

D2.1 KSH2 Report: Initiating Change Beyond the Centre. A Literature Review of Gender Equality Plans in Research Organisations across Europe.

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# **Executive Summary**

This report presents the results of the scoping literature review conducted by the Knowledge and Support Hub (KSH) "Widening Participation" of the INSPIRE project. The KSH "Widening Participation" aims to describe and understand the multiple organisational pathways in the development of gender equality that are rooted in local knowledge and circumstances. In order to provide the KSH with the relevant background for its work, this report maps the existing knowledge regarding gender equality policies, particularly in the form of Gender Equality Plans (GEPs), and their development in Research & Innovation (R&I) organisations in "Widening countries" as defined by the European Commission in the Horizon Europe programme. Being critical of the term "Widening countries," we explain its meaning in the introduction to this report and the reasons for using it as an operational term. We conducted a scoping literature review using two approaches: a database search of English-language literature (a top-down approach) and questionnaires to national experts (a bottom-up approach). This allowed us to map the available data on the development and implementation of GEPs at the organisational level in Research Performing Organizations (RPOs) and Research Funding Organizations (RFOs) in the selected countries. From the 3,618 documents identified in five databases (Web of Science, Scopus, Google Scholar, EBSCO, JSTOR), we selected 60 for review and included 88 of the 133 documents suggested by national experts in the literature review. While journal articles are the most numerous type of literature in both samples, reports are much more prevalent in the literature suggested by the national experts. Although the timeframe of the search was 2012-2023, the majority had been published in the last 5 years. The coverage of country cases in the literature is only balanced when the two approaches are combined.

The combined findings of both approaches show that the literature covers a wide range of contextual factors that affect the implementation of gender equality instruments in the R&I systems of the analysed countries. The publications discuss the development/design of GEPs rather than their implementation and monitoring, with more attention paid to established gender equality measures and topics over newer ones. The main socio-political and economic factors hindering GE measures are: lack of laws and frameworks at the national level; negative connotations associated with the term 'gender'; low awareness and narrow understanding of gender issues among policy makers; low resources and cuts in research funding; an institutional culture that negatively perceives GE policies and lacks leadership commitment and expertise; the neoliberal turn in academia. The main supportive factors for initiating change and implementing GEPs identified in the literature are: mobilising the academic community by building broad consent and support from the institution's top leadership; engaging key stakeholders and activist change-agents within organisations through their collaboration in communities of practice; adapting GE measures to the respective institutional culture; influencing positive changes in national frameworks and policies; and using communication strategies that align GE policies with societal and institutional values. In some publications there is a tendency to obscure the diversity within the group of "Widening countries" and position them as backward in terms of gender equality, against more progressive and effective Western European countries. The predominantly positive impact of EU policies is reflected in the finding that the most successful institutionalisation practices can be attributed to EU-funded projects and the inclusion of GEPs in the Horizon Europe eligibility criteria. This action facilitated mobilising local expertise and building up tools, but also led to hasty institutionalisation efforts that lacked real commitment at institutional and national levels, a genuine understanding of the causes of gendered inequalities, and the sustainability of the newly created measures.

The report **concludes** by highlighting the gaps in the existing literature: an examination of the differences within the category of "Widening countries", including the development of legislation and policy frameworks for gender equality; how "anti-gender" politics and wider social debates influence the process of institutionalising GEPs in R&I organisations, and the adoption of a historical perspective that would critically examine the impact of the communist past on current developments.

The literature review indicates **recommendations for future studies** concerning the lack of studies on locally situated and contextually developed GEP interventions in the following areas: sexual harassment; incorporating the gender dimension into the content of research and teaching; gender-sensitive data collection tools; different management models to ensure commitment to GE institutionalisation; and applying intersectionality through the prism of organisational positionality rather than identity. Finally, the review indicates for the importance of diversification of sources of knowledge and sensitivity to the context of knowledge production.

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# Introduction

This literature review is conducted within the INSPIRE project, with the aim of identifying conceptual foundations, existing knowledge, and knowledge gaps for the INSPIRE work programme. This review specifically aims at providing a knowledge base for the functioning of the Knowledge and Support Hub (KSH) "Widening participation" managed by three partner institutions in the INSPIRE project: the Jagiellonian University in Krakow (Poland), the Research Centre of the Slovenian Academy of Sciences and Arts (ZRC SAZU, Slovenia), and the Facultad Latinoamericana de Ciencias Sociales (FLACSO, Argentina).

The KSH "Widening participation" is one of the five hubs forming an INSPIRE Excellence Centre for Inclusive Gender Equality, which focuses on supporting creation of GEPs and alternatives in R&I organisations in Europe and Latin America as a way to institutionalise inclusive gender equality policies. It develops support strategies that result from critical reflection on knowledge production, while considering specificities of social and political contexts and building on past experiences and practices. Geographically, the Hub is focused on the "Widening countries" as defined by the Horizon Europe Work Programme WIDERA (Widening Participation and strengthening the European Research Area), within which the INSPIRE project is being financed. The term "Widening countries" refers to a group of less R&I advanced countries (European Commission 2023) or, in other terms, the countries with low participation rates in FP7 and H2020 projects (European Research Executive Agency, n.d.). These countries are eligible as coordinators of widening actions and include Bulgaria, Croatia, Cyprus, Czechia, Estonia, Greece, Hungary, Latvia, Lithuania, Malta, Poland, Portugal, Romania, Slovakia, Slovenia and all Associated Countries with equivalent characteristics in terms of R&I performance (Albania, Bosnia & Herzegovina, Kosovo, Montenegro, North Macedonia, Serbia, Turkey, Armenia, Georgia, Moldova, Morocco, Tunisia, Ukraine, Faroe Islands) and the Outermost Regions (defined in Art. 349 TFEU, European Commission 2023).

The term "Widening countries" may be criticised for labelling certain countries as 'undeveloped' and for treating them indistinctively. Thus, we use the term only as a reference to the particular funding scheme, and for the purpose of stressing the importance of reaching those countries in which the gender equality plans have been only recently established or are in the process of their development (Reidl et al 2019; European Commission 2013). Yet, we do not use this term in general as we adopt a decolonial approach to knowledge production. In the work of the INSPIRE project and the KSH Widening participation, Latin America is also included and the literature review on this region is available in a separate report.

The KSH will aim at gathering knowledge on processes of development of GEPs (or alternatives to GEPs) in those regions/countries where until now there has been almost no regional or national regulations or initiatives encouraging such policy in the research and innovation organisations or in higher education institutions (Wroblewski 2020), thus where most of the institutions have drafted their first GEPs only recently. In this regard, the European Union Horizon Europe eligibility criterion introduced in 2022 with clear financial consequences for research performing organisations with no GEP became a strong incentive for initiating institutional change. It has directly influenced those relying on funding through European Union programmes, and it clearly has impacted organisations from the "Widening countries" where we witness the development of multiple GEPs in R&I organisations. Thus, this impact is

important to monitor and reflect about the usability of a GEP concept and framework in the diverse European contexts.

Due to the peripheral or at least semi-peripheral position of the "Widening countries" in different areas, including political, social, and knowledge production (Linková and Vohlídalová 2017; European Commission 2023), the perspective of those regions when it comes to the European Union policy developments in relation to gender equality in R&I is less present. With this review, we aim at bringing those perspectives and experiences into the debate, to reflect on how the national and local contexts, as well as historical perspectives, impact the development of gender equality policies, and how the interactions between local, regional, and European levels shape gender equality initiatives in research and innovation in the "Widening countries". Ultimately, the INSPIRE project aims at "mobilising existing gender expertise in "Widening countries" and employing it within locally situated knowledge production on structural change towards gender equity" (Project proposal Part b, Page 5). This review will contribute to this aim.

We are aware of the diversity of situations in particular "Widening countries", even if some groups of the "Widening countries" may share some commonalities. For example, a socialist past, integration in the European Union, neoliberal reforms in the research sector and higher education systems, a resurgence of feminist movements but also anti-democratic backsliding, are just some of the most important shared contexts. Together they constitute a specific constellation of historical, cultural, social, and structural conditions for gender equality policy development in these countries. We hope that the INSPIRE project will bring this richness of experience and varying trajectories into the debate.

This report aims at mapping existing knowledge regarding gender equality policy development in organisations in the "Widening countries", particularly in regards to the development of GEPs. We aim to describe and understand the multiple organisational pathways in gender equality development which are rooted in local knowledge and circumstances. The study has also practical aims in the INSPIRE project framework pertaining to the development of adequate support measures and tools for institutions that are willing to create GEPs or strengthen their existing ones, as well as stimulating the debate on mutual learning on GEP design and implementation, the exchange of best practices, and the transferability of solutions into diverse contexts.

The report first presents the methodology of the study – indicating two approaches to map the existing knowledge: the database search and expert questionnaires. It then describes the results of the database search and discusses the main aspects. This is followed by data analysis of the expert questionnaires. The report not only presents the data of those two sources, but also discusses whether and in what respects those two sets of knowledge are different.

# **Methodology**

In order to identify the existing knowledge on the "Widening countries", we conducted a **scoping literature review**, comprising two different but complementary, approaches: a database-focused search of publications in English, and a compilation of local language publications suggested by national experts. This scoping literature review allowed us to map the available data on GEPs together with policy development and implementation at the organisational level, in research performing organisations, and research funding organisations. We examined these processes from the wider perspective of the institutionalisation of gender equality, here understood as wholesome processes of development and implementation of gender equality policies, such as GEPs, organisational policies, programmes, activities and similar, as well as internalisation processes of values and norms in relation to gender equality in research organisations in the "Widening countries".

For the purpose of this review, we planned a **two-fold strategy** for gathering information on the existing documents, articles, or reports: a database search (a top-down approach) and expert questionnaires (a bottom-up approach). For the first approach, the team at the Jagiellonian University conducted systematic searches of the key databases (Google Scholar, Web of Science, Scopus, JSTOR and EBSCO). For the second approach, the national experts from the "Widening countries" within the EU (Bulgaria, Croatia, Cyprus, Czechia, Estonia, Greece, Hungary, Latvia, Lithuania, Malta, Poland, Portugal, Romania, Slovakia, Slovenia) provided information on the most important literature sources from their countries and this data was analysed by the ZRC SAZU team. The main rationale of the second approach was to complement the scoping review compiled via databases. These databases only capture a portion of knowledge production and tend to be inherently biased towards publications in English. Therefore, they potentially overlook valuable insights published in different languages. The focus of the bottom-up review was the literature in local languages, written by local authors. The selection of the relevant literature was based on recommendations and reports from national experts, who possess in-depth knowledge of the local context. Therefore, these two strategies were chosen to allow knowledge gathering from both the most recognized academic channels, including mostly peer-reviewed work (e.g. Scopus), but also to obtain localised knowledge from the experts in the form of documents or publications that are not necessarily included in indexed databases, and might be in the local languages and which would not be retrieved using database search with English keywords. As the interest to publish in English is relatively recent in many of the "Widening countries", the international databases may be in fact not the central source of knowledge on the topic.

Based on the scoping literature review, we aim to answer the following research questions:

- What are the socio-cultural, political, and economic contexts in the "Widening countries" impacting the implementation of GEPs (or their alternatives) in R&I organisations?
- What are the existing gender equality policy measures in education and research organisations in the "Widening countries"? What is their thematic scope? What alternatives (e.g. measures, policies, strategic policy documents) to GEPs are available?

- Which actors and processes are supportive for the development and implementation of gender equality policies or measures in R&I organisations in the "Widening countries"?
- What are the hindering factors and processes, including resistance, for the development and implementation of gender equality measures in R&I organisations in the "Widening countries"?
- How does the European Union impact the processes of GEP implementation?
- What theories, analytical frameworks and concepts are used in the reviewed literature?
- What methodologies are used to map and analyse these processes?
- What are the practical lessons from concrete GE interventions and policies in "Widening countries?"

The research questions for the bottom-up literature review are somewhat narrower than those for the top-down scoping review due to the methodological difference in gathering the data and the limitations for in-depth analysis of the texts in non-English languages. However, the research questions are designed to be compatible, and they are organised into two main sets of questions and sub-questions:

- What are the socio-cultural, political, and economic specificities in "Widening countries" which impact institutionalisation of GE in R&I?
  - Which aspects of GE in R&I in "Widening countries" are covered in the proposed literature? What is the existing gender expertise in "Widening countries"?
  - Which are the hindering and supportive contextual factors related to GE and GE institutionalisation in R&I in the proposed literature?
- What are the practical lessons from concrete GE interventions and policies in "Widening countries"?
  - Which measures, initiatives and actions are identified as successful in the process of institutionalisation of GE policies in R&I in "Widening countries" in the proposed literature?
  - Which measures, and/or approaches are proposed to be developed in the future?
  - What are alternatives to GEPs in "Widening countries"?
  - Which actors proved to be important for change?

This review concentrates on the gender equality plans development at Research & Innovation Institutions. Within them, our focus was on **Research performing organisations** (RPO), including Higher Education Institutions (HEI), public and private research institutes and research centres, as well as Research funding organisations (RFO). We excluded business and civil society organisations from our search.

In this study, we take a **geographical focus** on the "Widening countries" as they are crucial for any analysis of the uniqueness of the Knowledge and Support Hub. The KSH aims at targeting those regions where the implementation of GEPs is a relatively new phenomenon and where the organisational level strategic policy frameworks in regard to gender equality (in the shape of for example, GEPs) have largely been missing. The concept of the "Widening countries" is based on the evaluation of the Research and Innovation systems in Europe. The focus on this group of countries in this research is grounded on the premise that: "Existing disparities between R&I leading and lagging countries can be tackled by introducing structural

policy reforms (European Union 2023, 9). In the database search, we included all countries from the Horizon Europe regulation in programme component "Widening Participation and Spreading Excellence" (see Table 2), while the expert questionnaires – due to the INSPIRE project framework – only commissioned the national experts from the EU "Widening countries" (see Table 1).

Country	National experts
Bulgaria	Georgi Apostolov
Croatia	Brigita Miloš
Czechia	Jana Dvořáčková
Cyprus	Alexia Panayiotou
Estonia	Martin Jaigma
Greece	Dia Anagnostou
Hungary	Beáta Nagy
Latvia	Nina Linde
Lithuania	Aurelija Novelskaitė
Malta	Anamaria Magri Pantea
Poland	Marta Warat and Karolina Sikora
Portugal	Catarina Sales Oliveira
Romania	Monica Stroe
Slovakia	Alexandra Bitušiková
Slovenia	Martin Pogačar, Iva Kosmos and Jovana Mihajlović Trbovc

Table 1 National experts per country

The research was limited to the documents published **from 2012** onwards, when gender equality was set by the European Commission as one of the priorities of the European Research Area. In the study we wanted to concentrate on the most recent developments, following the proposition of ERA priorities and the inclusion of gender equality as a Horizon 2020 cross-cutting area (from 2014). We have observed a growing number of publications on the topic in recent years, also following the projects on gender equality plans within Horizon 2020 e.g. LIBRA (2015–2019), GENERA (2016–2018).

## The research process

During the first stage of our research, a **research protocol** was formulated clearly indicating the research aims and research questions, detailing the process for the database search, and the inclusion and exclusion criteria for the search. Additionally, the protocol included questions that would be posed to the gender equality experts in the questionnaires.

## Database search

In order to establish a final list of databases, the Jagiellonian University team ran **test searches** in different databases, which allowed us to take a final decision on the inclusion/exclusion on certain databases (beyond the databases that were included we tested ScienceDirect and The International Bibliography of the Social Sciences). Finally, we decided to run searches in 5 databases: Web of Science, Scopus, Google Scholar, EBSCO, JSTOR. On the one hand, we have chosen databases that provide access to scientific, peer-reviewed publications, and on the other hand, we have used Google Scholar to gain access to grey literature, mostly reports from research projects. The Google Scholar search machine was difficult to use since searches resulted in numerous irrelevant outcomes and, in order to limit the search, we only went through the 10 first pages of the search results.

The next step of the research was the **database search** conducted between January and June 2023. We searched through diverse document types: peer-reviewed scientific articles, books, chapters, grey literature such as reports, and Master and PhD theses. We decided to integrate grey literature in the analysis, as national, regional and local reports on gender equality policies and programmes developments are often not published in academic formats, since they are frequently written by practitioners and policy makers. MA theses and doctoral dissertations were also included as they may tackle important case studies (ultimately, however, no thesis was retrieved). We did not limit our study in regard to disciplines, to allow perspectives of those who implement gender equality measures within specific disciplines, e.g. engineering, and may publish the results in the adequate journal. In the top-down approach we limited our search to English language documents.

The screening of databases was done in titles, abstracts, and keywords, not in the full texts. In the case of Google Scholar, the search was done in full texts. As this particular search engine browses either titles or full text, we chose the second option to find more relevant results.

