Gender Differences in Burnout Syndrome and Perceptions of Gender Equality in Research Organisations

Stefania Marcassa
THEMA, CY Cergy Paris Université, Cergy-Pontoise, France
stefania.marcassa@cyu.fr

Abstract: We present the results of a survey which was distributed to six research performing organisations in Albania, France, Germany, Italy, Serbia, and Spain. We found that both academic and non-academic women perceive 1) a greater degree of work pressure than men; and, 2) a greater degree of gender inequality than men. These results are consistent across countries. The fact that women occupy a lower percentage of senior positions than men and do not share the same perception of inequality, may be critical to the resolution of the *leaky pipeline* phenomenon. These results have provided incentives to the six organisations to implement measures that address gender biases to ensure a balanced gender representation at decision-making levels, and that improve work-life balance to reduce burnout syndrome and positively affect career satisfaction.

Keywords: gender bias, gender perception, gender inequality, burnout syndrome, leaky pipeline, survey, research organisations

1. Introduction

The best starting-point for developing an effective set of gender equality actions is to have a thorough understanding about how the organisation is doing regarding the promotion of gender equality (EIGE, 2016). In the specific context of research organisations and higher education institutions, the first step of this process is the identification of gender bias. The subsequent steps towards the development of a plan will identify and implement innovative strategies to correct any bias, by setting targets and monitoring progress via indicators.

In order to comply with these procedures and assess the gender equality state-of-play in their institutions, implementing partners of the Horizon 2020 project "Leading Towards Sustainable Gender Equality Plans in research performing organisations" (LeTSGEPs) have submitted a survey to their academic and non-academic staff. The survey has been developed by CY Cergy Paris University, and it is part of a wider project to explore the conscious and unconscious biases, perceptions and experiences of gender equality of both research and administrative staff working in research performing institutions. In this article, we document the responses to two questions about gender differences in burnout syndrome, and in the perceptions of allocations of tasks and resources.

Our study shows that women have a higher level of burnout syndrome, even though the gender difference is not always statistically different from zero. These results may have been affected by the unusual context in which the survey has been responded (Oreffice and Quintana-Domeque, 2021). When the study was conducted, in April 2021, the participants were subjected to partial or total lockdown measures due to the pandemic, with school closures, distance learning, and working from home. A *New York Times* report highlighted that the closing of schools had a significantly higher effect on working mothers since they still continue to bear the brunt of most child care obligations (Wang et al, 2020). Thus, the key challenge for women in particular has been to combine working from home with a considerably expanded "second shift" of looking after children (in the absence of schools or childcare facilities) as well as undertaking a majority of the housework.

Del Boca et al (2020) show that, in Italy, most of the additional workload associated to Covid-19 has fallen on women, while childcare activities are more equally shared within the couple than housework activities. These trends have also been documented by The European Institute for Gender Equality, and consequences in terms of scientific publications have been presented by Viglione (2020). Several analyses suggest that female academics have posted fewer preprints and started fewer research projects than their male peers during the pandemic (Amano-Patiño et al, 2020, Deryugina et al, 2021, Minello, 2020, and Squazzoni et al, 2021). Gewin (2021) discusses the findings of several surveys addressed to academics and health workers in the US and in Europe during lockdown: 75% of women reported feeling stressed, compared with 59% of men.

It is nonetheless important to signal that this phenomenon is not exclusive to this time of crisis, because even before the pandemic, many researchers in academia were struggling with poor mental health, as claimed by

Desiree Dickerson, an academic mental-health consultant in Valencia, Spain. More generally, the literature on burnout syndrome tends to be gender neutral (Leiter, 1991, among others), hence the results of this survey contribute to shed light on a phenomenon that may be linked to gender different experiences in the workplace.

In relation to the second group of questions, a higher percentage of women perceive that it is easier or much easier for men to obtain demanded tasks or resources. Gender differences in perceptions are significantly different from zero for both academics and non-academics. Our results are consistent with the findings of García-González et al (2019), and the observations of the British ASSET 2016, which provide clear evidence that men and women do not share the same perceptions of gender equality in science and that their differing perceptions are relatively consistent across Spain and the UK.

