



TECHNICAL REPORT

Impact of selected non-pharmaceutical
interventions on EU adults' work-life
balance during the COVID-19
pandemic, 2020–2022

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ECDC TECHNICAL REPORT

Impact of selected non-pharmaceutical interventions on EU adults' work-life balance during the COVID-19 pandemic, 2020–2022



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Abbreviations

CI	Confidence interval
ECDC	European Centre for Disease Prevention and Control
EQLS	European Quality of Life Survey
ETF	European Training Foundation
EU/EEA	European Union/European Economic Area
Eurofound	The European Foundation for the Improvement of Living and Working Conditions
EWCS	European Working Conditions Survey
GDPR	General Data Protection Regulation
JRC	Joint Research Centre
OR	Odds Ratio
NPI	Non-pharmaceutical intervention
RMD	ECDC/JRC Response Measures Database
SARS-CoV-2	Severe acute respiratory syndrome coronavirus 2
WLB	Work-life balance

Executive summary

- This report investigates the association between a set of selected non-pharmaceutical interventions (NPI), namely stay-at-home orders and recommendations, closure of day-care, primary and secondary schools (closure of educational facilities) and national teleworking recommendations, on adult work-life balance (WLB). The study is set in the 27 European Union (EU) Member States between March 2020 and May 2022. Linked data from the European Foundation for the Improvement of Living and Working Conditions (Eurofound) 'Living, Working and COVID-19' e-survey and the European Centre for Disease Prevention and Control (ECDC) and the Joint Research Centre (JRC) Response Measures Database were analysed using logistic regression models, adjusted for socio-demographic and spatial confounders.
- This study found that the selected NPIs, implemented in response to the COVID-19 pandemic during the period 2020–2022, significantly affected WLB. On the one hand, these NPIs, particularly the closure of educational facilities and teleworking, reduced the pressure of work on personal and family life by decreasing working time and tiredness from work. On the other hand, the selected NPIs, particularly the stay-at-home policies and teleworking, increased European adults' propensity to worry about work outside of working hours and, in some instances, reduced their job concentration and dedicated working time due to family responsibilities.
- The study findings suggest important differences in how the WLB of specific groups is associated with the above-mentioned NPIs, with certain groups appearing more negatively affected than others. For instance, individuals living with young children appear to have suffered more from the stay-at-home policies and school closures, while benefitting less from teleworking. Conversely, those aged <35 years, those without children at home, those living in the countryside and those living in northern EU countries perceived a positive impact from teleworking policies in terms of their professional-private life conflicts, with a limited or insignificant negative impact on their private-professional life conflicts and the extent to which they worried about work.
- Our results also suggest that policies on the introduction of NPIs need to consider ways to reduce the burden of family and care responsibilities and their conflict with working remotely, especially for those living with children <12 years. At the same time, policies perceived as improving professional-private life balance should be explored further, and this could be a fruitful avenue for future research.
- Policymakers should include methodologies to monitor the WLB, besides the effectiveness, adherence to and impact of NPIs during their implementation, in order to be able to rapidly adjust NPIs and improve efficacy and compliance while reducing their negative impact. In addition, stronger support arrangements should be considered to improve WLB when planning the implementation of NPIs such as stay-at-home policies, the closure of educational facilities and the recommendation to telework.

Scope and purpose of the report

This report summarises results from an analysis conducted by ECDC and Eurofound to understand the impact of selected NPIs introduced from 2020 to 2022 in response to the COVID-19 pandemic on the WLB among EU adults.

The report includes information collected by ECDC regarding NPIs and by Eurofound regarding the impact of the pandemic on the work and lives of EU citizens.

Information from all 27 EU Member States was included in the analysis.

Background

Non-pharmaceutical interventions in response to the COVID-19 pandemic

COVID-19 has had a profound impact on the EU since it was identified in the region since January 2020. As the severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2) quickly spread across the world, the EU, like many other regions, was hit by large numbers of both COVID-19 notifications and deaths, overcrowding of intensive care units, and extreme pressure placed on healthcare systems, bringing them to the verge of collapse [1]. From 2020 to 2022, the response to the pandemic resulted in an extensive roll-out of NPIs in most EU Member States, with societies coming to an almost complete standstill in terms of work routines and social behaviour [2,3].

Several NPIs focused on reducing population mobility and limiting contacts between infectious and susceptible individuals. Very often, a number of NPIs were implemented simultaneously to maximise their effectiveness [4]. Although NPIs, such as school and business closures and travel restrictions, were undertaken to reduce virus transmission and spread, they also resulted in serious personal, social and economic consequences [5,6].

There were three main categories of NPIs:

- those targeting the individual, such as hand hygiene, respiratory hygiene and use of face masks;
- those targeting environmental aspects, such as cleaning and ventilation of indoor spaces;
- those targeting the general population – e.g. promoting physical distancing and restricting movement and the gathering of people.

The ECDC-JRC Response Measures Database

In spring 2020, ECDC and the JRC developed the ECDC-JRC Response Measures Database (RMD) to collect data related to the implementation of NPIs in EU/EEA countries. The aim was to understand how countries responded to the pandemic and identify lessons for current and future public health emergencies [7,8].

The ECDC-JRC RMD is an archive of the NPIs applied from 1 January 2020 to 30 September 2022. Each NPI is coded through a three-level hierarchical system (Levels 1, 2 and 3) with increasingly detailed description. In addition, each NPI is further characterised with information on its legal basis (i.e. mandatory/voluntary), its level of implementation (i.e. full or partial, where a partial implementation indicates some level of exemption), its target group, and its geographical representation (i.e. national, regional or local implementation).

Work-life balance during the COVID-19 pandemic

Existing research on work-life balance

Harmoniously combining paid work with other areas of life can pose a challenge, with implications for working and living conditions [9]. While Kalliath and Brough (2008) note that there is no single definition of WLB, other studies recognise the potential conflicts between a person's multiple roles, the balance of time allocation and personal satisfaction across roles, and the facilitation of and control over multiple roles [10]. Encapsulating these concepts, Kalliath and Brough put forward the following definition: 'Work-life balance is the individual perception that work and non-work activities are compatible and promote growth in accordance with an individual's current life priorities' [10] (p. 326). This definition highlights the multidimensionality of non-work life, which includes education, health, leisure, relationships, family, household management, and community involvement [11]. The relative importance of these varies for each individual and also depends on their life cycle. WLB has been examined from many different perspectives. Some studies examine it in terms of the challenge to labour market conditions [12,13]. Others have considered the situation of dual-earner households and gender imbalances in unpaid work [13,14]. The effects of new forms of working, including increasingly demanding and stressful work situations, have also been examined [15-17].

The complexity of the WLB concept is underscored by the bi-directional relationship between paid work and non work domains¹ (17) as these can enhance and/or conflict with one another [10].

WLB can therefore influence many outcomes. A better balance between work and private life has been linked to improvements in job satisfaction, job performance, organisational commitment, personal and family life satisfaction, and better emotional and mental health [19]. On the other hand, a perception of conflict between work and private life can result in unsatisfactory outcomes for individuals, families, and organisations, manifesting as difficulties on the job, absenteeism, job changes, struggles in finding time for family, lack of personal time, deterioration in health, stress, exhaustion, and depression [20-23].

Determinants of work-life balance

Conflict in the work-life balance has been found to be closely related to the number of hours spent on paid work, working overtime, and the flexibility of work schedules [17,24,25]. Sources of stress for workers include use of information technology, the demand for constant availability, and the increased intensity of work [26,27].

Remote and hybrid work arrangements can have both positive and negative consequences for WLB. On the one hand, teleworking has the potential to minimise work-life conflicts by reducing commuting and providing workers with more flexibility [28,29]. On the other hand, working from home can blur the boundary between work and private life, leading to longer working hours [14,30,31].

¹ Paid work refers to remunerated activities, usually conducted outside of the household and unrelated to family or personal life. Non-work domains incorporate all areas of life other than paid work, including family responsibilities, leisure and other activities in the personal sphere.

If we look at the phenomenon of work-family conflict, job stress has been found to have a negative impact on family life, while non-work factors, including marital conflict, time spent on unpaid work, and the presence of children in the household have been identified as factors that have a negative impact on paid work [32]. Age is also a determinant of WLB, with family generally becoming a more important area of life as people get older [33].

Family characteristics, such as marital status or having children, influence WLB. In general, couples struggle more with WLB than single people, and parents, especially those with small children or large families, battle with WLB more than those without children [18,23,34,35].

Culture is also an important dimension. Empirical research has focused mainly on the US and Canada, countries characterised by strong individualist values [36]. This contrasts with collectivist cultures (e.g. China and many Mediterranean countries) where family is of central importance, and people are less prone to see work and family as two independent domains [37].

Effects of COVID-19 pandemic on work-life balance

The COVID-19 pandemic saw many changes to people's working and non-working lives. The restrictions imposed by governments to curb the spread of the virus had an impact on all areas of life to varying degrees. The pandemic and its response, including the closure of schools and childcare facilities, made it more challenging for workers to reconcile job and family responsibilities. Evidence from Japan suggests that school closures increased the gender childcare gap and the burden on mothers in particular [38]. Similar evidence has been uncovered across Europe and in the United States [39-41]. Reimann et al. studied the resulting outcomes in terms of work-family conflict using German data [42]. Evidence also suggests that the competing demands of work and home may have caused some women to leave the labour market altogether [43,44].

During the COVID-19 crisis, working from home was one of the key measures introduced to promote social distancing. There are numerous studies examining the effects of this and other NPIs on the spread of the SARS-CoV-2 virus and on people's mobility [45-49]. There is less information on how NPIs have affected other outcomes. Evidence from the early stages of the pandemic suggests that teleworking reduced the incidence of paid work, having a negative impact on family life, and increased the incidence of family, having a negative impact on paid work commitments [50]. Ipsen et al. examined pandemic-period data from 29 European countries, finding that most workers reported positive experiences of working from home, with improved work-life balance being one of the main advantages [51]. Toffolutti et al. studied the associations between the implementation and lifting of 13 different NPIs and mental well-being across Europe, uncovering positive correlations with workplace closures and negative correlations with contact-tracing, restrictions on international travel, and restrictions on social gatherings [52]. Pedraza and Vicente, using data from Spain, found that bar and restaurant closures caused significant negative impacts on life satisfaction [53].

The Eurofound 'Living, Working and COVID-19' e-survey

Eurofound's work on COVID-19 examines the far-reaching socioeconomic implications of the pandemic across Europe and its impact on living and working conditions. A key element of the research is the 'Living, working and COVID-19' electronic survey (e-survey), launched in April 2020 [54]. The e-survey is a population-based online survey capturing the experience of living and working in Europe through the pandemic, with the aim of helping policymakers to bring about an equal recovery from the crisis. The e-survey examined the impact of the COVID-19 pandemic on European citizens at different points in time, with questions ranging from life satisfaction, happiness and optimism, to health and levels of trust in institutions. Respondents were also asked about their work situation, their work-life balance and use of teleworking during the COVID-19 crisis.

The e-survey was open to anyone aged 18 years and over with access to the internet using the SoSciSurvey platform. Participants were recruited through social media (i.e. advertising through the Facebook platform), and by distributing the e-survey link among Eurofound stakeholders. Respondents were invited to share the e-survey link with their friends. Furthermore, as respondents were requested to leave their email addresses in order to participate in future rounds, a panel sample was built and participants could be re-contacted with a tailored email.

Five rounds of the e-survey were carried out from 2020 to 2022. Rounds 1, 2, 3 and 5 were advertised on social media and through Eurofound channels, while Round 4 was reserved for those who had participated in previous rounds of the e-survey. In cooperation with the European Training Foundation (ETF), Round 5 was also fielded in 10 countries neighbouring the European Union. The different rounds coincided with different periods of the pandemic:

- First round: spring 2020 (09/04/2020-10/06/2020) – 67 392 responses
- Second round: summer 2020 (19/06/2020-27/07/2020) – 23 702 responses
- Third round: spring 2021 (12/02/2021-31/03/2021) – 45 269 responses
- Fourth round: autumn 2021 (21/10/2021-09/12/2021) – 19 572 responses
- Fifth round: spring 2022 (24/03/2022-03/05/2022) – 36 891 responses.

The e-survey uses a structured questionnaire to investigate the impacts of the pandemic on living and working conditions². In each round, core questions were included, focussing on quality of living and working conditions, and work-life balance. After the first, relatively short, questionnaire was fielded, subsequent e-survey rounds included additional questions to capture pressing issues affecting living and working conditions in Europe. In the second e-survey round, questions on teleworking and government support were added. In the third e-survey round, questions on use of time and vaccination against COVID-19 were included. The fourth round added questions on reasons for non-vaccination. The fifth and final round of the e-survey included questions on housing and accommodation. Most of the e-survey questions were based on questions contained in the European Quality of Life Survey (EQLS) [55] and the European Working Conditions Survey (EWCS) [56], ensuring that questions were tested and passed cognitive quality controls before the e-survey was fielded. As the survey was non-probabilistic and therefore non-representative of the underlying population, an a posteriori weighting was performed [57]. For the analyses included in this report, weights have not been used.

Ethics

The protocol for Eurofound's 'Living, Working and COVID-19' e-survey was reviewed and approved both by the Eurofound directorate and its legal and data protection advisors. As a European agency, Eurofound is committed to ensuring that the research it conducts and coordinates complies with relevant regulatory and industry codes of practice, including data protection and other legal obligations in all EU Member States. In line with these codes, standards and the EU General Data Protection Regulation (GDPR), specific attention was paid to consent for data collection; consent to send a customised report; consent to be re-contacted; opting out/data deletion, and secure storage of respondents' data and pseudo-anonymisation. Respondents were informed that their responses would be used solely for research purposes, and stored separately from personal information such as email addresses, which would be used to invite them to participate in the next round of the e-survey if they gave their consent. Respondents were also informed that their participation, together with their individual responses to the questions, would be kept strictly confidential, implying anonymity of all respondents in the research results (containing statistical information only). E-survey participants received a description of the study and could decline to participate or withdraw at any time and were provided with the option 'I don't want to respond' for all questions. The authors did not obtain any personal information about the participants. Participants' responses were treated confidentially, and anonymous responses were used for the analyses presented in this report.

² Details are available at: <https://www.eurofound.europa.eu/surveys/living-working-and-covid-19-e-survey>

Methods

Data sources and data selection

Non-pharmaceutical interventions

For this study, we sourced information on NPIs from the ECDC-JRC Response Measures Database. We included NPIs which were fully implemented at national level from 26 March 2020 to 3 May 2022 which targeted the community and were either mandatory or voluntary. Data from the NPI database were extracted on 8 August 2022.

