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Gender perspectives on research impact: Insights from a survey of early career researchers

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Abstract

The increasing emphasis on research impact in academia necessitates a deeper understanding of how early career researchers (ECRs) perceive and engage with this concept, especially through the lens of gender. This study aims to explore the gendered dimensions of research impact among ECRs in the social sciences. We conducted a comprehensive survey across over thirty countries in Europe, as well as South Africa. The methodology involved thematic analysis of survey responses, focusing on differences in attitudes towards impact, the challenges faced, and the role of gender in shaping these perceptions. Our findings reveal that while there are no significant gender differences in the conceptualization of research impact, female ECRs experience greater vulnerability due to systemic inequities in academia. These disparities affect their career trajectories and ability to generate impact. This study highlights the need for tailored support structures to address these gender-specific challenges and calls for further empirical research to validate and expand upon these initial findings.

Keywords: impact, gender differences, motivation, ECRs.

1 Introduction

Scholarly research is generally considered to create impact when its outputs affect, change, or benefit the economy and society beyond academia (REF, 2014, p. 6). The growing emphasis on impact as a key objective in science policy stems from the desire to see research institutions provide tangible benefits in response to significant past increases in science funding (Mühonen et al., 2020, p. 34). However, impact is not easy to create and to communicate to the larger public. A number of activities, such as scientific communication (e.g. writing book chapters), contributions to the public debate, policy advice (e.g. producing policy documents), participative research, or consultancy, what Spaapen and Van Drooge (2011) call "productive interactions", are required to achieve it.

As with all dimensions of research culture, there are many differences in how researchers and other stakeholders think about impact. The discipline of the research, the career stage of the researcher, and geographical location, for example, are likely to have

a strong effect on what counts as impact and how it is created and measured. Generating impact has a geopolitical dimension as well. As de Jong and Mühonen (2020) examined, in Low Performing Countries (LPC) in the European Union (which are mostly former socialist countries), when it comes to impact generation, there is a lower impact capacity compared to High Performing Countries (HPC) (which are mostly the Western European countries), which suggests that researchers from HPCs are better equipped to score well on the impact criterion when applying for international funding than researchers from LPCs.

LPC include CEE (Central and Eastern European) countries: Bulgaria, Czech Republic, Estonia, Hungary, Lithuania, Latvia, Poland, Romania, Slovenia, Slovakia. LPC typically involve fewer types of stakeholders, resulting in lower societal impact capacity. They notably engage citizens, the private sector, and the cultural sector less frequently compared to HPC. This is surprising considering these groups are key audiences for Social Sciences and Humanities (SSH) research dissemination. In contrast, HPC cases employ a broader range of interaction channels tailored to specific audiences. They use methods like popularizing books for the public and offering training courses and synthesis notes for governments and politicians (ibid). The most significant differences between LPCs and HPCs include stakeholders' negative attitudes towards SSH research in LPCs and the influence of policies and funding requirements on academics' motivation in HPCs to achieve impact. However, both LPCs and HPCs face challenges in obtaining practical support for societal impact, though support structures appear to be improving in HPCs. Constraints such as insufficient funding and time are prevalent but not considered major issues in either group of countries (de Jong & Mühonnen, 2020).

There is increasing pressure from research funders to ensure the research they fund has societal impact. As a result, impact and income have become the most highly valued commodities in the academic arena, perhaps to the detriment of the intrinsic value of one's scientific work (Grove, 2017). In other words, the scientific value of research is no longer the top priority – it is rather the value it creates for a society which funders can point to in order to justify their funding expenditures (Fecher et al., 2021; Luo et al., 2021). Such demands put significant pressure on researchers regarding the topics they pursue and how, since acquiring grant funding is often necessary for establishing and maintaining an academic career (Herschberg et al., 2018).

According to Smith et al. (2020), as funders and higher education institutions continue to debate, measure, and promote various forms of research impact outside of the academy, there is a great need for empirical research on the topic, with a particular eye to understanding how researchers understand and engage the impact discourse and how those differences may vary by discipline, gender, or career stage. To learn more, we carried out an international survey of Early Career Researchers (ECRs) who were currently doing or had completed their PhD in Social Sciences and the Humanities (SSH) in the previous eight years. This group represents the first generation of SSH scholars to be exposed to the impact-related provisions that have increasingly been made by funders or policymakers during the last decade (Mühonen et al., 2018; de Jong & Mühonen, 2018).