This data, strengthened by context analysis prior to the gender equality plan, and the fact that men occupy the majority of senior positions (She figures 2021) while not perceiving the same inequality as women do, underline that it may be critical to ensure the fair ascent of women to senior positions (Van den Brink and Benschop, 2012). Dismantling gender stereotypes and ideas about traditional gender roles could account for a decrease in the level of burnout syndrome, improve work conditions, and assure a fairer career path (Smyth and Nosek, 2015, Carli et al, 2016, and Leslie et al, 2015).

The paper is organised as follows. Section 2 describes the survey and the characteristics of the participants. In Section 3, we discuss the results to the questions about burnout syndrome and perception in allocation of tasks and resources. Section 4 concludes the paper.

2. Methods

2.1 Participants

A total of 6,791 individuals were contacted via email through their institutions. Of these, we analysed the data provided by 910 (or 13.4 percent of the total) respondents that did reach the end of the survey. Participants were given the option of not responding to each question. Respondents' ages ranged between 21 and 65 or over and represented all stages of the research (n = 541) and administrative career ladder (n = 320). Some respondents (n = 49) have preferred not to indicate their professional category.

The highest percentage of academic respondents are at the level of associate professors, and working in the departments of engineering and computing sciences. While this survey included the opportunity for respondents to indicate that they would prefer not to disclose their gender (n = 12), the data presented are limited to those respondents who identified themselves as either men or women. The final sample for the analysis from the 6 institutions is shown in Table 1. 66.3% (n = 603) were women and 33.7% (n = 307) were men.

2.2 Research ethics

The survey has been developed in Qualtrics, which provides a user-friendly environment for respondents. It required a computer to be completed, and devices without keyboards were not allowed. The data in this study were analysed anonymously. At the beginning of the survey, all participants were informed about the anonymization of their data. Responses were obtained between March 19 and April 16, 2021. We only included data of participants older than 18 years old.

The survey required about 20 to 25 minutes to be completed. CY Cergy Paris University implemented an incentive scheme and organised a raffle among respondents who completed the survey to obtain gift cards to be spent in cultural/entertainment goods of a predetermined brand. At the end of the survey, respondents had the possibility to contact the organizer to ask for the statistical analysis of the results obtained in their institution. Moreover, under the request of the Data Protection Officers, in some of the institutions, respondents have been assigned with a random number that allows them to ask for their data to be withdrawn from the analysis.

Three institutions made the survey available in their national languages: Serbian, Albanian, and Italian, respectively; two institutions made the survey available in the national languages (French and German) and in English; one institution located in Spain, made the survey available in English only.

Table 1: Sample characteristics and key frequencies

Gender		*Academic Staff*		*Research Areas*		*Non-Academic Staff*	
Women	603 (66.3 %)	Full Professor	62 (12.2%)	Arts, Humanities and Education	84 (16.2%)	Grade A	67 (20.9 %)
Men	307 (33.7 %)	Associate Professor	108 (21.3%)	Medical and Health	51 (9.9%)	Grade B	37 (11.6 %)
		Assistant Professor	37 (7.3%)	Economics, Business and Finance	100 (19.5%)	Grade C	11 (3.4 %)
Age		Instructor	57 (11.2%)	Chemical Sciences, Biology and Earth Sciences	22 (4.3%)	Grade D	118 (36.9 %)
21 to 34	282 (31.2 %)	PhD Student	57 (11.2%)	Engineering and computing	102 (19.9%)	Engineers and research technicians	31 (9.7 %)
35 to 44	236 (26.2 %)	Post-Doctoral Student	88 (17.4%)	Law and Political Science	39 (7.5%)	Other	56 (17.5 %)
45 to 54	236 (26.2 %)	Research Fellow	45 (8.9%)	Maths, Statistics and Physical Sciences	40 (7.8%)		
55 to 64	136 (15.1 %)	Researcher with tenure	27 (5.3%)	Sociology	23 (4.5%)		
65 and over	12 (1.3 %)	Researcher with fixed-term contract	26 (5.2%)	Other	52 (10.4%)		

2.3 Measures

Two dimensions of gender equality are documented in this report: perceptions of burnout syndrome and perceptions in the allocation of tasks and resources. Gender differences in perceptions of burnout syndrome were assessed using five statements such as “How many times in the last month did you find yourself worrying about work when you were not working?” or “How many times in the last month did you think that your family responsibilities prevented you from giving the time you should to your job?”. Each statement was rated using a 5-point scale ranging from 1 = “Never” to 5 =“Always”.

