



**Proceedings of the 2nd International Conference
of the Journal Scuola Democratica**

REINVENTING EDUCATION

2-5 June 2021

VOLUME III

**Pandemic and Post-Pandemic
Space and Time**

ASSOCIAZIONE "PER SCUOLA DEMOCRATICA"

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**Pandemic and Post-
Pandemic Space and Time**

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***Title* Proceedings of the Second International Conference of the Journal “Scuola Democratica” – Reinventing Education VOLUME III Pandemic and Post-Pandemic Space and Time**

This volume contains papers presented in the 2nd International Conference of the Journal “Scuola Democratica” which took place online on 2-5 June 2021. The Conference was devoted to the needs and prospects of Reinventing Education.

The challenges posed by the contemporary world have long required a rethinking of educational concepts, policies and practices. The question about education ‘for what’ as well as ‘how’ and ‘for whom’ has become unavoidable and yet it largely remained elusive due to a tenacious attachment to the ideas and routines of the past which are now far off the radical transformations required of educational systems.

Scenarios, reflections and practices fostering the possibility of change towards the reinvention of the educational field as a driver of more general and global changes have been centerstage topics at the Conference. Multidisciplinary approach from experts from different disciplinary communities, including sociology, pedagogy, psychology, economics, architecture, political science has brought together researchers, decision makers and educators from all around the world to investigate constraints and opportunities for reinventing education.

The Conference has been an opportunity to present and discuss empirical and theoretical works from a variety of disciplines and fields covering education and thus promoting a trans- and interdisciplinary discussion on urgent topics; to foster debates among experts and professionals; to diffuse research findings all over international scientific networks and practitioners’ mainstreams; to launch further strategies and networking alliances on local, national and international scale; to provide a new space for debate and evidences to educational policies. In this framework, more than 800 participants, including academics, educators, university students, had the opportunity to engage in a productive and fruitful dialogue based on research, analyses and critics, most of which have been published in this volume in their full version.

Pandemic and Post-Pandemic Space and Time

A Premise

Papers in this third volume deals with the Covid-19 pandemic which is having an enormous impact on education systems worldwide. Policy makers, teachers, school managers, parents and students have been called to the reinvent their way of 'doing school'. At the same time, the governance of the education system and schools' organizations have been exposed to unprecedented tensions.

Within a short period of time, radical changes had to be introduced, simultaneously, at various levels of the school system. At national and regional level, there has been the need to rethink the way in which teachers are recruited, engaged and managed. National assessment and evaluation systems have been suspended or redefined in their uses by school actors. The ways through which institutes were managed and organized had to be rethought, passing in a very short time through an on and off of dematerialization and hyper-normativity of time and space. Within schools, managers and teachers have been called to redefine the role of digital technologies in their didactic, as well as in their relationships with families and students. In some cases, these set of changes led to experience novel and unexpected daily proximities, in other prevailed a context characterized by distance and unsatisfactory relationships. Managers and teachers have been asked to re-invent their professionalism to rethink their organizational, didactic and relational competences. Students and families, on their side, have been called to rebuild and reimagine new way of being at school, re-inventing the spaces and time of schooling and the way in which they relate among each other and with teachers.

The pandemic emergency has been a lens revealing intersections and structural tensions among various level and actors of the education system, but also allowing opportunities of changes thanks to the exogenous shock. At the same time, it must be considered that the emergency is interacting on pre-existing inequalities and contradictions. The pandemic clearly revealed the deep disparities of educational opportunities associated to students' life and housing conditions, beyond their access and uses of technological devices. Remote teaching and the enactment of an 'emergency didactic' has exacerbated learning difficulties for underprivileged students (children facing material deprivation, students with migratory background, students with special needs or disable, etc.). The interaction between the pandemic and pre-existing inequalities created different contextual conditions for actors' agency, orienting toward different directions the pandemic's transformational potential.

