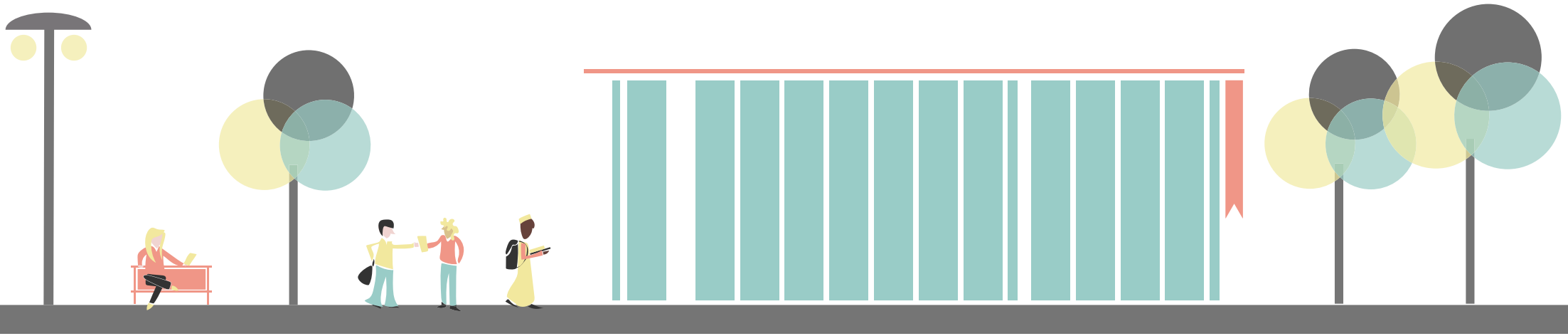
Inequalities exposed at the university by the COVID-19 crisis:

The impact of gender on working conditions, time use and academic performance at UCM



UNIVERSIDAD COMPLUTENSE MADRID

supera
Supporting the Promotion of Equality in Research and Academia

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Contents

List of figures and tables

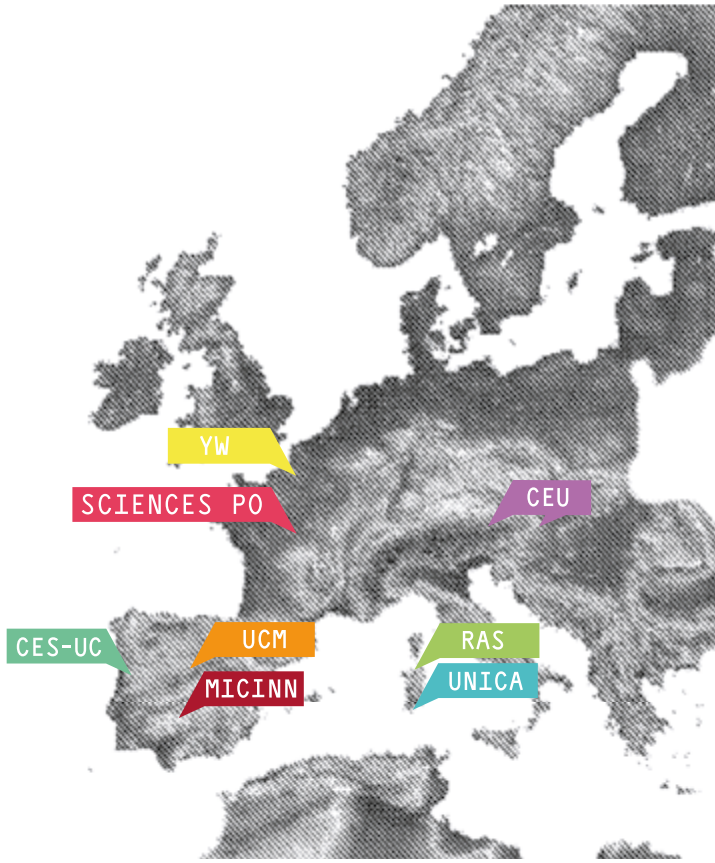
Introduction

The SUPERA project

The European Horizon 2020 **SUPERA project, Supporting the Promotion of Equality in Research and Academia,** (June 2018-May 2022), aims to develop Equality Plans that promote true structural change. The SUPERA project consortium, led by the Complutense University of Madrid (UCM), includes the following partners: the University of Cagliari, the University of Coimbra, the Central European University, the Ministry of Science and Innovation and the State Agency for Research and the Autonomous Government of Sardinia. The consortium also has two supporting partners: the consulting firm Yellow Window, which provides training and technical assistance, and Sciences PO as an evaluation partner.

This study was carried out within the framework of the SUPERA project's activities at UCM, in coordination with studies conducted at the consortium's partner universities (the University of Coimbra and University of Cagliari). Its objective was to undertake a gender analysis of the COVID-19 crisis and its impact in the field of research and academia.

The SUPERA project is based on a participatory methodology, encompassing the collection of information and the preparation of action proposals to promote equality throughout the university community, so that these can be included both in the UCM's Gender Equality Plan, as well as in plans or measures established at the faculty level. Within the framework of the SUPERA project, the UCM Network of **Gender Equality Nodes** began to be organised in 2018. Including 26 UCM faculties, the network's objective is to align the project's contents and activities, with a view to advancing gender equality in the institution. After three years of experience, the network has been strengthened and trained on a gender approach to structural change. As such, it has become a fundamental structure to collect information and ideas, as well as to stimulate discussions that contribute to a continuous diagnosis of the state of gender equality at UCM.



Presentation of the study

The COVID-19 pandemic, alongside successive periods of lockdown and semi-lockdown, have revealed our vulnerability, the urgent need to care for the people around us and for mutual care, as well as the importance of sustaining life beyond production. They have also provided a raw and palpable glimpse of inequalities of all kinds, including gender-based inequalities, which were not as visible or apparent before the pandemic. In fact, it has become clear that the **crisis caused by COVID-19 has had a substantive gendered impact,** which is reflected in many aspects of life. It has also taught us, in a much more evident way than before, of the need for sustainable lives and the importance of taking into account sustainability at the core of any productive activity, coupled with the 'crisis of care' which feminists have been calling attention to for decades. The crisis has demonstrated how essential care jobs – the vast majority of which are carried out by women – are extremely important and necessary, but are largely incompatible **with organisations and labour standards** that may be categorised as 'gender blind'. All of this has had a differential impact on Women. During lockdown, Women have expended more time and energy than men on domestic and care work, supporting home-schooling, and managing the crisis' emotional and mental health impact, as shown consistently by several studies and reports (Institute for Women, 2020; Ausín et al, 2020; Jacques-Avinõ et al., 2020)[1]. The academic world, including universities, is no exception. In fact, there is emerging evidence that, during the lockdown in the first wave of the pandemic, women's submission of articles to academic journals decreased, while men's submission increased.[2]

[1] Women's Institute (2020) Report: *The gender perspective, essential in the response to COVID-19;*
Ausín, B., González-Sanguino, C., Castellanos, M. Á., & Muñoz, M. (2020). Gender-related differences in the psychological impact of confinement as a consequence of COVID-19 in Spain. *Journal of Gender Studies*, 00(00), 1–10;
Jacques-Avinõ, C., López-Jiménez, T., Medina-Perucha, L., De Bont, J., Gonçalves, A. Q., Duarte-Salles, T., & Berenguera, A. (2020). Gender-based approach on the social impact and mental health in Spain during COVID-19 lockdown: A cross-sectional study. *BMJ Open,* 10(11), 1–10.

[2] Viglione, Giuliana. *Are women publishing less during the pandemic? Here's what the data say.*

Therefore, **analysing the pandemic's effects from a gender perspective helps us see and understand the systemic and structural nature of gender inequalities.** This is precisely the aim of this SUPERA project study, using a survey to identify the working conditions, time use and academic performance of the teaching and research staff (PDI) at the consortium's universities, including the Complutense University of Madrid (UCM).

The survey explored aspects of reconciling work and family life, co-responsibility, the psychological impact of the pandemic, the time use in terms of domestic and care work, working time (uses of academic time), and academic performance and production during lockdown periods among the UCM's teaching and research staff (PDI). As discussed in greater detail later in this report, the survey's results conclusively show that **women PDIs had a significantly worse time during lockdown than their male colleagues,** in general. This includes a greater negative psychological impact on women, the need for greater efforts on their part, and the presence of more difficulties in combining academic work with care and family life in lockdown. As such, it may be concluded that they were most severely affected by the COVID-19 crisis. They have had worse working conditions, have dedicated more time to housework and care work, have significantly increased the hours they dedicated to academic work – dedicating more time to teaching and student care, and less time to research, writing and publishing their work – compared to their male peers. This indicates a sexual division of labour in the academic world, which ultimately has differentiated effects on academic production.

Methodology

To conduct this study, a **survey targeting all teaching and research staff (PDI)** at UCM was carried out. The survey was designed in April and May 2020, before being shared with the Network of Gender Equality Nodes for review and improvement at the end of May. The survey was undertaken through an online questionnaire, disseminated by email on 18 June, and remaining open until 8 July 2020. It was distributed through the **Network of Equality Nodes,** promoted by the coordinator of the Equality Node within each faculty, and disseminated by each **Dean** to all the PDI in the faculty (26 faculties in total).

The survey was distributed to a total of 6,179 people, including 3,222 men (52.14%) and 2,957 women (47.86%). A total of **1,691 responses** were obtained. After purging the database, 1,531 valid responses remained (representing a **final response rate of 24.78%**).

Disaggregating data on the total responses received by gender, men's participation was somewhat lower – accounting for 41.5% of total responses, despite representing 52% of UCM staff. Full professors (*catedráticos*), associate professors who are not civil servants (*contratados doctores/as*) and part-time professors (*asociados/as*) were especially underrepresented. Among women, associate professors who are tenured civil servants (titulares) and assistant professors (*ayudante doctores/as*) were slightly overrepresented among respondents.* For this reason, **the database was weighted by sex and by position,** in order to accord the real weight to each group based on their representation in the census or total population, thereby ensuring the **external validity** of the results. An analysis to gauge statistical significance was also conducted, so that all the data presented in this report corresponds to significant responses with a 95% confidence interval, with the text expressly indicating when this is not the case. Data based on responses in which the relationship is statistically significant but at a lower confidence level (90%) is also included, when these contribute to highlighting possible patterns, forming hypotheses or simply completing information on a specific question.

