of public funding and tax incentives in Russia: recipient analysis and additionality effects evaluation
- **Attila Havas** (Hungarian Academy of Science)
  Various approaches to measuring business innovation: their relevance for capturing social innovation

DAY 1: THURSDAY | NOVEMBER 24TH

17:45 - 18:45 **PANEL DISCUSSION 2**

The changing challenges of RTI evaluation in Europe - experience, observations and outlook

Chair: **Katharina Warta** (Austrian Platform for Research and Technology Policy Evaluation, fteval)

AU Auditorium - ground floor

- **André Martinuzzi** (Vienna University of Economics and Business)
- **Christian Naczinsky** (Austrian Federal Ministry of Science, Research and Economy)
- **Paul Simmonds** (Technopolis Group)
- **Rosalinde van der Vlies** (European Commission)

19:00 - 19:30 **BUS RIDE TO CONFERENCE DINNER**

Meeting point in lobby - Bus leaves at 19:00

19:30 - 22:00 **CONFERENCE DINNER**

Heuriger Bernreiter (traditional Austrian wine tavern)

DETAILED CONFERENCE PROGRAMME

DAY 2: FRIDAY | NOVEMBER 25TH

09:00 - 09:45 | **KEY NOTE**

Pierre-Benoît Joly (French National Institute of Agronomic Research, INRA)

Challenges of Research Impact Assessment for addressing Societal Challenges: Bridging theory and practice

AU Auditorium - ground floor

09:45 - 10:45 | **PANEL DISCUSSION 3**

Radical ways to select risky research & create new programmes

Chair: **Maria Nedeva** (Manchester Institute of Innovation Research, MIoIR)

AU Auditorium - ground floor

Charlotte Alber (Austrian Research Promotion Agency, FFG)

Albert Bravo-Biosca (Nesta, Innovation Foundation)

Thomas König (Institute for Advanced Studies, IHS)

Klaus Zinöcker (Austrian Science Fund, FWF)

10:45 - 11:10 | **COFFEE BREAK & SNACKS**

FO Foyer - ground floor

11:10 - 13:10 | **PARALLEL SESSIONS 13 - 16**

13 INDIVIDUALS AND CAREER TRAJECTORIES

Chair: **Sergio Salles-Filho** (University of Campinas, São Paulo)

AU Auditorium - ground floor

Jens Ambrasat (German Centre for Higher Education Research and Science Studies)

How structured doctoral programmes change the landscape of doctoral education? An evaluation approach

Maria Calatrava Moreno (Vienna University of Technology)

Measuring and Understanding Interdisciplinarity in Computer Science Doctoral Programs

Richard Heidler (German Research Foundation)

The effects of German Research Foundation grants on career patterns

Sarah Seus (Frauenhofer ISI)

The evaluation of the Austrian START programme: an example for a successful sophisticated multi-method approach

DAY 2: FRIDAY | NOVEMBER 25TH

11:10 - 13:10 **PARALLEL SESSIONS 13 - 16** (continuation)

14 CONCEPTS AND APPROACHES TOWARDS OPENNESS

Chair: **Jordi Molas-Gallart** (Spanish Council for Scientific Research, CSIC)

CS City Stage - ground floor

Laurent Bach (University of Strasbourg)

The evaluation of the economic impact of Research Infrastructures in open innovation and research environments : the EvaRIO project

Alexander Degelsegger (Centre for Social Innovation, ZSI)

Unpacking the openness of open evaluations

Dietmar Lampert (Centre for Social Innovation, ZSI)

New Indicators for Open Science - Possible ways of measuring the uptake and impact of open science

15 NEW EVALUATION APPROACHES, TOOLS AND SOURCES

Chair: **Peter van den Besselaar** (VU University Amsterdam)

1.2 Business Stage 1.2 - 1st floor

Lutz Bornmann (Max Planck Society)

Can policy documents be used as sources for measuring societal impact?

Qiang Li (Chinese Academy of Sciences)

Theoretical Extension of Evaluation Theory Tree Based on Mapping Knowledge Domain

Olga Radchuk (Biofaction KG)

Technology Readiness Level (TRL) mapping for synthetic biology products

Paul Cunningham (Manchester Institute of Innovation Research, MIoIR)

Towards a Taxonomy of Science and Innovation Policy Instruments

16 EVALUATING SMART SPECIALISATION AND REGIONAL INNOVATION

Chair: **Alexander Kleibrink** (Joint Research Centre, European Commission)

3.1 Business Stage 3.1 - 3rd floor

Annalisa Caloffi (University of Padova)

R&D collaboration policies: are they really able to promote networking?

Alwin Leonard Gerritsen (Wageningen University and Research)

Knowledge Governance and Policy Learning: Theoretical Reflections

Alexander Kleibrink (Joint Research Centre, European Commission)

The Informational Basis of STI Policies in Europe

13:10 - 14:00 **LUNCH BREAK**

LA Lunch Area - ground floor

DAY 2: FRIDAY | NOVEMBER 25TH

14:00 - 14:30 | **LAUNCH OF THE SIPER EVALUATION INTERACTIVE STI EVALUATION DATABASE**

Paul Cunningham (Manchester Institute of Innovation Research, MIoIR)

AU Auditorium - ground floor

14:30 - 15:20 | **KEY NOTE**

Liz Allen (F1000 & King's College London)

Accelerating science, understanding its impact: the promise of open science

AU Auditorium - ground floor

15:20 - 15:45 | **COFFEE BREAK & SNACKS**

FO Foyer - ground floor

15:45 - 17:10 | **PARALLEL SESSIONS 17 - 20**

17 EVALUATING IMPACTS OF SSH

Chair: **Michael Stampfer** (Vienna Science and Technology Fund, WWTF)

AU Auditorium - ground floor

Emanuela Reale (Research Institute on Sustainable Economic Growth, NRC)

Assessing the impact of research in social science and humanities: a comparative perspective on national evaluation systems in Germany, France and Spain

Nicolas Robinson-Garcia (Universidad Politécnica de Valencia)

SSH & the city. A proposal to map societal engagement through social media and web-link analysis

Jack Spaapen (Royal Netherlands Academy of Arts and Sciences) & **Michael Ochsner** (ETH Zurich)

Evaluating to valorise: the societal value of SSH research and the ENRESSH COST action

18 STAKEHOLDER INVOLVEMENT IN RESEARCH PRODUCTION AND CITIZEN SCIENCE EVALUATION

Chair: **Michael Strassnig** (Vienna Science and Technology Fund, WWTF)

CS City Stage - ground floor

Barbara Kieslinger (Centre for Social Innovation, ZSI)

Evaluating citizen science at progress and impact level: what's the value for research funding policies?

Isabella Wagner (Centre for Social Innovation, ZSI)

Societal vs. academic impact? A critical discussion based on the experiences from evaluations of the 'Sparkling Science' programme and the 'Young Science' project and other citizen science projects

Go Yoshizawa (Osaka University)

Programme evaluation and organisational development for transdisciplinary research

DAY 2: FRIDAY | NOVEMBER 25TH

15:45 - 17:10 | **PARALLEL SESSIONS 17 - 20** (continuation)

19 EVALUATION OF INNOVATION REGULATIONS, PROGRAMMES AND INSTRUMENTS

Chair: **Wolfgang Polt** (Joanneum Research)

3.1 Business Stage 3.1 - 3rd floor

Alquézar Sabadie (European Commission)

The Community Innovation Survey and the innovation performance of enterprises funded by the EU's Framework Programmes. Lessons for the evaluation of Horizon 2020's economic impacts

Abdelfeteh Bitat (Saint-Louis University, Brussels)

Environmental regulation and eco-innovation: insights from diffusion of innovations theory

Oluwasola Emmanuel Omoju (Xiamen University)

Intellectual property rights and technological innovation: Case study of renewable energy adoption

20 POSTER SESSION

Chair: **Klaus Schuch** (Austrian Platform for Research and Technology Policy Evaluation, fteval)

LA Lunch Area - ground floor

Maria Domenica Blundi (Vale S.A.)

R&D management in a Brazilian mining company: creating a collaborative way of managing and evaluating R&D projects

David Campbell (Alpen-Adria-University Klagenfurt)

Research in Social Sciences and Humanities (SSH) at Austrian Universities: Bibliometric Article Analysis and Comparison of the Years 2007, 2010 and 2013

Béatrice Cointe (Aix-Marseille University)

Science technology and innovation policy and expectations in practice: insights from the sociological study of an interdisciplinary project on microbial bioenergy

Kaisa Granqvist (Centre for Social Innovation, ZSI)

Availability and design of public funding programmes for frugal innovations

Elizabeth Koier (Rathenau Institute)

Spinning plates: The effects of national prioritizing policies on university internal decisions

Ali Maleki (Iran University of Science and Technology)

Rationales for designing and comparing science, technology and innovation (STI) indicators' frameworks

Torger Möller (German Centre for Higher Education Research and Science Studies, DZHW)

Same objectives, different governance – How the Excellence Initiative and the Pact for Research and Innovation effect the German science system

Cian O'Donovan (University of Sussex)

Democratic engagement with and within emerging regulator spaces

Gabriele Permoser (St. Pölten University of Applied Sciences)

Evaluating third mission activities – Towards a concept for small universities of applied sciences

DAY 2: FRIDAY | NOVEMBER 25TH

15:45 - 17:10 | **PARALLEL SESSIONS 17 - 20** (continuation)

20 POSTER SESSION

Edgar Salas Gironés (Eindhoven University of Technology)

Societal goals, STI policies and socio-technical transitions: The case of the Dutch smart mobility policy

Luiza Silva (Institute of Communication and Information Science and Technology in Health, ICICT/Fiocruz)

π-TUPI: An Opensource P2p Solution to Foster Open Evaluation?

Birge Wolf (University of Kassel)

The use of synergies between research funding and CRIS systems for the documentation and evaluation of the societal impact of applied research

17:10 - 18:00 | **WRAP-UP & GOOD-BYE**

Philippe Laredo (Institute for Research and Innovation in Society, IFRIS)

Klaus Schuch (Austrian Platform for Research and Technology Policy Evaluation, fteval)

AU Auditorium - ground floor

GENERAL INFORMATION

CONFERENCE SITE FLOOR PLANS

SESSION DETAILS

PANEL DISCUSSIONS & KEY NOTES

DAY 1: THURSDAY | NOVEMBER 24TH

WELCOME AND IMPULS

09:00 - 09:15

AU Auditorium

Katharina Warta

Austrian Platform for Research and Technology Policy Evaluation (fteval)

warta@technopolis-group.com

Jakob Edler

Manchester Institute of Innovation Research (MIoIR)

jakob.edler@manchester.ac.uk

KEY NOTE

09:15 - 10:00

Research impact and its assessment - lessons from the UK experience

AU Auditorium

Steven Hill

Higher Education Funding Council for England (HEFCE)

s.hill@hefce.ac.uk

In this presentation I will reflect on the evaluation of research impact, drawing on the lessons and experience of impact assessment in the UK Research Excellence Framework (REF). This exercise represents an attempt to evaluate research impact on a national scale, and evaluation of the process and outcomes provides important insights. I will consider the extent to which the traditional challenges of impact assessment (attribution, time lags, and evidence) played out in reality, and conclude that the approach used in REF was broadly successful. However, the new information on impact afforded by the assessment itself raises new challenges for the future evaluation of impact. I will consider three of these new challenges:

- The role of interdisciplinary research
- The role of co-produced research
- Societal legitimacy of research impact

Finally, I will consider whether the evaluation of research impact should become more predominant in research evaluation generally.

DAY 1: THURSDAY | NOVEMBER 24TH

PANEL DISCUSSION 1

10:00 - 11:00

Trends and challenges on systematic impact evaluation in science and innovation funding agencies

AU Auditorium

Chair

Sergio Salles-Filho

University of Campinas, São Paulo

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DAY 1: THURSDAY | NOVEMBER 24TH

PANEL 1 (continuation)

One central challenge in STI policy design and implementation is to introduce impact evaluation as an organic component of the policy process. At STI programme level, evaluation of outputs and outcomes has been implemented in several OECD countries. The same cannot be said at the funding agencies level. Notwithstanding, funding agencies are increasingly demanding information on expected results and impacts and collecting data of outputs and outcomes of all sorts of financial support.

This panel aims to promote an updated discussion on how funding STI agencies are designing and implementing impact evaluation, what are the trends and the main challenges to tackle. The session is organized as a round-table to approach the following issues:

a) What kind of conceptual approaches should back the rationales behind impact evaluation in funding agencies?

b) What is reasonable - and what is not - in building systematic impact evaluation in funding agencies?

c) Should impact evaluation be established as in-built-systems?

d) What are the main methodological trends?

e) To what extent should funding agencies perform their own evaluation reports based on their own databases?

f) How should this be conciliated with external independent evaluations?

PANEL DISCUSSION 2

17:45 - 18:45

The changing challenges of RTI evaluation in Europe - experience, observations and outlook

AU Auditorium

Chair

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DAY 1: THURSDAY | NOVEMBER 24TH

PANEL 1 (continuation)

Paul Simmonds

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Since more than two decades, public funding of science and innovation has considerably changed, in volume and in the way of spending. Project-wise funding has been replaced by program funding; the management of programs has been outsourced from ministries to agencies; public research centres, universities, and agencies are governed in 3-4 year terms by performance contracts, to name some of these changes. Evaluation is expected to provide necessary information to decision makers dealing with this new complexity: project evaluation, program evaluation, performance evaluation, and – on the top of all ¬– impact evaluation at any level: projects, programs, systems.

Evaluation as well has evolved. Change might be linked to new evaluation questions related to new funding objectives (i.e. dealing with grand challenges in Europe), but also to the process of defining, executing and using evaluations. Firstly, we dispose of more and better monitoring data, new data analysis techniques, and professionally trained competences of evaluators. Secondly, we experience new limitations, for instance related to the availability of peers doing reviews, or to the absorptive capacity of evaluation results by decision makers. Thirdly, public tendering of evaluations has changed. Whereas the European Commission uses framework contracts triggering new forms of cooperation in consortia covering a broad range of competences, national agencies or ministries increasingly ask for very short project outlines, and evaluations preferably realised by small teams. The budget for one evaluation ranges between 10.000 EUR and 1,6 Million EUR. To sum up, the evaluation process itself has become complex, and at the same time, competences have increased to deal with that.

