RISIS

RESEARCH INFRASTRUCTURE FOR SCIENCE AND INNOVATION POLICY STUDIES

SIPER

Science and Innovation Policy Evaluations Respository

Fraunhofer ISI, 30th September 2021

This project is funded by the European Union under Horizon2020 Research and Innovation Programme Grant Agreement n° 824091

Agenda

RISIS

1. Research Questions
2. The SIPER Database
3. Findings
   - Timing and aim of the evaluation
   - Data collection and analysis methods
   - Design of the evaluation
   - Topics covered and objectives of funding
   - Perceived quality of the evaluation reports
4. Summary & Outlook

RISIS

Research Questions

Research Questions

RISIS

1. Which developments can be identified in the area of impact measurement? In particular, do social and environmental impacts gain in importance?
2. Is the measurement of social and environmental impacts linked to specific methodological approaches and evaluation dimensions?
3. Which policy instruments are most frequently evaluated according to social and economic impacts and what are their characteristics?
4. What is the perceived quality of the different impact studies?

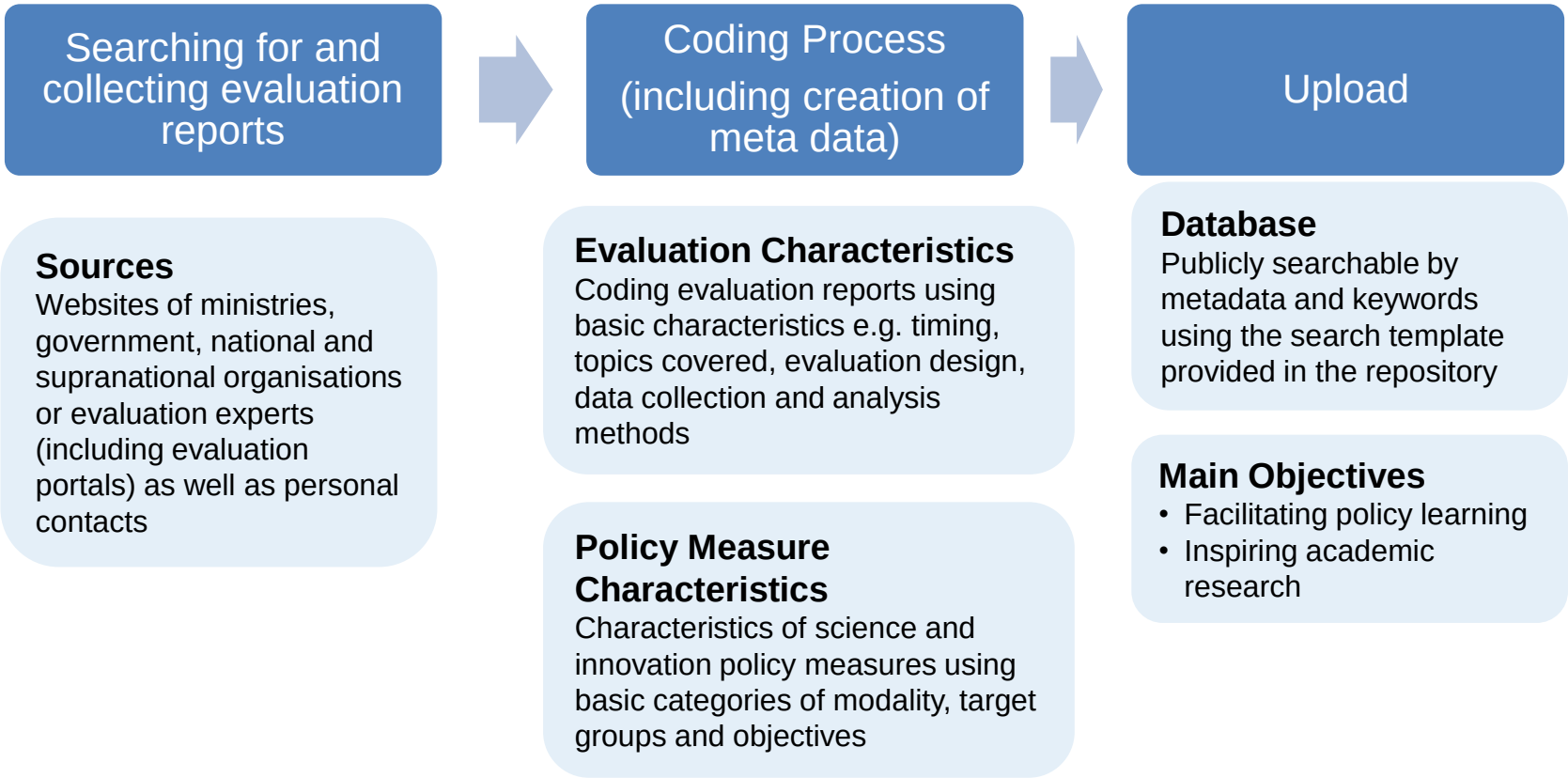
RISIS

The SIPER Database

Core Characteristics

RISIS

Figure 1. Core characteristics of SIPER and the coding process



Access Procedure

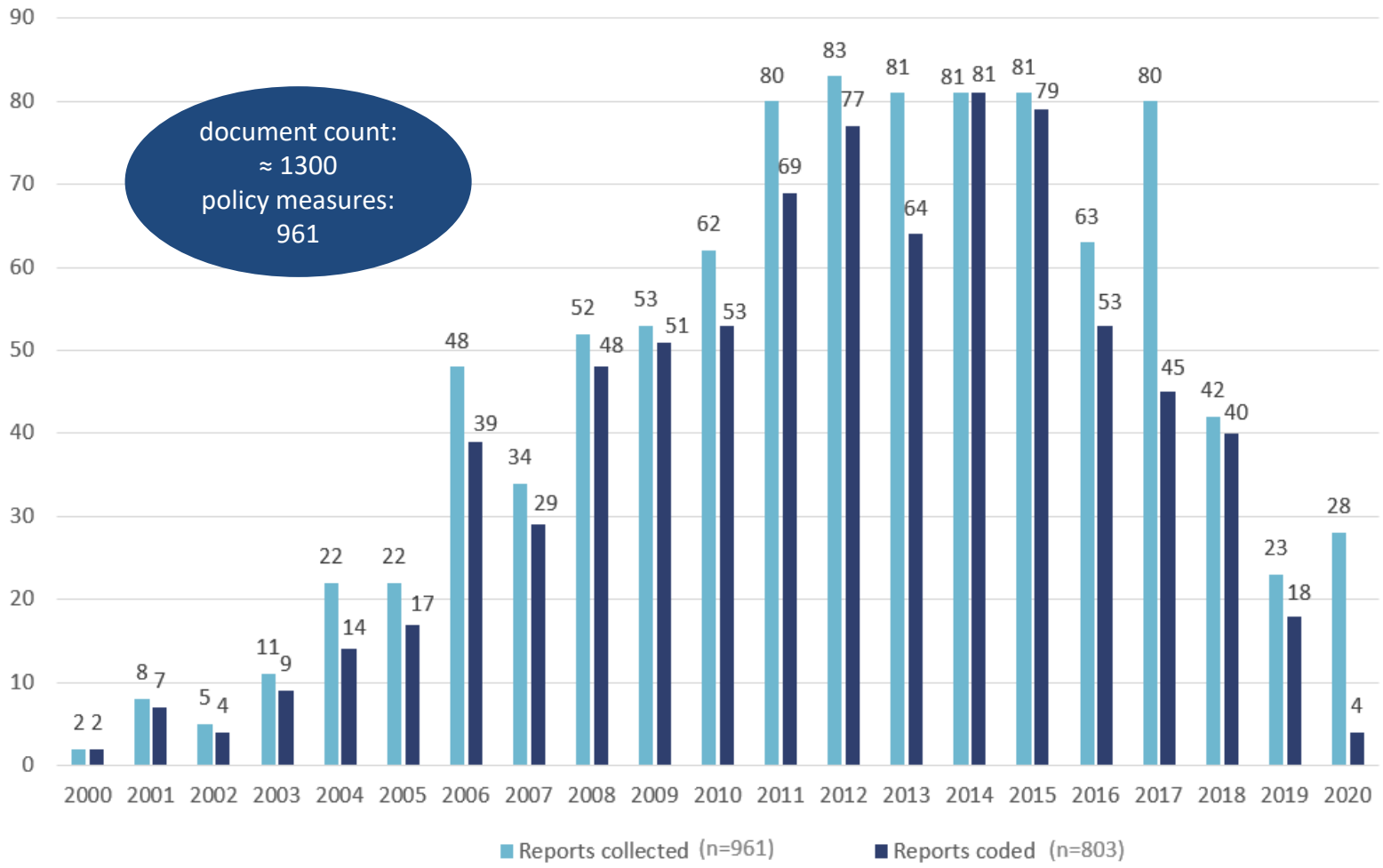
RISIS

- Website: https://www.si-per.eu/
  - Repository with the PDF documents for each coded report
  - Searchable via a search mask
  - Currently developing free text search function
- RISIS Core Facility: https://rcf.risis2.eu/
  - After registration on the website it is possible to apply for access request
    - Gain access to data not published on the website regarding the coders‘ assessment of the report‘s quality
    - Explore multiple RISIS datasets simultaniously

Status Quo

RISIS

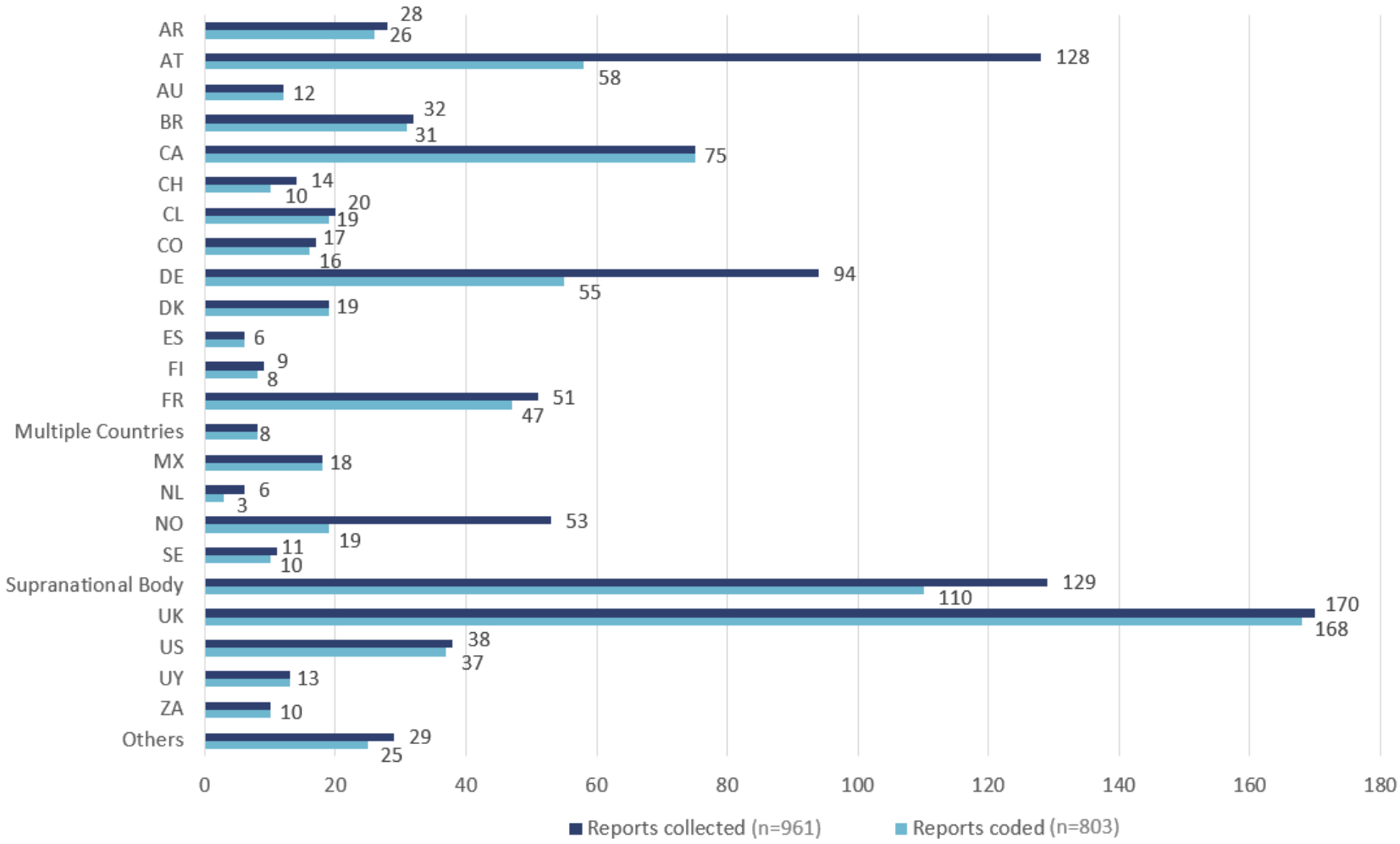
Figure 2. Reports collected and reports coded by year (RISIS 1 & RISIS 2)



