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GENDER EQUALITY PLANS IN ITALIAN UNIVERSITIES: A FIRST DESCRIPTIVE ANALYSIS

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Gender Equality Plans in Italian Universities: A First Descriptive Analysis

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Abstract: The present paper explores the implementation of Gender Equality Plans (GEPs) within Italian Universities. The aim of the paper is to produce a first comparative analysis of selected institution to assess if the elaboration of more comprehensive GEPs, and therefore the effort of Italian universities in addressing gender equality in academia, may depend on the share of woman researchers and top-management present in the institution itself. To do so, twelve universities' GEPs has been selected based on the universities' geographical location (north, centre, south) and the share of women among research and top-management staff. Through a simple descriptive analysis of the content of the GEPs and the gendered data on universities' research and top-management staff, the paper found that there is no significant relation between the comprehensiveness of the measures implemented by a GEP and women presence among research and top-management staff. In addition, the analysis also funds no relation between the comprehensiveness of the measures implemented by a GEP and the geographical location of the institutions considered.

Keywords: Gender Equality Plans, Descriptive Analysis, Comparative Analysis, Gender in Academia

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Piani di Uguaglianza di Genere nelle Università Italiane: Una Prima Analisi Descrittiva

Giovanni De Luca, Paolo Mazzocchi, Claudio Quintano, Antonella Rocca

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Sommario: Il presente articolo esplora l'attuazione dei Piani per l'uguaglianza di genere (GEP) all'interno delle Università italiane. L'obiettivo del paper è produrre una prima analisi comparativa dei GEP selezionati per valutare se l'elaborazione di GEP più completi, e quindi lo sforzo delle università italiane nell'affrontare la parità di genere nel mondo accademico, possa dipendere dalla quota di donne tra lo staff di ricerca e il top-management presente nell'ente stesso. A tal fine, sono stati selezionati dodici GEP di altrettanti atenei in base alla posizione geografica degli atenei (nord, centro, sud) e alla quota di donne tra lo staff di ricerca e il top-management. Attraverso una semplice analisi descrittiva del contenuto dei GEP e dei dati di genere sul personale di ricerca, sul personale apicale delle università, l'articolo ha rilevato che non esiste una relazione significativa tra la completezza delle misure attuate da un GEP e la presenza delle donne tra lo staff di ricerca e il personale apicale. Inoltre, l'analisi non ha rilevato alcuna relazione tra la completezza delle misure attuate da un GEP e l'ubicazione geografica delle istituzioni considerate.

Parole chiave: Piani di Uguaglianza di Genere, Analisi Descrittiva, Analisi Comparativa, Genere nell'Accademia

Introduction

The presence of gender inequalities in academia is a well-known and investigated issue (Goastellec and Pekari 2013; Winslow and Davis 2016). In the last decades, research has long focused on such inequalities, both from a theoretical and an empirical perspective. Scientific literature highlighted the presence of many different dimensions that are affected by gender gaps, from access to academic positions (European Commission 2019; Carriero and Naldini 2022), to career progressions (Ooms, Werker and Hopp 2019; Danell and Hjerm 2013), the evaluation of teaching activities (MacNell, Driscoll and Hunt 2015), the peer-review processes (Wennerås and Wold 1997), the publishing of academic papers (Mueller, Wright and Girod 2017; Mathews and Andersen 2001; Cellini 2022), as well as patenting (Ding, Murray and Stuart 2006), receiving prestigious international awards (Meho 2021), and citation patterns (Dion, Sumner, and Mitchell 2018; Bendels, Müller, Brueggmann and Groneberg 2018), just to mention the principal ones. Indeed, scientific literature found a more marked presence of gender inequalities in the so-called STEM sectors, but many works highlighted how also social sciences are affected by the presence of such inequalities (Avveduto 2019; Wang and Degol 2017).

Within the European context, especially through the European Commission, gender equality and gender mainstreaming have been considered an EU priority since at least 2012 (European Commission 2021). The Creation of the European Research Area (ERA) represented a strong commitment toward the reduction of gender inequalities. The ERA priority number 4, in fact, proposed actions to achieve gender equality in three main areas: promoting gender equality in careers; ensuring gender balance in decision making; and integrating the gender dimension in R&I content and programs (European Commission 2012). The last point has been driven also by the allocation of research funds. With the onset of the Horizon 2020 framework, gender was defined as a cross-cutting priority transversally considered in almost all the calls for funding, so as that for most of the calls the proposals should explicitly state how they address the gender dimension within their projects. Horizon 2020 also financed several projects aimed at designing and implementing different gender-related instruments, such as Gender Equality Plans (GEPs), deemed effective tools to promote gender equality within Research Performing Organizations.

However, notwithstanding all the efforts spent and some improvement experienced in the last decade, the data reported in the last edition of the She Figures (European Commission 2021) show how we are still far away from reaching gender equality in R&I, and rather the consequences of Covid-19, affecting disproportionately women, seem to be worsening the picture (Górska *et al.* 2021; Kim and Patterson 2022; Cui, Ding and Zhu 2022). It is however important to notice that the situation considerably varies among EU countries. For instance, considering the proportion of women among researchers in 2018, data show how the proportion varies from Latvia and Lithuania with a share of respectively 52.2% and 49.5%, to the Netherlands and the Czech Republic with a share of respectively 26.4% and 26.6%. Such differences may be found in many of the indicators provided by the European Commission (2021).