This panel will discuss how evaluation evolves, both on the European and the member states level, with a focus on needs and expectations, as well as on competences and structures. It will be organised in two parts, starting with a backward looking perspective on learnings, difficulties, and good experiences, and ending with a future oriented perspective on new challenges and needs. Panelists will be asked to provide a short input on their experience and observations, and then commonly discuss the outlook resulting from these observations. We have the opportunity to make use of the concrete experience of each single person on the panel to identify the most relevant issues and open an evidence based discussion of key challenges.

The ambition of this conference is to promote the exchange between policy, evaluators and researchers on this issue – this panel shall provide an input to this endeavour.

DAY 2: FRIDAY | NOVEMBER 25TH

KEY NOTE

09:00 - 09:45

Challenges of research impact assessment for adressing societal challenges: bridging theory and practice

AU Auditorium

Pierre-Benoît Joly

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Research Impact Assessment (RIA) is well established but the changing relations between research, innovation, and society require new ways of conceiving and practicing RIA. Specifically, traditional RIAs focus mainly on accounting and accountability, and involved methodologies that focus on the economic efficiency of research investment. Conceptualization and practice of RIA are based on two hypotheses: (a) a linear model of innovation where investment in research increases the stock of knowledge which in turn increases productivity, and (b) the belief that economic growth automatically results in social progress.

The changing relations between research, innovation, and society are at the heart of the new discourse on societal challenges which emerged in the US, Europe and other areas as a central piece of the new master frame in the 2000s (Lund Declaration 2009).

In line with this new master frame, RIA involves collective learning and can be considered a tool to guide complex transformation dynamics. Hence, there is a strong need to develop new RIA approaches that go beyond traditional methods and are suited to the current interactions between research, innovation, and society.

Such a recasting of RIA is already underway. For instance, the Public Value Mapping (PVM) approach was designed to assess the capacity of research to achieve social goals (Bozeman and Sarewitz, 2011). The SIAMPI project (Social Impact Assessment Methods for research and funding instruments through the study of Productive Interactions between science and society) developed an approach aimed at uncovering how productive interactions contribute to the generation of impact (Spaapen and Van Drooge, 2011). The ASIRPA approach (Assessment of socio-economic impact of public agricultural research) draws on these approaches (Joly et al., 2015) but exploits a set of standardized ex post case studies in order to learn about the generic features of impact generating mechanisms.

In this presentation, I will reflect on the design and implementation of new approaches that aim at addressing the current challenges of RIA. I will specifically look at experiences where these renewed approaches are co-produced and emerge as a result of close interactions between researchers and practitioners. Such experiences are important since, together with the need to address challenges, there is a strong need to bridge the gap between theory and practices.

DAY 2: FRIDAY | NOVEMBER 25TH

PANEL DISCUSSION 3

09:45 - 10:45

Radical ways to select risky research & create new programmes

AU Auditorium

Chair

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Over the past few years, science, technology and innovation policy stakeholders have begun to open themselves up to exploring new approaches in public funding and selecting applications: In search of more radical and highly innovative outcomes they try to foster 'high risk – high gain' projects that may have a higher risk of failure. Peer review is often thought of as the gold standard for reviewing research proposals. However, is traditional peer review really the best methodology to select risky research, or are alternative approaches more appropriate? Do we have to change the way we think about promoting research and innovation, and the methods we select proposals? This panel will feature new approaches (like experimental innovation policy labs) that allow science, technology and innovation policy stakeholders to support a wider portfolio of instruments and projects, which may lead to more radical and high-innovative outcomes and discuss peer review as organisational practice.

DAY 2: FRIDAY | NOVEMBER 25TH

PRESENTATION

14:00 - 14:30

Launch of the SIPER evaluation interactive STI evaluation database

AU Auditorium

Chair

Paul Cunningham

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Effective policy making depends on evidence and learning. Across the world, numerous avenues of support for science and innovation exist, provided by a host of governmental, non-governmental and supra-governmental actors. These actors continually seek to determine the effects of their policy interventions – how well are they being managed? – what results have been achieved? – how effective or efficient is their implementation? – what impact have they had?

Evidence of these effects is typically generated through a process of evaluation. A vast number of evaluations have been performed to assess the effects of an enormous range of policy instruments and together these constitute an incredibly valuable resource for policy learning. However, these evaluations are published in an enormous variety of locations and, even given the power of today's search engines, are not readily traceable. In addition, very few have been systematically organised according to their major features (such as the type of policy intervention on which they focus).

This is where SIPER aims to make a difference. SIPER (the Science and Innovation Policy Evaluations Repository) has been developed by a team at the Manchester Institute of Innovation Research, at the University of Manchester and forms part of the EC's RISIS initiative. It offers a central source of knowledge on science and innovation policy evaluations. It has two broad aims: to provide on-line access to a unique collection of policy evaluations, in a single location; and to allow policy learning by providing an informed analysis of the database contents that is searchable by policy makers and other stakeholders and which provides the basis for additional academic analysis.

This presentation will provide an overview of SIPER, its objectives, its methodology and the data it holds. We will also be launching the public website of SIPER and will provide a live on-line demonstration of its search functions.

DAY 2: FRIDAY | NOVEMBER 25TH

KEY NOTE

14:30 - 15:20

Accelerating science, understanding its impact: the promise of open science

AU Auditorium

Liz Allen

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Open science aims to accelerate scientific progress to turn what is discovered into benefits for all. Researchers increasingly share their findings and research outputs in new, open and accessible ways, resulting in greater discoverability of their work for others to scrutinise and build upon. This presents exciting opportunities for research evaluators; providing a more holistic view of the products and outputs of research; enabling new indicators to be developed that describe the qualities, value and characteristics of research, beyond a focus on research articles and traditional outputs; and provides the potential for greater understanding of the myriad routes to impact.

The challenge is to harness this potential to best effect, to reward and recognise activity that improves and enhances science while avoiding perverse incentives. This keynote will provide a summary of the context and opportunities that open science presents for research evaluation, explores the challenges and poses some potential solutions.

WRAP-UP & GOOD-BYE

17:10 - 18:00

AU Auditorium

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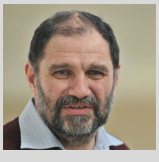

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ABSTRACTS OF PAPERS

Erik Arnold

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1

Title **Beyond the REF (Research Excellence Framework)? What does the evidence tell us about designing a future performance-based research funding system for the UK and other countries?**

The UK's REF is the mother of all performance-based research funding systems (PRFS). Originally introduced in 1986, it rapidly became the mechanism used to allocate a majority of institutional funding for research to the UK universities. Today, the majority of universities' research income comes from external sources, so the UK is among the most fiercely competitive research environments in the world. In a country where overall expenditure on R&D has been declining for years and the expenditure on research in the universities has been growing much more slowly than in competing countries, the REF may be decisive in squeezing high research performance out of the university sector.

In the period since 1986, many countries have adopted a PRFS. Unlike the REF, which is based on peer review, most of the newer systems rely heavily on metrics. A the oldest PRFS, the REF is also the most studied but there is also a growing literature about the others. This paper is based on a review of that evidence done by Technopolis during 2016. Unsurprisingly, university research managers seem to like PRFS while the researchers are somewhat less convinced of their usefulness.

The paper summarises the main findings from the UK and other literatures. It explains what the advantages and disadvantages of PRFS appear to be and their apparent effects on research and the research community. It points out that PRFS and instruments for achieving policy objectives and that they can be designed in a range of ways in order to have different effects. It sets out some of the main design options and explains their likely consequences.

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1

Title **Summary of 'Encouraging Evidence-based STI Policymaking in Japan: Overviewing Science for RE-designing Science, Technology and Innovation Policy (SciREX)'**

In April 2011, Japan's Ministry of Education, Culture, Sports, Science and Technology of Japan (MEXT), launched "SciREX: Science for RE-designing Science, Technology and Innovation Policy" program. SciREX program unlike SciSIP, not only provides competitive research fund for interdisciplinary studies, but also establishes database for interdisciplinary researches and human resource development programs in several universities. By conducting these activities, it is believed to produce the innovation-inducing interaction of stakeholders. The ultimate goal of this program is to realize "evidence-based policy formation", which tries to make policy more effective in order to address policy challenges, based on observations and analysis of social and economic states from various aspects as well as setting plausible policy options.

SciREX program is deeply committed to encourage frequent communication between science community and policymakers. For instance, last year the program held wide variety of 16 seminars which invited researchers of interdisciplinary studies as speakers. The seminar series were well functioned since stakeholders from policymakers, academia, and private sectors joined and discussed how the program can be more successful. Furthermore, so-called "Policy Liaisons", who have career background of both policymaking and scientific research, were appointed as a channel for capturing policy demand and for delivering evidence to policymaking.

After 5 years from launching the program, it is observed some accomplishments and challenges. In this paper, we created a distribution map of SciREX activities to review management of the program and re-examined research questions for advancing the program, since we regard the research questions is a crucial bond for communities of researchers and policy-makers to achieve 'co-evolution' of Science of STI Policy and STI Policy system.

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1 Title **Research performance based funding systems in Europe**

Research performance based funding (RPBF) (Hicks 2012) is one of the central mechanisms through which many EU MS have tried to increase the performance of their Public Sector Research systems over the past decade. This paper analyses the extent to which RPBF allocation mechanisms are being implemented in Europe, the differences in their nature and discusses the strength and drawbacks of different approaches. To do so, it builds on a novel set of data on project and organisational level funding allocation, developed for the European Commission This project identifies funding allocation mechanisms in each of the EU-28 Member States. Further, the paper builds on an in-depth qualitative analysis of RPBF implementation in 28 European countries and comes to a classification of different types of RPBF implementation.

Special Session: **Advancing Research Policy and Programme Evaluation Practice – Science Europe's Policy Contributions** 2

This session provides an insight into evaluation practice and policy, by showcasing the work undertaken by the Science Europe Working Group Research Policy and Programme Evaluation (WG) on different aspects of research evaluation practice and policy.

Science Europe is the association of Europe's major Research Funding Organisations (RFOs) and Research Performing Organisations (RPOs) with a public mission (including national research councils and major nation-wide performers). Science Europe brings together 47 organisations from 27 countries which, together, invest more than €25 billion per annum in R&D.

The WG is a platform of evaluation experts working at Science Europe's Member Organisations. By showcasing the WG's work, this session supports the Open Evaluation conference in achieving its goal of bringing together evaluation theory and practice, as well as linking academia and evaluation stakeholders.

In addition, the session will be used by the WG itself to hear feedback from the evaluation community, and to reach out to those who may be interested in the outcomes of and follow-up to the activities outlined above.

The WG is active on three topics that are relevant to evaluation practitioners and for research policy:

1) The interoperability of data on research activity that would allow the integration and use of research information across organisations and countries: the WG will present a draft Position Statement outlining broad principles on research information systems and concrete actions that research organisations can undertake to progress towards interoperability;

2) The development of a shared understanding among Member Organisations on the definition and assessment of societal impact; and

3) Enhancing the members' understanding of the factors that determine the impact and influence of evaluation studies.

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Title **Enhancing Interoperability of Research Activity Data** 2

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2 Title **Understanding and Assessing the Contributions of Science to Society**

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Title **The Use and Influence of Research Evaluation Studies** 2

Ariane Gaunand

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3

Title

Practices of Research Impact Assessment – The case of public agricultural research organizations

Agricultural research is growingly expected to address global societal challenges. Research Impact Assessment (RIA) is increasingly needed to prove its achievements to a diversity of audiences.

Drawing on the analysis of five public agricultural research organizations (PROs), we provide an original analysis of the motivations, the theoretical issues and the implementation challenges of impact assessment. We discuss the supposed gap between the theoretical background for impact assessment and actual practices. Qualitative data were collected through interviews conducted with senior managers of each PRO, and desk research.

It appears that all five organizations have recently attempted to implement scientifically credible yet implementable methods for assessing their societal impact. The PROs seek for a balance between the multiple purposes for evaluation. Accounting to funders is usually accompanied with competing objectives such as organizational learning, internal capacity-building, or accounting to other audiences. It may be necessary to make choices between these objectives. While, in practice, external control through positive yet credible reporting to funders is clearly prioritized, it is argued that multidimensional evaluation to foster internal learning would be more efficient at improving research impact. RIA would thus nurture a culture of impact and become a central tool for strategic intelligence.

In terms of evaluation design, monitoring systems often combine with ex-post approaches, mobilizing qualitative and quantitative methods. The degree of centralization of the assessment activities differs, but all organizations seek to deliver a comprehensive picture of their impact.

Implementation features reveal that assessment is often conducted under multiples constraints related to budget, management, time delays, calendars misalignment, or data availability.

Tensions in divergent objectives, institutional choices in terms of centralization of the assessment activities, and practical implementation obstacles, all refer to the place of evaluation in the overall governance system. They are keys toward explaining the gap between the methods available in the literature and the approaches actually implemented by the PROs.

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Title

Contribution of Social Network Analysis for evaluating Impacts of Science-Based Research and Innovation Program: The example of farmers' conversion to organic crop production in Camargue

3

This contribution is a methodological research paper that aims to demonstrate the relevance of undertaking a Social Network Analysis (SNA) for ex-post evaluating Impacts of Science-Based Research and Innovation Program (ISRIP) in the agricultural sector. Our study is based on the ISRIP Method, derived from the Participatory Impact Pathway Analysis (PIPA). The ISRIP Method is characterized by the organization of stakeholders' workshops; and SNA is part of the evaluation process. In this paper, we question the rationale of undertaking a SNA to help evaluate the impacts, role and contribution of the research through the example of farmers' conversion to organic crop production in the French Camargue. Our analysis shows the interest of SNA for confirming or contradicting stakeholders' statements on relationships issues as well as investigating the accuracy of possible alternative explanations. In particular, SNA was greatly useful for exploring the presence of underlying mechanisms to the hypothesized pathway links, e.g. for identifying how a research activity X could lead to the availability of a new technic Y. We also demonstrate the importance of considering impacts of research on the survival capacity of the network, through revealing the organic network provides better resilience and robustness than the conventional one.