Perceptions of gender equality in the allocation of tasks and resources were assessed using 12 items, such as “Access career development opportunities”, “Obtain a permanent contract” or “Inform his/her department about health issues”. Each item was evaluated using a 5-point scale ranging from 1 = “Much easier for a woman” to 5 = “Much easier for a man”. For all questions, respondents were given the possibility to check “No answer”.

3. Results

3.1 Gender differences in burnout syndrome

A total of five items were used to evaluate the level of burnout perceived by participants in the last month (Figure 1) in terms of (1) worrying about work when not working, (2) being too tired after work to do some of the household chores which need to be done, (3) feeling that the job did not leave enough time for family or personal life, (4) working during weekends and holidays to meet work demands, and (5) feeling that family responsibilities took time away from work responsibilities.

On average across all five questions, perceptions of burnout were overall significatively higher for women (p-value < 0.02), with an average score across the five items close to neutral (M = 2.87, SD = 0.85) compared to

men, who perceived a lower level of stress related to work (*M* = 2.73, *SD* = 0.92). The percentage of responses and the related statistics are shown in Figure 1.

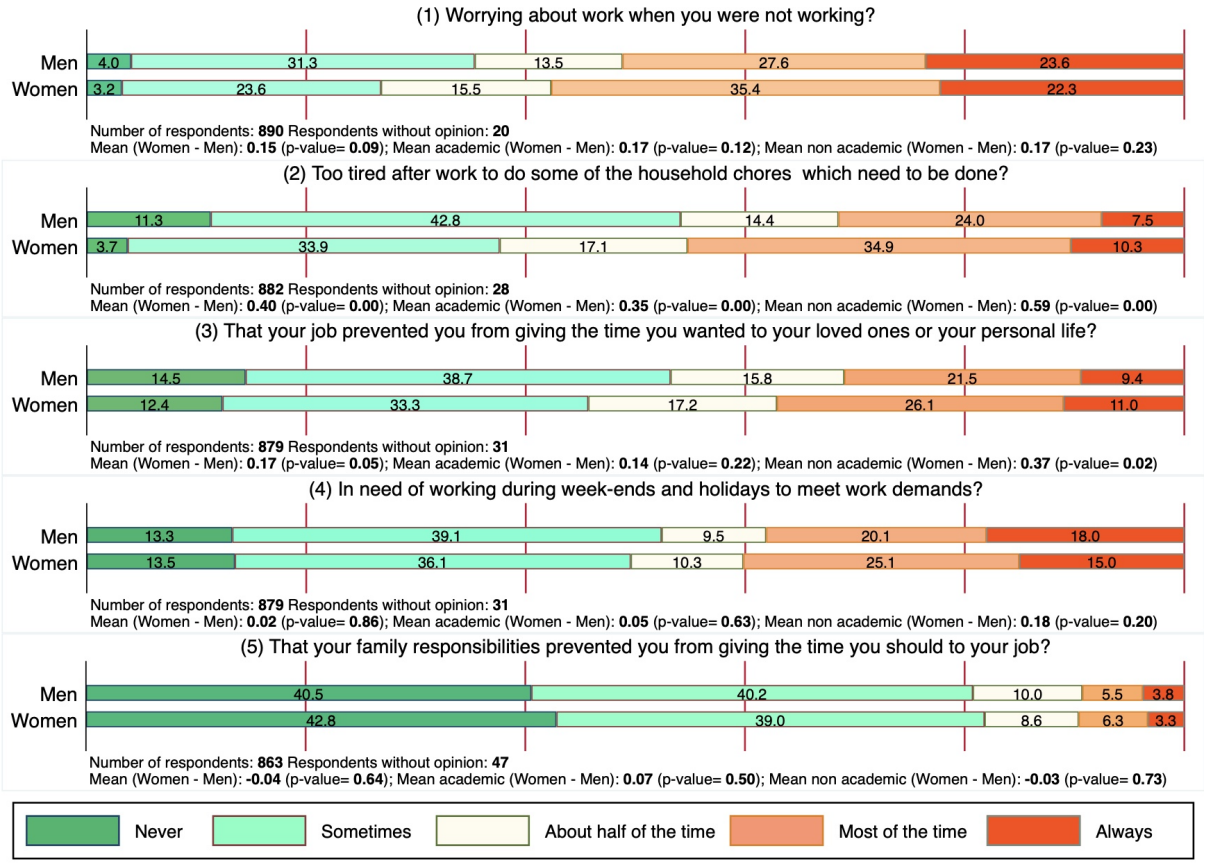

Figure 1: "How many times in the last month did you find yourself…" (% of respondents)