NPIs included in the analysis were:

- 'Stay-at-home orders or recommendations' (coded in three categories: i) no intervention; ii) stay-at-home orders; iii) stay-at-home recommendations).
Stay-at-home orders were defined as legally enforced measures requiring the population to leave home only under certain circumstances (sometimes also referred as 'lockdown').
Stay-at-home recommendations were similar measures, but not legally enforced.
- 'Closure of educational facilities':
 - closure of day-care centres (coded as: i) no interventions; ii) closure);
 - closure of primary schools (coded as: i) no interventions; ii) closure);
 - closure of secondary schools (coded as: i) no intervention; ii) closure).
 Closures of educational facilities were defined as measures that prevented in-person schooling. Depending on the different EU Member States, the age of the children attending the different educational facilities was up to four years or up to six years for day-care, between 5–7 years and 10–11 years for primary school, and from 11–12 years to 17–18 years for secondary school.
- 'Teleworking recommendation' (coded in two categories: i) no intervention; ii) full teleworking).
Teleworking was defined as a work-place measure strongly recommending people to work from home when possible. In most cases this measure was not legally enforced.

Stay-at-home interventions and closure of educational facilities were selected for this study since they were considered to be among the most intrusive NPIs implemented as a response to the COVID-19 pandemic [58-60]. Teleworking was selected as it entails a high degree of interference in the relation between professional and private life [61].

Work-life balance

All responses received over the five rounds of the Eurofound e-survey 'Living, working and COVID-19' were considered. The initial database counted 192 826 completed responses. The 73 899 responses giving the current working status as 'unemployed', 'unable to work due to illness or disability', 'retired', 'full-time homemaker/fulfilling domestic tasks' or 'student' were excluded. A final sample of 118 927 responses completed by individuals who indicated that they were working at the time of response to the e-survey was used for the analysis.

To analyse the impact of NPIs on WLB, the five questions from the e-survey defining the areas of the WLB in this study were selected from all the questions included in the questionnaires. The questions included in our analysis from the Eurofound 'Living, working and COVID-19' e-survey were the following:

'How often in the last two weeks have you...'

Outcome 1. '...kept worrying about work when you were not working' (Job Worried).

Outcome 2. '...felt too tired after work to do some of the household jobs which need to be done' (Job-Household Tired).

Outcome 3. '...found that your job prevented you from giving the time you wanted to your family' (Job-Family Time).

Outcome 4. '...found it difficult to concentrate on your job because of your family responsibilities' (Family-Job Concentration).

Outcome 5. '...found that your family responsibilities prevented you from giving the time you should to your job' (Family-Job Time).

The words in parentheses are the shorthand descriptions for these outcomes, as used in tables and figures throughout the text. There were five potential answers to the questions: 1. 'Always'; 2. 'Most of the time'; 3. 'Sometimes'; 4. 'Rarely'; 5. 'Never'. For this analysis, the outcomes were dichotomised into values: 0 'Never/Rarely'; 1 'Sometimes/Most/Always'. Outcome 1 is a general measure of work stress and may be closely related to labour market conditions. Outcomes 2 and 3 represent ways in which a person's job may interfere with their household and family responsibilities outside of the workplace. Outcomes 4 and 5 capture impacts that family responsibilities may have on a person's ability to do their job.

Additional co-variates for which adjustments are made

Information on possible confounders, such as gender, age-group, education, living arrangements (including both sharing the household with a partner and/or with children), being allowed to work from home (work location), and area of residence was also extracted from the Eurofound e-survey.

Furthermore, the geographical region of the respondent's country, and the national average COVID-19 death rates per 100 000 inhabitants in the seven days prior to the respondent's reply were included in the analysis to capture additional information related to the different phases of the pandemic [62,63].

List of variables included in the analysis

- Gender: 1) Male; 2) Female; 3) Other.
- Age group in years: 1) 18–34 years; 2) 35–49 years; 3) 50–64 years; 4) 65+ years.
- Education: 1) Primary school; 2) Secondary school; 3) Tertiary school.
- Living arrangements: living with a partner: 1) Yes; 2) No.
- Children living in the household: 1) No child/Alone; 2) Children aged 0–11 years only; 3) Children aged 12–17 years only; 4) Children aged 0–11 years and 12–17 years.
- Work location: 1) Teleworker; 2) Non-teleworker.
- Area of residence: 1) Open countryside; 2) Small town; 3) Medium/Large town; 4) City/City suburb.
- Geographical regions coded in four categories:
 - 1) 'north' including Denmark, Estonia, Finland, Latvia, Lithuania, Sweden;
 - 2) 'east' including Bulgaria, Czechia, Croatia, Hungary, Poland, Romania, Slovakia, Slovenia;
 - 3) 'west' including Austria, Belgium, France, Germany, Ireland, Luxembourg, the Netherlands;
 - 4) 'south' including Cyprus, Greece, Italy, Malta, Portugal, Spain.
- Seven-day average COVID-19 deaths (numerical variable).

Data analysis

Data on NPIs (from the RMD) and on WLB (from the Eurofound e-survey) were merged using the e-survey respondent's country of residence and date of response. NPI data were included in the analysis where they had been in place for the two weeks before the e-survey response, as the e-survey questions referred to the experiences of the respondent in the two weeks prior to completing the e-survey.

The distribution of the interviewed sample was described, presenting the number and proportion of respondents' socio-demographic characteristics, the frequency of their responses regarding the five WLB outcomes, and the status of the NPIs at the time of response.

All the variables of interest were first summarised using frequencies and proportions. Cross-tabulations between both socio-demographic characteristics and NPIs versus each of the outcomes, with row percentages, were also created in order to present the crude relationship between each covariate and the WLB. Finally, to assess the association between each NPI and the five dichotomised outcomes, logistic regression models were fitted and adjusted for the all individual-level potential confounders extracted from Eurofound's e-survey, as well as the geographical region of the respondent's country and the country average COVID-19 death rate per 100 000 inhabitants in the previous seven days. The logistic regression models assessing the impact of the closures of different educational institutions and the national policies recommending teleworking were further adjusted for the stay-at-home orders and recommendations in place at the time. Odds Ratios (ORs) and their 95% Confidence Intervals (95% CI) were used to present the results of the regression models.

Since most of NPIs were active only during the first three rounds of Eurofound's e-survey, a sensitivity analysis was run including information for these three rounds only, which took place from 9 April 2020 to 31 March 2021.

P-values <0.05 were considered statistically significant. Stata (StataCorp. 2021. Stata Statistical Software: Release 17) was used for data preparation and analyses.

Results

Descriptive analysis

Of the 118 927 responses included in the analysis, 64.7% of the responses were from females and the most represented age group comprises individuals between 50 and 64 years old (43.9%), followed by those between 35 and 49 years of age (36.2%) (Table 1a and 1b). Most responses were from tertiary-educated respondents (70.1%). With regard to the household composition, 65.9% of the responses were from adults living with a partner, and 61.1% were from adults living without children; among the 26.5% (n=31 490) of responses with children in the household, 16 017 (50.9%) reported living with children aged <12 years only, and 10 749 (34.1%) reported living with children aged between 12 and 17 years only.

The geographical distribution of the sample was rather homogeneous, with 33.4% of the responses from residents in eastern EU, 23.7% in Member States southern EU Member States, 26.3% in western EU Member States and 16.5% in northern EU Member States. Responses from individuals living in cities and surrounding suburbs represented 40.4% of the sample, while those from open countryside areas represented 7.7% of the sample. Responses from workers who had not teleworked during the month prior to the e-survey response accounted for 50.8%.

With regard to the responses to the five questions defining the outcomes of WLB, 59.9% indicated that the respondents sometimes, most of the time or always kept worrying about work when they were not working; 67.5% felt too tired after work to do some of the household jobs which needed to be done and 53.4% found that their job prevented them from giving the time they wanted to their family. Conversely, 65.4% of the respondents stated that they rarely or never found it difficult to concentrate on their job because of their family responsibilities, and 74.8% rarely or never found that their family responsibilities prevented them from giving the time they needed to their job.

Table 1a. Distribution of socio-demographic characteristics of respondents to the Eurofound 'Living, Working and COVID-19' e-survey, EU 2020–2022 (N=118 927)

Variable	Frequency	Percentage
Gender		
Male	40 974	34.5
Female	76 990	64.7
Other	312	0.3
Missing	651	0.5
Education		
Primary	1 969	1.7
Secondary	30 232	25.4
Tertiary	83 400	70.1
Missing	3 326	2.8
Living Arrangements: Living with a partner		
Yes	78 387	65.9
No	38 356	32.3
Missing	2 184	1.8
Children in the household		
No child-Alone	72 648	61.1
Children aged 0–11 years only	16 017	13.5
Children aged 12–17 years only	10 749	9.0
Children aged 0–17 and 12–17 years	4 724	4.0
Missing	14 789	12.4
Age group		
18–34	19 841	16.7
35–49	43 089	36.2
50–64	52 195	43.9
65+	3 802	3.2
Geographical regions		
North	19 676	16.5
East	39 767	33.4
West	31 316	26.3
South	28 168	23.7
Work location		
Teleworker	53 831	45.2
Non-teleworker	60 436	50.8
Missing	4 660	3.9
Area of residence		
Open countryside	9 138	7.7
Small town	30 568	25.7
Medium/large town	30 231	25.4
City/city suburb	47 985	40.4
Missing	1 005	0.8

Table 1b. Distribution of respondents to questions defining work-life balance, EU 2020–2022 (N=118 927)

Variable	Frequency	Percentage
Outcome 1: Kept worrying about work when you were not working (Job Worried)		
Never/rarely	46 409	39.0
Sometimes/most/always	71 196	59.9
Missing	1 322	1.1
Outcome 2: Felt too tired after work to do some of the household jobs which need to be done (Job-Household Tired)		
Never/rarely	36 992	31.1
Sometimes/most/always	80 287	67.5
Missing	1 648	1.4
Outcome 3: Found that your job prevented you from giving the time you wanted to your family (Job-Family Time)		
Never/rarely	52 618	44.2
Sometimes/most/always	63 500	53.4
Missing	2 809	2.4
Outcome 4: Found it difficult to concentrate on your job because of your family responsibilities (Family-Job Concentration)		
Never/rarely	77 767	65.4
Sometimes/most/always	38 639	32.5
Missing	2 521	2.1
Outcome 5: Found that your family responsibilities prevented you from giving the time you should to your job (Family-Job Time)		
Never/rarely	88 936	74.8
Sometimes/most/always	27 241	22.9
Missing	2 750	2.3

Table 2 below shows the distribution of the responses for the five WLB outcomes stratified by respondent's gender, age group, education, household composition, work location, area of residence and geographical regions.

For all outcomes, female respondents had a larger frequency of affirmative responses (i.e. sometimes/most always). For the first three outcomes which focussed on worrying about work outside of working hours and how work affected personal and family life, most female and male respondents confirmed they felt their job had a negative impact on their personal and family life either sometimes, most of the time or always. On the other hand, for the outcomes focussing on the impact of family on professional life (Outcomes 4 and 5), only a minority of the respondents (20% of men and 35% of women) confirmed that they perceived their family responsibilities as having a negative impact on their job.

The frequency of affirmative answers (either responding sometimes, most of the time or always) was generally larger in respondents <50 years of age for all outcomes. However, while the outcomes focussing on worrying about work outside of working hours and how work negatively affects personal and family life (first three outcomes) included a majority of affirmative answers (meaning a negative perception), the opposite was observed for Outcomes 4 and 5 which focussed on how private life had an impact on the work dimension. The frequency of affirmative answers was largest for all the five outcomes among the most educated respondents (i.e. those with tertiary education).

Except for Outcome 2 (too tired after work to do household jobs), in all outcomes the frequency of affirmative answers was larger in those living with a partner. Similarly, respondents sharing a household with children aged <12 years were more likely to answer 'sometimes', 'most of the time' or 'always' to all outcomes.

Those who were teleworking at the time of responding to the e-survey answered in the affirmative more frequently to Outcome 1, 4 and 5 (outcomes referring to job worry, and family affecting work) than those who did not telework. The opposite was true for Outcome 2 and 3 (outcomes concerning work having an impact on non-work responsibilities).

When comparing the responses from participants living in areas of residence of various sizes, no clear differences could be identified, while those living in southern EU Member States had a higher frequency of affirmative answers in relation to all the outcomes than those living in the other regions.

