

Women professors and Covid-19: impact of telework in the routine of university professors in Brazil

Samantha de Toledo Martins Boehs

Universidade Federal do Paraná, UFPR, Curitiba, Brazil

Nágila Giovanna Silva Vilela and Lucas dos Santos-Costa

FEA-USP, University of São Paulo, São Paulo, Brazil, and

Simone Kunde and Mariane Lemos Lourenço

Universidade Federal do Paraná, UFPR, Curitiba, Brazil

2

Received 21 June 2021
Revised 19 October 2021
19 February 2022
9 June 2022
3 January 2023
Accepted 13 March 2023

Abstract

Purpose – This article investigates the impact of teleworking, especially concerning work intensity, during the Covid-19 pandemic, on the routine of women university professors in Brazil.

Design/methodology/approach – The authors collected data through a web-based survey disseminated through social media and sent e-mails to professors (addresses obtained from educational institutions' public information), reaching 1,471 responses which were analyzed by correlation and multinomial logistic regression (MLR).

Findings – The authors find evidence to confirm all hypotheses tested at different levels. The professors who noticed increased workload during the pandemic are mostly from private higher education institutions (HEIs). The authors also demonstrate the impact of professional and family contexts and find a higher number of negative feelings and workplace correlates that influence the perception of working more.

Originality/value – This work problematizes the condition of women in Brazilian society, revealing the overload of work in the intersection between family, work, self-care, and other tasks. This study contributes to the literature exploring the home-office/telework in extreme periods, as is the case of the Covid-19 pandemic period.

Keywords Women, Professors, Remote work, Covid-19, Telework

Paper type Research paper

Introduction

Ever since the 1970s, female participation has grown in the job market in the most diverse positions and performing different activities (Hryniewicz & Vianna, 2018). Despite this, gender differences in this context are still significant, given socially established prejudices, such as the understanding that domestic work should have the woman as a reference.

Given the non-egalitarian distribution of domestic activities added to paid work activities, previous studies point to the issue of the overload of women due to the multiplicity of roles they play and the impacts of this on their physical and mental health (Allen & Finkelstein, 2014; Lemos, Barbosa, & Monzato, 2020; Silva & Camargo, 2020).

In Brazil, the Continuous National Household Sample Survey in 2018 (PNAD Contínua) highlights that women are primarily responsible for carrying out housework in their own



home or relatives' houses, and in caring for relatives. The survey data also points out that women dedicate about 18.5 hours a week to domestic and care activities when busy, and about 23.8 hours a week when they are not engaged in paid work. Men, in turn, dedicate about 10.3 hours when employed and 12 hours when not involved in paid employment (IBGE, 2019). The reality of university professors, the target audience for this study, is no different.

In Brazil, on March 17, 2020, the Ministry of Education issued Ordinance No. 343, which replaced classroom sessions with online ones at all educational levels in the country, while the Coronavirus pandemic situation lasted (Brasil, 2020). In this context, educational institutions had to suspend the academic calendar or offer emergency remote education. Especially in the latter case, those who did not have a home office or a specific workplace in the household had to transform the family/leisure environment into a professional environment conducive to meetings, videoconferences, recording of classes, among other activities.

The professors' compulsory and abrupt transition to telework required both professional and family adaptations. Adjustments were necessary, such as learning new technical skills to teach in remote education arrangement, as well as the need to organize family-related issues, such as caring for children and performing domestic chores that were previously supplied by the role of school and services.

Previous studies (Carreri & Dordoni, 2020; Lemos *et al.*, 2020) have pointed to increased gender inequality and overloading of women with domestic activities and paid work during the Covid-19 pandemic. In this context, this article investigates the impacts of teleworking, especially concerning work intensity, during the Covid-19 pandemic, on the routine of women university professors in Brazil.

Theoretical background

Roles performed by women in the work and family context

Previous studies indicate that with the accumulation of activities performed by women - professional, family, and domestic -, the experience of conflicts is not surprising (Allen & Finkelstein, 2014; Dilmaghani & Tabvuma, 2019; Strobino & Teixeira, 2014; Silva & Camargo, 2020). In a study relating gender, age, and work-family conflict in six stages of family life – as newly married couples, family with babies, family with preschool children, family with school children, family with adolescents, and those whose children have already left home) – Allen and Finkelstein (2014) found that, in general, women report more interference from the family at work than men. In addition, concerning the family life cycle stage, the work-family conflict occurs more frequently among those who have children aged five years or less (Allen & Finkelstein, 2014). It is also necessary to consider the gender imbalance in the division of domestic work and the difficulty in listing the activities carried out in the family environment, especially since many tasks are overlapped (Floro, 1995). During the pandemic, this overlapping of tasks in the family environment has increased, contributing to the perception of having worked more during this period. With all this argumentation, it is possible to propose [Hypothesis 1](#)

- H1.* The greater the accumulation of activities developed in the family environment, the greater the probability that female professors will perceive working more during the pandemic.

Teaching work in Brazil

University teaching work in Brazil is characterized differently according to its nature: public or private. In both spheres, despite the differences, it is possible to observe the existence of a

logic linked to productivity, whether in hours worked, for private institutions, or in scientific production, teaching, and extension, for public institutions (Lemos, 2011; Ferreira, Nascimento, & Salvá, 2014).

The teaching-research-extension triad characterizes the teaching work in public Higher Education Institutions (HEIs) in Brazil. In addition, professors also conduct activities such as advising, participating in meetings, assemblies, and carrying out tasks of bureaucratic nature (Lemos, 2011; Hoffmann, Zanini, Moura, & Machado, 2019). The excess of activities culminates in the accumulation of functions and the intensive workload, leading to the invasion of work activities into the personal space for leisure and rest, which can have consequences on the health of professors (Lemos, 2011; Zandoná, Cabral, & Sulzbach, 2014).