Field	Search terms + synonyms (British and American English)
Торіс	"gender equality polic*" OR "gender equality plan*" OR "gender equality measure*" OR "gender equality mainstreaming" OR "gender equality strategy" OR anti-discrimination OR antidiscrimination OR "gender diversity"
Population/target group	"research institut*" OR "research organisation*" OR "research performing organisation*" OR "research funding organisation" OR "research center" OR "higher education" OR universit* OR "Research & Innovation" OR science OR academy OR academies OR academia
Geographical scope	"Central and Eastern Europe" OR "Eastern Europe" OR "Balkans" OR "Former Yugoslavia" OR "post-socialist" OR "post-communist*" OR Baltic OR Bulgaria OR Croatia OR Cyprus OR Czech* OR Estonia OR Greece OR Hungary OR Latvia OR Lithuania OR Malta OR Poland OR Portugal OR Romania OR Slovakia OR Slovenia OR Albania OR "Bosnia & Herzegovina" OR Kosovo OR Montenegro OR "North Macedonia" OR Serbia OR Turkey OR Armenia OR Georgia OR Moldova OR Morocco OR Tunisia OR Ukraine OR "Faroe Islands" OR Guadeloupe OR "French Guiana" OR Martinique OR Réunion OR "Saint-Barthélemy" OR "Saint-Martin" OR Azores OR Madeira OR "Canary Islands"

Search terms (presented in Table 2) were related to topic, population/target group and geographical scope of our review.

Table 2 Search terms

For Google Scholar we used a modified search string, due to the limitations of the Google Scholar search engine (mainly signs limit and searching for associated words close to the key word). We decided to narrow down the keywords to: ('gender equality plan' OR 'gender equality measure') AND ('research organisation' OR 'higher education' OR 'university' OR 'Research & Innovation') AND (countries). The Google Scholar search had to be done in multiple iterations. For JSTOR we also used the EDS search engine as the JSTOR database cannot handle long queries. Moreover, very recent publications cannot be found in JSTOR due to the so called "moving wall".<sup>1</sup>

After the search, the title and abstract were screened for the inclusion in the database by two referees (in case of divergent opinions, we asked the opinion of a third referee). The articles in the database were assessed on the basis of full text, considering the following exclusion reasons:

- 1. Article/document does not relate to gender equality or gender equality policies/programmes.
- 2. Article/document relates primarily on gender inequalities but does not focus on gender equality measures/GEP development or implementation, nor on conditions for implementation of gender equality measures in organisations.
- 3. Article/document does not include organisational perspective or data, but e.g. relates only to national level policies.
- 4. Article/document refers to gender equality measures/GEP beyond Research & Innovation sector.
- 5. Article/document focusing on measures in the business sector.
- 6. Article/document published before 2012.
- 7. Article/document does not relate to "Widening countries" providing meaningful knowledge on the local, regional or national situation or context.
- 8. Article/document is not based on original data, but a review of existing sources.
- 9. Article/document is not in English.

The searches were done in iterative mode, starting with the search of the Google Scholar database and then followed by the other databases.

- Google Scholar: the search was done in 21 iterations, which resulted altogether in 3,348 items retrieved. After the screening of the abstracts, the final number of items included in the database was 83.
- Web of Science: in the search we obtained 36 hits, after screening 2 items added (an additional 5 were duplicates already included through the Google Scholar search).
- Scopus: in the search we obtained 38 hits, after screening 4 items added to the database (an additional 6 were duplicates already included through the Google Scholar search).
- EBSCO: in the search we obtained 165 hits, after screening 3 items were added to the database (an additional 3 were duplicates already included through Google Scholar search).

<sup>&</sup>lt;sup>1</sup> Each publisher defines which issues of a journal are available in JSTOR. The "moving wall" refers to the time between the journal issue's publication date and the last issue available in JSTOR. The "moving wall" is usually three to five years, for more details please visit https://guides.jstor.org/how-to-jstor/about-jstor.

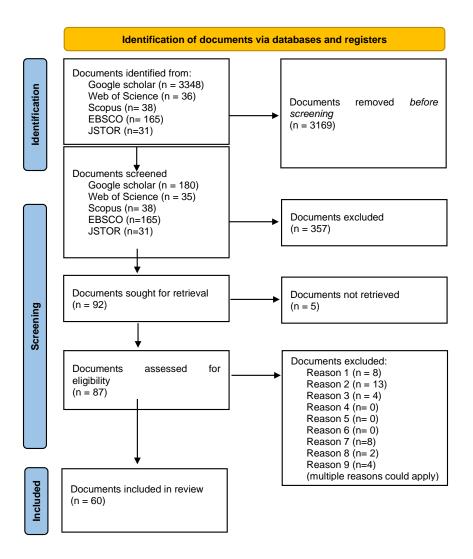
• JSTOR through the search engine EDS: in the search we obtained 31 hits, after screening 0 items were added to the database.

After the database search, 87 items were read full-text and analysed against the exclusion criteria (we did not gain access to 5 items). After this step, an additional 27 items were excluded. Finally, 60 items were included in the review.

It is important to add that the most fruitful source of items proved to be Google Scholar due to wider access to diverse types of documentation, papers, and reports, that are not listed by more academic databases. The drawback in using Google Scholar is that it also lists a lot of irrelevant documents. Nonetheless, after the search in Google Scholar, only 9 papers were added from other databases.

The next step in the analysis included **charting the data**, which was analysed according to multiple categories in relation to:

- Publication outlet (type of outlet, journal name, year of publication, disciplinary area)
- Object of study (single/multicase study, country of interest, type of institution, policy/measure analysed: GEP, alternative, single measures, policy area)
- Methodology (approach, methods of data collection, unit of analysis, sample size, year of data collection)
- Theory (Theoretical framework or concepts applied to analyse collected data)
- Research questions (supportive factors, agents of change, barriers and resistance in regards to GEP implementation, factors stemming from local, socio-cultural, political, economic context, regional context, interactions between the local and European level, alternative to GEPs, the presence of intersectional approach, EU funding)



Adapted from: Page MJ, McKenzie JE, Bossuyt PM, Boutron I, Hoffmann TC, Mulrow CD, et al. The PRISMA 2020 statement: an updated guideline for reporting systematic reviews. BMJ 2021;372:n71. doi: 10.1136/bmj.n71

Figure 1 PRISMA chart for the top-down approach

## **Questionnaires for the national experts**

The second information source was provided by national experts commissioned for the national expert consultation to feed D2.2 Country Cluster Reports within the INSPIRE project. These national experts were contacted from the list of experts that the consortium partner, Joanneum Research, used for the update of the Gender Equality in Academia and Research tool (GEAR tool) for the European Institute for Gender Equality (EIGE), which took place in 2021. The same experts who worked on the update of the GEAR tool also acted as national experts for the INSPIRE project (including consortium partners UJ and ZRC SAZU, who acted as experts for Poland and Slovenia respectively), except in the cases of Cyprus, Greece, and Portugal, where replacement experts were commissioned. The national experts were asked to provide their responses through an online questionnaire via LimeSurvey from 2 March until 12 May 2023 (with an additional round of corrections until 13 June 2023).

For the bottom-up literature review, we analysed the following three questions from the expert questionnaire:

- Q12: "Please select the most relevant literature about structural change towards (inclusive) gender equality in R&I organisations in your country: at least 5 publications out of which at least 3 in local language." Instructions: "You may include academic literature as well as other types of publications (organisation's reports, policy analysis, working papers, etc.). Please give priority to the most recent publications (published in last 5 years). For each publication, please provide: a) Bibliographical reference, b) English summary and/or abstract of selected publication in local language (use of automatic translation is accepted). If you cannot identify at least 5 relevant publications, out of which at least 3 in the local language, please indicate this explicitly."
- Q23: "How do socio-cultural, political, and economic contexts impact institutionalisation of gender equality in R&I in your country? (Up to 400 words)." Instructions: "Please answer this question using the publications indicated in question 12. For each statement, please cite the source used. If there are no relevant publications to answer this question, please state this."
- Q24: "What are the practical lessons to be learnt from interventions or policies producing significant changes in R&I organisations for (inclusive) gender equality in your country? Could you provide some examples of good practice/results from specific interventions and identify who and how did changes occur in specific R&I organisations? (Up to 400 words)." The same instructions were included as for the previous question.

The bottom-up literature review used the publications listed by the national experts under question 12 as a pool of sources but drew upon two main sources of information: narrative answers provided by the national experts and the abstracts of the relevant literature. Therefore, the protocol of the analysis and selection went through the following steps:

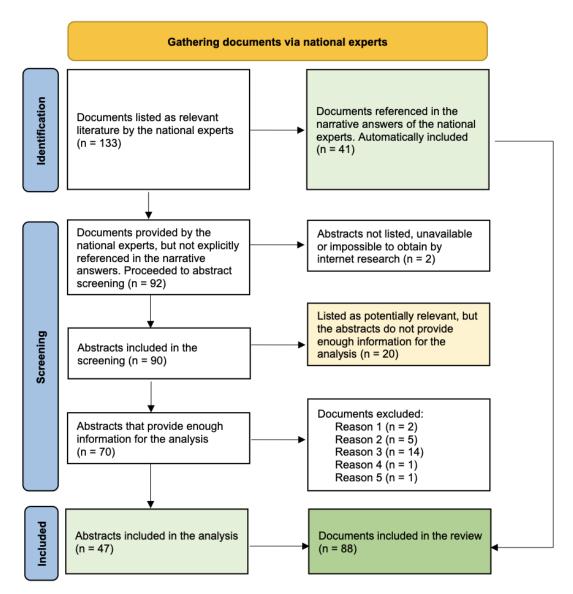
- 1. Reading narrative answers of the national experts in order to obtain an overview for each country. (Number of country reports: 15).
- 2. All the publications directly referenced in the narrative answers were automatically included into the pool of publications for the analysis (n = 41). All of the abstracts were retrieved. The literature referenced in the narrative answers was automatically included because the national experts explain the significance and the content of the proposed literature.
- 3. Retrieving all the abstracts suggested by the national experts under Q12, but not directly referenced in the narrative answers (n = 92). Abstracts that were unavailable or impossible to obtain through an internet search were excluded (n = 2). Proceeding to the selection process.
- 4. Analysing the selected and automatically included abstracts (n = 88).

Due to the time, language, and source limitations, only the abstracts were analysed and not the entire publication (a journal article, a chapter in edited volume, or a report). The analysis of entire publications would require translations from multiple European languages which, while unquestionably providing even more in-depth analysis, was not feasible within the existing constraints of the INSPIRE project. The process of selecting abstracts adhered to the following criteria:

- Included: abstracts of the proposed literature providing relevant information on the contextual factors related to GE in R&I and GE implementation and/or practical lessons learned (n = 45).
- Not included but listed as potentially relevant: abstract stating the aim of the research/analysis, but not providing enough information to gather contextual information and/or practical lessons (n = 20).

For example: some abstracts were too descriptive and stated that they look into practical lessons of GE policy implementation in a specific country but would not define what those lessons were. Thus, they potentially have useful information, but we cannot reach them at this stage. Additional reasons for listing those articles is their potential usefulness in the future work of KSH2 with CoPs, as we can refer our partners in CoPs to this literature as a potential source of information.

- Excluded for the following reasons:
- 1. Articles and documents published before 2012 (n = 2).
- 2. Irrelevant: abstracts not related to GE implementation in R&I (e.g. relating to process of innovation, business sector etc.) (n = 5).
- No information on relevant contextual specificities or practical lessons in relation to GE in R&I (n = 14).
- 4. Grey literature on the topic that has been extensively covered by scholarly literature in the same country or region (n = 1).
- 5. Abstracts referring to the EU area, but not providing specific information on "Widening countries" (n = 1).



Adapted from: Page MJ, McKenzie JE, Bossuyt PM, Boutron I, Hoffmann TC, Mulrow CD, et al. The PRISMA 2020 statement: an updated guideline for reporting systematic reviews. BMJ 2021;372:n71. doi: 10.1136/bmj.n71

Figure 2 PRISMA chart for the bottom-up approach

## Mapping the research sources/field

In this part of the report, we analyse the data gathered through both the top-down and bottomup approaches in regard to categories used for data charting – this gives us an overview of the types of documents that were retrieved as well as of the object of study.

First of all, it is important to say that knowledge on the "Widening countries" has only recently been created - most publications come from the last 5 years. This indicates the growing interest in the analysis of these processes as institutions take steps to introduce gender equality plans, also resulting from the participation in the EU projects that are supporting institutional change towards gender equality. The trend is particularly visible in the bottom-up research, where we observe a rise in publications since 2016, and a spike since 2020. It should be noted, however,

that the national experts were advised (in the guidelines to the questionnaire) to give priority to the most recent publications (published in the last 5 years). The difference between the two sets of samples is that national experts seem to be more familiar with the latest publications in their countries that were potentially less visible and available in databases.

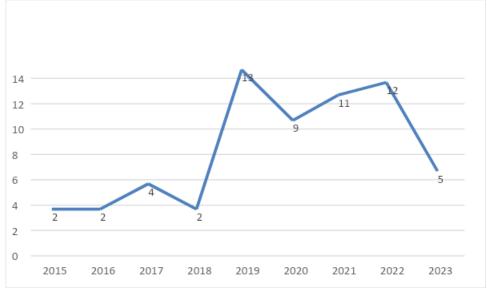


Figure 3 Year of publication (top-down)

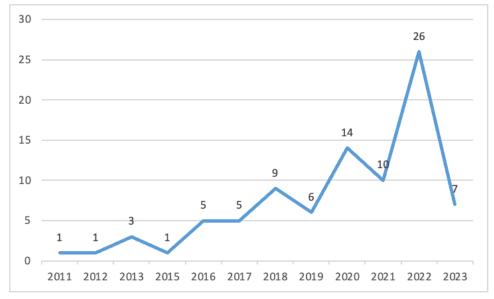


Figure 4 Year of publication (bottom-up)

Concerning the outlet of the publications, diverse outlets were collected from the databases with journal articles being in the majority followed by book chapters, reports, and conference related publications. Similarly, in the literature pool gathered through national expert questionnaires, journal articles constitute almost half of the selection. However, reports are the second most prominent type of literature, which indicates that important information from the field might be disseminated via grey rather than scholarly literature, at least in the "Widening countries".

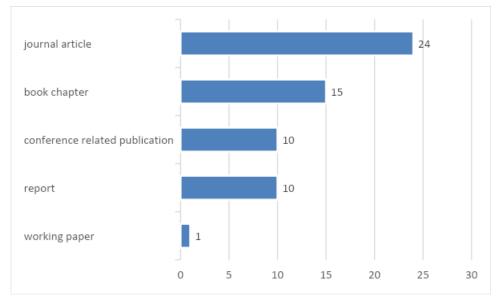


Figure 5 Publication outlet (top-down)

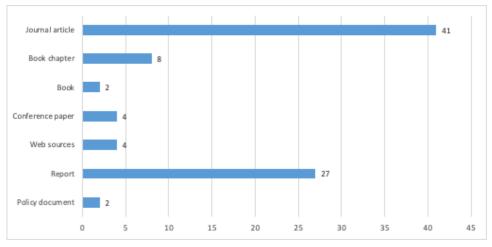


Figure 6 Publication outlet (bottom-up)

When it comes to the discipline, while it was not easy to identify the disciplinary background of the paper, the majority of the papers were classified by the authors as belonging to what may be broadly understood as the social sciences, including sociology, gender studies, economics and business, history, educational sciences, political science. Nonetheless, there were also documents published within the natural sciences, engineering, and computer and information sciences, which result from the certain disciplinary position of the authors.

Most documents analysed through top-down research are connected to projects funded by the European Union. In most cases, the texts were an outcome of particular internationally funded research projects – which was the case in 51 out of 60 investigated documents. 27 of 29 mentioned projects were funded by the EU, apart from 2 which were financed by Norway Grants. Several projects were mentioned in more than one publication.

Funding scheme	Projects
Horizon 2020 (EU)	ACT (7), Baltic Gender, CASPER, CHANGE (3), EFFORTI (4), EQUAL-IST (7), GEECCO, GENDER- Net Plus, GENOVATE, GRANTed, LeTSGEPs, Mindthegep, MILIEU, MoRRI, R&I PEERS, SAGE (3), SPEAR (2), StarBios, TARGET (10), UniSafe
Seventh framework programme (EU)	FESTA, GARCIA (2), GenderTime (2), INTEGER (2), SAPGERIC, STAGES
Erasmus + (EU)	ULYSSEUS
Norway Grants	ENEKE, GEIRICA

Table 3 Funding sources

We were unable to make the same kind of analysis for the literature gathered via national experts, as we were only analysing experts' narrative answers and abstracts, which did not necessarily convey this information.

Concerning the object of study in the database search, 37 of the documents related to multicase studies, involving several countries, while 23 were concentrating on a single case. The multi-case studies are often a result of projects: they offer a broad, but more general overview of all the countries involved. They do not include comparison between particular countries and commonly present an insider perspective as a dominant one, resulting in lack of reflections "from above" allowing the identification of regional or sectoral patterns. Many studies had rather a descriptive than conceptual and critical character. Many of them were based on general reflections and organisational experiences, thus directed at practical implications rather than conceptual and theoretical developments.

When it comes to countries of interest or where the case study is located, the countries that are most present in the database research appear to be Portugal (20 documents), then Greece (11), Poland and Lithuania (10), Turkey and Cyprus (9), Slovenia (8) Bulgaria, Slovakia and Estonia (7), Hungary, Romania, Czechia, and Serbia (6), Ukraine (5), Morocco, Bosnia and Herzegovina, and Latvia (2). None of the articles included information on Croatia. Nonetheless, it is important to stress that we obtain much more limited information about the context in the multi-case studies where several countries are included. However, if single country case studies are concerned, most were from Portugal, then Bulgaria and single articles from Slovenia, Hungary, Romania, Poland, and Turkey. Most of the countries were only present in multi-case studies, for example only one single case study concerned Poland despite the country being present in 9 texts, while on the other hand Portugal had 8 single case studies.