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3

Title **RTI evaluation as governance and effectiveness tool: the case of EMBRAPII in Brazil**

The manuscript presents the results of an in-deep evaluation carried out by the authors in 2015 and 2016 focusing on a new policy instrument called Brazilian Company for Industrial Research and Innovation (EMBRAPII). From 2013 to 2015 EMBRAPII implemented a pilot phase that resulted in 63 R&D and innovation projects executed by three Brazilian research organizations (ROs) in collaboration with 44 firms.

Methodology included four different instruments: i) semi-structured interviews with ROs managers; (ii) web survey applied to project coordinators at ROs (62 responses from 63 projects – or 98% of response rate); (iii) web survey with counterparts of projects in firms (44 responses from 63 projects – or 70% of response rate); and (iv) semi-structured interviews conducted by five experts specifically hired to technically evaluate a sample of 25 projects.

The preliminary conclusion is that the model is pretty effective in promoting linkages between ROs and firms towards R&D and innovation. Main reasons are: a) it induces contracts among ROs and companies giving them freedom to negotiate objectives and conditions and requiring mutual involvement in terms of financial support and managerial assistance; b) it facilitates the financial and operational conditions to execute projects leaving project's governance to the parties; c) it induces ROs to develop best practices in R&D cooperative projects.

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4

Title **Project Collaboration in Science. A research framework and an application in a context of research policy evaluation**

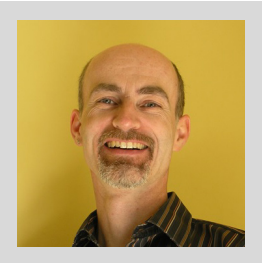
We have conducted a research within the French National Research Agency (ANR) in order to account for 10 years of funding in the area of agricultural and environmental research. Being embedded at the heart of this Agency we have developed a fine approach of data, and be active in the remediation of database.

Our purpose was to question research dynamics through a large scope of sources related to research projects as the unit of analysis. We have conducted systematic data mining, data extraction and have constituted an adequate and robust information structure through the creation of a heterogeneous and relational database. Project properties, specifications concerning researchers, laboratories and institutions, as well as network indicators have been informed as precisely as possible.

We have then realized a set of co-word maps to deliver a retrospective account of the ecology of projects of these 10 years of programming. This rather classic enterprise of science mapping has been discussed with the scientific managers of this research program. Our work took part to the strategic discussion about the use and impact of thematic programs in relation to on going research policy evolutions in France. The final report have been published by the Agency, which represents a direct contribution to this discussion.

Our communication presents our research perspective on project collaborations and proposes an analysis of project descriptors through time. We show how it delivers a particularly relevant landscape of front of science when accessibility to submitted projects is made possible. We particularly discuss the co-evolution between the research program incentives and the ecology of laboratories networks. We conclude on some considerations about the use of this type of "open scientometric exercise" in a context of research policies that tend to go away from thematic programs and foster either on individual excellence or on Grand Challenges.

Peter Biegelbauer



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4

Title

How Do Innovation Agencies Evaluate and Select Projects? A Comparison of 12 European Agencies

Evaluation happens not only on the policy level, it is also an important function of applied research funding organisations. Research funding agencies have to evaluate project proposals in order to select the most promising proposals for funding. Since the funding of societally and economically relevant research is the most important task of research funding agencies, project selection is the very core of their business.

Besides some research on peer reviewing there is little verified knowledge available on project evaluation and selection processes. In a recently finished study for the European Association of National Innovation Agencies Taftie a comparison of the procedures of 18 programmes of 12 European innovation agencies has been carried out.

The key points of interest were selection and role of evaluators, selection criteria, ranking procedures and general process issues. A number of critical process issues were identified and ordered after three perspectives, i.e. policy, agency and customer perspective. A major outcome of the study was the realisation that in lieu of the differences between the agencies, their regulatory, budgetary and governance environment and the functions they have to fulfil in the respective innovation systems, it does not make sense to define a "best practice" for the selection processes.

The comparison of the ways in which the 12 innovation agencies evaluate and select projects therefore shows that there is more than one solution to the challenge of financing the best research projects – "best" relating to fulfilling the programme goals. The socio-economic and political framework conditions the innovation agencies find themselves in form their potential options for possible and sensible solutions in the respective innovation systems. This is true for older programmes, such as schemes focusing on the competitiveness of firms, but also newer programmes, such as schemes influenced by the societal problem oriented Grand Challenge rationales.

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Title

Instrument-specific Evaluation Methods of Tekes Activities

4

Evaluation has two equally important objectives: (1) to verify the real impact of R&D and innovation funding, and (2) to facilitate learning and in-depth understanding of how this impact is created and how it may be improved either by redesigning existing instruments and support measures or designing new ones. While the former has become increasingly important in order to demonstrate the value of R&D and innovation funding, Tekes places even higher importance on the latter. Learning and in-depth understanding is the key to identifying where and how R&D and innovation funding can produce the highest possible impact, thus allowing the necessary redirection or even reduction of funding necessary to reach the desired objectives.

My presentation shows how the Tekes impact model will be reorganized to measure new impact goals and instrument-specific pathways. These goals take into account new insights considering the impacts of R&D and innovation funding on the whole economy and society in the Finnish innovation environment. The goals are (1) globally competitive innovative firms and economy, and (2) highly attractive innovation environment which determine the impact analysis in Tekes. The main question is how specific logic models can be formed to measure goals, instruments, beneficiary segments and industrial sectors separately? My presentation concerns two evaluation questions: (1) What are methods, results and outcomes of the Tekes activities from the perspectives of several pathways of goals, instruments, beneficiary segments and innovative sectors? (2) What are the working methods to reach new goals?

Moreover, it is observed that ex-post impact assessment can be used only to design future impacts, and therefore it misses the impacts of running instruments and programmes. Thus, it is crucial to develop evaluation tools in a way that they measure also foresight evaluation results.

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Title **Evaluating 'Excellence' in the ERC peer review process**

5

In order to explain lower success rates of female applicants in ERC grants, we studied the grant selection process, focusing on the construction of excellence on a formal level as well as the practices in panel meetings. We analyzed how excellence is constructed in the ERC peer-review process in general and from a gender perspective. Therefore, we analyzed how the funding agency has defined excellence, which elements are defined to describe excellence and which indicators are mentioned to measure excellence. In what ways could they be gendered?

Yet, the focus was on the practicing (Martin 2006, 2003) of excellence in panels. Excellence is negotiated in every day practices and interactions, by this, excellence is understood as socially constructed, not merit-based only.

The analysis of practices in peer-review panels is based on interviews with 32 panel members of the ERC Starting Grants (StG) 2014, with focus on Life Science panels. To study the formalization of excellence, relevant policy has been analyzed which can be mirrored by practices.

The analysis of the interviews provides empirical evidence that current evaluation practices are suboptimal. Due to a lack of formal definition of excellence and appropriate indicators, criteria and indicators are applied unsystematically, often following the personal preferences of the panel members.

In order to reduce individual implementation, it is recommended to better formalize the process by defining criteria and appropriate indicators. To mitigate the so far vague definition of excellence, this is a crucial step for being better able to evaluate excellence. Furthermore, the suboptimal practices give space to gendered practices, as a lack of formalization increases personal interpretations and individual preferences in the field.

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5

Title **Measuring the impact of large scale European FTI Interventions: the EU Flagship projects**

In this article we will investigate the question of how to measure the impact of the EU Flagship projects. Flagships are long-term, very large scale research initiatives aiming to solve an ambitious challenge such as understanding the human brain or exploiting the potential of graphene, the newly discovered revolutionary material (European Commission, 2014). In October 2013 the first two EU Flagships, the Human Brain Project (HBP) and Graphene started operation. These long-term initiatives are planned for a run-time of about 10 years and will receive and generate an investment of € 1 billion each. Flagships aim at transformational impacts on science and technology, delivering a key competitive advantage for European industry and substantial benefits for society. The impact measurement approach is based on work performed in the EU Horizon 2020 funded Coordination and Support Action TAIPI - Tools and Actions for Impact Assessment and Policy makers Information. TAIPI started operation in January 2015 and supports the Flagships in their impact evaluation.

We highlight in the article first the assessment frame for measuring the impact. The frame has been developed based on literature review and interviews with evaluation experts. Impact dimensions were identified with structural, cooperation/collaboration, scientific, economic, social and environmental impacts. For each dimension we show examples of specific indicators, which were developed for the Flagship impact evaluation. We focus then on data collection, which was done for measurement of the specified indicators. Finally we discuss several challenges which are linked to the Flagship evaluation (e.g. data availability, short duration of Flagship implementation).

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5

Title **Challenges of evaluating complex European policy initiatives: The case of the European Research Area**

This paper draws and reflects on the recent study on the European Research Area (ERA), commissioned by the European Parliament (Ulnicane, 2016). The Parliament requested to identify gaps and barriers in the ERA initiative and to suggest recommendations for future policy activities including possible legislation. To do that, the study combined multiple methods and data sources including interviews with policymakers and stakeholders, extensive document analysis, and literature review.

The ERA initiative, launched in 2000, aims to facilitate the free circulation of researchers, scientific knowledge and technology. This study focused on the first three (of six) ERA priorities: more effective national research systems, transnational cooperation, and open labor market for researchers. 14 gaps and barriers were identified such as insufficient coordination with other policies and initiatives, limited range of interests represented in the ERA stakeholder platform, uneven progress across member states, narrow focus on project-based funding, lack of output evaluation of jointly addressing grand challenges, lack of support for bottom-up transnational research collaboration, unidirectional flows of researchers, and lack of open, transparent and merit-based recruitment. Additionally, the paper reflects on a number of challenges identified in evaluating the complex ERA initiative and developing policy recommendations.

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Title **How to identify stakeholders in the policy-making context?**

6

In the last decades, the stakeholder theory has been applied in a variety of fields like social sciences or business management. Recently, researchers and practitioners have been integrating the concept in policy-making, especially for issues related to environmental protection. It is believed that stakeholder analysis techniques can support the development of successful policies by understanding the different wishes and engaging with multiple stakeholders at multiple levels (local, regional, national and international). However, to engage with stakeholders it is necessary to identify them and know what their present and future roles and their direct or indirect influences may be. This essential step in stakeholder analysis processes is often undervalued and conducted with bias, if described at all, leading to the ommission of key stakeholders and policy failures. Also, stakeholder analysis tools come from fields that may be inadapted for policy-making since they often place a firm at the centre of the analysis. Such approaches are even obsolete in certain sectors like energy where energy users and homeowners can also produce and store their own energy which converts them into energy suppliers. Thus stakeholder identification is crucial and the way stakeholders are identified shall also be guided and evaluated in a policy-making context. This paper hence suggests adapting existing tools for stakeholder identification to the policy-making context. This is based on the development, testing and assessment of the Supply Chain-Oriented Procedure to Identify Stakeholders (SCOPIS) that places the product at the centre of the analysis instead of a firm, and uses well-known scientific methods like literature reviews or interviews that allow replicability of the approach from local to global policy-making. The suggested procedure also integrates requirements from scientific papers that highlight the need for iterative processes, visualisation tools, and the consideration of time and context to reduce bias and ommission risks.

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Title **Evaluation from Inside? Evaluating structural change processes to promote gender equality**

6

The promotion of gender equality has become a key priority for the European Research Area reform agenda. One particular approach in advancing gender equality is promoting measures leading to the development and implementation of gender equality plans. They typically aim to encourage institutional and cultural change in organisations, covering aspects such as equal opportunities for career advancement and balancing occupational and family obligations. Also, European Research Framework Programmes (FPs) increasingly request a better integration of gender in research proposals and respective research content.

The growing interest in gender equality measures in RTI has been accompanied by a growing line of research about how to measure respective outputs and impacts. Previous studies such as the "She Figure" publications (see EC 2003, 2006, 2009, 2013, 2016) have directed substantial efforts to develop quantitative indicators and use different data sources to provide a longitudinal perspective. However, there is currently no comprehensive and agreed-upon methodology to measure outputs and impacts of projects for structural and cultural change promoting gender equality.

In this study, we seek to understand the wider achievements of gender equality measures in research performing organizations and we discuss initial results arising from two EU-framework projects that deal with developing and improving gender equality plans and related activities in research institutions. The results shed light on the overall setting of the evaluation, which can be integral part of funded projects, the role and experience of the evaluators and the methodology applied. Building on recent work and literature, an evaluating concept and relevant indicators are discussed for assessing the achievements of projects for structural and cultural change that support gender equality policies. Initial results suggest that interpretation of project achievements may vary considerably amongst project partners, while the evaluating teams find themselves in the dual roles of "critical friend" and project partner.

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Title **Diversity among stakeholders and the evaluation of impact and relevance of public research**

Much of the literature about research impact assessment stresses the importance of network approaches, suggesting a crucial role for stakeholders in research and innovation networks. Recent experiences in evaluation practices such as the British REF 2014 show considerable diversity of such networks. Although the diversity in tasks and missions and the diversity in contexts certainly poses a challenge for the assessment of the societal impact of research, it does not exclude a systematic approach to evaluation or assessment. In this paper we will address the issue of diversity among stakeholder networks in academic and public research organizations, and offer a systematic approach for analyzing these networks while discussing some of its limitations and the implications for impact evaluation procedures. Looking at a number of public research institutes in the Netherlands, we will identify stakeholders and show that their diversity reflects certain organisational and socio-political aspects that are characteristic for the specific network these institutes work in. We show a variation in stakeholder profiles and the effects these different profiles have on communication and interaction patterns, and on processes of knowledge production. The profiles include larger and smaller organisations, public and private, and user groups. Also, diversity in stakeholder profiles may have political implications, for example between proponents and adversary groups in contested fields such as global warming and wind energy. The significance for evaluation may be the possibilities for comparing the outcome of such analysis with the goals and missions of the investigated institutes.

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7

Title

Measuring the impact of a public research organization on environment: a methodology based on case studies and an expert panel

Research is considered an important solution to address environmental challenges. However there is no international consensus on an implementable framework to assess environmental impacts of innovation, as different stakeholders have different expectations for research.