For these reasons, with the onset of the new Framework of EU research funding, Horizon Europe, the European Commission decided to move forward toward the achievement of gender equality in the research sector by adding the adoption of a Gender Equality Plan among the eligibility criteria for any Research Performing Organizations to be eligible to get EU funding. Starting from the calls for application with deadlines in 2022, in fact, to be able to sign a grant agreement, once a proposal results among the ones selected for funding, each organization part of the winning consortium needs to be provided with an approved GEP. In

other words, an organization can be part of a consortium and submit a proposal for EU funding under Horizon Europe Funding Framework even without having a GEP but, if the proposal is awarded, to formalize the contract with the EC the GEP needs to be adopted and functioning, respecting the indications provided by the EC.

In this context the present paper intends to provide a first attempt to evaluate some of the GEPs adopted by Italian Universities. It does so by analyzing relevant characteristics and content of such GEPs from a substantial descriptive perspective. In addition, in doing so, we tried to assess to what extent a higher share of women within the research workforce and the top management of the institutions is associated with more comprehensive and elaborated GEPs. Whether a higher presence of women influences the adoption of more gender sensitive policies within private and public organizations has been studies in the last decades, especially in the context of organizational studies. Research has shown that, in particular, when women representation within the top-management increases, organizations tend to increase their focus on gender issues and to adopt more gender-related policies (Larrieta-Rubín *et al.* 2015), even if it requires some time after female top-management appointment (Biswas, Roberts and Stainback 2021).

The paper is structured as follows. The next section presents and describe the GEPs and their functions. Section 3 briefly describes the Italian context. Section 4 illustrated the process of case selection and the methodology employed for the analysis. Section 5 reports the results of the analysis, and section 6 discusses the results and presents the conclusions.

Improving structural changes: the Gender Equality Plan

A gender equality plan (GEP) is a policy instrument with which R&I institutions adopt specific and concrete measures to tackle gender inequalities and promote gender-related measures in specific areas. In the words of the European Commission (2021), a GEP is defined as "*a set of commitments and actions that aim to promote gender equality in an organization through a process of structural change*". The emphasis posed by the European Commission on "*structural change*" is particularly important since it qualifies the GEP not only as a short-term instrument to address current gender inequalities but also as a tool designed and implemented to promote deep structural and cultural changes that can unfold their effects in the medium-long term.

According to the European Commission (2021), in order to meet the eligibility criterion, a GEP must include at least 4 mandatory process-based actions and they should address 5 recommended content-related areas. The four process-based criteria required to be met for the GEP are:

1. Being a formal and public document, signed by the top management of the institution, demonstrating a clear commitment to gender equality.
2. Having dedicated resources in terms of staff and funds for the design, implementation, and monitoring of the actions implemented.
3. Including arrangements for data collection and monitoring that assure the GEP is grounded on evidence and founded on sex (or gender) disaggregated data.
4. Being supported by training and capacity-building activities.

The four process-related actions have been set mandatory to guarantee that GEPs could actually produce the structural changes envisaged by the EC. The provision to make arrangements for gendered data collection responds to the "no data, no problem, no policy" principle according to which the first step to address an issue is necessary to know the issue in terms of both magnitude and specificities. The provisions to make a public document signed

by the top management of the research performing organization and to provide dedicated resources assure on the one hand the commitment of the institutions toward the GEP and, on the other hand, that the measures included in the GEP could be effectively carried out. Lastly, the inclusion of training and capacity-building activities are essential to reach a structural change capable of modifying those cultural barriers and unconscious biases that tend to reproduce gender inequalities.

The five thematic areas that are recommended to address key gender inequality issues are:

1. Work-life balance and organizational culture.
2. Gender balance in leadership and decision-making.
3. Gender equality in recruitment and career progression.
4. Integration of the gender dimension into research and teaching content.
5. Measures against gender-based violence, including sexual harassment.

With the exclusion of the integration of the gender dimension into research and teaching content, which is indeed an area specific to research performing organizations, the thematic areas recommended by the EC represent common issues that have been proved to affect gender equality across all R&I organizations, as well as across other sectors (European Commission 2021).

GEPs, therefore, could become important instruments both to overcome current gender inequalities within research performing institutions and to promote structural changes that allow the implementation of new practices able to change the institutional culture toward creating more just and fair working environments. Indeed, the efficacy and effectiveness of the GEPs in addressing inequalities also depend on the processes through which they are implemented. In this respect, the literature highlights the importance of the type of governance framework, to what extent the top management is committed to the results, the implementation of a bottom-up participated approach that includes all the institutions' staff, the presence of synergies with other initiatives, the provision of strategies aimed at tackling resistance, the investment of adequate resources, the setting up of realistic and achievable targets, standards and monitoring activities, and the production of accessible data and information upon which to base the design of the interventions (Palmén and Schmidt 2019). In other words, the simple fact that an institution formally approves a GEP is not sufficient to guarantee that such a document will produce the changes promoted by the EC and, in some cases, there is the risk that they could become just a box-ticking exercise.

The Italian Context

The history of processes and procedures aimed at reaching gender equality in Italy has always been strictly intertwined with EU guidelines, regulations, and recommendations. In the last decade, Italy has undertaken different steps on the path to gender equality, starting in 2006 when Equal Opportunities Committees (Comitati per le Pari Opportunità – CPOs) were first created, under Decree Law n. 198 of 11 April, in the Equal opportunities code.