Table 2. Distribution of socio-demographic characteristics of respondents to the Eurofound 'Living, Working and COVID-19' e-survey by outcome question, EU 2020–2022 (N= 118 927)

Variable	Outcome 1 (Job Worried)		Outcome 2 (Job- Household Tired)		Outcome 3 (Job- Family Time)		Outcome 4 (Family-Job Concentration)		Outcome 5 (Family-Job Time)	
	N/R ¹	S/M/A ²	N/R ¹	S/M/A ²	N/R ¹	S/M/A ²	N/R ¹	S/M/A ²	N/R ¹	S/M/A ²
Gender										
Male	43.2	56.8	37.9	62.1	47.0	53.0	69.6	30.4	78.4	21.6
Female	37.5	62.5	28.2	71.8	44.4	55.6	65.3	34.7	75.5	24.5
Other	40.0	60.0	28.4	71.6	52.2	47.8	66.8	33.2	74.4	25.6
Age group										
18–34	37.3	62.7	29.3	70.7	47.0	53.0	68.9	31.1	79.4	20.6
35–49	36.9	63.1	28.6	71.4	38.5	61.5	57.9	42.1	68.6	31.4
50–64	41.8	58.2	33.8	66.2	48.9	51.1	72.2	27.8	81.4	18.6
65+	47.7	52.3	46.1	53.9	63.7	36.3	81.5	18.5	85.9	14.1
Education										
Primary	44.9	55.1	33.0	67.0	47.1	52.9	67.1	32.9	78.6	21.4
Secondary	45.2	54.8	31.8	68.2	46.7	53.3	70.2	29.8	81.2	18.8
Tertiary	37.0	63.0	31.5	68.5	44.8	55.2	65.5	34.5	74.8	25.2
Living arrangements: Living with a partner										
Yes	39.4	60.6	32.6	67.4	42.9	57.1	64.1	35.9	74.0	26.0
No	39.7	60.3	29.4	70.6	50.7	49.3	72.7	27.3	82.1	17.9
Children in the household										
No child-Alone	40.7	59.3	32.8	67.2	51.1	48.9	75.1	24.9	84.2	15.8
Children 0–11 years only	36.1	63.9	28.2	71.8	31.4	68.6	42.2	57.8	52.0	48.0
Children 12–17 years only	37.9	62.1	33.0	67.0	41.3	58.7	61.5	38.5	73.7	26.3
Children aged 0–17 and 12–17 years	34.6	65.4	29.6	70.4	32.0	68.0	46.0	54.0	56.5	43.5
Work location										
Teleworker	36.0	64.0	33.0	67.0	46.3	53.7	62.0	38.0	71.5	28.5
Non-teleworker	43.2	56.8	30.0	70.0	44.2	55.8	71.1	28.9	81.2	18.8
Area of residence										
Open countryside	42.4	57.6	31.8	68.2	45.2	54.8	65.6	34.4	75.5	24.5
Small town	41.3	58.7	32.1	67.9	44.3	55.7	66.6	33.4	76.7	23.3
Medium/Large town	39.6	60.4	31.9	68.1	46.0	54.0	68.2	31.8	77.8	22.2
City/City suburb	37.7	62.3	31.0	69.0	45.6	54.4	66.4	33.6	75.9	24.1

Variable	Outcome 1 (Job Worried)		Outcome 2 (Job-Household Tired)		Outcome 3 (Job-Family Time)		Outcome 4 (Family-Job Concentration)		Outcome 5 (Family-Job Time)	
	N/R ¹	S/M/A ²	N/R ¹	S/M/A ²	N/R ¹	S/M/A ²	N/R ¹	S/M/A ²	N/R ¹	S/M/A ²
Geographical regions										
North	43.2	56.8	31.9	68.1	48.9	51.1	71.5	28.5	78.8	21.2
East	41.5	58.5	34.3	65.7	47.0	53.0	70.8	29.2	80.0	20.0
West	42.8	57.2	32.9	67.1	48.8	51.2	65.0	35.0	75.2	24.8
South	30.2	69.8	25.8	74.2	36.7	63.3	59.8	40.2	71.6	28.4

1 N/R where respondents indicated the options 'Never' or 'Rarely' for each outcome.

2 S/M/A where respondents indicated the options 'Sometimes', 'Most of the time' or 'Always' for each outcome.

In Table 3, the frequency of the responses to the five WLB outcomes are stratified by the status (active/inactive) of the NPIs in the two weeks prior to the e-survey response. For all NPIs, the frequency of the affirmative responses for Outcomes 1, 4 and 5 was larger when the NPIs were active (or the stay-at-home orders were active). For Outcomes 2 and 3, the frequency of affirmative responses was larger when the measures were inactive.

Table 3. Distribution of the responses to Eurofound's 'Living, Working and COVID-19' e-survey, stratified by non-pharmaceutical intervention and outcome, European Union 2020–2022 (N= 118 927)

Variable	Outcome 1 (Job Worried)		Outcome 2 (Job-Household Tired)		Outcome 3 (Job-Family Time)		Outcome 4 (Family-Job Concentration)		Outcome 5 (Family-Job Time)	
	N/R ¹	S/M/A ²	N/R ¹	S/M/A ²	N/R ¹	S/M/A ²	N/R ¹	S/M/A ²	N/R ¹	S/M/A ²
Stay-at-home										
Inactive	40.5	59.5	29.9	70.1	44.3	55.7	67.6	32.4	77.5	22.5
Stay-at-home recommended	41.7	58.3	40.0	60.0	53.8	46.2	67.6	32.4	75.1	24.9
Stay-at-home orders	34.2	65.8	35.5	64.5	46.7	53.3	63.4	36.6	73.1	26.9
Closure day-care/nursery										
Inactive	41.2	58.8	28.3	71.7	44.0	56.0	67.7	32.3	77.2	22.8
Active	36.3	63.7	37.9	62.1	47.8	52.2	65.2	34.8	75.2	24.8
Closure primary school										
Inactive	41.5	58.5	27.4	72.6	43.3	56.7	67.9	32.1	77.7	22.3
Active	36.6	63.4	37.4	62.6	48.2	51.8	65.3	34.7	75.0	25.0
Closure secondary school										
Inactive	41.5	58.5	27.3	72.7	43.1	56.9	67.6	32.4	77.5	22.5
Active	36.9	63.1	37.1	62.9	48.3	51.7	65.8	34.2	75.3	24.7
Teleworking (2 levels)										
Inactive	39.9	60.1	29.6	70.4	44.1	55.9	68.2	31.8	77.5	22.5
Active	39.1	60.9	33.4	66.6	46.5	53.5	65.5	34.5	75.7	24.3

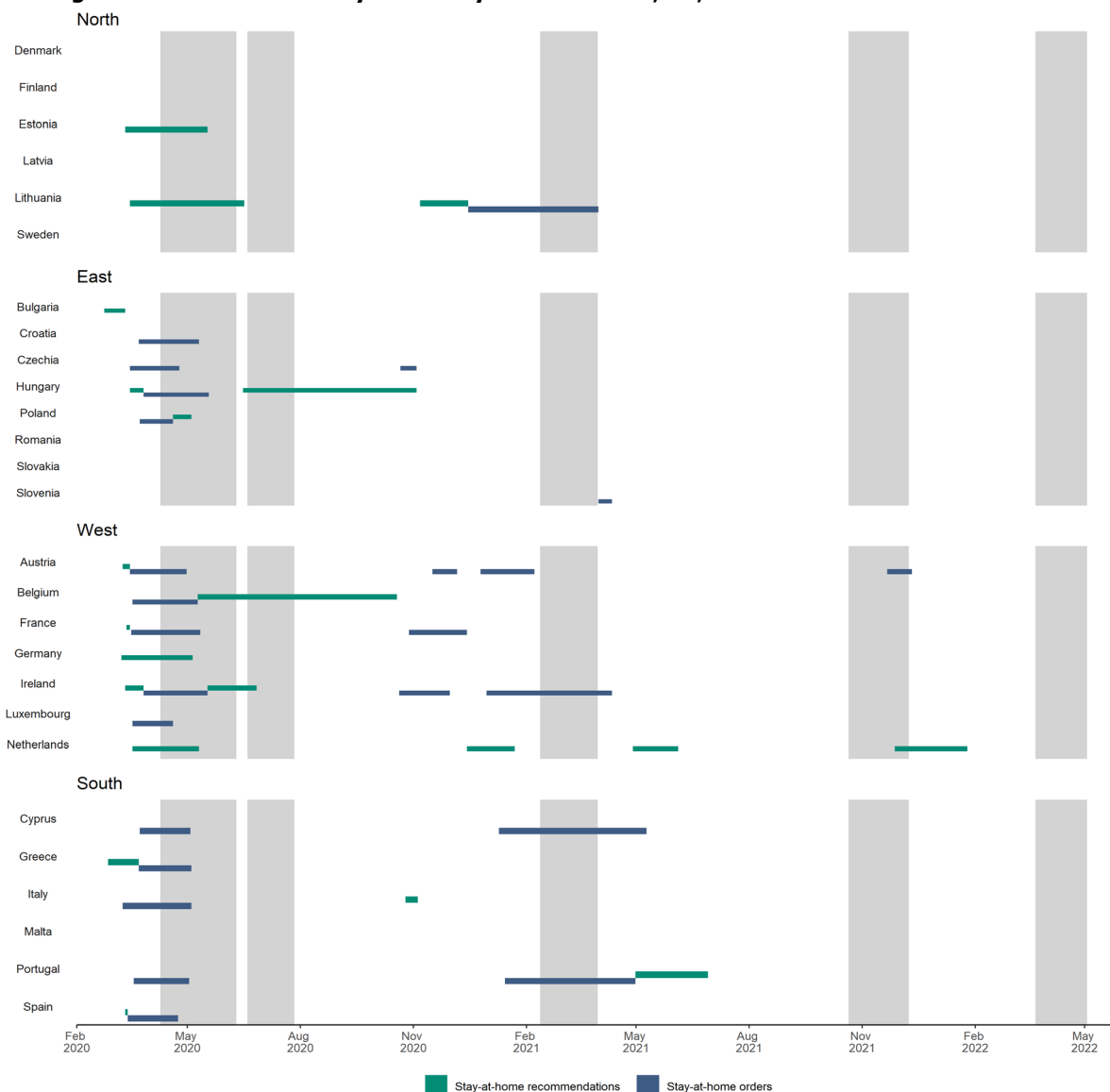
1 N/R where respondents indicated the options 'Never' or 'Rarely' for each outcome.

2 S/M/A where respondents indicated the options 'Sometimes', 'Most of the times' or 'Always' for each outcome.

Figures 1, 2 and 3 depict the distribution of stay-at-home policies, educational institution closures and teleworking policies, respectively, in the EU Member States grouped by geographical region.

Twenty-one Member States implemented some form of national stay-at-home policy: five Member States applied stay-at-home orders only, four applied stay-at-home recommendations only, and 11 implemented both orders and recommendations at different times. The smallest number of stay-at-home policies were implemented in the region 'North', and the largest in the region 'West'. The Member States in the regions 'East' and 'South' implemented orders more frequently than recommendations. Most Member States implemented stay-at-home policies during spring 2020, at the time of the first Eurofound's e-survey round, whereas only a few had active stay-at-home policies during the second, third and fourth e-survey rounds. There were no policies active during the last round of the e-survey.

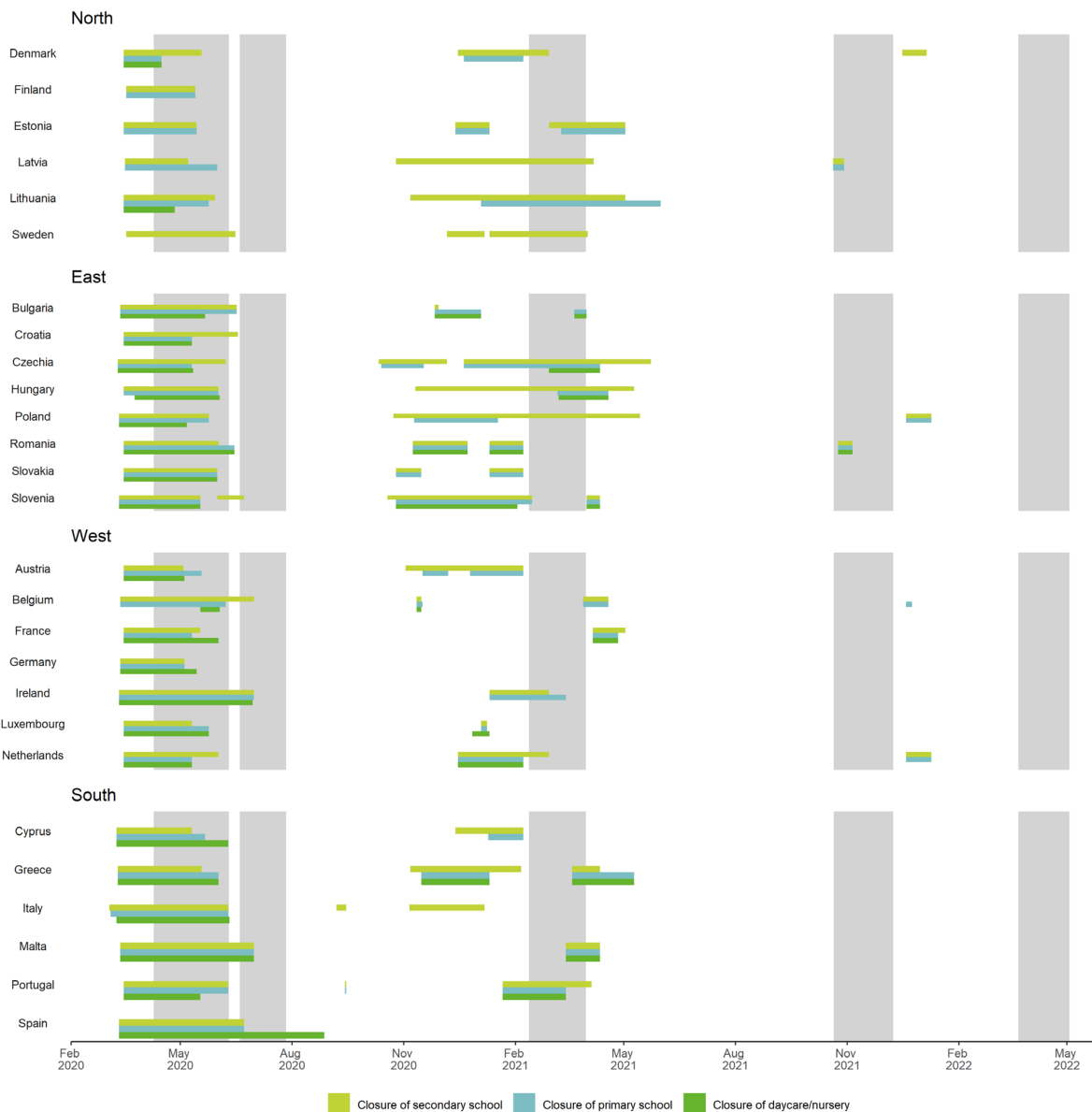
Figure 1. Implementation of stay-at-home orders and recommendations and Eurofound's 'Living, Working and COVID-19' e-survey rounds by Member State, EU, 2020–2022



Note: The grey areas indicate the five rounds of the Eurofound e-survey 'Living, working and COVID-19'

All EU Member States implemented some form of national educational institution closure. Most applied national closures of day-care centres, primary and secondary schools. Germany implemented a national closure of day-care centres only (however, even though a national policy was not in place, during spring 2020 all German federal states also implemented a primary and secondary school closure). Estonia, Finland and Latvia (all part of the region 'North') implemented national closures of primary and secondary schools only. Sweden only closed secondary schools. All Member States implemented educational institution closures during spring 2020 at the time of the first round of the Eurofound e-survey, and most were doing the same during or just before the second and third round of the e-survey roll-out. However, only two Member States were implementing some form of educational institution closure at the time of the fourth round and none at the time of the fifth round.