In private HEIs in Brazil, teaching is mainly lecturing, since the teaching-research-extension triad is responsible of public HEIs. As a reflection of the market patterns present in private HEIs, some authors observed a constant search for cost reduction, as professors at private universities are paid primarily for hours spent in the classroom, without considering the workload that goes beyond the time incurred in class (Ferreira *et al.*, 2014; Felix Junior & Thiollent, 2015). Thus, it is possible to propose [Hypothesis 2](#)

H2. Female professors who work in private HEIs are more likely to perceive working more during the pandemic period.

Previous studies point to the impact of gender bias in academic career, especially concerning female researchers around the world (van den Besselaar & Sandström, 2016; Astegiano, Sebastián-González & Castanho, 2019; Carreri & Dordoni, 2020). According to van Miegroot, Glass, Callister, and Sullivan (2019), women still do not have much representation in the academic field, especially at the highest levels. For this reason, organizations in several countries have turned to the importance of addressing gender inequality in science and the mechanisms underlying academic performance differences in the area: only 28.4% of people involved with research and development in the world are female (van den Besselaar & Sandström, 2016; Astegiano *et al.*, 2019).

Finally, according to Kitchener (2020), during the quarantine period caused by Covid-19, some American academic journal editors realized that women were sending less scientific articles, while men were sending up to 50% more than usual. The exceptional context generated by the Covid-19 pandemic has exacerbated the asymmetries in gender relations in work routines and the production of scientific knowledge in universities (Castro & Chaguri, 2020) and, according to Carreri and Dordoni (2020), this has an association with the growth of women's domestic and family activities.

Silveira and Bendassolli (2018) conducted a study with 168 university teaching professionals from a capital city in the Northeast of Brazil, showing that 70% of the women undertook professional activities and other home and childcare tasks, while 30% of the men surveyed claimed to perform that. If female professors already conducted conjointly professional and care activities to support home and children (Silveira & Bendassolli, 2018), these activities have intensified even more due to the pandemic before the isolation period. In this way, it is possible to propose [Hypothesis 3](#)

H3. The greater the accumulation of activities developed in the professional environment, the greater the probability that female professors will perceive that they are working more during the pandemic.

In the context of education in Brazil, professors were challenged into a new pedagogical practice that required teaching work in public and private HEIs to be entirely operated in an online format, which Barreto and Rocha (2020) called "pandemic pedagogy". These required professors to prepare classes on virtual platforms, understand new resources and technologies for remote teaching, and work using only the telework model.

Before the pandemic, professors conducted writing assignments in class, for example. As evaluations, other activities were entirely different from the online format, like laboratory experiments, field research, visiting, and interviews. Some of them could not be adapted, and others were partially adjusted. Indeed, the woman professor performed the effort to prepare classes in a new format that goes beyond the content, and it could be classified as overtime at work for multiple subjects (Basilaia & Kavadze, 2020). It is evidence for the proposition of Hypothesis 4

- H4. Female professors who had to prepare and adapt classes for the remote education format are more likely to realize that they are working more during the pandemic period.

Advantages and disadvantages of telework

Although the term home office is often used as a synonym for telework or telecommuting (Ellison, 1999), the home office is one of the modalities of telework. Telework is “[...] a decentralized work form or a work arrangement based on information and communication technologies” (Cortés-Pérez, Escobar-Sierra, & Galindo-Monsalve, 2020, p. 2). A survey conducted by a consultancy in partnership with the Brazilian Society of Teleworking and Teleactivities (Sobratt) in 2018 pointed out that the main objectives of the home office practice are: improving the quality of life, urban mobility, granting benefits to employees, and attracting and retaining talent (Sobratt – Sociedade Brasileira de Teletrabalho e Teleatividades, 2018).

According to Lodovici (2021), the effects of teleworking are mainly associated with direct implications on work flexibility and autonomy, work intensity, work-life balance (WLB), and health and safety issues. Hau and Todescat (2018) state that when workers can manage their own time and define how to do the activities under their responsibility, the benefits include higher levels of quality of life, job satisfaction, and productivity. Therefore, it is possible to point out Hypothesis 5

- H5. The advantages of teleworking format decrease the probability that female professors will perceive working more during the pandemic.

Despite possible advantages, telework also has some disadvantages, as highlighted in the research conducted by Filardi, Castro, and Zanini (2020). Those include lack of specific equipment and training to conduct the work, failure to adapt to the modality, disconnection with the company, isolation, and difficulty in communication. Moreover, some challenges for teleworkers are dealing with high flexibility and autonomy, as well as matching the demands from both work and family (Nakrošienė, Bučiūnienė, & Goštautaitė, 2019; Lemos *et al.*, 2020; Lodovici, 2021). Ellison (1999) points out that when an individual works at home, the boundaries between work and personal life, and, consequently, between the different roles they manage (as an employee, parent, spouse, sibling, among others) become practically invisible, not only for the worker but also for their family. As a result, a work arrangement that should be positive for the worker – providing, among other effects, a better WLB – often causes adverse outcomes, such as the intensification of activities (Bathini and Kandathil, 2019). Lodovici (2021) points out that high flexibility and autonomy are usually accompanied by greater work intensity and longer working hours. Consequently, according to the author, difficulties in balancing personal and professional life are perceived, especially for women with children. Given this context, we can suggest Hypothesis 6

- H6. The disadvantages of teleworking format increase the probability that female professors will perceive working more during the pandemic.