Higher education systems have been affected too: in constant evolution due to constant transformations of society and changed functions of knowledge, universities have undergone a structural

change along with pandemic times. Simultaneously, the growing relevance of knowledge for the economic development of the capitalistic system has profoundly affected higher education systems, characterized by the neo-liberal approach which has subject of increasing critical analysis.

However, Higher education systems are starting to be affected by other somewhat inevitable changing processes due to the evolution of knowledge and the consequent forms of its transmission. These forms have to be necessarily new both because of the availability of new instruments and the increased need to develop interpretative models of a constant and often unpredictable change. In this juncture the university might assume a renewed central role. At Higher Education System level, the growing use of digital instruments is envisaged in order to cope with the rising of the management rates of the training offer as well as to answer to the growing differentiation of user categories. A feasible consequence could be the increasing of the already pressure for the differentiation among the universities, with the related social implications.

At individual university level, it is foreseeable the demand for university involvement in tackling the problems of society and the economy will increase. And this at global, national and local level. From an organizational point of view the most significant feature is represented by the accumulation of traditional and new tasks that do not seem to be possible to manage. Whatever form the higher education systems will come to take, it remains that a central point to be clarified concerns the management of change. It will be the market that will impose its rules and the universities will organize themselves individually within the invisible enclosures that will guide their policies (with predictable growing social and territorial differences), or instead the State will choose incentive policies to direct its training system. It remains that in a condition of uncertainty and constant change the university's roles multiply and become – at least potentially – more and more central. It can therefore be argued that the university is not only called upon to respond to the demands of society but by elaborating answers and solutions to the problems it progressively affects the functioning of society.

We are fully aware that each educational experience produces specific results and definitions of teaching-learning practices. The well-established model of the magister teacher, based on a one-to-many transmission of knowledge, is complemented by new configurations of teaching-learning practices. There are teaching practices that cultivate the ambition to combine the technological innovation with the psychological and pedagogical issues. Educational technologies, such as the Interactive Whiteboard, incorporate a new grammar and pragmatic in which the emphasis is placed on the

involvement and the participation of the student, as well as on a “reverse teaching”, compared to the traditional one. The diffusion of online educational platforms, based on algorithmic architectures and data-driven approaches, also draws attention to a personalized way of learning and a datafication of teaching. Digital technologies are therefore stimulating a series of transformations in the socio-material order of the class affecting the spatial and temporal configuration of teaching. At the same time, they are embedded in the complexity of the educational contexts that rework their practical and symbolic value.

In the European framework of strengthening the relations between the labour market and education, we also witness the implementation of teaching practices associated with the idea of knowledge as an economic and social investment. Recently, a large field of critical investigation has highlighted how teaching aimed at improving the employment prospects of students is deeply affecting public values in education. At the same time, different points of view in the educational field claim to postpone the transmission of skills related to the labour market to broader educational objectives of social inclusion and civic participation.

The new proxemics imposed by the current pandemic challenge traditional spatial configuration, from the arrangement of desks to the mobile use of chairs, from the forms of communication in virtual environments to the interaction in the classroom. Therefore, this is to register the need to re-elaborate the ecology of the educational practices, starting from the socio-material space of learning.

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University Third Mission and the Local Environment

Public Engagement and Gender Differences in Italy: Exploring the Gap by Activity and Discipline

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ABSTRACT: *The extent of some changes that have occurred over the last years, as well as the social and political consequences of these changes, has led to the emergence of new needs related to expert knowledge, scientific culture, and public trust, calling for new attention regarding the implications of the ties between science and society. Scientists are called upon in first person to engage with society, interact and facilitate the relationship between the scientific world and the world of non-experts. This study focuses on the public engagement activities of Italian academics, specifically on the participation of women scientists in these activities since the relationship between gender and public engagement in the literature is unclear. What is the involvement of women in these activities? Is it different in terms of quantity and quality from that of men? In which disciplines the gender gap, if any, is stronger? How do attitudes towards the university's role in society impact on public engagement of men and women? Using survey data from a national sample of Italian academics from all disciplines (N=5.123), we find that men and women are equally engaged in community-based activities, but women are less engaged in communication activities through mass media. Moreover, the gender gap in the last group of activities is stronger in those disciplines where academics are more frequently engaged, Health Sciences among STEM disciplines and Social Sciences among SSH. These results suggest a different analytical approach for investigating gender differences in public engagement and indicate which disciplinary fields need more incisive policies for promoting women as experts.*