Subsequently, in 2008, a Network of University Committees' Equal Opportunities representatives, aimed at improving cooperation through conferences and providing training for students and staff, was created by the National Conference of Italian Universities' Equality Bodies.

In 2010, Article 21 of the Italian Law 183/2010 required Public Administrations to establish a Unique Guarantee Committees for Equal Opportunities in Public Administrations for Workers' Wellbeing and against Discriminations (Comitati Unici di Garanzia, CUG) that replaced previous CPOs in most cases, though some universities still retain both a CUG and a CPO. This law also requires Public Administrations to identify a Confidential advisor, a figure

called to prevent, manage and help to resolve cases of discrimination, psychological harassment, moral harassment, sexual harassment, or mobbing and straining, which take place in the workplace, brought to her attention. In 2019 Directive 2/19, issued by the Ministry of Public Administration, reinforced the CUGs emphasizing the role that gender equality plays in equal opportunities and wellbeing.

The Equal opportunities code (2006), Article 48, Subparagraph 1, states that Public Administrations (including universities and research organizations) are required to enforce three-year Positive Action Plans (PAPs) whose instruments and area of intervention were then defined in 2007 by the Directive of the Presidency of the Council of Ministers of 23 May. Public administrations' institutions must have a PAP according to the law but, since these positive action plans don't always meet all the EU's requirements for the Horizon Europe program, most universities and research organizations are now developing a Gender Equality Plan (GEP), often building on and expanding existing PAPs. These new documents set every institution's own effort and measures to reach gender equality.

A recent study shows that while in the EU 56% of RPOs adopted a GEP, in Italy the figure is only 39% (MoRRI 2018). Therefore, implementing measures aimed at increasing gender equality in academia is particularly important in the Italian context where gender inequalities are still substantial. As reported by the European Commission (2021), in 2018 the proportion of women among researchers in Italy was 33.8%. Furthermore, data highlight how female researchers are still also struggling for career advancement. In fact, in 2018, while female researchers represented 50.13% of grade D staff, they represented only 23.74% of grade A staff.

Case Selection and Methodology

To assess if and to what extent the presence of a higher share of female researchers within universities in Italy was associated with the development and implementation of more comprehensive GEPs, we calculated such figures based on MIUR (2021) data. The percentages have been calculated for all public and non-public universities in Italy. To increase the comparability of the cases selected, we excluded all the telematic universities present in the database.

Moreover, the share of women among university research staff has been calculated as the average percent value of the percentages of women among grade A, B, C, and D[1] staff in each Italian university. The resulting Institutions then have sorted into three geographic areas (Northern, Central, and Southern Italy) to control for the presence of geographical differences. To code the geographical areas, we employed the city where universities are based, and the code was assigned based on the NUTS-1 classification[2]. However, for simplicity's sake, we merged the "North-west" and the "North-east" NUTS categories into the "North" category.

From each geographical area, then, comparing the share of female research staff, four universities have been selected. To answer our principal research question, namely, how does the presence of a higher share of female researchers within universities contribute to the development and implementation of more comprehensive GEPs, two distinct criteria have

[1] The classification of academic staff comprises: Grade A: full professors; Grade B: associate professors; Grade C: fixed terms researchers; and Grade D: research fellows. The metadata illustrating the different positions can be accessed at: http://dati.ustat.miur.it/dataset/a60a221d-1c0d-4abb-bc8b-2199f61c205d/resource/ddd84a09-8410-4dd7-b5d4-425a45ff5a6c/download/tracciatorecord_serieacademicstaff.xlsx.

[2] NUTS-1 classification provided by EUROSTAT is available at: https://ec.europa.eu/eurostat/documents/345175/7451602/2021-NUTS-1-map.pdf.

been followed. On the one hand, we have selected two of the Universities with the lowest and two with the highest share of female research staff within the institution and, on the other hand, we selected institutions. On the other hand, we selected universities with similar shares of female teaching and research staff for which an online version of an approved GEP was available. Table A1 in the Appendix reports the full list of the universities among which the selection has been made. All the process led to the selection of the following Italian Universities: Scuola IMT Alti Studi, Scuola Normale Superiore, Università degli studi di Pisa, Università degli studi di Macerata, Istituto universitario di studi superiori di Pavia, Scuola internazionale superiore di studi avanzati, Università degli studi di Milano, Università degli studi di Pavia, Politecnico di Bari, Università degli studi della Campania, Napoli, Università degli studi di Messina, Università l'Orientale di Napoli. All of these Universities have a public GEP or PAP on their websites that were taken under examination to answer our research question. Table 1 reports the list of the case selected and the link to access and download each GEP/PAP.

