

Article

Was This Supposed to Be on the Test? Academic Leadership, Gender and the COVID-19 Pandemic in Denmark, Hungary, Romania, and United Kingdom

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Abstract: Recent developments in workplace dynamics have made us even more aware of the importance of gender representation in all work-related decisions. Working from home during the pandemic, a decision that was generally the norm for European universities, forced us to rethink what are the main priorities when addressing the different needs of academic workers. The present paper tackles this overall issue from the perspective of gender representation, looking at the gender composition of the leadership structures of universities and their policy responses to employee needs. All the state-accredited universities in the following countries were included in the analysis: Romania, Denmark, Hungary and UK. These countries were chosen for the diversity in the state of their gender politics and in their overall quality of higher education. Primary results show not only that gender equality within academic leadership lags behind, but also that this lag may be associated with a poorer policy response to challenges typically faced by women during the COVID-19 pandemic.

Keywords: gender parity; COVID-19; women faculty; STEM; humanities; care; university policy; pandemic inequality



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1. Introduction

After two years of living with the COVID-19 global pandemic, an impressive accumulation of evidence suggests that the careers of women in academia have been set back disproportionately compared to the effects of the pandemic on men's academic careers. This evidence cannot be ignored any further because it has already reasonably surpassed a threshold beyond which it cannot simply be considered anecdotal. The better part of this article, starting at Section 1.2, is dedicated to presenting a comprehensive review of the most compelling gender-based pandemic inequalities research to date. The present study aims to add to this body of proof by stressing the importance of institutional leadership structures in calibrating decision making and policy design in order to avoid perpetuating gender-based disadvantages when managing a crisis situation.

In the European Union, there has been stable progress registered over the past decade in terms of gender balance among doctoral graduates. A recent report from the European Commission [1] points out that, in most member-states, women doctoral graduates make up about 40% to 60% of the doctoral graduate pool. The graduate parity, however, does not transfer into the academic job market, where women hold only around one third of academic positions [1]. The numbers further decrease for women in leadership positions, funneling towards one-fourth of full professorships and less than 25% for heads of universities [1].

Based on evidence from four European countries, we argue that this stark gender discrepancy in leadership roles has had palpable consequences upon the kinds of policies

that were implemented in order to manage the transition from in-person teaching to online classes during the COVID-19 pandemic and the adjustments that were made or ignored to accommodate those academic workers with additional household and family care responsibilities.

The study will proceed by briefly reviewing the swelling body of evidence pointing towards the inequitable effects of pandemic management regulations upon the careers of academic workers by gender. This new field of research sparked by the pandemic will be contextualised within the larger picture of the long-standing gender disparity in the academic labour market. Following this contextualization, the paper will continue with a theoretical explanation believed to underlie the persistence of gender disparities in academic institutions. The second half of the paper will explore the leadership structures of all state accredited universities in Hungary, Romania, Denmark, and the United Kingdom along with their human resources COVID-19 response policies to the extent that these policies exist and were made publicly available and not put behind an institutional access wall. The last section offers an interpretation of the results obtained and highlights some conclusions.

1.1. Pre-Pandemic Gender Inequality in the Academia

Pre-COVID-19 pandemic, gender disparities in academic structures are well documented. Any inequalities associated with the management of academic work during the pandemic could potentially be explained by looking at the context in which they occurred.

To begin with, women tend to be under-represented in leadership and permanent positions in universities while, at the same time, being over-represented in temporary and lower income ones [2], and also enduring slower promotion tracks [3]. These are gendered rifts stretching across the board, from STEMM (science, technology, engineering, mathematics, and medicine) [4–6] to the social sciences [7,8] and even some fields in the humanities [9,10]. In the European Union, recent figures indicate that, on average across member states, 11.1% of women employed in academia work part-time or under precarious conditions, while only 7.2% of their colleagues who are men are subject to the same contractual conditions [1]. This discrepancy is most pronounced in Hungary (16.2% women, 9% men) and, surprisingly enough, given its better position in other areas of gender equality, Denmark (15.3% women, 5.8% men) and less evident in Romania (4% women, 3.4% men) [1]. In general, early-career researchers are subject to more precarious working conditions and more part-time contracts. These numbers suggest that early-career women academics hold a larger part of these part-time positions than early-career researchers among men.