Status Quo

RISIS

Figure 3. Reports collected and reports coded by country (RISIS 1 & RISIS 2)



RISIS

Findings

Findings

RISIS

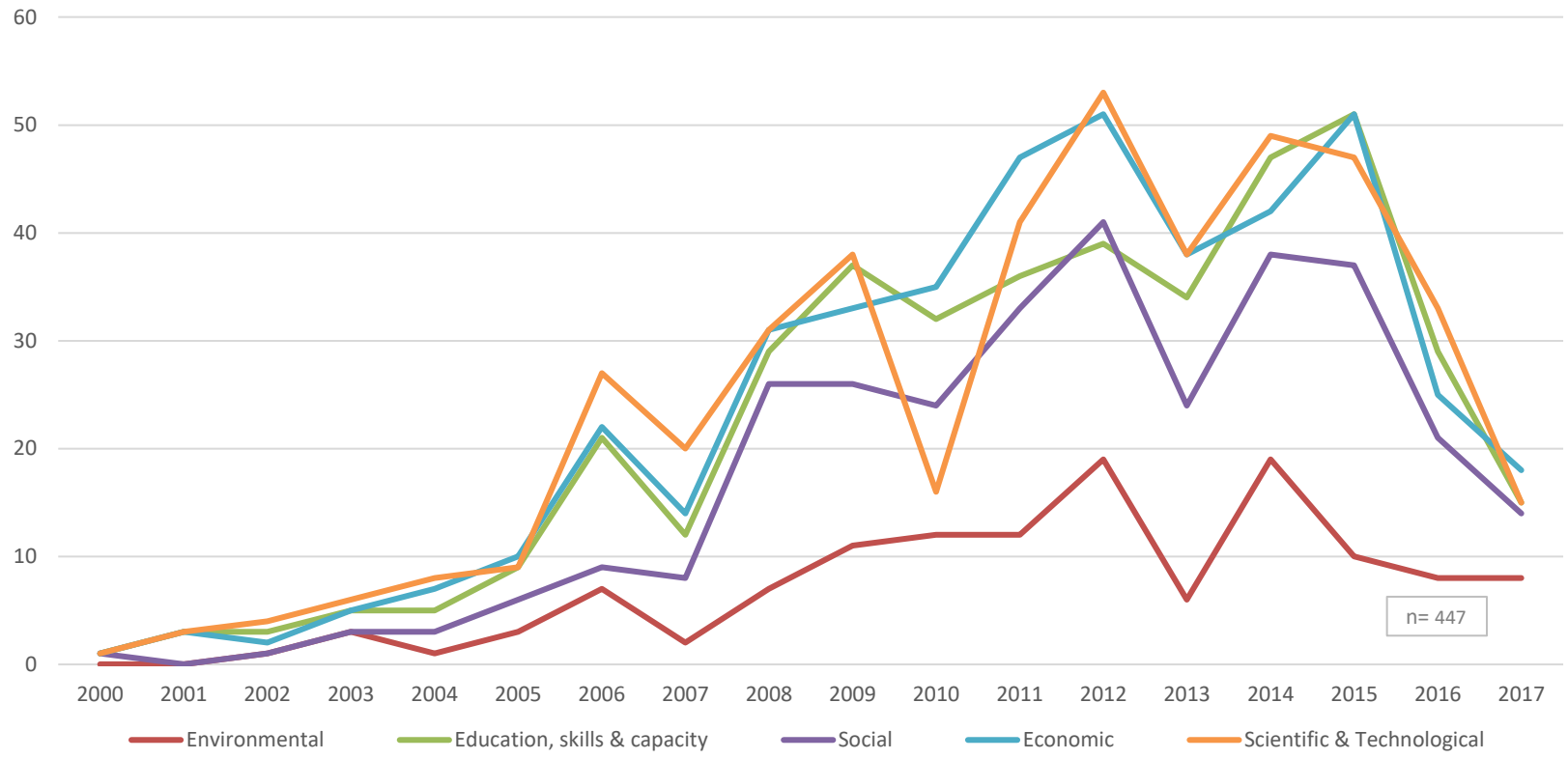
- Relevance of "impacts" within the SIPER database
  - The analysis of impacts has increased significantly since 2008
  - Scientific, economic and knowlegde-related impacts are considered most frequently
  - The analysis of social impacts is in line with the general development and has taken an upward trend (especially in 2012)
  - The same holds true for environmental impact analysis (which is generally less often mentioned within the SIPER dataset)

Interpretation: policy makers must increasingly legitimize the measures taken by demonstrating the impact of these in various fields

Findings

RISIS

Figure 4. Impact dimensions covered between 2000 and 2017 (total numbers)



Findings

RISIS

- Timing and aim
  - Approximately three quarters of the evaluation studies in each impact group are interim
  - Interim evaluations are performed less often in case of environmental impacts, while summative-final reports are somewhat more frequent in this type of impact studies
  - Accompanying evaluations, but especially ex-ante studies, are less well represented in the existing dataset
  - Almost all reports have both summative and formative elements, with the former applying to almost all studies