Quite a different picture emerges when one looks at the literature gathered and selected via the national experts. In this group, the most prominent are precisely those source countries, which are least present in the literature gathered via database scoping: Slovenia and Bulgaria (9), Romania and Croatia (8), Lithuania, Poland, and Latvia (7). However, it should be noted that there might be an element of bias, as the selection process was conducted by the team from Slovenia. Also, the highest number of the duplicates (3 out of 11) appeared in both samples related to Poland, whereas the team which conducted the database research (and acted as national expert in INSPIRE) came from Poland. What the comparison of the two

charts shows is that the two approaches in the literature review (top-down and bottom-up) produced a complementary overview of the literature.

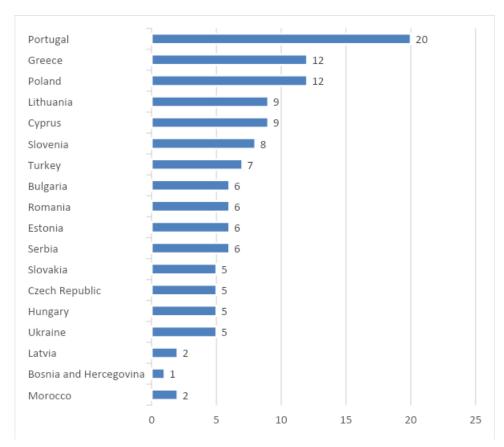


Figure 7 Countries from which case studies are - multiple selection possible (top-down)

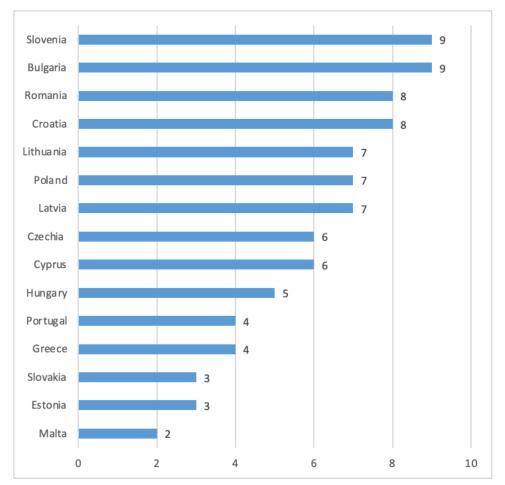


Figure 8 Countries from which case studies are - multiple selection possible (bottom up)

Regarding the type of organisations, the documents retrieved via databases mostly concentrated on higher education institutions. There were studies that embraced broader Research and Innovation groups including all types of organisations. Nonetheless, we can say that there is much less analysis in relation to funding organisations and research institutes. We were unable to make the same kind of analysis for the sources retrieved via the national expert questionnaire.

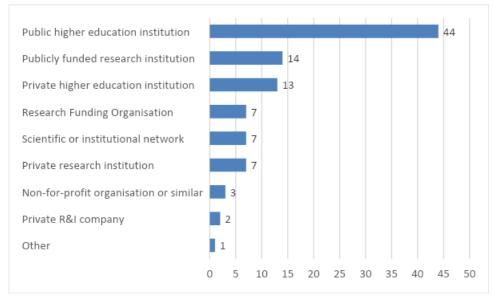


Figure 9 Type of organisations studied – multiple selection possible (using ACT Community mapping classification, Reidl et al. 2019)

Next, we analysed the policy areas (using the GenPort taxonomy) that were addressed in the documents gathered via databases – the same kind of analysis was not possible for the sources gathered via national experts due to the limitations of the bottom-up research. Most of the documents concentrated on describing and analysing 'Institutional practices and processes' as well as 'Policy setting & implementation'. This is not surprising as the articles primarily concentrated on GEPs or policies. Nonetheless, other topics that appeared in the papers largely concerned the issue of 'Research content and knowledge production' and 'Facts & concepts on gender inequality'. A few papers were related to the issues of 'Gender stereotypes & bias' and 'Academic & science careers' while none of the received papers primarily dealt with historical perspectives.

Facts & concepts on gender inequality	Research content and knowledge production	Gender stereotypes & bias	Institutional practices and processes	Academic & science careers	Policy setting & implementati on	Equality and diversity units
7	11	2	39	5	24	4

Table 4 Policy areas (GenPort classification) - multiple selection possible

Finally, when it comes to the methodological approaches, most of the analysed publications in databases are based on qualitative methodologies, with a broad scope of methods used (individual interviews, focus group interviews, analysis of documents, case studies, observation, participatory action research). Several articles present studies applying a quantitative methodology (e.g. Mejlgaard, Bloch, and Madsen 2019; Novelskaitė 2016; Reidl et al. 2019; Werner 2020). However, they are either based on small-case surveys or online questionnaires, while large, representative studies are still missing.

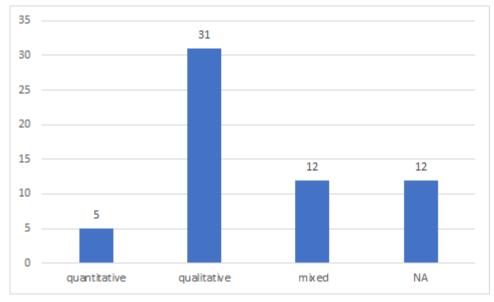


Figure 10 Research methodology

# Results from the qualitative analysis of literature obtained through the database search (top-down approach)

In this part of the report, we answer the research questions formulated in the review on the basis of the qualitative analysis of documents retrieved through the database search. First of all, we look into the context of the "Widening countries" R&I organisations impacting the implementation of GEPs. Then we look at the organisations exploring the existing gender equality policies. Last, we look at the supportive and hindering factors at the organisational level. In the following sections, we discuss the impact of EU policies on the "Widening countries". Finally, we consider what theoretical frameworks and methodologies were employed in the studies analysed.

## International, regional, national and institutional contexts for institutional change in the "Widening countries" R&I organisations

The importance of contextual factors is generally considered by the authors of the reviewed publications, as they are "a significant driving force for stimulating gender equality and enacting structural change in academia and research institutions" (Barnard et al. 2016; comp. also Cacace et al. 2015; De Micheli and Vingelli 2022; Milenkova 2021; Ranea-Triviño et al. 2022). While contextual factors seem to be recognised as a universally important aspect of designing and implementing gender equality interventions, it is argued that, especially in these countries where public discourse on gender equality in academia is lacking, these processes have become highly dependent on context and a specific constellation of opportunities and

constraints (Caprile et al. 2022). Therefore, the need for sufficiently tailored gender equality interventions (Palmén et al. 2019) to the local context is emphasised. From this perspective it is acknowledged that Communities of Practice are suitable platforms for the exchange of context-dependent and practice-based knowledge as they engage actors that have good knowledge from their practice in the given locality (Sekuła et al. 2023). At the same time, however, it is important to recognize that contextual factors may operate as both facilitating factors and constraints for gender equality interventions in R&I. The contextual factors are understood widely as stemming from international, regional, national, and institutional specificities (Addabbo et al. 2020; Barnard et al. 2016; Ranea-Triviño et al. 2022). We will now discuss those different levels in the following parts of the report.

## The impact of the EU in "Widening countries"

Numerous articles and papers indicated the policies of the European Union (EU) as a lever for institutional change. They argue that the EU sets the standards for both structural and cultural change by promoting and imposing gender equality discourse and providing legitimacy and prestige for work on gender equality, especially among top management. The EU is considered as acting as a major push factor enabling institutions to initiate and facilitate change: "(...) the EC was acting as an 'honest broker' for GE efforts, a convening organization, whose patronage facilitated the agenda and collaboration among member institutions and boosted legitimacy and status of the project and its members" (Thomson et al. 2022). Careful attention is given to the differences and policy gap between the 'older' EU member states (EU-15) and those from Central-East and Southeast Europe that joined the EU in the 2000s (EU-13). The former are advanced in terms of implementing GE measures in R&I policies, covering almost all ERA objectives, while most of the latter have not introduced GEP requirement compliant with the Horizon Europe in their national legislation (Anagnostou 2022). Contrary to Western Europe, where the major institutional changes were strongly related to national gender equality policies, or to Iceland and Italy which rely on both national policies and EU support, most countries from the CEE region (e.g. Romania, Slovenia, Lithuania) and Portugal rely mostly on participation in EU-funded projects when implementing GE policies (Sangiuliano 2019; Jordão and Diogo 2023). In a context featuring a lack of discourse at the national level and the influence of external gender equality legal and regulatory frameworks, organisations in the R&I sector are seen as pioneers in developing GEPs (Anagnostou 2022; De Micheli and Vingelli 2022). There are, however, exceptions to this process of GE policy development. Several articles highlighted the national level as an important intermediary between the EU and HEIs or RPOs. They illustrate how GE policies and regulations are first transposed to national R&I policies (Serbia), national laws (e.g. the national Act on Equal Treatment and Promotion of Equal Opportunities, Hungary) or national strategies for gender equality (Bulgaria, Portugal) to have a potential further impact at the level of HEIs and RPOs (Doneva et al. 2019; Milenkova 2021; Tardos and Paksi 2021; Wroblewski 2021). They conclude that the more coherent and similar the policies and regulations at both levels are, the more successful is the implementation of GEPs.

### Participation in EU-funded projects

51 publications discuss the opportunities for HEIs and RPOs that come from their participation in EU-funded projects such as Horizon 2020 (e.g. Zabaniotou 2020b; Milenkova 2021; Clavero and Galligan 2021; Siri, Leone and Bencivenga 2022; De Micheli and Vingelli 2022). There

are 27 EU-funded projects mentioned in the documents (see Table 3) and their influence can be observed at several levels. Firstly, these projects provide funding for gender equality measures and actions, which otherwise would not have been possible due to the lack of internal financial support of the institution.

Secondly, given the collaborative nature of EU projects, they are identified as a platform for capacity building: mutual learning, sharing good practices, exchange of expertise and building international networks of gender equality academics and practitioners (such as GEinCEE Community of Practice created in the ACT project or the CESAER network in EFFORTI project). As it is directly noted "European schemes, projects and initiatives addressing gender equality issues provide opportunities for mutual learning and developing common standards and guidelines. The CESAER gender community should in particular use the opportunities offered by Horizon 2020 calls for proposals" (Horvat 2015). The importance of learning and sharing good practices through the participation in the EU-funded projects was highlighted across the entire region, having impact in countries such as Greece, Cyprus (De Micheli and Vingelli 2022) as well as Poland (Kosakowska-Berezecka, Zadkowska and Pawlicka 2020). Yet, there is a geographical imbalance between countries in Western Europe characterised by stronger links established with other institutions and institutions from CEE region which are poorly connected or even disconnected. It clearly shows the isolation of Bulgaria (Spasova, Leone and Bencivenga 2022) as well as Balkan countries such as Bosnia and Herzegovina, Montenegro, Albania, Serbia, and Macedonia (Reidl et al. 2019) which, with the exception of Serbia, do not have any links to other institutions - either among "Widening countries" or more broadly, in Europe (Reidl et al. 2019).

Thirdly, EU projects are discussed as a gateway to gender expertise, tools, common guidelines, and standards. A few studies indicate practical outcomes of the participation of HEIs and RPOs in EU projects, including collecting gender-disaggregated data, training related to gender equality or research into organisational cultures or gender audits (Drew et al. 2017; Petrović 2021; Hermansson, Jacobsson and Österberg 2021).

Finally, the symbolic impact of EU-funded projects is discussed. In Romania and Baltic countries such as Estonia, EU-funded projects raise awareness about the importance of gender equality, provide higher relevance and acceptance of gender equality in institutions and ensure that it is included as a standard in the agenda of an institution (Tăriceanu 2022; Werner 2020). The argument of the importance of not lagging behind on gender equality was also used as a justification for the implementation of gender equality measures in Bulgaria (Doneva et al. 2019). As it is noted, "The equality between women and men is one of the objectives of the EU (integrated into all EU policies and EU funding programmes and promoted within the Member States and across the world), that's why a modern university, such as PU [the University of Plovdiv "Paisii Hilendarski], should not be lagging behind on gender policy" (Doneva et al. 2019; c.f. Thomson et al. 2022).

### Gender Equality Plans in "Widening countries"

In narrowing the scope of analysis to GEPs, a few articles found it important to discuss the development in the EU policies towards making them an eligibility criterion for all public bodies, higher education institutions, and research organisations from Member States and Associated Countries wishing to participate in Horizon Europe, for calls with deadlines in 2022 and onwards (Siri, Leone, and Bencivenga 2022; Ranea-Triviño et al. 2022; Jordão and

Diogo 2023). This legislation is discussed as a factor accelerating the development of GEPs, forcing many institutions to quickly develop and implement GEP for the first time (Husu and Peterson 2022). Yet, as Mihajlović Trbovc (2023) claims, contrary to previous European funded initiatives which were usually limited to the lifespan of a particular project, this new policy may bring a sustainable structural change. It is believed to provide more possibilities for change agents interested in implementing measures of gender equality. Not only is their work now visible and valued, but also, they were given more options to mobilise for supporting institutions: "once the GEP has become a requirement in the application for the Horizon Europe programme as of calls opened in 2021 (and an eligibility criterion as of 2022), the situation significantly changed. Many of the institutions of the CoP members initiated the process of creating a GEP and relied on the CoP members as their key actors in the process" (Mihajlović Trbovc 2023). Therefore, the example of Slovenia illustrates how the new EU policy may not only affect organisational policy, but also how gender expertise has become an asset and a value to the institution. Interestingly, the impact of the new EU regulation is seen in Poland and Slovakia as going beyond the research institution level to reach the funding organisations (e.g. NCN in Poland, SRDA in Slovakia) encouraging these institutions to use external pressure to increase gender equality (Husu and Peterson 2022).

### Limitations of EU impact

Several studies discuss the limitations of the impact of the EU on HEIs' and RPOs' gender equality policies or measures. Although they recognize the potential for change initiated by EU policies and strategies, they also highlight their weaknesses. These include a lack of sustainability in human and financial resources and a temporary character of the change (Sekuła et al. 2023; Drew et al. 2017). Also, the implementation of the EU requirements, in particular adopting GEPs, is seen only as a legal compliance to fulfil formal criterion of gaining financial support while ignoring its potential for institutional social change (Sekuła et al. 2023; Siri, Leone, and Bencivenga 2022). Other issues indicated are problems with embracing GE arguments and interventions within other concepts such as diversity or antidiscrimination (Sekuła et al. 2023) or difficulties in transposing EU directives and regulations into similar policies in the Member States (Aavik 2017). In the latter, the Estonian case can be illustrative here, showing that "(...) the solutions applied elsewhere in Europe might not work in the same way in CEE, due to different local conceptualisations of gender that could partly be associated with the legacy of the socialist regimes" (Aavik 2017, 131). The historical legacy is clearly visible here as having impacted on the adoption of the EU initiative. The solutions proposed to overcome these challenges include embedding the EU projects in the organisational culture of the institution to ensure the sustainability of the changes in two cases: after the lifespan of the project or in case of changes among the authorities, as confirmed by the study in Turkey (Drew et al. 2017). Furthermore, as emphasised by the members of CoPs established in the ACT project, ensuring the support from strategic actors like policy makers or funders on the national level to secure more resources for gender equality may be considered (Reidl, Beranek, and Holzinger 2022).

There are also articles discussing resistance towards gender equality. While a lack of understanding and willingness on the organisational level is emphasised in Lithuania despite the involvement in the EU funded project (Novelskaitė 2016), the Polish case showcases the importance of national cultures and policy as hindering factors in the implementation of GEPs

(Hermansson, Jacobsson and Österberg 2021). The latter illustrates the tensions between the EU and national values, treating the EU as a source of advancement and a threat at the same time: "Only the European Commission provided policy tools through initiatives such as the 'HR Excellence in Research Award' or 'Alliances of European Universities', promoting universities to pay greater attention to gender issues. These tools are effective since many Polish universities generally seek international recognition to get access to European funding, build networks with European institutions through strategic partnerships and obtain European certificates. The Polish case, in contrast, shows that national cultures and policy traditions can also be shielded and preserved from influences emanating from sectorial logics. Even though Polish HEIs have become internationalised, and Poland, as a country, has introduced EU policies in other domains, no equal opportunity measures to improve gender balance at HEIs have so far been adopted. In short, Poland is a basket case of the phenomenon of 'continuity in change' that is observed elsewhere" (Klenk et al. 2022, 143-144).

Only one article, based on the analysis of gender equality mechanisms in Estonia, explained a recent change in EU policies to include men in efforts to achieve gender equality (Aavik 2017). Although attempts to address gender inequality from the perspective of men are understandable and in line with EU policies, this strategy is also criticised as diverting attention from the exclusion and under-representation of women in many areas in HEIs and RPOs.