Moreover, evidence shows that women academics are generally assigned more teaching hours, more students to advise, and even more introductory courses than men in the same departments [11]. Likewise, women are expected to do more service and support hours for their departments and their students [12,13]. This type of work is compounded in the case of women of colour [13] who are expected to perform the extraneous service labour associated with their institution's design and implementation of policies on gender and racial equity and support. These are all types of academic work which have low promotability [14] and are unpaid, in themselves, despite not being required for all faculty.

To top it off, there is pre-pandemic evidence for gender-based publishing disparities especially in top journals [15,16] and authors with feminine-sounding names being less likely to be cited, a bias trend which may even be increasing over time rather than decreasing in some fields [17].

1.2. Post-Pandemic Gender Inequality in the Academia

In this context, in the beginning of 2020, shortly after most universities worldwide were forced to move teaching online due to governmental curfew and closure rules imposed to manage the spread of the novel coronavirus, the first alarm signals about the effects of these new work conditions upon the research productivity of women came in the form of published essays, personal accounts (e.g., maybe one of the first and most cited such

publications appeared in Nature Journal [18]), and even editorials and thorough reports from academic journals [19,20]. Further evidence soon started to accumulate from many types of studies.

Maybe the most striking findings came from field-specific quantitative analyses of authorship in journals and preprint repositories in STEM [21–24], the social sciences [25], and economics [26], to give only several examples. Generally, these studies found a stark increase in the overall number of manuscripts submitted for peer review (for example, an increase by 58% compared to the same period in 2019 in Elsevier journals [20], and an increase by 35% in social science journals specifically [25]), yet a decrease in submissions made by women researchers (by 13.2% in social science journals [25]). Similarly, authorship by women researchers in medicine decreased in 2020 by 19% compared to 2019, while the same downward trend was not detectable for authors among men [21]. This is consistent with an explanation often cited in this body of literature, namely that work from home conditions and closure of schools severely decreased productivity for those academic workers with household and care responsibilities.

While large, quantitative studies were able to establish the existence of the phenomenon as a widespread pandemic-related issue in academic publishing, another category of quantitative studies edged towards offering explanations taken from the lives of researchers. These studies investigated the issue by surveying virtually available samples of researchers in STEM [27], social sciences and various other disciplines [28,29]. One predictor of decreased research productivity after the imposition of pandemic measures was found to be the presence of small children at home, with academics in STEM who were also parents of children between 0 to 5 years old reporting a decrease of 15 h in weekly working time [27]. Surveys also found that, while childcare hours increased for all parents, women bore the brunt of this increase (childcare hours increased by 1 h per day for women and by 45 min per day for men) [28]. Academic mothers investing more childcare time than academic fathers during lockdown is consistent with pre-pandemic indications that mothers compensate for long work hours by spending more time with their children [30].

Another important finding from self-reports is that whenever an increase in time for childcare or house care was required, academics cut those hours to the detriment of research and kept the same teaching hours [28]. This is because teaching responsibilities are much less flexible than the time dedicated to research [28]. Given that pre-pandemic findings suggest that women are, in general, given more teaching and advisory responsibilities within a department [11,12], and that they take on more childcare time than men peers, it follows that this convergence in inflexible responsibility, namely teaching and childcare, will necessarily impeach upon research. This convergence is less likely to happen for researchers who are fathers because they are expected to teach less, advise less, and tend to take fewer childcare responsibilities. Of course, the gender-based differential nature of the effects of being a parent upon academic productivity during the pandemic lockdown will not surprise those familiar with pre-pandemic findings which indicate that women academics with young children are 33% less likely than childless women to obtain tenure-track positions and 35% less likely than men academics with young children [31] (pp. 28–29). In the case of women researchers working in STEM fields, where their academic success is already correlated to a significant degree with the decision to not have children [32,33], the pressure of additional domestic labour could have an even deeper effect on the long-term relative presence of women in these fields, as the scarcity of successful role models in STEM, and the perceived rigidity of their lifestyles, can discourage younger women from pursuing such academic careers [34]. This discrepancy is further compounded by the fact that research is valued more on the academic job market than teaching and advising. It is easy to see how these tendencies alone can explain the lag observed in women's academic careers compared to their peers who are men.