Women and men's levels of discomfort were striking for the question about worrying outside of working time (Panel 1), which shows that more than 57 (50) percent of women (men) worried about work when not working "most of the time" or "always" (women: *M* = 3.50, *SD* = 1.67; men: *M* = 3.35, *SD* = 1.25) (*p*-value < 0.10). Interestingly, about the same percentage of men and women (3-4 percent) "never" had this issue. A deeper analysis shows that, even though scores are higher for academic men and women, gender differences are not statistically different from zero.

The largest statistically significant gender differences are observed when participants were asked about being too tired for household chores after work (Panel 2). 45 percent of women (M = 3.14, SD = 1.11) are "most of the time" or "always" too tired after work, while only 31 percent of men are worried about not being able to do household chores (M = 2.74, SD = 0.68). Moreover, gender differences are statistically different from zero for all staff members, but higher for non-academics (women: *M* = 3.11, *SD* = 1.07; men: *M* = 2.52, *SD* = 1.08).

Panel 3 shows that women (*M* = 2.90, *SD* = 1.23) perceive that work prevents them from spending enough time with their family with a statistically significant higher score than men (*M* = 2.73, *SD* = 1.22). The same gender difference is not statistically different from zero for academics (women: *M* = 3.02, *SD* = 1.21; men: *M* = 2.89, *SD* = 1.22), but it is positive and significant for non-academics (women: *M* = 2.77, *SD* = 1.23; men: *M* = 2.40, *SD* = 1.17).

When respondents were asked about their work-related stress during weekends (Panel 4), for both men and women, item means ranged between 2.90 (*SD = 1.35*) and 2.92 (*SD = 1.32*), and their difference is about zero. Nonetheless, about 40 percent of the respondents are "most of the time" or "always" worrying about work on weekends or during holidays.

Panel 5 shows that most men (*M* = 1.92, *SD* = 1.03) and women (*M* = 1.88, *SD* = 1.03) felt that family responsibilities interfered only "sometimes" or "never" in their job. This is the only question where the man's

average score is higher than the woman's average score. The same gender inversion of scores is observed for non-academics (women: *M* = 1.54, *SD* = 0.78; men: *M* = 1.58, *SD* = 0.86), but not for academics (women: *M* = 2.14, *SD* = 0.06; men: *M* = 2.07, *SD* = 0.08).

Distribution of responses by gender where responses ranged from 1 = "Never" to 5 ="Always". The neutral value is 3 = "About half the time". Statistics include: no. of respondents, no. of respondents without an opinion, mean difference of scores, mean difference of scores of academics and non-academics, and their corresponding *p*-values.

Overall, in 4 out of 5 items, academic and non-academic women exhibit a higher level of work related stress than men do. Our survey has been conducted during a peculiar period of lockdown and school closures, and our results could have been exacerbated by the new unexpected working conditions. Nevertheless, they are in line with the findings of the extensive literature that has been published on gender differences in mental health (Oreffice and Quintana-Domeque, 2021). Moreover, an annual survey, the Barometer Good Work 2021, shows that the Covid pandemic made women "significantly less satisfied" than men in all the categories that are monitored, but, interestingly, in relation to our results, four years ago this was the case only for stress.

3.2 Gender differences in perceptions of gender equality in the allocation of tasks and resources

To evaluate whether men and women perceive that tasks and resources are equally allocated in their departments, twelve items were assessed and included evaluations on the allocation of professional development resources (Figure 2), markers of esteem (Figure 3), and academic / administrative duties (Figure 4). On average, over the 12 questions, women perceived that tasks and resources are more easily allocated to men, and the gender difference in scores is statistically different from zero for both academic and non-academic staff (women: *M* = 3.30, *SD* = 0.43; men: *M* = 3.03, *SD* = 0.34; *p*-value = 0.00).