Under the light of this theoretical framework and the support for the proposed relationships, Figure 1 below visually presents the hypotheses tested in this study.

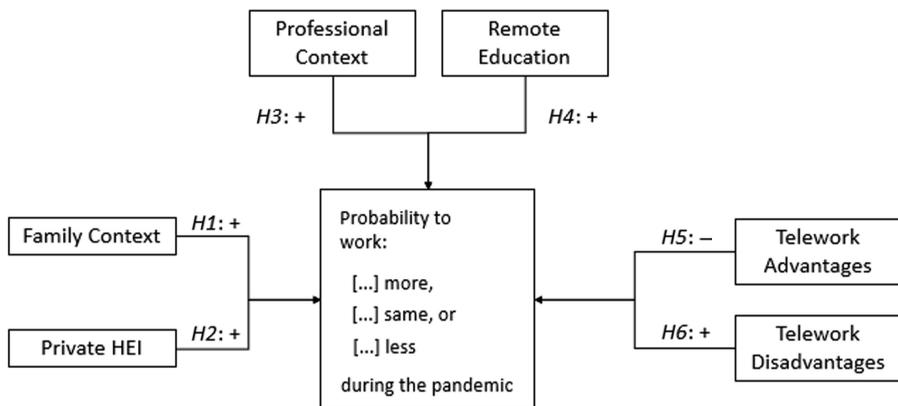


Figure 1.
Research model

Source(s): The authors (2023)

Research method

Procedures and instrument

To empirically investigate the impact of teleworking, especially concerning work intensity during the Covid-19 pandemic on the routine of women university professors in Brazil, the authors developed an online survey. Table 1 presents the relationship between the hypotheses and variables.

Five women university professors (respondent profile) evaluated the pre-test before applying the data collection instruments. This phase was necessary for the calibration of the questionnaire and resulted on modification of four questions and insertion of four more.

Data collection

The step following the pilot questionnaire was the collection of women professors' e-mails on HEI websites, to send the questionnaire electronically. The second strategy was disseminating and sharing the survey on social media. The inclusion criteria for participants were: being a woman, being university professor at least at the undergraduate level, and having been performing one or more remote teaching activities due to the pandemic period for at least three weeks.

The participation of university professors was voluntary, and confidentiality of the information provided was guaranteed during data collection and analysis. Data collection was conducted over June 2020, and, in total, 1,524 professors answered the questionnaire. However, 53 responses were excluded because they did not meet the inclusion criteria, bringing the total to 1,471 valid responses.

Statistical analysis

The statistical technique used for data analysis is Multinomial Logistic Regression (MLR) (Fávero, Belfiore, Silva, & Chan, 2009). Here, the objective of MRL was to analyze the intensity of work during the pandemic as the dependent variable with three different categories. The question is "about the intensity of your work in the pandemic period, do you consider that:" with the following response options (1) "You are working the same as you did before the pandemic" (main category in the second equation); (2) "You are working less than you did before the pandemic" (main category in the first equation); or (3) "You are working more than you did before the pandemic" (reference in both equations).

| Hypotheses | Dimension | Variables | Questions | Categories | Statistical treatment |
|------------|----------------------|--|---|---|--|
| H1 | Family Context | Marital status Age and number of children Dismissed housemaid Division of domestic work | What is your marital status? How many children do you have? How old are your children? Did you dismiss any kind of contractor service during the isolation period? How have you perceived the division of household chores in your home during the pandemic period? | Single, married/cohabitation/common-law marriage, separated/divorced, widowed, others – Maid, cleaning lady, nanny, laundress, others Fair, unfair | Dummy Counting Dummy Dummy |
| H2 | Private HEI | Work on private HEI | What kind of Higher Education Institution (HEI) do you work at? | Private, Public - Municipal, Public - State, Public - Federal | Dummy |
| H3 | Professional Context | Number of professional activities Number of HEI in which professor works Academic calendar in progress | What professional activities are you currently performing? What kind of Higher Education Institution (HEI) do you work at? Due to the pandemic, the HEI where you work at the undergraduate/graduate level is | – – With the academic calendar in progress, suspended but with other teaching and administrative activities working normally | Counting Counting Dummy Dummy Continuous |
| | | Form of contract Work regime Higher Education Teacher Work on Saturdays, Sundays and Holiday | What is your current form of employment contract at the HEI where you work? What is your teaching work regimen? Consider the total hours provided for in your employment contract What levels of education do you work at? During the pandemic, which days of the week have you been working? | – – Basic, Undergraduate, Post-graduate Only on weekdays (Monday to Friday), on weekends and eventually on Saturdays, Sundays and holidays, On and always on Saturdays, Sundays and holidays | Dummy Dummy Dummy Dummy (continued) |

Table 1.
Association matrix

Table 1.

