

Perceived stress across EU countries: does working from home impact? *La percezione dello stress lavorativo in Europa: gli effetti del telelavoro*

Abstract The study concerns the relationship between self-assessed occupational stress and workers' characteristics, stemming from the Sixth European Working Conditions Survey. Specific tasks, which are generally performed more often by women, such as caregiving and house working activities, are also considered, as well as home-based teleworking condition. The analysis, carried out by means of a heteroskedastic Ordered Probit model, provides results that are partially expected, such as the effects of gender and age on the response patterns, and the influence of the presence of children in the household. Besides, some unexpected findings are presented, as the statistical non-significance of specific family care commitments. Future research will be directed at investigating the role of gender and the distinction between employees and the self-employed respondents.

Abstract *Lo studio analizza la relazione tra la percezione dello stress da lavoro e le principali caratteristiche dei lavoratori, utilizzando i dati della sesta edizione dell'Indagine Europea sulle Condizioni di Lavoro. Il focus è rivolto al genere, alle attività di cura familiare e al lavoro domestico, più spesso svolti dalle lavoratrici, anche considerando l'effetto del telelavoro. Taluni dei risultati emersi dall'applicazione di un modello Ordered Probit eteroschedastico possono considerarsi parzialmente attesi, come l'effetto del genere e dell'età dei rispondenti; altre evidenze sono invece meno attese, come la non rilevanza statistica di alcuni oneri di cura familiare. Futuri approfondimenti della ricerca saranno diretti ad approfondire il ruolo svolto dal genere, anche distinguendo tra lavoratori dipendenti e autonomi.*

Key words: Occupational stress, Ordered Probit; EWCS, Teleworking

Introduction

Aim of the paper is investigating work-related stress across European countries, explicitly considering specific duties and tasks which are performed more often by women, such as caregiving and house working activities, together with the circumstance to telework from home (Del Boca et al., 2020).

In addition to the complex privacy issues and the recently acknowledged right to disconnect, the enhanced flexibility and autonomy implied by home-based teleworking frequently come with greater work intensity and longer working hours (European Parliament, 2021). Furthermore, the associated detrimental effects on workers' work-life balance are more often registered in case of women with caring

responsibilities and especially of working mothers (Chung and Van der Horst, 2018; Pascucci et al., 2021). Therefore, in order to provide insights in a perspective of integrated European policies towards a healthier, happier and more sustainable quality of life, our research question is to comprehend whether undertaking those extra duties could exert an effect on occupational stress, as suggested by the literature (among many others: Repetti et al., 1989; Eurofound and ILO, 2017; Messenger, 2019).

The present study is conducted employing data from the Sixth European Working Condition Survey (EWCS), carried out in 2015, which is the most recent representative information source at EU level on working conditions so far. Of course, related findings are to be interpreted in light of a pre-Covid-19 scenario.

The paper is organized as follows: the next Section presents the employed data, the main descriptive statistics, and the selected model; the results of the modelling implementation and related discussion are in Section 3; finally, Section 4 presents brief concluding remarks.

Data and methods

Data from the EWCS are used focusing on EU-28 countries and, more specifically, considering responses to question Q61M: “You experience stress in your Work?”, as measured over a 5-point Likert scale.

The EWCS provides comprehensive evidence on a wide range of topics related to workers and workplaces, including exposure to physical and psychosocial risks, work organization, balance between private and professional life, as well as perceived health and well-being. Most recent EWCS data refer to 2015 determining that the available information may offer a picture of “pre-COVID 19 Europe at work” when home-based teleworking was still a quite marginal feature of labour market and telework arrangements were made mostly on a voluntary basis. Additionally, in our modelling implementation other specific work-life balance features connected with home-based work are considered.

A preliminary screening for missing values of the selected explanatory variables lowers the original sample size to 22,864 respondents (52.72% are women). When distinguishing 5 age classes for respondents, in accordance with the sampling design, 14.37% are aged under 30 years; 24.72% are between 30 and 40 years old; 28.43% are between 40 and 50 years old; 25.82% are in between 50 and 60 years old, while those over 60 are 6.65%.