### **Regional context**

In a few publications the regional context is discussed when analysing the conditions for the implementation of gender equality instruments in the organisations of the "Widening countries". In this regard, there is a tendency to contrast the 13 'new' EU member states, mainly those located in the region of Central and Eastern Europe (but also two other countries belonging to the group of the 'new member states': Cyprus and Malta) with Western Europe and Scandinavia:

- as having a much shorter history of gender equality policies because they were only introduced into national legal and policy frameworks of these countries when they joined the EU (Aavik 2017, 131), and therefore they tend to lag behind the 'old EU' (Ranea-Triviño et al. 2022; Nason and Sangiuliano 2020; Mejlgaard, Bloch, and Madsen 2019);
- as applying "different local conceptualisations of gender that could partly be associated with the legacy of the socialist regimes" (Aavik 2017, 131), as noted in the above section on the EU;
- as limiting gender equality to work-life balance issues (Linková and Mergaert 2021);
- as not recognising gender inequalities as an important social issue (Nason and Sangiuliano 2020);
- as tending to focus on a narrower concept of gender equality than those of the EU15 countries: while the latter follow the ERA's multidimensional gender equality concept, most EU13 countries if having gender equality policies in place focus only on women's participation, especially in Grade A, and neglect measures towards gender equality in decision-making as well as the inclusion of gender dimension into research and teaching (Wroblewski 2021);

- as less successful in introducing gender studies into higher education as a field of teaching and research due to considering them as "a borrowed concept from Western culture that did not fit the social and political realities of former communist Eastern European countries" (Tăriceanu 2022, 126);
- as generally being suspicious of gender equality and feminism (Linková and Mergaert 2021).

While the problems identified might be valid in particular countries, such generalisations obscure the diversity within the group of "Widening countries" and may overlook the impact of the legacy of the past, such as – in the case of CEE countries – gender equality legislation or development of feminism during state socialism.

There are also analyses of sub-regions of Central and Eastern Europe, including Baltic countries and the Balkans. It is suggested that Baltic countries – Lithuania, Latvia and Estonia – share some common features stemming from historical legacy – namely a lack of legal obligations to introduce gender equality measures coupled with the alleged tendency "to resist the implementation of models and instruments developed in (...) Western societies" – which are or might be the reasons for reported slow change regarding gender equality in R&I (Novelskeite 2016, 18). The countries of the Balkan region are in turn classified as being disconnected from the networks of cooperation on gender equality, even in comparison to other countries of the Central and Eastern European region (Reidl et al. 2019).

Specific conditions were also mentioned regarding gender equality interventions in the Mediterranean region. On the one hand, having shared visions, values, and goals emerging from a common history, unique natural and cultural heritage was argued to facilitate dialogue and open communication between gender equality practitioners and scholars from the region (Zabaniotou 2020b; Zabaniotou et al. 2022). On the other hand, cultural differences in the perception of gender inequalities became a challenge in the operation of a cross-national network and inactivated some of the partners from common efforts: while "in Europe-based Mediterranean countries GE policies have slowly, but surely developed, in other Mediterranean countries of the Arabic world this development is almost at the zero level with only some exceptions related to anti-harassment measures taken" (Zabaniotou 2020b, 13).

While only few studies provide in-depth analysis and empirically rooted conclusions concerning the regional differences in the development of gender equality interventions in the national R&I systems, many studies were limited to general statements without further contextualisation. However, the picture is much more complex, and this will be discussed in the following sections on national legal and policy contexts and socio-cultural ones.

### National legal and policy contexts

Much has been written on the impact of the national legal and policy frameworks on the implementation of organisational gender equality measures. In the analysed material, general national legislation and regulations are assumed to exert pressure on organisations to take steps towards gender equality (Reidl, Beranek, and Holzinger 2022; Takkenberg, Dijkstra, and Kardijk 2022), but also facilitate the design and implementation of gender equality plans by providing anchoring for basic policies and measures such as childcare facilities or quotas (Werner 2020). This is why, therefore, the "institutions which have only recently begun to

intensively tackle the topic of gender equality, and which are located in countries whose legal provisions predominantly include antidiscrimination laws but no regulations for the promotion of women, often begin their gender equality activities with topics like reconciling family and work in the GEPs" (Werner 2020, 3).

In this context, considerable differences in the development of gender equality legislation and policy frameworks have been recognised: as was signalled in the previous section, the 'new' EU member states tend to lag behind the 'old EU' (Ranea-Triviño et al. 2022; Nason and Sangiuliano 2020; Meilgaard, Bloch and Madsen 2019; Wroblewski 2021). This is indeed true for some countries of the region, e.g., there is lack of systemic integration of gender equality into research policy strategies or legislation in both Poland and Slovakia. In those two countries only fragmented actions are implemented, with the implicit emphasis on maternity leave, which is argued to possibly reproduce traditional gender roles, gender stereotypes and gender segregation in R&I sector (Husu and Peterson 2022). In neither of the two countries is accountability for gender equality policies developed and there is a reporting demand on gender equality to the national authority (Husu and Peterson 2022). Similarly, Bulgaria (Doneva et al. 2019; Wroblewski 2021) as well as Latvia, Lithuania and Estonia (Novelskaitė 2016) are reported as not integrating gender equality in higher education in their legislation and policy frameworks. The absence of a reference to gender equality in the national higher education legislation is as well reported in another "Widening country" from outside the EU -Morocco (Caprile et al. 2022).

However, it is important to remember that the "Widening countries" are not homogenous and different paths and dynamics of developing gender equality national frameworks can be observed. Although most new EU member states indeed undertook a lengthy process of transforming their legal and political systems from authoritarianism to democracy in the early 1990s, strengthened with the EU accession, previous legal and policy developments should not be overlooked. For example, although Serbia is lacking systemic, national-level incentives for structural change in higher education, it is argued that its socialist heritage has left a sound basis for current developments, which include a legally binding obligation to develop an equal opportunities policy, issuing gender responsive budgeting at all levels and incorporation of references to gender equality and gender budgeting into the strategy for higher education and research (Caprile et al. 2022). Similarly, the concern with gender equality is reported to have been present in Slovenian public policy from the early 1990s, as well as the infrastructure on gender equality in R&I, which started to appear on the ministerial level before the EU access. Even though these developments have not yet been translated into the implementation of national laws and policies explicitly addressing gender inequalities in Slovenian R&I, they became the ground for strong gender equality advocacy on both national and organisational levels (Mihajlović Trbovc 2023). Additionally, it is argued that the "existing legislation and welfare provisions already make Slovenia a society favourable to women's inclusion in the labour market" (Petrović 2021, 46). Likewise, while current Romanian education law does not stipulate the need for implementing gender equality measures (Wroblewski 2021), the GEP implemented by the Romanian Agency for Quality Assurance in Higher Education (ARACIS) a few years ago "marked a very important benchmark for the entire system and sent a clear message that gender equality should be a quality standard for all higher education institutions in Romania" (Tăriceanu 2022, 137). The Agency already developed a new set of university evaluation criteria and requests to provide specific gender-related data and to address gender equality in the organisational documents and policies (Tăriceanu 2022, 137).

National and local contexts were discussed in a number of papers. Tanja Klenk and her team theorised national types and styles of policy instruments as an important factor in the implementation of GE interventions (Klenk et al. 2022). This perspective links the way in which GE interventions are implemented to a more deeply rooted, long-standing political style in particular countries, and thus to their embedding into local legal, administrative, and managerial cultures. By providing tools to examine the local context, the authors have shown that "national culture and politico-administrative traditions were found to be crucial for understanding the choice of instruments of addressing gender imbalances in academia" (Klenk et al. 2022, 146). They argue further that, in order to be effective, GE interventions need to be locally rooted and accompanied by broader societal changes in norms and values.

An interesting case exemplifying the diversity within the "Widening countries" is Portugal. An EU member since 1986 and having in place a developed GE national machinery and legislation on equal opportunities at work and employment, including the public sector, it lacks a specific law on gender equality in higher education and R&I and national-level incentives – including affirmative action instruments – for structural change (Carvalho et al. 2020; Jordão, Carvalho, and Diogo 2020). Gender equality interventions within the higher education system are reported as being seen as a threat to the culture of excellence and meritocracy (Jordão, Carvalho, and Diogo 2020). Similarly, as in the CEE region, some higher education institutions only very recently started designing and implementing GEPs, mostly under the framework of EC structural change projects (Jordão, Carvalho, and Diogo 2020). Despite this, gender ratios of academic staff, including the STEM disciplines, are more balanced in Portugal than in most EU countries (Carvalho et al. 2020), as women represent nearly 50% of active authors. Moreover, there has been the largest percentage increase across Europe in women's representation in research in terms of authors, grant recipients, and patent applicants.

The presented examples demonstrate that while gender equality provisions in the national research and higher education legislation are an important facilitating factor for structural change at organisational level, their absence does not preclude positive developments.

### Socio-cultural context

The discussion of the national socio-cultural context, understood as dominant social attitudes and public discourses, is also present among the factors impacting the gender inequalities and the implementation of gender equality instruments in R&I. In the analysis of the selected countries, the prevalence of traditional gender roles and stereotypes is reported to negatively impact the situation of female scientists and the perspectives for a successful structural change in R&I (Augusto et al. 2018; Diogo et al. 2021b; Doneva et al. 2019; Reidl et al. 2020; Tăriceanu, 2022; Zabaniotou et al. 2022). It is for example explained that in Hungary, due to the domination of traditional attitudes towards the division of family and social roles, which see mothers as sole carers of children under three, the female participation in the labour market is below the EU average, women's expertise is less recognized than men's and work-life balance of working mothers is affected. This also has an impact on female researchers, who are confronted with a rigid masculine organisational culture of R&I and their work-life balance and career advancement are hindered (Reidl et al. 2020). Similarly, it is reported that "Romanian society still tends to define itself as traditional and conservative," which translates into

gendered patterns of educational choices: "it is still widely believed that women should study medical sciences, education, psychology or the arts, while men are expected to study technology, IT, engineering or the military sciences" (Tăriceanu 2022, 136). Likewise, Bulgarian society is reported as holding prejudices towards women's participation in the paid labour force, primarily in business and politics (Milenkova 2021).

It is further noticed that in Romania (Tăriceanu 2022), but also Slovakia (Diogo et al. 2021b), the idea of gender equality evokes negative emotions, presented in the public discourse as a Western concept which is in contradiction with - and therefore, a threat to - the traditional values of the society. In this context, few publications signal that these anti-gender narratives are becoming widespread and become influential among ruling parties and state institutions in several European states, including some of the "Widening countries" (Ranea-Triviño et al. 2022; Sekuła et al. 2023). For example, this is reported to be the case of Serbia, a country that is "facing the emergence of nationalistic and far-right movements which treat gender equality policies as an external imposition by foreign powers - overlooking the fact that both gender equality policies and feminist movements were strong in socialist times" (Caprile et al. 2022, 165–166). Hence feminist mobilizations have been reported to have a mixed effect on introducing GE into policy. Only a few studies mentioned feminist activism as being supportive of the implementation of GE measures and policies including increasing social visibility of gender inequality, especially in Portugal (Jordão, Carvalho, and Diogo 2020) or mentioned the importance of feminist activism in tackling harassment, publicized by the #metoo movement (Ranea-Triviño et al. 2022).

The analysis of the reviewed publications may give the impression that traditionalism and antigender backlash are unique to post-communist European countries and impact their disadvantaged status in terms of the state of gender equality and prospects for successful structural change in R&I in comparison to other European states. However, few studies demonstrate that these problems also affect gender equality in the research organisations located in both other "Widening countries" like Portugal (Augusto et al. 2018) and Morocco (Caprile et al. 2022) and in Western European countries, including Germany, where the support for the traditional division of family roles and prioritising a male-breadwinner model over gender equality translates into the low integration of women in the labour market and their poorer career advancement prospects (Reidl et al. 2020; Klenk et al. 2022). Additionally, publications from outside the pool of the literature analysed in this scoping review provide evidence that anti-gender mobilisation is not limited to CEE region and also potentially exerts an impact on the developments of gender equality interventions in the countries which are currently classified as more advanced in this regard. This implies the need for deepening our understanding of the impact of various contextual factors on the processes of the institutionalisation of gender equality.

### Institutional context

The HE and R&I systems in "Widening countries", as in Western Europe, have been undergoing deep restructuring according to the logic of the market. However, while there is a wealth of scholarship on neoliberalisation and its impact on gender equality in Western context, these processes have remained largely unexamined, especially in post-socialist Central and Eastern Europe, where "market-centred thinking and governance seem to be equated with common sense" (Aavik 2017, 131). At the same time, market-driven reforms in the CEE countries brought dramatic changes in the working conditions of academic staff and may have

become an impeding factor for structural change, which is only partly, and sometimes implicitly discussed in the reviewed publications. In this context, it is for example reported that the high level of labour market uncertainty negatively influences the advancement prospects for early-career researchers in technical fields in Hungary (Reidl et al. 2020). Similarly, early-career researchers are reported as being impacted the worst by the prevalence of project-based research funding in Slovenia, which makes their positions precarious and unstable (Petrović 2021). The negative impact of neoliberalisation on implementing gender equality instruments in CEE R&I institutions is implicitly signalled, when the authors note that in Estonia gender issues should be viewed within the context of country's general research funding situation, which is reported as being "rather dramatic" (Hermansson, Jacobsson and Österberg 2021).

The prevalence of the myth of meritocracy and gender neutrality of HEIs and research organisations is reported as generating resistance towards the implementation of gender equality measures in some of the analysed case studies, including a university in Portugal (Diogo et al. 2021b; Jordão and Diogo 2023). In Estonian universities, quotas are rejected because they are incompatible with the assumption that a researcher's career is only dependent on his/her individual choices and not bound by any structural obstacles and therefore are perceived as externally enforced interventions that threaten the autonomy of the individual and the research organisation, construed as sovereign (Aavik 2017). Again, the pervasiveness of such attitudes is not seen as the specificity of "Widening countries" as they have been identified also in Danish research communities (Cacace et al. 2015; Reidl 2022). Additionally, – and besides the above reported presence of anti-gender public discourses – the misrecognition of gender inequalities in Bulgarian and Serbian research communities is attributed to a balanced gender representation in HEIs in these countries, which creates the belief that there is not a problem which needs to be solved (Doneva et al. 2019; Caprile et al. 2022).

Moreover, the cultures of certain disciplines seem to be more resistant to gender equality interventions than others. This is reported to be the case in the Information Sciences and Technology (IST) community in a Portuguese university (Barros et al. 2018), and Engineering HEIs in the Mediterranean region (Zabaniotou 2021), where the gender differences tend to be naturalised and taken for granted.

### Gender equality policies at R&I organisations

#### Gender equality plans and measures in the "Widening countries"

It is important to examine what has already been achieved in the HEIs, RPOs, and RFOs in the "Widening countries". Almost all publications refer to the GE equality measures – either mentioning Gender Equality Plans (40 publications), alternative measures to gender equality plans (7 publications), single measures (2 publications) or both: GEP and alternatives (2 publications) or GEP and single measures (4 publications) and 5 sources do not specify the type of policy intervention. The latter occurs in articles presenting comparative research, focusing on several countries, apart from one article discussing GEP and single measures in Portugal. Therefore, the articles focus on chosen measures rather than discussing all of the available tools at the institutional level to advance gender equality. Taking into consideration

the timespan of the publications and that most of them are grounded in the EU-funded structural projects, the focus on GEPs as the policy instrument to advance gender equality perhaps should be expected.

The single measures mentioned in the articles are considered to be a way of achieving policy reform, especially in countries with less advanced gender equality and considerable resistance towards gender equality policies. They address a variety of areas where gender inequalities occurred, but typically refer to no more than three of them. They include decision-making, e.g. gender quotas, informal strategies encouraging women to apply for decision-making positions, raising awareness on gender equality in decision-making (Aavik 2017; Carvalho et al. 2020; Nason and Sangiuliano 2020), career development and mobility, e.g. workplace flexibility (Aavik 2017; Carvalho et al. 2020), work-life balance (Barnard et al. 2016; Nason and Sangiuliano 2020), gender-based violence (Ranea-Triviño et al. 2022; Nason and Sangiuliano 2020), gender-based violence (Ranea-Triviño et al. 2022; Nason and Sangiuliano 2020), gender budgeting (Addabbo et al. 2020), or gender dimension in the content of research and education (Jordão and Diogo 2023; Nason and Sangiuliano 2020). Only in one case the voice of men is brought to the process of institutional change towards gender equality (Aavik 2017). The inclusion of men is a crucial step towards building a positive environment for gender equality and creating an alliance between actors affected by gender equality policies.