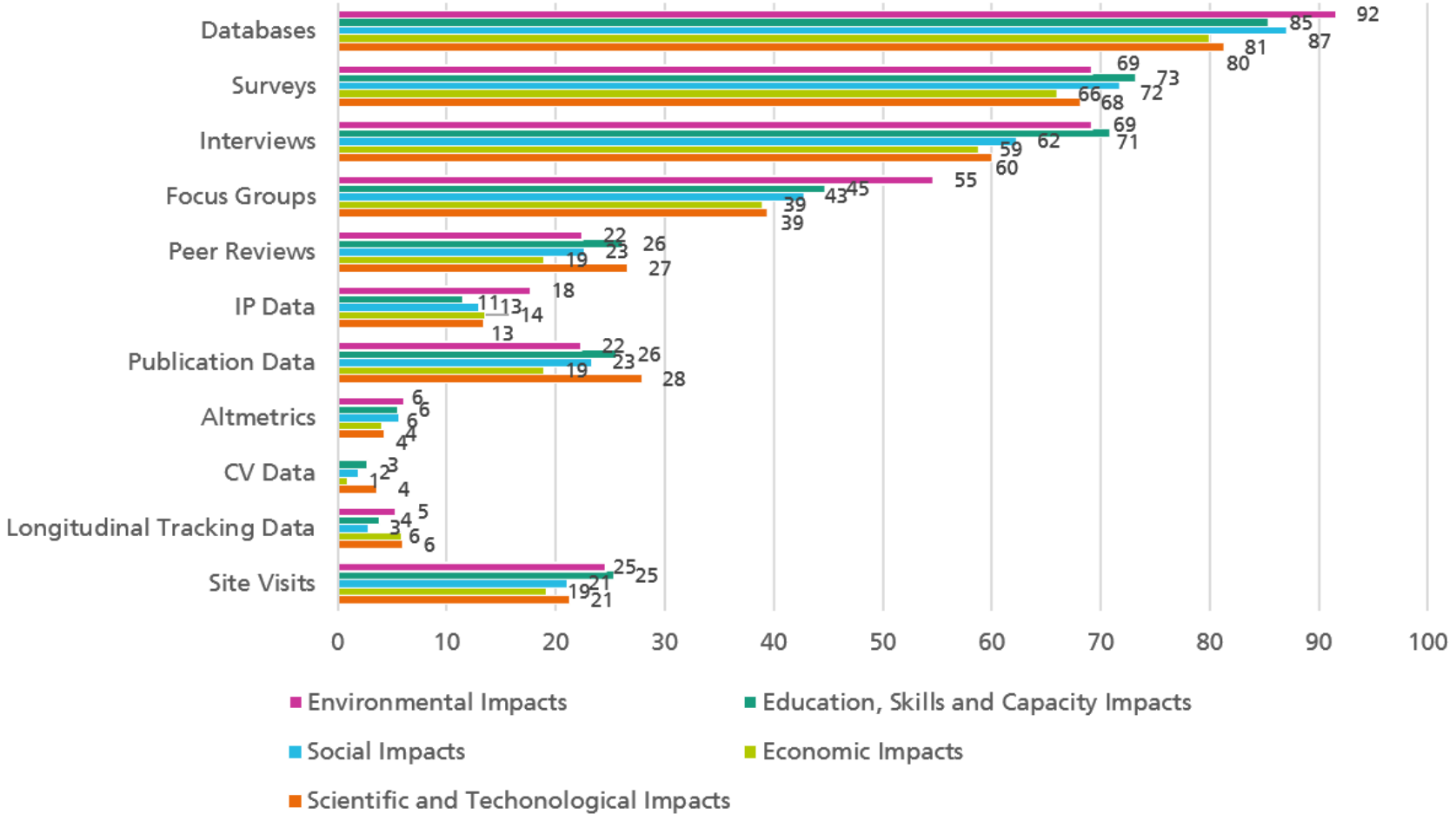
Findings

- Data collection methods
  - Database analyses, surveys and interviews with programme participants are by far the most commonly used data collection methods
  - The use of existing databases is particularly common for social and environmental impact studies
  - Stakeholders directly linked with the programme are mainly included in studies on social and environmental impacts
  - In addition, other parties and / or stakeholders are also most frequently included in environmental impact studies

Interpretation: environmental impact studies often have a more complex design than studies of scientific and economic impacts

Findings

Figure 5. Data collection methods (percent of all reports considering this impact)



Findings

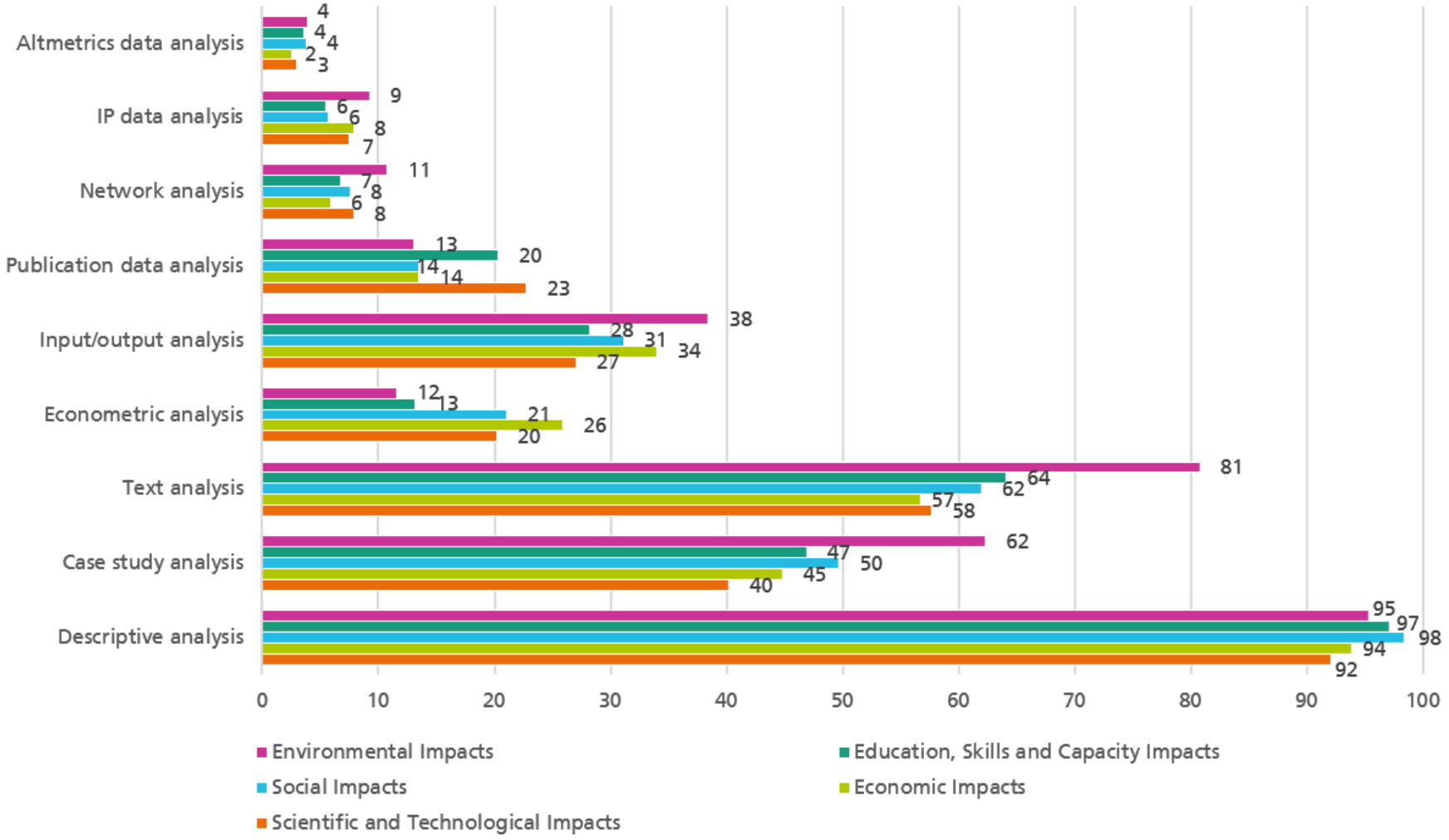
RISIS

- Data analysis methods
  - Overall, descriptive analysis is most common and dominant in all types of impact analysis
  - At position two: case study analysis, which is most frequently used in environmental and social impact studies,
  - Text analysis, either qualitative or quantitative, is rather common as well and can primarily be found in studies on environmental, educational and social impacts
  - Expectedly, we find econometrics most frequently in evaluation studies that investigate economic impacts
  - The less frequent data analysis methods like network analysis, IP data analysis and altmetrics can again primarily be found in environmental impact studies