Structure of the questionnaire

The questionnaire consisted of 37 questions in total, all of which were multiple choice, with the exception of six open-ended questions. The questions were divided into five blocks, organised as follows:

- Chapter 1. Academic and socio-demographic variables
- Chapter 2. Working conditions
- Chapter 3. Academic performance and production
- Chapter 4. Time use and perceptions of efficiency
- Chapter 5. Institutional support and possible solutions

Only two questions (related to gender and academic position/category) were mandatory.

Results

Chapter 1. Academic and socio-demographic variables

The first block of questions was designed to obtain information on the **academic and socio-demographic profiles** of persons who responded to the questionnaire, with the aim of having enough variables to allow group analysis and cross-analyses of data. Questions asked respondents about their academic position, whether they are pursuing an academic career or not, in addition to other basic variables such as gender or age. Data on respondents' academic connection (position) was weighted to enable the interpretation of the data in a manner adjusted to the real census at UCM.

In terms of gender, once the weighted analysis was carried out, **47.9% of the answers were provided by women and 52.1% by men** (thereby being almost equivalent to the gender-disaggregated proportions of the PDI population at UCM, 52.2% of which is comprised of men and 47.8% of women). Only nine respondents reported other gender identities, two of whom did not provide any responses to any other questions in the questionnaire. Since this number of responses does not allow for the extraction of meaningful data, all of the data presented in this report is broken down by the categories of women and men.

Chapter 2. Working conditions

The block of questions on working conditions during lockdown and de-escalation included several important questions to analyse the possibilities for carrying out the PDI's work in terms of both teaching and research. Respondents were asked about **computer equipment** and **internet** connection, alongside several questions related to their **residence** – such as the availability of a **separate room** in which to work, an outdoor space in the residence and the size in square metres of their residence. Questions also concerned the people with whom respondents live in terms of **care responsibilities** during the health crisis. Finally, a number of questions concerned respondents' **emotional state** and the amount of time spent doing **housework** before and during the lockdown.

The data obtained reflects COVID-19's **immense impact at the personal and family levels among the UCM community,** and its consequent emotional impact. To give one example, 21.4% of respondents reported that someone close to them had recently died as of June 2020.

Among UCM's research and teaching staff (PDI), women have experienced worse working conditions than men.

In terms of access to **adequate computer equipment,** there is a significant difference between men and women who answered 'yes' – while 84.4% of men responded in this manner, the figure dropped to 79.1% for women. Equipment was one of the issues mentioned most in respondents' answers to open-ended questions, where they expressed general discomfort at having to work with nothing but their own resources. *"Everything I have done is because I have provided the resources [myself]: internet connection, materials, printer, computer..."* (Woman, associate professor (*contratada doctora*)). *"I have not been able to work properly because I did not have the appropriate instruments (computer, webcam, headphones, microphone, etc.) and they were not provided by the university"* (Man, associate profesor (*titular*)).

There were also significant differences in terms of access to a **room in which to work alone.** While 73.6% of men answered 'yes' to this question, affirmative responses dropped to 68.8% for women. This data indicates that PDI women have experienced worse conditions in which to conduct their academic and research work. The cause may be, among others, that they have had to prioritise the use of computer equipment and rooms/offices by other persons with whom they live, including minors with schoolwork or adults in the same house.

"Everything I have done is because I have provided the resources [myself]: internet connection, materials, printer, computer..."
Woman, associate professor (*contratada doctora*)

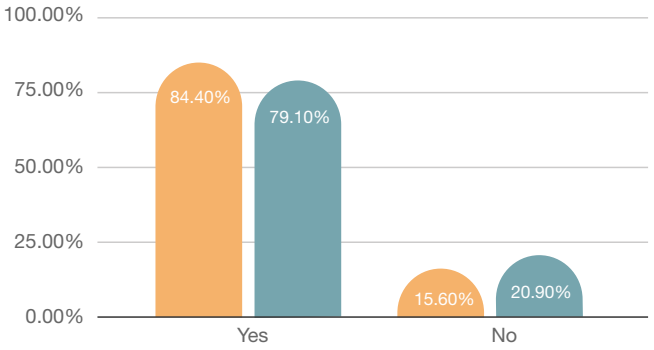


Figure 1.
Access to good computer equipment during the lockdown and de-escalation

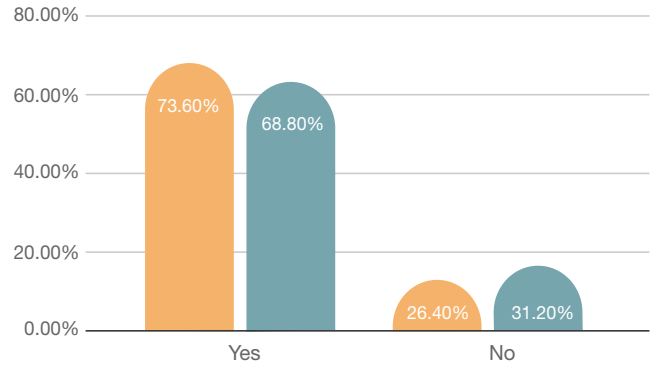


Figure 2.
Access to a private room in which to work during the lockdown and de-escalation

In terms of **cohabitation,** we found significant differences between men and women among respondents who live alone with children. There are more women than men among their ranks – 7.9% of all women respondents, compared to 1.3% of all men who responded to the survey – live alone with children (**single-mother or single-parent family**). These types of households were particularly affected during the period of total lockdown, given that a single adult person was responsible for all domestic work, supporting schoolwork, and work responsibilities as a PDI, both in terms of teaching and research.

"I have spent the lockdown working alone with two young children in my care. My only moments of productivity were during the children's sleeping hours."

Woman, associate profesor (contratada doctora)

"I reiterate that, with small children and all other tasks, it is very difficult to work. Since I couldn't give classes online because I had to take care of the children, I had to record myself. To get a 20-minute video, I spent 4 hours working, which I had to do at dawn, when the children were asleep. This caused total exhaustion and a lot of stress, since I felt that I did not achieve everything [I wanted to]. For me, it has been a very unpleasant situation." – Woman, associate professor *(titular)*

When cross-checking the data on respondents who live with children, significant differences arise based on the ages of respondents' daughters and sons. This is especially true for respondents **who live with children under 19 years old.** Until to this age, women tend to live with their children, with a difference of almost 7 percentage points (39.9% compared to 33% of men). Men represent the majority of respondents who do not live with children or live with young persons over 19 years old, although the differences between men and women respondents is less pronounced in terms of the latter group.

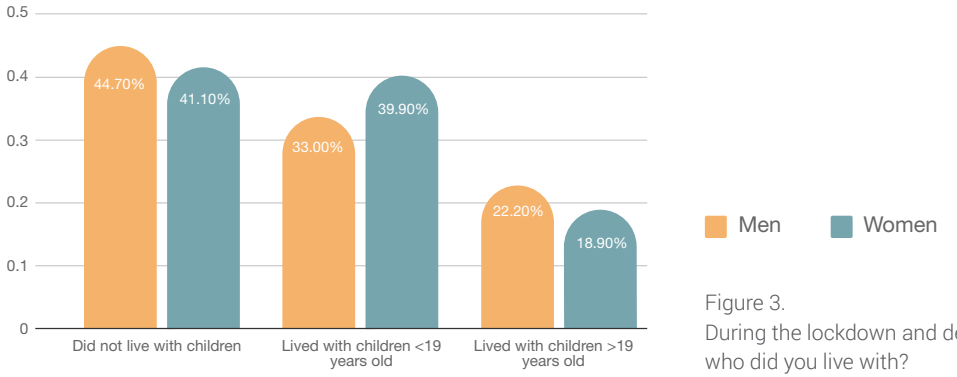


Figure 3.
During the lockdown and de-escalation, who did you live with?

Women's persistently greater burden of care work is also reflected in responses to the question concerning **elderly dependants whom they live with.** Men represented the majority of respondents who did not live with any elderly dependant person (91.7% of men, compared to 88.3 % of women), while 2.9% of women lived with two elderly dependants, compared to 0.8% of men.

Differences are also apparent in terms of **the size of the residence** in which respondents lived during lockdown and de-escalation. Comparing data on persons who resided in a residence smaller than 100m^2, compared to those who lived in a residence larger than 100m^2, there is a difference of up to 5 percentage points, as shown in figure 4.

This difference may be indicative of the economic gender gap. Specifically, it may function as an indicative proxy of the gender wage gap between the male and female PDI at UCM. To delve further into this data, the statistics were cross-analysed with the variables of age and academic position, as possible explanatory factors of the identified difference. However, this cross-analysis did not provide an explanation of the significant difference identified. As such, it seems plausible to maintain the earlier hypothesis.

This chapter also reveals significant differences in responses to questions on respondents' **emotional state.** Women PDIs have not only had worse working conditions, they had a significantly worse time during lockdown than their male colleagues overall. Specifically, the survey asked how intensely respondents experienced the following emotions on a scale of 1 to 5, where '1' is 'not at all' and 5 is 'extremely':

- I felt sadness
- I felt concerned
- I felt nervous, stressed or anxious
- I felt that the situation overwhelmed me
- I felt like I was losing control of the situation

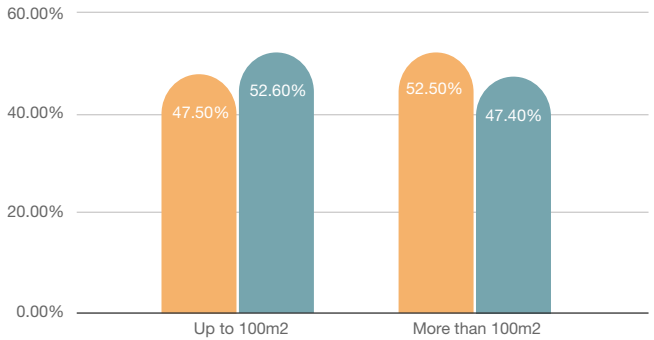


Figure 4.
Size of the residence where you lived during the lockdown and de-escalation (in square metres)

In all cases, significant gender differences are apparent in responses 1 and 2 (not at all, and a little) and 4 and 5 (a lot, and extremely). When added together, these result in a difference of more than 16 percentage points in some cases. In the open-ended questions, some respondents explained the various factors that influenced their emotional state. They revealed that teaching work was a form of support for some people, although workloads also contributed to others feeling overwhelmed. *"In general, I have had serious concentration problems and a significant feeling of the loss of meaning of [my] work. The only thing that I have sustained, and that has sustained me in a very important way, was class work and monitoring my students to prevent anyone from being left behind."* (Woman, associate professor *(contratada doctora)*).