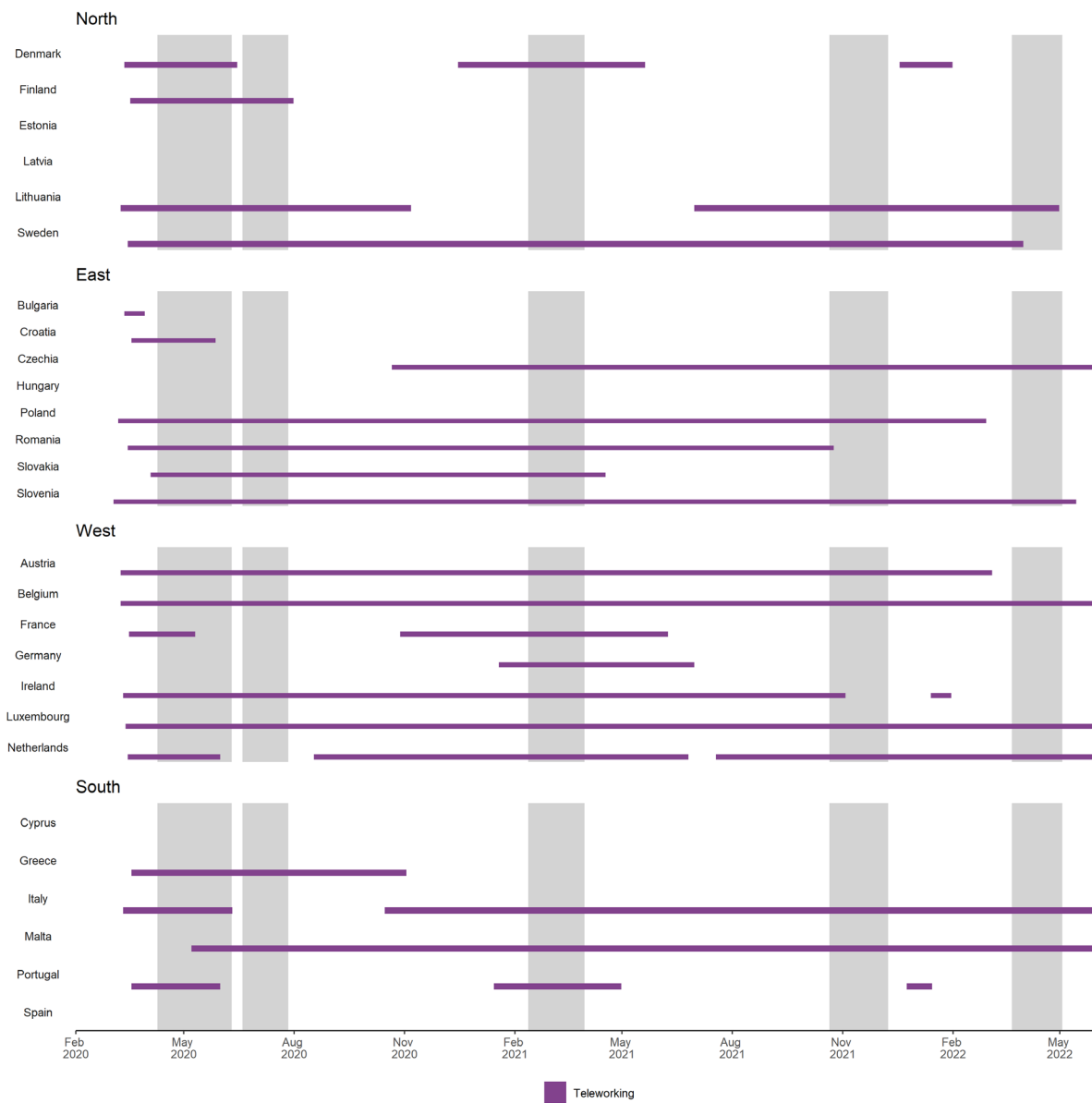
Figure 2. Implementation of closures of educational facilities and Eurofound's 'Living, Working and COVID-19' e-survey rounds by Member State, EU, 2020–2022



Note: The grey areas indicate the five rounds of Eurofound's e-survey 'Living, working and COVID-19'.

National 'full' teleworking recommendations were implemented by all EU Member States except Estonia, Hungary and Latvia (where such policies was categorised as 'partial' because they only applied to part of the workforce). Around half of the EU Member States implemented such policies for long periods (i.e. more than one year), albeit with some degrees of difference. The other Member States implemented teleworking recommendations between 2020 and 2022 during periods when notification rates for SARS-CoV-2 were high. As a result, the teleworking recommendations are more homogeneously distributed during the study period and across the different rounds of Eurofound's e-survey than the stay-at-home policies and educational institution closures.

Figure 3. Implementation of 'full' teleworking recommendations and Eurofound's 'Living, Working and COVID-19' e-survey rounds by Member State, EU, 2020–2022



Note: The grey areas indicate the five rounds of Eurofound's e-survey 'Living, working and COVID-19'.

Impact of non-pharmaceutical interventions on the work-life balance of EU adults

Stay-at-home policies

The two stay-at-home policies, and particularly the stay-at-home orders, had a negative impact on Outcomes 1, 4 and 5, increasing worry about work outside of working hours and reducing job concentration and dedicated working time (Figures 4 and 5, and Tables A4 and A5 in the Annex). Conversely, stay-at-home policies appeared to have a positive impact on Outcomes 2 and 3, decreasing the pressure of work on personal/family life by reducing tiredness from work and allowing for more family time.

When only the first three rounds of the e-survey were included, instead of all five, the sensitivity analysis obtained similar results.

Stay-at-home orders

In most instances, the negative impact of the stay-at-home orders was stronger than the positive, whereas stay-at-home recommendations had a milder negative impact and a more marked positive one.

The groups most negatively affected by the stay-at-home orders were i) those living in the western EU Member States (particularly with regard to Outcomes 1 and 4); ii) those living with children <12 years of age (particularly with regard to Outcomes 1, 4 and 5); iii) those living alone (particularly with regard to outcomes 1, 4 and 5); and iv) women (particularly with regard to Outcomes 3, 4 and 5). When considering the geographical region, the largest negative impact on Outcome 1 was observed in those under stay-at-home orders in western EU Member States (they had an OR of 1.49, 95% CI 1.36–1.63 of replying 'sometimes/most always' instead of 'never/rarely'). The same group also experienced the largest negative impact on Outcome 4, with a decrease in job concentration due to increasing family responsibilities (OR 1.22, 95% CI 1.12–1.34). Respondents from eastern and northern EU Member States generally fared better than those from other geographical areas, although those from northern EU Member States were the only ones who did not experience a positive impact from the stay-at-home orders on Outcome 2 – i.e. not perceiving reduced pressure from work on personal/family life (e.g. Outcome 2; OR 0.99, 95% CI 0.86–1.14).

When considering those with children in households, adults sharing a household with children <12 years of age experienced an increase in their propensity to worry about work outside of working hours (Outcome 1, OR 1.36, 95% CI 1.25–1.48). A negative impact was also observed in those adults sharing a household with children <12 years for Outcome 4 (i.e. a reduction in job concentration, OR 1.15, 95% CI 1.05–1.25) and 5 (i.e. a reduction in dedicated working time due to family responsibilities, OR 1.23, 95% CI 1.13–1.34). With regard to Outcomes 2 and 3, a positive impact was observed for those adults not sharing a household with a child (Outcome 2: feeling too tired for household jobs after work, OR 0.70, 95% CI 0.67–0.74; and Outcome 3: job depriving them of family time, OR 0.82, 95% CI 0.78–0.85).

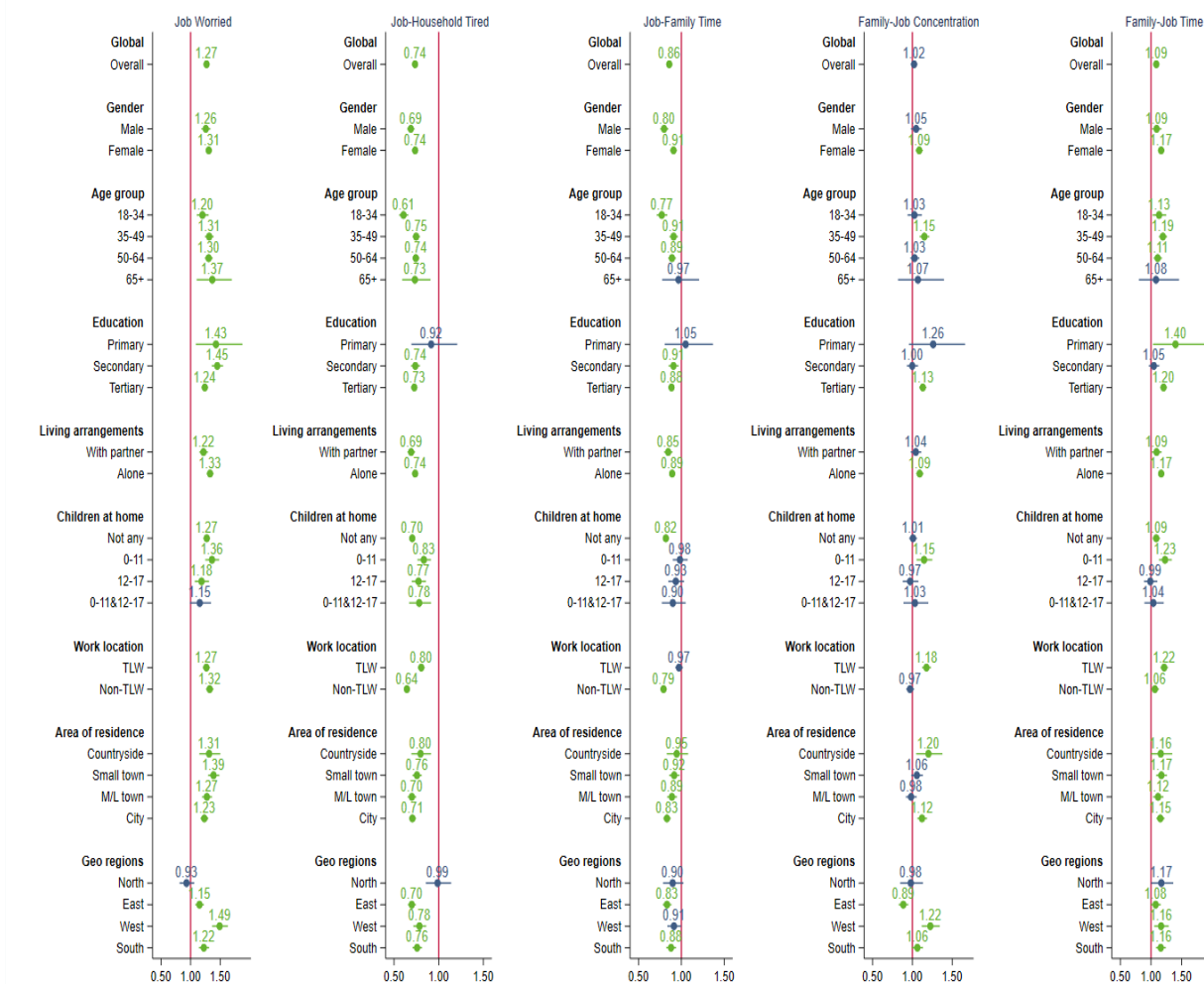
Although the confidence intervals sometimes overlap, it appears that respondents living without a partner in the household experienced a slightly stronger negative impact from the stay-at-home orders in all five outcomes than those living with a partner. The same is observed for both women and men.

When considering different age-groups, adults aged between 35 and 49 years of age appeared to have been more negatively affected by the application of the stay-at-home orders (e.g. with regard to Outcome 4, OR: 1.15, 95% CI 1.09–1.21). Those 65 years or older also appeared to have suffered considerably as a result of this measure, particularly in terms of worrying about work outside of working hours (i.e. Outcome 1, OR: 1.37, 95% CI 1.10–1.70). Conversely, stay-at-home orders appeared to have had a protective effect on Outcomes 2 and 3 in young adults aged between 18 and 34 years (outcome 2: OR 0.61, 95% CI 0.56–0.66; and Outcome 3: OR 0.77, 95% CI 0.71–0.84), with a consequent reduction in how tiredness from work limited their ability to attend to household responsibilities and the extent to which work interfered with dedicated family time.

When considering the level of education, those adults with a tertiary education generally fared better than those with a primary or secondary education in work-life conflicts (i.e. Outcomes 2 and 3), whereas they fared worse in family-work conflicts (i.e. Outcomes 4 and 5).

The impact of the stay-at-home orders with respect to gender was similar for females and males, with the confidence intervals for the estimates always overlapping. In most instances this was also the case for the respondent's area of residence and geographical region of the country.

Figure 4. Effect of stay-at-home orders on work-life balance overall, stratified by respondent's gender, age group, education, living arrangements, children in the household, work location, area of residence and country's geographical regions, and by outcome, EU, 2020–2022



Estimate colour: statistically significant at 5% level in green, not statistically significant in navy blue.

Stay-at-home recommendations

The groups most negatively affected by the stay-at-home recommendations, although with confidence intervals largely overlapping, were i) those living with children <12 years of age; and ii) those living alone.

When considering the presence of children in households, adults sharing a household with children <12 years of age fared worse than all other groups, except in their perception of the pressure of work on personal/family life (i.e. Outcome 2: OR 0.77, 95% CI 0.67–0.89). For instance, they had an increase in the negative impact of reduced job concentration (Outcome 4: OR 1.36, 95% CI 1.18–1.56) and in the reduction in dedicated working time due to family responsibilities (Outcome 5: OR 1.48, 95% CI 1.29–1.70).

People living alone managed worse than those living with a partner, particularly with regard to being deprived of family time by their work (Outcome 3: OR 0.77, 95% CI 0.73–0.82) and family responsibilities interfering with dedicated work time (Outcome 5: OR 1.15, 95% CI 1.07–1.23).