Since the establishment of the GEP eligibility criterion for the EU Horizon Europe programme, the interest in developing and implementing GEP has increased, but - as the articles show they are not the only way of reducing gender inequalities and imbalances. Some of the organisations have implemented policy instruments and gender machineries which are in fact alternatives to GEP. They are understood as comprehensive, strategic and complex instruments, reaching relevant stakeholders, addressing various policy areas, and providing systematic measures that involve the entire organisation. The main goal of alternative measures to GEP is to improve gender equality in the organisations. While some of the alternatives focus specifically on gender equality, others provide broader frameworks which do not focus specifically on gender inequalities, but still prove the institution's commitment to gender equality. The former are implemented in the form of gender mainstreaming, incorporating a gender equality approach in different policy areas. The latter varies from certification-award systems (Nason and Sangiuliano 2020) and equality policies and regulations (Tardos and Paksi 2021; Husu and Peterson 2022) to diversity policies (Hermansson, Jacobsson, and Österberg 2021), science strategy at the organisational level (Kosakowska-Berezecka, Żadkowska, and Pawlicka 2020), equality charter (Caprile et al. 2022) and responsible research strategies (Meilgaard, Bloch, and Madsen 2019; Kosakowska-Berezecka, Żadkowska, and Pawlicka 2020). Moreover, the case of Hungary shows that gender inequalities can be addressed as part of strategies addressing other inequalities, such as a disability policy (Tardos and Paksi 2021). An equally important framework is created by codes of ethics and HR Excellence in Research (Aavik 2017). Before making the GEP an eligibility criterion, the latter was considered to give recognition and visibility to gender inequalities and was perceived as an initial phase of GEP development, awareness-raising programme or/and creating friendly atmosphere for gender equality.

Alternatives to GEPs are not limited to measures and strategies, but also include alternative gender machineries such as communities of practice (Barnard et al. 2016; Petrović 2021, Reidl, Beranek, and Holzinger 2022; Mihajlović Trbovc 2023) or living labs (Zabaniotou 2020a). Such networks are considered to provide knowledge, enable sharing of the experience, and are also seen as potentially leading to a GEP development due to imposing actions (e.g.

described in the memorandum of understanding signed by the partner institutions) on advancing gender equality (see chapter on supportive factors). Therefore, in a context of a lack or insufficient institutional solutions, they serve as substitutes for gender equality policies.

The literature collected shows that the analysed research organisations from "Widening countries" rarely include an intersectional approach, and even if they do, they treat it as an added value increasing the legitimacy of the gender equality measures, which are seen as core. For example, one of the Portugal HEI has recently put the intersectional perspective in place, however this was limited to raising awareness actions on 'sexual minorities' and students with migrants and refugees background (Sangiuliano 2019). Another example shows that even if the GEP designers are aware of the relevance of the intersectional approach, they might face various difficulties in its implementation. Empirical analyses preceding the GEP design in one Slovenian research institute clearly revealed the need for a contextualised understanding of female academic careers and excellence, including understanding that gender differences "intersect with other structural aspects that define a researcher's position, with career stage being the most important" (Petrović 2021, 49). However, efforts to implement an intersectional perspective in this organisation's GEP met with resistance at the HR and academic levels. This illustrates a more general discrepancy and gap between theory and practice manifesting in taking intersectionality into account more at the level of diagnosis of issues and problems than prognosis and proposed or implemented measures (Sangiuliano 2019). In other cases, e.g. Lithuania, Ukraine, and Romania, the issue of intersectionality was not considered relevant, because it was either perceived as confusing to mix different axes of inequalities in one policy or intersectional perspective was argued to be unnecessary in otherwise meritocratic and fair university environment (Sangiuliano 2019). Similarly, in Bulgaria it is reported that although women with disabilities face 'overwhelming disadvantage', there is a distinct lack of initiatives focused on the inequalities stemming from the intersection of gender and disability status (Spasova, Leone, and Bencivenga 2022).

Based on the results of the multi-case study on institutional responses against gender-based violence in research organisations in both Western European and "Widening countries", including Czechia, Lithuania, Poland and Serbia, Ranea-Triviño et al. (2022) concluded that while European institutions seemed to be increasingly convinced of the need to integrate an intersectional approach, their institutional responses usually failed to recognise the existence of intersecting axes of discrimination, other than gender. Therefore, they tend to employ a multiple rather than an integrated approach. An example of this is a GEP implementation process in one of the Bulgarian HEIs, where the planned activities were only reported to reflect the characteristics of the region as including different ethnic groups, ethnocultural communities, as well as "people with other social and economic affiliations" (Milenkova 2021, 253), but without any further reflection on how the intersection of these aspects and gender may intensify inequalities. Similarly, Equality Plans implemented in Hungarian HEIs and research institutes were reported to recognise different protected groups including people with disabilities or parents with young children and women (Tardos and Paksi 2021), however it seems that they do not address a complex matrix of inequalities.

Regardless of the reasons why the intersectional perspective was not recognised, it was argued that the root causes of insufficient incorporation of the intersectional approach in many European (not only Widening) countries included a broadly described lack of experience, knowledge, political will, and engagement in partnerships with activists and experts in the operationalisation of intersectionality (Ranea-Triviño et al. 2022).

# Supportive factors for development and implementation of gender equality measures in R&I in the "Widening countries"

The institutional level is crucial for the implementation of GEPs and other GE measures. From initiating GEPs, through their implementation and sustainability, various aspects of institutional practices can facilitate the process and can have different impact and meaning in particular national and regional contexts.

Top management support (vertical channel for change) The role of HR departments and solutions Broad mobilisation of stakeholders (horizontal channels for change) Communities of practice Strategic framing of gender equality

Table 5 Supporting factors for development and implementation of GE measures

#### Top management support (vertical channel for change)

In the context of a lack of political support and policy solution on the state level in the "Widening countries", the political will and support of decision-makers and top management at the institutional level was identified as crucial, regardless of the country or region (Anagnostou 2022; Bailey and Drew 2020; Caprile et al., 2022; Clavero and Galligan, 2021; Horvat, 2015; Linková and Mergaert 2021; Wroblewski 2021; Zabaniotou et al. 2022). Often the commitment of the rector played a critical role, as in the case of TARGET project carried out in Romania, Serbia, Cyprus, Serbia, Greece, and Morocco. Anagnostou points out that committed leadership contributed to pushing forward the establishment of a community of practice and gathering desegregated data (Anagnostou 2022, 84). Similar examples were found in Greece (Wroblewski 2021) and Turkey, where the rector's "transformative leadership" and the role of women in the leadership positions in the institution were seen as important factors pushing for positive change (Atay 2017, 222). The support from top-management was seen as especially important in CEE countries and where GE is not included in the national policy (Anagnostou 2022, 84).

#### The role of HR departments and solutions

The inclusion of stakeholders from various sectors of the institution, such as human resources managers or gender equality officers from the respective groups, in the organisation in the process and their participation within it, were identified as key to ensuring a broad ownership of the process by the institutional community (Clavero and Galligan 2021; Bailey and Drew 2020; Linková and Mergaert 2021; Reidl, Beranek, and Holzinger 2022; De Micheli and Vingelli 2022). Involvement process included gender sensitive trainings raising awareness on GE and fighting bias in Portugal (Bailey and Drew 2020; Ramos and Barros, 2019), or sexual harassment in the case of Cyprus (De Micheli and Vingelli 2022, 187). It engaged various members of the staff, including crucial administrative staff. Persons working in the human resources departments, who hold the responsibilities of implementing GE actions, for example in recruitment, were identified as key to the implementation of gender equality policies in

projects, including those carried out in Bosnia and Herzegovina and Turkey (Bailey and Drew 2020) or Romania (Thaler 2016). In some organisations young researchers were mainly targeted, e.g. as in a small RPO in Greece (De Micheli and Vingelli 2022, 187).

The "human resources perspective" is also present in the work-life balance initiatives and actions aimed at supporting women's careers, which were also identified as supporting the implementation of GEPs. Among these were flexible working arrangements, adjusting teaching load to the needs of teachers, working towards work-life balance friendly solutions like on-campus nurseries (Drew et al. 2017, 341). In addition, studies mentioned equal opportunities for research: academic promotion and scholarship programmes, the introduction of mentoring programmes, coaching, peer learning and empowerment for women scientists. Women's careers were also supported by clear formal procedures and transparency in recruitment and promotion (Drew et al. 2017). National welfare policies and childcare provision promoting the equal sharing of caring responsibilities were also highlighted as important incentives for developing equal careers (Reidl et al. 2020).

#### Broad mobilisation of stakeholders (horizontal channels for change)

One way to create a broad community in the process of the development of a GEP at particular institutions was to engage the existing informal networks and individuals who were either personally engaged in GE values, activism and/or research. In Portugal and Poland, members of the academic community engaged in feminist activism were seen as important change agents for GEPs: they contributed to activate grass-roots support or initiated the whole process of introducing GE programmes (Kosakowska-Berezecka, Żadkowska and Pawlicka 2020; Barros et al. 2018; Barros and Ramos 2019). A similar process was noted in institutions participating in the TARGET project (Anagnostou 2022) in which experts in GE were seen as contributing to creating "critical mass among the staff" in the institutions (Anagnostou 2022, 81). Thus, experts in GE are seen as those who can contribute to empowering organisational actors to pro-actively suggest initiatives promoting GE (Ramos and Barros 2019, 93). Moreover, "having knowledgeable actors with gender expertise among their staff was also more likely to trigger a discussion about gender disparities from within" (Anagnostou 2022, 85).

As a way of engaging the broad institutional community, interpersonal relationships, face-toface meetings, joint workshops, and discussions were considered important (Linková and Mergaert 2021; Sekuła et al. 2023; Vasconcelos et al. 2019). The studies showed that setting up working groups with members representing different constituents in the institution could be a tool to engage differently positioned community members. In this context, Zabanitou writes about four stages of the GEP implementation process in the Mediterranean region defined as the "4ls": Intuiting, Interpreting, Integrating, Institutionalizing. From the point of view of community involvement, intuiting and interpreting are seen as especially important. Intuiting involves "conversation and dialogue that leads to mental shift among individuals, while integrating involves taking coordinated actions and focusing on collective action" (Zabaniotou 2021). Authors underlined the importance of the dialogic conversation and participatory techniques in the projects conducted in Serbia (Barnard et al. 2016), Lithuania, Poland, Czech Republic, Serbia and Turkey (Ranea-Triviño et al. 2022) and in the CEE region (Linková and Mergaert 2021). Co-creation techniques and action research were used in a Portuguese institution as means of disseminating knowledge, as "qualitative methods can contribute to raising awareness about gender violence in academic contexts, particularly those that are still male-dominated" (Barros et al. 2018, 5). Inclusive approaches facilitated the exchange of experiences allowing key stakeholders to communicate and take action (Barnard et al. 2016, 10). Training and workshops were seen as important tools for disseminating knowledge and involving many actors and communities. Some of the topics included training in unconscious bias awareness (Bailey and Drew 2020). In some cases, innovative methods were also used, including art and game-based collective learning (Zabaniotou et al. 2022, 107). As Rachel Palmén and others commented, these kinds of approaches are found to promote positive attitudes, interest and motivation to participate as a positive action measure (Palmén et al. 2019). All these methods aimed at evoking positive feelings about the GEP, by building on the trust and joy which was shared among the working groups' participants. It also created a sense of belonging and thus "paving the way for gender equality" (Zabaniotou 2020b, 4).

The process of involving a broad range of institutional actors also included students, both in GEP bodies and through education, for example by introducing new courses with gender aspects (e.g. in Portugal or the Mediterranean region) (Doneva et al. 2019; Ramos and Barros, 2019). Students were also mentioned as actors initiating the process of change, as in Poland (Kosakowska-Berezecka, Żadkowska, and Pawlicka, 2020), Bulgaria (Doneva et al. 2019; Milenkova, 2021), or Portugal (Jordão, Carvalho, and Diogo 2020).

Both the horizontal and vertical channels of the process of implementing GEP or alternatives were discussed. In some cases, e.g. Bulgaria (Doneva et al. 2019), having a centralized structure at the university level for GEP implementation was seen as especially supportive in the hierarchical academic structures. These hierarchical structures, although "could stand in the way of a culture oriented towards equal treatment" (Doneva et al. 2019, 7875), can also be promising, since "after adoption of any gender-related decision by the Academic Council, all faculties and their governing bodies must respect them" (Doneva et al. 2019, 7874). On the other hand, the bottom-up approach was frequently discussed as a necessary element of GEP design and implementation. Zabanioutou, while describing the approach of a TARGET project carried out in the Mediterranean region, underlined the importance of the "personal development" aspect for participants of GEP implementation process and the approach of "not to impose a view of the situation" (Zabaniotou 2021). Especially in the projects carried out in Serbia and Morocco, integrating bottom-up and top-down approaches was seen as an effective tool not only for GE implementation, but it also "has opened a space for building evidence and reflecting more systematically on gender issues among different actors in both universities including top management, gender scholars and activists" (Caprile et al. 2022, 175). Gülsün Sağlamer from Turkey mentions that such approach is also effective in tackling resistance (Drew et al. 2017, 340). The interplay of both approaches was underlined since it served as "building consensus and a common framework and understanding of gender equality" through trust, legitimacy and authoritativeness" (De Micheli and Vingelli 2022, 189).

Many studies addressed access to resources as a supporting factor for the implementation of GEPs (Palmen et al. 2019; Thaler 2016; Ranea-Triviño et al. 2022; Cacace 2015; Reidl et al. 2019; Werner 2020; Zabaniotou 2020b). Here, the approach of the institution was very prominent. One of the tools to secure funding for GEP policies was gender budgeting, "which should be included in the budgeting cycle and RPO reporting framework" (Addabbo et al. 2020, 430). Other financial incentives mentioned in the reviewed material were financial support to cover travel, meeting and catering costs, expenses of invited experts, publication fees, grants

and awards, or mobility funds. Institutions could also be involved in supporting internal initiatives resulting from self-organisation.

#### **Communities of practice**

A very important and widely discussed factor was the participation in a community of practice (CoP) and its impact was widely outlined: CoP develops and enhances gender competence, provides GE expertise, but also acts as an agent of change in the institution, fulfilling the role of a "piece of the puzzle when it comes to organisational change towards gender equality" (Reidl, Beranek, and Holzinger 2022, 182). CoPs support the process of knowledge exchange and can also be a community of moral support in case of resistance, in particular in contexts with no support for gender equality policies from national structures (Mihajlović Trbovc 2023). In a project carried out among other countries in Serbia, the CoP provided the opportunity to "identify gaps and common issues, formulate new solutions, and help highlight measures that have been developed to advance women's careers in higher education and research" (Barnard et al. 2016, 10). Sarah Barnard and their team emphasised that participation in CoPs is particularly important in cases where the teams implementing the GEP are isolated in the national or institutional contexts in the pursuit of greater gender equality (Barnard et al. 2016; Sekula et al. 2023). As they argue: "Indeed, the confidence gained from a strong sense of community is an important basis for challenging the status quo in gender equality: and when there are challenges to be faced, we know we are not the first to face these, nor are we alone in doing so" (Barnard et al. 2016, 10), also by "leveraging this advancement into credibility and trust-building" (Thomson et al. 2022, 47). In the CEE region, a CoP grants prestige and/or legitimacy as a network when speaking out on gender equality (Reidl, Beranek, and Holzinger 2022). CoPs amplify the impact of individual gender expertise of change agents by providing a rich source of knowledge and sharing practices. Aleksandra Thomson and their team especially underlined that CoPs act as important vehicles for knowledge transfer and sustainability of GE actions (also in long-term) and cultivation of GE knowledge (Thomson et al. 2022, 47).

An important step confirming an institutional commitment was signing a Memorandum of Understanding. As demonstrated by research on ACT CoPs (three being developed in "Widening countries"), an institutional commitment is necessary to transfer individual gains from a CoP at the institution level (Reidl, Beranek, and Holzinger 2022). It was also visible in the example of institutions belonging to GEinCEE CoP, where most institutions signed the MOU and this resulted in e.g. high participation rate in the GEAM (Gender Equality Audit and Monitoring) survey and some positive effects on the level of institutional change (Sekuła et al. 2023).

#### Strategic framing of gender equality

Many studies highlighted the critical importance of the way in which GE is framed, communicated and promoted. Several studies referred to the use of strategic framing of GEP to generate interest in it among key stakeholders. One of the strategies mentioned in the CEE region was the use of work-life balance, for example the challenges of combining motherhood with an academic career (Linková and Mergaert 2021). In the Mediterranean region, the link was made to "the concept of systemic change and the commitment to sustainable development

goals (SDG) by members of the network", which "enabled the introduction of a gender equality as a prerequisite for the SDG innovations within the network" (Zabaniotou, Boukamel, and Tsirogianni 2021, 15). Moreover, in this case, the "communicating actions on climate change and environmental problems as having synergies with gender equality had an impact on many network members' thinking" (Zabaniotou, Boukamel, and Tsirogianni 2021, 15). In order to gain the support of decision makers, the strategy of convincing the leaders that the GEP helps to build on both women's and men's talents for the success of the entire institution was used (Drew et al. 2017) and "continuously nurturing awareness of the role played by women in engineering" (Ramos and Barros, 2019, 93).

In addition to strategic framing, supporting factors included using windows of opportunity such as key events or network meetings, for example the network's annual General Assembly, as an arena to reach many stakeholders within the community. The events should also be used to consolidate the CoPs (Horvat 2015). The communication of the GEP should be visible, adequately publicised and promoted to ensure prestige and visibility, as the final award and public presentation of highly effective gender equality measures as best practices further increases the visibility of the measures and underscores their legitimacy (Werner 2020).

#### Other strategies supporting the implementation of GEPs

Some other practices at the institutional level were identified that were used to facilitate or support GEP implementation. As they pertain to various aspects of the institutional practices, we will briefly mention them here.