| Hypotheses | Dimension | Variables | Questions | Categories | Statistical treatment |
|------------|------------------------|--|---|--|-----------------------|
| H4 | Distance Education | Adapt and prepare classes | What professional activities are you currently performing? | Preparation and adaptation of classes for the distance education format (planning, recording of classes, preparation of exercises, sending texts) | Dummy |
| H5 | Telework Advantages | Advantages | In your perception, what are the main advantages of working remotely during this pandemic period? | Being at home safe, being close to my child(ren) and/or partner, spending more time with my family, being able to organize my own schedule, saving money on transportation and food, less exposure to violence and pollution, having privacy | Dummy |
| H6 | Telework Disadvantages | Time for yourself Disadvantages | Regarding the time you have spent on yourself during the pandemic period for other activities (except professional, domestic, and family activities) such as reading books, listening to music, doing physical activities, among others In your perception, what are the main disadvantages of working remotely during this pandemic period? | I have had more time during the pandemic period than before, I have had less time during the pandemic period than before, the time I have had remains the same Satisfactorily divide time between professional and domestic/family activities; conduct professional activities without being interrupted; maintain focus on professional activities while at home, an environment where other activities are usually performed, such as domestic and family activities; lack of equipment and training specific makes it difficult to work; being isolated and distant from the educational institution is a negative aspect of remote work; it is challenging to communicate with other people at work I have had more time during the pandemic period than before, I have had less time during the pandemic period than before, the time I have had remains the same | Dummy Dummy |
| | | Time for yourself | Regarding the time you have spent on yourself during the pandemic period for other activities (except professional, domestic, and family activities) such as reading books, listening to music, doing physical activities, among others | I have had more time during the pandemic period than before, I have had less time during the pandemic period than before, the time I have had remains the same | Dummy |
| | | Disadvantages | In your perception, what are the main disadvantages of working remotely during this pandemic period? | Satisfactorily divide time between professional and domestic/family activities; conduct professional activities without being interrupted; maintain focus on professional activities while at home, an environment where other activities are usually performed, such as domestic and family activities; lack of equipment and training specific makes it difficult to work; being isolated and distant from the educational institution is a negative aspect of remote work; it is challenging to communicate with other people at work | Dummy |
| | | Time for yourself | Regarding the time you have spent on yourself during the pandemic period for other activities (except professional, domestic, and family activities) such as reading books, listening to music, doing physical activities, among others | I have had more time during the pandemic period than before, I have had less time during the pandemic period than before, the time I have had remains the same | Dummy |

Source(s): The authors (2023)

The step-by-step process removed variables with no statistical relevance, leaving only those explaining the model with greater parsimony: maximizing variability with the least possible number of variables. Thus, the results of this model indicate that professors with a specific characteristic, professional routine, or domestic routine are more likely to consider that they are working less, equal/same, or more (compared to the work previously done) during the pandemic period. This article describes the relative risk ratios (rrr) in terms of more or less likely, simplifying the interpretation of MLR parameters.

Results and discussions

Sample description and preliminary results

The average age of the respondents was 43.8 year-old, with a standard deviation of 9.7; 61.9% had children; 67.7% were married or living in a stable relationship, 17.1% were single, and 14.5% were widows or divorced. The vast majority (87%) of participants had income above five times Brazil minimum wage, with 37.9% receiving more than ten times that measure. As for the level of education, 54.1% had Ph.D., 22.3% had postdoctoral degree, and 11.4% had completed a master's degree.

Most of the sample (77.3%) was permanent/effective/stable (a form of employment contract characteristic of public HEIs), 18.9% were hired under the Consolidation of Brazilian Labor Laws, and 6.5% had a temporary contract (including temporary professor, substitute, visitor, among others). It is noteworthy that although the survey was sent to professors from all Brazilian regions, among the respondents the Northeast (52.6%), Southeast (24.3%), and South (17.3%) regions predominated.

Regarding the teaching area, 23.2% of the professors were from Health Sciences, 21.9% from Applied Social Sciences, 19.2% from Human Sciences, 8.7% from Agrarian Sciences and the remaining 27.0% were distributed among Biological Sciences, Linguistics, Arts, Exact and Earth Sciences, Engineering, and Multidisciplinary.

Concerning the professional activities developed during the pandemic, 94% of the professors stated that they were participating in educational and/or administrative meetings, 82% were advising students on virtual platforms, 78% were involved in writing articles and scientific projects, and 64% were adapting classes to the remote education format. Before the pandemic, only 5.2% of the professors used to make videos for virtual platforms, 16% took classes using chats and/or virtual forums, and 19.3% participated in meetings on digital media. On the other hand, 86.2% already used PowerPoint or Prezi to prepare the classes, and 57.8% uploaded materials and texts on virtual platforms.

Hypotheses testing

As the main results of the general fit, it was not possible to reject the null hypothesis of the Hosmer and Lemeshow test adapted for the MLR (Table 2) – this means that the model is well-calibrated.

In addition, it was possible to reject the general null hypothesis, demonstrating that it has at least one parameter with statistical significance. The significant variables are shown in Table 3. The variables used in the research explained 26% of the total variability (R^2) of the phenomenon studied.

The most expressive variable to distinguish female professors who perceive are working less from those who perceive being working more is the perception of doing little or no professional activity in the pandemic period (rrr = 11.95; $p < 0.01$). It means that professors who cannot perform professional activities are approximately 12 times more likely to

Table 2.
General fit statistics for
the models

| n | LR χ^2 | df | prob > χ^2 | LL (model) | LL (base) | Pseudo- R^2 | AIC | BIC | χ^2 | Hosmer-Lemeshow df | prob > χ^2 |
|-------|-------------|----|-----------------|------------|-----------|---------------|--------|--------|----------|-----------------------|-----------------|
| 1,471 | 704.7 | 48 | 0.00 | 982.7 | 1335.1 | 0.26 | 2065.5 | 2330.2 | 11.8 | 16 | 0.76 |