Complementary contributions were brought, as detailed further, from qualitative research using interviews [30,35], qualitative surveys [3], autoethnographies [36–39] and other accounts in the form of journal correspondence and essays [40]. These findings grant

even more weight to the differential manner in which women and man parents relate to childcare responsibilities. For instance, from interviews with American and Italian academics, Minello et al. [35] find that women prioritise their academic duties differently. Namely, women prioritise teaching and cut from research time, a common choice among both Italian and American respondents. Interviewed academics also testified that, for the most part, productivity expectations have not changed in their institutions after the implementation of lockdown measures [30].

Qualitative studies were also able to highlight institutional policies which were implemented and were successful in alleviating some of the disproportionate burden suffered by women scholars with children during the pandemic. One study pointed out that only a minority of subjects were able to share positive experiences with good institutional practices and indicated that they contained new or increased structures of support around childcare, mentorship, and mental health [3].

This body of evidence also contains several accounts, under the form of autoethnographies, of women scholars trying to manage both family life and academic productivity during the lockdown. They attest to previously described findings from interviews and surveys and add other important details. For instance, one account highlights that the inaccessibility of an institutional working space (offices, classrooms, libraries etc) has also led to uncomfortable situations which affected the scholar's image as a professional academic. When the residential space became the office during online meetings and classes, it was impossible for some to completely shut out noises or distractions coming from their children or the rest of the family, leading some to worry about projecting an image which does not adhere to that of the ideal worker, and which could therefore be perceived as less professional [38]. Autoethnographies also provided the opportunity for scholars with disabilities or mothers caring for children with disabilities to bring forth some of the challenges specific to their condition during the lockdown [39].

Results from some of these studies were also able to show that certain professional positions were more associated with a lower research output after the lockdown measures than others. For instance, women who were assistant professors or worked in top-ranked universities within the social sciences were more affected by a publishing gap [25]. A similar phenomenon was observed in STEMM, where a larger gender gap was found among last authors [24].

It is important to point out that increased gender disparity in research productivity as a result of pandemic rules and switching to online teaching is not a phenomenon restricted to Europe and North America. There are a plethora of studies showing similar results globally, including Brazil [41], Mexico [42], South Africa [43], Pakistan [44], Turkey [45], Chile [46], West African countries [47], and Australia [48] to give only a handful of examples.

The long-standing persistence of evidence for a gender gap in publishing and hiring in universities has prompted social scientists to investigate a number of theories which may explain it and may help in the conception of possible solutions. One such theory with direct relevance to the situation caused by the lockdown measures is that institutional design in higher education is based on a prescriptive model of the so-called ideal worker. Proponents of this understanding explain that universities perpetuate a gendered inequality regime [49] resulting from the institutions being structured around and optimised for the model of the ideal academic worker, that is, a white male free of private responsibilities such as childcare or housework because he can defer those to his wife. Additionally, this "ideal" worker is geographically mobile and fully committed to the institution [48]. In other words, as one author poignantly puts it, the "ideal" academic worker is none other than "the traditional man with his traditional wife" [50] (p. 18). Academics whose private responsibilities include strong ties to family members, or responsibilities around childcare, elderly care, housework, living with a disability, and other such conditions, infringe on the high levels of productivity expected of the model of the ideal academic worker, and may be unable to comply with the quantitative metrics required for career advancement. The metrics and expectations based on the ideal worker create an inequality regime because they are the