The paper offers a methodology to assess the environmental impact of research results in a consistent manner. It consists in building a metric based on the submission of standardized case studies to experts' judgments. Descriptors of achieved environmental impacts were collected through interviews with stakeholders on 23 cases originating from the French National Institute for Agricultural Research (INRA).

The resulting metric comprised of a 1 to 5 grading scale revealing the intensity of environmental impact, with generic criteria associated to each level of the scale. The metric comprises a transversal grid, and four dimensions: biodiversity, climate change, resources consumption, pollutions and destruction of compartments. The transversal grid rates the systemic nature of the impacts observed. For each dimension, four criteria are considered: the gravity of the stakes; the originality of the research outputs; the geographical scale of adoption; the specific impacts on biodiversity or climate change or resources or pollutions. An algorithm enables aggregating the scores of each dimension and compute the global 1 to 5 score of a case.

This grid can be used to rate the environmental impact of a diversity of self-assessed case studies with transparent criteria. This grid enables to add new cases and scale-up information to the level of the organization. The robustness of the metric is being tested in routine impact assessment with new cases.

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7

Title

Evaluating the impacts of New Zealand's Crown Research Institutes – frameworks, forums and fostering developmental evaluation in research programs

This presentation describes the way New Zealand Crown Research Institutes (CRIs) are evaluated by their Government shareholders. It outlines the roles of CRIs in the Science & Innovation system as they seek to deliver economic, environmental, social and cultural benefits to New Zealand. The approaches adopted by two CRIs – The New Zealand Institute for Plant & Food Research Limited (PFR) and AgResearch Limited – are detailed. These organisations have developed ex poste impact evaluation case studies and road maps to track their progress towards targeted impacts. A current focus in these organisations is to embed co-innovation theory and practice in research teams and the programs they lead as researchers adopt a systems approach to tackling complex problems facing the agricultural sector. Co-innovation seeks to engage a wide range of stakeholders and utilise diverse sources of knowledge to find solutions to these complex problems. It requires more flexible and dynamic approaches to evaluation in order to generate evidence of diverse interactions, networking, trust-building and learning and their contribution to the delivery of impact. Developmental evaluation is emerging as an appropriate framework for this context. System-level change is also required to ensure pre-conditions that foster the principles of co-innovation exist, and investments and activities in the New Zealand Science & Innovation system are better co-ordinated. The challenge ultimately lies in creating evaluation frameworks that are suitably flexible at both system and program levels to capture the diverse outcomes and impacts created by co-innovation in practice while ensuring sufficient accountability for a wide range of stakeholders.

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7

Title **Evaluation of Research Institutions of the National Academy of Sciences of Ukraine: old and new approaches.**

National Academy of Sciences (NASU) is the core of the Ukrainian research system. It includes more than 150 organizations with approximately 20 thousand researchers in all scientific disciplines. Proper evaluation of research potential of NASU institutes has to be a key element and precondition of reforms in S&T sphere in Ukraine.

Evaluation of the research institutes was formalized in 1998. It used a number of indicators, which were not in line with Frascati Manual recommendations. Special procedures of generalization of individual indicators were developed to receive one-figure-estimate, which could be used for ranking procedure. However, in reality, this procedure has not been applied in a strict way. No institutes have been closed on the base of evaluation since its implementation.

In 2015, it was a decision to change the procedure of evaluation in NASU in the context of general reform of Ukrainian S&T. NASU has decided to utilize experience of Leibniz Association (Germany) as its structure was similar to organization to the National Academy.

Procedure of evaluation has become more transparent and democratic. It is also more flexible: no single indicator is used for final ranking. The evaluation of the first 14 institutes was made during the summer of 2016. First results shows, that it was successful, despite problems with access to some data, misunderstanding of survey questions, lack of foreign experts and so on. However, the key question is how to provide pool of independent experts for the evaluation. As our experience shows, involvement of external evaluators is a key precondition of success. It is also evident that there is a need to continue work on improvement of questionnaires and procedure of evaluation itself by inclusion of activities, which reflect specific features of different scientific disciplines.

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8

Title **Using an assessment of 'complicated' and 'complex' characteristics to determine evaluation design of innovation policies**

Innovation activities, by the nature of how they are undertaken and their unpredictability, occur in iterative ways and with results that are brought about through non-linear routes. The increasingly 'open' and collaborative way in which innovation is undertaken can mean that some of the benefits are indirect and unintended, as results are diffused through the innovation network system. RTI policies, therefore, can be particularly challenging to evaluate, and this is often exacerbated by their design. For example, reflecting the iterative and collaborative process of innovation, policies can involve multiple components or partners, or may involve support that is tailored to specific circumstances such that no 'standard' intervention exists.

Evaluation literature has suggested that the characteristics of interventions can be used to inform evaluation design, with Rogers (2008) drawing a distinction between aspects of interventions that can be categorised as 'simple', 'complicated' and 'complex'. In this paper, we consider how this categorisation can apply to innovation policies and how different characteristics can be used as determinants of appropriate evaluation design. In doing so, we find an important role of theory-based techniques for 'complicated' and 'complex' interventions, and a need for flexible and iterative approaches to using programme theory.

The paper draws on the experiences of several recent evaluation studies that we have undertaken, focussed primarily on business innovation in the UK and the EU. It covers a mix of types of RTI policy, including: single company R&D grants; collaborative R&D grant schemes; the development of RTI infrastructures that seek to bridge the gap between research and businesses; and demand-side innovation policies.

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8

Title

Evaluation of the impact of R&D subsidies using a matching approach

Policy makers and academic scholars are debating the effectiveness of public incentive system that enhances innovation and research and development (R&D) efforts. Literature has investigated the effectiveness of R&D subsidies but the findings are mixed and controversial. The inconclusive empirical results could mainly be explained by the difficulties in isolating the impact of innovation subsidies from the confounding effects induced by other factors. In particular, participation in these programs is generally endogenous and the selection bias is pervasive. Economists and econometricians deal with the problem of inferring the effect of a policy by using different evaluation methods, depending basically on the type and quality of available data and on the policy assignment rule'.

The paper is cast in this stream of literature. The study analyzes the effect of public R&D subsidies on firms performance and innovative efforts in Italian industry using a counterfactual approach based on a MDID (Matching Difference-in Differences) estimator.

The main concern is to assess the effectiveness of public R&D support on firm's performances analyzing whether the sign and the size of the effects depend on the size of the firms and on its technological level. We want evaluate the Fund for Technological Innovation (FTI) that is the main Italian policy instrument used to subsidize private projects on R&D.

The information collected in our dataset covers administrative data and balance sheet data for the time before the investment and for the time following the investment. This has allowed for a deepen analysis of the casual effect of public R&D subsidies on employment and productivity. The casual effect identified is significantly positive for employment while it is significantly negative on productivity.

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Title

Evaluating Public Supports to the Investment Activities of Business Firms: A Meta-Regression Analysis of Italian Studies

8

The use of public funding to foster different types of private investments, including those in R&D and innovation, is a common practice in many parts of the world. In countries with decentralised government, public support in this area often relies on both national and regional programmes, with the two levels more or less interplaying within a multilevel governance framework. This state of affairs continues to fuel old, and partly ideological debates between the supporters and the detractors of industrial policy, as well as between the advocates and the skeptics of decentralisation in this area. Thanks to the vast, and ever-growing body of empirical studies reporting programme evaluations, it is possible today to brings facts to bear on these debates. Our paper presents a meta-regression analysis of recent micro-econometric evaluations of enterprise and innovation policies implemented in Italy. We categorise 478 programme impacts from 43 studies, all obtained using methods that are appropriate for causal inference in observational settings, and analyse which programme, study and estimate characteristics are associated with higher probability of success net of unobserved heterogeneity at the study level. We find that several types of programmes yield non-negligible probability of positive effects and that the outcome variable used to measure programme impact matters. If there exist any differential in probability of success between the government levels that may deliver the programmes, this differential is favourable to regional governments.

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Title

Joint evaluation for joint governance of challenge-oriented research

9

We propose a novel way to understand evaluation of challenge-oriented research. We argue that challenge-oriented research requires specific modes of governance and research evaluation. Challenge-oriented research goes beyond conventional thematic or mission-oriented research programming. It concerns broader transformations in society, for instance the transitions towards sustainable energy systems or sustainable agriculture. It necessarily involves a broad range of stakeholders who may have different views on what the problem is and how it should be approached. Challenge-oriented research is part of a complex, non-linear, long-term, open-ended and contested transformation journey. This should be reflected in the governance and evaluation of this mode of research. We argue that 'joint' and 'in itinere' evaluation is crucial to learn how and what research contributes to broader, systemic transformations in society. It is also a necessary ingredient in building trust between various research funders, multiple research performers, users and other stakeholders that research helps society to move forward a step in the (open-ended) transformation journey.

For this type of research, traditional ways of research evaluation do not suffice. New evaluation methods and practices have been developed over the last years. But so far, the experience with these methods for the evaluation of challenge-oriented research is limited. We argue that understanding evaluation as a joint governance process is key. We present a number of projects concerning evaluation of challenge-oriented research that we have been involved in and the lessons learnt.

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Title

Impact assessment and grand challenges

9

This paper aims to instigate a comprehensive and conceptual discussion of the relationship between impact (assessment) and grand challenges. We want to put forward a number of propositions for debate in the research evaluation community, we want to shape a future-oriented research agenda about impact, and we want advice and discussion about how to carry out state-of-the-art longitudinal investigations of impact. Our context is a new joint project with a long time horizon (8 years). We observe that there are different communities interested in impact, related to different theoretical traditions and assumptions about research and how it primarily leads to effects in society. The field as such appears fragmented with only weak transfer of knowledge. At least four such communities can be identified: economics of R&D and innovation, research evaluation, knowledge exchange/academic engagement, and evolutionary studies of science and innovation. What are the meeting places, if any, between these communities? Is it possible to combine approaches from different ones? Can the current dominating science policy paradigm – the grand challenges – help frame the discussion and shape new directions? These are central questions we discuss in the paper.

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9

Title

Assessment of social impacts caused by mission-oriented funding programmes to support transport and mobility research

Evaluations of RDTI policies have mainly covered impacts on innovation and com-petitiveness in the past. More recently, we can observe an increasing push to in-clude also further dimensions like impacts on the environment or the society in general. Some social dimensions are mentioned under the themes 'passenger mobility' and 'freight mobility' in the portfolio of the Federal Ministry for Transport, Innovation and Technology (bmvit). The challenge of this project was to develop an encompassing, though practical way to capture the social impacts of funded projects.

The specific objectives of the study were to develop a conceptual model covering potential social impacts of funded mobility research. This entails to answer the following three main questions: (i) what kind of social impacts are associated with passenger and freight mobility research? (ii) which methods and indicators are available for identifying social impacts? and (iii) how can the programme´s specific contribution be estimated?

We went about to answer these questions by surveying the relevant literature: i.e. more theoretical contributions by academics, handbooks on transport policy on national and supranational levels, national sustainability strategies, and more spe-cific, tailored to the policy context contributions on social effects of (large) transport policy projects. This laid the foundation for the first draft of the conceptual model, which was first tested with stakeholders through personal interviews. A refined version was then tested on a selection of projects, which were funded during a previous funding programme period. The results can readily be implemented by the funding agency.

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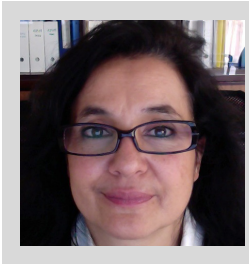
9

Title

Assessing and evaluating new mission-orientated R&D programs: requirements, frameworks and a review of recent experiences

In recent years, mission-oriented policy has (again) come to the fore of STI policy debate, and the recent publication of Mariana Mazzucato's influential book ‚The Entrepreneurial State' (2013) has further reinforced this development. Since, there is renewed interest in the conceptualisation of ‚new mission oriented policies'. In our paper, we focus on an important aspect - that is, the question of assessing and evaluating this type of policy approach. To do this, we first characterise the main building blocks of new mission-orientied policy, critically discuss the metrics suggested so far (e.g. in OECDs work on impact assessment (2013-14) or by M. Mazzucato herself), and whether they offer suited and sufficiently comprehensive measurements by which to assess the success of mission-oriented policy. Secondly, we collect (scattered) evidence from recent evaluations and impacts assessment of new mission-oriented policies (e.g. from Finland, the EU, and Austria) with the aim of providing an overview of current practices and gaps that point to a research agenda for further development of metrics and ultimately to better ways of assessing new mission-oriented policies.

Emanuela Reale



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10

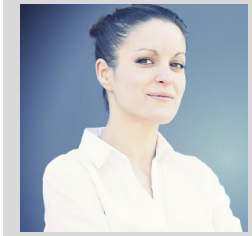
Title

Responsible Research and Innovation: implications for research evaluation at universities

RRI is an emerging discourse at national and European level for the governance of science, which includes public engagement, science education, gender dimension, and ethics, open science. RRI is targeted as a process devoted "to align research and innovation with the values, needs and expectations of society" (EC 2011), to produce a 'right impact', to make the motivations and the intentions for actions in research and innovation more democratic. In November 2014, the Rome Declaration addressed directly governments, research funding organizations and research performing institution to actions toward RRI.

The paper assumes that responsible research challenges research organizations, Universities first and foremost, and evaluation with new questions, which require new criteria and indicators. In fact, RRI cannot be assessed under a performance-based approach based on efficiency and effectiveness. RRI asks for reflexivity that universities and research communities should adopt as normal component of their research practice, about the ultimate goal of their efforts and the role they are playing in society. We argue that research evaluation shall improve the formative approach to assess opportunities and characteristics of the stakeholders' engagement in research. It means that activity indicators, rather than performance indicators of actual implementation can provide a useful approach. The university internal governance and the decision-making shall evolve toward including the new dimension of responsibility; evaluation can have a strong role, supporting the debate, providing evidences about results achieved and open challenges, feeding up learning processes and rethinking about research aims and directions.

Maria Schrammel



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10

Title

Measuring RRI - a Shift of Perspective on Evaluation?

The need for evaluation criteria has become increasingly apparent and pressing. On the one hand, there is the call for evaluation criteria on RRI by funding bodies to guide them in the selection of research proposals, as well as by different stakeholder groups who aim at implementing RRI, but on the other hand there is the challenge of operationalization of RRI which has been criticised as vague and fuzzy notion.