Findings

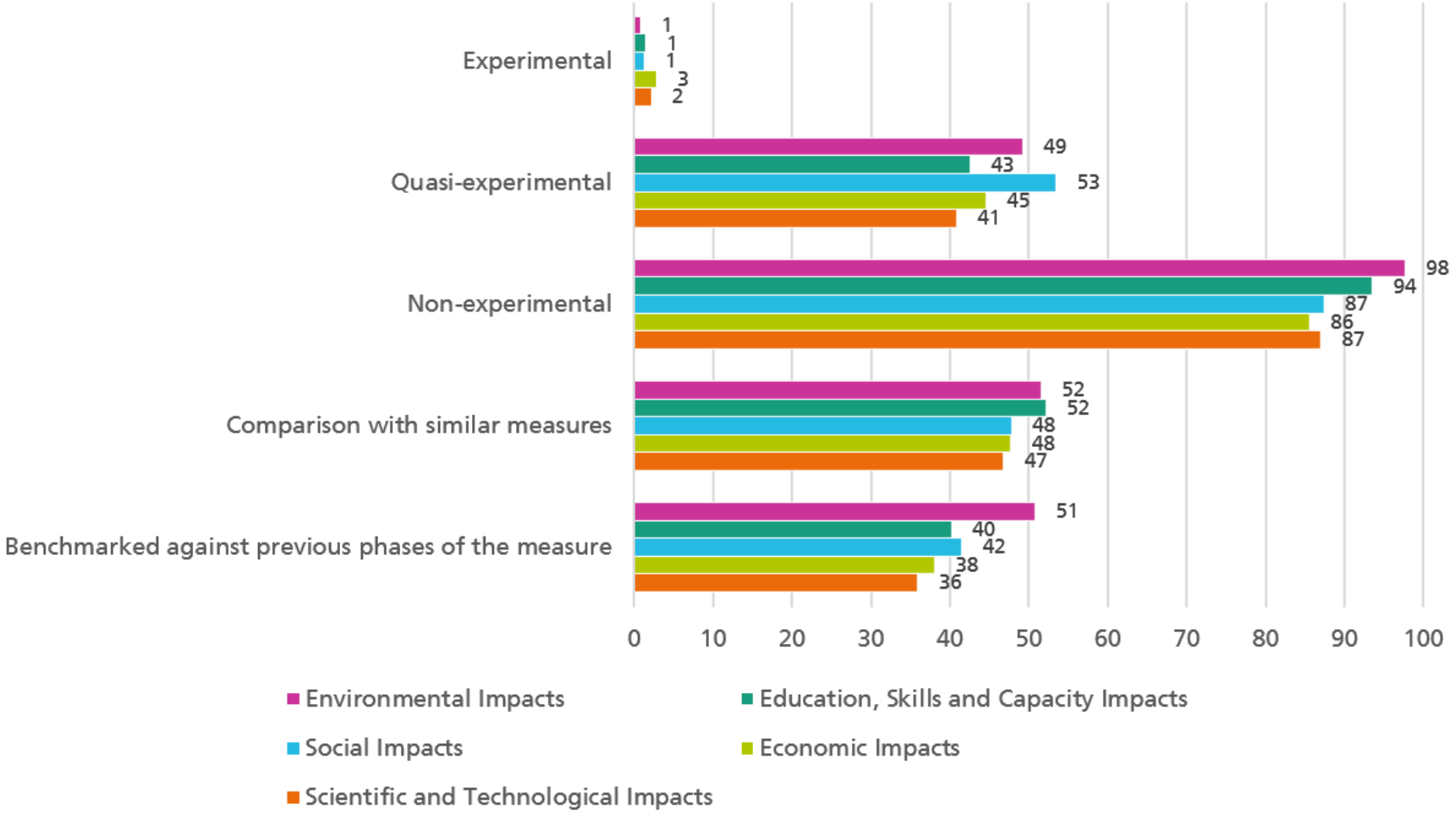
RISIS

Figure 6. Data analysis methods (percent of all reports considering this impact)



Findings

Figure 7. Design of the evaluation (percentage of all reports considering this impact)