results of gendered social roles (i.e., the traditional role of the male breadwinner and women as housewives). To the extent that these traditional social roles continue to have currency in contemporary societies, this model favours man academics. In the context of challenging the gender roles, the ideal academic worker model discourages men from taking on more housework and child rearing responsibilities and, more importantly, disadvantages all those who cannot afford to conform to it. These are usually parents and especially single parents, women who continue to shoulder most of the house and care work regardless of their employment status [51], workers with disabilities, and others.

It is no wonder, then, that the collapse of external support provided by childcare centres and schools compounded with work-from-home and quarantine policies in response to the COVID-19 pandemic enlarged the productivity gap between academics with house and care work responsibilities and those without. In fact, the closure of schools and day-care centres as well as work-from-home and quarantine rules that were part of the efforts to curb the spread of COVID-19 impacted the workload of parents regardless of their professional work status. An early study [51] using a representative sample of the UK general population found that measures like these increased the burden of childcare upon UK families by the equivalent of a full work week. Moreover, the study found that, once again, women alone carried most of this additional burden regardless of their employment status, while men only increased their childcare hours when they were unemployed, in furlough or had reduced working hours.

Given the extensive evidence available about gender bias in publishing and hiring before the COVID-19 pandemic, any additional gender-based disparities in publication output due to pandemic management rules are likely to deepen the academic gender gap and undo trends of gender parity progress which may have been initiated over the last two decades. It therefore becomes imperative that higher education institutions consider gendered disparities in areas, such as the distribution of domestic and academic labour, when addressing any future mandatory lockdown rules or remote work requirements which, at the beginning of the third year of the COVID-19 pandemic, continue to be the *modus operandi* in some parts of the world.

The current study examines two institutional aspects of higher education which are generative of the gender-differential effects of lockdown working conditions upon research productivity. Namely, we look at the morphology of gender representation in leadership structures of universities and university policies regarding additional support provided to scholars with children and other care responsibilities working from a home office. Our guiding research question inquires about the ways in which home office and additional support policies may have been linked to higher representation of women within the leadership structures of universities.

To investigate this question, universities in four European countries were chosen for their important differences in indices about the quality of education provided and their overall national level gender equality. For instance, in the latest issue of the Shanghai top 1000 global university rankings [52], only universities in the United Kingdom are ranked in the top 10 universities worldwide, while Danish universities occupy positions between 30 to 700, and Hungarian universities are situated on positions between 601 and 900, and only one university in Romania was included in the position 801–900. The selected countries are also likely to represent typical tertiary education cases for the European regions to which they belong, namely Western, Scandinavian, Central and Eastern Europe.

A brief overview of some aspects of the gender situation in academia within these countries will help in contextualising our discussion. To start, we should note that, despite their poorer performances in other aspects of gender equality, both Romania and Hungary display a somewhat higher rate of representation for women in academic authorship for STEMM fields than Denmark and the UK [53]. This is consistent with other research demonstrating a more balanced gender-parity situation in Central and Eastern European academia, compared to Northern and Western Europe [54]. Explanations for this phenomenon point to a mix of factors, from more policies oriented towards gender equality implemented by

former socialist regimes to the poorer social status afforded to academics in some countries, which can be a factor in the feminisation of any profession [55,56]. The different family structures between countries are also relevant because developing countries tend to have a higher presence of extended family structures compared to the more compact nuclear family model present in higher income countries; they sometimes offer better and wider support networks for women academics when it comes to coping with domestic labour. Of course, this situation does not necessarily translate to better outcomes when it comes to leadership positions in academia.

2. Materials and Methods

The study is based on descriptive statistics and content analysis of data gathered from the websites of all nationally accredited universities in the United Kingdom, Denmark, Hungary, and Romania, as they existed online at the end of 2021, the second year of the COVID-19 global pandemic. The period of data collection was between 4 and 25 October 2021.