Table 1. List of the cases selected and the relative link to access and download each GEP

University	Acronym	Link to the GEP
Scuola IMT Alti Studi	IMT	https://www.imtlucca.it/it/file/203994/download?token=fZwB1ajz
Scuola Normale Superiore	SNS	https://www.sns.it/sites/default/files/2022-04/gep_sns.pdf
Università degli studi di Pisa	UNIPISA	https://www.unipi.it/index.php/presentazione/item/23013-gender-equality-plan
Università degli studi di Macerata	UNIMC	https://www.unimc.it/it/ricerca/policy/gender/gep-25-10-2021.pdf
Istituto universitario di studi superiori	IUSS	http://www.iusspavia.it/documents/20181/139488/Geneder+Equality+Plan+2022_2024/5915ebb9-81a9-45fb-9fcb-eabb5c434794
Scuola internazionale superiore di studi avanzati	SISSA	https://www.sissa.it/sites/default/files/GENDER%20EQUALITY%20PLAN%2022-24_APPROVATO_10052022.pdf
Università degli studi di Milano	UNIMI	https://www.unimi.it/sites/default/files/2021-12/GEP_2021_final.pdf
Università degli studi di Pavia	UNIPAVIA	https://web.unipv.it/wp-content/uploads/2022/04/GEP_defSA-1.pdf
Politecnico di Bari	POLIBA	http://www.poliba.it/sites/default/files/pap_piano_azioni_positive.pdf
Università degli studi della Campania	UNICAMPANIA	https://www.unicampania.it/doc/CUG/bilancio-di-genere/GEP_Formattato.pdf
Università degli studi di Messina	UNIME	https://www.unime.it/sites/default/files/GEP_UNIME_2021_LeTSGEPs_EN.pdf
Università l'Orientale di Napoli	ORIENTALE	https://www.unior.it/doc_db/doc_obj_29441_624a943cbb0cd.pdf

Source: Authors' elaboration.

In order to answer our question, we performed a content analysis by comparing the content of the twelve cases selected. To do so, we looked at the presence or absence of the mandatory elements required by the EC to comply with the eligibility criteria for Horizon Europe funding, the assessment of the five thematic areas suggested by the EC, the number of objectives and actions provided in the GEPs, and the presence of economic provisions and the funds allocated if any. Subsequently, for the five thematic areas suggested by the EC, paradigmatic measures have been identified through the literature and have been searched within the GEPs and/or within previously policies implemented by the universities. In particular, we have chosen the following measures:

1. For Area I: the constitution of internal Kindergarten, or partnerships with external kindergarten, provided in the GEP or previously stipulated. According to the literature, in fact, having access to kindergarten services is an essential mean to allow parents to better balance their work and family duties (Krilić *et al.* 2018). And this is especially compelling in a context like Italy where according to the data provided by ISTAT (2020) available kindergartens for children below three years just cover 25.5% of the children of that age.

2. For Area II and III: provision of actions aimed at incrementing female participation in competitions' commissions. The presence of women in committees, in fact, has been associated with higher rates of women employed (Van den Brink, Brouns and Waslander 2006; Timmers, Willemsen and Tijdens 2010).

3. For Area IV: the provision of funding aimed at promoting the inclusion of the gender perspective within the content of the research. As demonstrated by the effort made by the EU, through both Horizon Europe and Horizon 2020, the requirement for gender mainstreaming within research projects' funding schemes is a vital policy to persuade researchers to include the gender perspective in the research content (European Commission 2021b).

4. For Area V: provision of procedures for the management of mobbing and harassment. The presence of clear and settled procedures for the management of these kinds of conducts, that employees can activate if needed, is essential to give them legal instruments to combat the phenomena (Benjes-Small *et al.* 2021).

Usually pertaining to Area I, but transversally essential to the implementation of a GEP, we also considered the presence or absence of an office dedicated to the implementation and monitoring of the GEP itself.

Lastly, the gender of Universities' rectors and the share of women among vice-rectors and among the board of directors have been coded based on the information collected on the Universities' web pages. Table 2 reports the summary of the principal information collected for each university

Table 2: Summary information of the cases selected concerning shares of female research staff and apical roles, and GEPs requirements and content

University	GEO	% W staff (A, B, C, D)	N of procedural requirement (Max 4)	N of Areas covered out of 5 suggested	Further areas covered	N of selected measures implemented (max 5)	% of female vice-rectors	% of Board of directors female members
IMT	Centre	14,20	4	5	No	2	25,0	18,2
SNS	Centre	22,01	4	5	No	3	50,0	11,1
UNIPISA	Centre	30,37	4	5	No	3	16,7	40,0
UNIMC	Centre	40,77	4	5	No	3	75,0	27,3
IUSS	North	20,88	3	5	No	2	12,5	11,1
SISSA	North	13,09	4	5	No	3	NA	40,0
UNIMI	North	36,37	4	5	Yes	4	75,0	38,5
UNIPAVIA	North	33,24	4	5	Yes	3	37,5	45,5
POLIBA	South	21,08	4	5	Yes	3	33,3	16,7
UNICAMPANIA	South	35,00	4	4	No	1	0,0	18,2
UNIME	South	37,61	4	4	No	3	42,9	18,2
ORIENTALE	South	44,10	4	5	No	4	0,0	50,0

Source: authors' elaboration.

Results

The first step to compare the GEPs of the selected universities, as previously mentioned, has been to look if they comply with the four mandatory elements concerning the process. In this regard, with the notable exception of the Istituto Universitario di Studi Superiori di Pavia which does not include arrangements for data collection, all selected universities include, as required by the European Commission, the four mandatory process-related elements. Subsequently, the analysis of the selected GEPs shows how the five content-related elements suggested by the European Commission can be found in almost all of them with two exceptions: both Università degli Studi della Campania and Università degli Studi di Messina lack the fourth thematic area concerning the integration of the gender dimension into research and teaching content. In these two cases, this key issue is not mentioned, and it hasn't even been replaced with a similar area of intervention.