In coding our data and conducting our analysis we considered not only ECRs' conceptualization of impact (that is, what ECRs think impact is), but also their attitude or orientation to that impact. In this paper we draw on these data to address three questions:

– How do ECR researchers conceptualize research impact in their work?
– What is their attitude towards research impact?
– How does gender factor into differences in orientation to research impact (conceptualization and attitudes) among ECRs?

We begin by reviewing the literature on research impact and different pathways and approaches to implementing it. We then describe our survey in greater detail, followed by the findings section, where we address the research questions above. We conclude by discussing how our work can contribute to further understanding of research impact and the need for more research on gender and other demographic differences in orientation to research impact.

2 Understanding research impact

Impact is not just an endpoint or target; it is a series of processes that can be conceptualized and implemented in a number of ways (Finne et al., 2011; Morton, 2015; Spaapen & Van Drooge, 2011; Wilson et al., 2010). It does not emerge unexpectedly but is rather a consequence of various activities undertaken to achieve it, such as policy recommendations, knowledge exchange, contributions to public debates, participative research, etc. More precisely, impact implies a wide variety of spheres of society (Bayley et al., 2018). This suite of activities is also referred to as pathways (Research Councils UK, 2014). A recent analysis of 6679 impact case studies showed that 3709 unique pathways could be identified (King's College London and Digital Science, 2015).

Despite the recognition of a variety of pathways, what still remains unexplained are the processes that precede them. Two models of these processes have been described; these tend to be presented as linear and non-linear pathways to impact (Grønvad et al., 2017). According to the linear model, there is a direct pathway between research and impact. It was predominantly used in the 20th century (Lawrence, 2006) and dominated national and European research and innovation policies. This approach to impact argues that researchers disseminate their research to societal stakeholders who are then in charge of identifying the impact of that research (Phipps et al., 2016). In other words, research is passed on to society only upon its completion. Furthermore, it was believed that the knowledge transfer process could be measured and quantified, as in the Technology Readiness Levels (TRL) systems, which are used to assess the maturity of a particular technology. With this approach, there is a dividing line between academics on the one side and societal stakeholders on the other (Caplan, 1977; Cousins & Simon, 1996).

Although linear models found their application in Science, Technology, Engineering and Mathematics (STEM) fields, they were hardly applicable in the SSH. During the 1990s, scholars acknowledged that knowledge does not flow in such linear ways (Morton, 2015) but rather that knowledge transfer consists of more complex and iterative processes. In an early non-linear model of impact, Meagher and colleagues (2008) described the many forms that research takes, as well as various ways that research can influence society from direct instrumental impact to indirect conceptual impact. These authors also state that knowledge does not always flow in the same direction, i.e. that it is not always passed by the researchers to society, but that the opposite case is also possible – nonexperts can also

transfer some knowledge to science and scientists. One such model, the Quadruple Helix model, is commonly used in the EU. It postulates that four sectors – civil society, industry, government, and academia – according to their institutional functions, contribute to creating impact (Cavallini et al., 2016).

Sometimes, discussions of creating impact take on a rather self-justifying tone (Vanholsbeeck & Lendák-Kabók, 2020), in the sense that researchers need to provide society with reasonable grounds for conducting research, i.e. to account for its purpose. In this debate, the responsibility of the researcher to account for the research's impact becomes the most prominent notion, such that all research needs to be evaluated in terms of its contribution to society (Shore, 2008). In this view, the relationship between researchers and societal stakeholders is of great importance – the closer they are, the higher the impact is assumed to be. In other words, the more involved societal actors are, the more likely it is that the research will meet their needs, be picked up, and have an impact. Thus, the driving forces of research are sustainable and efficient forms of partnership with societal actors.

As research impact has become a more important part of accounting for research, measuring it has become more important as well. However, many such attempts to create metrics for measuring impact have consequences that redound negatively to women, ethnic and racialized minorities and has geopolitical implications (Lendák-Kabók, 2017; Lendák-Kabók et al., 2024), for a myriad of institutional and systemic reasons that are often tied to fewer citations, slower career progression, and assumptions about a career model that continues to favor men (Lendák-Kabók, 2022; Lendák-Kabók et al., 2024; Smith et al., 2020; Beaudry et al., 2023). According to Davies and Thomas (2002, p. 184), in the search of new performance indicators, New Public Management produced novel forms of managerial masculinity, based on "self-sacrifice, competitiveness, aggressiveness and long hours".