The countries were selected for their differences in the quality of education [52] and the differences in the status of women both on an overall national basis as well as in academia, where Romania and Hungary rank low on gender inequality indicators and Denmark and UK hold median or higher positions [1].

The process of data gathering had two stages. The first round of data gathering included searching the organisational structure of each university and identifying the gender of persons in the following positions: rector or university president, prorector, faculty deans and student union president. The second round of data gathering searched all university websites for COVID-19 employee guidance, frequently asked questions, or HR policies. Specifically, we extracted information relating to university policy or guidance about the management of work from home in the case of employees with additional care responsibilities, i.e., those with a dependant in their care. This included guidance and policy relating to work during a lockdown as well as relating to school or kindergarten closure, quarantine or any situation warranting the employee to live and work at home while caring for a dependent.

This process resulted in two datasets which contained the gender of each individual in one of the leadership positions selected above (the leadership dataset) and the text content of each university COVID-related policy or recommendation found (the guidance dataset). Additionally, faculties were split between STEM and non-STEM disciplines.

The total number of state accredited universities included in the two datasets was $n = 243$, distributed across the four countries as follows: the United Kingdom, $n = 152$; Denmark, $n = 15$; Hungary, $n = 31$; Romania, $n = 45$.

Following data gathering, descriptive statistical analysis was applied on the leadership database, and content analysis based on closed reading and coding was applied on the guidance database. Where needed, the text of university web pages containing COVID-19 related policies was translated using the machine translation service Google Translate.

3. Results

Comparing the ratios of women to men in leadership positions within universities (see Table 1 below), a number of interesting patterns emerge. Firstly, we notice the trend of top positions within each rung of management (rectors, deans) being occupied to a larger extent by men, with women faring better in occupying deputy positions (prorectors), with the peculiar exception of Hungary, which has the most equal gender distribution of rectorships together with the most unequal distribution of all other leadership positions (not taking into account student representatives, where the data set was too small to be taken into account). The higher rates of women prorectors compared to deans, when seen within this wider trend, could be explained by the fact that the upper and middle management positions follow separate mechanisms of selection and address different levels of the academic community within a university (university-wide vs. a particular faculty or department). This would suggest that, when competing for the leadership positions

at each level of management, men tend to be favoured over women. The particular rates at which women and men obtain leadership positions in universities generally follow each country's overall level of gender equality, with Denmark achieving the highest levels of parity and Romania and Hungary the lowest. This changes somewhat with regards to student representatives, where the UK has the highest proportion of women student representatives, with an actual disparity in their favour, out of the three countries for which we had sufficient data (i.e., UK, Denmark, and Romania). While a number of factors could come into play here—the relative prestige and power afforded by a student representative position, the potential it could have in boosting one's academic career, the particular responsibilities required by the position—it is difficult to speculate the precise causes for these national differences within the scope of our study.

Table 1. Ratios of women to men in leadership positions (columns) across the four countries (rows).

Country	Rector	Pro Rector	Deans	Student Representative
Romania	0.09756	0.62205	0.47414	0.36
Denmark	0.8	1	0.67742	0.5
UK	0.44762	0.64103	0.50585	1.65854
Hungary	0.80645	0.38462	0.45455	1

As we have pointed out before, women academics tend to have a more difficult time entering and advancing in STEMM fields. The differences between the gender ratios in STEMM and non-STEMM universities and departments in the four countries we have analysed seem to confirm this, as institutions and departments specialising in STEMM fields favour men for leadership positions. Table 2 shows the ratios of women to men in leadership positions (rectors and pro-rectors—in cases where whole university was STEMM-only, Deans, and Student representatives) at STEMM and non-STEMM faculties in the four countries. The one outlier is Romania, where STEMM leadership positions actually have a higher proportion of women than non-STEMM (0.54 women to every man vs. 0.45 women to every man). The explanation for this lies most probably in communist-era gender policies, both in their attention to having some female representation in all branches of the economy, and in their focus on STEMM disciplines as instrumental for economic development.