Firstly, the RRI concept comprises six key dimensions. They are set on different levels; some have a rather overarching character, for instance governance of RRI, while others are more specific. Furthermore, they come from different backgrounds in terms of disciplines. Thus, the dimensions of RRI have been evaluated separately and some have a longer evaluation history than others. Secondly, RRI also comprises process requirements which are difficult to measure with quantitative evaluation indicators. While there seems to be an agreement that benchmarking criteria for RRI is not an option, the question of how to evaluate RRI in practice after all is still unanswered.

The current EC funded RRI Tools project is presenting a training and dissemination toolkit on RRI. One of the tools is a 'Self-reflection tool' (SRT), which is based on the understanding of RRI as an ongoing reflection process. The tool is meant to support this idea of continuous reflection by stimulating discussions on RRI with the overall aim to contribute to a paradigm shift from traditional science and innovation towards responsible research and innovation.

Nevertheless, self-reflection cannot replace evaluation but it can be understood as valuable contribution to the approach of evaluating the complex RRI concept. The understanding and thinking of evaluation of RRI will have to develop accordingly, moving away from a tick-boxing system to a rather innovative and open approach to critical thinking and reflecting.

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Title **Establishing an evaluation framework for promoting gender equality in R&I**

EFFORTI, an EU funded H2020 project that started in June 2016 and will last until April 2019, will contribute to a better understanding of the impacts of current Gender Equality policies. It will help adapt GE policies and increase their efficacy, leading to an improved research intensity, productivity and responsibility and furthering the progress towards the achievement of the European Research Area. Furthermore, it will provide evidence of good practice but also concepts and tools for monitoring and evaluating GE policies and their effects on RTDI. It will therefore advance the discussion and the state of the art of measuring impacts of GE policies on RTDI by providing a comprehensive evaluation framework including an empirically tested and validated set of indicators and clear methodological guidelines on how to apply these indicators.

EFFORTI combines the theories, models and practices from GE evaluation with the most recent RTDI evaluation approaches. In particular we intend to investigate not only how GE can be improved and its effects on research and innovation outputs like number of publications and patents, but especially RRI-related concepts like the contribution to addressing Grand Challenges, public engagement etc.

Secondly, in order to overcome the well-known limits of conventional evaluation and impact assessment approaches, we will make use of the concept of theory based impact evaluation which is reflected in a sophisticated logical modelling of contributional links, the extensive consideration of the respective national and organizational framework conditions and finally a sound qualitative approach based on case studies and their vali-dation.

In this regard, EFFORTI seeks to highlight, conceptualize and finally better understand the importance of broader systemic framework conditions for the effectiveness and effi-ciency of GE policies. It takes context and heterogeneity seriously. Thus it will enable learning by stakeholders, policy makers and program managers.

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10

Title **Criteria for Socially Responsible Research Processes – Making a Difference to Research Impacts?**

The debates about research's role in the further development of societies focus on research outputs and research's thematic orientation for tackling sustainability issues. Still, a scientific discussion emerges on the question of how research should be conducted to best contribute to solving societal challenges. We identified a set of eight criteria that characterise socially responsible research processes with help of a literature review and in numerous stakeholder workshops. The criteria which were combined in a Framework for Reflection are: ethics, integrative approach, interdisciplinarity, user orientation, reflection of impacts, transdisciplinarity, transparency and dealing with complexity and uncertainty. In this paper we present the framework for the reflection of socially responsible research processes and we report about results from test applications of the framework at various levels of the research cycle. On this basis, we lay out a concept for prospective impact assessment of the application of such criteria to test the hypothesis in how far the Framework for Reflection provides an added value for socially responsible research processes and thereby outweighs possible trade-offs. We also seek for case study collaborations (with an agricultural focus) at international level for further testing the set of criteria.

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11

Title **Indo-European Collaboration in Science, Technology and Innovation: examining framework conditions and outcomes**

Teresa de Oliveira, works as a project manager and researcher in the department of "Research Policy & Development" at the Centre for Social Innovation (ZSI) in Vienna. She is currently engaged in the analysis of the STI collaboration with two BRIC countries: India and Brazil. Within these two countries, Teresa de Oliveira is analysing the frameworks conditions, impacts and outcomes of collaboration, both on qualitative and quantitative level.

The presentation will focus on the Indo-European Collaboration in Science, Technology and Innovation by examining framework conditions and outcomes, specifically related to the participation of India within the context of the Seventh Framework Program and its successor, Horizon 2020. We will focus our presentation on two dimensions which are distinct, yet linked within the Indo-European collaboration: the external conditions of the funding schemes and the internal project level.

The presentation will aim to address two main research questions: 1) how the frameworks conditions applied to India affected the participation of India within FP7 and H2020; 2) how the project coordinators benefitted from the international research collaboration. The presentation is mainly structured into two parts: the first part of the presentation will focus rather on the discussion, at a theoretical level, of the framework conditions and the outcomes applied to the international research collaboration.

In the second part of the presentation, the author of the paper will be analysing, at macro level, the impacts of frameworks conditions on India´s participation within FP7 and H2020. Within this part, the author will also be looking at and impacts at micro level of Indo-European collaboration within the field of Water, Health and Energy.

Our empirical results suggest financial and attentional resources, such as external funding conditions and advancement of knowledge as internal features, played significant roles in accomplishing international collaboration between India and Europe.

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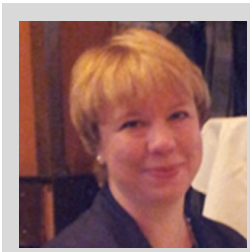
11

Title **International research links of EU13 countries and the consequences for EU research project participation**

The countries that joined the EU in 2004 and after have low participation in EU research programmes such as the Seventh Framework Programme (FP7) and the current Horizon 2020 programme. These EU13 countries only accounted for 4.2% of the funding and 8% of participations for FP7. However, it has been claimed that this low level of involvement does not fully reflect their capabilities and potential. Stated reasons include problems of the national research landscape, a lack of competitive funding environment and size and resources of these countries that means they do not have the capacity to compete in all research areas. Therefore, the presentation will consider the strength of research links inside and outside FP7 networks to see if EU13 were at a disadvantage to participate. In doing so an objective is to understand the strength of links between different EU countries and the characteristics of their research networks in FP7 and to compare with the wider research community. A further objective is to study the collaboration network characteristics to understand whether the differences between the domains (FP7 vs wider research networks) can indicate whether countries are locked out of FP7 through a „club" effect by being unable to access the tight networks of the EU15 countries or whether the comparison indicates a more fundamental problem for EU 13 countries to access competitive funding (such as reputation of organisations, resources and governance).

Emilia Primeri



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11

Title

Evaluating participation of top class universities in European research programmes: what insights for policy debate?

The paper analyses the Universities' participation to EUFP7, taking top-class research universities as specific cases. The research questions are: what indicators are likely to provide better insights about top class universities participation to EUFPs? To what extent they can provide policy makers with useful information about Programmes design and implementation? In the study, we assume that drivers and effects of EUFPs participation are highly diversified also across top class universities, which mirror differences in EU programmes involvement of national governments and characteristics of national R&D systems.

We operationalize EUFPs as policy instruments that contribute to academics organisational, cultural, and cognitive changes (Primeri and Reale, 2012), shaped through a complex political process of negotiations between motivations, interests and expectations of different stakeholders (Primeri and Reale, 2012; Lascoumes & Le Galès, 2005). Framework Programmes are considered as a set of opportunities intended by the policy makers and provided in the programme design that are differently perceived and mobilized by the research performers. The paper combines different methods, mixing both qualitative and quantitative approaches, and control the motivations and impact of EUFP7 participation in top-research universities with those of other European research universities.

Interesting insights on drivers of universities participation and the capacity of the EU research programmes to meet needs and expectations of a broader set of universities instead of a narrow bulk of best performers emerge, putting into evidence as EUFPs are research policy instruments designed mostly at rewarding the best instead of aligning and widening participation. The approach based on mixing quantitative and qualitative empirical evidences under the 'opportunity framework' confirms then its capability to provide relevant insights for the implementation of the policy instruments.

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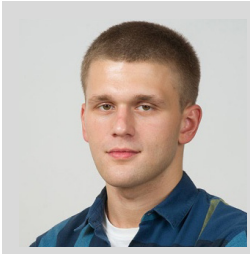

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Title

Assessing the impact of public funding and tax incentives in Russia: recipient analysis and additionality effects evaluation

So far a considerable number of studies with the use of the basic evaluation approach called additionality concept has taken place but none of them paid attention to the Russian innovation policy additionality. In this study we performed a microeconomic evaluation of the industrial firms' public innovation support in Russia focusing on its two key toolbox elements: direct funding and tax incentives. Based on the data from a questionnaire survey of top executives of Russian manufacturing firms held in 2015 we identified and evaluated the profiles and the performance correspondingly of direct funding and tax incentives recipients. We also assessed the "relative" additionality - the additionality of a concrete instrument for a particular firm relative to all other used instruments - with propensity score matching. The results show that generally Russian industrial innovation policy tends to target sufficiently large and long-operating companies. In terms of effects we have confirmed not only the importance of the fiscal support in providing all main kinds of additionality but also its significance in the private investment crowding-out. Tax incentives as our results suggest almost do not contribute to additionality of any kind which is especially unusual regarding input additionality. One should also point out a relatively small impact of public support on science-business cooperation which is quite unexpected considering Russian government substantial effort in enhancing its development.

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Title

Explaining the success (and failure) of the intervention with the use of sampling based on propensity score matching

The presentation depicts the unique approach to the explanation of success (and failure) of the particular public intervention. The approach was applied within the evaluation of financial support for enterprises received from Innovative Economy Operational Programme (IE OP) in Poland. It was applied to the measure 4.4 IE OP within which investment projects involving the purchase or implementation of research results/new technological solutions were supported. The conclusions of 4.4 IE OP net effect analysis have indicated that the financial condition of measure 4.4 beneficiaries was disappointing (compared to expectations resulting from intervention logic). Thus, there was a need to explain this phenomenon.

Out of program beneficiaries, the contrast pairs were selected to in-depth interviewing. The pairs' selection procedure was based on financial performance as a success criterion and used linear regression model and propensity score matching in order to identify most alike companies within pairs which differ only in being classified as those, which succeeded or failed to turn received funding into better financial performance.

In the qualitative, in-depth part of the study, key factors explaining why some entrepreneurs experienced a relatively small effect on the company profitability were identified: 1) general economic situation (economic crisis) and difficulty in prediction of changes in the industry (e.g. energy prices, the embargo on food products in Russia); 2) lack of adequate monitoring of the situation on the market in terms of demands and appropriate plan to reach customers.

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12

Title

Ex-ante evaluation of research policy: An agent-based model of Austrian biotechnology

There is an increasing demand for ex-ante impact assessment of policy measures in the field of research, technology & innovation. Existing methods to explore the effects of envisaged policy interventions in innovation systems often lack transparency or just extrapolate current trends, neglecting real-world complexities like technological evolution, collaborative invention and interactive learning. Therefore, we propose an empirically based simulation approach and develop a corresponding agent-based model (ABM) to address this issue.

In science-based industries, the creation and diffusion of new scientific knowledge is directly relevant for innovation and competitiveness of the firms. We choose the biotechnology industry as an example where research results of commercial value are particularly well documented (in patents), and which has continuously been a strong policy focus since the 1980s in Austria. With our ABM, we focus on the influence of different government interventions on the creation of knowledge in a system of interacting agents, also referred to by "second-order additionality". Hereby, we are particularly interested in the technological specialization vs. diversification effects of specific public R&D funding mechanisms, such as policies directed towards inter-organizational collaboration or policies fostering the risk-taking propensity of firms.

For initialization of the model agents (61 Austrian biotech firms), as well as for model calibration and validation we use patent and company data from the period 2000-2012. Moreover, individual output performance of the model agents is determined using a fitness function generated by means of econometric techniques. With this strong empirical foothold, the ABM allows for exploring long-term output scenarios under different R&D policies, especially regarding the specialization of the technological profile of the industry. The robustness of the simulation results supports the credibility of this ABM approach for supporting the ex-ante evaluation of public research policy.

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12

Title **Various approaches to measuring business innovation: Their relevance for capturing social innovation**

This paper reviews various approaches to measuring business innovation from the angle of capturing social innovations and offers several methodological and policy conclusions. First, the Innovation Union Scoreboard (IUS) indicators in principle could be useful in settings where the dominant mode of innovation is based on R&D activities. In practice, however, both R&D and non-R&D-based modes of innovation are fairly important. IUS, therefore, only provides a partial picture. Social innovations can certainly rely on R&D-based technological innovations. Their essence, however, tends to be organisational, managerial and behavioural changes. The IUS indicators do not capture these types of changes. Second, an assessment of the 81 indicators used to compile the Global Innovation Index reveals that it would not be a fruitful effort to rely on those indicators to capture social innovations, either. Third, given the diversity among innovation systems, a poor performance signalled by a composite indicator does not automatically identify the area(s) necessitating the most urgent policy actions. Analysts and policy-makers, therefore, need to avoid the trap of paying too much attention to simplifying ranking exercises. Instead, it is of utmost importance to conduct tailored, thorough comparative analyses, identifying the reasons for a disappointing performance, as well as the sources of – opportunities for – balanced, and sustainable, socio-economic development. Fourth, analysts and policy-makers need to be aware of the differences between measuring (i) social innovation activities (efforts) themselves, (ii) the framework conditions (pre-requisites, available inputs, skills, norms, values, behavioural patterns, etc.) of being socially innovative, and (iii) the economic, societal or environmental impacts of social innovations.

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13

Title **How do structured doctoral programs change the landscape of doctoral training? An evaluation approach**

Following several critics on efficiency and transparency of doctoral training there is an ongoing reform process in Europe and worldwide in which structured doctoral programs (SDPs) are in the center of discussion. An increasing number of SDPs has been implemented at the institutional level of universities, faculties or research institutes. However, the actual change and the impact on the landscape of doctoral training were only scarcely examined. This might be primarily due to a lack of appropriate data for investigating and evaluating these changes in a comparative perspective. But, as we would argue, there is also a missing conceptual framework for such comparative analyses. Most of all it has been widely ignored that in Germany as well as in many other countries exist traditional pathways of doctoral training which, as we argue, function as backdrop of ongoing changes.