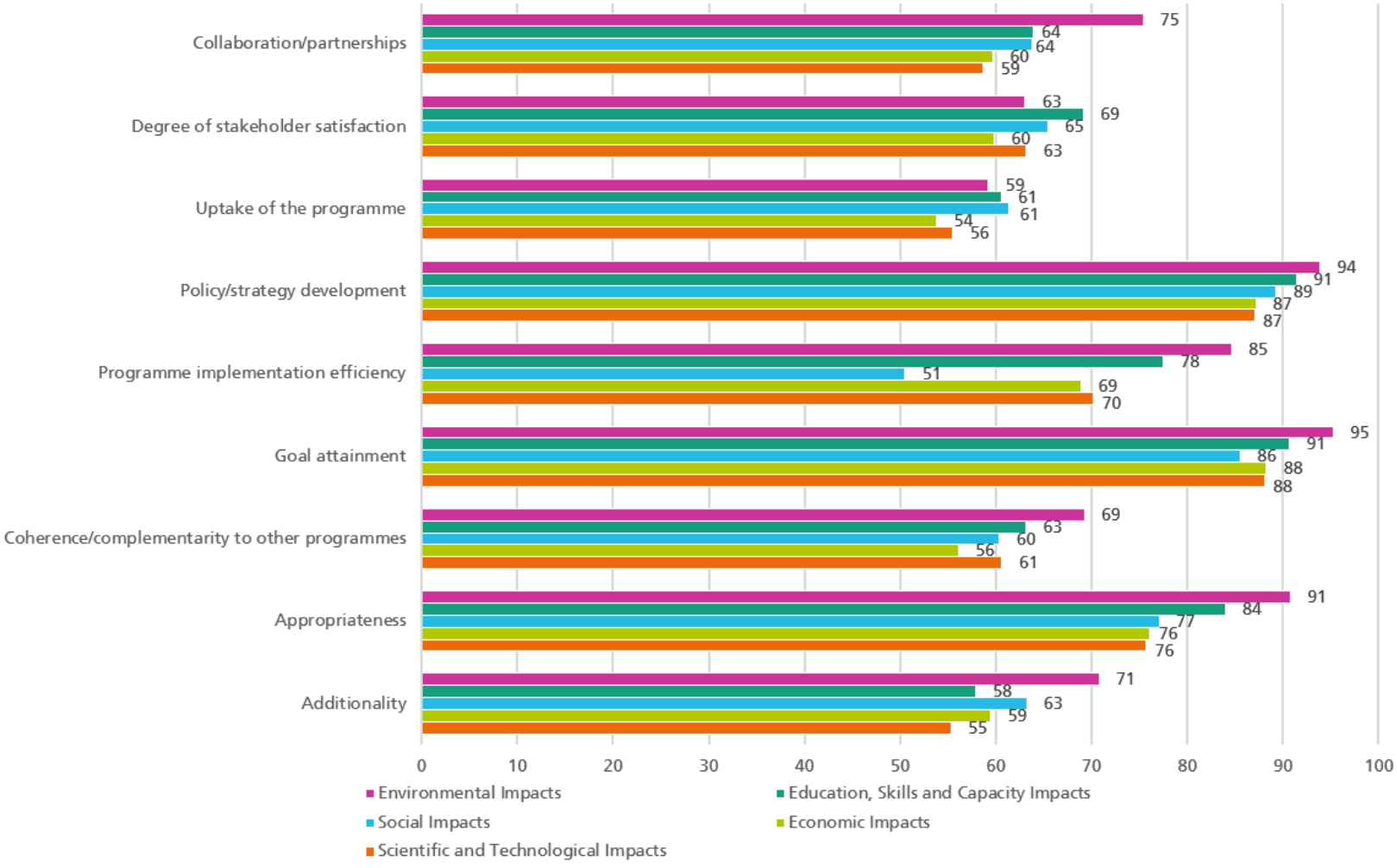
Findings

RISIS

- Topics covered
  - Additionality (input, output and behavioural) plays a particularly strong role in studies that focus on social or environmental impacts
  - The uptake of the programme, different types of collaborations (among different stakeholder groups as well as with differing geographical scope) and mobility issues (intersectoral, geographic) are also primarily topics investigated in environmental and social impact studies
  - Also gender and minority issues play a much larger role for evaluations covering social impacts than in other evaluation studies
  - Finally, environmental impact studies also frequently address coherence / complementarity, goal attainment and return on investment

Findings

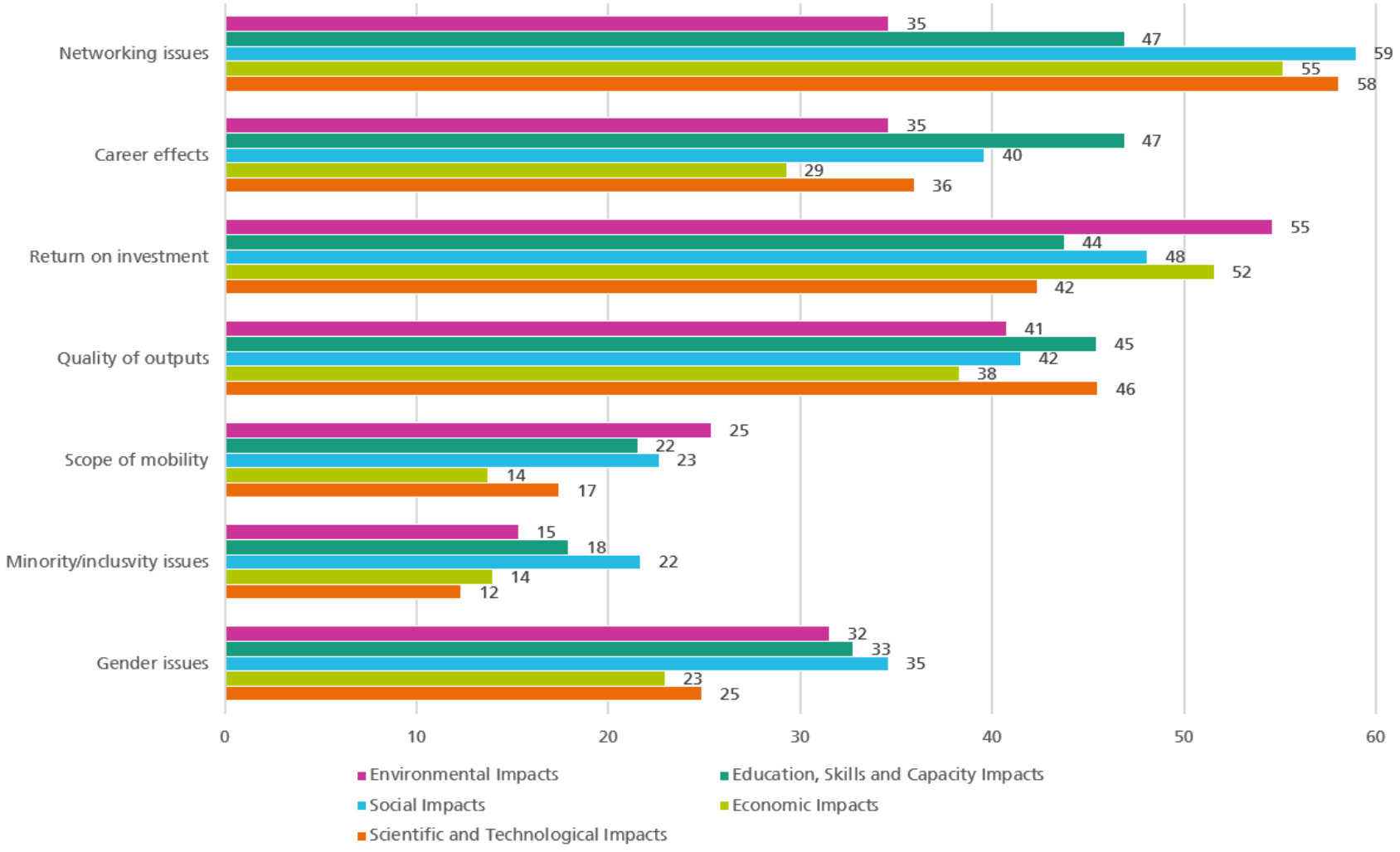
Figure 8.1 Topics covered (percentage of all reports considering this impact), most frequently used