As Zhang et al. (2021) note, although there is a long history of research into gender and research performance, there have been fewer studies that look closely at gender differences in what kind of research is performed and why. This gap in the research matters for science policy and practice. To give a concrete example, Davies et al. (2020) note that women management scholars are under-represented in leading impact cases of UK research in 2014. More precisely, only 25 per cent of business and management studies were led by women, whereas 54 per cent of them were solo-authored. Similarly, the same authors (Davies et al., 2017) found that only 31 per cent of the cases in the same corpus included at least one woman in the research team. Another project led by Chubb and Derrick (2020) was one of the first to uncover implicit gendered associations around impact generation. Such studies are part of a larger body of work on publication rates, promotions, funding, and other dimensions of research culture and point to stark disparities in the recognition of women and their achievements in research. As Chubb and Derrick (2020, p. 2) bluntly put it, "[M]odern science was born as an exclusively masculine activity".

The REF (Research Excellence Framework) and SIAMPI (Social Impact Assessment Methods for research and funding instruments through the study of Productive Interactions) are among the most prominent frameworks for assessing and measuring research impact. The Research Excellence Framework (REF) evaluates the impact of research conducted by British Higher Education Institutions (HEIs). The REF aims to: allocate block-

grant research funding to HEIs based on research quality, ensure accountability for public investment in research and demonstrate its benefits, and provide insights into the overall research health of HEIs in the UK. Besides the REF, SIAMPI, a project introduced in the Netherlands, created an innovative approach on how to shed light onto the mechanisms by which social impact occurs and to develop methods to assess social impact (SIAMPI, 2011).

Critics argue that the REF overly emphasizes research impact beyond the university system, questioning its relevance to research quality. Some suggest the REF may incentivize mediocre published research while discouraging potentially valuable long-term research.

Given the recent focus of research institutions on impact and its measurement, there has been surprisingly little discussion of how ECRs are receiving training in creating and measuring impact. For instance, Wróblewska et al. (2024) provide an initial examination of the challenges early-career researchers (ECRs) encounter as they balance their personal aspirations for achieving impact beyond academia with conflicting signals about the importance of these activities in a successful academic career. This study explores the challenges faced by ECRs regarding the concept of impact beyond academia in their careers. Thematic analysis revealed a variety of conflicting themes as ECRs navigate their inherent commitment to societal impact against a research culture that predominantly rewards narrow, traditional forms of excellence necessary for achieving research independence (ibid.). These tensions were similarly reflected in discourse analysis, where both negative and positive evaluations were intertwined. It seems clear that the career stage of researchers also potentially affects their attitudes towards creating impact and their ability and pathways to achieving it. As Laudel and Glaser (2008) note, the journey of turning an apprentice into a colleague is often long and full of obstacles. This journey is one from dependence to independence, having as the ultimate goal becoming a completely independent researcher (Jazvac-Martek et al., 2011) but the daily reality of higher education for many ECRs is the need to pursue activities that result in a stable career path (Herschberg et al., 2018).

One of the obstacles that ECRs encounter along their path is temporary employment; the challenges of short-term contracts, which are especially pronounced for early career researchers, may lead to insecurity about career prospects and job satisfaction (Waaijer et al., 2016). ECRs may find it difficult to think about the impact of their work on their local society or region if they are not able to be resident long enough to understand deeply the local context.

There are many other challenges for ECRs with respect to creating (or demonstrating) impact. One is the inability to expand one's research ideas due to being contracted to particular projects; thus ECRs may lack spare capacity to develop in other directions (or, perhaps, think more about the medium and long-term impact of their work). The lack of mentors as vital figures to provide support is another problem mentioned by ECRs (Capewell et al., 2016).

Following the calls of Smith et al. (2020), Chubb and Derrick (2020), and others for more critical engagement with and understanding of research impact with more empirical data on disciplinary, gender, and career stage differences, as well as more nuanced analysis of attitudes and challenges, this paper reports on a survey of social science ECRs to

learn more about how they perceive impact, their attitudes towards impact, and how gender might figure into those attitudes. Our article aims to build on what Wróblewska et al. (2024) provided in their study, additionally focusing on ECRs' narratives from a gender perspective.