In such target sample, 3.47% of the workforce declares to “daily” work from home, and a similar proportion (4.40%) states to work from home “several times a week”, with no remarkable difference by gender. Considering the latter respondents as home-based workers, about 33% of them declare to experience “always” or “most of the time” occupational stress. This sub-set response pattern seems to be quite different as compared to that of the interviewees who do not work from home on a regular basis. In fact, descriptive results for the whole sample indicates that about 27% of workers claim to experience occupational stress constantly, since the distribution of the answers is: “Always” (10.47%); “Most of the time” (16.79%); “Sometimes”

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(40.14%); “Rarely” (20.15%); “Never” (12.43%). Furthermore, women report a higher level of perceived stress, although these proportions are not so largely different across gender.

To interpret responses with respect to specific determinants and workers’ characteristics, different modelling approaches can be implemented. Aiming to analyse ordinal data, Agresti (2010), Tutz (2012), and Piccolo and Simone (2019) may be considered as the main references. Due to the nature of the available data, the most straightforward choice is a heteroskedastic Ordered Probit Model (Agresti 2010) in order to detect the effects of subjective, environmental, and economic variables on reported occupational stress.

Drivers of interest, selected from the available information set according to the established literature on the topic (among others: Eurofound and ILO, 2017; Messenger, 2019), encompass three main areas: basic socio-demographics; workers’ family management issues; job-related features. The considered socio-demographic variables are: gender, age classes, education level (using 2 dummies: one for tertiary education and one for high school degree), and number of family components. Some variables related to respondents’ family management are: making-ends-meet, house working, caregiving, leisure activities (measured on a 5 point Likert scale ranging from 1=*never* to 5=*always*). Work-related features are expressed by dummies referred to permanent contract, full-time job, private sector and home-based work.

Additionally, we consider several self-registered assessments measured again on a 5-point Likert scales (from 1=*never* to 5=*always*) for work-life balance, fitting of working time, autonomy of decision at work, and a continuous variable for the amount of working hours per week. Finally, a dummy is used to discriminate for geographical aspects, considering countries of Northern Europe=1.

Results and discussion

The estimated model (Table 1) with self-assessed occupational stress being the response variable shows that gender, age class, and number of components of the household turn out to be statistically significant. Respondents’ level of education does impact significantly when considering university degree. With respect to work-related characteristics, significant effects are those related to the number of working hours, permanent job contract and working in the private sector. Likewise, having some influence on decision at work and regularly working from home seem to exert some impact on stress perception, while having a full-time job is not statistically significant. The fitting of working hours with family or social commitments outside work, as well as making-ends-meet also exert some effects. Enjoying leisure activities turns out to be slightly significant. Somewhat unexpected results come from caregiving, childcare and house working activities, which do not seem to influence respondents’ experience of work-related stress. Finally, living in a Northern European country, where welfare settings and job regulation systems are supposed to be more homogeneous, is also a significant covariate.

Since in the Ordered Probit model neither the sign nor the magnitude of the coefficients provides any information about the partial effects of a given explanatory variable, it could be useful to consider marginal effects of selected variables on the dependent one.

Table 1: Heteroskedastic Ordered Probit estimated coefficients

Stress	Coef.	Std. Err.	z	P>z	
Gender	0.118	0.015	8.07	0.000	***
Age class	-0.031	0.006	-5.43	0.000	***
Highschool education	0.014	0.015	0.97	0.330	
Tertiary education	-0.031	0.015	-2.03	0.042	**
Household components	-0.020	0.006	-3.37	0.001	***
Children	0.014	0.019	0.74	0.457	
Permanent job	0.125	0.018	6.95	0.000	***
Private sector	-0.049	0.013	-3.84	0.000	***
Full time job	-0.022	0.019	-1.19	0.233	
Working hours	0.009	0.001	10.53	0.000	***
Make-ends-meet	-0.016	0.005	-2.92	0.003	***
Childcare	0.003	0.005	0.53	0.597	
House working	0.002	0.006	0.36	0.717	
Caregiving	0.006	0.006	1.14	0.253	
Working hours fit	-0.282	0.013	-21.49	0.000	***
Home-based Telework	0.193	0.023	8.31	0.000	***
Influence on decisions	0.039	0.005	7.82	0.000	***
Leisure	0.009	0.005	1.78	0.076	*
D_North	0.113	0.014	7.99	0.000	***
<i>Insigma</i>					
Make-ends-meet	-0.033	0.005	-6.94	0.000	***
Household components	0.011	0.005	2.37	0.018	**
Permanent job	-0.098	0.016	-6.02	0.000	***
Working hours	0.000	0.001	-0.74	0.461	
Age class	0.008	0.005	1.57	0.116	
/cut1	-1.428	0.076	-18.78	0.000	***
/cut2	-0.804	0.063	-12.78	0.000	***
/cut3	0.128	0.055	2.33	0.020	**
/cut4	0.700	0.060	11.72	0.000	***