Source(s): The authors (2023)

| Variables | Working less working more | | | Working the same working more | | |
|---|-----------------------------|-----|------------|---------------------------------|-----|------------|
| | rrr | sig | CI [95%] | rrr | sig | CI [95%] |
| Work Monday to Friday | 7.31 | *** | 4.21 12.71 | 3.95 | *** | 2.32 6.74 |
| Ongoing calendar | 0.60 | ** | 0.36 1.00 | 0.55 | *** | 0.35 0.87 |
| Number professional activities | 0.68 | *** | 0.62 0.76 | 0.93 | * | 0.85 1.01 |
| Less time for other activities | 1.15 | ns | 0.69 1.93 | 0.33 | *** | 0.22 0.47 |
| Private HEI | 0.17 | *** | 0.07 0.44 | 0.61 | ns | 0.32 1.16 |
| Work eventually on Saturdays, Sundays, and Holidays | 1.80 | ** | 1.13 2.88 | 2.65 | *** | 1.77 3.96 |
| More time for other activities | 2.55 | *** | 1.46 4.48 | 0.58 | ** | 0.37 0.90 |
| Doing little/no activity | 11.95 | *** | 3.73 38.29 | 0.61 | ns | 0.07 5.48 |
| Tiredness/exhaustion | 0.34 | *** | 0.22 0.52 | 0.49 | *** | 0.33 0.72 |
| Laziness | 1.75 | *** | 1.21 2.53 | 1.35 | * | 0.97 1.89 |
| Dismissed housemaid | 2.67 | *** | 1.76 4.07 | 1.21 | ns | 0.81 1.79 |
| Age | 0.96 | *** | 0.94 0.98 | 0.99 | ns | 0.97 1.01 |
| Current junior company advising | 2.02 | ** | 1.00 4.07 | 0.35 | ** | 0.15 0.85 |
| Adapt and prepare classes for the distance education format | 0.58 | *** | 0.40 0.83 | 0.56 | *** | 0.40 0.78 |
| Agrarian sciences | 2.39 | ** | 1.10 5.17 | 2.75 | *** | 1.37 5.54 |
| Higher education teacher | 9.22 | *** | 2.29 37.13 | 1.36 | ns | 0.64 2.90 |
| Number HEI works | 3.32 | ** | 1.11 9.95 | 0.31 | ns | 0.07 1.37 |
| Divorced | 1.84 | ** | 1.12 3.04 | 0.83 | ns | 0.50 1.36 |
| Perceives telework as exploration | 0.53 | *** | 0.34 0.83 | 0.91 | ns | 0.63 1.30 |
| Other advantages of telework | 1.00 | ns | 0.42 2.35 | 2.49 | *** | 1.35 4.59 |
| Security telework advantage | 1.20 | ns | 0.71 2.02 | 2.14 | *** | 1.25 3.69 |
| Work regime | 1.03 | * | 1.00 1.06 | 1.03 | ** | 1.00 1.05 |
| Before virtual meetings | 1.22 | ns | 0.78 1.90 | 1.65 | *** | 1.15 2.38 |
| Constant/intercept | 0.09 | * | 0.01 1.16 | 1.22 | ns | 0.13 11.60 |

Note(s): Relative risk ratios (rrr), statistical significance (sig), confidence interval (CI); no statistical significance (ns), *** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$

Source(s): The authors (2023)

Table 3.
Hypotheses testing

consider working less during the pandemic. It is the first evidence to confirm the H3 – the influence of professional context in decreasing workload. Our hypothesis was designed to cover the extreme, that is, workers who would accumulate a greater amount of work during the pandemic period compared to the normal work environment. On the other hand, it is also possible to observe that working conditions have been worsened. Literature shows that part of the professors' work was limited by the lack of institutional support, such as the lack of assistance in the process of converting face-to-face courses to online format (Griffiths *et al.*, 2022). This fact led to restrictions on carrying out professional activities and, consequently, the perception of working less during the pandemic.

The second most relevant variable is being a professor only at the undergraduate compared to being a professor at any other level (primary or postgraduate). Those who work only at graduation are nine times more likely to realize that they are working less (rrr = 9.22; $p < 0.01$) than those who work concurrently at other levels. It is one evidence for both H3 - because some universities freeze their calendars -, and H4, because the professors need some time to convert in-person to online courses. The profiles of master and Ph.D. professors are more independent (and more asynchronous) than those with classes only in undergraduate.

The study also revealed that many professors work on weekends and holidays, making them feel more overwhelmed than those working Monday through Friday (business hours,

BH). Professors who are working only during BH consider that they are working less ($rrr = 7.31; p < 0.01$), or at the same intensity ($rrr = 3.95; p < 0.01$), in the pandemic when compared to those who, in addition to working during the week, also work occasionally or consistently on Saturdays, Sundays and holidays. These data align with previous studies' results that point out the disadvantages of telework (Filardi *et al.*, 2020; Nakrošienė *et al.*, 2019), especially the intensification of work (Bathini and Kandathil, 2019). In the context of the pandemic, this situation got worse for women professors in Brazil. This research shows that many university professors started working from Monday to Sunday, feeling the intensification of their work, which adds to the care of children and the demands related to domestic work.

The type of HEI to which professors were linked also demonstrated relevance to determining work intensity. Those who work in private HEIs are more likely to perceive working more ($rrr = 0.17; p < 0.01$) than those who have ties to public HEIs, whether municipal, state, or federal. This result may be related, in private universities, to the fact that since the beginning of the pandemic, classroom lessons have been turned into remote education (Vidigal, 2020). We found strong evidence that female professors that work on private HEIs are likely to perceive working more, as described in H2.

In the pandemic context, many private HEIs had massive layoffs (ADUSP, 2020). This, added to the rapid adherence of private HEIs to remote education may have contributed to professors at these institutions having to work harder than in the period before the pandemic. It is also noteworthy that in these institutions, the teaching work is mainly concentrated in teaching activities, and the professors are paid for the hours spent in the classroom, not taking in consideration the extra workload they perform outside the class (Ferreira *et al.*, 2014; Felix Junior & Thiollent, 2015). On the other hand, in public HEIs, administrative, research, and guidance activities continued to be conducted. Still, there was a more significant delay in resuming undergraduate classes in remote education format.