3 Methodology

Within a COST project (European Cooperation in Science and Technology)[1] ENRESSH (European Network for Research Evaluation in the Social Sciences and the Humanities) Action, the Careers and Research Evaluation Systems for Societal Impact (CARES) questionnaire was developed (https://enressh.eu/cares/). It was disseminated between December 2018 and January 2019 in European universities and research centres using snowball sampling. One hundred and eleven questionnaires (in English) were filled in by ECRs active in 31 European countries and South Africa.[2] The respondents had completed their PhD up to eight years before they took the survey or were still working on their degree.

The CARES questionnaire consisted of 14 open-ended and 14 closed-ended questions. The goal was to investigate ECRs' orientation, experiences, and attitudes towards the principles of defining and delivering research impact. As a result, the CARES questionnaire did not include any ex-ante definition of impact, so there was no bias concerning the introduction of a pre-determined description in the answers provided by the respondents. The introduction made it clear though that the focus of the survey was on the impact of research on society, and not on its scientific or technological effects.

A primary analysis of the qualitative data was conducted in relation to our first and second research questions about ECR researchers' conceptualization of research impact and their attitude towards it. Initial coding (Saldana, 2013) was applied, which involved developing a list of codes after the first cycle of analysis of the open-ended questions. The different codes were then sorted and examined for overarching theme(s) (Braun & Clarke, 2006, p. 89), and then refined – first by reviewing at the level of the coded data extracts and second in relation to the entire data set (Braun & Clarke, 2006, p. 91). The following five themes emerged in relation to the conceptualization of and attitudes towards impact: (1) accountability, (2) social engagement (3) motivation, (4) burden and (5) other issues.

The survey also asked questions to understand the pool of respondents: gender, discipline, field of study, country, and institutional context. Statistical analysis was conducted to record the frequency of occurrence of specific themes and thus verify their persistency. Analysis of the data found that gender had a partially significant role in the nature of the responses, hence our focus in exploring the data further (and reporting findings by gender). Finally, it is important to mention that the sampling was in no way aleatory, and the researchers did not use any inferential statistics, only descriptive ones.

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[1] The European Cooperation in Science and Technology (COST) is a long-running instrument for bottom-up research networking across the European Union and associated countries. COST Actions run for four years and bring together researchers around pre-defined topics.

[2] South Africa is a COST associated country; thus it was included in our research.

4 Findings

A total of 110[3] questionnaires were filled in, out of which there were 39 (35 per cent of respondents) male and 71 (65 per cent of respondents) female respondents. The summarized results are presented in Figure 1 below. After analysing the answers given with respect to the respondents' attitudes towards the societal impact of research and themes drawn from the existing literature on research impact, the following codes were developed: accountability, social engagement, motivation, burden, and other problems. We structure our findings accordingly.

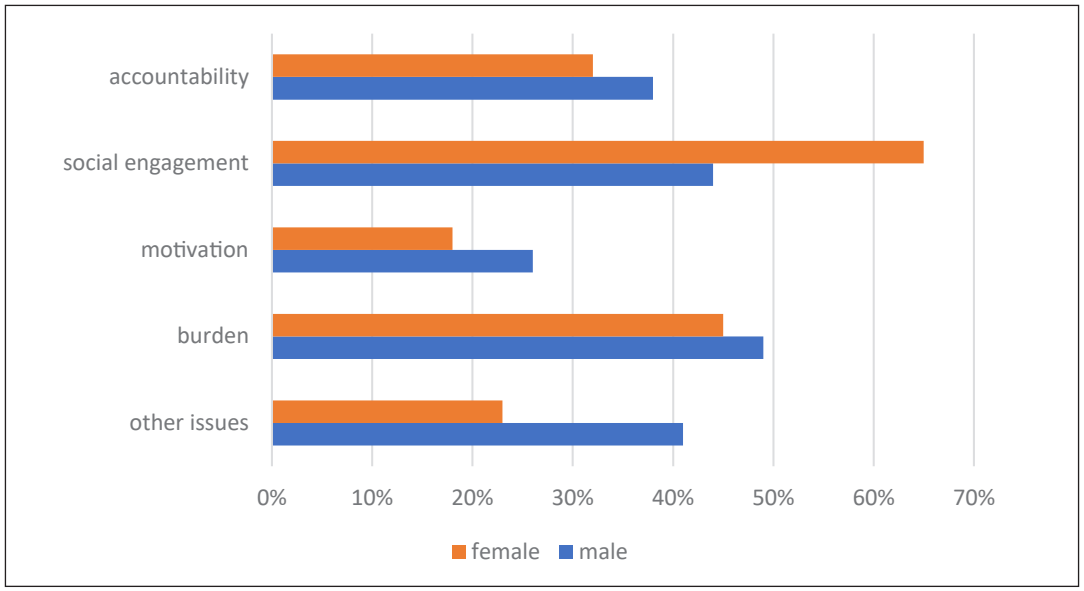

Figure 1 Coding of respondents' attitudes to societal impact by gender (%)