The last part of this chapter concerned perceptions of **time use in terms of reproductive work and respondents' own time,** both before lockdown, as well as during lockdown and de-escalation. It included questions about how many hours per week respondents devoted to domestic work within the home (cleaning, preparing meals), domestic work outside the home (running errands related to the household, shopping), caring for young children and supporting their schoolwork, caring for elderly dependants (whether or not they lived with these dependants), as well as the time used for personal care, including sports, leisure, or simply time for oneself.

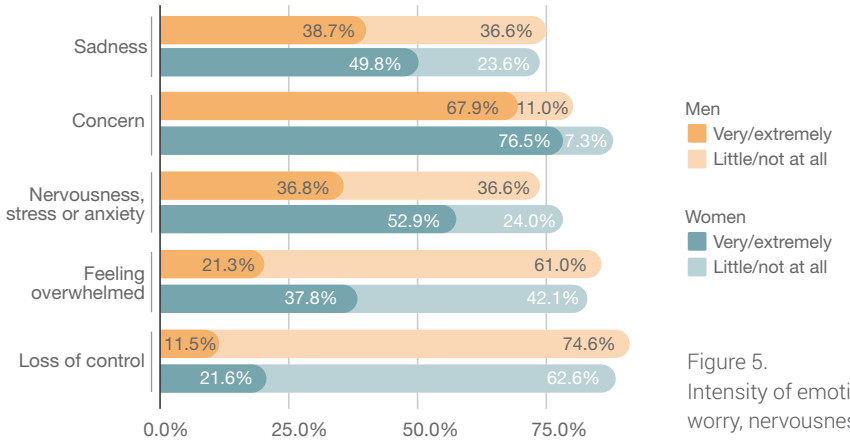


Figure 5.
Intensity of emotions during the lockdown (sadness, worry, nervousness, being overwhelmed, loss of control)

Among these issues – both before and during lockdown – the most significant differences concern **child care,** which largely falls to women, as well as time for **leisure and sports,** which men had more of. The number of hours spent caring for young children increased for both women and men, with a direct impact on their professional performance, as respondents of both genders reported in the survey's open-ended questions. However, such care work increased by one hour more for women than for men, indicating higher levels of stress and fatigue. *"It is impossible to do research with small children at home, having to take care of them, paying attention to them, connecting to their classes every day, doing homework, having to work [oneself], do the housework and prepare all the meals. It is absolutely impossible."* (Woman, associate professor *(titular)*). *"The routines at home within families are complicated and performance is lower. With good organisation, leisure time increases at the expense of research."* (Man, associate professor *(titular)*).

	Sex	N	Average	Standard deviation
Caring for young children (hygiene, play, etc.) - Before lockdown (^^)[3]	Men	302	8.47	9.62
	Women	314	11.44	12.66
Caring for young children (hygiene, play, etc.) - During lockdown and de-escalation (^^)[3]	Men	299	12.99	14.22
	Women	314	16.74	16.32
Sports and exercise - Before lockdown	Men	694	5.31	5.81711
	Women	663	4.54	4.69671
Sport and exercise - During lockdown and de-escalation (^^)	Men	687	4.41	5.63215
	Women	663	3.81	4.68323

Table 1.
Caring for young children, and sports and exercise, before lockdown, and during the lockdown and de-escalation

[3] The symbols ^ and ^^ are used to indicate the statistical representativeness in terms of Chi-square, where ^ represents p <.01 and ^^ represents p <.05

It is impossible to do research with small children at home, having to take care of them, paying attention to them, connecting to their classes every day, doing homework, having to work, doing the house work, and preparing all the meals. It is absolutely impossible."
Woman, associate professor (*titular*)

In terms of differences that were not statistically significant before the lockdown, but worsened during lockdown and de-escalation, these include chores related to housework in terms of **cleaning, washing, ironing, tidying, etc.,** as well as domestic work related to **meal preparation.** If before the lockdown men and women spent 5 hours and 5.4 hours, respectively, on the former, during lockdown women spent twice as many hours on cleaning, representing a difference of 2.5 hours compared to the time spent by men. In terms of preparing meals, men and women went from spending 5.4 and 5.6 hours on this task, respectively, to 8.9 and 10.1 hours. By contrast, **domestic work performed outside the home** decreased during the lockdown, with women spending 0.8 hours less on such tasks compared to men. In other words, in the context of lockdown, women were even more 'confined' than men, which may have been among the many factors that contributed to women's worse emotional state.

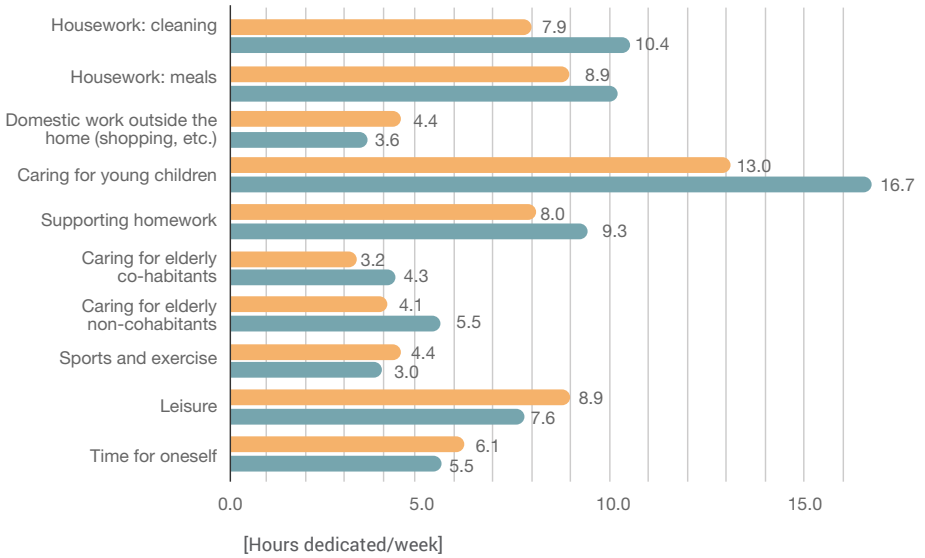


Figure 6.
Hours dedicated to reproductive work and personal time per week, during the lockdown and de-escalation

Chapter 3. Academic production

This block of questions sought to explore the specific situation of **academic work, both in terms of teaching** (whether or not teaching was undertaken during the lockdown, the number of students or credits, and other related variables, such as the number of end of degree projects (TFG in Spanish) and/or theses supervised during the lockdown), **as well as scientific production and research** before and during the lockdown (questions about the number of articles, books/book chapters, presentations, reports, patents or artistic works, among others, in addition to the number of research, innovation or transfer projects). The chapter also included a question designed to identify PDIs' perceptions of their academic performance, specifically, their degree of satisfaction with their performance.

Responses to the question about official teaching delivered in the January–June 2020 semester, significant differences are not apparent. The data is practically the same for women and men (88.1% of men and 88.2% of the women respondents taught during the lockdown). Nevertheless, differences are apparent in terms of the **number of credits** taught by women and men. The most significant difference exists in terms of the range between 3.1 and 6 credits, with a difference of 5 percentage points for men compared to women (30.0% versus 26%, respectively).

			Sex		
			Man	Woman	Total
Number of credits	Up to 3	Number	82	56	138
		%	13.1%	10.2%	11.8%
	From 3.1 to 6 (^^)	Number	193	142	335
		%	30.9%	26.0%	28.6%
	From 6.1 to 9	Number	127	126	253
		%	20.3%	23.0%	21.6%
	From 9.1 to 12	Number	100	96	196
		%	16.0%	17.6%	16.7%
	From 12.1 to 15	Number	50	54	104
		%	8.0%	9.9%	8.9%
	More than 15	Number	73	73	146
		%	11.7%	13.3%	12.5%
Total		Number	625	547	1172
		%	100.0%	100.0%	100.0%

Table 2.
ber of credits during the January–June 2020 semester

Regarding the specific group of PDI who **did not teach** during the lockdown, there are significant differences in three of the reasons cited for not having a teaching load. These are teaching accumulated in the first semester (80% of men, compared to 57.9 % of women), sick leave (6.6% of women and 0% of men) and 'other' causes (5.3% of women and 0% of men). In terms of the other two reasons cited by respondents (being on sabbatical or having a union management position), no significant differences are observed.

The questions related to **scientific production** also show significant differences in several of the issues analysed, both before the lockdown and during lockdown and de-escalation. It is important to note that the data for both periods are not comparable, since they are not the same periods. 'Before the lockdown' specifically referred to 2019 up to until 11 March 2020, while the period of 'lockdown and de-escalation' only the months of March to June 2020. Nevertheless, even if the data on the period before the lockdown is reduced by half, important differences are apparent in respondents' answers to specific questions.

In the year before the lockdown, the first significant difference is evident in the number of **books,** both with respect to those submitted for publication (men submitted twice as many books as women) and those which were actually published. Men also submitted significantly more **book chapters** than women (although in this case, the difference between the number of chapters published by men compared to women is not statistically significant). The same is true for **articles** submitted to peer-reviewed journals. There is also a significant difference in terms of **patents, as well as artistic and musical works,** with men producing more than twice the number of such works than women. No significant differences appear in terms of monographs, working papers, presentations, reports and popular articles. Men submitted and had more of these kinds of Works published than women, with the exception of presentations, where women produced slightly more than men, albeit without any statistical relevance.