Partnerships with funding agencies and governmental bodies that work to promote gender equality were mentioned in the case of Portugal (Ramos and Barros 2019). Other resources facilitating the implementation of GE included physical space - an office and location to hold workshops, meetings, etc., a position dedicated to GE, or employees assigned to GE related issues.

The sources also mentioned the introduction of measures regarding the presence of women in various sectors of the institutions, including appointing more women in recruitment, promotion committees and rector advisors, encouraging women academics for promotions, inviting more women as deans or rectors as well as rector advisors and generally increasing the visibility of women academic staff (Drew et al. 2017, 340-341), or attracting and retaining women at universities of science and technology, including in Hungary (Horvat 2015). For example, at Alexandru Ioan Cuza University, Romania, several initiatives were undertaken, such as annual thematic workshops of the UAIC's "Network of Women on GE strategies", or activities increasing women's visibility like annual "Women Researchers Day" (Cacace et al. 2015).

Gender equality measures were often used to legitimise and demonstrate the need for gender equality policies. A number of ways in which they can support the implementation of a GEP were identified: the establishment of a system for the systematic collection of sexdisaggregated data (e.g. in Poland, Slovakia, Portugal and countries participating in the TARGET project; Husu and Peterson 2022; Jordão and Diogo 2023; Ramos and Barros 2019; Anagnostou, 2022). The need to monitor data was also indicated as an important factor for implementing GE measures. The following strategies were seen as especially allowing to better understand the organisational performance in terms of gender equality: use of a broader set of indicators in assessing the status quo, comparisons with national level data (country averages) and with other benchmarks (e.g. with universities of the same size or with similar research and educational objectives) (Addabbo et al. 2020; Anagnostou 2022; Jordão and Diogo 2023).

# Hindering factors and processes, including resistance, in the development and implementation of gender equality measures in R&I in the "Widening countries"

In this part of the report, we will discuss the factors or processes at the institutional level that constitute barriers for the development of gender equality plans in R&I organisations in the "Widening countries". It is important to underline that organisational level barriers are tightly connected to conditions discussed above at European, national, regional level, as well as to the context of academia and science production.

Low level of institutional strategic commitment
Missing leadership commitment and engagement
Insufficient resources dedicated to gender equality in institutions
Lack of access to institutional data on gender equality
Difficulties in access to gender expertise
Resistance within institutions
Limited scope of gender equality policies

Table 6 Hindering factors and processes in the development and implementation of GE measures

#### Low level of institutional strategic commitment

The main concern in relation to institutional change relates to the sustainability of the gender equality activities or measures through the strategic commitment at the institutional level. The need for a comprehensive strategic approach has been shown in the research (Sekuła et al. 2023) and the GEP was seen as a tool to gather all activities under one umbrella (Reidl et al. 2019). It is important to notice that the issue of lack of strategic approach was particularly indicated before the GEP eligibility criteria was enforced. In Estonia, Lithuania, and Latvia, the lack of an overall GEP resulted in ad-hoc initiatives that did not prove sustainable or monitored (Novelskaitė 2016). At the same time, more general strategies were not implemented, because there was neither national nor European level enforcement of such initiatives (Novelskaitė 2016). Thus, for many "Widening countries" that until recently did not have any enforcement mechanism on the national level, the eligibility criteria seem to be a marking line for their activities in regard to gender equality. Still, the certain lack of interest may also be a hindering factor for initiatives – this is, fulfilling legal obligations without clear commitment does not result in any programme implementation, not having strategic meaning for managers (Wieczorek-Szymańska 2020).

Consequently, the lack of formal policy instruments (and subsequently the lack of necessity for leadership to engage as this is not their formal obligation) or the lack of other formal obligations such as participation in EU projects, meant that gender initiatives have been/are implemented by groups of individuals. This bears certain consequences in regards to, among others, resources and the visibility of the measures (Sekuła et al. 2023; Novelskaitė 2016).

Still, the bottom-up character of policies could also be interpreted as a positive element able to create more genuine interventions or measures, stirred by organisational or local needs. However, if the support is person-based, a change in leadership may immediately cause the hindrance of the implementation of actions if no clear structures are designed for GEP implementation (Sekuła et al. 2023; Doneva et al. 2019; Caprile et al. 2022).

There were more critical comments in relation to the design of GEPs, indicating that such strategic documents also have their drawbacks or, if not designed adequately, they would not be effective. The short timeframe of the gender equality agenda appears problematic, including only fragmented actions (Husu and Peterson 2022). In Hungary, the overview of existing GEPs revealed the lack of controlling mechanisms during the implementation phase, which was seen as a barrier to GEP success – only in a minority of GEPs do institutions monitor results, assign accountability for tasks or set deadlines/milestones (Tardos and Paksi 2021). Similarly, the involvement of leaders could not be traced in documents (Tardos and Paksi 2021) – which in a way indicates the institutional commitment to the strategy, which we discuss next. Also, a critical element is the lack of monitoring of the planned activities – as stressed in the case of Hungary, the documents may meet EU standards but would not be effective without clear monitoring of actions (Abusalha 2023). In Slovenia, even if the strategic documents were in place, there was no control over the fulfilment of the goals (Diogo et al. 2021b).

#### Missing leadership commitment and engagement

There is a wide recognition that a lack of leadership commitment is a critical barrier for gender equality institutionalisation (Wroblewski 2021). Different aspects were mentioned in regard to the participation of top management in GEP development at the organisational level. There are situations of the absence of top management throughout the process, while their active support would be very beneficial - silence from those in the institutions who have the power to 'enforce' change was remarked as a barrier (Diogo et al. 2021b). The lack of active participation in activities is also an obstacle - the highest-ranking managers in academic or research organisations are too busy to participate in knowledge transfers (workshops, activities) (Thaler 2016). In consequence the "leadership appears unwilling to train their moral imagination in situations of explicit power" (Linková and Mergaert 2021, 306). This shows that the priority of GE issues is not high for leaders, as shown by the case of a Slovenian institution (Diogo et al. 2021b). Finally, the large size and complex internal structure of an administrative entity is problematic when it comes to the implementation of institutional change policies or measures (Anagnostou 2022; Doneva et al. 2019). While those factors are generally applicable to different contexts, the top leadership position is particularly important as this person sometimes needs to show a commitment to combatting an atmosphere resisting gender equality measures, or take additional steps to argue or defend the university engagement in certain activities. Here, anchoring in European projects or networks seem to be one way to gain the arguments for the leadership to act (as shown in the part on European project participation), nonetheless it may also raise concerns on imposition of commitment when it is not deemed necessary (e.g. gender equality is not seen as an issue).

#### Insufficient resources dedicated to gender equality in institutions

A lack of resources (time, personnel, funding) was indicated as a key barrier among European actors, but also CEE countries (Reild et al. 2019; Thomson et al., 2022). This is confirmed by,

among others, the case studies from Bulgaria where lack of university budget to fund GErelated activities was reported (Doneva et al. 2019); Serbia and Morocco, which faced difficulties in GEP implementation without dedicated financial resources (Caprile et al. 2022); or member institutions of the Mediterranean Engineering Schools network, where lack of financial resources was problematic for the effectiveness and sustainability of the community of practice (Zabaniotou et al. 2022). Also, the members of GE in CEE community, mostly practitioners from the region, indicated insufficient resources (financial, human resources, as well as a lack of dedicated funding for GE actions) as being a critical barrier for gender equality institutionalisation. Many community members acted as volunteers that had limited engagement due to lack of time, e.g. the members of Communities of Practice did not receive remuneration for their work from the project funding (Sekuła et al. 2023). Also, the multicase report on gender-based violence institutional measures (Ranea-Triviño 2022) indicated the lack of resources as a key barrier, matched with resistance. Again, European projects may be an important factor in securing funding for some actions (Kosakowska-Berezecka, Żadkowska and Pawlicka 2020), but it was also criticised as being temporary, limited to some participants of projects, e.g. partners, not community of practice members (Sekuła et al. 2023; Reild et al. 2022) and limited to some agendas. The resources seem to be tied to the existence of the strategic commitment of the institution, so if it is missing, funds are difficult to mobilise within the organisation. Here the eligibility criteria might prove important as it demands dedicated resources for gender equality. Similarly, small institutions reported limited resources to engage in the implementation of GEPs (De Micheli and Vingelli 2022).

#### Lack of access to institutional data on gender equality

A pertinent barrier that still appeared to be present in the institutions is access to genderdisaggregated data. In particular, it was mentioned the challenge of obtaining reliable, gender disaggregated data, e.g. in the African and Middle East Mediterranean countries such data was missing (Zabaniotou Boukamel and Tsirogianni 2021), but, even if data existed there still appeared issues of access to particular types of data (Diogo et al. 2021b). Voicing some issues, e.g. gender-based violence occurrence or inequality, may cause the fear of institutions to announce it due to a potential loss of reputation or public image damage, and thus lead to silencing (Ranea-Triviño 2022). While one of the arguments for passivity is an alleged lack of inequalities, the publication of results calling for action may not be of interest to institutions.

#### Difficulties in access to gender expertise

Another barrier to the implementation of GEPs is insufficient gender expertise or otherwise difficulties to mobilise existing expertise. While some research indicates for more general lack of knowledge in the community, other indicates that in certain contexts specific competences tend to be lacking e.g. in case of faculty members at engineering education institutions (Zabaniotou et al. 2022). It is sometimes difficult to identify experts due to the large size of the institution, or experts might not be ready to engage in the given project (Doneva et al. 2019). The issue is also related to the status/position of gender expertise and gender research within academic institutions - what was noticed is devaluation of knowledge on gender equality (Diogo et al. 2021b; Gorbacheva and Ramos 2023). What was also indicated was a problem with the recognition of gender expertise. In the case of Bulgaria, due to late access to gender studies, gender experts are 'self-made' – thus this may cause a lack of respect towards their

expertise (Tăriceanu 2022). A lack of gender competence within the organisation was also indicated by Wroblewski (2021) – here, gender expertise was provided by an external expert who joined the organisation for the duration of the project – such an external position also has consequences.

For some countries that are not participating in EU projects, the lack of networking and disconnection from other actors may cause a lack of access to knowledge and tailored-made solutions, as indicated by the ACT Community Mapping (Reild et al. 2019) – isolation thus proves to be a negative factor. It is important to notice that it does not relate necessarily to gaining external knowledge (unavailable at spot) but to discuss or confront one's experience with other institutions (here the regional CoPs were particularly valued – Sekuła et al. 2023).

#### **Resistance within institutions**

Resistance of both an implicit and explicit character constitutes a critical barrier in the implementation of gender equality interventions (Palmén and Kalpazidou Schmidt 2019). The general socio-cultural context impacts the level of support from employees, as well as students - even if it is recognized that students usually act as more gender-supportive and that their mobilisation may tear down some barriers. As noticed by research on gender-based violence: "resistances come from all groups of actors (students, administrative and professional staff or academics) and can be directed either to the political core of the measure (political frames and ideas) or -when that might not be politically correct- towards the people, channels, means and structures serving the measure" (Ranea-Triviño et al. 2022, 99). Some generational clashes might also appear in universities where the age of academic staff is relatively high (Siri, Leone and Bencivenga 2022). The CHANGE project focused in particular on analysing resistance and they concluded that "it was possible to identify the existence of four different types of resistances which are independent from the institutional and/or national contexts: fear of feminism; assumption of HEIs as gender neutral and the presence of dominant discourses on excellence and merit; devaluing knowledge on gender equality; and lack of institutional or personal support" (Diogo et al. 2021b, 292). Additionally, a political environment which is against gender equality initiatives may strengthen the arguments of individuals with negative attitudes towards gender equality - and may hinder the activities of the GEP implementation team (Mihajlović Trbovc 2023). Beyond that, resistance may come from institutional demands and it is not easy to sustain the commitment to the gender equality activities on the individual level in the academic context, for example, where young researchers give priority to their careers (Zabaniotou et al. 2022).

Lack of knowledge is seen as one of the reasons for a lack of consciousness of the inequalities – resulting in the naturalisation of inequality and gender-inequality blindness (Novelskaitė 2016). In Bulgaria, the low level of gender awareness was also matched with a lack of interest in the issue among academics, administrative staff, students, and members of the top and middle management (Doneva et al. 2019). As concluded by Jordão and Diogo (2022), the non-recognition of gender inequality as a problem within RPOs, and the lack of knowledge and information about gender in/equality by the academic community, are some of the main reasons for resistance to gender equality initiatives in the Portuguese context. The lack of knowledge may cause a misinterpretation of the issue and/or a narrow understanding of the issue. In some analysed cases, it appeared as if gender equality was only seen as related to gender balance. Thus, a generalised perception within the organisation that there are no inequalities may constitute a barrier to change, and this is particularly pronounced where there

is (almost) balanced representation between women and men. This is illustrative in particular for some countries in Central and Eastern Europe which show above-average proportions of women in research in comparison to European levels and this is used to argue that the gender balance in research should not be a policy priority (Anagnostou 2022; also Wroblewski 2021). Also mentioned is the lack of involvement of men and a difficulty to engage them in gender equality initiatives (Sangiuliano 2019; Vasconcelos et al. 2019; Kosakowska-Berezecka, Żadkowska, and Pawlicka 2020).

#### Limited scope of gender equality policies

Selected studies indicated the limited scope of policies directed at gender equality and the consequences of such a perception within an institution. As already mentioned, the narrow understanding of gender equality as limited to equal representation was a hindrance is developing gender equality policies in any other areas, in particular if the institution was characterised by gender balance (e.g. Spasova, Leone, and Bencivenga 2022).

The study of Hungarian institutions noticed the blindness to the impact of organisational culture on gender equality: only a tenth of the GEPs mentioned any activities related to organisational culture change (Tardos and Paksi 2021). The Bulgarian case underlined the issue of hierarchical relationships within the university and related dependencies, which could stand in the way of a culture oriented towards equal treatment (Doneva et al. 2019). Academic culture, with its hierarchical and asymmetrical power relations and person-dependent collaborations, was also mentioned as problematic in the case of the implementation of gender-based violence policies (Ranea-Triviño et al. 2022).

Another limitation indicated in the research is the narrow understanding of the scope of gender equality policies and its concentration on work-life balance policies. As noticed by a multi case study, the implicit emphasis on maternity leave threatens to lock women and men in traditional roles, and reproduce gender stereotypes and gender segregation (Husu and Peterson 2022). Also, a Hungarian case confirms that the conceptualization of equality in the workplace as a 'family-friendly workplace', may hamper a focus on other gender equality areas (Tardos and Paksi 2021). Nonetheless, policies to support families may be more easily introduced in countries with traditional regimes.

There are also barriers to the inclusion of strategic actions towards adopting a gender dimension in research. As noticed, the issue of inclusion of the gender dimension in research lacks expertise (Jordão and Diogo 2023): in Portugal there appears confusion around the concept/issue of the 'gender/sex dimension' and the lack of knowledge and gender awareness surrounding the advantages of integrating it in research. The study concludes that the gender dimension is understood as the participation of women in research teams. There is a lack of a realisation within organisations and among researchers on the importance of the gender dimension in some scientific fields which are considered to be gender-neutral by nature – in example of ICT and IST research, the issue is of a low priority and raises controversies (e.g. (cyber-) feminism and gender theories in the ICT and IST research), as well as there is no knowledge on recent developments in the field that might be relevant (Sanguiliano, Gorbacheva and Canali 2019). This hinders actions in the area, but also in relation to other dimensions of inequalities such as increasing the numbers of female professors and leaders.

### Theorising gender equality institutionalisation

In this section we will review the theoretical approaches used to discuss GEP institutionalisation. The majority of the reviewed texts displayed a descriptive rather than conceptual or critical character. Most of the texts focused on practical implications based on general reflections and organisational experiences. Many publications were authored by practitioners rather than theorists of gender equality, with the aim of presenting project results, reporting on effects or good practices, or serving as a toolkit explaining the stages of the project, instead of presenting a general problematization of the whole process of institutionalisation of gender equality. In some texts, theoretical frameworks are referred only as background or inspiration rather than guiding principles, such as diversity management (Abusalha 2023), the theory of organisational inertia (Novelskaite 2016), or the theory of learning organisations (Thaler 2016). Authors who referred to GEP implementation in STEM contexts often introduced an interdisciplinary approach, integrating social studies, STS and engineering fields (Barnard et al. 2016; Gorbacheva and Ramos 2023; Linková and Mergaert 2021; Zabaniotou, Boukamel, and Tsirogianni 2021). Other theoretical perspectives included theories of change, management and leadership theories, policy studies, critical reflection on neoliberalism and feminist perspectives. Below we will discuss each of these perspectives.

The theoretical reference most often found pertained to the theory of change, which allows the different stages of GEP introduction to be problematised, from planning to implementation (Palmén et al. 2019; Palmén and Kalpazidou Schmidt 2019; Reidl et al. 2020; Wroblewski 2021; Zabaniotou, Boukamel, and Tsirogianni 2021). The theory of change provides a tool for both "baseline analysis of the problem" and "planning and envisioning change over the long term" (Reidl et al. 2020, 5), enabling an understanding of "how the actual implementation process contributes to the desired outcomes and impacts" (Palmén and Kalpazidou Schmidt 2019, 1017–26). The theory of change has often been used to guide the evaluation process and to answer how and under what conditions the particular instruments contributed to intended and unintended effects (Reidl et al. 2020; Wroblewski 2021). Sybille Reidl and others highlighted the theory of change's emphasis on contexts and its influence on the implementation process, arguing that "the theory of change approach enables and indeed requires one to factor the context into any explanation of change" (Reidl et al. 2020, 6).