4.1 Accountability

Impact cannot be discussed without referring to public accountability, or the need to justify research funding that is dependent upon the expenditures of public funds. In this case, accountability "refers to various legitimization attempts to defend academic endeavours by revealing greater interaction between researchers and social agents" (Lauren, 2022, p. 217). In other words, accountability is the researcher's need and desire to justify public expenditures on their work in some way to the public that funds them. Due to pressures on universities and researchers to be accountable, various evaluation practices have been implemented to assess research and value scientific performance (Galleron et al., 2017; Bayley & Phipps, 2023).

[3] Initially, there were 111 questionnaires filled in, however one of the respondents did not specify their gender, so those answers were not included in the analysis.

Just over one-third (38 per cent, n=15) of male respondents reported that creating impact is their duty and responsibility as researchers. The most commonly occurring argument is accountability towards the larger society, i.e. the public funding received should be used to make society benefit from their research. As one respondent wrote:

> *The impact of research in society is vital for two main reasons; 1. Efficient use of financial resources to conduct research and 2. Research outcomes are valuable and practical for the improvement of people's lives. (Male, Business Administration, Cyprus)*

Almost one third of female respondents (32 per cent, n=23) responded that they felt it was acceptable to be held accountable for creating impact, as part of their duty and responsibility. Similarly to the male respondents, they were of the opinion that they should give back to the community that is funding the research, as well as to the research subjects who provided the data. A quote from one female respondent illustrates this point:

> *A lot of SSH research deals directly with research subjects and creates opportunities for impact (or should I say achieving social change) that would be immoral to miss. In SSH research there are also plenty of chances to exploit research subjects for data and impact can be a way of giving back and achieving balance. (Female, Social Studies of Science and Technology, UK)*

4.2 Social Engagement

A significant portion (65 percent, n=46) of female respondents argued that creating impact holds great importance, emphasizing that researchers should address issues relevant to society. This quote illustrates this claim:

> *We are supposed to create value for the development of a better society. Therefore, society should be interested and take advantage of our discoveries. Otherwise, it would have no sense [sic] to be creating non-valuable knowledge. (Female, Management, Basque Country)*

Almost half (44 per cent, n=17) of the male respondents mentioned social engagement, i.e. the argument that research is important as a vehicle for social change and a tool for social development. They perceived their research as a sort of power aimed at improving the world they live in. Therefore, these respondents believe that conducting research without impact would not be worthwhile, even adding in some cases that it is not science if it does not have impact. One respondent writes:

> *Research (as education) is a tool for development, and expenses in research (as expenses in education), are social investments. Research has the power to improve the society in which we live and our understanding of reality from different perspectives. (Male, Business Economics, Spain)*

4.3 Motivation and Burden

About one quarter (26 per cent, n=29) of all respondents stated that they feel intrinsically motivated to conduct research with impact, whereas almost half (49 per cent, n=54) said it is a burden for them. Accounting for impact takes extra time and effort that is not accounted for in their workload but requires additional, usually personal, time. Some male

respondents explained that given how challenging it is to quantify impact in a CV, they should have considered impact as an important part of their research production earlier on. Among additional problems, male researchers mentioned tensions such as balancing research output between quality and quantity and the pressure to be a "public academic". The following quote illustrates the perceived difficulty of maintaining a commitment to generating societal impact at the same time as balancing other responsibilities as an ECR;

> *[It] creates various tensions with teaching. Doing research and creating societal impacts is a very time-consuming task. It is impossible to conduct world-class research, create societal impact and teach in a very innovative way. There is just not enough time for this. (Male, Philosophy, Poland)*

Respondents acknowledged many of the known difficulties of measuring societal impact outcomes, and thus the negative effects of dedicating too much time to generating, when time could be better spent achieving more traditional, and measurable markers of academic esteem to bolster future career opportunities: *"I believe nevertheless that for some research the immediate benefit for society may not be directly visible and the impact may be long-term or even non-existent". (Male, Czech Republic, Contemporary History)*