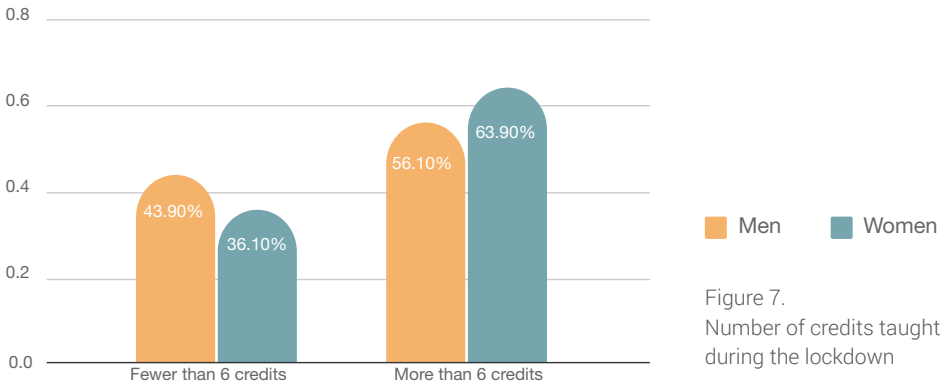


Figure 7.
Number of credits taught during the lockdown

During the months of lockdown and de-escalation, significant differences are apparent in respondents **working on books and book chapters**; as one respondent noted in his response to the survey's open-ended questions: *"Lockdown has been excellent for me to move forward with a book that I haven't finished yet."* (Man, full professor (*catedrático*)). Significant differences also exist in terms of **articles in peer-reviewed journals** and, to a lesser extent, artistic and musical works, the **submission of articles for publication in peer-reviewed journals and the submission of patents,** as well as reports/opinions and popular articles. The latter's statistical significance involves a lower confidence interval (90%). In all these cases, men worked on and submitted more works for publication than women (*"I have taken the opportunity to boost the publication of papers."* – Man, associate professor *(titular)*). There is an especially marked difference in peer-reviewed journal articles, one of the most important aspects to consider when assessing the scientific quality of a person's research work, which is considered essential for the development of an academic career. *"During the hardest stage of lockdown, I took the opportunity to write/finish two articles in peer-reviewed journals that I had pending, and for which I did not find the time before."* (Man, associate professor *(contratado doctor)*).

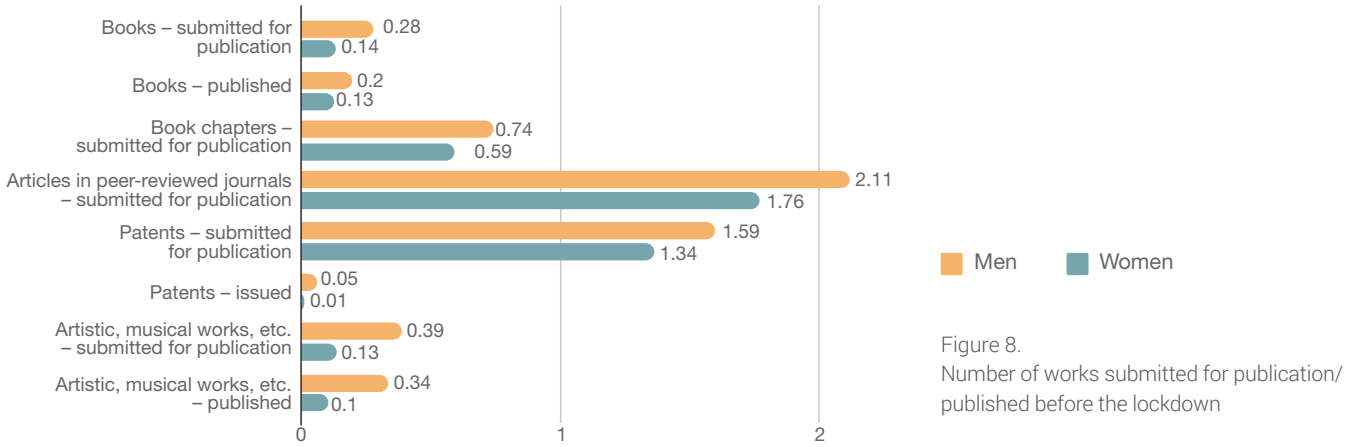


Figure 8.
Number of works submitted for publication/ published before the lockdown

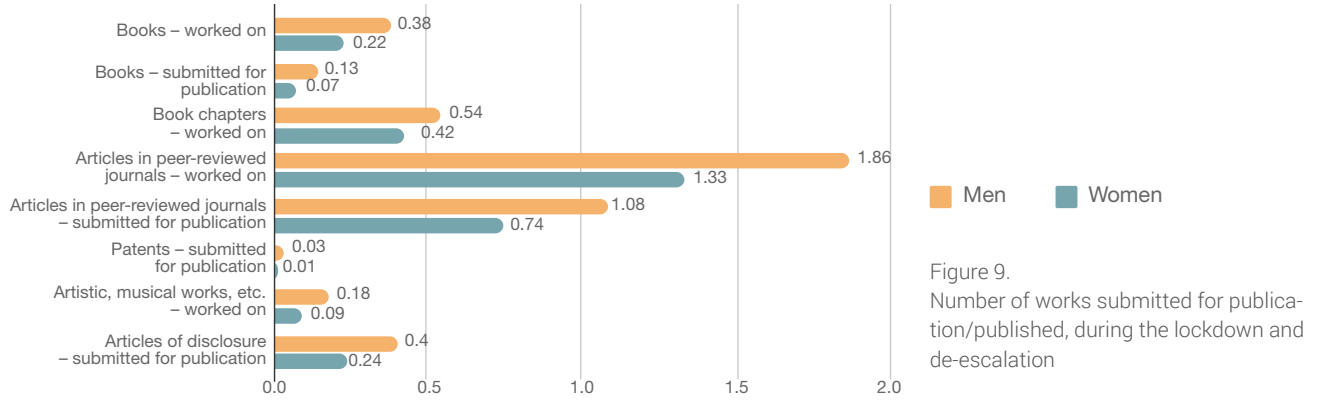


Figure 9.
Number of works submitted for publication/published, during the lockdown and de-escalation

Monographs and working papers are the only kinds of works in which there is parity between women and men in terms of working on and sending works for publication. For all other kinds of outputs, while men have worked on or submitted more works for publication, albeit without statistically significant differences. For example, men worked on 0.64 papers on average compared to 0.56 for women, men submitted 0.48 papers for publication compared to 0.36 for women. Men worked on 0.84 reports/opinions and submitted 0.60 for publication, on average, while women worked on 0.64 reports/opinions and submitted 0.33 for publication. The same trend is apparent in terms of **popular articles.** Here again, the differences are not statistically significant, although men worked on and submitted more such articles for publication. In fact, men submitted almost the same number of articles that they worked on (0.40 and 0.43, respectively), while women submitted only 0.24 articles despite working on 0.31.

In general, therefore, it is clear that women not only had a heavier teaching load during confinement, **but they were also able to devote much less to research** than their male peers, especially when they had family responsibilities. This is reflected in responses to the survey's open-ended questions: *"In general, women with family responsibilities during lockdown carried out teaching tasks but not research, so the gap with respect to our colleagues who do not have family responsibilities is increasing"* (Woman, associate professor *(titular)*).

While aggregate data is presented here for the entire PDI, a more detailed, in-depth analysis by fields of knowledge could offer a more accurate reflection of the most acute gaps and different impacts of the crisis, depending on each field's characteristics. For example, scientific work which requires work in laboratories is not the same as work that does not. This is in addition to the crisis' impact on specific groups, such as health care personnel, as reflected in their responses to the survey's open-ended questions: *"We, health care doctors, have been treating patients in our hospitals and there was no time to try to write anything"* (Man, associate professor *(titular)*).

"In general, women with family responsibilities during lockdown performed teaching tasks but not research, so the gap with respect to our colleagues who do not have family responsibilities is increasing."
Woman, associate professor *(titular)*

	Sex	N	Average	Standard deviation	Standard error
Educational innovation projects - In 2019 (^^)	Man	564	.57	.59598	.02510
	Woman	488	.71	.54799	.02482
Educational innovation projects - In 2020 (^^)	Man	552	.50	.56832	.02420
	Woman	462	.63	.53503	.02488

Table 3.
Number of educational innovation projects which respondents participated in during 2019 and 2020

With regard to **research, transfer and innovation** projects, the questionnaire included specific questions on: competitive research projects (national research and development (R&D), European R&D, Regional and UCM funded projects, etc.), educational innovation projects, Article 83 contracts and other non-competitive research, innovation or transfer projects, both before and during the lockdown. Respondents were asked whether they participated or were involved in some manner, but were not asked whether they were principal investigators (PI), which is where the largest gender gap usually occurs, according to official data.[4] This study finds significant differences in educational innovation projects, where women had higher rates of Participation both before and during the lockdown and de-escalation.

For all other projects, no significant differences are apparent, although women's Participation rate is slightly higher than men's, except in the case of Article 83 projects in 2020, wherein men's participation was slightly higher, albeit not in a statistically relevant manner. Gender differences in terms of competitive research projects offers significant data, with a confidence interval of 90%, reflecting women's higher rate of participation (1.18 compared to 1.09 for men in 2019, and 1. 14 vs 1.04, respectively, in 2020).

Women have higher rates of participation in educational innovation projects.

[4] See the 'Scientific Report in Figures' published by the MICINN, available here.

This chapter concluded with a question on respondents' **degree of satisfaction with their academic work** during the lockdown on a scale of 1 to 5, where 1 is 'not at all satisfied' and 5 is 'very satisfied'. A significant difference exists among respondents who selected 4 (quite satisfied), with men surpassing women by 6.1 percentage points. The question referred to academic work in general; therefore, specific data is not available on each different aspect of academic work. Nevertheless, answers to the open-ended questions indicate differences in this regard which could be explored through a more qualitative analysis: *"My dissatisfaction is with my research work, not with the teaching staff, whom I consider to have been satisfactory"* (Woman, assistant professor (*ayudante doctora*)). Answers which distinguish levels of satisfaction by the type of activity performed also reflect other types of differences related to the time that men and women were able to dedicate to each other, with a clear gender undercurrent: *"[I was] satisfied with the research, because the lockdown logically leaves a lot of time for writing"* (Man, full professor *(catedrático)*).

"[I was] satisfied with the research, because the lockdown logically leaves a lot of time for writing"
Man, full professor (*catedrático*).

