



Synthesis on the Case Study Work

(Work Package 3)

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Date: 15th May, 2019

Main Objectives

The main objective of WP3 was to identify links between gender equality promoting initiatives and impacts on research and innovation, and develop a conceptual evaluation framework and instruments to design and assess gender equality interventions and their effects in research and innovation. WP3 comprised the following subtasks:

- Development of a conceptual evaluation framework on how gender equality interventions can affect research and innovation output, outcome and impact (EFFORTI Toolbox 1.0). The evaluation framework has been tested and refined in the validation phase of the project and contributes to the development of the final toolbox (EFFORTI Toolbox 2.0). The conceptual evaluation framework addresses the three gender equality ERA objectives (more women in research and innovation, more women in leadership positions, and integration of the gender dimension in research content and curricula) for the different levels of intervention i.e. micro – individual/team; meso – organisational; macro – system/country.
- Collection and development of quantitative and qualitative indicators that are both sophisticated and practical for the design and evaluation of gender equality interventions in research and innovation across European countries.

Methodological Approach

Drawing on a comprehensive desk research, a methodological approach was initiated to develop the conceptual evaluation framework that involved the following steps:

- A literature review and systematic mapping of the state of the art with an extensive collection of gender equality intervention evaluation studies
- A collection of smart practices of interventions according to specific defined criteria
- Development of a typology of gender equality interventions based on the existing literature
- Development of a conceptual evaluation framework as a basis for the further work in the project
- Identification and development of indicators (quantitative and qualitative for the three ERA strategies and at different levels of intervention i.e. micro, meso, macro)
- Creation of the initial EFFORTI Toolbox 1.0 that has been validated in WP4 and further developed into the final Toolbox 2.0.

Strengths and weaknesses of the methodological approach

EFFORTI proposes a wide-ranging, well-developed framework for capturing the complexity of interventions and their impacts in complex systems. The EFFORTI conceptual evaluation framework opens the “black box” of the relationship between gender equality interventions and outputs, outcomes and impacts, pointing out which aspects of context are important for the design and evaluation of policy interventions.

It is a theory-based evaluation framework that goes beyond linearity and causality and focuses on contribution to achieve impact instead of attribution. The framework focuses on the questions (i) in which way and (ii) under which conditions an intervention causes the effects observed (Döring & Bortz, 2016) and explores “not only whether the intervention works, but also how, for whom and in which context” (Van Belle, Marchal, Dubourg & Kegels, 2010). This is articulated in an intervention logic model that explicitly states the assumptions of the intervention, which may help to understand the complex dynamics and linkages between inputs and outcomes and impacts (Kalpazidou Schmidt & Graversen, forthcoming).

Moreover, the framework suggests that data collection is conducted through rigorous procedures and a probabilistic perspective, moving away from using only traditional quantitative measures, towards including more sophisticated indicators. However, the framework needs to be tailored to adjust to local conditions, and be designed with context sensitivity, considering the challenges in assessing impact of gender equality interventions in research and innovation (Kalpazidou Schmidt & Graversen, forthcoming).

There are though a number of challenges linked to evaluation of gender equality interventions and their impact in research and innovation (cf. European Court of Auditors, 2008):

Attribution problems: It may be a challenge to state which effects are directly related to the intervention and how change has occurred because interventions are implemented in complex environments. Impact can have multiple causes, and thus identifying causal relations between interventions and impacts is not straightforward. The direct attribution of a long-term impact to a specific intervention may be rather challenging: Evaluators should rather focus on contributions given the complex and dynamic research and innovation environments.

Measurement problems:

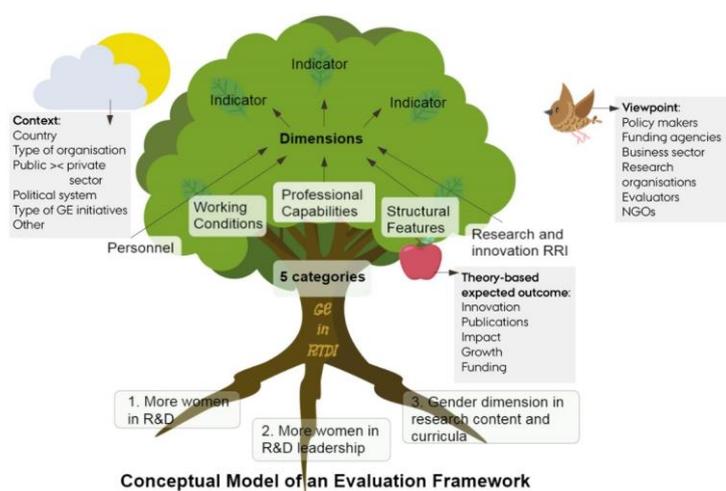
- data availability: Assessing impact may suffer from lack of data. For example, although assessing the status quo of gender equality is considered a prerequisite for developing and implementing initiatives, there are hardly any detailed data describing the ex-ante status besides some general indicators as regards the number of women researchers at different hierarchical levels.
- adequacy of indicators: A crucial question is whether evaluations are measuring the right thing. Institutions or organisations need to be confident that indicators used are appropriate and truthful. Therefore, it is very important to involve stakeholders in the process from the very beginning. Furthermore, a “measurable” indicator for output does not necessarily permit conclusions on outcomes or impacts to be drawn.
- lack of consensus on what data to collect. This is due to the fact that the different stakeholders involved in a specific evaluation try to promote their interests (Kalpazidou Schmidt & Cacace 2017).
- understanding the dynamics: Given the apparent difficulty to model the relations between inputs, outputs, outcome and impacts, the mechanisms of research and innovation processes and the role gender equality can play are unclear. Too narrow a perspective on outputs and outcomes may overlook the complex interactions between the initiatives and their context, and the potentially unintentional effects stemming from these interactions.
- comparability of results: As gender inequalities are quite different between fields and disciplines, interventions promoting gender equality and evaluation practices need to take specific disciplinary, organisational & national contexts into account.
- aggregation: Simplistic extrapolation of evaluation results in terms of outputs, outcomes and impacts attained at the lower level to a higher level is challenging and risks to result in non-representative aggregates.

Timing problems: Typically, there is a considerable time-lag from the gender equality intervention until the generation of outputs and outcomes so that impact can be assessed. Data need to be collected over the long-term so that meaningful and robust conclusions can be drawn. Then again, an evaluation performed after a long period may complicate the identification of the intervention contribution to change.

Main Results

The conceptual evaluation framework offers a non-linear concept, where the notion of contribution - instead of attribution - to achieve impact is central to the integration of team, organizational and system context factors in policy design and evaluation. The illustrative tree presented below is a visualization of the conceptual evaluation framework in EFFORTI. The three ERA gender equality strategies stand as the vision and foundation of the tree and set up the platform for all interventions. The branching of the tree corresponds to the categorization of the tools, i.e. the division of indicators into categories and dimensions, with the indicators as the level closest to actual operationalization, embodied by the leaves of the tree. In line with the theory of change approach, the developed indicators are both of quantitative and qualitative character. The theory-based evaluation approach adopted in EFFORTI helps to mitigate the risks related to complexity in dynamic contexts (Kalpazidou Schmidt & Graversen, forthcoming).

The contextual aspects of the framework are illustrated by the means of weather icons and refer to the varying structural and cultural features pertaining to any specific implemented intervention. Contextual elements may pertain to country, type of research system, sector type (i.e. public or private), type and position of organization in the R&I system, type of gender equality intervention, and previous experiences with policy interventions. The fruits of the tree represent the positive effect of the intended gender-equal R&I system and involve outcome and impact of interventions (i.e. innovation, patents, publications, funding, knowledge dissemination, science communication, research-based teaching, societal impact, etc.). A bird is pictured symbolizing the different perspectives available in the conceptual framework for a variety of stakeholder groups. The conceptual framework aims at providing interesting insights and instruments to policymakers and representatives of funding agencies, NGOs, the business sector, research organizations, and more (Kalpazidou Schmidt & Graversen, forthcoming).