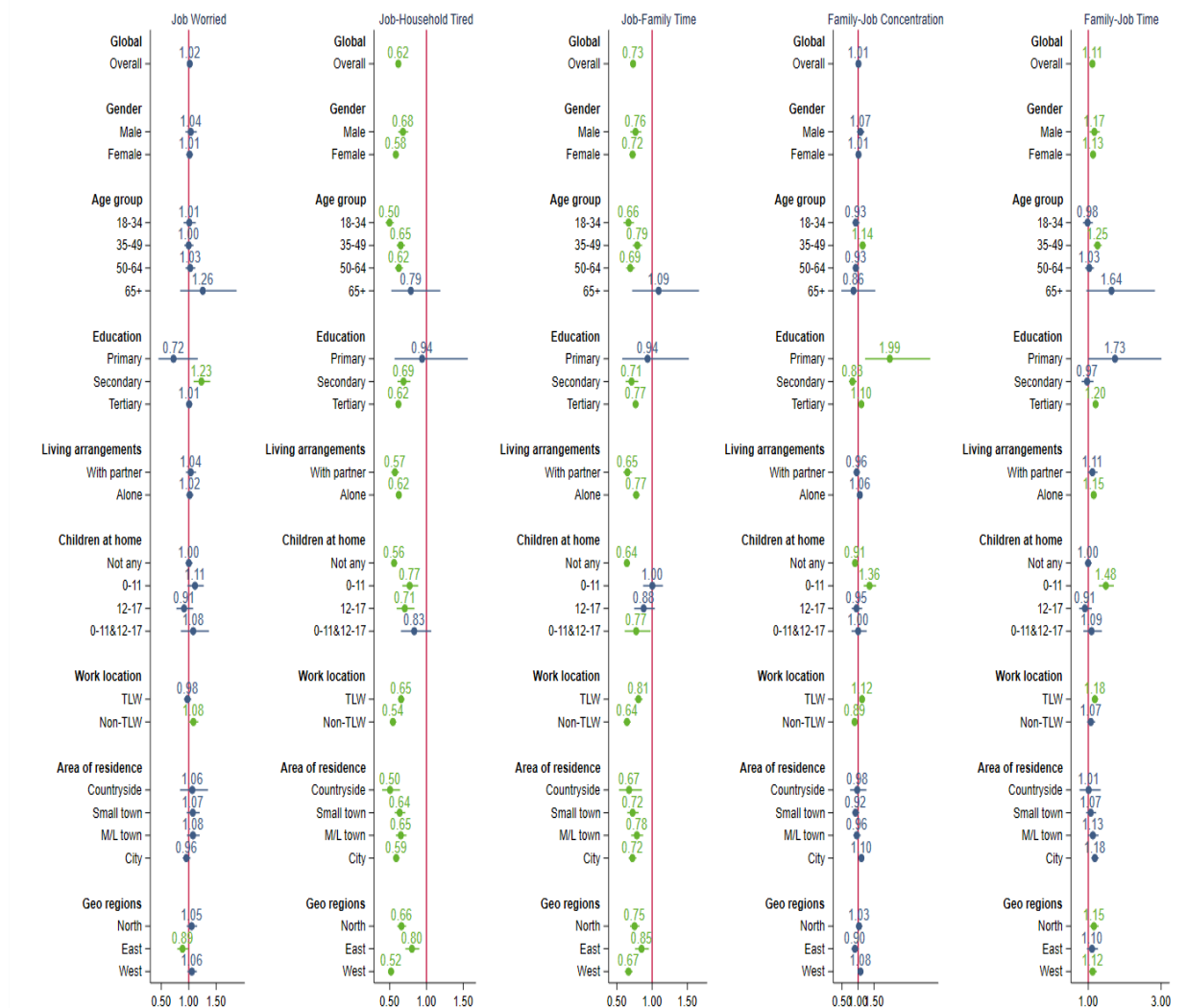
In terms of the age of the respondents, similar to the situation observed for the stay-at-home orders, adults aged <35 years experienced the most positive impact on Outcomes 2 and 3, whereas those aged between 35 and 49 years were the only group experiencing a significant negative impact from the stay-at-home recommendations on Outcomes 4 and 5.

With the exception of Outcome 1 (i.e. worrying about work out of working hours), the stay-at-home recommendations had a worse impact on those teleworking than on those who did not.

An analysis of the level of education indicates that those with secondary education fared worse in terms of worrying about work outside of working hours (i.e. Outcome 1). However, the same group fared significantly better than those with primary education in terms of work-life conflicts (i.e. Outcomes 2 and 3) and those with tertiary education in terms of life-work conflicts (i.e. Outcomes 4 and 5). With regard to family-job concentration, those with primary education experienced the worst impact on Outcome 4, with a strong decrease in job concentration due to family responsibilities when stay-at-home recommendations were active.

There was no clear differentiation in terms of the impact of the stay-at-home recommendations with respect to gender, where the confidence intervals of the estimates always overlapped. The same was true for the respondent's area of residence and the geographical region of the country. However, those living in the countryside and in western EU countries had more positive experiences in relation to Outcomes 2 and 3, while those living in cities experienced a negative impact in relation to Outcomes 4 and 5.

Figure 5. Effect of stay-at-home recommendations on work-life balance overall, stratified by respondent's gender, age group, education, living arrangements, children in the household, work location, area of residence and country's geographical regions, and by outcome, EU, 2020–2022



Estimate colour: statistically significant at 5% level in green, not statistically significant in navy blue.

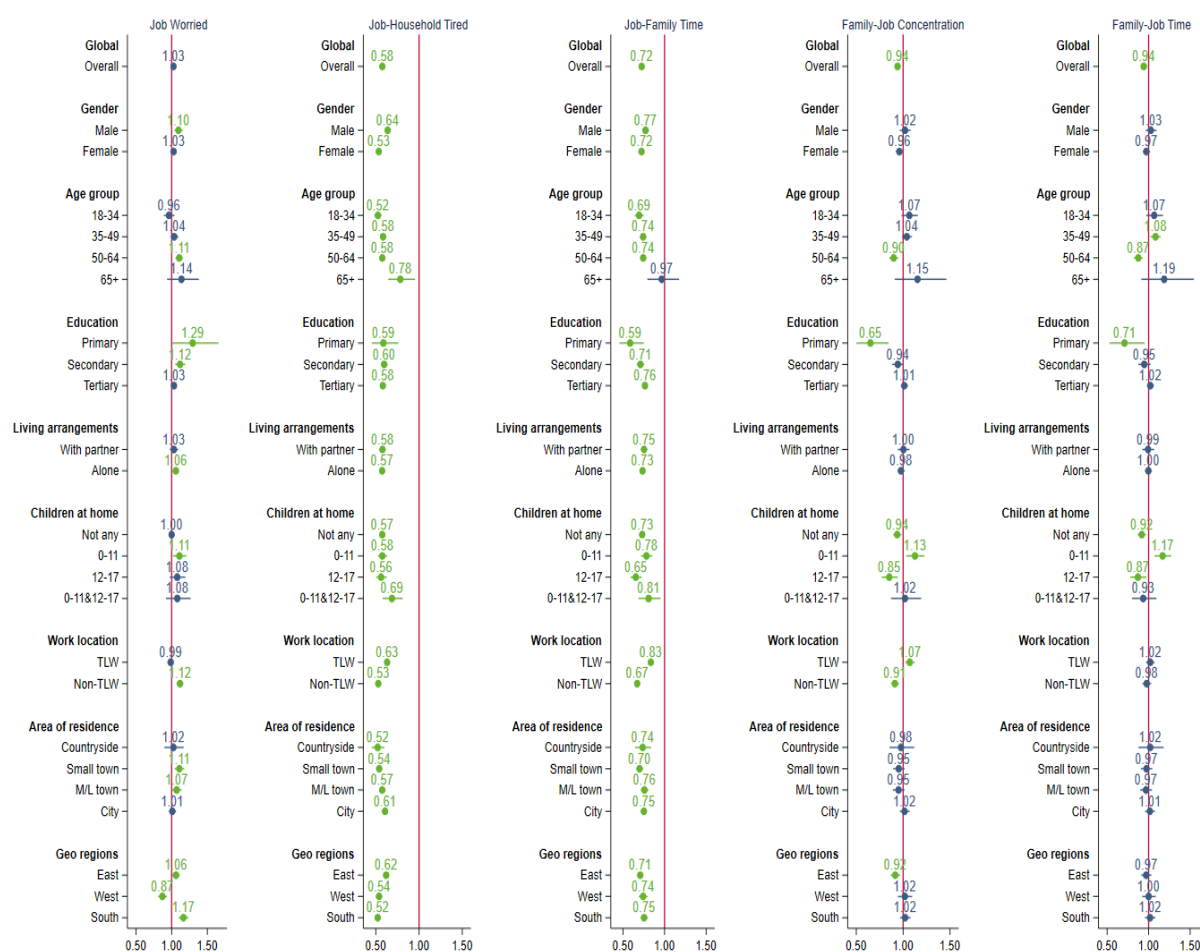
Educational institution closures

After controlling for the stay-at-home policies in place, the impact of closing day-care, primary and secondary education facilities (Figures 6, 7 and 8, and Tables A6, A7 and A8 in the Annex respectively) was negative with regard to European adults' concerns about work outside of working hours (Outcome 1), positive in terms of the effect of work on their private/family life (Outcomes 2 and 3), and insignificant or negative in terms of the intrusion of private/family life in their work (Outcomes 4 and 5).

The closure of day-care centres had a negative impact on the propensity to worry about work outside of working hours (Outcome 1), particularly for those European adults were not teleworking (OR 1.12, 95% CI 1.07–1.17), were sharing households with children aged <12 years (OR 1.11, 95% CI 1.02–1.21), were in the age group 50–64 years (OR 1.11, 95% CI 1.05–1.16), were of male gender (OR 1.10, 95% CI 1.04–1.16), were living alone (OR 1.06, 95% CI 1.02–1.10), or were living in small-medium-large towns and in southern or eastern EU Member States (respectively OR 1.17, 95% CI 1.10–1.24; and OR 1.06, 95% CI 1.01–1.11). With regard to the same outcome, the closure of primary and secondary schools had similar effects, with the same groups being negatively affected, as well as women (OR 1.09, 95% CI 1.05–1.13 for primary school closures, and OR 1.08, 95% CI 1.04–1.12 for secondary school closures), adults aged 35–49 years (OR 1.07, 95% CI 1.02–1.13 for both primary and secondary school closures) and those living with a partner (OR 1.05, 95% CI 1.00–1.12 for primary school closures, and OR 1.06, 95% CI 1.01–1.12 for secondary school closures).

In contrast to the closure of day-care centres, primary and secondary school closures had a negative impact on those adults living in northern EU Member States (OR 1.25, 95% CI 1.12–1.39 for primary school closures; and OR 1.09, 95% CI 1.01–1.17 for secondary school closures) and southern EU Member States (OR 1.18, 95% CI 1.11–1.25 for primary school closures; and OR 1.19, 95% CI 1.12–1.26 for secondary school closures). The impact of closing educational facilities on the level of worry about work outside of working hours for the groups with different levels of education was varied: those with secondary education were the only group significantly suffering from the closure of any educational facilities, whereas those with a primary education experienced a significant negative association when day-care centres were closed (OR 1.29, 95% CI 1.01–1.66), while those with tertiary education experienced a negative association with the closure of primary and secondary schools (OR 1.08, 95% CI 1.04–1.12 for primary schools closures; and OR 1.07, 95% CI 1.03–1.11 for secondary schools closures).

Figure 6. Effect of day-care/nursery closure on work-life balance overall, stratified by respondent's gender, age group, education, living arrangements, children in the household, work location, area of residence and country's geographical regions, and by outcome, EU 2020–2022



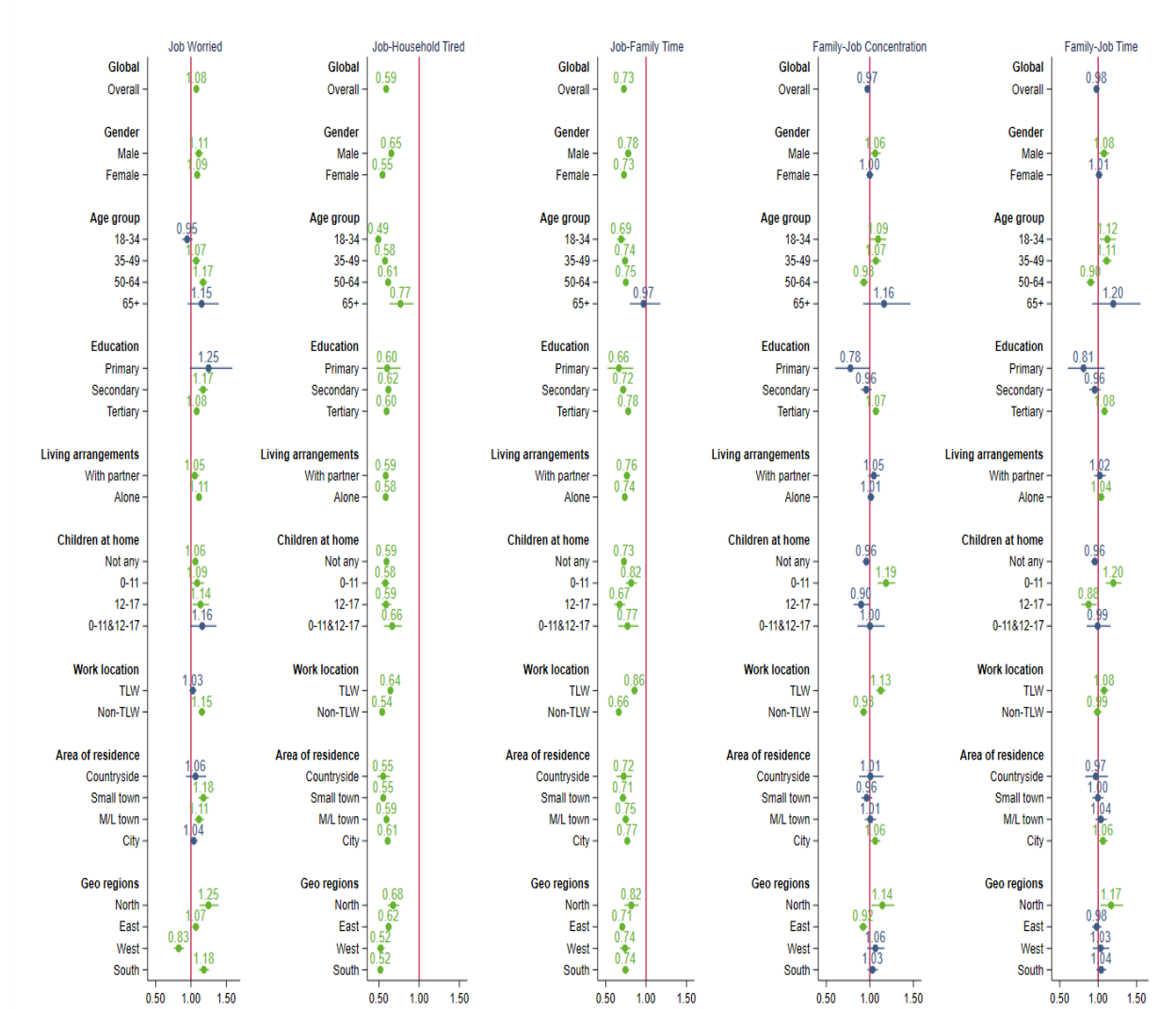
Estimate colour: statistically significant at 5% level in green, not statistically significant in navy blue.