Another essential variable is the number of links with different HEIs that the professors have. Those who work at more than one HEI are more likely to consider that they are working less during the pandemic period than to feel that they are working more ($rrr = 0.68; p < 0.01$) or at the same intensity ($rrr = 0.93; p < 0.01$) than before. This result may be associated with the increased productivity of teleworkers (Hau & Todescat, 2018; Nakrošienė *et al.*, 2019). Thus, professors may perform their professional activities in a shorter period and save time commuting between one institution and another, which helps the perception of decreasing the workload.

It was also possible to observe that professors who have had more time for themselves – with activities such as reading books, listening to music, and doing physical activities – are working less during the pandemic period ($rrr = 2.55; p < 0.01$). On the other hand, those who considered having less time during the pandemic are more likely to realize that they have been working harder ($rrr = 0.33; p < 0.01$) than those who say they are working the same as before. This result represents the contextual balance that emerges with the pandemics, detailed in H5 (advantages) and H6 hypotheses (disadvantages). At the same time, it is possible to organize and have better enjoyment of one's own time, mainly because there is no need to spend time on transportation but it is more challenging to separate job and non-work-related activities.

Some complementary results that confirm the hypotheses H3 and H6 in the joint analysis of professors who do not have children are those who (1) work in HEIs with an academic calendar in progress ($p < 0.05$), (2) have a greater number of professional activities ($p < 0.01$), (3) are preparing and adapting classes to the remote teaching format [planning, recording lessons, developing exercises, sending texts, ($p < 0.01$)], and (4) feeling tired/exhausted (for

H6, $p < 0.01$) are more likely to consider that they are working more in the pandemic period than before.

Finally, even though they are not prepared, these data reveal that many female professors in Brazil accepted the challenge of reinventing themselves. In the context called pandemic pedagogy, learning new technologies to prepare online activities (Barreto & Rocha, 2020) as the new “ways of relating, consuming, work strategies and, above all, teaching work was impacted” (Barreto & Rocha, 2020, p. 1). Finally, Table 4 presents the main results obtained from this research.

| Hypothesis | Result | Variables | Interpretation |
|------------|---------------------|---|--|
| H1 | Partially Confirmed | Marital status | Divorced female professors perceive working more during the pandemic |
| | | Age and number of children | Female professors with older age and more children perceive working more during the pandemic |
| | | Dismissed housemaid | Female professors who dismissed housemaid perceive working more during the pandemic |
| | | Division of domestic work | No statistical significance |
| H2 | Confirmed | Work on private HEI | Strong evidence that female professors that work at private HEIs are likely to perceive working more during the pandemic |
| H3 | Partially Confirmed | Number of professional activities | The greater the number of professional activities, the more female professors perceive working more during the pandemic |
| | | Number of HEI works | The greater the number of HEIs the female professor works, the greater the perception of working more during the pandemic |
| | | Academic calendar in progress | Female professors who work at HEIs with academic calendar in progress perceive working more during the pandemic |
| | | Form of contract | Female professors who work at private HEIs perceive working more during the pandemic |
| | | Work regime | Weak evidence that the greater the workload, the more likely female professors are to perceive working less during the pandemic |
| | | Higher Education Teacher | Strong evidence that compared to female professors who work in postgraduate, undergraduate female professors perceive working more during the pandemic |
| | | Work on Saturdays, Sundays and Holidays | Female professors who work eventually on Saturdays, Sundays and Holidays perceive working more during the pandemic |
| H4 | Confirmed | Adapt and prepare classes | Female professors who adapt and prepare classes for remote education format perceive working more during the pandemic |
| H5 | Partially Confirmed | Advantages | No statistical significance |
| | | Time for yourself | Female professors who have had more time for themselves are working less during the pandemic period |
| H6 | Partially Confirmed | Disadvantages | Female professors who perceive telework as exploration are working less during the pandemic period |
| | | Time for yourself | Female professors who have had less time are working more during the pandemic period |

Source(s): The authors (2023)

Table 4.
Hypotheses testing and main results

Conclusions, limitations and suggestions for further research

We find evidence to confirm all hypotheses at different levels. The most prominent in our results was the discrepancy of private HEI female professors (H2). We also demonstrate the impact of professional (H3, like with the number of professional activities and HEI linkages, the form of contract and workload, and the position of the academic calendar) and family contexts (H1, with marital status, the age and number of children, and division of domestic chores). The need to adapt and prepare classes to online format was also important to confirm H4. Finally, we also find a higher number of negative feelings and aspects related to the workplace that influence the perception to work more (evidence to H6) and a lower number of advantages in telework (H5).

Through this study, it was possible to perceive the impact, especially concerning work intensity, on the work routine of university professors in the Brazilian context during the Covid-19 pandemic. The professors who perceived the increase in their workload during the pandemic period are primarily workers from private HEIs. It was also possible to observe that professors with more children and younger children considered working more than before the pandemic.

With the increase in work intensity in this period, the personal sphere also suffers consequences, reducing time for themselves, such as reading books, listening to music, and doing physical activities. On the other hand, those women who perceive the decrease in the workload during the pandemic were more likely to spend more time with themselves. It was also found that being safe at home is one of the main advantages of telework. However, maintaining the focus on work was presented as a disadvantage of working in this modality.