KEYWORDS: *Public engagement, Gender differences, Science in society.*

Introduction

The extent and the complexity of some changes that have occurred over the last years – the scientific and technological developments, the disintermediation of communication and information, the new opportunities for individuals to find every kind of information –, as well as the social and political consequences of these changes, has led to the emergence of new needs related to expert knowledge, scientific culture and public trust, calling for new attention regarding the implications of the ties between science and society (Nichols, 2017). The concern of the diffusion of scientific culture within society calls into question the role of

university and, in particular, the commitment of academics in science communication activities towards different audiences. Scientists are called upon in first person to engage with society, interact and facilitate the relationship between the scientific world and the world of non-experts. In this context, the importance of the university's third mission has developed as a critical dimension in university activities, and particularly the relevance of public engagement of academics. Indeed, among the third mission's dimensions (Schoen, Theves, 2006), public engagement has perhaps been the one to produce the most reflection, evolving over time and varying its definitions and activities included (Burchell, 2015).

This study focuses on the public engagement activities of Italian academics, specifically on the participation of women scientists in these activities, since the relationship between gender and public engagement in the literature is unclear. What is the involvement of women in these activities? Is it different in terms of quantity and quality from that of men? In which disciplines the gender gap, if any, is stronger? How do attitudes towards the university's role in society impact on public engagement of men and women? These issues are relevant for at least two reasons. Given the importance of engagement with society, participation in these activities could be, in the near future, evaluated as one of the criteria for academic career prospects, thus representing an issue that may reduce or intensify existing inequalities for women, still relevant as substantiated by European Commission (2019). Furthermore, greater involvement of women in public engagement activities could contribute to feminize the image of science and to bring different role models for girls and increase over time the likelihood of choosing a scientific course of study, decreasing gender segregation in these fields.

2. Gender and public engagement

Unlike other individual factors for which studies have established coherent results although the same methodological differences – such as professional role, age and discipline – gender role is unclear. As we have recently stated and showed (Anzivino, 2021) the reason for this ambiguity is mainly methodological and it is related to how many activities through the mass media are considered in conceptualization of public engagement and how the public engagement variable is computed.

Looking at some international studies about public engagement, we can recognize a trend: studies that include a large number of mass media activities – proportionally – out of the total of public engagement activities considered, show that men are more engaged than women. Those that include more community-based activities and few or no mass media activities show that women are more engaged than men or do not find statistical gender differences.

Jensen (2011) in an extensive survey on all disciplines using multivariate analysis, finds that French women scientists are more active in public engagement. The indicators of public engagement in this study are participation in conferences for a general audience, in exhibitions, in open doors, actions taken to help associations in understanding scientific aspects of their activity, actions taking place in schools, publications of books/CD-ROM for the general public, activities in the press, participation in radio/television/movies and popularization sites on the Web. A single dichotomous variable synthesizes these indicators: the academic has participated in at least one activity or not. By this procedure, mass media activities account for just over a fifth (22%; two media activities – press and radio/TV/movies are susceptible to be affected by the gender gap on the total of nine activities). Johnson et al. (2014), in their qualitative study, find that women scientists are more involved in public engagement than men, but the activities which are more frequently performed are those with children and school and public lessons, whereas media activities are less. Moreover, female scientists are more interested and motivated by the goal of increasing the participation of women in science, than those activities directed at students. Thune et al. (2016) use a dichotomous variable of public engagement (at least one of the dissemination activities performed) including just one media activity – publication of contributions in the popular press – and three other activities – participation of academics in debates, the participation in meetings/conferences with users/practitioners, participation in lectures/talks to users/practitioners – and men and women result as being equally engaged. Also, the Dudo (2012) study on biomedical researchers shows no differences between males and females in public engagement. The author compute public engagement as a single variable, where the community-based activities (nine activities) are more than twice the activities through mass media (four activities).