*The estimates for the geographical region 'North' were removed from the figure due to the very wide confidence intervals; the odds ratios were not statistically significant (see Annex 1 – Table 4).

The closure of educational facilities had a positive impact on Outcome 2, strongly decreasing the pressure of work on personal/family life by reducing tiredness from work, and on Outcome 3, reducing the impact of work on family life.

A significant difference from the other groups, was the fact that the largest positive impact on Outcome 2 was experienced by women (e.g. OR 0.53, 95% CI 0.51–0.56 for day-care centre closures), those who were not teleworking (e.g. OR 0.54, 95% CI 0.52–0.57 for primary school closures), and those living in southern and western EU countries (e.g. OR 0.53, 95% CI 0.49–0.56 for secondary school closures in southern EU countries; and OR 0.49, 95% CI 0.45–0.54 for secondary school closures in western EU countries), and this was experienced for any type of educational institution closure. The positive impact on Outcome 3 was smaller than that on Outcome 2, with only those who were not teleworking experiencing a significantly larger effect (e.g. OR 0.67, 95% CI 0.64–0.70 for day-care centres and secondary school closures).

Figure 7. Effect of primary school closure on work-life balance overall, stratified by respondent's gender, age group, education, living arrangements, children in the household, work location, area of residence and country's geographical regions, and by outcome, EU 2020–2022



Estimate colour: statistically significant at 5% level in green, not statistically significant in navy blue.

With regard to Outcomes 4 and 5, overall the closure of day-care centres had a positive impact on the way personal and family life affects work, whereas the closure of primary and secondary schools did not have a significant impact. However, the impact was mixed for the different groups.

The closure of any type of school had a strong negative impact on those living with children under 12 years of age by decreasing their quality of work, due to increased family responsibilities (e.g. Outcome 4: OR 1.19, 95% CI 1.09–1.29 for primary school closure), whereas the impact on Outcomes 4 and 5 from the closure of day-care centres and secondary schools was positive for those without children in the household (e.g. Outcome 4: OR 0.94, 95% CI 0.90–0.98 for both day-care and secondary school closure).

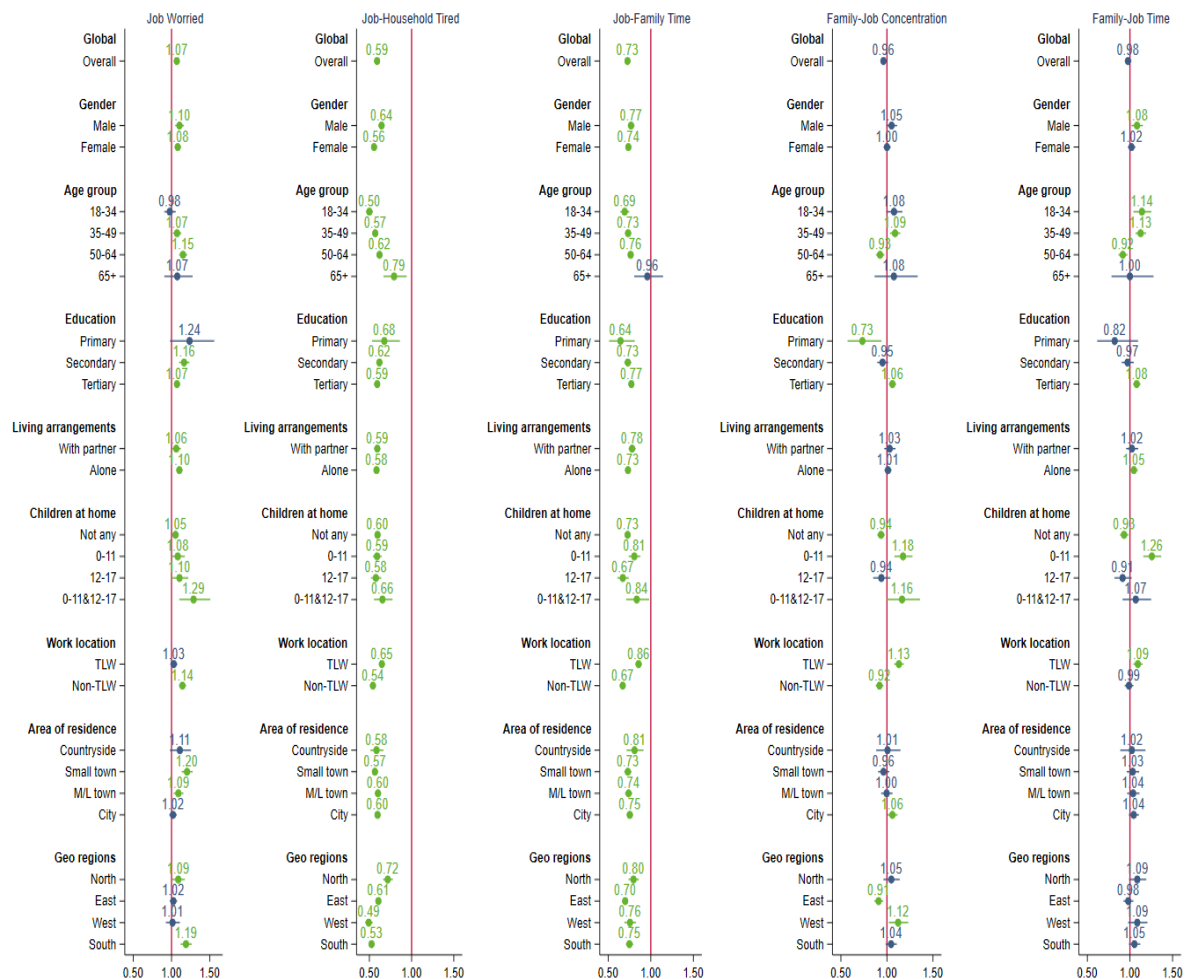
The closure of any educational institution had a negative impact on the quality of work, and particularly concentration on work, for those practising teleworking, due to increased family responsibilities (Outcome 4: OR 1.13, 95% CI 1.07–1.18 for primary school closure).

The impact of educational institution closure on different age-groups was mixed. While any type of school closure appears to have been associated with increased quality of work by decreasing family responsibilities for those aged 50–64 years (strongest positive effect on Outcome 5: OR 0.87, 95% CI 0.82–0.93 for day-care closure), the opposite was true for those aged 35–49 years, who were negatively affected by day-care closures (e.g. Outcome 5: OR 1.08, 95% CI 1.02–1.14 for day-care closure), and those aged 18–34 and 35–49 years, who were negatively affected by primary and secondary school closures (strongest negative effect on Outcome 5: OR 1.14, 95% CI 1.04–1.25 for those aged 18-34 years and OR 1.13, 95% CI 1.07–1.19 for those aged 35-49 years, for secondary school closure).

Impacts were also diverse with regard to the level of education – those with primary education experiencing a positive impact on their family-job conflicts when day-care centres were closed; whereas those with tertiary education fared worst when primary and secondary schools were closed.

The impact of educational institution closures was most often insignificant when stratified by gender, sharing the household with a partner, geographical location of the country and area of residence (although a slight decrease in the quality of work due to family responsibilities was noted for those living in cities when primary and secondary schools were closed).

Figure 8. Effect of secondary school closure on work-life balance overall, stratified by gender, age group, education, living arrangements, children in the household, work location, area of residence (area type) and geographical regions and by outcome, EU, 2020–2022



Estimate colour: statistically significant at 5% level in green, not statistically significant in navy blue.

A sensitivity analysis including only the first three e-surveys obtained the same results as when using all five rounds.

Teleworking (as a national policy)

After controlling for the stay-at-home policies in place, overall the national policies recommending teleworking (Figure 9 and Table A9 in the Annex) had a positive impact on how work affected personal and family life (Outcome 2: OR 0.90, 95% CI 0.88-0.93; outcome 3: OR 0.95, 95% CI 0.93-0.98), an insignificant impact on worrying about work outside of working hours (Outcome 1) and dedicated working time after carrying out family responsibilities (Outcome 5), and a negative impact on job concentration due to the increase in family responsibilities (Outcome 4: OR 1.08, 95% CI 1.05-1.11).

The groups most positively affected by the national teleworking recommendations were i) those living in northern EU countries; ii) those living without children; iii) those not teleworking, and iv) those living in small-medium towns.

Conversely, those suffering most from the national teleworking recommendations were i) those living with children; ii) those aged between 35 and 49 years; and iii) men.

In terms of the geographical region, those living in northern EU countries managed substantially better than those living in all other EU countries when national teleworking recommendations were active (e.g. Outcome 1: OR 0.74, 95% CI 0.70-0.79). In contrast, those living in southern EU countries experienced a particularly negative impact from teleworking recommendations in terms of worrying about work outside of working hours (Outcome 1: OR 1.21, 95% CI 1.13-1.28), and those living in eastern EU countries in terms of decreased job concentration due to the increase in family responsibilities (Outcome 4: OR 1.18, 95% CI 1.12-1.24).

When considering the presence of children in households, those living without children appeared to fare better than the other groups, with an improvement in how work affects personal and family life (Outcome 2: OR 0.88, 95% CI 0.85-0.91; Outcome 3: OR 0.92, 95% CI 0.89-0.95), a non-significant impact in their propensity to worry about work outside of working hours (Outcome 1) and in their dedicated working time (Outcome 5), and a negative impact on job concentration due to the increase in family responsibilities (Outcome 4: OR 1.04, 95% CI 1.00-1.08). In contrast, those with children in the household experienced a negative impact on Outcome 1 from the teleworking policies (OR 1.17, 95% CI 1.07-1.28, for those with children >11 years of age), Outcome 4 (OR 1.17, 95% CI 1.08-1.26, for those with children <12 years of age; and OR 1.16, 95% CI 1.06-1.27, for those with children >11 years of age) and Outcome 5 (OR 1.09, 95% CI 1.01-1.17, for those with children <12 years of age).

Those who were not teleworking when national teleworking recommendations were active fared slightly better than those who teleworked. On one hand, those who were not teleworking experienced a positive impact on their job-family time (Outcome 3: OR 0.91, 95% CI 0.87-0.94) compared to an insignificant impact for those who teleworked. On the other hand, those who teleworked experienced a negative impact on Outcome 5, resulting in a decrease in dedicated working time due to the increase in family responsibilities (OR 1.04, 95% CI 1.00-1.09), compared to those who did not telework and experienced an insignificant impact.

In terms of age-groups, the respondents aged between 35 and 49 years appeared to fare worst when teleworking recommendations were active. This was the only age-group that experienced a negative impact in their propensity to worry about work outside of working hours (Outcome 1: OR 1.05, 95% CI 1.01-1.10) and a decrease in their quality of work due to an increase in family responsibilities (Outcome 4: OR 1.10, 95% CI 1.05-1.15; and Outcome 5: OR 1.05, 95% CI 1.00-1.10), whereas the other age-groups experienced a mix of positive or insignificant impacts when teleworking recommendations were active.

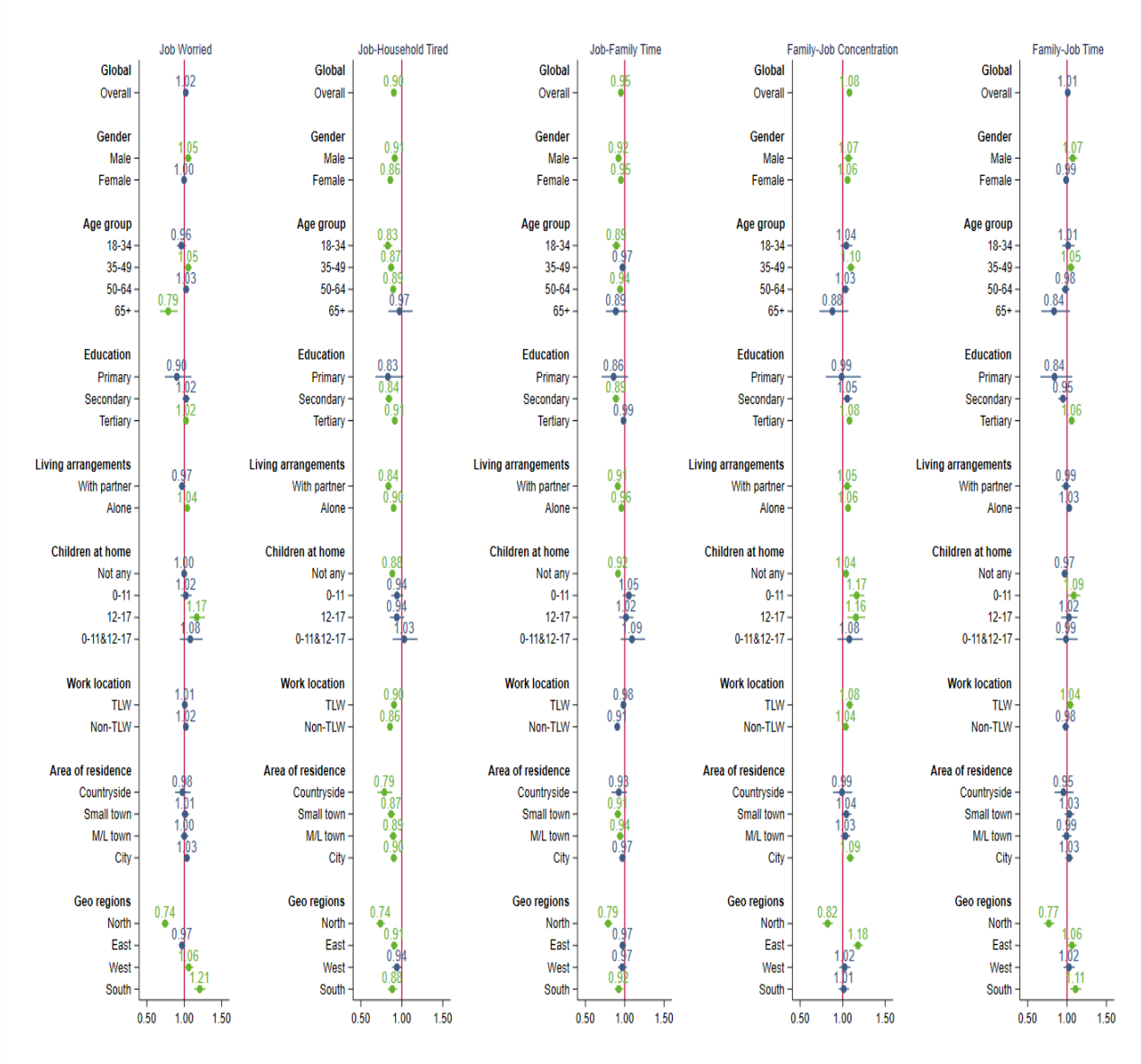
When national teleworking policies were active, in general men appeared to manage worse than women, particularly in terms of their propensity to worry about work outside of working hours (Outcome 1: OR 1.05, 95% CI 1.01-1.10) and the decrease in dedicated working time due to the increase in family responsibilities (Outcome 5: OR 1.07, 95% CI 1.02-1.13).