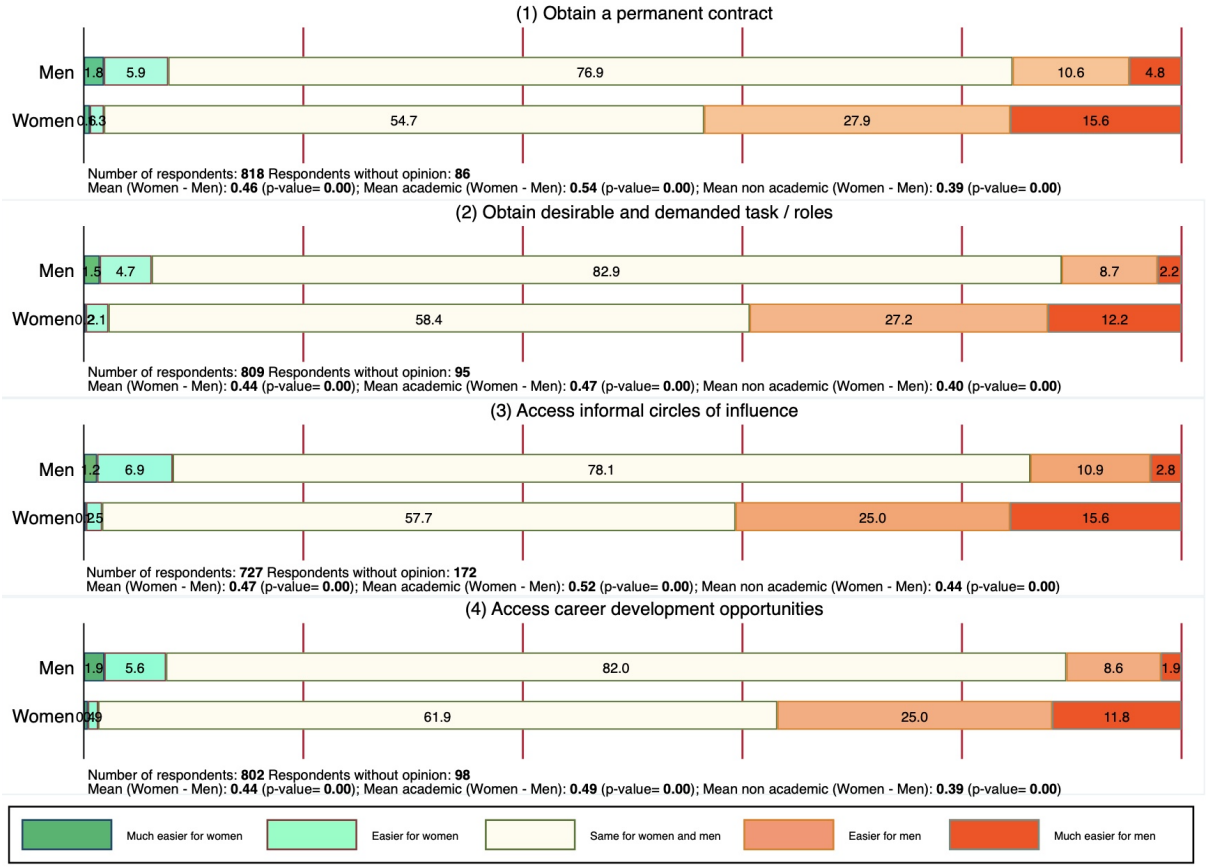

Figure 2: "In your workplace, it is easier for a woman or a man to:…" (% of respondents)

The most noticeable gender differences are in replies shown in Figure 2, where mean scores for women range between 3.47 (*SD* = 0.72) in Panel 4, and 3.57 (*SD* = 0.78) in Panel 1. Moreover, gender differences are statistically different from zero (*p*-value = 0.00) for both academics and non-academics for all evaluations in Figure 2. The

distribution of the answers is striking: man respondents mostly (about 80 percent) rated the allocation of these resources as "the same for men and women", with mean scores between 3.03 (*SD = 0.54)* and 3.11 (*SD = 0.65*), while at least 36 percent of women perceived that it is easier or much easier for men to obtain a permanent contract or desirable tasks, access informal circles of influence or career development opportunities.

The highest level of gender disagreement is reached in correspondence of different items for academics and non-academics. For academics, the biggest difference in scores is in the possibility of obtaining a permanent contract (women: *M* = 3.68, *SD* = 0.80; men: *M* = 3.14, *SD* = 0.60; *p*-value = 0.00); while for non-academics, it lies in the opportunity of accessing informal circles of influence (women: *M* = 3.45, *SD* = 0.75; men: *M* = 3.01, *SD* = 0.69; *p*-value = 0.00).