This study contributes to the literature exploring one of the forms of work, the home office/telework, by demonstrating the implications, advantages, and disadvantages of this type of work in extreme periods, as is the case in the Covid-19 pandemic period. One of the main contributions to the literature was the understanding of which variables are associated with an increase in the perception of workload.

As a social contribution, this work problematizes the condition of women in Brazilian society, revealing the overload of work in the intersection between family, work, self-care, and other tasks. The results reveal that most professors who are feeling tired or exhausted and sad are also those who believe that the division of tasks is unfair. In addition, it points out that there is a need for a greater sharing of personal life tasks within families, regardless of how they are configured.

As a practical contribution, the results presented, especially the evidence of tiredness/exhaustion, number of professional activities developed, and days worked during the week, may be relevant for employers and HR managers to adapt or modify business practices in this context of experienced exceptionality. Such notes are confirmed when it is observed that women who work in HEIs that offer adequate support in this period to meet their needs did not notice changes in the intensity of their work.

Our research data sample consisted of 77.3% of female professors with effective contracts, a form of employment contract characteristic of public HEIs. It is a different proportion from the population, in which 44% of the women professors universe from higher education are employed by public institutions. Our sample representativeness of this kind of institution is almost double the average (INEP, 2020). Although the sample has a different proportion from the population, our evidence remains robust because we have achieved an extensive data collection over Brazilian territory.

The dependent variable was measured with three categories in our designed questionnaire: (1) work less, (2) same or (3) more than before the pandemic. This rule has a different precision than dummy or continuous variables. Our approach is more precise than a dichotomic but less than a metric. Thus, although better than a yes/no question, it does not capture all the possibilities provided by a quantitative measure or a test/retested scale.

Future research can qualitatively explore the impact of teleworking on the routine of university professors. The qualitative study allows a deeper understanding of the aspects that facilitated or hindered the routine of women university professors in Brazil. Another possibility is to conduct comparative research of the impact experienced by men and women higher education professors.

In the quantitative vein, future research could analyze the combination of aspects that can raise work intensity, with questions like this: are married women professors with children likely to work more than single without children? Further papers could replicate our design in other countries (cross-cultural) to understand the opening-closing process of new quarantines (longitudinal).

References

- ADUSP (2020). Demissões em massa nas universidades particulares atestam conversão acelerada para modalidade EaD e sinalizam desemprego estrutural dos docentes, 14 July. Available from: <https://www.adusp.org.br/index.php/defesa-do-ensino-publico/3744-demissoes-em-massa-nas-universidades-particulares-atestam-conversao-acelerada-para-modalidade-ead-e-sinalizam-desemprego-estrutural-dos-docentes> (accessed 5 August 2020).
- Allen, T. D., & Finkelstein, L. M. (2014). Work–family conflict among members of full-time dual-earner couples: An examination of family life stage, gender, and age. *Journal of Occupational Health Psychology, 19*(3), 376.
- Astegiano, J., Sebastián-González, E., & Castanho, C. D. T. (2019). Unravelling the gender productivity gap in science: A meta-analytical review. *Royal Society Open Science, 6*(6), 1–12.
- Barreto, A. C. F., & Rocha, D. S. (2020). Covid 19 e educação: Resistências, desafios e (im) possibilidade. *Revista Encantar-Educação, Cultura e Sociedade, 2*, 1–11.
- Basilaia, G., & Kvavadze, D. (2020). Transition to online education in schools during a SARS-CoV-2 coronavirus (COVID-19) pandemic in Georgia. *Pedagogical Research, 5*(4), 1–9.
- Bathini, D. R., & Kandathil, G. M. (2019). An orchestrated negotiated exchange: Trading home-based telework for intensified work. *Journal of Business Ethics, 154*(2), 411–423.
- Brasil (2020). *Portaria n.º 343, de 17 de março de 2020. Dispõe sobre a substituição das aulas presenciais por aulas em meios digitais enquanto durar a situação de pandemia do Novo Coronavírus - COVID-19* (p. 39). Diário Oficial da União. 18 mar. 2020., Seção I.
- Carreri, A., & Dordoni, A. (2020). Academic and research work from home during the COVID-19 pandemic in Italy: A gender perspective. *Italian Sociological Review, 10*(3S), 821.
- Castro, B., & Chaguri, M. (2020). Um tempo só para si: Gênero, pandemia e uma política científica feminista. Available from: <http://dados.iesp.uerj.br/pandemia-cientifica-feminista/> (accessed 17 July 2020).
- Cortés-Pérez, H. D., Escobar-Sierra, M., & Galindo-Monsalve, R. (2020). Influence of lifestyle and cultural traits on the willingness to telework: A case study in the Aburrá valley, Medellín, Colombia. *Global Business Review, 24*(1), 1–17.
- Dilmaghani, M., & Tabvuma, V. (2019). The gender gap in work-life balance satisfaction across occupation. *Gender in Management: An International Journal, 34*(5), 398–428.
- Ellison, N. B. (1999). Social impacts: New perspectives on telework. *Social Science Computer Review, 17*(3), 338–356.
- Fávero, L. P. L., Belfiore, P. P., Silva, F. L. D., & Chan, B. L. (2009). *Análise de dados: modelagem multivariada para tomada de decisões*. Elsevier Brasil.
- Felix Junior, M. S. F., & Thiollent, M. J. M. (2015). O trabalho docente em instituições de ensino superior privadas: Um estudo com professores horistas de cursos de administração. *Paper presented at the VI Congresso Nacional de Administração e Contabilidade*. 29-30 October, Rio de Janeiro. Available from: <http://www.adcont.net/index.php/adcont/adcont2015/paper/viewFile/1848/452> (accessed 25 June 2020).