18 per cent of all female respondents indicated that they were more motivated than men to create impact (n=13), compared to 26 per cent of men (n = 10), who stated that they are motivated to created impact which shows that men are slightly more strategic in this matter – as their motivation is connected to their career achivements. In the open-ended survey questions, some women explained how creating impact takes more involvement but is not part of their job descriptions. Within "Other issues" female researchers addressed included finding a balance between career achievements and impactful research, as well as the concern that impact is often not immediately evident. Women also spoke of the difficulty of addressing people who would recognise impact (i.e., a lay audience), lack of funding and energy, and difficulties identifying pathways towards impact generation, whereas men did not report these issues. Some women also brought up the problem of the lack of valorisation, wherein generating impact is not sufficiently valued, thus disincentivizing any increased time and attention on generating non-traditional research outputs such as impact. Nevertheless, they did express the desire to have their research be useful. One of the female researchers' testimonies follows:

> *It is a robust motivating factor for me, to feel that my research is "useful" and can help people or places. Especially, because I focus on poorer peripheral regions, and am very driven by the real need to understand more about the plight of these places and how we can design better policies and approaches for them. (Female, Economic Geography, Sweden)*

A specific orientation or focus on creating impact, female respondents reported, takes time and energy which should be spent on career building, i.e. scientific writing. The generation of impact adds an extra burden besides the regular research duties, which was highlighted by the male respondents as well, almost in the same percentage (49 per cent, n=19).

> *For me aspect of societal impact [sic] e.g. strong link to the practices of research policy is an inspiration also for my work. However, sometimes I feel that time used for all the side duties is away from scientific writing [sic]. (Female, Sociology, Finland)*

4.4 Other Issues

Table 1 below summarizes the themes raised by respondents with respect to "other issues" that arise for them in the context of impact. Most of these are also perceived as burdens.

Table 1 List of other issues by gender

other issues			
female respondents		***male respondents***	
additional requirements	time, work, activities, energy, travel	**additional requirements**	time, work
the lack of…	funding, resources, time	**the lack of…**	time
other tensions	career advancement, no measurable benefits, publication duties (highly ranked journals), legitimacy, valorization, difficult and time-consuming to communicate to lay audience	**other tensions**	valorization, negative impact, politics involvement, publication duties, communicating research, long-term or non-existent impact

One female scholar from Lithuania struggled with communicating her research results because of entrenched ideologies in the society in which she is living and researching:

> *Communication with media, struggle with limitations of research, that do not let to make [sic] fully grounded statements in questions of policymakers (that are usually not nuanced), and sometimes it is hard to fight with dominating ideology and common sense – people are not ready to question their assumptions. (Female, Sociology, Lithuania)*

This quote raises an important point: communicating research results and creating impact in SSH might depend on cultural boundaries and geopolitical differences, especially if the aim of the research is to deconstruct dominant narratives and ideologies.

The results show that the structural disadvantages that women face within academia and which are well documented in the literature (Acker & Armenti, 2004; Lendák-Kabók, 2020 among others) do not impair women ECRs' commitment to generating impact in the early stages of their career. Notably though, men are more cognizant of the political factors involved in generating impact, and combined with the realization that impact outcomes are neither measurable nor formally rewarded in their academic settings, are less personally motivated to pursue impact at the cost of more traditional markers of esteem.

5 Discussion

In the analysis five themes were identified in relation to the different conceptualizations and attitudes ECRs developed towards societal impact, as a product of the research they do in SSH: (1) accountability, (2) social engagement, (3) motivation, (4) burden, and (5) other issues.