Distribution of responses by gender where responses ranged from 1 = "Much easier for women" to 5 ="Much easier for men". The neutral value is 3 = "Same for women and men". Statistics include: no. of respondents, no. of respondents without an opinion, mean difference of scores, mean difference of scores of academics and non-academics, and their corresponding *p*-values.

In Figure 3, most of the men (about 90 percent) perceived that office spaces, wage bonuses, job positions or promotions, are obtained by men and women with similar ease, with scores ranging from *M* = 2.99 (*SD* = 0.37) to *M* = 3.03 (*SD* = 0.45). However, a larger proportion of women respondents (from 13 to 26 percent) felt that most of these resources are more easily allocated to men, with mean scores from *M* = 3.16 (*SD* = 0.50) to *M* = 3.32 (*SD* = 0.65). Although these differences were subtle, they were statistically significant, with a *p*-value < 0.10 for all of the items individually, and for both academic and administrative staff.

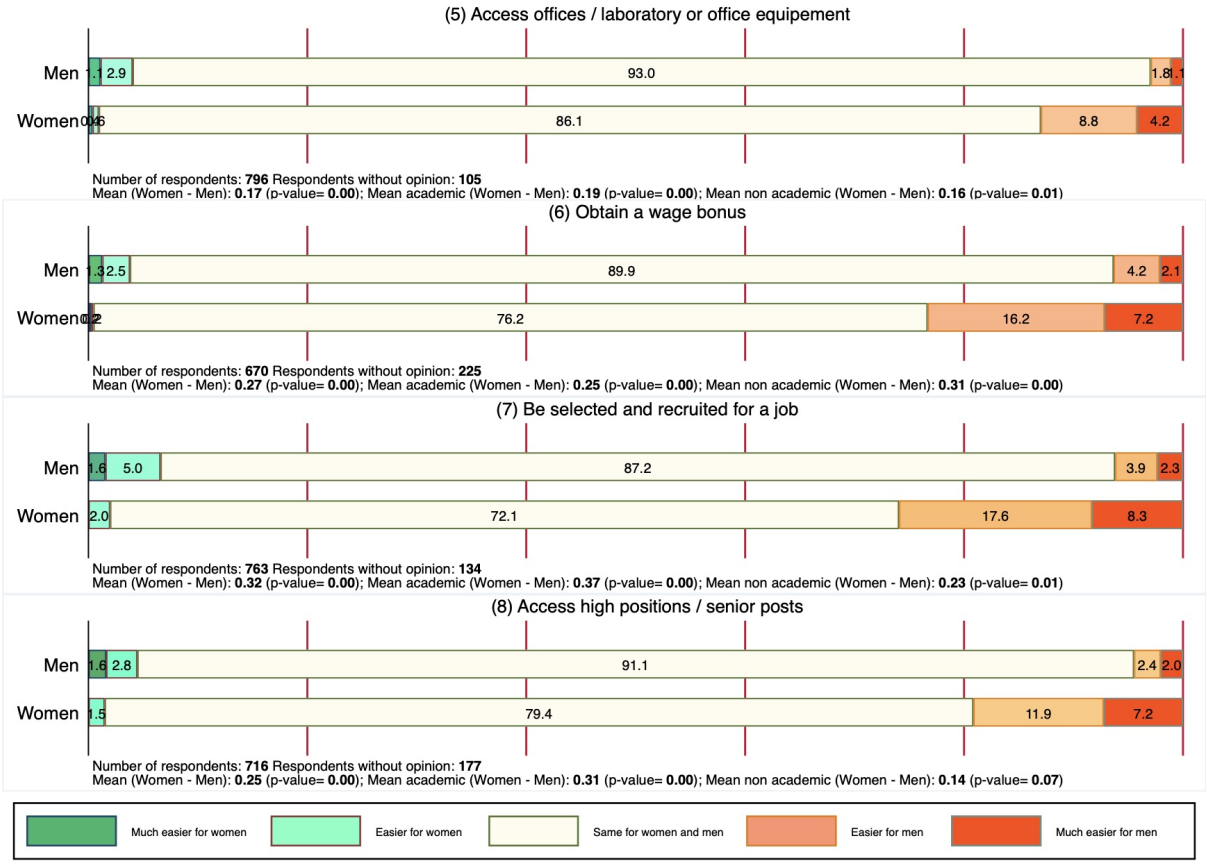

Figure 3: "In your workplace, it is easier for a woman or a man to:…" (% of respondents)

The highest gender difference among researchers is found in the possibility of being recruited for a job (women: *M* = 3.38, *SD* = 0.67; men: *M* = 3.00, *SD* = 0.49; *p*-value = 0.00); while non-academic men and women disagree significantly on the possibility of obtaining a wage bonus (women: *M* = 3.30, *SD* = 0.60; men: *M* = 2.98, *SD* = 0.44; *p*-value = 0.00).