"My dissatisfaction is with my research work, not with the teaching staff, whom I consider to have been satisfactory"
Woman, assistant professor (*ayudante doctora*)

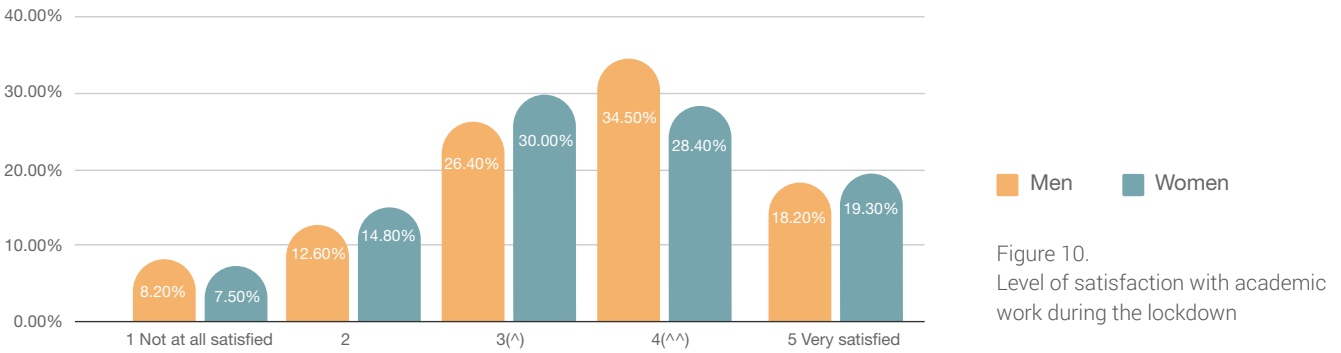


Figure 10.
Level of satisfaction with academic work during the lockdown

Nevertheless, understanding and interpreting this data requires a more in-depth analysis, which places the findings into a qualitative dialogue with the information obtained through the survey's open-ended questions. These questions show that the variables which different respondents took into consideration to assess their own degree of satisfaction differed greatly. These variables were not solely related to teaching or research results, but also encompassed other variables ranging from respondents' family context to more intangible issues, such as their relationship with students: *"This satisfaction is fundamentally due to the fact that I do not have significant family responsibilities, since my children are older. If they had been younger, my level of satisfaction would have been completely different"* (Woman, associate professor *(titular)*). *"The relationship with the student body has been very good and their participation was excellent, but nothing compares to face-to-face teaching. This, alongside the enormous difficulties I faced in making my home my only place of work, makes it very difficult for me to assess my degree of satisfaction. On the one hand, this was 0, but my relationship with students made it increase"* (Woman, associate professor *(contratada doctora)*). *"Very satisfied with the results with the students; not at all satisfied with the overwhelming workload that it entailed"* (Man, associate profesor *(contratado doctor)*). Moreover, a high level of satisfaction should not be interpreted necessarily as something positive, since the impact and cost of the efforts involved were very high: *"I feel satisfied because I keep moving forward, although the cost of physical, mental and family health is absolutely unfeasible in the medium-term"* (Woman, assistant professor (*ayudante doctora*)).

Chapter 4. Time use and perceptions of efficiency

This block in the questionnaire included six questions on how many hours respondents dedicated to each kind of academic work and the use of this time. Methodologically, it is important to point out that the survey inquired about perceptions of time use for each task, and does not involve a rigorous methodology for measuring time use. These six questions asked respondents about the total number of hours they dedicated to academic work before and during the lockdown, how many hours per week they spent on different activities, and the possible factors that affected academic performance. They were asked to rate, on a scale of 1 to 5, how much they agreed with a list of statements related to time use during the lockdown and de-escalation. This block also included two open-ended questions, enabling participants to add tasks that were not included in the list, as well as to comment on any relevant questions.

In terms of the **number of hours dedicated to academic work per week,** although no significant differences are apparent between men and women, we did find a change in the time respondents spent on academic work before and during the lockdown. The data indicates that before the lockdown, men spent an average of 32.2 hours per week on academic work, while women spent an average of 31.9 hours. During the lockdown and de-escalation, women spent an average of 38.6 hours on academic work, while men spent 37.2 hours. This data is relevant because it reflects that, during the lockdown and de-escalation, the time that women spent on academic work increased by an average of 6.7 hours per a week, compared to an increase of 5 hours for men.

During the lockdown and de-escalation, the time that women spent on academic work increased by an average of 6.7 hours per week, compared to an increase of 5 hours for men.

With regard to the number of hours spent on different activities within the scope of academic work before and during the lockdown and de-escalation, the questionnaire presented a list of 13 activities. These were:

1. Preparing and teaching classes and exams
2. Supporting students, doctoral students and fellows
3. Managing research projects
4. The collection and analysis of information/samples
5. Writing papers, articles or books
6. Preparing research, educational innovation or transfer proposals
7. Attending meetings and commissions
8. Work management for departments, deanships and commissions
9. Reviewing and evaluating articles or proposals for research projects
10. Self-training
11. Applications (accreditations, six-year terms, scholarships, vacancies, etc.)
12. Transfer and dissemination activities (presentations, managing and delivering courses/seminars, scientific societies, etc.)
13. Participating tribunals (on theses, vacancies, etc.)

Overall, both women and men exhibited a tendency to dedicate more time to all of these activities during the lockdown and de-escalation than in the pre-lockdown period, with the exception of collecting and analysing information/samples and participating in selection committees or tribunals. The time that both men and women spent on these two activities decreased during the lockdown. Moreover, women spent 0.6 hours less, on average, on transfer and outreach activities during the lockdown, while men spent 0.2 hours less on this activity during the lockdown, on average.

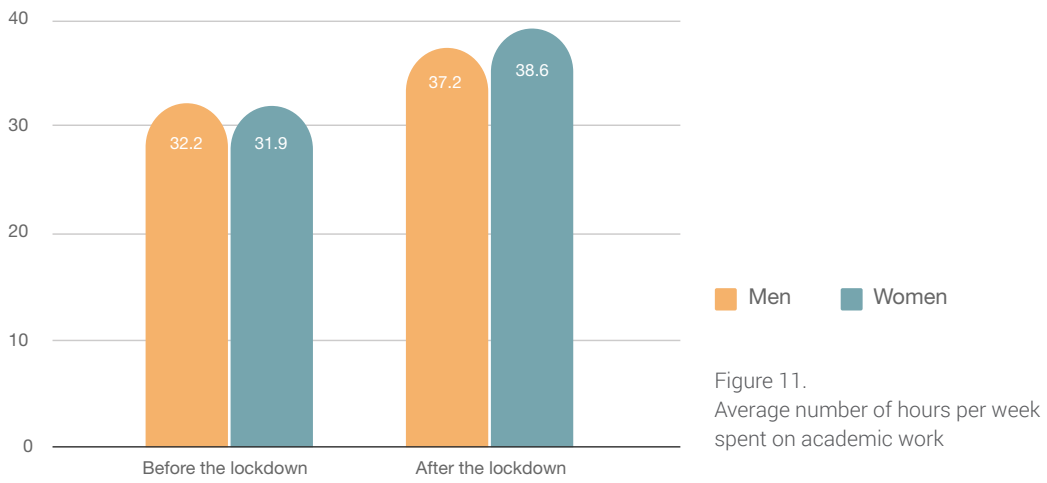


Figure 11.
Average number of hours per week spent on academic work

Before the lockdown, there was a significant difference between men and women in terms of **requests,** with women spending an average of 1.6 hours on this activity, compared to 1.1 hours spent by men. This difference decreased during the lockdown, with women dedicating the same amount of time to requests but men's time spent increasing to 1.4 hours; therefore, the difference is no longer significant.

In terms of **writing papers, articles or books,** differences already existed before the lockdown; with men spending 7 hours on this activity compared to 6.2 hours spend by women. This difference increased greatly during the lockdown, yielding a significant difference – whereby men spent an average of 8.1 hours and women spent 6.6 hours on this activity.

Significant differences were also identified between men and women in terms of three other, both before and during the lockdown.

Women spend more time than men on **preparing and delivering classes and exams.** Before the lockdown, women respondents reported spending an average of 11.4 hours per week on this activity, compared to 9.3 hours spent by men. This difference was aggravated during the lockdown, with women spending an average of 4.7 hours more per week on this activity, totalling 16.1 hours per week on average, compared to 12.5 hours per week spent by men. In other words, the women PDI at UCM spent an average of 3.6 hours more per week than their male colleagues on preparing and teaching classes.

Women also spent more time on **supporting students, doctoral students and interns,** both before and after the lockdown. Before the lockdown, men spent an average of 4.8 hours on this activity, while women spent 5.4 hours. During the lockdown, this increased to 7.3 hours for men and 8.5 for women; that is, the difference increased, just as it did for the activity mentioned above. Overall, women dedicated an average of 1.2 hours more per week to supporting students, doctoral students and interns.

Women PDI at UCM spent an average of 3.6 hours more per week than their male colleagues on preparing and teaching classes.

We also found significant differences, both before and after the lockdown, in **participation in selection tribunals or commissions.** Although both men and women spent fewer hours on this activity on average during the lockdown, women spent more time on it both before the lockdown (an average of 1.7 hours per week, compared to 1.2 hours spent by men) and during the lockdown (1.3 hours per week on average, compared to 0.9 hours spent by men).

Responses to questions on the factors that may have had an **impact on academic performance** during the COVID-19 crisis reveal important differences between men and women. The questionnaire included six factors that could have affected performance, asking respondents to assess the influence of each factor on a scale of 1 to 5 (where 1 is 'it did not affect me at all' and 5 is 'it affected me a lot').

We found significant differences between men and women across all of these factors, except for the special conditions of academic work, which both men and women report being affected by in a similar manner. However, for the other factors, the differences are significant. These allow us to identify gender inequalities in terms of the crisis' impact on academic performance.

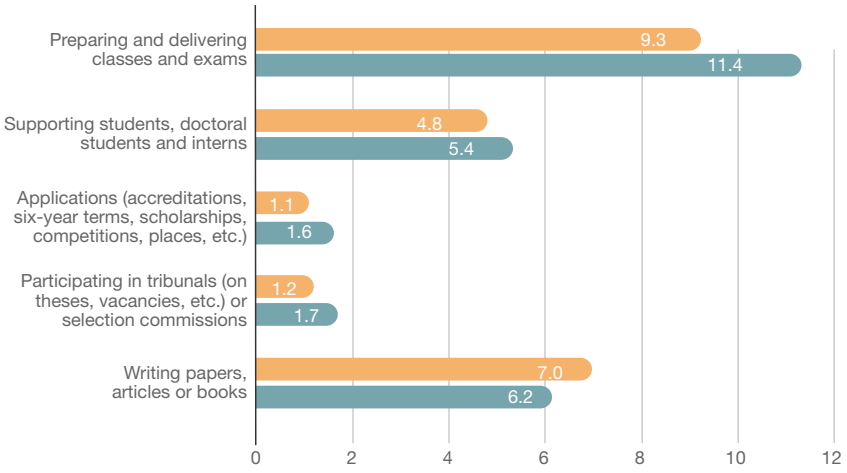


Figure 12.
Hours spent per week on academic activities before the lockdown

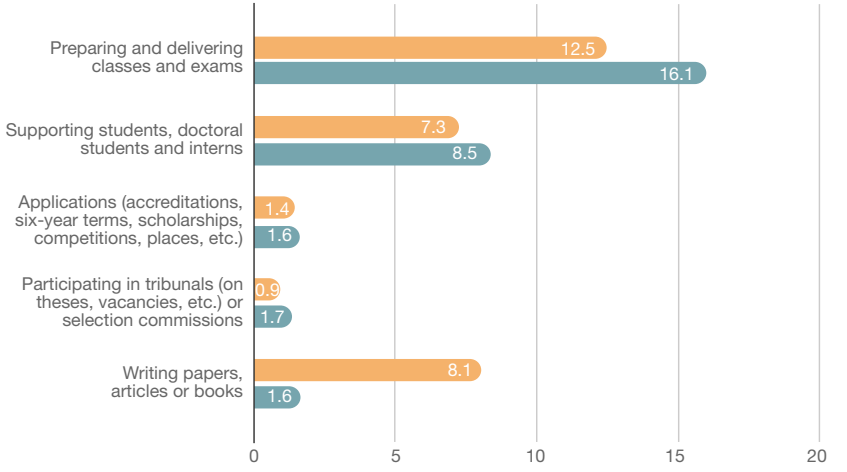


Figure 13.
Hours spent per week on academic activities after the lockdown

Respondents were asked to assess each factor's impact on their academic performance, on a scale of 1 to 5. Above all, the results revealed significant differences between men and women in terms of **family care.** This is apparent both in responses which indicated that respondents were not affected at all (26.6% of men and 20.5% of women) and responses which stated that they were affected a great deal. In terms of the latter, there was a significant converse difference – more women reported being severely affected by caring for their families (almost 30%) than men (21.5%).