On the contrary, studies that indicate a greater engagement of men consider more activities carried out through mass media. Kreimer et al. (2011) consider 17 activities and over half are media communication activities (i.e. TV or radio host or panelist; radio, newspaper, television, magazine, websites inter-views; magazine, newspaper and websites articles), and the dependent variable of public engagement is a synthesis of all activities: participation in at least one activity or not in the last year. When Besley et al. (2012) use, in their analysis, two separate indicators – one for media communication activities (how often researchers talk with journalists about research results) and one for other communication activities (how often researchers talk with the general public about science or research results) – gender differences (male are more engaged) are shown for the media activities and not for others; when they use only one index for public engagement, where three media activities are contemplated out of four, males are more engaged than females, even though women consider engagement to be more important than males. Also, Crettaz von Roten (2011) shows that men are more engaged

than women, even though the attitudes towards public outreach and engagement activities are the same. She considers 17 activities, of which four are media activities, computing a synthetic measure of public engagement, adding scores on the 17 items. This kind of computing allows to take into account the number of activities performed and their frequency. Therefore, if women are less involved than men in media communication activities, they will result as being less engaged.

In this contribution, we resume some of the previous results and expand the investigation to the gender differences in each disciplinary field.

3. Data and methods

Data used in this article have been collected through a national survey on academics' third mission activities, carried out between the end of 2015 and the beginning of 2016. It has been possible to collect information from 5.123 respondents working at 62 universities, with a response rate of 34.2%, on 27 different third mission activities. The sample was randomly selected from the Ministry of Education lists, according to two stratification criteria: the field of teaching and the university's geographical location within a macro-region. The field of teaching included seven categories: Humanities and arts, engineering and architecture, social and behavioural sciences, business, economics and law, mathematics, physical and life sciences, agriculture and veterinary, and health. The university's geographical location included five categories, corresponding to the traditional division of the country in macro-regions: North-West, North-East, Centre, South and the Islands. The sample is representative of the entire population of Italian academics who work in a public university. In addition to being a probabilistic sample, the distribution of the two stratification variables – field of teaching and geographical area – and the distribution of the other relevant variables – gender and academic position – are the same in the final sample and population.

3.1. Variables

Public engagement activities: Among the 27 third mission activities investigated by the questionnaire through a Likert-type scale, we have selected five activities that are characterized by being addressed to a general and non-expert public. Three of these activities were addressed to the territory in which the university is located: collaboration in the realization of cultural or recreational or sporting events (exhibitions, museums, concerts, scientific dissemination festivals, etc.); participation in projects addressed to primary and/or secondary schools; participation in conferences, meetings, training activities addressed to the general public. The other two activities were explicitly addressed as scientific dissemination in the mass media: scientific dissemination through mass

media interventions (press, radio, TV, Internet, digital publishing, social media and blog); contributions to the public debate through mass media interventions (press, radio, TV, Internet, digital publishing, social media and blog). Participation in each of these activities referred to the 5 years prior to the interview and the frequency was observed on a four-category scale: never, rarely, quite often and very often.