Once the presence of the five content-related areas recommended by the EC has been assessed, we selected five specific and paradigmatic measures, covering the five suggested content-related areas, aimed at achieving gender equality and controlled for their presence within the GEPs considered in the analysis and/or in measures already and otherwise implemented by the universities. The measures considered, as previously described, are: i) the constitution of internal Kindergarten, or partnerships with external kindergarten, provided in the GEP or previously stipulated; ii) the provision of actions aimed at incrementing female participation in competitions' commissions; iii) the provision of funding aimed at promoting the inclusion of the gender perspective within the content of the research; iv) the provision of procedures for the management of mobbing and harassment; and v) the presence or absence of an office dedicated to the implementation and monitoring of the GEP.

The analysis of the GEPs, and other relevant institutions' documents, shows how the measures related to the activation of conventions with kindergarten and the presence of the provision of procedures for the management of mobbing and harassment are the most widespread among the Institutions considered, with only two exceptions: the Università degli Studi della Campania does not have a clear and settled procedure for the management of episodes of sexual harassment, while the Istituto Universitario di Studi Superiori does not have any active conventions with kindergartens. On the other hand, the measures related to the financing of gender-sensitive research and those related to the creation of an office dedicated to the implementation and monitoring of the GEPs' activities resulted to be less widespread. In particular, the former has been implemented by two out of twelve Institutions, while the latter by three out of twelve universities. Finally, the presence of the provision of positive actions incrementing female participation in competitions commissions has been found in seven out of twelve GEPs. Table 3 reports a summary of the presence or absence of the selected measures.

Table 3. Summary of the presence or absence of the selected measures within the GEPs considered in the analysis

Institution	dedicated office	Kindergarten partnership	Positive actions incrementing female participation in competitions commissions	Financing gender-sensitive research	Procedures for the management of mobbing and harassment
IMT	No	Yes	No	No	Yes
SNS	No	Yes	Yes	No	Yes
UNIPISA	Yes	Yes	No	No	Yes
UNIMC	No	Yes	No	Yes	Yes
IUSS	No	No	Yes	No	Yes
SISSA	No	Yes	Yes	No	Yes
UNIMI	Yes	Yes	Yes	No	Yes
UNIPAVIA	No	Yes	Yes	No	Yes
POLIBA	No	Yes	Yes	No	Yes
UNICAMPANIA	No	Yes	No	No	No
UNIME	Yes	Yes	No	No	Yes
ORIENTALE	No	Yes	Yes	Yes	Yes

Source: authors' elaboration.

To answer our research question, therefore, we calculated the correlation coefficient between the different relevant variables. Table 4 reports the Persons' correlation coefficients.

Table 4: Correlation matrix reporting correlation coefficients between the characteristics considered

	% Female research staff	Further areas	# Objectives	# Actions	Budget	5 measures' presence	% Women vice rectors	% Women CDA	Geo location
% Female research staff	1								
Further areas	-0.02	1							
# Objectives	0.46	0.17	1						
# Actions	-0.09	-0.07	0.40	1					
Budget	0.74	-0.02	0.59	0.19	1				
5 measures' presence	0.43	0.38	0.43	0.29	0.64	1			
% Women vice rectors	0.14	0.36	0.85	0.40	0.32	0.47	1		
% Women BoD	0.63	0.31	0.28	0.11	0.52	0.62	0.02	1	
Geo location	0.35	0.24	-0.41	-0.59	0.11	0	-0.44	0.05	1

Source: authors' elaboration.

The correlation shows how the percentage of female research staff is not significantly related to none of the characteristics considered. The analysis, in fact, highlights how the number of objectives and measures implemented, the presence of further areas covered by the GEPs as well as the presence of the specific measures selected are not significantly associated with a higher or lower presence of women among research staff.

Similarly, the geographical variable did not result to be associated with none of the characteristics above-mentioned. In other words, it is not possible to find a significant association between the universities' location (North, Centre, South) and the inclusion of the mandatory process-based or content-related elements.

Notwithstanding, a positive correlation has been found between the percentage of women vice-rectors and the number of objectives included in the GEPs, and between the share of women on the Board of Directors and the presence of the five measures selected.

Conclusions

Notwithstanding the efforts spent by the European Commission in the last decade to address gender inequality in research and academia, data show how such inequalities are still abundantly present. The decision to make the implementation of GEPs an eligibility criterion upon which the possibility to access EU research funds is subordinated can be read, therefore, as a further commitment to fight gender inequalities.

In making GEPs mandatory to access EU funds, the European Commission highlighted how these instruments must be understood as policies aimed at promoting "structural change" qualifying them as not merely short-term instruments to address current gender inequalities but as tools designed and developed to promote structural and cultural changes able to unfold their effects in the medium-long run. Precisely to promote this structural change, the European Commission identified some characteristics that GEPs must possess to meet the eligibility criterion and a set of suggested areas of intervention that GEPs should include to reach such an ambitious objective.

In particular, a GEP must include at least four mandatory process-based actions: being a formal and public document, signed by the top management of the institution, demonstrating a clear commitment to gender equality; having dedicated resources in terms of staff and funds for the design, implementation, and monitoring of the actions implemented; including arrangements for data collection and monitoring that assure the GEP to be grounded on evidence and founded on sex or gender-disaggregated data; and being supported by training and capacity building activities. And it should assess at least five recommended content-related areas: work-life balance and organizational culture; gender balance in leadership and decision-making; gender equality in recruitment and career progression; integration of the gender dimension into research and teaching content; and measures against gender-based violence including sexual harassment.