Table 2. Ratios of women in STEMM/non-STEMM departments in each country.

Country	STEMM	Non-STEMM
Romania	0.54	0.454545
Denmark	0.538462	1.007
Hungary	0.170732	0.771429
UK	0.419355	0.584699

Results from the frequency and content analysis of university policies regarding the case of employees with additional caring responsibilities forced to work from home during lockdown reveal two distinct national situations, two specific institutional approaches and a limited number of solutions proposed by institutions.

At the national level, special guidance or policy on carer's workloads when working from home were found only on the websites of universities from the United Kingdom and Denmark. No university from Hungary or Romania had any information pertaining to this issue. This missing data could not be identified, despite searching the websites bilingually (both the English and local language versions, with bilingual search terms). From this blanket absence, along with anecdotal stories from scholars in Romanian universities, we understand that Romanian and Hungarian universities did not, in fact, offer any guidance around this issue. By contrast, even though most universities in Denmark and the UK similarly did not offer this type of pandemic-related guidance on their public websites, about 20% of universities in each of the two countries did, as visible in Table 3. Furthermore, a minority of Danish and UK universities went one step further, offering not only guidance but also instituting a preferred solution to the problem through a special policy.

Table 3. Distribution of the number and percentage of universities which offered guidance or a special policy for managing work from home for employees with additional care responsibilities.

Country	Total N Universities	N (% Universities Offering Guidance Only)	N (% Universities Offering a Special Policy)
Denmark	15	3 (20%)	1 (7%)
United Kingdom	152	27 (18%)	4 (3%)
Romania	45	0	0
Hungary	31	0	0

At the institutional level, where guidance and policy on carer employees working from home were found, the results of content analysis distinguished two approaches.

The first approach was publishing a new policy to govern pandemic-related working from home for scholars with additional care responsibilities. One university in Denmark and four universities in the UK (amounting to 3% of all universities in the country) took this road.

The second approach was guiding the employee in a relevant situation to speak with their line manager in order to figure out a fitting combination of solutions. This option was chosen by the majority of universities which offered guidance in the two countries.

Content analysis also identified a limited set of solutions suggested by university guidance or imposed by new policies. Table 4 below offers a summary of the categories of solutions identified and an overview of the number of universities which offered one of the solutions coded from content analysis, in each of the two counties (Denmark and the United Kingdom) which had a special policy or guidance to managing work from home for employees with additional care responsibilities published on their websites.

Table 4. Distribution of recommended solutions to the problems posed by working from home for employees with additional care responsibilities. The numbers represent the number of universities which proposed a certain solution (rows) within a country (columns).

Country	Denmark	United Kingdom
• only time off	2	3
• only flexible schedule	0	2
• time off + flexible schedule	1	18
• reduce workload (in addition to another solution)	0	2
• changed performance assessment	0	1
• expect to maintain regular schedule	0	3

The categories of solutions proposed by universities in Denmark and the UK can be described as follows:

1. Flexible schedule. The most often recommended option was that the employee and the manager figure out together a flexible working schedule. Managers were required to be “flexible” in almost all cases, a requirement sometimes underlined with the qualification “pragmatic”. While most universities understood a flexible schedule to consist of undertaking the same amount of work hours per week as before the pandemic, only nontraditionally distributed over the course of a week, some added that managers should have an outcome-based approach to the work of their team and not an hours-based approach. Some universities encouraged employees in this situation to “get creative” and find workable solutions like working during the weekend or at night and taking time off during the traditional working day to dedicate to childcare.

2. Time off. This was the solution proposed by all special pandemic-related policies meant to govern work and care responsibilities during lockdown. For instance, one university in Denmark offered 10 additional unpaid days off per child under the age of 14 for each employee with childcare responsibilities, in case all other time off options had been

exhausted. Time off offered by UK similar university policies varied from four free days to unlimited additional time during the pandemic.