To problematise organisational change, many authors drew on management and leadership theories. For example, Jemimah Bailey and Eileen Drew presented the SAGE Model for Institutional Change, which includes "nine key components to support the management of change in the creation of a gender-sensitive institution", based on the theorisation of project evaluation (Bailey and Drew 2020, 124). A more general theoretical contribution was presented by Linková and Mergaert (2021), who utilised Science and Technology Studies and Feminist Institutionalism to explore GEP implementation. They further developed the concept of the "trading zone", which "offers an innovative and fruitful perspective on the negotiation processes and interactions between various actors who hold differentiated power positions in the organisations" (Linková and Mergaert 2021, 298). This approach conceptualises the process of change in a nuanced way, paying attention to layering, transformation, and displacement as processes that demonstrate non-linear change. The authors recognise different institutional logics and emphasise the influence of local and temporal factors.

The use of social, economic, and cultural change theories provided some authors with tools to problematise GE interventions in a broader context. For example, Zabanitou problematised

leadership styles and referred to the "soft leadership framework". In her paper (2020) she discusses the change in leadership style, including the shift towards emotional intelligence, "aiming at creating humanistic and value-based visions to build personalities transcending their known boundaries" (Zabaniotou 2021). This is linked to female leadership and allows for a better realisation of social justice and democratic governance, thus leading "towards eco-social centric development" (Zabaniotou 2021). This perspective goes beyond the single-issue understanding of GE and implements a systemic view of the necessary transformations in the era of climate crisis and planetary emergency.

Institutional resistance is problematised by Carina Jordão Teresa Carvalho, and Sara Diogo. The authors argue that "identifying and recognising them [resistances] is an essential requirement to ensure that the implementation of GEPs and other GE initiatives is successful" (Jordão, Carvalho, and Diogo 2020, 3). In particular, understanding locally embedded resistances that are relevant to the local political, social, and institutional context can be beneficial to the successful implementation of GE interventions.

The experience of implementing the GEP or participating in a CoP was also a starting point for theorising the institutional change or institutional learning process (Barnard et al. 2016; Sekuła et al. 2023; Thomson et al. 2022). Among the most interesting was the theory of communities of practice (Barnard et al. 2016), which aims to understand "how knowledge is context dependent and continually evolving through interactions". Sarah Barnard and their team argue that "foregrounding CoP in GEP work can be a valid and useful conceptual model for facilitating organisational change" (Barnard et al. 2016, 10).

The neoliberal context was also discussed as its effects are intertwined with gender inequalities. The article by Amélia Augusto and others (2017) uses the perspective of neoliberal changes as a lens to view the gender equality plans in the RPO. Rather than mitigating the effects of neoliberalisation, universities that embrace market logic align themselves with market rationality. In contrast to the above trends in higher education, the gender perspective in academia (and beyond) is often seen as having counter-hegemonic and transformative potential. Aavik (2017) draws on the microsociological perspective to discuss how liberalism produces neoliberal academic subjects. This contextualised problematization in a post-socialist country enabled to elaborate on how the adoption of neoliberal logics by academics play against the introduction of GE measures, as they are "seen as obstacles that stand in the way of carrying out 'real' research work" (Aavik 2017, 149).

Reference to feminist perspectives was not common, but the few texts that drew on feminist theories introduced the notion of the gendered nature of academic institutions as a factor determining the process of implementing GE. One of the texts rooted in feminist institutionalism and feminist politics analysed institutional responses to gender-based violence (Ranea-Triviño et al. 2022), however without any deeper theoretical discussion.

A very insightful application of feminist perspective was the reference to epistemic justice as especially fruitful in understanding the gender inequalities in academia (Clavero and Galligan 2021). Clavero and Galligan introduce the idea of justice in reference to gender imbalances in academia, moving away from utilitarian arguments of efficiency, "talent loss" and "waste of human resources" (Clavero and Galligan 2021,1119). Epistemic injustice in academia was defined as "a form of injustice institutionalised in the norms and standards of 'excellence' and 'merit' that results in the marginalisation or exclusion from epistemic communities of individuals

that do not belong to the dominant group", which "is committed through masculinist micropolitical practices which devalue, or put into question, women's epistemic authority" (Clavero and Galligan 2021, 1120–1121). Hence Clavero and Galligan advocate that "restoring gender epistemic justice may require a politics of recognition that focuses on the damage inflicted when women are systematically marginalized, and which is aimed towards the achievement of gender equality within the 'status order' of this field" (Clavero and Galligan 2021, 1121). The implication for the introduction of GE measures in academia are that it should "be sensitive to gender power relations in the academic world, and the multiple and interrelated forms through which these power dynamics are manifested" (Clavero and Galligan 2021, 1128).

# Results from the qualitative analysis of expert questionnaires (bottom-up approach)

In this part of the report, we provide a literature review that results from the narrative answers provided by the national experts, the literature they referenced, and the analysis of the abstracts selected from the list suggested by them. The analysis is organised to answer two sets of research questions: (1) what are the socio-cultural, political and economic specificities in "Widening countries" which impact institutionalisation of GE in R&I?; and (2) what are the practical lessons from concrete GE interventions and policies in "Widening countries"? We conclude this part by detecting the gaps in the mapped local literature.

#### General information on the state-of-the art

Before we focus on answering our research questions, we provide an overview of the most common current issues we observed in the abstracts of the publications selected by the national experts. The literature provides basic data on increasing the participation of women in academia across different countries: the results mostly underline that the share of educated women is equal to that of men, although women are still largely absent from STEM (Bairampa and Bojanić 2020; Ciupercă and Stanciu 2020; Füleki et al. 2018; Stanić, Klobučar, and Milovanović Soldatić 2023; Xenophontos et al. 2022) and leadership positions in general (National Statistics Office Malta 2020; Pološki Vokić, Obadić, and Sinčić Ćorić 2019; Xenophontos et al. 2022). Vertical and horizontal segregation (Füleki et al. 2018; Lannert and Nagy 2020; Paliokaitė et al. 2012; Pološki Vokić, Obadić, and Sinčić Ćorić 2019; Uzunova 2020; Žalėnienė et al. 2016; Žalėnienė, Rakauskiene, and Grigoloviciene 2013) including gender pay gap (Antić Gaber 2018; Paliokaitė et al. 2022; Sabiedrības integrācijas fonds 2023) are widely covered.

The literature from Central and Eastern Europe also underlines that the participation of women and the mentioned trends are comparable with their European counterparts and sometimes better, specifically in Slovenia (Antić Gaber 2018), Estonia (Urmann et al. 2021), Hungary (Striebing et al. 2020) and Lithuania (Paliokaitė et al. 2022). The exception is the literature from Czechia (Linková et al. 2018; Tenglerová et al. 2018) which reports on the low proportion of women researchers. The mentioned data and trends are in contrast with that of the South European "Widening countries": Cyprus and Malta, which report on very recent progress in the

participation of women in public life and labour market, including academia and politics (National Statistics Office Malta 2020; Xenophontos et al. 2022). For example: Xenophontos explains that primary and secondary education in Cyprus became compulsory for all in the 1960s, while in 1960 only 1% of the population had attained tertiary education, mostly men (Xenophontos et al. 2022).

The suggested literature offers an analysis of the structural conditions for academic progress and excellence from the gender perspective. It indicates the seemingly neutral structural conditions for achieving science excellence and career progress, which are in fact conformed to a male habitus, particularly issues related to international networking, travelling and stays abroad, and a continuous publishing track (Fakin Bajec and Sitar 2017; Janušauskienė 2016; Linková et al. 2018; Mihajlović Trbovc et al. 2022; Petrović 2021; Urmann et al. 2021).

# Socio-cultural, political, and economic factors related to GE and GE institutionalisation in R&I in "Widening countries"

The proposed literature on the socio-cultural, political, and economic factors that affect the institutionalisation of GE in R&I in "Widening countries" mostly focuses on hindering factors and discusses supporting factors to a much lesser extent.

#### **Hindering factors**

# Socio-political context: negative understanding and connotations of the term "gender" in the political mainstream

Several national experts defined the political atmosphere as being "anti-gender" (meaning inclined against gender equality) and negative attitudes towards the term "gender" as being relevant factors hindering the institutionalisation of GE policies. The available literature covers differences in the wide usage and understandings of the term "gender" in the context of "Widening countries". Analysis in the literature centres on the public and political usage of the term "gender" and syntagma "gender ideology", which are used and understood as developments that constitute a threat to national identities. For instance, the term 'gender' is understood as opposing the existence of biological sex and thus undermining social stability (in Croatia and Hungary), as promoting homosexuality (in Bulgaria), or as promoting gender identities outside conservative norms (in Romania). In most cases, the accompanying antigender rhetoric is also analysed. It is explained that "gender" appears as a rival to the concept of "biological sex". Some explain that the current, negative understanding of the term "gender" is not restricted to certain political parties or segments of society, but has entered the field of political representation, due to the current prevalence of traditional, patriarchal, and heteronormative values and codes in all segments of the political spectrum (Băluță 2020; Dragolea 2022). One example from Bulgaria explains that anti-gender sentiments are strengthened by its socialist past (Darakchi 2019). In Portugal the issue of gender equality tends to be politically instrumentalized, especially in what concerns education with right wing parties claiming that to teach gender equality means disseminating left-wing gender ideology (Jordão et al. 2022). The mentioned literature on the use of the term "gender" specifically deals with examples from Bulgaria, Hungary and Romania (Băluță 2020; Darakchi 2019; Dragolea 2022; Eftimova 2019; Lannert and Nagy 2020; Nencheva 2022; Slavova 2022). However, the existing literature covering the different understanding of the term "gender" in "Widening countries" does not discuss the issue in connection with GE institutionalisation in R&I, but rather as an issue in society and policymaking in general.

#### National context: funding, cuts and low gender awareness in policy-making

The national context as the hindering factor in GE institutionalisation in R&I refers to generally low R&I funding, cuts connected to the economic crisis, and the absence of gender awareness in national and institutional policy documents.

The literature widely refers to generally low national expenditure for research, education, and scientific development. Apart from that, national bodies which should invent and promote designs of national GE strategies are often not funded (CEDAW 2017; Mihajlović Trbovc 2023). An example from Romania also mentions that there is an unclear division of responsibility between different national bodies (CEDAW 2017).

Cuts in academic financing, which appeared in the economic crisis around 2010, are still mentioned as an impacting factor for both GE in general and GE in R&I. The literature claims that general cuts in the social services affected those services that are usually used by women (Cukut Krilić 2017), while academic cuts in staff resulted in temporary and project-based contracts (Kambouri 2021), which are usually occupied by younger researchers and women (Cukut Krilić 2017; Petrović 2021). An example from Greece also covers the influence of the health crisis and pandemic, which increased the level of unpaid care work by female scientists, which was not experienced by their male counterparts (Kambouri 2022).

A body of literature is dedicated to various reviews of legislation, national and institutional strategic and policy documents. The conclusion is that there is a radical absence of gender awareness, gender related goals, and gender as a term from both national and academic institutional documents (Antić Gaber 2022a; EIGE/Cyprus 2022; Šinko and Petek 2022). Gender equality awareness is a theme that has been difficult to put on the political agenda and that is still often dismissed as not being a priority (Peterson et al. 2021). In recent years there has been more passive resistance, such as empty statements about the promotion of gender equality that are not really translated into concrete practices (Augusto et al. 2018). In certain countries, such as Latvia, with a high percentage of women in academia, research, and innovation, gender equality is no longer recognized as a necessary topic to be addressed. On the other hand, increased GE awareness may have spillover effect, as in Portugal, where increased attention in domestic violence resulted in Portuguese society now being much more conscious of GE problems and addressing them (Augusto et al. 2018; Jordão et al. 2022).

#### Institutional culture: ideas and attitudes regarding GE institutionalization in R&I

The available literature uncovers the common belief in R&I that gender equality has already been achieved (Antić Gaber 2022a; Tenglerová et al. 2018; Urmann et al. 2021) and the fear that GE policies will reduce the level of general competence (i.e. decrease quality) in academic world (Urmann et al. 2021). One article from Czechia also mentions a strong aversion to

measures imposed from above in general, and particularly in the area of gender equality (Tenglerová et al. 2018).

There are a number of articles dealing with the fact that institutions and/or academics ignore the structural inequalities and reject the idea that systemic work conditions and rules for career development are gendered (Anagnostou 2022; Linková et al. 2018; Urmann et al. 2021). The reasons are ascribed to different factors: (a) stereotypes and institutional practices (Helmane 2022; Janušauskienė 2016); (b) traditional, patriarchal and illiberal policy (Lannert and Nagy 2020; Tardos and Paksi 2021); and (c) widely spread neoliberal ideas and ideology, which insist on meritocracy and individualism – it places reasons for inequality on the personal level, while resisting addressing any structural reason for inequality (Aavik 2017; Urmann et al. 2021).

The literature from Lithuania appears as an exception – there is increasing recognition within the academic community on how structural inequalities systemically affect the local academic culture (Šidlauskienė and Butašova 2013), as well as a positive approach towards the structural change among national policy makers (Novelskaitė 2016).

#### The neoliberal turn in academia

Another hindering factor exposed in the proposed literature and connected to both the national and institutional levels, is the neoliberal working conditions in the current academic setting. The proposed literature covers an increase in precarious working conditions – flexible, unstable, short-term contracts and project-based financing, which come along with an increase in managerial and bureaucratic work related to obtaining funding, especially experienced by both women and early career researchers (Aavik 2017; Cukut Krilić 2017; Fakin Bajec and Sitar 2017; Kambouri 2021).

Along with material working conditions, the proposed literature covers the effects of neoliberal ideology: the depoliticisation of the discourse on sex/gender issues and academic neocolonialism, meaning that the logic of academic excellence is defined by standards grounded in Western norms of meritocracy (Fakin Bajec and Sitar 2017; Kašić 2016).

Finally, two articles from the same author, based on examples from Greece, deepen the understanding on the genderization of precarity and overworking. They cover the determining role of gendered norms in relation to precarity meaning that "academic precarious labour presupposes and reproduces labour practices that are in tune with specific gender, class and age norms of private and professional life" and that "it is characterised by the feminisation of labour, where the violations of labour rights are normalised, and affect determines how these violations are legitimised" (Kambouri 2021, 2022).

#### Socio-cultural gender representation and norms

Traditional social and cultural gender norms, representations, and expectations are widely covered as reasons for gender inequality in general and in R&I. Gender bias is particularly (although not exclusively) researched in STEM (Avraam et al. 2020; Nakić et al. 2021; Paliokaitė et al. 2022; Xenophontos et al. 2022). It is underlined that gender-based professional selection is informed by stereotypes (Janušauskienė 2016; Urmann et al. 2021).

Specific attention is given to the cultural and social normalisation of the unequal distribution of reproductive and care-work (Angeli 2020; Pološki Vokić, Obadić, and Sinčić Ćorić 2019), although it is mentioned that there is larger equality in terms of decision-making in the family (Kamenov and Galić 2011).

Legacy of gender stereotypes is on the one side ascribed to Soviet legacy (Urmann et al. 2021), but on the other side to the post-socialist formation of national identities. It is explained that post-socialist national narratives are related to heterosexuality as the unquestionable norm (Đurin 2012; Parunov and Barada 2021) and to the conservative family model (Lannert and Nagy 2020).

#### **Supportive factors**

#### Historical legacy of (positive) structural employment conditions

While supportive factors are rarely explored, there are a couple of articles – included in the proposed literature on Slovenia and one article on Hungary – highlighting the legacy of the socialist structural and employment conditions that enabled traditionally high female participation in labour market and academia in those countries. The literature covers institutional foundations established in the socialist period which enabled the "synchronisation of work and care", such as paid parental leave, affordable public nurseries, and kindergartens (Cukut Krilić 2017; Füleki et al. 2018; Mihajlović Trbovc et al. 2022; Petrović 2021). A paper from Hungary also reports on the long legacy of the high share of women in academic management from a comparative perspective (Füleki et al. 2018).

#### Other factors regarding structural employment conditions

Another article from Hungary also reports on current policies and structural conditions which support female participation in academia, although they stem from politics and policies which are ideologically opposed to the concept of GE. These are current governmental family friendly policies, such as work-life balance measures and conditions enabling flexible career trajectories. While this is found to be supportive, it is underlined that additional positive changes depend on explicit GE policies (Striebing et al. 2020).

# Practical lessons from context-specific GE interventions and policies in "Widening countries"

#### **Successful practices**

#### Inclusion of GEP as eligibility criteria in Horizon Europe and its challenges

The available literature covers the positive effects of having a GEP as part of the eligibility criteria in Horizon Europe: a drastic increase in the number of institutions developing GEPs,

and buildup of local expertise and tools (Donovalová and Tenglerová 2023; Sales Olivera and Augusto 2017; Serafimova 2023; Tăriceanu 2022; Urmann et al. 2021).