Independent and control variables: Gender is our independent variable, and it was collected at the start of the questionnaire, with 4.2% of missing data, which we have excluded from the analysis, leaving 56.4% of men and 39.4% of women. As control variables in the multivariate analysis we have included age in years; academic position (full professor, associate professor and assistant professor); the field of teaching and the geographical area where the university is located (as considered during the sampling); university size, classified on the basis of the number of students (small, up to 10,000 students; medium, from 10,001 to 20,000 students; large, from 20,001 to 40,000 students and mega, more than 40,000 students); academic productivity, measured by the number of articles or chapters published in academic journals or books, the number of scientific books authored and the number of scientific books edited. Attitudes towards engagement are indicated by the degree of agreement or disagreement with the item: Universities should increase their social relevance. This indicator has been inserted in the model as dichotomous, considering together 'totally disagree' (.5%), 'disagree' (4.6%) and 'agree' (38.3%) and separately the answers 'totally agree' (56.5%); this kind of recoding was necessary due to the low discriminatory power of this indicator.

3.2. Techniques

To answer our research questions, we used bivariate analysis to investigate the extent of public engagement activities for men and women, and factor analysis to test the existence of different latent dimensions in the concept of public engagement as it results from respondents' activities¹. Finally, to test whether men and women differ in engagement with society in each dimension of public engagement, also considering the academic position, age, discipline and other factors indicated by literature as potentially relevant, we relied on regression techniques, namely linear regression. This technique allows us to use all the available information estimating the effect of gender, net of other variables. We also replicated the regression models within each disciplinary field, with the same control variables.

¹ Factor analysis can be found in Anzivino (2021). We mention it only to substantiate the computation of the two separate indexes used in the analysis.

4. Results

Results from bivariate analysis (Table 1) show no gender differences for two of the three activities addressed to the territory where the university is located, a small difference for activities directed at schools and significant differences for the two activities of dissemination through the mass media. For both men and women, the most frequent activity is the participation in conferences, meetings and training courses for the general public. There are no relevant differences in the intensity of engagement, except for a slightly higher propensity for women to participate in projects with primary or secondary schools (statistically significant). Relating to public engagement activities in the mass media, the differences between men and women are more substantial: the frequency of engagement is higher for men for both activities (+9% for scientific dissemination activities, and +11% for contribution in public debate).

On the basis of a previous factor analysis (see results in Anzivino, 2021), we calculated two indexes, adding the scores for each item and dividing the total by the number of items composing the indexes: one for the index of local engagement, one for the index of media engagement (both varying from 1 – not engaged – to 10 – maximally engaged). These two dimensions of public engagement are different on several levels. Local engagement refers to the communication activities that imply a direct interaction with the public within the local community. Media engagement refers to communication activities directed at a potentially larger and general public that implies an indirect relationship with them. Moreover, these two dimensions differ depending on the origin of the initiative for public engagement activities. For media engagement, the initiative is external, it comes from editorial staff, whereas for local engagement it is more likely to come from the academics or the department.

Moreover, we calculated, by the same procedure, a third dependent variable that considers all activities of public engagement together in a single index and we used it in another linear regression model.

TAB. 1. *Public engagement activities by gender (% of men and women involved at least 'rarely' in the last five years)*

	<i>Men</i>	<i>Women</i>
Carrying out of sport, leisure or cultural events	56.2	56.9
Projects with primary or secondary schools	56.7	60.7
Meetings, conferences or training activities	85.7	84.8
Scientific dissemination through the mass media	58.9	49.5
Contribution to public debates through the mass media	48.3	36.9

We used them as dependent variables in two linear regression models and we calculated, by the same procedure, a third dependent variable

that considers all activities of public engagement together in a single index and we used it in another linear regression model.