We analysed the concepts introduced above and attitudes from a gender perspective. When it comes to accountability, both men and women feel accountable in the same way for creating impact, however there is a difference in the type of accountability they share. Women tend to engage more than male academics in accountability towards the academic community through academic services or towards teaching students. Whereas men think that creating impact is their accountability towards society which provides the funds for the research itself. Our results show that ECRs (both men and women) have integrated "horizontal accountability" towards society, not just "vertical accountability" towards research managers and assessors, into their worldview. The most prominent gender difference was regarding social engagement – a much higher number of women consider their research impact to be social engagement to change the world for the better, which confirms that women are more focused on academic community work and service rather than being very strategic with the enhancement of their personal academic career (Lendák-Kabók et al., 2024). When it came to motivation for creating impact, more men were motivated to conduct research with an impact than women who stated that they sometimes feel insecure about making everything "work" at the same time when it comes to all aspects of their research. Both men and women equally stated that they lack time and energy and see focusing on societal impact as a burden. Men in our survey reported disregarding the generation of impact, as it is not a measurable aspect, nor a visible one, of research power and achievements. Under "other issues" men mentioned the involvement of politics as the greatest impediment in creating impact, while women were rather complaining of the difficulty of addressing people, lack of funding and energy, organizational issues, difficulties with finding pathways towards impact generation, but also of dominant ideologies, which are discouraging them of promoting their research results, i.e. creating societal impact.

The above results suggest that the engagement of researchers in impact activities is highly contextualized and related to many other aspects of research culture (de Jong & Mühonen, 2020). So too are researchers' motivations which are sensitive to notions of what their research is worth to their institutions beyond academia. These tensions are amplified in the ECR context, where scholars are committed to solidifying research reputations and agendas within the wider research culture and the context of precarious contracts and political concerns. Weighing the options among the possible choices that ECRs of both genders make in their early career is related to balancing a personal commitment to generating research outcomes that reflect their sense of societal "duty" with the time necessary to generate traditional markers of academic esteem that will solidify their membership within academia. For ECRs the choice to engage in impact generation activities comes at a cost to gaining the markers necessary to advance in academia/research culture; our data do not allow us to infer any significant difference of attitude towards research impact between male and female researchers in this regard.

In the end, we conclude that our research adds an extra layer of consideration of how non-traditional forms of research impact are gendered at the point of research choices made by individual researchers as well as for the constructive of impact narratives for the purpose of evaluation (Davies et al., 2020; Chubb & Derrick, 2020). Notably, the career journey that ECRs face is "a continuum beginning with doctoral studies, moving through the years spent as a non-tenured academic and on to becoming an established academic" (Jazvac-Martek et al., 2011, p.15). That journey is permeated with both pleasures and tensions. Students' doctoral experiences are an intertwined scheme of internal and external factors creating a cross-cutting impact on their academic development (Sverdlik et al., 2018). Some of the difficulties that emerge are the product of academic life which is (about to become) a "market failure" (Laudel & Glaser, 2008), since high expectations are imposed upon doctoral students, who, apart from their studies, personal lives and, very often, full-time jobs, need to do various other activities in order to fulfil the requirements, with the ultimate goal of earning money for their institution (Jazvac-Martek et al., 2011). Consequently, while trying to successfully build their academic careers, this most vulnerable group is faced with heavy workloads, the inability to find work-life balance (Lendák-Kabók, 2020; Lendák-Kabók et al., 2024), as well as the time-consuming nature of impact generation (Wroblewska et al., 2023). From our study, we can provisionally conclude that researchers and institutions need to consider the role of research of impact in the career development of ECRs more thoughtfully and that gender differences, if they do not seem to alter very significantly neither the principal conceptualizations of research impact nor the attitudes of our respondents towards impact, could nevertheless result in an increasing vulnerability of women.

6 Conclusion

We acknowledge several limitations to our study. One, it is based on a relatively modest number of questionnaires. However, these were collected in more than thirty countries across Europe with the addition of some respondents from South Africa. Secondly, gender differences were not the initial focus of the survey but instead arose from the coding and from our interest as researchers. Follow-up work in the form of interviews (for example) would be needed to strengthen claims and probe the themes that surfaced. In addition to the need for further understanding of how gender differences are manifested in research culture and impact generation, our survey also suggests the need to explore more deeply how mentorship and training, national or institutional mandates for impact generation, and disciplinary/research methodology are involved.

This exploratory study constitutes an early attempt to consider ECRs' career building under the lens of the creation of research impact. Further empirical studies will be needed to deepen our provisory conclusions and, in particular, evaluate to what extent gendered differences in conceptualization of and attitudes towards ECRs contribute to systemic inequities and disparities in career trajectories.