The ratification of the possession of a functioning GEP as an eligibility criterion to access EU research funding has boosted the implementation of GEPs within EU countries, and numerous GEPs have been developed and implemented in the last couple of years.

The present paper represents a first attempt to evaluate some GEPs adopted by Italian Universities by analyzing relevant characteristics and content of such GEPs from a purely descriptive perspective. In particular, in doing so, it assessed to what extent a higher share of women within the research workforce is associated with more comprehensive and elaborated GEPs while controlling for geographical differences and differences in the gender composition of the top management of the institutions considered.

The analysis has been performed on a sample of twelve GEPs selected on the basis of the share of female research staff present in the implementing universities. To control for the effect of the share of female research staff and geographical effects, two of the Universities with the lowest and two with the highest share of female research staff have been selected within the three macro-regions (north, center, and south) identified. The process led to the selection of the following Italian Universities: Scuola IMT Alti Studi, Scuola Normale Superiore, Università degli studi di Pisa, Università degli studi di Macerata, Istituto universitario di studi superiori di Pavia, Scuola internazionale superiore di studi avanzati, Università degli studi di Milano, Università degli studi di Pavia, Politecnico di Bari, Università degli studi della Campania, Napoli, Università degli studi di Messina, Università l'Orientale di Napoli.

The analysis has been performed mainly through a content analysis of the texts of the GEPs that led to the coding of a series of characteristics that have been then compared with the presence of female research staff, the geographical location, and the gender composition

of the highest decision-making bodies within the universities selected. In particular, we focused on the presence of the procedural mandatory characteristics set up by the European Commission, the presence of the five areas suggested by the Commission, the presence of further areas covered by the GEPs, the number of objectives and measures provided by the GEPs and the presence of five paradigmatic measures, within the five recommended areas, that have been identified through the literature and have been searched within the GEPs and/or within previously policies implemented by the universities.

The results of the analysis show how almost all the selected GEPs, with the exception of the one produced by Istituto Universitario di Studi Superiori di Pavia, present all the four mandatory procedural elements required by the European Commission to comply with the eligibility criteria to apply to EU research funds. In addition, it shows how also the five content-related elements suggested by the European Commission are present in almost all the GEPs analyzed, excluding the Università degli Studi della Campania and Università degli Studi di Messina which lack the thematic area concerning the integration of the gender dimension into research and teaching content.

Moving to the assessment of the paradigmatic measures selected, we found that the measures related to the activation of conventions with kindergarten and the presence of the provision of procedures for the management of mobbing and harassment are the most widespread among the Institutions considered, while the measures related to the financing of gender-sensitive research and those related with the creation of an office dedicated to the implementation and monitoring of the GEPs' activities resulted to be less widespread being found in two and three out of twelve GEPs respectively. The analysis shows how three out of twelve universities provided their GEPs with further areas with respect to the five recommended by the European Commission. Lastly, at the same time, the presence of the provision of positive actions incrementing female participation in competitions' commissions can be placed in the middle of the two extremes, being found in seven out of twelve GEPs.

When looking at the relation between the characteristics investigated and the percentage of female researcher staff, the share of women among the top management, and the geographical location of the universities selected, however, the analysis shows few significant results. In particular, the percentage of female research staff, as well as the geographical location, are not significantly related to none of the characteristics considered. On the other hand, a positive correlation has been found between the percentage of women vice-rectors and the number of objectives included in the GEPs, and between the share of women on the Board of Directors and the presence of the five measures selected.

Even if the results do not allow us to sum up definitive results, they seem to suggest that for the elaboration of completer and more exhaustive GEPs what matters is the presence of women in the key decision bodies of the institutions, much more than the share of the female research staff or their geographical location.

Further studies employing more sophisticated qualitative and quantitative research methods, therefore, are needed in order to understand what are the characteristics that help to better deal with gender inequalities within Research Performing Organizations. Furthermore, it will be important to assess, with future analysis, the outcomes provided by such GEPs. The approval of well-written and comprehensive GEPs, in fact, is certainly an important step but only the assessment of their implementation and impact on the structure and culture of the implementing institutions will allow us to understand their impact on the overall research sector.