Findings

RISIS

Figure 8.2 Topics covered (percentage of all reports considering this impact), less frequently used



Findings

RISIS

- Objectives of funding
  - Studies that investigate environmental impacts refer to policy measures with the broadest set of objectives:
  - 11% of environmental impact studies refer to 10 different policy objectives while this applies to only 4% of the economic studies, 5% of the scientific impact studies, and 7% of social impact studies
  - Awareness raising is particularly important for social and environmental impact studies
  - The topic of education and mobility is most frequent for measures that involve the investigation of educational impacts
  - The participation and advancement of women or minority groups in research and innovation is most often among the policy objectives for social impact studies (followed by studies on educational impacts)

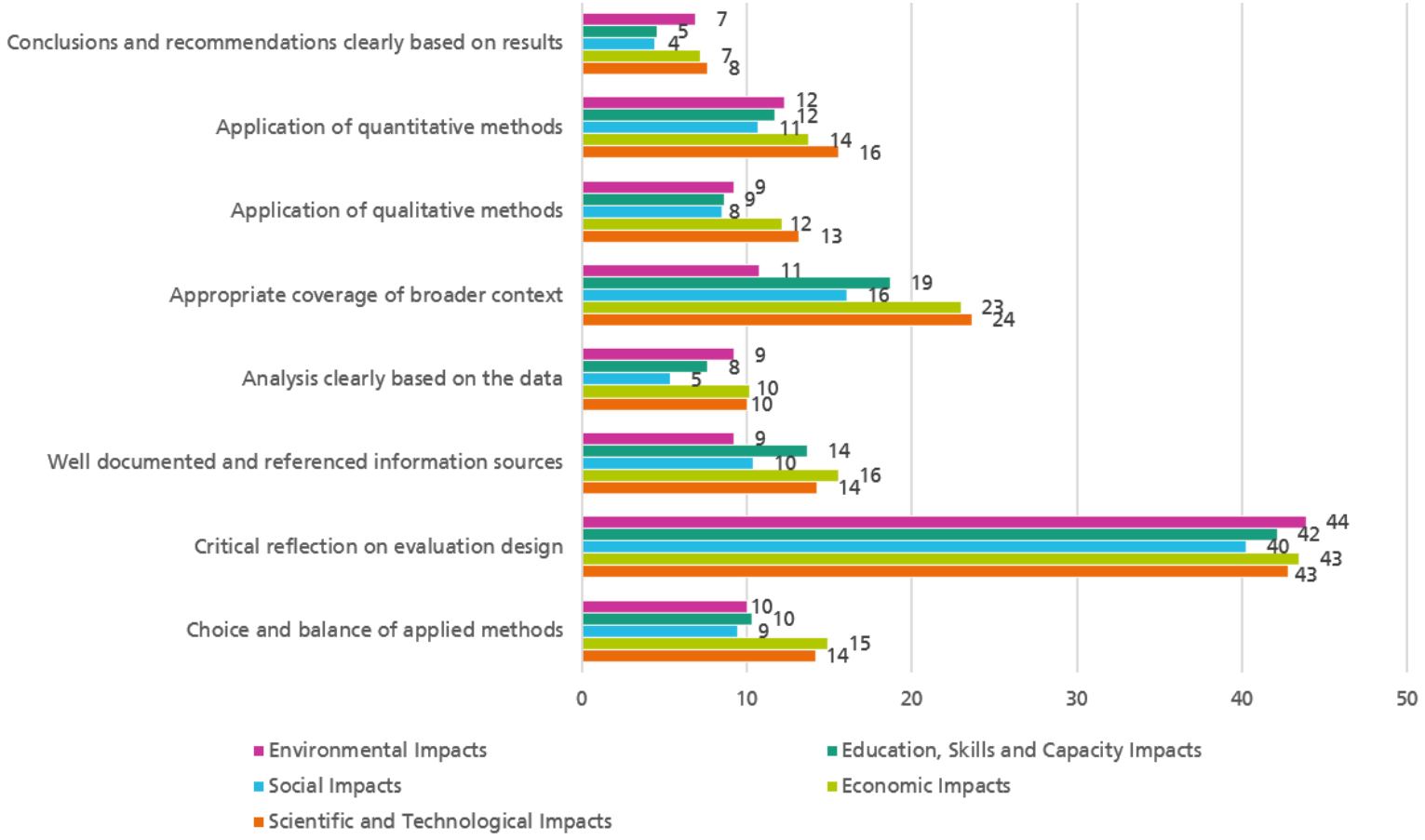
Findings

RISIS

- Perceived quality
  - Overall, the large majority of evaluations was assessed very positively
  - A critical reflection on evaluation design and implementation is most often missing. On the contrary, the conclusions and recommendations seem to be sufficiently based on the evaluation results
  - Environmental impact studies are usually assessed more positively, they receive less frequently "poor" / "average" compared to other studies.
  - This is especially true for the coverage of the broader context and the documentation of the information sources
  - Studies on scientific and economic impacts receive comparatively low assessments as regards the coverage of context but also the choice and balance of the applied (quantitative and qualitative) methods

Findings

Figure 9. Perceived quality of the evaluation reports covering different types of impacts (percent of assignments only for the sum „poor“ + „average“)



RISIS

Summary & Outlook

Summary

RISIS

- The analysis of the SIPER database has shown that
  - A new type of impact analysis is emerging with a focus on social and environmental impacts
  - These studies differ in several respects from evaluations in the field of scientific, technological and economic impacts
  - For example: Qualitative approaches are more common in these still emerging impact fields
  - They often address a much broader set of topics than other impact studies do
  - In particular, environmental impact studies are most frequent in countries with sophisticated evaluation culture practices like the EU, Norway, the US, the UK and Australia

Outlook - Research

RISIS

- Further research is needed to answer questions like
  - Why is the qualitative accompanying approach recommended by numerous evaluation scholars for transition-oriented measures (Molas-Gallart 2015, Molas-Gallart et al. 2020, Dinges et al. 2020) not sufficiently reflected in the SIPER data?
  - Potential reason: many environmental impact studies are conducted at the EU level where researchers have observed an incresing trend towards standardisation for many years
  - Further analysis based on an updated version of SIPER will show whether the tendencies observed so far will continue