When asked how the number of hours spent on **domestic work** impacted their academic performance, respondents' answers reflect similarly significant differences. Overall, 21.1% of men reported not being affected at all, compared to just 15.2% of women, while 12.9% of men reported being severely affected, as did 23.4% of women.

Te ha afectado la atención a tu familia en el desempeño académico

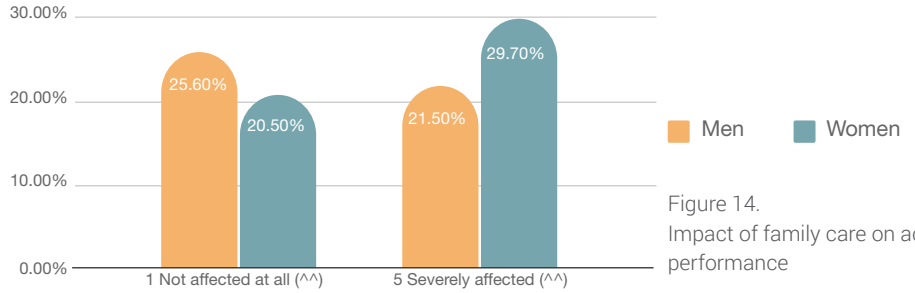


Figure 14.
Impact of family care on academic performance

Te ha afectado la cantidad de horas destinado al trabajo doméstico en el desempeño académico

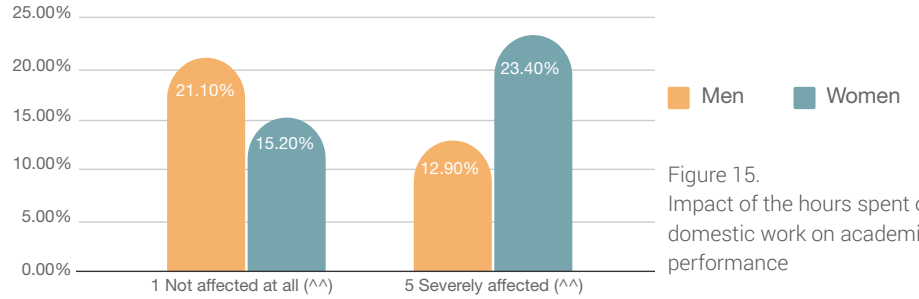
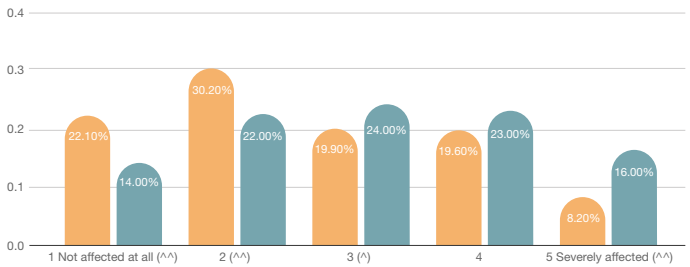


Figure 15.
Impact of the hours spent on domestic work on academic performance

When asked how the **emotional state** caused by the situation impacted their academic performance, responses answers reveal significant differences between women and men. Only 14% of women respondents reported not being affected at all, while 22% reported being affected 'a little', compared to 22.1% of men who reported not being affected at all and 30.20% who reported being affected 'a little'. Once more, there is a marked difference – of almost 8 percentage points – between respondents whose emotional state affected their academic performance a great deal, 16% of whom are women and 8.2% of whom are men.

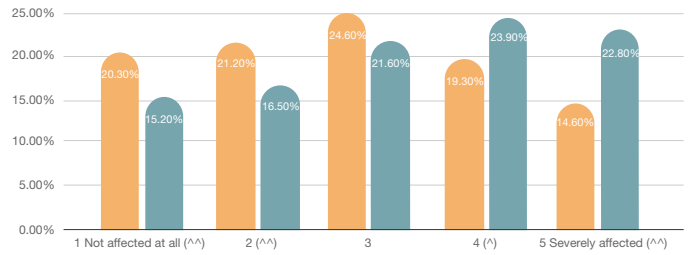
In terms of how their academic performance was affected by the time spent on **getting to grips with online tools**, responses reveal this affected women far more than men. Therefore, this reflects an important digital gender divide that persists among PDI at UCM. Significant differences are apparent at both ends of the spectrum – a higher percentage of men reported that this did not affect them at all (20.3%) or affected them a little (21.1%), while fewer women reported not being affected at all (15.20%) or only affected them a little (16.5%). At the opposite end of the spectrum, 22.8% of women reported being severely affected, as did 14.6% of men.



Has the emotional state caused by the situation affected your academic performance?

Men Women

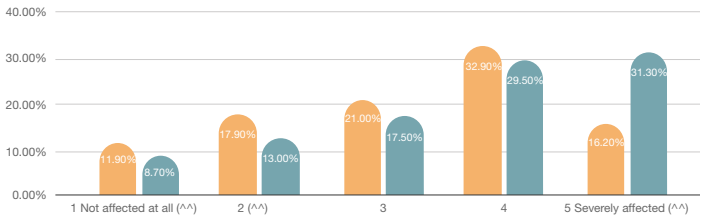
Figure 16.
Impact of emotional state on academic performance



Has getting to grips with online tools affected your academic performance?

Men Women

Figure 17.
Impact of the need to get to grips with online tools on academic performance



Has the accumulation of tasks and the difficulty of performing them affected your academic performance?

Men Women

Figure 18.
Impact of the accumulation of tasks and the difficulty of performing them on academic performance

The last factor examined was the impact that **accumulated tasks, and the difficulty of performing them,** had on academic performance. The data shows that more than 30% of women reported being greatly affected, compared to only 16% of men.

The chapter concluded by asking respondents to indicate how much they agreed or disagreed with the following statements on a scale of 1 to 5, where 1 is 'do not agree at all' and 5 is 'strongly agree':

1. I took the opportunity to catch up on pending issues
2. I felt very comfortable working at home
3. I felt very productive academically during the lockdown
4. I felt very effective in teaching tasks
5. I felt very effective in management tasks
6. On many occasions, I worked unusual hours (at night) or on weekends
7. I often found it difficult to work several hours at a time without being interrupted
8. Concentrating on work was a way of distracting myself from the situation

Some significant differences are evident in the responses to all of these statements, with the exception of the two statements on feeling efficient about teaching and management tasks. In terms of **taking the opportunity to catch up on pending issues,** the most acute difference is evident among respondents who did not agree at all, with a difference of more than 10 percentage points between women (40.9%) and men (30.6%). There is also a significant difference, but with a lower confidence interval (90%), between those who strongly agreed with this statement (9.3% of men and 6.5% of women).

In terms of feeling very comfortable working at home and feeling very productive during the lockdown, the most significant differences are apparent between respondents who selected '3' (which may be interpreted as 'neither agree nor disagree'). These were not considered especially relevant given the particular difficulty of interpreting these responses. However, differences are also apparent in terms of **working unusual hours** (nights and weekends), the difficulty of working for several hours in a row without interruptions, and respondents used work as a way of distracting themselves from the situation.

The first of these three statements (on having to work unusual hours), received significantly different responses across the 1 to 5 scale, with the exception of responses that strongly disagreed with the statement.

Women PDI work more unusual hours (nights and weekends) than their male colleagues.

The greatest different is evident among respondents who strongly agree with the statement, most of whom are women (68%, compared to 51.1% of men). Nevertheless, a very high proportion of respondents of both genders agreed with the statement. As one respondent noted: *"Concentrating for long periods with a 3-year-old child at home can only be achieved when he sleeps, that is, at night. My efforts to maintain some scientific productivity have been at the expense of [my] night's sleep"* (Man, associate professor (*contratado doctor*)). Among the responses to the survey's open-ended questions, another respondent gave an example of how this relates to the non-direct correlation between a high level of satisfaction and a positive assessment of a response, as discussed in chapter 3:

"I am very satisfied with my scientific work but I have done it in my 'non-sleep' hours. That is to say, I have had to sacrifice time from my rest"
Woman, assistant professor *(ayudante doctora)*

Regarding the **difficulty of working without interruptions,** 36.1% of women strongly agreed with this statement, compared to 25.6% of men. In terms of the last question, significant differences exist both between respondents who did not agree at all (26.5% of men and 20.9% of women), as well as among those who strongly agreed (12.1% of men and 17.6% of women).

Connected to this, another participant's response to the open-ended questions highlighted the impact on her physical condition: *"Although I tried not to [have] lower productivity and quality of work, and I tried to get everything done, most of the time this meant reducing my hours of sleep, since during the day it was very difficult to combine my academic activity with the presence of my daughters (who are 3 and 5 years old) at home playing and doing activities typical for their age. It was difficult to achieve a reasonable level of concentration, except at night, when I was already very tired"* (Woman, associate professor (*contratada doctora*)).