Appendix

Table A1. Full list of the universities among which the selection has been done

Centre			North			South		
Institution	**F**	**M**	**Istitution**	**F**	**M**	**Istitution**	**F**	**M**
Firenze - Istituto Italiano di Scienze Umane	16.7	75.0	Pavia - Istituto universitario di studi superiori	22.1	72.4	Reggio Calabria - Università per Stranieri	21.7	72.8
Lucca - Scuola IMT Alti Studi	29.0	63.7	Bra (CN) - Università di Scienze Gastronomiche	26.0	67.4	L'Aquila - Gran Sasso Science Institute	24.9	68.8
Pisa - Scuola normale superiore	33.0	58.8	Trieste - Scuola internazionale superiore di studi avanzati	29.7	62.9	Casamassima - Libera Università Mediterranea "Jean Monnet"	30.6	61.8
Roma - Università Europea	34.3	57.2	Castellanza - Università “Carlo Cattaneo”	32.7	59.1	Bari - Politecnico	37.0	53.8
Roma - LUISS Guido Carli	35.2	56.1	Rozzano (MI) Humanitas University	34.8	56.5	Potenza - Università degli studi della Basilicata	37.5	53.2
Pisa - S. Anna	35.7	55.4	Milano - Università Vita-Salute San Raffaele	36.0	55.0	Napoli - Università degli studi della Campania “Luigi Vanvitelli”	37.5	53.1
Perugia - Università per stranieri	36.9	53.9	Arcavacata di Rende - Università della Calabria	37.1	53.6	Enna - Libera Università della Sicilia Centrale “KORE”	37.6	53.0
Roma – “Foro Italico”	37.6	53.0	Venezia - Università degli studi “Cà Foscari”	37.9	52.7	Sassari - Università degli studi	37.7	52.9
Cassino - Università degli Studi di Cassino e del Lazio Meridionale	37.7	52.9	Trento - Università degli studi	38.0	52.4	Campobasso - Università degli studi del Molise	37.8	52.8
Ancona - Università Politecnica delle Marche	37.9	52.6	Torino - Politecnico	38.1	52.4	Salerno - Università degli studi	38.2	52.3
Siena - Università degli studi	38.0	52.5	Varese - Università dell'Insubria	38.1	52.4	Lecce - Università del Salento	38.4	52.1
Roma - Università degli studi “La Sapienza”	38.4	51.9	Milano - Libera Università di Lingue e Comunicazione (IULM)	38.2	52.2	Bari - Università degli studi	38.5	51.9
Urbino - Università degli studi “Carlo Bo”	38.7	51.7	Verona - Università degli studi	38.3	52.1	Reggio Calabria - Università degli studi Mediterranea	38.6	51.7
Perugia - Università degli studi	38.7	51.6	Milano - Università commerciale “Luigi Bocconi”	38.4	52.0	Napoli - Università degli studi "Parthenope"	38.6	51.7
Roma - Università degli studi di “Tor Vergata”	39.1	51.2	Bolzano - Libera Università	38.4	52.0	Cagliari - Università degli studi	38.8	51.5
Firenze - Università degli studi	39.3	50.9	Bergamo - Università degli studi	38.6	51.8	Foggia - Università degli studi	38.9	51.4

Viterbo - Università della Tuscia	39.3	50.8	Modena e Reggio Emilia - Università degli studi	38.6	51.7	Chieti e Pescara - Università degli studi Gabriele D'Annunzio	38.9	51.4
Roma - Università "Campus Bio-Medico"	39.4	50.7	Ferrara - Università degli studi	38.7	51.6	Catania - Università degli studi	39.4	50.7
Roma - III Università degli studi	39.9	50.1	Parma - Università degli studi	39.0	51.2	L'Aquila - Università degli studi	39.5	50.6
Pisa - Università degli studi	40.1	49.9	Trieste - Università degli studi	39.0	51.2	Catanzaro - Università degli studi "Magna Grecia"	39.6	50.5
Camerino - Università degli studi	40.1	49.9	Milano - Università Cattolica del "Sacro Cuore"	39.2	51.0	Palermo - Università degli studi	39.6	50.5
Roma - Libera Università Maria SS. Assunta	41.2	48.5	Padova - Università degli studi	39.2	51.0	Napoli - Università degli studi "Federico II"	39.7	50.4
Siena - Università per stranieri	41.4	48.2	Genova - Università degli studi	39.4	50.8	Napoli - Università degli studi "Suor Orsola Benincasa"	39.8	50.2
Macerata - Università degli studi	41.9	47.7	Torino - Università degli studi	39.5	50.7	Teramo - Università degli studi	39.9	50.2
Roma - Università degli Studi Internazionali – UNINT	45.5	43.1	Bologna - Università degli studi	39.5	50.7	Napoli - Università degli studi "L'Orientale"	40.1	49.8
Roma - Saint Camillus International	57.8	13.3	Venezia - Università IUAV	39.6	50.4	Messina - Università degli studi	40.4	49.5
			Brescia - Università degli studi	39.7	50.4	Benevento - Università degli studi del Sannio	40.5	49.4
			Udine - Università degli studi	39.9	50.2	Napoli - Seconda Università degli studi	40.8	49.0
			Milano-Bicocca - Università degli studi	40.1	49.9			
			Vercelli - Università degli studi del Piemonte orientale "A. Avogadro"	40.1	49.8			
			Milano - Politecnico	40.2	49.8			
			Milano - Università degli studi	40.4	49.6			
			Pavia - Università degli studi	41.4	48.3			
			Aosta - Università degli studi	42.7	46.7			

Source: authors' elaboration.

References

Avveduto Sveva (ed.). (2019). Ricerca: Femminile, Plurale. Rome: CNR Edizioni. https://doi.org/10.14600/97888880803690.

Bendels M.H., Müller R., Brueggmann D. & Groneberg D.A. (2018). Gender disparities in high-quality research revealed by Nature Index journals. *PloS one*, 13(1), e0189136.

Benjes-Small C., Knievel J., Resor-Whicker J., Wisecup A., & Hunter J. (2021). #MeToo in the Academic Library: A Quantitative Measurement of the Prevalence of Sexual Harassment in Academic Libraries. *College & Research Libraries*, *82*(5), 623.

Biswas P.K., Roberts H. & Stainback K. (2021). Does women's board representation affect non-managerial gender inequality? Human Resource Management, 60(4), 659-680.

Carriero R. & Naldini M. (2022). Gender Disparity in Access to Academia in Italy. Are there barriers to women's early career stages? *Polis*, 36(1), 5-32.

Cellini M. (2022). Gender Gap in Political Science: An Analysis of the Scientific Publications and Career Paths of Italian Political Scientists. *PS: Political Science & Politics*, *55*(1), 142-148.