TAB. 2. *Linear regression model on local engagement (N = 4308); linear regression model on media engagement (N = 4303); linear regression model on public engagement (N = 4297).*

	<i>Local engagement</i>	<i>Mass media engagement</i>	<i>Public engagement</i>
	Coeff. B	Coeff. B	Coeff. B.
Intercept	3.829***	1.319***	2.825***
<i>Gender</i>			
Male	-.116	.301***	.053
Female (Ref.)	0	0	0
Age (years)	-.004	.014**	.003
<i>Academic position</i>			
Full professor	.476***	.680***	.557***
Associate professor	.276**	.243**	.264***
Assistant professor (Ref.)	0	0	0
<i>Discipline</i>			
Humanities and arts	.964***	.051	.598***
Social and behavioural sciences	1.174***	.797***	1.020***
Business, economics and law	.008	-.160	-.056
Mathematics, physical and life sciences	.128	-.707***	-.206*
Architecture and engineering	-.039	-.412**	-.143
Agriculture and veterinary	.145	.030	.102
Health (Ref.)	0	0	0
<i>Academic productivity</i>			
N. Books published in 5 years	.094***	.124***	.106***
N. Edited/Co-edited books published in 5 years	.121***	.135***	.126***
N. Articles published in 5 years	.006***	.006***	.006***
<i>University location</i>			
Northwest	-.426**	.016	-.245*
Northeast	-.307*	.046	-.161
Centre	-.641***	-.058	-.403***
South	-.254*	.116	-.103
Islands (Ref.)	0	0	0
<i>University size</i>			
Small	.950***	.571***	.790***
Medium	.379***	.266**	.332***
Large	.073	.190*	.122
Mega (Ref.)	0	0	0
<i>Attitudes</i>			
Totally agree with the need for an increasing social relevance of university	.674***	.391***	.564***
Not totally agree with the need for an increasing social relevance of university (Ref.)	0	0	0
<i>Adjusted R-squared</i>	0.116	0.157	0.153

* $p < .05$; ** $p < .01$; *** $p < .001$.

Results from the first model (local engagement as dependent variable) confirm the absence of substantial differences between men and women that we have observed in the bivariate analysis. Even considering the

control variables, individual and academic factors – such as age, position, the discipline of teaching and academic productivity – and the institutional variables – size and macro-region in which the university is located – women and men are equal for the intensity of public engagement within the territory. On the contrary, results from the second model (media engagement as dependent variable) show that the gender effect on public engagement through mass media is significant and relevant also controlling for the other variables: age, position, discipline, productivity, size and location of the university being equal, men have on average a higher score of 0.298 points of media engagement.

It must be highlighted that the differences between the two types of engagement involve other aspects. Those that are interesting for our aims are related to the mass media logic and the journalists' selection criteria of academics to involve in debates, speeches or interviews. Indeed, the factors relating to the Matthew effect and the scientist's visibility – age, position and scientific productivity – matter more (in terms of significance and coefficient magnitude) for media engagement than for local engagement, for which, on the contrary, contextual factors count more. Particularly interesting also seems to be the fact that the publishing products circulating almost entirely within the scientific community (such as scientific articles) count equally for both local and media engagement but publishing activity accessible also to the general public (books), matters more for the media engagement. Looking at the model with public engagement as the dependent variable, the absence of gender differences confirms that the conceptualization of public engagement as a whole, regardless of its different components, could mask the gender effect. We run the same model for local and media engagement within each of the seven disciplinary area (Table 3). Results show that the engagement on the territory is the same for men and women in all disciplines, but women are significantly less engaged in activities through mass media in four disciplinary fields, particularly in Social and Health sciences. Social and behavioural sciences is the most engaged field, and the Health sciences is the most engaged among STEM disciplines.

TAB. 3. *Linear regression coefficients of gender (Ref.=women), for Local engagement and Mass media engagement models in seven disciplinary fields².*

	<i>Local engagement</i>	<i>Mass media engagement</i>
Social sciences	-0,079	0,733**
Humanities and arts	-0,021	0,223
Economics and law	-0,183	0,364*
Health sciences	0,158	0,619***
Agriculture and Veterinary	-0,158	0,702*
Engineering and architecture	-0,254	0,169
Mathematics, physical and life sciences	-0,174	0,099

* $p < .05$; ** $p < .01$; *** $p < .001$.

² All models are controlled for academic position, age, academic productivity, university location, university size, attitudes towards the role of university in society.