On a practical level, the different kinds of pathways to impact could also form the basis for more effective training and implementation and lead to more care being taken concerning supporting women in the research enterprise. At a broader level, the results also argue for more understanding of how societal impact in SSH happens and nonlinearly,

often incrementally, and contributes to change through communication and interaction with relevant societal stakeholders (Grønvad et al., 2017). Sustained engagement between researchers and societal stakeholders is needed (Nutley et al., 2007; Greenhalgh & Wieringa, 2011; Grønvad et al., 2017; SIAMPI, 2011). Even as knowledge mobilization strategies and identification strategies are used by pivotal stakeholders (Bayley et al. 2018; Grønvad et al., 2017) and approvingly accepted by EU policy makers and used in European research and development policies and programmes (Vanholsbeeck & Lendák-Kabók, 2020), the daily lived experience of women researchers and their concerns may well be at odds with what has been "accepted" as research impact and how institutions and organizations evaluate it.

As Laudel and Glaser (2008) write, the journey of turning an apprentice into a colleague is often long and full of obstacles. This journey can be described as one where an ECR moves from intellectual dependence to independence, with the ultimate goal becoming a completely independent researcher with their own way of creating impact through their work (Healey & Davies, 2019). Therefore, understanding the everyday difficulties and responses that ECRs experience along that path may provide clearer ways to support their academic growth as researchers and scholars (Jazvac-Martek et al., 2011).

Conflicts of interest

Not applicable for this section.

Data sharing not applicable to this article as no datasets were generated nor analysed during the current study.

Dedication to Paul Benneworth (passed away on May 12, 2020 at the age of 46) who was the initiatior of the CARES research

Paul was the most creative person I have ever met. His ideas focused on creating meaningful research while also aiming to involve and integrate young scholars into the academic arena. He was deeply aware of the adversities faced by early-career academics and the precarity of their positions. I cannot recall exactly when the Careers and Research Evaluation Systems for Societal Impact (CARES) initiative fully developed, but I think it began as a thought during the Training School Paul organized on societal impact in February 2018 in Zagreb, as part of the COST ENRESSH network. This event targeted early career investigators (ECIs). At the time, we exchanged thoughts about how research on understanding societal impact within ECIs would be innovative. However, as I was still struggling to finish my PhD thesis, I suppressed the idea and assumed Paul did too. A few months later, at an ENRESSH meeting in Ljubljana in July 2018, Paul gathered a small group of us for a discussion where he elaborated on his CARES initiative. We agreed to develop a questionnaire to be distributed among young scholars across Europe. True to his nature as a man of action, Paul promptly drafted a version of the questionnaire and sent it to Rita Faria and me for feedback. Rita's comments led to essential improvements, while

my contributions were more modest. In November 2018, following the SSH Impact conference in Vienna, Paul convened another meeting with a few network members (a different group from the Ljubljana meeting) to form working groups and articulate the topics we would address based on the questionnaires. In Vienna, I also spoke with Marc Vanholsbeeck about the CARES initiative, and he decided to collaborate with me on this project. By the end of 2018, Paul launched the questionnaire, and several of us circulated it among our ECI colleagues, who completed it. Within the ENRESSH Action, Marc undertook a Short Term Scientific Mission (STSM) at CEU in Budapest, which I hosted in February 2019. Together, we analysed the CARES dataset and planned to write two papers: one on impact as a boundary object and another on the gender perspective of impact creation. The first idea materialized thanks to Marc, and we published a paper based on the CARES data in Word and Text. Paul was a great source of encouragement throughout the process. The second paper, intended to incorporate a gender perspective, was planned for a special issue of Research Evaluation. However, the special issue struggled to gain momentum. We discussed potential topics and papers during a meeting in Valencia in September 2019, but little progress was made. Later, Kalpana Shankar joined this endevour, to whom I am truly grateful.

The last time I saw Paul was in Paris in February 2020, just before the COVID-19 pandemic disrupted everything. At our final ENRESSH meeting, he admitted he was exhausted and lacked the energy to lead the special issue. I was disappointed, as his enthusiasm seemed to have waned. It felt as though he had stepped away from the central idea of giving ECIs a voice, making them count through research, and supporting them to publish. Although I understood the immense pressure he was under, balancing work, travel, and family, I still expressed my dissatisfaction with his decision to withdraw from leading the CARES project. As we parted, he left me with a sentence that has haunted me ever since: "Karolina, this might be the last time I'm seeing you, so don't be nasty with me, as I might bite you back." Since I am terrible with goodbyes, I didn't say a proper goodbye to Paul in Paris. I was confident we would meet again soon. During the COVID-19 lockdown, I often looked at the photos he posted of himself with his children on Twitter. He seemed happy.

Karolina Lendák-Kabók

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