Outlook - Practice

RISIS

- Usefulness of the SIPER database for practitioners
  - Evaluation reports can be easily accessed under: https://si-per.eu/siper-en/index.php
  - The reports can be searched by predefined criteria, for example the addressed policy instrument
  - A full text search function will be implemented by the end of November 2021
  - Work on sophisticated methods to assess the performance of a policy measure are still ongoing

References

References

- Bloch, Carter; Sorensen, Mads S.; Graversen, Ebbe K.; Schneider, Jesper W.; Kalpazidou Schmidt, Evanthia; Aagaard, Kaare; Mejlgaard, Niels (2014): Developing a methodology to assess the impact of research grant funding: A mixed methods approach. In: Evaluation and Program Planning 43 (2014), 105-117.
- Bornmann, Lutz (2013): What Is Societal Impact of Research and How Can It Be Assessed? A Literature Survey. Journal of the American Society for Information Science and Technology, 64(2):217–233, 2013.
- Daimer, Stephanie; Bührer, Susanne (2010): The role of impact assessment in evaluation. In: Edler, J./Cunningham, P./Gök, A./Rigby, J./Amanatidou, E./Garefi, I./Bührer,S./Daimer, S./Dinges, M./Berger, M./Schmidmayer,J./Guy,K. (2010): INNO-Appraisal - Perspectives on Evaluation and Monitoring, Final Report. Brussels, February 2010. P. P. 151-176.
- Dinges, Michael; Meyer, Susanne; Brodnik, Christoph (2020): KEY ELEMENTS OF EVALUATION FRAMEWORKS FOR TRANSFORMATIVE R&I PROGRAMMES IN EUROPE. In: *fteval - Austrian Platform for Research and Technology Policy Evaluation*, S. 26–40. DOI: 10.22163/fteval.2020.486.
- European Court of Auditors (2008): Special report No 9/2007 concerning 'Evaluating the EU Research and Technological Development (RTD) framework programmes — could the Commission's approach be improved?' together with the Commission's replies. Brussels: Official Journal of the European Union.
- European Commission (2018): Monitoring the Impact of EU Framework Programmes. Expert Report. Written by Peter van den Besselaar, Ramon Flecha, Alfred Radauer.

References

RISIS

- Joly, Pierre-Benoît; Gaunand, Ariane; Colinet, Laurence; Larédo, Philippe; Lemarié, Stéphane; Matt, Mireille (2015): ASIRPA: A comprehensive theory-based approach to assessing the societal impacts of a research organization. Research Evaluation, Volume 24, Issue 4, October 2015, Pages 440–453, https://doi.org/10.1093/reseval/rvv015
- Martin, Ben & Tang, Puay (2007): The benefits from publicly funded research. SPRU Electronic Working Paper Series (SEWPS). Paper No. 161.
- Molas-Gallart, Jordi (2015): Research evaluation and the assessment of public value. Arts & Humanities in Higher Education 2015, Vol. 14(1) 111–126.
- Molas-Gallart, Jordi; Boni, Alejandra; Schot, Johan; Giachi, Sandro (2020): A Formative Approach to the Evaluation Of Transformative Innovation Policy. In: TIPC Working Paper (01). Online verfügbar unter http://www.tipconsortium.net/wp-content/uploads/2020/07/Paper-FORETIP-1.pdf, zuletzt geprüft am 23.02.202
- Reale, Emaunela, Dragana Avramov, Kubra Canhial, Claire Donovan, Ramon Flecha, Poul Holm6, Charles Larkin, Benedetto Lepori, Judith Mosoni-Fried, Esther Oliver, Emilia Primeri, Lidia Puigvert4, Andrea Scharnhorst, Andras Schubert, Marta Soler, Sandor Soos, Teresa Sorde, Charles Travis and Rene´ Van Horik (2015): A review of literature on evaluating the scientific, social and political impact of social sciences and humanities research. Research Evaluation, 27(4), 2018, 298–308

References

- Sivertsen, Gunnar; Meijer, Ingeborg (2018): Evaluating and improving research-society relationships: The role of normal and extraordinary impact. R-QUEST Policy Brief No. 3.
- Spaapen, Jack; van Drooge, Leonie (2011): Introducing "productive interactions" in social impact assessment. In: Research Evaluation 20(39), p 211-218.
- Wilsdon, James; Allen,Liz; Balfiore, Eleonora; Campbell, Philip (2015): The Metric Tide: Report of the Independent Review of the Role of Metrics in Research Assessment and Management. DOI: 10.13140/RG.2.1.4929.1363

RISIS

Team

Dr. Susanne Bührer
Fraunhofer ISI
Breslauer Str. 48
76139 Karlsruhe

+49 721 6809-148
susanne.buehrer@isi.fraunhofer.de

Elisa Wallwaey, M.A.
Fraunhofer ISI
Breslauer Str. 48
76139 Karlsruhe

+49 721 6809-337
elisa.wallwaey@isi.fraunhofer.de

Dr. Hendrik Berghäuser
Fraunhofer ISI
Breslauer Str. 48
76139 Karlsruhe

+49 721 6809-466
hendrik.berghäuser@isi.fraunhofer.de

Sarah Seus, M.A.
Fraunhofer ISI
Breslauer Str. 48
76139 Karlsruhe

+49 721 6809-344
sarah.seus@isi.fraunhofer.de

Supervision

Prof. Dr. Jakob Edler
Fraunhofer ISI
Breslauer Str. 48
76139 Karlsruhe

+49 721 6809-205
jakob.edler@isi.fraunhofer.de

RISIS

RESEARCH INFRASTRUCTURE FOR SCIENCE AND INNOVATION POLICY STUDIES

THANK YOU !

WWW.RISIS2.EU

ZENODO.ORG/COMMUNITIES/RISIS

CONTACT@RISIS2.EU

@RISIS_EU

RISIS COMMUNICATION

FACEBOOK.COM/RISIS.EU

RISIS2 EU PROJECT

Université Gustave Eiffel · AIT Austrian Institute of Technology · Politecnico Milano 1863 · Consiglio Nazionale delle Ricerche · Universiteit Leiden · The University Of Sheffield. · Fraunhofer ISI · Università della Svizzera italiana · Joanneum Research

University of Sussex · DZHW Deutsches Zentrum für Hochschul- und Wissenschaftsforschung · University of Strathclyde Glasgow · Sapienza Università di Roma · NIFU Nordisk institutt for studier av innovasjon, forskning og utdanning · CSIC Consejo Superior de Investigaciones Científicas · Samuel Neaman Institute for National Policy Research · Technology Centre ASCR · ATHENA Research & Innovation Information Technologies