Within this paper we compare different contexts of doctoral training as interplay of traditional pathways such as the status groups research assistants, scholars, and external candidates and emerging structured doctoral programs.

To substantiate our argument we take advantage of a large longitudinal study (ProFile) with about 9,000 doctoral candidates in Germany. With regard to ongoing changes, we look at formal and structural elements of doctoral training, such as recorded agreements, multiple supervisor constellations, exchange intensity, course attendances, and the time candidates invest to work on their thesis.

We can show, that the impact of SDPs differs across traditional status groups, which implies that not all doctoral candidates benefit to the same extend from the new SDPs.

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13

Title **Measuring and Understanding Interdisciplinarity in Computer Science Doctoral Programs**

In the last years new doctoral structures are proliferating to prepare interdisciplinary early career researchers. Therefore, there is a demand for both the monitoring and the understanding of processes towards greater interdisciplinarity at the doctoral level. This requires, on the one hand, the definition and development of criteria and tools for the measurement of interdisciplinary research, and on the other hand, the understanding of processes and factors facilitating interdisciplinary research. This study includes both perspectives with a mixed approach. First, we measure interdisciplinarity based on bibliographic data, and then analyze interview data to investigate how and why doctoral students engage in interdisciplinarity and produce different forms of interdisciplinary research. The implementation of our methodology has allowed for a comparison of interdisciplinarity across doctoral programs with different approaches to specialization, as well as the identification of important factors that shaped students' interdisciplinary identity.

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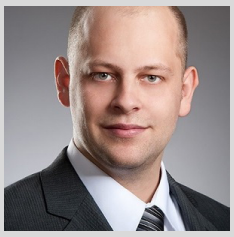

13

Title **The effects of German Research Foundation grants on career patterns**

The contribution presents the results of an analysis and comparison of the effects of five types of grants on the careers patterns of scientists. The study uses an innovative research design that combines a cohort design comparing granted with rejected applications and a CV-analysis. Additionally, methodological challenges and benefits resulting out of such an approach are discussed.

The presented study extends the approach from a Danish study (Bloch et al. 2014) to the German research system and the funding programs from the German Research Foundation relevant for postdoctoral researchers. Results for five person-oriented funding schemes will be presented, which are tailored at or can be used for conducting research projects and pursuing careers. The studied programs differ in their funding goals, funding rate, grant volume, duration, application requirements and other aspects. They address different career stages and enjoy varying popularity in different scientific disciplines. The funding programs which will be studied and compared in detail are the "research fellowship", the "temporary position" ("Eigene Stelle"), the "Emmy Noether-program", the "Heisenberg fellowship" and the "Heisenberg professorship". Within these programs, granted and rejected applicants are contrasted. This will be done by using the CV-method to gather standardized information from 1,133 curriculum vitae. To this purpose, CVs attached to later applications are used and additional (or more recent) CVs from public sources and websites are included. For the cohorts from the years 2007/2008 the past and future careers are tracked by a standardized coding of information on the PhD, research stage, research position, habilitation, junior professorship, occupational sectors and home country.

Based on this data, an econometric analysis models the treatment effect of the five funding programs on future career stages and on the chances to become a full professor. In addition, for selected programs the chances that the applicant will later continue his or her career in a foreign country or leave the science system will be modeled.

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Title

The evaluation of the Austrian START programme : an example for a successful sophisticated multi-method approach

In October 2014, the Fraunhofer ISI and KMU Forschung Austria were commissioned by the Austrian Science Fund FWF to evaluate the effects and impacts of the START Programme which is one of Austria's most prestigious research grants for individual researchers at post-doctoral level. The programme aims are twofold: supporting excellent research and qualifying the grantee for a (permanent) senior research position in the research system. The funding consists of up to 1.2 million Euros for five years and is to be used for the building up or consolidating a research group.

The objectives of the evaluation were to assess the achievements of the programme, especially on output and outcome level. Furthermore it should provide information on the role the programme plays in the FWF's overall funding portfolio for post-doctoral research. The evaluation was designed as an impact evaluation and used a quasi-experimental design based on a control group.

The aim of this contribution is to present the methodological design that combines ele-ments of quantitative impact analysis with qualitative elements stemming from different sources. On the basis of selected key findings of the evaluation the strengths of this ap-proach is discussed. In particular, it shows the role of triangulation and its potential to either reinforce or discard preliminary conclusions and provide further explanatory vari-ables for the measurements.

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14

Title

The evaluation of the economic impact of Research Infrastructures in open innovation and research environments : the EvaRIO project

This presentation will introduce the results as well as some promising extensions of the EU FP7 funded EvaRIO project that aimed at developing an evaluation framework and a set of specific methods and tools well suited to the evaluation of some economic impacts of Research Infrastructures (RIs) in the currently changing context towards an open innovation and research environment.

Based on the original BETA method initially developed for large Technology Procurement/ Agency driven R&D public programmes, the EvaRIO approach focuses on learning processes analyzed ex post at a micro level. It relies on the assumption that knowledge creation in general, and through RIs in particular, result from a cumulative and interactive learning process. EvaRIO thus aims at drawing a comprehensive mapping of the different effects generated by RIs, taking into account: types of activities at the source of impacts (setting up, operating, using the RI,...), actors concerned (suppliers, operators, researchers accessing the RI, ...), time i.e. evolution stages of the RI, including its possible enrichment via users' feedback loops. Moreover the approach distinguishes four families of effects (direct, capacity, performance and indirect) articulated around actors' knowledge processes (creation, storage, sharing, exploitation,...). Some metrics are proposed, fed by information gathered through a series of sample-based case studies. Additional types of mainly quantitative data are used as well.

A few examples drawn from 9 selected case studies carried out in the Bio-Medical Sciences field are presented as illustrations, as well as some further promising evaluation avenues, in particular on networking communities or flexibility management at different levels of scientific organisation.

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14

Title **Unpacking the openness of open evaluations**

Openness is a new quality and qualifier for evaluations. How it is achieved and what degree of openness is suitable are largely unresolved questions. In addressing these questions, we turn to ongoing discussions in other realms of knowledge-intensive production: scientific publishing and design. Open peer review and open design competitions explore modes of openness that can also inform the opening up of programme and policy evaluation.

The two cases show, for instance, that clients and implementers of open evaluations need answers to the question of the anonymity of the reviewers, to the participation of reviewers, the structure of the process, the sponsor's role and potential dominance or the network effects. They also need to agree on the rationale for openness: democratic ideas, the conviction that openness leads to better solutions, or that it is less cost intensive. Finally, openness might raise additional challenges. For instance, openness is not necessarily implying inclusiveness and it cannot be judged normatively as 'good' per se.

In linking this discussion to literature on theory-driven and participatory evaluations, we conclude that a common and more refined understanding of openness is only the first step. Experimentation and learning will equally be necessary. Evaluations can then benefit from a differentiated set of 'opening' options. Simply maximising openness will minimise opportunities.

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14

Title **New indicators for Open Science - Possible ways of measuring the uptake and impact of Open Science**

Open science (OS) does not only open up new ways of creating and sharing knowledge, of disseminating results of individual research components (e.g. research idea generation or data analysis), but also of evaluating science in a more nuanced, fair, and precise way. Evaluation of OS is thereby closely intertwined with the whole research processes and the adoption of individual components by both, the research community and society. This is not only a matter of technological developments but also of changes in cultural practice. Expectations of OS impacts are high but it is yet unclear how the uptake and impact of OS practice ought to be monitored and measured, especially societal impacts. A study on OS uptake and impact commissioned by the EC, executed by eutema, BIFI (University of Zaragoza) and ZSI (Center for Social Innovation), explored if and how radically different scientific practices – enabled by digital technology – are changing the relation of science and society. A main objective of the study was also to propose a framework for an OS observatory which monitors the progress of OS in Europe on a continuous basis. Ultimately, we proposed a set of indicators for measuring the uptake and impact of OS. The indicators were developed via a mixed-method approach that included a literature review, a scenarios exercise that brought to light new necessities and application of potential indicators, a series of expert workshops, and a validation survey with experts on the topic. Although – and maybe because – the concept of Open Science is still evolving and especially because OS is embedded in a larger system that includes e.g. new skills, a new reputation system, or the involvement of the wider public, now is the time to engage all concerned stakeholders in the design, reflection, and post-processing of such indicators - the presented results can be a starting point for necessary discussions and exchanges of ideas.

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15

Title

Can policy documents be used as sources for measuring societal impact? An empirical study based on climate change research

In recent years, societal impact measurements of academic research have become more and more important. This study focusses on a relatively new form of impact data (provided by Altmetric): mentions of publications in policy documents. In this study, we use a comprehensive dataset of papers on climate change to investigate the new data source of altmetric data. Climate change is particularly useful in this respect because the topic is very policy relevant since many years. Thus, we expect to find a large number of papers mentioned in policy documents in comparison with other research fields – especially because corresponding policy sites are continuously evaluated by Altmetric.

However, the results of our analyses are contrary to our expectation: Out of n=191,276 publications on climate change in the dataset, only 1.2% (n=2,341) have at least one policy mention. The low percentage of 1.2% which we find in this study might be due to the fact that Altmetric quite recently started to analyze policy documents and the coverage of the literature is still low (but will be extended). However, the low percentage might also reflect that only a small part of the literature is really policy relevant and most of the papers are only relevant for researchers studying climate change. Another reason for the low percentage might be that policy documents may not mention every important paper on which a policy document is based on.

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15

Title

Extension of Evaluation Theory Tree Based on Mapping Knowledge Domain

This study constructed mapping knowledge domain of evaluation research area and extended Alkin's evaluation theory tree based on leading researchers and citation analysis of their journal publications. The extended evaluation theory tree better characterized relationship between research front, research area and the researchers, and also demonstrated the evolution of hot topics in the area of evaluation research. Compared with the subjective methods such as interviewing, personal summarizing and so on, this study provided objective methods and data in sociological research and can be a paradigm for reference.

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15

Title **Technology Readiness Level (TRL) mapping for synthetic biology products**

Synthetic biology is the application of science, technology and engineering to facilitate and accelerate the design, manufacture and/or modification of genetic materials in living organisms. It aims to bring a large number of new bio-based solutions to the market with the help of deeply engineered microorganisms. A small number of products and applications, manufactured using synthetic biology, has already reached the market or is approaching it. Without any doubts, the number of such products will rapidly increase in the future. However, concerns on social and health issues, surrounding these technologies, tarnish clear understanding of the market potential and the real position of the products, harbouring such technologies. A clear and transparent categorisation of synbio products on the market is therefore needed to track the level of their technologic development and determine the exact position of each product of concern. This will not only define the measures still needed to commercialise such products, but also help to identify potential problematic societal issues. In order to create such categorisation, we propose to apply the concept of Technology Readiness Levels (TRLs), usually used to measure the degree to which a certain technology is ready to be applied in a real environment. It provides a measurable proof of successful transition of a technology from the stage of conceptualization to the full integration into the market. Originally developed by NASA for space applications, the TRL methodology is now increasingly adapted for use in innovative economies that rely on research and development-based technologies. In order to assist the TRL classification, we propose „exit criteria" for the novel products, manufactured using synthetic biology and based on the TRLs definition, issued by the European Commission.

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16

Title **R&D collaboration policies: are they really able to promote networking?**

Governments around the world promote networking through R&D collaboration policies. However, as literature has shown that different types of policies for R&D can generate network additionality, one might wonder if this specific instrument is really needed to boost collaboration. Our analysis, which has no precedents in the literature, assesses and compares the network additionality of two different innovation policy instruments, implemented by the same policymaker, in the same area, in the same period and targeting SMEs: a subsidy for R&D collaboration and a classical R&D subsidy to individual firms. To this end, we take a propensity-score matching approach to reconstruct, separately for each programme, the counterfactual outcomes of firms in a no-policy scenario, as well as under the alternative policy instrument.

As learning to collaborate takes time, we focus on the non-simultaneous network effects of these policies.

We find that the R&D collaboration subsidy has been effective in stimulating companies to build relationships with external organisations such as universities, while the firm subsidy has not. The direct comparison between the network additionality generated by the two instruments confirms that R&D collaboration subsidies provide an effective stimulus. Firms participating in R&D collaboration policies often have, already, a higher collaboration propensity. However, if more stand-alone firms participated in these policies instead of taking the individual R&D subsidy, they would persistently increase inter-firm partnerships. In sum, our results confirm the pro-networking rationale of R&D collaboration policies highlighted by previous studies. In addition, they suggest that such schemes, despite being perhaps more complex to manage, are not interchangeable with individual R&D subsidisation. In conclusion, we find that the pro-networking rationale of R&D collaboration policies is confirmed.

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Title

Knowledge Governance and Policy Learning: Theoretical Reflections

Evaluation and monitoring of Research, Technology and Innovation (RTI) policies are now well-established and recognised, however, how these practices feed the policy-making process is still an open challenge, mainly whether a place-based approach is assumed as in the case of the EU smart specialisation strategies (S3). The case of the S3 policy with its emphasis on entrepreneurial discovery processes provides the opportunity to reflect on knowledge dynamics for territorial development policies. Although the S3 policy is still too recent to discuss empirical outcomes, we aim to discuss some theoretical reflections on the emerging notion of 'knowledge governance' and its implicit, contextual and capacity to act based approach to knowledge that will be applied to various cases of place-based policy learning and knowledge governance comparing S3 approaches with other cases of RTI policy. The cases that will be reflected on are the Helsinki Smart Specialization Strategy, the Brussels Innovation Strategy, and a Food Cluster strategy in Mexico and the Netherlands. The paper explores the place based challenge of the intrinsic limits of local epistemic communities, the need to establish trans-territorial knowledge networks, and the activation of context-specific knowledge through entrepreneurial processes. The cases are analysed for how they address 'transdisciplinary knowledge production', 'social learning', 'self-organization', 'reflexivity', 'boundary arrangements', and 'anchoring of trans-territorial knowledge in place-based innovation policies'. This will provide insights on what such a knowledge governance and place-based policy learning approach means for evaluating and monitoring of RTI and specifically S3 policies.