Distribution of responses by gender where responses ranged from 1 = “Much easier for women” to 5 =“Much easier for men”. The neutral value is 3 = “Same for women and men”. Statistics include: no. of respondents, no. of respondents without an opinion, mean difference of scores, mean difference of scores of academics and non-academics, and their corresponding *p*-values.

Figure 4 does not show any significant change in results. Declining teaching and/or administrative duties, and being chosen for representative roles are perceived easier or much easier for men by women, and gender differences are significantly different from zero. Once again, across all the items, the response distribution is shifted between women and men. The percentage of women that perceived that it is easier or much easier for a man to get these resources ranged between 5 and 32 percent, in contrast to a smaller fraction of men with similar opinions, between 3 and 9 percent. As in the above figures, the majority of men, between 85 and 94 percent of them, perceived that the allocation of resources is distributed equally.

Figure 4: “In your workplace, it is easier for a woman or a man to:…” (% of respondents)

Academic and non-academic women and men reported the highest difference in scores when asked about the possibility of declining unwanted, non-mandatory administrative duties (academic women: *M* = 3.40, *SD* = 0.71; men: *M* = 3.02, *SD* = 0.47; *p*-value = 0.00) (non-academic women: *M* = 3.36, *SD* = 0.67; men: *M* = 3.04, *SD* = 0.56; *p*-value = 0.00). Academics also reported a similar high difference in score on the possibility of being chosen for representative roles (women: *M* = 3.37, *SD* = 0.68; men: *M* = 3.02, *SD* = 0.46; *p*-value = 0.00). Both academics and non-academics perceived that women and men can communicate about health issues with a similar ease.

Altogether, gender differences were observed for the allocation of all the items, and women perceived that these are more easily allocated to men while men did not perceive a biased distribution to the same extent. This conclusion is valid for both academics and non-academics, even though the highest gender disagreements concern different items. Our results are consistent with previous surveys developed in UK (ASSET 2016) and in Spain (Garcia-Gonzalez et al, 2019), and add new evidence about non-academic staff. Male researchers in both the UK and Spain perceived greater gender equality in their departments compared to female researchers.

Distribution of responses by gender where responses ranged from 1 = “Much easier for women” to 5 =“Much easier for men”. The neutral value is 3 = “Same for women and men”. Statistics include. no. of respondents, no. of respondents without an opinion, mean difference of scores, mean difference of scores of academics and non-academics, and their corresponding *p*-values.

4. Conclusions

The present study assesses gender differences in burnout syndrome and perception of gender equality in allocations of tasks and resources. It documents the responses to a survey that has been submitted to both academics and non-academics working in institutions belonging to the LeTSGEPs project, prior to the implementation of gender equality plans. The main objective of the survey was to identify gender biases, and establish the actions to be included in the plans. The literature has shown the importance of increasing gender stereotype awareness through training sessions to affect perceptions (Pritlove et al, 2019).

The results provide clear evidence that women feel a higher level of stress related to work than men do, even if gender differences are not always statistically different from zero. Scores of burnout are significantly higher for academic than non-academic staff, regardless of gender. They may have been exacerbated by the Covid crisis, but they are in line with previous literature on burnout syndrome.

Our results also show that while women perceive greater gender inequality than men do in the allocation of tasks and resources, men perceive equal gender treatment in their departments and offices. These gender differences in perception are found in answers of both academics and non-academics.

Future developments of this research should focus on the interaction between gender and departments or research fields. It will also be important to enlarge the analysis to demographic characteristics of respondents to account for their observable differences, and measure the impact of, for example, age, children, and marital status. The identification of the source of bias through data analysis is key to bring into effective actions (Axt et al, 2019), and determine their primary recipients (Coe et al, 2019).

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