An analysis of the level of education indicated that those with primary education were not significantly associated with any of the outcomes studied. Conversely, those with secondary education fared better than the other groups in terms of their work-family conflicts (Outcome 2: OR 0.84, 95% CI 0.80-0.89; and Outcome 3: OR 0.89, 95% CI 0.85-0.93) and those with tertiary education fared significantly worse in terms of their family-work conflicts (Outcome 4: OR 1.08, 95% CI 1.05-1.12; and Outcome 5: OR 1.06, 95% CI 1.02-1.10).

European adults living in cities fared slightly worse than those living in smaller urban centres or in the countryside, particularly in terms of decreased job concentration due to an increase in family responsibilities (Outcome 4: OR 1.09, 95% CI 1.04-1.14).

The impact of teleworking for those living with or without a partner appeared to be consistent with the overall impact described above, and similar between the two groups, although only those living alone experienced increased worry about work outside of working hours (Outcome 1: OR 1.04, 95% CI 1.01-1.07).

Figure 9. Effect of teleworking on work-life balance overall, stratified by gender, age group, education, living arrangements, children in the household, work location, area of residence (area type) and geographical regions and by outcome, EU, 2020–2022



Estimate colour: statistically significant at 5% level in green, not statistically significant in navy blue.

A sensitivity analysis including only the first three e-surveys obtained the same results as when using all five rounds.

Discussion

Using data from 118 927 responses to the Eurofound Living, Working and COVID-19 e-survey from the 27 EU Member States, this study investigates the association between the implementation and lifting of six NPIs, namely stay-at-home orders and recommendations, closures of day-care centres, primary and secondary schools and teleworking, and individuals' WLB, proxied by five different variables. The study does not explore the effectiveness of the six selected NPIs in reducing SARS-CoV-2 transmission and the pressure on the healthcare system from the COVID-19 pandemic, but instead focuses on both positive and negative associations between the implementation of the NPIs and the WLB of the population affected by such response measures.

The results show that the selected NPIs had a negative impact on European adults' propensity to worry about work outside of working hours (Outcome 1 'Job worried'). In particular, the stay-at-home orders had the most negative impact on this outcome. Conversely, the selected restrictions reduced the prevalence of conflicts in the family-work domain (Outcomes 2 'Job Household tired' and 3 'Job-Family time'). In particular, the closure of any type of educational institution had the largest positive impact in reducing the work pressure on personal/family life by decreasing tiredness from work (Outcome 2 'Job Household tired'). To a lesser extent, the closure of day-care centres and schools and national teleworking recommendations also had a positive impact by reducing the tendency for work pressure to impede upon family time (Outcome 3 'Job-Family time').

The association between these policies and how personal and family life affect work (Outcomes 4 'Family-Job concentration' and 5 'Family-Job Time') was not clear-cut, with most estimates not achieving statistical significance. However, national teleworking recommendations showed a negative impact by decreasing job concentration due to increased family responsibilities, while day-care centre closures had the opposite effect – a positive impact on the same Outcome 4 ('Family-Job concentration'). With regard to Outcome 5 ('Family-Job Time'), stay-at-home policies reduced dedicated working time due to increased family responsibilities, whereas the closure of day-care facilities appeared to have a slight positive impact on the same Outcome 5 ('Family-Job Time').

In general, stay-at-home orders had a more accentuated negative impact on the WLB of European adults than stay-at-home recommendations. A recent study from a European Nordic country showed that population adherence to recommended measures was as high as adherence to mandatory measures, particularly in its less densely populated areas [64]. In similar situations, stay-at-home recommendations could be preferred to stay-at-home orders to reduce the negative impact on the WLB of the affected adult population.

The aggregated study results mask some heterogeneities. The stratified analyses suggest that households with children under 12 years, those teleworking, those living alone, and those between 35 and 49 years suffered most from the effect of the NPIs in place.

Adults living with children under 12 years experienced a larger negative impact in their family-job concentration (Outcomes 4 'Family-Job concentration') and their family-job time (Outcome 5 'Family-Job Time') while NPIs were active than households with children in other age groups. They also experienced a negative impact in terms of worrying about work outside of working hours associated with day-care closures and teleworking. As anticipated, stay-at-home policies and day-care and school closures had heterogeneous associations with work-life balance across household types. Respondents in households with young children (aged between 0 and 11 years) felt their family interfered with their ability to concentrate/spend time on their work. This finding confirms results of previous studies highlighting the negative impact of school closures, not only on pupils, but also on adults in households [65-67].

The association between the NPIs and the WLB of those teleworking appears to be mixed. On the one hand, when stay-at-home recommendations were active or educational settings were closed, adults who were not teleworking fared worse in terms of worrying about work outside of working hours. On the other hand, those who were teleworking fared significantly worse in terms of all other outcomes related to work-family and family-work conflicts (Outcome 2 'Job Household tired'; 3 'Job-Family time'; 4 'Family-Job concentration' and 5 'Family-Job Time'), feeling more strongly that their ability to concentrate on their work was impeded by their family than non-teleworkers. In general, the impact of teleworking during the pandemic was not clear cut and, while some outcomes may have improved for workers, others may have worsened. However, evidence suggests that the impacts of the COVID-19 crisis on teleworkers highlighted the potential negative impact of teleworking in relation to anxiety, sleep quality and mental health [68,69]. On the other hand, other studies have found that teleworking may improve working relationships between managers and employers [70], and is associated with greater flexibility and less commuting time [71].

Compared to those living with others, adults living alone experienced a slightly (but statistically significant) more negative impact from the stay-at-home policies on the tendency of their job to impede on family time (Outcome 3 'Job-Family time'), and of their family to interfere with their job concentration (Outcome 4 'Family-Job concentration') and time (Outcome 5 'Family-Job Time'). Day-care and school closures had a similar negative impact in that they caused increased worry about work outside of working hours (Outcome 1 'Job worried') and family to impede upon job time (Outcome 5 'Family-Job Time'), in a similar manner to teleworking recommendations in terms of their propensity to cause worry about work outside of working hours (Outcome 1 'Job worried'). While those living alone were expected to suffer more from pandemic-related job insecurity, the negative outcome on family-related indicators probably points to the important role of family networks which is more significant than the mere sharing a roof [72].

Adults with tertiary education appeared to be the most affected in their family-work conflicts by all the NPIs analysed (except for day-care closures) compared to adults with lower levels of education. This was possibly due to the challenges of working from home and/or working during school closures or stay-at-home policies throughout the pandemic. In contrast, adults with primary education were not significantly affected by any of the outcomes studied when teleworking was active, showing how little this group was affected by such a policy. Otherwise, the results of the NPIs' impact on gender, age group and geographical area of the EU country of origin are inconclusive.

Looking more closely at the results by gender, there is no clear gendered impact from the NPIs. For some interventions, men seemed to perceive a stronger impact on their work-life balance (e.g. from the closure of educational settings or the teleworking recommendations on Outcomes 1 ('Job worried'), 4 ('Family-Job concentration') and 5 ('Family-Job Time'), or a less positive impact from the closure of educational institutions on Outcome 2 ('Job Household tired'). Meanwhile the impact of the stay-at-home orders was felt more acutely by women. However, overall differences by gender were relatively small once other factors (e.g. age and presence of children in the household) were considered. There is some evidence that men may have experienced a greater reduction in the likelihood of their jobs interfering with family time (Outcome 3 'Job-Family Time') in the presence of stay-at-home orders. This may reflect pre-pandemic differences in time allocation between men and women, whereby men, on average, allocate more time to paid work and less to unpaid work than is the case for women. Stay-at-home orders would have increased the time spent at home for all household members, which may have been felt more acutely by those who were used to spending less time with their families. On the other hand, day-care, primary and secondary school closures were associated with a greater reduction in the fatigue experienced by women after work. This may reflect the fact that women were more likely than men to reduce their working hours during the COVID-19 crisis [73]. Overall, the results support other studies that have shown the impact of the pandemic on women has been nuanced [74], and specific to the context and stage of the pandemic [75]. The results also corroborate the conclusion of other studies showing that, for parents, the labour market outcomes of both fathers and mothers have been affected [76]. However, an important caveat is that the data only capture information on individuals who were working. As such, changes in WLB that forced individuals out of the labour market were not captured.

The NPIs' impacts on different age groups were mixed. On the one hand, adults between 35 and 49 years appear to have fared worse than most of the other age groups, not only from the impact of any NPI on Outcome 4 ('Family-Job concentration'), but also from the impact of the school closures and teleworking recommendations on Outcomes 1 ('Job worried') and 5 ('Family-Job time'). This is not surprising – as already mentioned above, the NPIs in analysis (and particularly the closure of schools and the teleworking recommendations) are expected to have had a negative effect on teleworking parents, particularly when their children were at home due to school closures. On the other hand, those between 50 and 64 years experienced the most negative impact of day-care and school closures on Outcome 1 ('Job worried'), but the same group experienced the most positive impact from the same measures on Outcomes 4 and 5 ('Family-Job concentration' and 'Family-Job time'). Although the seven-day average for COVID-19 deaths was one of the covariates included in the multivariable analysis to account for the dynamic of the pandemic, it is possible that the propensity to worry about work outside of working hours may mask some residual confounding, associated with the general anxiety felt by older workers about retaining their jobs during the worst phases of the pandemic. Conversely, the positive impact of day-care and school closures could be due to a possible decrease in interference between this group's obligations towards their grandchildren (e.g. picking them up from school and taking care of them until their parents return from work) and their work responsibilities [77].

The impact of the selected NPIs varied depending on the size of the area of residence. On the one hand, those living in small and medium-large towns experienced more worry about work outside of working hours and on the other hand, those living in cities experienced worse outcomes, particularly in relation to job concentration and dedicated working time when stay-at-home policies, day-care and school closures or teleworking were active. The latter effect is possibly associated with the fact that city homes are smaller and it can be challenging to find a quiet space to work [78]. In small and medium-large towns, the proportion of self-employed workers tends to be higher, and those workers might have found it difficult to differentiate between working and leisure time [79]. In these areas, retail and hospitality are important work sectors that were heavily affected (e.g. online sales) by the implementation of most of the NPIs.

Finally, it was challenging to identify a pattern for the geographical regions of the Eurofound e-survey respondents. The one exception was the positive impact of national teleworking recommendations on those living in countries defined as northern EU countries (i.e. Denmark, Estonia, Finland, Latvia, Lithuania and Sweden). According to Ballario, teleworking was already a relatively well-established practice in some of these northern EU countries [80]. Therefore, they might have required less adaptation than other countries, which could explain the lower impact of this NPI. By grouping countries into four geographical areas aims it was possible to consider, at least in part, the macro socio-economic differences between EU Member States.

Options for action

The present study finds that NPIs have an impact on the community and outlines both positive and negative associations between the implementation of six selected NPIs and the WLB of the population affected by these measures. In order to reduce the negative burden of NPIs and to increase their positive impact, policy makers, healthcare professionals and social scientists should act to increase current knowledge of the societal impact of NPIs, develop up-to-date methodologies and tools, and prepare for the future to protect vulnerable groups and avoid missing out on new opportunities.

Learning from the COVID-19 pandemic

The current research efforts to understand the societal impact of pandemic response measures should be expanded, not only to fully appreciate the NPIs' impact on societal indicators (e.g. WLB, mental health, gender-based violence, etc.) and population groups, but also to discern their long-term effects on different population groups. Cross-disciplinary collaborations involving the research community, public health authorities and international organisations, and the use of information sourced from different sectors, should be encouraged to increase scientific evidence on the impact of NPIs and the lessons learnt from the COVID-19 pandemic. Researchers and public health experts should consider developing and sharing new and improved methodologies to monitor and assess the impact of NPIs during their implementation.

Studies on adherence to NPIs during the COVID-19 pandemic have shown that, at least in some areas, non-mandatory NPIs had a similar level of adherence, and therefore effectiveness, as mandatory measures. Our study, shows how legally-enforced orders have a deeper negative impact than recommended measures. Implementation of an NPI should be accompanied by monitoring of its effectiveness, adherence and impact to the population. Non-mandatory measures are preferable to legally-enforced orders when effectiveness of and adherence to the two approaches are similar. Transparency in decision-making and adjustment of measures depending on monitoring results are important ways in which to build trust in the population.

Our study also highlights some positive impact of the selected NPIs. Such positive associations should be studied in greater detail to identify opportunities to bring about constructive changes to adults' WLB, not only during crises but also in peace time. For instance, workers aged <35 years, those living without children at home, those living in the countryside and those living in northern EU countries perceived that teleworking policies brought positive improvements to their professional-private life balance, with a limited or insignificant negative impact on their concern about work and private-professional life conflicts. Flexibility of working conditions and decreased commuting also result in positive impacts.

Protecting vulnerable groups

The results of the present study appear to be alarming as previous research by Toffolutti et al. suggests that those individuals living with children aged under 12 years and those aged between 35 and 49 years were already experiencing lower levels of mental well-being pre-pandemic [52]. Consequently, the NPIs in place might have widened some pre-existing gaps in terms of WLB. The way in which these and other population groups were disproportionately and negatively affected makes it necessary to identify ways in which to better balance the burden of NPIs. For instance, individuals living with young children appear to have suffered more from stay-at-home requirements and school closures, while benefitting less from teleworking. Here, policies have to be adjusted or developed in order to reduce the burden of family and care responsibilities, and the challenges of working remotely. Policies to balance the burden of any future NPIs may be of even greater importance now that the COVID-19 pandemic has widened existing societal inequalities, making some already disadvantaged groups even more vulnerable [81,82].

To mitigate the negative effect of certain NPIs, the implementation of these measures, after an assessment of their potential negative impact, should be accompanied by reinforced support, offered to the population as a means of reducing the perceived impact. For instance, if the decision to close educational institutions is considered essential to curb a disease, an option should be offered to students to enable them to continue their learning. Furthermore, parents who cannot take care of their children during working hours should be offered solutions to prevent this measure from having a negative and sometimes irremediable impact on their work performance.