In most cases where time off was suggested outside of a dedicated policy, the type of leave recommended was most often a combination of annual, parental, and unpaid leave. A handful of UK universities had pre-pandemic policies offering carer's time off for those employees who were taking care of dependents. These suggested taking this kind of leave in addition to annual, parental, and unpaid leave. Still, others suggested career breaks or taking a sabbatical.

A special type of time off was the suggestion of a temporary modification to the work contract to reduce work hours, given as a standalone solution, or in combination with previously mentioned types of leave.

Time off and flexible schedule combined. This was the most popular solution among universities without a dedicated policy. In all cases, university guidance stressed the importance of speaking with the line manager in order to agree upon a fitting combination.

3. Reducing or shifting workload. Two universities from the UK shifted the responsibility of arriving at a solution from the employee to the manager or department leadership, by suggesting that these actors ease nonteaching responsibilities from employees with additional care duties and redistribute them inside the larger team or the department.

4. Expectation to maintain a regular work schedule. Three universities in the UK indicated the expectation to maintain regular working hours despite acknowledging that employees with extra care responsibilities may be having a difficult time during the lockdown.

5. Changes to performance assessment. Significantly, only one university in the UK added a solution other than work time management to the issue. This outlier acknowledged that the problem of working at home while shouldering additional care duties disproportionately affected "particular groups" and created a space where staff could describe how the pandemic affected their performance. The institution then pledged to use this information in making fair decisions about promotions.

4. Discussion

The results of this study show that only a small number of tertiary education institutions and only in countries which are already in a better position regarding gender parity overall have given consideration to the effects of the joint burden of academic and domestic work upon women's careers. This is perplexing given the sizable scholarly contributions that were made over the past two years to understand this issue and the accumulated evidence showing diminishing productivity among women scholars as reviewed in the second section of the current study. We suggest that a possible explanation for why this wealth of evidence and recommendations have been ignored so far could be found within the gender make-up of academic leadership. The current study tentatively explores this possible relationship, but further research would be needed to establish a causal relationship between the two.

Maybe the most remarkable result from this analysis is the extent to which universities that showed such concerns relied primarily on leadership structures within departments and ad hoc judgement of managers in order to address them. The vast majority of universities who offered guidance advised employees to speak with their managers if they have additional care duties at home, while entirely disregarding that the group most likely to shoulder the overlap of care and professional work are women. This is where gender distribution across the leadership structure of these universities becomes bluntly relevant. Common sense would indicate that, given an average shared gendered experience of professional and domestic work as described in the literature review section of the present study, women in managerial positions may be more inclined than men to exercise the flexibility suggested by their institutions to the benefit of their team members.

Our results concerning the types of solutions that universities found for the additional workload of carers align with those obtained by Nash and Churchill [48] when looking at the same guidelines and policy of universities in Australia. The options suggested in the

Australian academia were time off, discussing the possibility of a flexible schedule with the employee's manager, or both. In Europe, looking at four countries in a timeframe which included two years of experience under the pandemic instead of only a few months, we have seen that most universities still rely on these options, with only minimal diversification in the case of institutions showing somewhat more gender equality awareness.

There are two possible limitations of the study which stem from the missing data. First off, many universities in our dataset may have published guidance about carer's workload when working from home on employee password-protected platforms. These data were therefore unavailable to the authors of the current study. Secondly, in the case of Romania and Hungary, the overall structure of university websites gives us reason to believe that relevant information may have been published in scanned or otherwise nonsearchable PDF documents, instead of HTML pages. Moreover, these types of policy or guidance documents are liked on websites with titles containing document IDs rather than thematic titles, making the titles unsearchable when using relevant keywords. Another possible institutional practice in Romanian and Hungarian universities may have been sending direct communications to staff via email. This would also be a reason why pandemic recommendations were kept away from public accessibility.