Conclusions

This article aimed to show that the ambiguity in the literature concerning gender differences in public engagement could be ascribed to the one-dimensional conceptualization of public engagement that does not take into account the diverse character of activities. The analysis showed that synthesizing public engagement activities in a single variable, gender does not differentiate the engagement. Analysing the relationship with the two dimensions of public engagement separately, other factors being equal, women do the same local engagement activities but fewer media engagement activities than men, particularly in some disciplinary fields.

Considering that, other factors being equal, the inequalities of participation was solely on the mass media activities dimension of public engagement, also in the analysis within the disciplinary fields, we believe the explanation would be inherent in the specific logic of mass media, which can cross paths with some endogenous aspects related to the unequal distribution of resources in academia that could make an academic more visible.

From other surveys (Bucchi, Saracino, 2012; Peters *et al.*, 2008), we know that the frequency of contact with the media is associated with the scientist's position and with academic productivity – two factors on which women are strongly disadvantaged (Dubois-Shaik, Fusulier, 2015; Van Der Besselaar, Sandstrom, 2016) – and that contacts with media are more frequent for men, independently of position, age and faculty (Crettaz von Roten, 2011). Certainly, visibility is only one of the criteria for the selection of scientists by journalists, as is necessarily the topic of research and communication. The more the topic directly affects humans and their life and health, the more interesting is for the media (Summ, Volpers, 2016).

Gender seems to be an element crossing different dimensions of the media logic – that favours high visibility, scientific reputation, some disciplines, as the media engagement model seems to indicate. However, since our results show an autonomous impact of gender on media engagement, we can assume there is also an acceptance of a conventional idea of science in mass media logic that leads to the adoption of stereotyped communication models, whereby the image of a scientist is one of being older, with a high position, elevated scientific reputation and male. The literature on gender differences in mass media seems to support this hypothesis, showing how some journalistic routines favour the selection of men rather than women as experts and guests for reasons related to time and priority constraints, to communication style and personal characteristics (Howell, Singer, 2017; Niemi, Pitkäinen, 2017). Moreover, some media practices, such as the emphasis on private life (Mitchell, McKinnon, 2019), as well as the physical and aesthetical aspects (Kitzinger *et al.*, 2008) of women when they are involved as experts, could be at the basis of their reluctance to

appear in mass media due to the fear of being judged for work-unrelated reasons (Howell, Singer, 2017).

The exclusion of women from scientific media communication has several consequences. On one hand, on their academic career; and on the other hand, on the participation of young women in scientific educational courses and on their professional options. On the first point, having fewer opportunities in media engagement when public engagement is becoming strongly advocated at different levels (national and European) and, for this reason, having the potential in the near future to be among the evaluation criteria for the academic career, means for women to be disadvantaged in career paths where they have already been disadvantaged. On the second point, a larger presence of women who speak about scientific research in the mass media could contribute to making the image of science more feminine and to making it closer to young women, expanding their educational and professional perspectives towards scientific and technological fields, which at present are still affected by segregation and considered by many as male fields.

The role of university could be important in promoting public engagement of their academics. Each university has been compelled to reflect on the third mission (of which public engagement is a part) and to provide incentives to academics for participating in activities that are becoming part of the academic profession, in addition to the traditional academic activities, teaching and research. Considering this, universities should promote women's media engagement, in particular. Rather than general incentives, universities should focus on actions to encourage the participation of women in programmes or interviews in the press, television and radio, supporting them in specific training to build up their necessary skills to face the media logic and addressing their press officers to promote women as experts, particularly in those fields which are still perceived as male domains.

Indeed, the analysis by discipline shows that some fields need more incisive policies for promoting women as experts. Social sciences and health sciences, in particular, seem to be affected by a more relevant gender asymmetry in mass media engagement.

They are the two disciplinary fields more active on mass media engagement and where women are more represented (at least in the lowest level), so inequalities in these fields are more significant for women and serious in terms of the logic of representation of science.

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