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16

Title

The Informational Basis of STI Policies in Europe

Information is critical for effective STI policy making, but what kind of information and how much of it is actually used in practice? Policymakers face a growing information dilemma: their cognitive and time limitations meet an over-abundance of information. This paper dissects this dilemma by examining the information requirements of deliberate and emergent public strategies. For both, collaborative search processes between governments and non-state stakeholders seek to define the informational basis of STI prioritization. The paper conceptualizes collaborative search as being constituted by hard (aggregated facts) and soft data (stakeholder perceptions) and suggests a parsimonious measurement method. Taken together, hard and soft data constitute the informational basis of collaborative STI policies. Governmental STI strategy documents embody the innovation policy agenda, which organizes attention to particular kinds of information. The important question is the balance between hard and soft data. Knowing the limited attention policymakers have, how much information in the form of hard and soft data can they digest? The share of soft data over the total number of information sources used (hard data + soft data) in strategy documents is a proxy to measure the attention policymakers can pay to collaborative search. Original data from STI strategy documents in 75 EU regions and states illustrate that collaborative search is widespread particularly in market economies that are coordinated or dependent on foreign investments. Governments trying to catch up with leading innovators use more collaborative search. More than one third of the sample has medium to high levels of collaborative search.

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17

Title **Assessing the impact of research in Social Science and Humanities: A Comparative Perspective on National Evaluation Systems in France, Spain and Germany**

Assessing the social impact of research is becoming more important in the debate on evaluation policies. The diffusion of the neo-liberal paradigm (NPM) and the changes in the concept of research and its results led toward the emergence of efficiency, effectiveness, and productivity driving the way in which the activities must be managed. Accountability and the principle of value for money further enforce the mentioned trend, as well as the establishments of standards as benchmarks of successful performance (Brunsson and Jackobsson, 2002).

This process of change goes with the cutting of public resources (first and foremost funding) devoted to R&D, and with the emergence of a quest from the policy makers on behalf of society about the utility of research and its capability to contribute to the progress and well-being of the whole community. The needs of 'evidence-based justification' to sustain R&D through public funding, and the push toward focusing on "relevant" themes of investigation affected also the reflexivity about the public investment on R&D, questioning about the 'excellence' of the research produced, the capability of the research to address grand challenges for the sustainable development and innovation, to generate breakthrough and innovation, and definitely the impact produced by the R&D activities on science, society, economy and policy (Penfield et al., 2014).

Despite the interest, impact evaluation of R&D is strongly affected by the time lag and attribution problems, and solutions elaborated to solve them are still striving debates among scholars and policy makers about their capability to contribute to the evidence-based policy process (Hughes, A. and B. Martin, 2012; Spaapen et al., 2014; Reale et al. 2014).

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17

Title **SSH & the City. A Proposal to Map Social Engagement through Social Media and Web-Link Analysis**

This paper discusses the limitations of current evaluation schemes when addressing societal impact of social scientists and humanists in local communities. It makes the case on the impossibility of grasping societal impact using output-based indicators due to an attribution problem as well as to the heterogeneity of forms of societal impact. It discusses three theoretical frameworks which can be used as building steps towards identifying and mapping communities where interactions between scholars and non-academics may be taking place. The proposed approach uses social media as a means to capture traces of such interactions. Examples of these interactions will be given presenting case studies of individual researchers' communities using Twitter data. Finally, I will discuss the policy implications this approach may have as well as further steps needed to fully develop an understanding of how to identify such networks.

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17

Title

Evaluating to valorise : the societal value of SSH research and the ENRESSH COST Action

It is well known that SSH research is not adequately assessed when using indicators common in STEM fields. That is why SSH researchers are often reluctant to evaluation exercises based on those indicators. At the same time, SSH scholars believe strongly in the value of their disciplines, both in terms of scientific and societal contributions. Between policy-maker's need to evaluate research in all fields along similar lines and the lack of adequate methods to assess SSH research, there is obviously a gap to be bridged, and the new COST action, ENRESSH (European Network for Research Evaluation in the Social Sciences and Humanities, CA 15137), sets out to do this.

This paper looks at how some promising developments in European countries can contribute to tackle the problems of SSH evaluation. By taking a wider pan-European overview, it seeks to identify best practices. It will summarize the provisional lessons that can be learned from current developments based on an initial survey that entails an overview of who's who in the evaluation of SSH research in Europe. The survey confirms that existing typologies of evaluation procedures do not suffice to capture the diverse knowledge production practices of (European) SSH researchers with regard to principles, methods and goals of evaluation. There is an urgent need to make explicit the definitions for quality and impact in SSH research, to expand the typologies of knowledge production and exchange in the SSH (this includes the involvement of stakeholders), and to propose more adequate ways to assess quality as well as societal relevance and impact of SSH research. The aim is to foster an evaluation system that helps SSH live up to their full potential, performing as a learning and not only as an accountability tool.

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Title

Evaluating citizen science at progress and impact level: what's the value for research funding policies?

Citizen science is growing in popularity. The effort of opening science, the gaining interest of people to engage in science and its embedding in the wider trend of conducting responsible research and innovation (RRI) as well as the ease of access to latest ICT all contribute to a shift towards participatory science and a growing importance of open innovation. Citizen science is a highly dynamic approach where constantly new forms of collaboration between science and society evolve. This diversity puts a challenge to ways of evaluating citizen science. Evaluation concepts for citizen science need to be expanded to capture the added value generated by an open, participatory research process and need to equally support different types of citizen science projects. Comprehensive evaluation frameworks that would allow for comparability across projects and programmes while offering flexibility for adaptation are still missing. In Austria the Federal Ministry of Science, Research and Economy started the elaboration of an evaluation framework to be used for future funding programmes related to RRI, citizen science and open innovation in science. With this aim three independent concepts were developed. In our contribution we will discuss the three concepts in more detail, show the commonalities and differences between the approaches and discuss the challenges that come with applying an integrated evaluation framework for the evaluation of citizen science and open innovation projects and proposals. We also provide insights into how to advance from a comprehensive set of evaluation criteria to developing an easy-to-use instrument for the self-assessment of citizen science projects and project ideas. The main aim of such a self-assessment instrument is to support different types of open participatory scientific projects in reflecting about their individual strengths and shortcomings on a scientific, individual actor- and project-related level as well as on a socio-ecological and potential economic level.

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18

Title **Societal vs. Academic Impact? A critical discussion based on the experiences from evaluations of the "Sparkling Science" programme and the "Young Science" project and other Citizen Science projects**

The proposed contribution discusses the potentials and possibilities of treating societal outcomes in RTI programme evaluation studies, beyond mere academic impact dimensions. A particular focus is set on evaluating those programmes that specifically include societal stakeholder groups besides the scientific community, for example projects or programmes including students or pupils at different phases of a research project.

Based on experiences from Austrian cases, like the "Sparkling Science" programme or the "Young Science" project, as well as other (European) citizen science projects it will be analysed how traditionally measures of academic impact do not fully reflect the programmes' impact potential, particularly their societal impact. By presenting and discussing the methodologies and results of evaluation studies recently conducted of these programmes and projects by ZSI, it will be reflected what kind of potential societal impact was acknowledgeable with the methodologies and approaches utilised and where potential gaps are. There are various known intrinsic problems in measuring societal impact of research and innovation that have been discussed earlier and go beyond the mere feasibility and resource problems.

However, during our evaluation studies, as well as in earlier comparable evaluation studies, it became evident that the value of including students in scientific research projects was manifested in various dimensions. Researchers interviewed emphasised that the lack of acknowledgement of "social impact" or science communication measures beyond scientific publications applied in collaboration in the work with students is an issue, so expanding the evaluators' focus on these dimensions will become more important and therefore a deeper methodological discussion is needed.

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Title **Programme evaluation and organisational development for transdisciplinary research**

As transdisciplinary research requires participatory, in-depth and multi-method analysis of knowledge integration and societal impacts, research programme management and evaluation activities become more formative, interactive and constructive. Research Institute of Science and Technology for Society (RISTEX) is a public funding agency dedicated to transdisciplinary research and social innovation in Japan. A new action plan asked this agency to improve in-house analytical functions, develop programme structures highlighting a story and problem solving, and reform the evaluation system. Following this plan, in 2015, RISTEX launched the Steering and Evaluation Committee (SEC) to conduct evaluation of R&D programme and organisational management. SEC has reformed the evaluation system and made mid-term evaluation more relevant and effective. This kind of programme evaluation activities reflexively problematizes knowledge and actors for transdisciplinary research. Past studies on transdisciplinary and its related concepts are likely to downplay the role of synthetic knowledge whilst emphasising a bridging between observational knowledge and socially contributive knowledge. Synthetic knowledge is situated, reflexive and anticipatory and illuminates comprehensibility and interrelatedness of sociotechnical systems and transformations. Where synthetic researchers remain relatively few, one of the organisational challenges for RISTEX is oriented to responsible reform of the research and innovation ecosystem. Another challenge is how to develop effective formal and informal channels for the national and regional policy process by integrating project or programme outcomes. To conclude, recent efforts in the reform of programme evaluation at RISTEX require the needs of organisational development by broadening out evaluation with wider participants and reflexively arranging knowledge and actors.

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Title

The Community Innovation Survey and the innovation performance of enterprises funded by EU's Framework Programmes. Lessons for the evaluation of Horizon 2020's economic impacts

The Horizon 2020 monitoring and evaluation system has been improved in recent years, but there is still a need to further develop the ways to measure innovation outputs, outcomes and impacts. At present, project reporting provides only a few innovation-related indicators. This paper shows that the Eurostat's Community Innovation Survey (CIS) could be a valuable source of information for the Commission services.

The analysis of the CIS 2008, 2010 and 2012 demonstrates that innovative enterprises financed by the 7th Framework Programme (FP7) performed significantly better in terms of exploitation of products, services and processes. The data allows to characterise the successful FP7 innovators: large enterprises perform slightly better, and there are significant differences by sector and by country. FP7 funding seems to play a cohesive role amongst countries, as a consequence of cooperative R&I activities. Innovative firms supported by FP7 deliver more environmental-friendly innovations and obtain better turnovers from their innovations.

While the CIS could be a useful tool to assess the innovation impacts of the Framework Programmes, there are also some issues to keep in mind. In particular, the design of the questionnaire does not allow for an analysis of a full impact of all FP7 participants: the FP7 had a worldwide participation, while the CIS is limited to the EU respondents. Moreover, confidentiality rules lead to information loses when more than two variables are cross-referenced or when very detailed data (e.g. by NACE beyond one digit) are extracted. Finally, it is important to remember that correlations do not mean causality.

The free and easily accessible CIS data provides a good opportunity to go further in the evaluation of innovation impacts of European framework programmes.

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Title

Environmental regulation and eco-innovation: insights from diffusion of innovations theory

The paper analyses the relationship between environmental regulation and eco-innovation. The relationship is tested using a German firm-based panel and a dynamic count data model estimating the propensity of firms to innovate in response to five initiating factors, namely the fulfillment of existing legal requirements, expectations towards future legal requirements, financial incentives, demand for eco-innovations and self-commitment. The heterogeneity of firms is controlled for using R&D intensity, the size, the sector and the region of the company, and a filter for companies that account for their environmental impact is applied. The results answer the central question concerning the design of environmental policies in order to foster eco-innovation. Comparing a static model to a dynamic one shows that only long term objectives and market incentives are positively associated with eco-innovation. Conventional regulatory tools, namely legally binding instruments, are not effective for triggering innovative behaviour at the firm level. The results do not allow to confirm the Porter hypothesis but rather offer a refined version, emphasizing the nuances that apply to the concept of „regulation". The claim is that what matters is not the type of the policy instrument but rather the perception of the instrument by firms.

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Title **Intellectual property rights and technological innovation: Case study of renewable energy adoption**

This paper investigates the impact of intellectual property rights (IPR) protection on renewable energy adoption. There have been intense debates over the impacts of intellectual property rights protection since the ratification of the TRIPS in 1995. The challenge of global climate change, which necessitates the development and mass deployment of climate-friendly technologies, has resuscitated this debate in recent years. Development and expansion of renewable energy has been recognised as a major means of mitigating the pace of climate change. Given the differences in resource endowment, level of economic development and technological advancement among countries, there is need for technology and know-how transfer from technologically-advanced countries to technologically backward countries. The key question this paper seeks to answer is whether stronger protection of IPR enhances or hinders the adoption of renewable energy. Using panel data of 102 countries from 1990 to 2010 (5-year interval) and fixed and random effect estimation techniques, the paper examines the impact of IPR protection (proxied by the Ginarte-Park Index) on the share of renewable energy in total final energy use. The results show that stronger IPR protection undermines the adoption of renewable energy. This result also stands after controlling for other determinants of renewable energy adoption such as the level of economic development and trade openness. In addition, there is evidence that the impact of IPR protection on renewable energy adoption depends on the level of economic development and the scientific research capabilities of a country.

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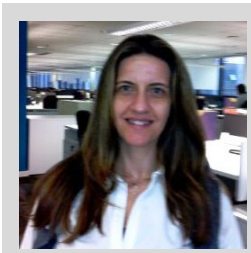
Title **The use of synergies between research funding and CRIS systems for the documentation and evaluation of the societal impact of applied research**

The project aims to contribute to an increase in the acknowledgement of societal contributions made by agricultural research, in addition to that of scientific quality and impact. To this end we developed and tested a documentation structure and an evaluation concept for agricultural projects; these provide synergies with research funding agencies, in order to generate multiple benefit at reasonable effort. The documentation structure extends the information that is already recorded in current research information systems (CRIS). We developed the structured documentation of contributions related to practice/society as a possibility for replacing passages in proposals and reports dealing with aims, attainment and exploitation plans, and enabling broader access to outputs via links and uploads. We also included stakeholder descriptions and framework conditions to cater to complexity in innovation systems, and a bar chart for scheduling to support project management and administration. The concept for evaluating projects 2-3 years after completion is based on information in the extended CRIS. It focuses on project design (especially transdisciplinarity issues), processes and outputs (target group orientation and open access), applicability (in products, services, behaviour, policy etc.) and associated (potential) impacts (ecological, economic, social/cultural). Furthermore, stakeholder involvement in documentation and evaluation processes is recommended to complement scientists' self-reporting and enable a reflexive evaluation approach. Project evaluations are not only meaningful for funders; 'awarded projects' may also be an easy-to-use indicator in the evaluation of institutes or scientists. The results of the project can be used to contribute to the extension of existing CRIS. The evaluation concept can be used with or without an extended CRIS.