- Ferreira, P. C. A. D. S., Nascimento, R. P., & Salvá, M. N. R. (2014). Professor: Profissão de risco. Uma análise do impacto da gestão de IES privadas sobre o trabalho docente. *Sociedade, Contabilidade e Gestão*, 9(2), 152–171.
- Filardi, F., Castro, R. M. P., & Zanini, M. T. F. (2020). Vantagens e desvantagens do teletrabalho na administração pública: Análise das experiências do Serpro e da Receita federal. *Cadernos EBAPE. BR*, 18(1), 28–46.
- Floro, M. S. (1995). Women's well-being, poverty, and work intensity. *Feminist Economics*, 1(3), 1–25.
- Griffiths, B., Tinoco, L., Baird Giordano, J., Hassel, H., Suh, E. K., & Sullivan, P. (2022). Community college English faculty pandemic teaching: Adjustments in the time of COVID-19. *Community College Journal of Research and Practice*, 46(1-2), 60–73.
- Hau, F., & Todescat, M. (2018). O teletrabalho na percepção dos teletrabalhadores e seus gestores: Vantagens e desvantagens em um estudo de caso. *Navus-Revista de Gestão e Tecnologia*, 8(3), 37–52.
- Hoffmann, C., Zanini, R. R., Moura, G. L. D., & Machado, B. P. (2019). Prazer e sofrimento no trabalho docente: Brasil e Portugal. *Educação e Pesquisa*, 45, 1–20.
- Hryniewicz, L. G. C., & Vianna, M. A. (2018). Mulheres em posição de liderança: Obstáculos e expectativas de gênero em cargos gerenciais. *Cadernos EBAPE. BR*, 16(3), 331–344.
- IBGE – Instituto Brasileiro de Geografia e Estatística (2019). Pesquisa Nacional por Amostra de Domicílios Contínua. Available from: https://biblioteca.ibge.gov.br/visualizacao/livros/liv101650_informativo.pdf (accessed 1 June 2020).
- INEP – Instituto Nacional de Estudos e Pesquisas Educacionais Anísio Teixeira (2020). Sinopse Estatística da Educação Superior 2019. Available from: <http://portal.inep.gov.br/basica-censo-escolar-sinopse-sinopse> (accessed 15 January 2022).
- Kitchener, C. (2020). Women academics seem to be submitting fewer papers during coronavirus. 'Never seen anything like it,' says one editor. *The Lily*, Available from: <https://www.thelily.com/women-academics-seem-to-be-submitting-fewer-papers-during-coronavirus-never-seen-anything-like-it-says-one-editor/>
- Lemos, D. (2011). Trabalho docente nas universidades federais: Tensões e contradições. *Caderno CRH*, 24, 105–120.
- Lemos, A. H. C., Barbosa, A. O., & Monzato, P. P. (2020). Mulheres em home office durante a Pandemia da COVID-19 e as configurações do conflito trabalho-família. *Revista de Administração de Empresas*, 60(6), 388–399.
- Lodovici, S. (2021). The impact of teleworking and digital work on workers and society. European Parliament. Available from: https://www.aceb.cat/images/The_impact_of_teleworking.pdf (accessed 6 February 2022).
- Nakrošienė, A., Bučiūnienė, I., & Goštautaitė, B. (2019). Working from home: Characteristics and outcomes of telework. *International Journal of Manpower*, 40(1), 1–15.
- Silva, S. S., & Camargo, D. (2020). A articulação de múltiplas atividades por mulheres trabalhadoras: Significados e emoções. *Psicologia Argumento*, 38(99), 46–65.
- Silveira, S. S., & Bendassolli, P. F. (2018). Estratégias de conciliação trabalho-família de professores universitários em uma capital do Nordeste brasileiro. *Revista Psicologia Organizações e Trabalho*, 18(3), 422–29.
- Sobratt – Sociedade Brasileira de Teletrabalho e Teleatividades (2018). Pesquisa home office 2018. Available from: <http://www.sobratt.org.br/index.php/01122018-pesquisa-home-office-2018/> (accessed 27 April 2020).
- Strobino, M. R. C., & Teixeira, R. M. (2014). Empreendedorismo Feminino e o Conflito Trabalho-Família: Estudo de Multicasos no Setor da Construção Civil da Cidade de Curitiba. *Revista Administração*, 49(1), 1–18.

-
- van den Besselaar, P., & Sandström, U. (2016). Gender differences in research performance and its impact on careers: A longitudinal case study. *Scientometrics*, *106*, 143–162.
- van Miegroet, H., Glass, C., Callister, R. R., & Sullivan, K. (2019). Unclogging the pipeline: Advancement to full professor in academic STEM. *Equality, Diversity and Inclusion: An International Journal*, *38*(2), 246–264.
- Vidigal, C. (2020). Ensino Superior Privado em tempos de pandemia. *O Tempo*. 09 June. Available from: <https://www.otempo.com.br/opiniaio/artigos/ensino-superior-privado-em-tempos-de-pandemia-1.2347664> (accessed 5 August 2020).
- Zandoná, C., Cabral, F. B., & Sulzbach, C. C. (2014). Produtivismo acadêmico, prazer e sofrimento: Um estudo bibliográfico. *Perspectiva*, *38*(144), 21–130.

Corresponding author

Nágila Giovanna Silva Vilela can be contacted at: nagilavilela@gmail.com

Associate Editor: Angela Lucas

For instructions on how to order reprints of this article, please visit our website:

www.emeraldgrouppublishing.com/licensing/reprints.htm

Or contact us for further details: permissions@emeraldinsight.com