***: significant at 1%; **: significant at 5%; *: significant at 10%

Specifically, we investigate the predicted probabilities of “stress”=never (Table 2) and “stress”=always (Table 3), for a worker profile holding high-school diploma, a full-time permanent job in the private sector, married with children and declaring to be in a household made of 3 components, working 40 hours per week, with the ordinal considered variables being fixed at their modal values. The profile is also distinguished by gender, home-based/non-home-based working condition and living in a Northern/Southern country.

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Among respondents who state to not regularly work from home (non-home-based), men present a higher estimated probability to perceive lower occupational stress as compared to women, with similar results for both Northern and Southern European Union countries.

Women are more likely to report they perceive “always” stress at work, and this is more evident for those who usually work from home, and especially in a Northern country. In addition to well-known work/family reconciliation issues, among the reasons explaining why female respondents report higher occupational stress, it could be said that women may deal with workplace sexism more often than men, and they must demonstrate that they are as capable as men to perform their jobs. Furthermore, women often obtain lower wages. Thus, results on perceived occupational stress for women working from home are consistent with current literature (see, among others: European Parliament, 2021).

Table 2: Estimated probability to be *never stressed at work*

	South		North	
	Non-home-based	Home-based	Non-home based	Home-based
Men	0.121 (0.005)	0.080 (0.005)	0.096 (0.005)	0.062 (0.004)
Women	0.095 (0.004)	0.061 (0.004)	0.074 (0.004)	0.046 (0.004)

Table 3: Estimated probability to be *always stressed at work*

	South		North	
	Non-home-based	Home-based	Non-home based	Home-based
Men	0.080 (0.004)	0.120 (0.007)	0.102 (0.005)	0.150 (0.008)
Women	0.103 (0.004)	0.151 (0.008)	0.130 (0.006)	0.186 (0.095)

Concluding remarks

Although our study focuses on a pre-pandemic era, it could provide useful insights on gender-based differences in the perception of occupational stress. The issue of working from home has become of most concerns since it has been the “new normal” during the last two years. However, for most employees working remotely has not been a choice, but a necessity imposed by the pandemic. By contrast, the present analysis focuses on a period when working from home was quite unusual, and most likely an option. This could help to explain our results on caregiving, caring for children and house working activities that do not seem to influence respondents’ experience of work-related stress.

Interestingly, given the characteristics of the welfare settings in the Northern Europe, our results show that women living in a Northern country report they perceive

work-related stress “always” more often than those living in the South. Such evidence may be interpreted considering the greater awareness of psycho-social risk factors at work in Northern countries, where the prospects of social protection are likely to be stronger. As a matter of fact, formal care services for elderly and kids are more efficient in the North as compared to the South of Europe, whereas in the latter countries’ norms concerning intergenerational responsibilities are still stronger and this could make women participation to the labour market more demanding and stressful. Therefore, as it is also the case for life satisfaction and other related topics, it can be assumed that the expectations of the respondents play an important role (Russell et al., 2018; Nappo, 2020).

In the light of changing working conditions, further research is necessary to examine the effect of female domestic (unpaid) work with respect to their main paid work, also considering the effects of geographical and welfare differences. In addition, more investigation is needed with respect to the distinction between employees and self-employed respondents.

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