The figure below summarises respondents' answers to all of these questions. The proportion of those who selected 1 and 2, or 4 and 5, were added together, in cases Where the differences were significant. Differences in almost all cases exceed 10 percentage points:

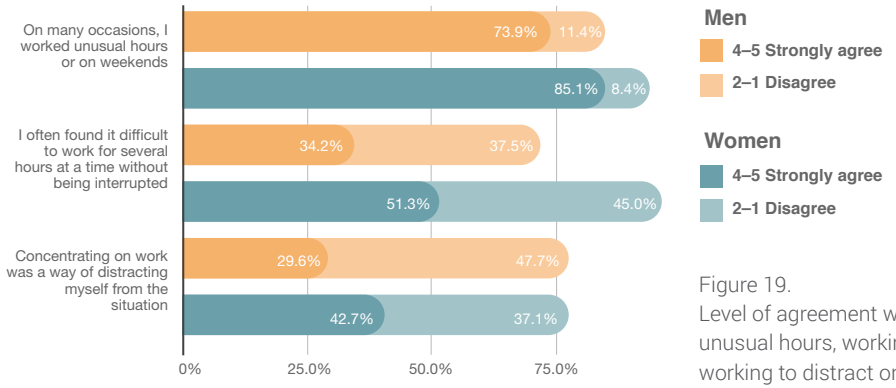


Figure 19.
Level of agreement with statements about working unusual hours, working without being interrupted and working to distract oneself from the situation

Chapter 5. Institutional support

The questionnaire ended with a block of questions on how supported respondents felt in terms of their academic work by people close to them, colleagues, their departments, the dean's office and the rector's office. They were asked to gauge their perceptions on a scale of 'not at all', to 'a little', 'quite a lot' and 'very'.

In this section, the most important differences were evident in terms of **support from people close to the respondents and colleagues,** far more so than at the institutional level. In the personal sphere, women felt less supported than men, with significant differences in respondents who did not feel supported by people close to them (7.9% of women vs 4.2% of men) compared to those who felt very supported by persons close to them (38.7% of women compared to 46.5% of men). In terms of feeling supported by colleagues, significant differences are also apparent between respondents who felt very well-supported (54.7% of men compared to 48.2% of women).

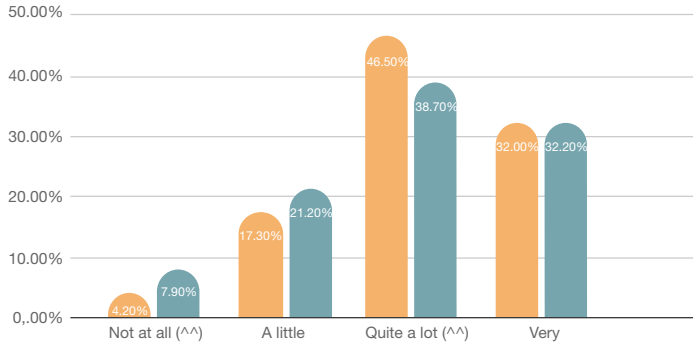


Figure 20.
How supported respondents felt by people close to them in terms of their academic work during the health crisis and the situation caused by the lockdown and de-escalation

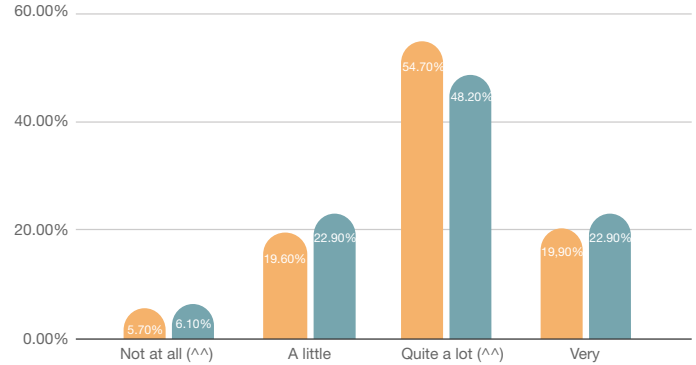


Figure 21.
How supported respondents felt by colleagues in terms of their academic work during the health crisis and the situation caused by the lockdown and de-escalation

Responses about **support from institutional figures** reveal no significant differences unless the confidence interval is set at 90%. In this case, a difference is apparent in terms of respondents who felt very well-supported by their **departments** (43.2% of men and 38% of women). It is important to note that, the questionnaire's open-ended questions invited respondents to highlight other forms of institutional support that were not included in the previous question. A large number of respondents mentioned support from faculties' information technology (IT) and coordination services in the context of virtual campuses. *"The IT service of the UCM, I applaud them, as well as the coordinators of the virtual campus"* (Woman, associate profesor (*titular*)). Other services mentioned included psychological support services (especially by women respondents), library services and administrative staff.

Conclusions

The data enables an initial general reflection on the seriousness of the lived experience of the pandemic, from a standpoint of making its true consequences visible. Several months later, we understand that this has not only been a health crisis, but also a social, economic and cultural crisis, as well as a turning point in people's lives and in institutions. At the global level, analyses of its impact and the response of different institutions, including universities, are emerging. In many cases, responses have tried to normalise the situation and focus on guaranteeing the continuity of activities, perhaps without properly assessing the real social and emotional scope of the crisis, and its special magnitude in terms of gender.

The first and strongest conclusion that can be drawn from this study is that **significant differences between men and women** were detected in all of the blocks of questions included in the survey. As this report describes, these differences confirm the existence of **structural inequality** that perpetuates traditional gender roles and stereotypes. The pandemic, lockdown and the de-escalation process have not only made existing structural inequalities more visible, they have also worsened them.

This study allows us to deduce that the profile of a **successful scientific professional** is of a person exclusively dedicated to academic work, who invests many hours per week in research and scientific production, and who spends far less time on reproductive and care work, both in their life personal as well in terms of supporting and caring for students which teaching requires in general. This requirement increased in this particular context of the lockdown.

This project has received funding from the European Research and Innovation Horizon 2020 programme under funding agreement no. 787829.

This homogeneous profile, which is mainly male, can translate into a lack of diversity in scientific production, an androcentric view thereof and, undoubtedly, a loss of talent. Diversity in scientific teams is vital because it allows problems to be observed from different perspectives. This translates into higher quality science that can respond to the needs of a diverse society in terms of gender, as well as sexual orientation, family models, religion, abilities, etc. It is difficult for a team that has no care-related responsibilities, or which is not affected by structural gender inequalities, to ask themselves questions which seek to solve problems that are unknown to them.

On the other hand, the results prompt new questions about institutional responses to the realities that the data reveals. As such, it is relevant to ask how basic needs of life have been taken into account and catered to, both within the PDI and the student body, in a context in which all activity was automatically transferred to people's homes. This was done without taking into account the diverse realities and possibilities within homes and, in a sense, assuming equal performance and capacity in all of them. As a result, adapting to an online model of work and managing everything that the pandemic entailed largely involved individual initiative, with burdens and responsibilities that, as we have seen, have not been equitable.

Regarding the diversity of households, the following conclusion concerns the **living arrangements of the PDI at UCM:** during the lockdown and de-escalation, more women than men lived with minors. Moreover, most households wherein a single adult lived with dependent minors were headed by women. These single women had to assume all household care and domestic work in addition to their academic work, without any at-

tention paid to their specific needs. Furthermore, they were faced by measures taken by health and political authorities which reflect the invisibility of these homes, the vast majority of which are headed by women, not only among the PDI at UCM, but within our society as a whole. It was taken for granted that one adult could go shopping while another adult took care of children at home, just as it was taken for granted at UCM that PDI could continue teleworking, while another person was responsible for sustaining life in the home. This type of household, according to the survey's respondents, represents 7.8% of co-habitation models among UCM's population. This is a not an insignificant figure and it highlights the relevance of establishing specific measures.

On the other hand, **women PDI at UCM** experienced **worse material working conditions** during the lockdown. They had less access to independent work spaces and good IT equipment. Women also spent more time getting to grips with computer applications, which raises the question of whether there is a significant digital divide between men and women PDI, not only in terms of access but also in qualitative terms, with respect to the use of applications and equipment. First, the results may indicate women tended to share their IT equipment with young children or other members of their households. Second, the data affirms that women dedicated more time to preparing classes and supporting students. Therefore, one may ask whether this was a reason for the greater time they spent coming to terms with up-to-date computer applications, or whether this was simply caused by less IT knowledge. This would be the first, quickest explanation why women required more time to get up to speed with these tools, but it may ignore a more structural analysis of the problem.

In addition, **women PDI at UCM dedicated more time than men to reproductive work** during the lockdown. Differences are as great as spending an additional 3 hours per week, on average, to domestic work and cleaning, or caring for young children. There are also relevant differences in the time dedicated to sports, leisure and personal time, which women spend less time on than men. Both findings indicate that women face a situation of structural inequality clearly influenced by gender roles, with a clear impact. Having less time per week makes it impossible for academic and professional careers to develop equally. Therefore, we can affirm that women PDI at UCM have had **less time available for rest, leisure and personal development** than men. Due to the type of work they do, this is inevitably relevant for the development of their academic careers. Creativity, innovation and concentration are key to the development of academic and intellectual work. Evidently, this is related to having time for rest and leisure, as well as having spaces for relaxation, concentration and personal development.

It is also important to note the **mental burden** created by the responsibility of domestic and care work, which, as the data shows, falls disproportionately on women PDI. Women are more affected by this mental load. In the case of PDI, this has a direct relationship with the characteristics of flexibility or the diverse schedules of teachers, which allows them to juggle their care work and teaching hours. This can have a double-edged connotation that must be analysed. On the one hand, it entails an increased mental load for those who – due to the weight of gender roles – are always available to perform care work. On the other, it can make this load even more invisible by promoting the view that it is 'lucky' to be able to have flexible schedules, giving a false image of the reconciliation of work-life balance. Added to this is the fact that the image of qualified professionals and researchers in society is one of professionally successful women, an image that can feed the **false myth of equality,** which masks the persistence of structural inequalities such as those reflected in this report's data.

To all of this, we must add the greater **emotional burden** borne by women during the months of lockdown. According to this study's results, this burden has not only been greater for women, but women also recognise – to a much greater extent than men – the clear impact of this load on their academic performance. On the one hand, this demonstrates the connection between emotional state and performance capacity. On the other, it reveals the connection between personal situation and social context. These differences generate new reflections, since it is worth asking if men, by virtue of having more time for themselves and their academic work, have been able to isolate themselves more from the crisis situation, or whether they are simply reproducing a stereotypical model of their relationship with the world in which, due to the weight of gender roles, they are more emotionally disconnected from the environment. When asked whether concentrating on work helped respondents to distract themselves from the situation, men agreed far more with this statement than their female colleagues, enabling us to infer that the latter is more likely to be the case.