Cui R., Ding, H. & Zhu F. (2022). Gender inequality in research productivity during the COVID-19 pandemic. *Manufacturing & Service Operations Management*, 24(2), 707-726.

Danell R. & Hjerm M. (2013). Career prospects for female university researchers have not improved. *Scientometrics*, *94*(3), 999-1006.

Ding W.W., Murray F. & Stuart T.E. (2006). Gender differences in patenting in the academic life sciences. *science*, *313*(5787), 665-667.

Dion M.L., Sumner J.L., & Mitchell S. M. (2018). Gendered citation patterns across political science and social science methodology fields. *Political analysis*, *26*(3), 312-327.

European Commission (2012). Communication From the Commission to the European Parliament, The Council, The European Economic and Social Committee and the Committee of The Regions: A Reinforced European Research Area Partnership for Excellence and Growth. COM (2012) 392. Available at:_https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=celex%3A52012DC0392.

European Commission (2021b). Directorate-General for Research and Innovation, *Horizon Europe, gender equality: a strengthened commitment in Horizon Europe*, Publications Office. Available at: https://data.europa.eu/doi/10.2777/97891.

European Commission (2019). She Figures 2018-Statistics and Indicators on Gender Equality in Science. Luxembourg: Publications Office of the European Union.

European Commission (2021). Horizon Europe guidance on gender equality plans, Directorate-General for Research and Innovation. Available at: https://data.europa.eu/doi/10.2777/876509.

European Commission. 2021. She Figures, Gender in Research and Innovation Statistics and Indicators. Available at: https://op.europa.eu/en/web/eu-law-and-publications/publication-detail/-/publication/67d5a207-4da1-11ec-91ac-01aa75ed71a1.

Goastellec G. & Pekari N. (2013). 'Gender differences and inequalities in academia: Findings in Europe'. In Teichler U. & Höhle E.A. (Eds.) *The work situation of the academic*

profession in Europe: Findings of a survey in twelve countries (pp. 55-78). Dordrecht: Springer.

Górska A.M., Kulicka K., Staniszewska Z. & Dobija D. (2021). Deepening inequalities: What did COVID-19 reveal about the gendered nature of academic work? G*ender, Work & Organization*, 28(4), 1546-1561.

ISTAT (2020). Offerta di Asili Nido e Servizi Integrativi per la Prima Infanzia, Anno Educativo 2018/2019. Istituto Nazionale di Statistica. Available at: https://www.istat.it/it/files/2020/10/REPORT_ASILI-NIDO-2018-19.pdf.

Larrieta-Rubín de Celis I., Velasco-Balmaseda E., Fernández de Bobadilla S., Alonso-Almeida M.D.M. & Intxaurburu-Clemente G. (2015). Does having women managers lead to increased gender equality practices in corporate social responsibility? Business Ethics: A European Review, 24(1), 91-110.

Kim E., & Patterson S. (2022). The pandemic and gender inequality in academia. *PS: Political Science & Politics*, 55(1), 109-116.

Krilić S.C., Istenič M.Č. & Hočevar D.K. (2018). 5 Work-life balance among early career researchers in six European countries. Gender and Precarious Research Careers, 145, 145-177.

MacNell L., Driscoll A. & Hunt A.N. (2015). What's in a name: Exposing gender bias in student ratings of teaching. *Innovative Higher Education*, *40*(4), 291-303.

Mathews A.L. & Andersen K. (2001). A gender gap in publishing? Women's representation in edited political science books. *PS: Political Science & Politics*, 34(1), 143-147.

Meho L.I. (2021). The gender gap in highly prestigious international research awards, 2001–2020. *Quantitative Science Studies*, 2(3), 976-989.

MIUR (2021). Dati per bilancio di genere, serie personale docente. USTAT MIUR. Available at: dati.ustat.miur.it/dataset/dati-per-bilancio-di-genere.

Mueller C., Wright R. & Girod S. (2017). The publication gender gap in US academic surgery. *BMC surgery*, 17(1), 1-4.

Ooms W., Werker C. & Hopp C. (2019). Moving up the ladder: heterogeneity influencing academic careers through research orientation, gender, and mentors. *Studies in Higher Education*, *44*(7), 1268-1289.

Palmén, R., & Schmidt, E. K. (2019). Analysing facilitating and hindering factors for implementing gender equality interventions in R&I: Structures and processes. Evaluation and program planning, 77, 101726.

Timmers T.M., Willemsen T.M. & Tijdens K.G. (2010). Gender diversity policies in universities: a multi-perspective framework of policy measures. *Higher Education*, *59*(6), 719-735.

Van den Brink M., Brouns M. & Waslander S. (2006). Does excellence have a gender?: A national research study on recruitment and selection procedures for professional appointments in the Netherlands. *Employee Relations, 28*(6), 523-539.Return to ref 2006 in article

Wang Ming-Te and Degol Jessica L. (2017). "Gender Gap in Science, Technology, Engineering, and Mathematics (STEM): Current Knowledge, Implications for Practice,

Policy, and Future Directions". Educational Psychology Review 29 (1): 119-40. https://doi.org/10.1007/s10648-015-9355-x.

Wennerås C. & Wold A. (1997). Nepotism and sexism in peer-review. *nature*, *387*(6631), 341.

Winslow S. & Davis S.N. (2016). Gender inequality across the academic life course. *Sociology Compass*, 10(5), 404-416.