Maria Domenica Blundi



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Title **R&D management in a Brazilian mining company: creating a collaborative way of managing and evaluating R&D projects**

the presentation aims to describe the experience of a Brazilian mining company in the development and implementation of R&D management processes, focusing its project assessment methodology (ex-ante evaluation; mid-term evaluation; and ex- post evaluation). The main objective is to discuss the limits and possibilities of a collaborative way of managing and evaluation R&D projects, involving the company and its stakeholders. To specify this "collaborative concept", will be used the arguments of the theoretical school „Variety of Capitalism", known as VoC.

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20

Title **Research in Social Sciences and Humanities (SSH) at Austrian Universities: Bibliometric Article Analysis and Comparison of the Years 2007, 2010 and 2013**

How can research and research quality be measured? One dimension of manifestation of research quality focuses on the publication of articles in international journals that are being peer reviewed. Bibliometric analysis opens here a route to measurement of article publications. Based on such results, the formulation of propositions is possible, which can be connected then to statements of evaluation.

The results of a bibliometric study of article publications at seven Austrian universities in the social sciences and humanities (SSH) are being presented and are discussed further with regard to their possible relevance for evaluation and governance (internal governance, external governance). The bibliometric study was based on the following methodic design: Only articles were considered, with at least one institutional address in Austria and that were released in journals which are represented in the SSCI or A&HCI. Also, three years were compared: 2007, 2010 and 2013.

Furthermore, the following issues of governance are being addressed: (1) a comparative commenting on the publication performance in the SSH for all Austrian universities covered by the analysis; (2) Discussion of methodic design considerations for bibliometric analyses; (3) Discussion of possible propositions for (internal, external) governance at Austrian universities.

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Title **Science technology and innovation policy and expectations in practice: insights from the sociological study of an interdisciplinary project on microbial bioenergy**

Béatrice Cointe is a post-doctoral researcher at the Mediterranean Laboratory of Sociology (LAMES) in Aix-Marseille University. She holds a PhD in sociology from EHESS. Her PhD dissertation explored the intertwined emergence of photovoltaics markets and politics in France from an actor-network theory perspective. She now works as part of a large interdisciplinary project on emerging bioenergy technologies involving biologists, chemists, physicists, engineers and social scientists. Her objective is to map out interactions among laboratories and disciplines, and to explore the changing relationships of science, technology and innovation with funding schemes and scientific policy.

She will present a first account of this embedded sociological investigation, with particular attention to two dimensions: the place and role of expectations and potential applications in day-to-day research, and the organisation and effects of interdisciplinary, inter-laboratories collaborations. She will also briefly comment on her position within the project and on its methodological challenges. In the tradition of STS laboratory studies, the account analyses the frame constituted by the project as affecting simultaneously the organisation and rhetoric of scientific work, and the actual production of knowledge and innovation. The project studied does not only organise research, it directs it towards the relatively well-defined, though remote, end in view of bioenergy – which the scientists involved in the project are increasingly used to working with, even when they consider their research to be basic. The empirical material is thus considered in the light of the sociology of expectations and of techno-scientific promises: how do the constraints of project-based research enact such expectations and promises? What happens of them within the projects that they are supposed to guide? How do they play out in practice? And what can their study in development bring to analyses of the relations and tensions between the objectives of STI policy and science, technology and innovation themselves?

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Title **Funding Frugal Innovations: Availability and design of public funding programmes for frugal innovations**

As a result, frugal innovations have captured the attention of companies searching for new business opportunities and policy makers who face the ever increasing pressure of more inclusive and environmentally conscious economic growth. Although to date there are only a few examples frugal innovations, which have reached a commercial success, the promises of simultaneous economic, social and environmental benefits have inspired a growing number of funding schemes by national governments and international charitable organisations for aiming to stimulate frugal innovations.

While the previous literature has focused on studying frugal innovations at a firm level, the public support instruments aiming to stimulate frugal innovations have not yet been studied. Because previous studies suggest that frugal innovation process is constitutively different than for "ordinary" R&D driven innovations or social innovations, this study explores how the frugal innovation funding scheme intervention logic acknowledges and addressed the specificities of frugal innovation process.

Based on the scheme objectives, three types of schemes were found, supporting: frugal innovations at grassroots; frugal businesses; and tackling global challenges. While the objectives of the schemes differed, the schemes' intervention logic was build around assisting the businesses to understand and deliver to the needs of the target market. Indeed, it was found that rather than addressing the requirement of affordability, the schemes focused on supporting businesses with the challenges related to target markets, which were mainly: a lack of awareness of the markets and suitable partners; a lack of know-how on translating research results to market solutions and scaling up the frugal innovations, and an above average risk.

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Title

Spinning plates: The effects of national prioritizing policies on university internal decisions

Elizabeth Koier is researcher quantitative science studies at the Rathenau Instituut in The Netherlands. The Rathenau Instituut studies developments in science and technology, interprets their potential impact on society and policy, and fosters dialogue and debate in support of decision-making on science and technology.

Elizabeth has a PhD in linguistics (2013). Currently she uses her data analysis skills to study science. Recently she published together with Edwin Horlings a paper in research evaluation on the accuracy of bibliometric output measurements for transdisciplinary research programmes and she was the first author of a report on the effects of national prioritizing policies on university internal decisions and the incentives in Dutch university funding. This report was covered by national newspapers and specialist journals. Currently she is leading a project on the development and effects of (policies stimulating) international mobility of researchers.

Elizabeth will present a poster on the effects of national prioritizing policies on university internal decisions. In collaboration with Barend van der Meulen and Edwin Horlings she has shown that that the various funding streams of Dutch university research are so intertwined at the faculty level that the effect of policy measures is strongly dependent on the individual characteristics of a faculty and the faculty policies. This is due to the large variety of policies and requirements that come with a faculty's funding sources. Using resource dependency theory (Pfeffer & Salancik, 1978) we analyze relationships between resource allocation and strategy making, especially at the faculty level. Our study combines two sorts of rather unique data. Firstly, a detailed analysis of research funding streams and allocation models from government to researchers in the Netherlands. Secondly, structured interviews with 74% of the deans of faculties in the Netherlands about allocation of funding, research management and strategy making.

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Title

π-TUPI: An Opensource P2p Solution to Foster Open Evaluation?

This work's main objective is introducing to the academic community's an Open Source P2P platform called π-Tupi1, which aims supporting open evaluation and collaboration among researchers and other interested parts. The platform's goal is providing a way to exchange research texts and data „as good and popular as The Pirate Bay", for P2P technology is used to decentralize data collections' storage, processing and availability: its simple web system and database store only the metadata of any RTI output file, and a torrent file generated by the author of the article/data package.

The metrics that π-Tupi can generate are still under study, but it can be said that they differ from those currently associated with green, platinum and gold OA: files with more „seeds" are more relevant according to the researchers themselves. The solution allows for code audit, while users can maintain confidentiality about their personal information, or not. Although it can be organized and seen as a social network - meaning that is always platform-dependent - π-Tupi, differently, creates data exchanging conditions regardless of its platform, because its operation is distributed in terms of processing and persistence.

This initiative is still in its early stages, so researchers' suggestions would be highly appreciated. Further efforts of its development team seek identifying mechanisms for building complementarity between this Brazilian initiative and others that internationally are gaining momentum, organization and recognition whether in ethical or technical, practical terms.

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20

Title **Same objectives, different governance – How the Excellence Initiative and the Pact for Research and Innovation affect the German science system**

Ten years ago the German federal government and the states have initiated two large research funding programs: the Excellence Initiative and the Pact for Research and Innovation. The two funding programs have both similarities and differences. While the Excellence Initiative is dedicated to the university system, the Pact for Research and Innovation focuses on the public non-university research organizations (Helmholtz Association, Max Planck Society, Leibniz Association, Fraunhofer Society and the German Research Foundation). The overall objectives of both programs are to strengthen the German science and university system and their international competitiveness by focusing mainly on research excellence.

Although the Excellence Initiative and the Pact for Research and Innovation pursue the same goals, different governance mechanisms are applied. The governance mechanism of the Excellence Initiative is based on competition. Proposals for competitive grants have to be submitted and are reviewed in a group peer review process. The selective funding scheme produces temporarily funded winner universities. In contrast, the central science policy aim of the Pact for Research and Innovation was to give the public research organizations financial planning security, which means that the block grant steadily rises for the public non-university research organizations by an annual rate of 3% (2006-2010 and 2016-2020) respectively 5% (2011-2015). The governance mechanism can be described as an external state guidance in terms of a target agreement.

There are two questions to be answered: (i) What are the reasons for choosing different forms of funding (competitive / block grants) in order to fulfill to a great extent identical objectives? (ii) How do these differing governance mechanisms affect the universities and the public non-university science system? The effects will be observed by bibliometric and R&D-indicators.

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20

Title **Democratic engagement with and within emerging regulator spaces**

Cian is a Research Fellow in Science and Technology Studies at SPRU — Science Policy Research Unit, University of Sussex. His research interests include the emergence of capabilities and innovation systems through time and space, and the role of democracy and institutions in innovation and social change. Cian gained his PhD in Science and Technology Policy from SPRU, where his thesis investigated the emergence of renewable electricity innovation systems in new locations. Currents research projects include coordinating the activities of the ESRC Nexus Network, a transdisciplinary research and collaborative network across the linked ‚nexus' domains of food, energy, water and the environment. And he has recently begun a project with SPRU and the Centre for Technology, Innovation and Culture, Oslo, investigating the relationship between ICTs and subjective well-being, specifically examining digital fabrication technologies and their users.

Cian will present a paper investigating the potential for democratic engagement within public utility regulatory spaces. Many studies within the sustainability transitions and innovation systems literature has been devoted to address various challenges of encouraging ‚first movers', ‚catching up', ‚forging ahead', diffusion, and leap frogging, the attendant focus being on how fast and who leads various ‚global races'. This paper address an emerging strand of the literature on directionality, which ask questions such as which way, what alternatives and who benefits. Drawing on a longitudinal study of how innovation processes emerge in new locations, the paper examines the ‚regulatory space' of an emergent wind energy system in a rapidly emerging, marketised context, the Republic of Ireland. Provisional analysis has identified opportunities for closer, more open and responsive relations between infrastructure providers, operators, investors and publics afforded and produced within regulator spaces. Conversely we also found attendant closure and capture within the regulatory space.

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20

Title **Evaluating third mission activities – Towards a concept for small universities of applied sciences**

St. Pölten University of Applied Sciences (UAS) is a still young and small university in Austria. Nevertheless, it is active partner in the regional innovation system and interacts with manifold stakeholders. Considering interaction with these collaborators, St. Pölten UAS aims at a holistic and integrative approach of its three missions of teaching, research and knowledge transfer and targets to develop towards a platform for collaborative innovation. This approach as well as the interrelation of different activities require performance indicators, which are suitable to present these interdependences, instead of a separate measurement of research output and quality aspects of teaching. Thus, St. Pölten UAS is developing a matrix of manifold key performance indicators considering not only the output within the three missions, but their interdependencies as well. This matrix not only includes traditional criteria like number of peer-reviewed papers and volume of third-party funding. St. Pölten UAS focuses on evaluating the interaction process itself, the networking and platform structure as well as the outcome, which cannot be measured with traditional criteria. This poster will present the current status of elaboration of the concept and will mainly give an overview and a classification of the different key performance indicators to evaluate a wide range of activities which integrate higher education, research and knowledge transfer, connect various stakeholders and support the needs of different target groups. It outlines specific aspects of the evaluation of a small university of applied sciences' third mission activities and presents the practical approach of St. Pölten UAS.

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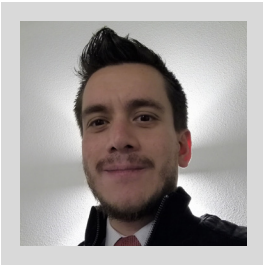

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Title **Societal goals, STI policies and socio-technical transitions: The case of the Dutch smart mobility policy**

Edgar Salas Gironés is currently a PhD candidate in the Technology, Innovation, and Society group at Eindhoven University of Technology. He received his MSc in Innovation Sciences at the same university after finishing his BA in International Relations in Mexico City (UNAM). His PhD is aimed at understanding the governance of the smart mobility transition policy in the Netherlands (2013-2023). This Science, Technology, and Innovation (STI) policy aims to transform the current mobility system by implementing emerging technologies in the fields of traffic information, traffic management, and in-vehicle technology. The aforementioned technologies are expected to contribute to some of the societal challenges we are facing today, such as climate change, ageing population, and wellbeing. However, the implementation of several smart mobility technologies are disruptive to current institutional and governance arrangements of the mobility system. This PhD research explores the governance of this policy from an implementation perspective, focusing on the novel arrangements which are required for smart mobility technologies to be introduced into society.

In the present conference, the author presents his ongoing research about public intervention rationales and instruments in the smart mobility transition policy, and its linkages to societal challenges. Current STI accounts have drawn limited attention to which instruments and rationales are used by policy makers to cope with these challenges. In this research it is argued that this gap can be overcome by integrating in STI policies a socio-technical transitions perspective, in which these challenges are addressed by fundamentally changing the technical and non-technical dimensions of a socio-technical system. Integrating a socio-technical transition perspective into a STI policy can provide policy makers intervention rationales going beyond the traditional 'failure' or 'systemic problems' rationales, while at the same time providing instruments to deal with them.

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Michael Rothgang & Bernhard Lageman

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„Evaluation vs. educated guess" Projektträger als unterschätze Quelle für die Bewertung von Förderprogrammen

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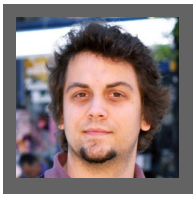
Stefan Philipp



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