Regarding the pandemic's impact on **scientific production,** existing inequalities appear to have been reinforced. During the lockdown, the data clearly reflects that men PDI at UCM worked on and submitted more works for publication than women. There was a particularly marked difference in the production of articles for peer-reviewed journals, which are especially relevant for the evaluation of scientific production and the development of an academic career. These findings data can help to explain phenomena that present at UCM, such as vertical segregation or the "leaky pipe".[5] These are closely linked to a model of scientific production strictly based on rigid meritocratic parameters, which are supposedly neutral and divorced from the diversity of social realities of those who make up university. As we explain at the beginning of this section, this results in science that is quantitatively more productive but qualitatively much poorer, biased – since it is male-dominated – and disconnected from reality.

[5] This metaphor refers to how women are often better, or equally, represented compared to men at the early stages of academic careers, and how this proportion decreases as careers' progress.

This disconnect means that the activity does not reflect how extraordinary the situation has been – a pandemic attended by illness, death, uncertainty, lockdown and socio-economic crisis. Compared to other sectors, such as hospitality, tourism or certain services that saw their productive activity interrupted, the university appears – and, above all, certain sections of its teaching staff appear – outside of the social reality based on this survey, since its productivity increased rather than decreased.

Significant differences between men and women are also apparent in terms of **time spent on different academic tasks**. Male PDI dedicate more hours per week to writing papers, articles and books than women, while women dedicate more time to preparing and teaching classes and exams, as well as supporting students. These patterns of time use reinforce a persistent structural inequality that places women in less-valued positions of care and reproductive work, not only in the domestic sphere but also in the professional sphere of the university. They dedicate more hours to supporting students and teaching, which, despite being fundamental university activities, are nonetheless less valued or unvalued with respect to the development of academic careers. Linking these findings to the points described above, we conclude that women not only sustain life outside the university, but are also the ones who care for and sustain life within it, as they are more focused on caring for people. It would be opportune to question, at this juncture, what type of model of university teaching staff are being promoted.

Finally, this study reflects that, PDI at UCM felt a **lack of institutional support** during the lockdown, in general. This indicates that the institution does not have the response capacity necessary to address this type of emergency or crisis situation. Moreover, it lacks knowledge of the different realities of PDIs, which is needed to adapt the institutional response to their different needs. Moreover, women respondents expressed a special

lack of support from people close to them and from colleagues. This may corroborate, on the one hand, higher levels of daily discomfort among PDI women. On the other, it may indicate a lack of general awareness about the persistence of gender roles in the university, (for example, not being aware of the different situations which colleagues are in, and their different needs for support). This is conditioned, in turn, by the aforementioned myth or mirage of equality.[6] This lack of awareness entails disaffection and lack of responsibility at the personal level, as well as the absence of co-responsibility policies at the institutional level.

Another aspect that may influence disillusionment and a lack of gender awareness is the argument of **'vocation'.** This implies practices and ways of thinking based on the scientific ethos,[7] linked to the profile of a successful scientific professional described above. This is a model where not crossing the line between work and personal life is impossible – as reflected in the results of this study – and influences women PDIs' greater workload and double shifts. The widespread use of the 'vocation argument' accords responsibility to women by virtue of individual decisions. It makes the gender roles and stereotypes that underlie structural inequalities invisible, and further perpetuates them.

Finally, it is important to approach these realities using a systemic and institutional approach, as well as a critical analysis of gender that puts life at the centre and acknowledges responsibilities at different levels. This implies recognising and properly valuing all types of activities needed to sustain the university, as well as acknowledging the dependent relationship between all of them.

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[6] This concept coined by the feminist philosopher Amelia Valcárcel to refer to the political condition in which it is thought that women and men already have equal opportunities, and that equality does not need to be argued for because the current situation is fair.

[7] According to sociologist Robert K. Merton, *"the ethos of science is this complex, with affective resonances, of values and norms that are considered obligatory for the man of science. The norms are expressed in the form of prescriptions, proscriptions, preferences and permissions. They are legitimised on the basis of institutional values"* [Merton, R.K (1942/1977), "The normative structure of science" in *The Sociology of Science*, volume II, Alianza Editorial].

Recommendations

This study reveals clear structural inequality between women and men in the use of academic time and their dedication to different academic activities. Therefore, it is necessary to **monitor the data continuously** with sustainable information systems that are followed up and studied by the rector's office and faculties (for example, class hours, dedication to different activities, etc.).

- By exploring perceptions of the **uses of academic time,** this study shows that the sexual division of labour and gender roles persist in the university environment. Therefore, it is necessary to continue measuring the real uses of academic time in a systematic and continuous manner, involving the methodology of time use surveys, so that gender imbalances can be monitored and acted upon.
- In addition to **monitoring data on teaching assignments by gender**, which can be done easily since these data are in the UCM academic data system (GEA), technologies used for online training and tutoring allow us to **measure how many hours are dedicated to each teaching task.** It is advisable to measure these times in order to obtain objective data, which in turn would allow PDI workloads to be organised in a more equitable manner.
- Based on the results of this survey, we find that women dedicate more time to preparing classes and supporting Students. It would be important to add an analysis of such teaching data – which has not yet been included – to include this dimension in the **evaluation of teachers**. This will enable the monitoring and correction of gendered differences.
- Systematising and analysing the impact of gender on the inquiries received by the UCM's psychological support services during this period would make it possible to include measurements of the **psychological and emotional risks** associated with mental workloads from the perspective of occupational risks, and enable associated prevention measures to be taken.
- Analyse data on **sick leave**. This study shows that 6.6% of women are on sick leave, compared to 0% of men. Unequal working conditions affect women more and, therefore, health problems may emerge that lead to sick leave. A good occupational health policy should take this data into account for the purposes of prevention.
- Delve into mixed quantitative and qualitative analyses, based on the survey data, paying special attention to **professional categories**. The impact on productivity is greater among professional levels that have to be accredited, compared to the rest. It is also important to analyse how people in junior academic career categories – which are temporary in nature, and that constitute profiles involving greater risks or more work-related vulnerability – have combined scientific production and teaching.

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Inequality is clearly reflected in the material conditions for carrying out academic work. Therefore, urgent measures must be taken to mitigate these inequalities, designed with the PDI's participation and adapted to their specific needs. Some relevant proposals include:

- Increase investment in, and guarantee access to, good **IT equipment** for all PDI, addressing the gender gap. Greater support is also required to update and operate such equipment.
- Foster possibilities of **work spaces** that are safe and flexible in terms of schedules, and which offer the necessary technical equipment, such as cameras or microphones.
- Review and **optimise administrative processes** in order to improve the coordination and efficiency of academic work related to management tasks.

As this study's results indicate, the crisis will have an unequal impact on women's and men's academic careers. Therefore, it is necessary to adopt measures accordingly.

- Promote the adoption of measures and gender analysis of all those elements with competencies and an impact on the development of academic careers (for example, Madrid R+D (i+d), the State Research Agency, the National Agency for Quality Assessment and Accreditation (ANECA), etc.). Foster the discussion and design of these measures with the bodies responsible for promoting equality policies in universities (the Conference of Rectors of Spanish Universities (CRUE), the Network of Gender Equality for University Excellence (RUIGEU), and the Gender Table of the Ministry of Universities).

- **Corrective measures** are required to prevent the pandemic from having a negative impact on women's academic careers, as a result of structural gender inequalities.
  - Prolonging research projects.
  - Extending research contracts
  - Corrective measures in terms of the number and indices of quality with respect to publications for six-year terms and accreditations.

- Evaluate the feasibility of establishing **limitations in the evaluation of teaching staff's productive activity,** taking into account the need to reconcile academic life with personal and family life. Do so in a way that an excess of certain activities – such as publications – in extraordinary contexts, such as the pandemic, are valued to a lesser extent. That is, that should not be valued in comparison with the rest, nor should they become established as a norm or starting point for academic excellence. This would function as a corrective or compensatory measure to avoid penalising those who have found it impossible to maintain a high level of production as a result of the structural inequalities described in this report.

- Balance the distribution of **teaching assignments** between men and women PDIs. In this regard, the following measures could be can introduced:

  - Apply teaching exemptions to those who have had a greater burden, combined with complicated family and personal situations during the COVID-19 crisis. This could even be applying in such a manner that one or two teaching-free semesters could be granted to enable the recovery of scientific output.

  - Departments and centres should review the application of their Departmental Academic Plans (PDAs) from a gender perspective.

  - Distribute teaching assignments using an equitable system, enabling staff to choose schedules in a manner that takes into account work-life balance.

  - Create substitution lists in which all academic categories appear in proportion to their dedication, and which guarantee needs related to reconciling work and family life.

- Develop a **work-life balance and co-responsibility plan** adapted and integrated into the next Equality Plan. This should take this study's results into account in order to promote measures that recognise care work and care responsibilities, assess their gendered impact, and aim to transform patterns that are especially damaging to women's academic careers. Measures to reconcile work and family life must also take into account the singularity of this profile of caregivers.

- Campaigns targeting the entire university community are needed to promote **disconnecting from technology** beyond established working hours, in terms of teaching and connecting on the weekend or at night.

- In terms of **tele-psychological and emotional support services,** gender training is required for existing internal services, such as Psicall.

This study highlights deep-seated gender inequalities that refute the myth of equality surrounding the PDI at UCM. Therefore, any measure to address inequalities is likely to generate **resistance** in the university community. This too must be addressed.

Institutional measures are necessary, but it is also important to become aware at the **individual level**, as well as to adopt measures and attitudes that favour an environment and setting that promotes equality. To this end, collective debates could be promoted that appeal to individual responsibilities that are equally assumed by men and women PDIs:

- Organising meetings at times compatible with other aspects of life, and which take care responsibilities into account.
- Favouring the distribution of schedules in a manner that takes care responsibilities into account.
- According visibility and value to academic activities that are less well-valued, such as supporting students or preparing classes.
- Actively supporting the adoption of affirmative measures and the promotion of women's research careers, starting at the department or faculty level.

Finally, we believe that this survey has yielded data that can still be utilised and deepened through a **qualitative analysis** of both general data, as well as data disaggregated by fields and faculties at the UCM level. Similarly, we believe that this initial analysis should also be continued through new, broader studies aimed at transforming the current academic model:

- The academic career model (and its associated meritocratic parameters) must be reviewed to make it more sustainable, and put people's lives and well-being at its core.

  A national study on the uses of academic time should be undertaken (along the lines of the study on the gender wage gap in universities promoted by CRUE and ANECA).

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