The importance of diversity at the workplace and within power structures has been outlined by a large corpus of literature, being associated, among other things, with better economic performance [57] or unbiased human resources strategies [58] counting among the organisational benefits, but at the same time, we see it embraced only as a declared and not internalised value by entities, such as political parties, corporations, or universities.

Looking at the Gender Inequality Index [59], we find our four countries, ranked from least to most equal, scoring 0.276 (Romania), 0.233 (Hungary), 0.118 (United Kingdom), 0.038 (Denmark). The index is a composite measure reflecting inequality in achievement between women and men in three dimensions: reproductive health, empowerment, and the labour market. Somewhat predictably, we have seen the levels of gender parity in university leadership positions track closely to each country's respective level of gender inequality, confirming that the combination of national culture around gender and policies targeting gender equality sets the tone for gender equality and organisational culture in academia.

The same phenomenon has been observed for the implementation of (or lack thereof) policies and guidelines for managing the additional care-work burden brought about by the pandemic: countries with lower levels of gender inequality and better gender parity in university leadership positions were also the ones more likely to have strategies in place for dealing with the increased domestic workload. It is also possible that in the case of Romanian and Hungarian universities, the lack of a longstanding organisational culture regarding human resource management made it less likely for particular institutions to take a more proactive approach to aiding employees in dealing with the disruptions caused by the pandemic and limiting themselves to implementing safety measures to contain the pandemic. The complete absence of guidance from the websites of Romanian and Hungarian universities is a strong indicator that the issue of the double burden of working from home for scholars with additional care responsibilities was invisible to academic leadership in the two countries. Moreover, it suggests that considerations about the gendered distribution of house and care work are considered irrelevant to the problem of gender equality in the tertiary education systems of the two countries.

While our analysis does not allow us to draw a direct relationship between the ratio of gender parity in academic leadership in each of the four countries and the importance they place of gender equality, it is notable that more balanced levels of gender representation are indeed associated with the presence of concerns about the unequal effects of care work on academic productivity in lockdown.

With regards to the future, our data points in the same direction as previous literature, establishing a clear link between the representation of women in the decision-making positions of institutions and these institutions' responsiveness to the particular needs and

additional burdens placed on women by the unequal distribution of domestic labour and by other gender power imbalances within a society. Addressing these issues will require improving the gender parity between women and men in leadership positions within these institutions, with measures such as gender quotas, which appear to yield better results over time according to previous research [34]. Keeping in mind that such changes can take time to implement and bear fruit, in the short term, universities could better attend to their employees' needs during exceptional periods such as the current crisis. This could be done through institutional reforms in human resource management to improve the channels through which academic staff can communicate the issues they are facing during periods of social crisis and avoid bearing the full weight of the double burden of academic wage work and domestic labour. More so, the confluence of care and academic work among women scholars during the COVID-19 pandemic could have offered an opportunity to correct systemic disadvantages based on the outdated model of the "ideal" worker, yet it was an opportunity missed by a majority of universities.

In the particular cases of Romania and Hungary, the academic environment has had a complicated relationship to the pandemic. While these countries have a better situation regarding gender parity at the level of ordinary academic workers when compared to some Western and Northern countries, this situation does not translate well to representation in leadership positions. If we also take into account the longer historical experience of women academics in these countries with the double burden of work, we can see why institutions were not responsive with a problem that had already been normalised for decades. The imposition of remote work and other restrictions on movement have taken Central and East European women back to splitting all their time between their teaching and research on the one hand, and housework and child-rearing on the other. Without proper representation in the decision-making process of the institutions they worked for, these women have been left, as our data has shown, to deal personally with the fallout from systems ill-prepared for the disruption caused by a pandemic without any additional support, while expected to generally maintain the same levels of academic output. However, as long as those with the most direct experience of these issues are left out of leadership structures, instituting changes in their favour continues to look like a daunting task.

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