However, criticism is also present. The literature also draws attention to the fact that GEPs do not always meet all of the EU requirements, e.g. in Czechia, only 50% of GEPs meet the posed requirements (Donovalová and Tenglerová 2023). It is also noted that GEPs might present a mere formalisation of the requirements, while not being integrated in the organisational infrastructure and other activities of the institutions (Tardos and Paksi 2021; Urmann et al. 2021). A lack of commitment from institutional top management (Tardos and Paksi 2021) and the unwillingness of policy makers to allocate national resources for the implementation of actions designed in GEPs (Anagnostou 2019) are also noted as issues. Anagnostou (2022), by comparing GEPs practices in Greece, Cyprus, Romania, Italy and Serbia, notes that the central impediment which limits the potential of GEPs and the power of change agents is the lack of the coherent GE discourse, meaning a discourse that would reveal structural barriers and implicit bias (Anagnostou 2022; Peterson et al. 2021).

#### Participation in international and EU supported projects on GE

The participation of R&I institutions in international and EU supported projects on GE is perceived as the first steps toward a GEP, which were accelerated with the Horizon Europe eligibility criteria. It is recognized that such projects offered previously lacking financial support for the implementation of GE actions, training, and the development of tools for the implementation of GE policies (e.g. GEAR tool) and expertise (Bryniarska et al. 2019; Czerniak-Swędzioł et al. 2021; Druciarek and Przybysz 2018; EIGE/Cyprus 2022; Klenk et al. 2022; Sekuła et al. 2023; Tăriceanu 2022; Tenglerová et al. 2018).

#### **Concrete practical lessons**

#### Gaining wide consent of institutional stakeholders and influencing the public opinion

The literature points to the importance of gaining the wide consent of all institutional stakeholders, including leadership and management (Antić Gaber 2022a; Dąbrowski and Zaroda-Dąbrowska 2018), academic and administrative staff (Mihajlović Trbovc et al. 2022) and students. Recurring proposed measures are campaigns for motivating staff and students to engage with GE measures (Antić Gaber 2022b; Doneva and Gaftandzhieva 2021).

Some authors underlined the need for wide public consent and designing measures which would not provoke resistance on the national, societal, and institutional levels (Broka and Kūkoja 2022; Doneva and Gaftandzhieva 2021). However, there is an example when an institution (Faculty of Arts, University of Ljubljana) adopted a gender-sensitive language policy as part of its GEP, which was in direct conflict with the dominant societal and media language policy. The institution managed to uphold its stance in spite of media pressure and protracted media debate, ultimately influencing the public perception about gender representations in Slovenian language (Antić Gaber and Kuhar 2022). This example supports the premise that GEPs can influence the national discourse on GE (Caprile 2022 et al.).

#### Importance of institutional culture

The literature underlines the need to adjust GE measures to the specific institution, including a bottom-up approach and the inclusion of employees in the process of GEP creation at all phases (Druciarek and Przybysz 2018; Kosakowska-Berezecka, Żadkowska and Pawlicka 2020; Mihajlović Trbovc et al. 2022; Šidlauskienė and Butašova 2013; Dąbrowski and Zaroda-Dąbrowska 2018).

#### Importance of national frameworks and policies

It is suggested that the creation of national frameworks, policies, or regulations makes GE policies independent of institutional authority and changes, and supports the implementation of GEPs (Diogo et al. 2021a; Klenk et al. 2022; Sekuła et al. 2023).

#### Relying on change-agents involved in CoPs

A portion of the literature recognises that organisational change depends on academic activism, voluntarism, and the perseverance of individual team members involved in GEP implementation (Augusto et al. 2018; Sales Oliveira and Augusto, 2017; Jordão et. al 2022).

The literature also highlights the advantages of a community of practice (CoP) approach in connecting "change agents", that is individuals and groups aware of inequality, who can contribute to institutional change (Caprile et al. 2022). This is confirmed by the national CoP experiences: CoPs facilitated conditions for gender equality interventions (not necessarily GEPs), built up know-how, exchanged tools, designed practical interventions in the local context (Mihajlović Trbovc 2023; Sekuła et al. 2023; Dąbrowski and Zaroda-Dąbrowska 2018). However, it is also underlined that CoP success may depend on the commitment of individuals working within it, rather than their institutions getting together, so its ability and outreach is contingent on contextual factors (Mihajlović Trbovc 2023).

#### Needs for measures and tools to be developed

Mapping measures that need to be (further) developed in most cases stems from the analysis of recent GEPs and GE measures initialised in "Widening countries" during the lifespan of the European projects dedicated to the GE in R&I.

#### Gender sensitive databases and data tools

It is reported that there is a lack of data and an additional need for gender-sensitive databases and data-based practical tools, which could be used in designing GEPs and would enable a nuanced understanding of gender differences in R&I (Gaftandzhieva, Doneva, and Blizankov 2022; Zamfir and Hjálmarsdóttir 2017; Zendulková et al. 2022).

#### Need for measures on sexual harassment

The literature reports increased attention in R&I towards sexual harassment, including needs, requests, and proposals for creating and adopting measures on sexual harassment in R&I

institutions (Antić Gaber 2022b; Fajmonova et al. 2021; Järv et al. 2020). A specific piece of research notes that general tools, such as codes of ethics, fail to offer acceptable solutions to the mentioned problem (Donovalová and Tenglerová 2022a).

#### Approaches based on management theories

Several examples from the literature explore how the scholarly discipline of management can contribute to GE institutionalisation. They propose diversity management (Tardos and Paksi 2018), "soft management" and innovative organisational management models (Vasiljevienė 2013) as a possible way to ensure commitment of management and involvement of different groups in GE implementation.

#### Intersectional approach as understanding different positionalities

Articles based on the experience from Slovenia advocate approaching intersectionality not as an issue of identity but rather as an issue of positionality within the academic system. They underline the need to go beyond gender as an exclusive category and correlate gender, one's position in relation to labour market and social division of labour, institutional hierarchy and type of labour performed (academic or administrative). They advise adopting an intersectional approach as a way to understand different perceptions and experiences of inequality (e.g. women employed in administration perceive and experience less inequality than women in academia) and create concrete policies for GEP accordingly (Cukut Krilić 2017; Mihajlović Trbovc et al. 2022; Petrović 2021).

#### Other

An article from Czechia reports on difficulties in understanding the inclusion of the gender dimension in the content of research and teaching and the need for support. It states that this criterion got the least attention in national GEPs and is often not a requirement in national funding (Donovalová and Tenglerová 2023; Donovalová and Tenglerová 2022b).

#### Gaps in the literature provided by experts

Existing literature, covering the different understanding of the term "gender" in "Widening countries" and wider European context, is not directly linked/related to examples of GE and GE institutionalisation in R&I, although it implies that the negative understanding of the term "gender" affects GE in general.

In their responses, the national experts emphasised that the controversies around GE issues and policies reflect broader debates, including the ratification of the Istanbul Convention (Bulgaria, Latvia, Poland), the ban on abortion (Poland) and/or the #MeToo movement (Greece, Poland) – which can be understood as creating both hindering and supporting factors. However, apart from the case of the discourse about the Istanbul Convention in Bulgaria, there is no proposed literature linking broader societal debates and GE policies in academia.

Unstable political situations and economic instability were repeatedly cited by national experts as reason for certain countries having delayed GE policies, or perceiving them as issues of

"lesser" importance. However, there is no literature dealing directly with the link between political and economic instability and institutionalisation of GE measures proposed.

While hindering factors like social norms, gender stereotypes, and the institutional context are covered extensively, there is less explanation of the fact that East Central European "Widening countries" have equal or even higher participation of women in the labour market and academia (in comparison to other European countries), and are on the same (or better) level regarding other aspects of gender equality in R&I. Historical background, structural employment conditions and/or alternative GE measures, which are related to the mentioned outcomes, are rarely explored as possible explanations.

Alternative GE measures and measures which predate EU supported programs are rarely explored, with the exception of the literature from Slovenia. A possible explanation is that measures created outside the EU framework do not correlate with the current conceptual framework and terminology of gender equality, thus they are automatically evaluated as unsuitable. This might cover up their direct or indirect influence on the participation of women in R&I in "Widening countries".

### **Discussion and conclusions**

In these final conclusions we discuss the similarities and differences between the two sets of data from the English-language centred databases and expert recommended sources. The literature reviewed provides insights into the richness of the contextual factors impacting the implementation of gender equality instruments in R&I systems in the "Widening countries". While an awareness of their multidimensionality is present in the literature from the databases, some arguments that appear in the discussion seem to be repeated unreflectively (as e.g. on the conservativeness of CEE societies), without unpacking the concepts. Additionally, there is a tendency in some publications to position "Widening countries" that are diagnosed as backward in terms of gender equality, against more progressive and effective Western European societies. This tendency illustrates well the need for a careful and nuanced approach to the examination of factors, both in single-case and comparative analyses. The relatively poorly present in-depth reflection on the mechanisms of the impact of specific factors additionally justifies the need for the wider recognition and incorporation of local expert knowledge in future studies.

It is important to note that the focus of the experts was oriented to providing literature indicating gender inequalities in R&I. This is in line with the literature available in databases but lacks the inclusion criteria that indicated that the articles should not only provide information about gender inequalities, but about gender equality institutionalisation. This, however, underscores the fact that debates in the "Widening countries" still focus a lot on gender inequalities, presenting this as unsolved problems to be noted before moving to the next level – policies. This is in line with the finding suggest that the belief that GE has already been achieved in selected countries hinders policy implementation. Therefore, the importance of diagnosing inequalities and of awareness raising in this regard is underlined by experts as laying the foundations for policy processes. Thus, the grounding of policies in data that visualises and voices gender inequalities is a good practice.

The context for GE policies is crucial in both analyses, but it seems that in the expert narrative this is a more prominent aspect. However, it should be noted that the experts do not focus on showing the impact of gender debates on R&I sector, they mostly describe the current situation in relation to GE and debates on gender. The literature proposed by the national experts and selected as suitable for the analysis focuses more on hindering than supporting factors in the socio-cultural, political, and economic context relevant for GE in R&I in "Widening countries". These hindering factors are (1) negative connotations associated with the term 'gender' within local politics (so called "anti-gender ideology"); (2) cuts in research funding and low awareness of gender related issues among the policy-makers; (3) an institutional culture that perceives the institutionalisation of GE policies unfavourably; (4) the neoliberal turn in academia, which fosters precarious working conditions producing gendered inequalities; (5) traditional and conservative gender norms and unequal distribution of reproductive and care-work. The literature from databases, beyond the above-mentioned barriers, points to the missing national level legislation or frameworks. Both databases, though, indicate the - mostly positive - impact of the EU on institutional change. The impact of the EU is clearly voiced in the articles from databases as they are a result of EU collaborative projects/they refer to EU projects. But in both cases, the EU is seen as providing financial resources and forcing the development of GEPs. Practical lessons from GE interventions in "Widening countries" show that the most successful practices of institutionalisation stem from EU funded projects and from putting GEPs as part of the eligibility criteria for Horizon Europe funding, which helped building local expertise and tools. However, the experts clearly see the pitfalls arising from the sharp increase in GEPs across the selected countries. This leads to hasty institutionalisation, a lack of genuine commitment at institutional and national levels, a lack of real understanding of the causes of gendered inequalities and difficulties in the sustainability of measures implemented. As the literature from databases is less recent, the analysis of the impact of GEP development after the eligibility criteria was introduced is not yet prominent.

While the reflection on resistance towards gender equality interventions is widely present, some of the topics need further development. Whereas the literature provided by experts focuses on the various (negative) understandings of the term 'gender' in the political sphere, as a rule it is not related to the discussion of the institutionalisation of GE policies in R&I. There is a need for further in-depth research on how "anti-gender" politics and wider social debates influence the process of institutionalising GEPs in R&I organisations. Also, both data sources give considerable attention to the institutional contexts of academia and science and neo-liberal ideas and ideology insisting on presumably gender-neutral meritocracy. Further research is needed on the issue of how economic instability delays or hinders GE policies in R&I.

The historical perspective is largely missing, with articles concentrating on recent developments, e.g. while authors writing on CEE countries often refer generally to the communist past, they rarely examine its impact on the current developments closely and critically. As presented in the expert literature, the legacy of the socialist state and its employment conditions is a contextual factor that some literature presents as supportive for the institutionalisation of GE (e.g. literature from Slovenia and Hungary), while other perceive socialist period as being the source of the pervasive gender stereotypes (e.g. literature from Bulgaria and Estonia). Further research is needed on how the relatively high participation of women in academia in post-socialist "Widening countries" is related to historical legacies and present-day GE policies.

Both the experts and the literature from the databases point to multiple good practices and recommendations in regard to initiating change and GEP implementation, such as the mobilisation of the academic community, communities of practice, relevant structures, or communication strategies. A lack of strategic commitment on the institutional level, also resulting from lack of national level enforcement, was a clear obstacle for initiatives. Indeed, the eligibility criteria seem to be a marking line for their activities in regard to gender equality for many "Widening countries". Still, multiple hindering factors potentially impacting the effectiveness of newly created strategies are identified, including a lack of leadership commitment, low resources, difficulty to mobilise expertise and support in organisations. Also, a narrow perception of gender equality policies, as directed at work-family balance, limits the impact. The concrete practical lessons from the literature suggested by the national experts point to importance of: (1) gaining wide consent of public opinion and institutional stakeholders, including both academic and supportive staff as well as students; (2) adjusting GE measures to particular institutional culture in order to change it from within; (3) influencing positive change in the national frameworks and policies; and (4) relying on activist change-agents within organisations and their cooperation in the form of communities of practice (CoP). The literature suggested by the national experts maps the need for the following GE measures to be developed further (within the context of "Widening countries"): (1) tools for gender-sensitive databases and data-gathering instruments to be used in designing GEPs; (2) measures relating to sexual harassment; (3) various management models in order to ensure commitment to GE institutionalisation; (4) applying intersectionality through a prism of organisational positionality rather than identity; and (5) developing measures for including gender dimension in the content of research.

As far as GEPs are concerned, the articles present and discuss the development/design of GEPs rather than GEP implementation and monitoring. Most countries have just recently started to introduce GEPs and have neither a long history of implementing GEPs nor research on their effectiveness. They are also not grounded in previous policies/programmes or solutions. They mostly respond to the EU requirement to address gender inequalities in decision-making and leadership, recruitment and career development, work-life balance or gender-based violence. There is a noticeable focus on "safer areas" of implementing GE such as work-life balance and distinctive lack of developed measures in more "complicated" GE measures, such as sexual harassment. Gender dimension in research and teaching is less pronounced in GEPs. Similarly, the intersectional approach is barely included in GEPs. The narrative on GE policies mostly focuses on women's exclusion or women as an underprivileged group, and men are rarely mentioned in this regard, so we identify a need to expand and include all genders when discussing GEP/GE policies.

In the articles from the databases, the focus was mostly on GEPs, rather than alternatives to GEPs (including those policies/measures which preceded GEPs). This entails a reflection in regard to alternatives and what should be considered as such. The literature addresses various forms of the alternatives to GEP in different contexts, emphasising that they are adopted either as policy measures or a replacement to gender machineries. Their broad scope can be interpreted as either a need to develop more flexible and varied solutions due to the insufficiency of GEP, or they indicate difficulties in implementing GEP as an overarching gender equality measure. Although the articles highlight the importance of alternatives to GEP and their strategic function in developing gender equality policies in general, there is still a question as to whether they can be treated as equivalent to GEP: Do alternatives to GEP have

the same visibility as GEP? Are they treated as equally important and binding as GEP? Can they provide structural change? The review of theories identified in the articles in the databases shows both the need to develop the conceptual frameworks for understanding GEP interventions further and the potential to build more "theory informed interventions" (Palmén and Kalpazidou Schmidt 2019). Rachel Palmén and others (2019) suggest that the in-depth, theory-informed problematization of GE implementation allows to go beyond the reports of "success stories". As they argue, "demonstrating the lack of results and impact provides valuable information about what does not work in which context and why" (Palmén et al. 2019, 163) and "understanding the underlying mechanisms" of gender equality intervention programmes, encourage innovative solutions that are context-sensitive and rooted in specific local histories and contexts.

The difference between the two sets of samples is that national experts seem to be more familiar with the latest publications in their countries, which were probably less visible in databases or absent from them. In both samples, journal articles are the most numerous types of literature. However, reports are much more prominent in the literature suggested by the national experts, which indicates that important information from the field might be disseminated via grey rather than scholarly literature, at least in the "Widening countries". The two approaches in the literature review (top-down and bottom-up) produced a complementary overview of the literature in the coverage of the countries: the country cases that were least prominent in the databases (such as Slovenia, Bulgaria, Romania) were most prominent in the selection of the literature gathered via national experts, and vice-versa. We noted that there might be an element of bias in the overall selected literature resulting in a relatively higher number of publications relating to Slovenia and Poland, as these are the countries from which the two teams come from, while the team members also authored some of the selected literature. The analysed documents from the databases align with funding from European sources and there seem to be little national level funding for this research, or organisation level funding. While journal articles were predominant, their character was often also quite practical, which on the one hand downplaying the theoretical considerations or more critical approaches, and on the other considering grey literature as an important source of knowledge on the field. To conclude, the review indicates for the importance of diversification of sources of knowledge and sensitivity to the context of knowledge production.

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