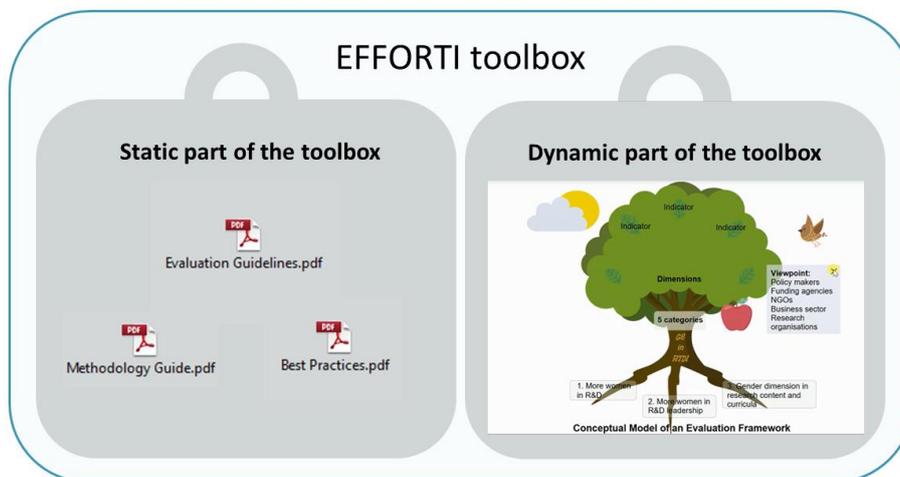


An illustration of the EFFORTI conceptual evaluation framework.
Source: Kalpazidou Schmidt et al. 2017.

The first part of the toolbox consists of evaluation guidelines, the typology of interventions catalogue, and best practice examples. The user is supported in considering and understanding ‘under which conditions’ impact of a specific intervention is produced. The user is guided to systematically include team, organizational and system factors in a design or evaluation process. Guidance is provided in terms of criteria about how to assess quality and impact of interventions (Kalpazidou Schmidt & Cacace, 2017). This rather ‘static’ part of the toolbox consists of downloadable cross-referring documents for stakeholders use.

The second part of the EFFORTI toolbox assists the user in understanding ‘how’ gender equality interventions support the formulation of intervention theory, design and implementation. It consists of 17 impact stories to guide the input, output, outcome and impact chain of commonly used gender equality interventions. The conceptual framework guided the collection and development of relevant indicators while the case studies and corresponding impact stories were used to verify, refine and further develop the evaluation framework and the indicators.

The toolbox is thus constructed as a landscape of guidelines, best practices and indicators, which stakeholders may use as a catalogue, and a source of inspiration. Hence, the EFFORTI toolbox provides a basis for further refinement of the pool of indicators in a dynamic process that can meet the needs of policymakers, researchers, evaluators and intervention owners in different contexts.



An illustration of the EFFORTI toolbox structure as a static and a dynamic process. Source: Kalpazidou Schmidt et al. 2017.

Main Lessons Learned

- Context sensitivity and methodological pluralism is a quality criterion for evaluations.
- Evaluation is a complex concept itself implemented in complex systems – evaluation design and instrumentation have to consider the complex systems i.e. contextual factors.
- Reality cannot be presented as a simple causal model - the models used should address the complexity of systems. Linear casual relations between interventions and impacts are challenging to establish.
- The direct attribution of a broader long-term impact to specific intervention is not possible: Evaluators should rather consider contributions given the complex and dynamic environments.
- There is a dilemma between context sensitivity and reduction of complexity.
- Not only the intervention itself, but also its context is decisive for its impact.
- A theory-based evaluation approach may help to mitigate the risks related to complexity in dynamic contexts.
- A theory-based evaluation approach allows to open the black box and address the question - how and why a policy works, and in which context and how to assess it.
- Evaluation is always a unique process - a one-size-fits-all approach does not function.
- In formative evaluations with a focus on learning, stakeholder involvement might be a beneficial approach.
- Evaluation as a learning instrument can foster structural and cultural change by delivering empirical evidence for different kinds of benefits (financial, scientific, economic, societal etc.).
- Incorporate evaluation from the beginning in the design of intervention.

Main lessons for intervention design

- The ability of gender equality interventions to foster the right conditions for change is central in complex systems.
- Need to develop a tailor-made design involving stakeholders.
- Be aware of emerging issues and complexity, unexpected internal and external co-variables that influence evaluation processes.
- Adopt a holistic approach that considers the constantly emerging issues created by team, organizational and system dynamics.
- Attention to the contextual elements may support making the results more generalizable.
- Interventions should take into consideration the societal impact of gender equality interventions in research and innovation from the outset and embed relevant monitoring and evaluation processes and procedures into programme design.
- Start from theory and assumptions and not from instruments or methods.
- Assessing gender equality programmes, in particular in terms of their research and innovation impacts can enrich evaluations, but may not always be feasible.

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