Pandemic and research preparedness

Pandemic preparedness plans require review and updating to incorporate lessons identified during the response to the COVID-19 pandemic. Methodologies to monitor the impact of NPIs on different social indicators, such as WLB, should be included to continuously and rapidly adjust to the needs of the population.

When planning implementation of NPIs at population level, the scientific community and policy makers should consider not only their effectiveness in curbing disease and improve the population adherence to NPIs, but also other aspects related to their impact on the general community and on those groups who proved to be more vulnerable to the negative effects. One example of other aspects to consider could be the broader public health spectrum, including health indicators not directly linked to infectious diseases. When formulating the NPI measures it is also critical to obtain feedback from behavioural and social scientists [83,84]. Collaboration between public health authorities, behavioural scientists and policy makers should be established in advance of crises, along with a preparedness research framework, in order to be able to rapidly launch operational research activities when a crisis arises requiring the implementation of NPIs. Social scientists and risk communication experts should also collaborate with policymakers to develop stronger communication messages for the community or specific population groups on how to absorb the impact of the NPIs.

It is important to monitor vulnerable groups that have already been identified (e.g. households with children aged <12 years). Initiatives such as Eurofound's 'Living, Working and COVID-19' e-survey can provide valuable information. Early and repeated analyses should be promoted in parallel with NPI implementation so that the results can be used to inform decision-making and correct possible negative consequences.

Limitations

When taking into consideration the policy implications of our findings there are a few limitations to bear in mind. First, our study does not capture the pre-pandemic period, potentially underestimating the impact of the first NPI-implementations. Second, even controlling for daily COVID-related deaths might not fully account for the severity of the pandemic in a given place and, as such, for its direct effects, and the economic channel through which it affected WLB. Third, our estimation strategy cannot fully account for all the NPIs in place at the time. On the one hand, this is likely to underestimate the impact of the NPIs in analysis, as partial and sub-national measures were not accounted for. On the other hand, it may overestimate their impact as only a selected number of measures were taken into account at a time when several different measures were being implemented simultaneously. Fourth, the data come from a web survey, which is not fully representative of the European population. To the extent that the sample selection mechanism is correlated with the association of NPIs and WLB, there might be threats to external validity (i.e. the ability to generalise the findings from our sample, made up of highly-educated individuals able to retain their work during the pandemic, to the general population). Fifth, only working adults were included in the e-survey. Sixth, due to the cross-sectional design, the associations identified in this study do not imply direct causality. Finally, this study does not fully account for the economic impact of the pandemic, which is indeed related to WLB.

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Annex 1

Odds ratios and 95% confidence intervals for each NPI under analysis

Table A4. Odds ratios and 95% confidence intervals for the effect of stay-at-home orders on work-life balance overall, stratified by respondent's gender, age group, education, living arrangements, children in the household, work location, area of residence and country's geographical regions, and by outcome, EU 2020–2022

Variables	Job worried			Job Household tired			Job-Family time			Family-Job concentration			Family-Job Time		
	Coeff.	CI-L	CI-S	Coeff.	CI-L	CI-S	Coeff.	CI-L	CI-S	Coeff.	CI-L	CI-S	Coeff.	CI-L	CI-S
Global															
Overall	1.27	1.22	1.31	0.74	0.71	0.76	0.86	0.83	0.89	1.02	0.98	1.06	1.09	1.04	1.13
Gender															
Male	1.26	1.18	1.34	0.69	0.65	0.73	0.80	0.75	0.85	1.05	0.98	1.12	1.09	1.02	1.17
Female	1.31	1.25	1.36	0.74	0.71	0.77	0.91	0.87	0.94	1.09	1.04	1.13	1.17	1.11	1.22
Age group															
18–34 years	1.20	1.10	1.30	0.61	0.56	0.66	0.77	0.71	0.84	1.03	0.94	1.12	1.13	1.03	1.25
35–49 years	1.31	1.24	1.39	0.75	0.71	0.79	0.91	0.86	0.96	1.15	1.09	1.21	1.19	1.13	1.26
50–64 years	1.30	1.24	1.37	0.74	0.71	0.78	0.89	0.85	0.94	1.03	0.97	1.09	1.11	1.04	1.18
65+ years	1.37	1.10	1.70	0.73	0.59	0.91	0.97	0.78	1.21	1.07	0.82	1.40	1.08	0.80	1.46
Education															
Primary	1.43	1.09	1.88	0.92	0.69	1.21	1.05	0.81	1.37	1.26	0.96	1.66	1.40	1.03	1.90
Secondary	1.45	1.36	1.55	0.74	0.69	0.79	0.91	0.85	0.97	1.00	0.93	1.07	1.05	0.96	1.14
Tertiary	1.24	1.19	1.29	0.73	0.70	0.76	0.88	0.85	0.92	1.13	1.09	1.18	1.20	1.15	1.26
Living arrangements															
With partner	1.22	1.15	1.29	0.69	0.65	0.73	0.85	0.80	0.90	1.04	0.98	1.11	1.09	1.01	1.17
Alone	1.33	1.28	1.39	0.74	0.71	0.77	0.89	0.86	0.93	1.09	1.05	1.14	1.17	1.12	1.22
Children at home															
None	1.27	1.22	1.33	0.70	0.67	0.74	0.82	0.78	0.85	1.01	0.96	1.06	1.09	1.03	1.15
0–11 years	1.36	1.25	1.48	0.83	0.76	0.91	0.98	0.90	1.07	1.15	1.05	1.25	1.23	1.13	1.34
12–17 years	1.18	1.07	1.31	0.77	0.70	0.86	0.93	0.85	1.03	0.97	0.88	1.07	0.99	0.89	1.10
0–11 and 12–17 yrs	1.15	0.99	1.35	0.78	0.67	0.91	0.90	0.77	1.05	1.03	0.89	1.20	1.04	0.89	1.21
Work location															
TLW	1.27	1.21	1.33	0.80	0.77	0.84	0.97	0.93	1.02	1.18	1.12	1.23	1.22	1.16	1.28
Non-TLW	1.32	1.26	1.39	0.64	0.61	0.68	0.79	0.75	0.83	0.97	0.92	1.02	1.06	1.00	1.13
Area of residence															
Countryside	1.31	1.15	1.50	0.80	0.69	0.91	0.95	0.83	1.08	1.20	1.05	1.38	1.16	1.00	1.35
Small town	1.39	1.30	1.49	0.76	0.71	0.81	0.92	0.86	0.98	1.06	0.99	1.13	1.17	1.08	1.26
M/L town	1.27	1.19	1.36	0.70	0.65	0.75	0.89	0.83	0.95	0.98	0.92	1.05	1.12	1.03	1.20
City	1.23	1.17	1.30	0.71	0.67	0.74	0.83	0.79	0.88	1.12	1.06	1.18	1.15	1.09	1.22
Geo regions															
North	0.93	0.81	1.06	0.99	0.86	1.14	0.90	0.79	1.03	0.98	0.85	1.13	1.17	1.00	1.36
East	1.15	1.08	1.22	0.70	0.66	0.74	0.83	0.78	0.88	0.89	0.83	0.95	1.08	1.00	1.16
West	1.49	1.36	1.63	0.78	0.72	0.86	0.91	0.84	1.00	1.22	1.12	1.34	1.16	1.05	1.29
South	1.22	1.14	1.31	0.76	0.71	0.81	0.88	0.82	0.94	1.06	1.00	1.13	1.16	1.08	1.24

TLW – teleworking

M/L town – Medium-Large town

CI – Confidence interval

Table A5. Odds ratios and 95% confidence intervals for the effect of stay-at-home recommendations on work-life balance overall, stratified by respondent's gender, age group, education, living arrangements, children in the household, work location, area of residence and country's geographical regions, and by outcome, EU 2020–2022

Variables	Job worried			Job Household tired			Job-Family time			Family-Job concentration			Family-Job Time		
	Coeff.	CHL	CI-S	Coeff.	CHL	CI-S	Coeff.	CHL	CI-S	Coeff.	CHL	CI-S	Coeff.	CHL	CI-S
Global															
Overall	1.02	0.96	1.07	0.62	0.58	0.65	0.73	0.69	0.77	1.01	0.95	1.07	1.11	1.04	1.19
Gender															
Male	1.04	0.94	1.15	0.68	0.62	0.75	0.76	0.69	0.85	1.07	0.96	1.20	1.17	1.04	1.31
Female	1.01	0.95	1.08	0.58	0.55	0.62	0.72	0.68	0.77	1.01	0.95	1.08	1.13	1.05	1.21
Age group															
18–34 years	1.01	0.91	1.13	0.50	0.45	0.56	0.66	0.60	0.74	0.93	0.82	1.05	0.98	0.85	1.12
35–49 years	1.00	0.92	1.09	0.65	0.60	0.71	0.79	0.73	0.86	1.14	1.05	1.24	1.25	1.15	1.37
50–64 years	1.03	0.94	1.12	0.62	0.57	0.68	0.69	0.63	0.75	0.93	0.84	1.03	1.03	0.91	1.15
65+ years	1.26	0.84	1.87	0.79	0.52	1.19	1.09	0.72	1.66	0.86	0.48	1.54	1.64	0.95	2.83
Education															
Primary	0.72	0.45	1.16	0.94	0.57	1.56	0.94	0.58	1.52	1.99	1.22	3.25	1.73	1.00	3.01
Secondary	1.23	1.09	1.39	0.69	0.61	0.78	0.71	0.63	0.8	0.83	0.72	0.95	0.97	0.82	1.14
Tertiary	1.01	0.95	1.07	0.62	0.58	0.66	0.77	0.72	0.81	1.10	1.04	1.17	1.20	1.12	1.28
Living arrangements															
With partner	1.04	0.95	1.13	0.57	0.52	0.63	0.65	0.59	0.71	0.96	0.86	1.06	1.11	0.99	1.25
Alone	1.02	0.95	1.08	0.62	0.59	0.67	0.77	0.73	0.82	1.06	0.99	1.13	1.15	1.07	1.23
Children at home															
None	1.00	0.94	1.07	0.56	0.52	0.60	0.64	0.60	0.69	0.91	0.84	0.98	1.00	0.91	1.10
0–11 years	1.11	0.98	1.27	0.77	0.67	0.89	1.00	0.87	1.15	1.36	1.18	1.56	1.48	1.29	1.70
12–17 years	0.91	0.78	1.08	0.71	0.60	0.84	0.88	0.75	1.04	0.95	0.80	1.13	0.91	0.75	1.10
0–11and12–17ys	1.08	0.85	1.37	0.83	0.65	1.06	0.77	0.61	0.98	1.00	0.79	1.27	1.09	0.87	1.37
Work location															
TLW	0.98	0.91	1.05	0.65	0.61	0.70	0.81	0.75	0.86	1.12	1.05	1.21	1.18	1.09	1.27
Non-TLW	1.08	1.00	1.17	0.54	0.50	0.59	0.64	0.59	0.70	0.89	0.81	0.98	1.07	0.97	1.19
Area of residence															
Countryside	1.06	0.84	1.35	0.50	0.40	0.64	0.67	0.53	0.86	0.98	0.75	1.26	1.01	0.76	1.34
Small town	1.07	0.96	1.20	0.64	0.57	0.71	0.72	0.65	0.81	0.92	0.82	1.04	1.07	0.94	1.21
M/L town	1.08	0.97	1.20	0.65	0.58	0.73	0.78	0.70	0.87	0.96	0.85	1.08	1.13	0.99	1.28
City	0.96	0.89	1.03	0.59	0.55	0.64	0.72	0.67	0.78	1.10	1.02	1.20	1.18	1.08	1.29
Geo regions															
North	1.05	0.96	1.15	0.66	0.60	0.72	0.75	0.69	0.82	1.03	0.93	1.14	1.15	1.04	1.28
East	0.89	0.79	0.99	0.80	0.71	0.90	0.85	0.76	0.95	0.90	0.79	1.02	1.10	0.96	1.26
West	1.06	0.98	1.15	0.52	0.48	0.56	0.67	0.61	0.72	1.08	0.99	1.17	1.12	1.02	1.23
South	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--

TLW – teleworking

M/L town – Medium-Large town

CI – Confidence interval

-- No data available

Table A6. Odds ratios and 95% confidence intervals for the effect of day-care/nursery closure on work-life balance overall, stratified by respondent's gender, age group, education, living arrangements, children in the household, work location, area of residence and country's geographical regions, and by outcome, EU 2020–2022

Variables	Job worried			Job Household tired			Job-Family time			Family-Job concentration			Family-Job Time		
	Coeff.	CI-L	CI-S	Coeff.	CI-L	CI-S	Coeff.	CI-L	CI-S	Coeff.	CI-L	CI-S	Coeff.	CI-L	CI-S
Global															
Overall	1.03	0.99	1.06	0.58	0.56	0.60	0.72	0.70	0.75	0.94	0.91	0.97	0.94	0.90	0.98
Gender															
Male	1.10	1.04	1.16	0.64	0.60	0.67	0.77	0.73	0.81	1.02	0.96	1.08	1.03	0.96	1.09
Female	1.03	0.99	1.07	0.53	0.51	0.56	0.72	0.70	0.75	0.96	0.92	1.00	0.97	0.93	1.02
Age group															
18–34 years	0.96	0.89	1.04	0.52	0.48	0.57	0.69	0.64	0.75	1.07	0.98	1.16	1.07	0.97	1.17
35–49 years	1.04	0.98	1.09	0.58	0.55	0.62	0.74	0.70	0.78	1.04	0.99	1.09	1.08	1.02	1.14
50–64 years	1.11	1.05	1.16	0.58	0.55	0.60	0.74	0.71	0.78	0.90	0.85	0.95	0.87	0.82	0.93
65+ years	1.14	0.94	1.38	0.78	0.64	0.95	0.97	0.79	1.18	1.15	0.91	1.46	1.19	0.91	1.54
Education															
Primary	1.29	1.01	1.66	0.59	0.45	0.76	0.59	0.46	0.75	0.65	0.50	0.85	0.71	0.53	0.95
Secondary	1.12	1.05	1.19	0.60	0.56	0.64	0.71	0.67	0.76	0.94	0.88	1.01	0.95	0.88	1.02
Tertiary	1.03	0.99	1.07	0.58	0.56	0.60	0.76	0.74	0.79	1.01	0.97	1.05	1.02	0.98	1.06
Living arrangements															
With partner	1.03	0.98	1.09	0.58	0.54	0.61	0.75	0.71	0.80	1.00	0.94	1.07	0.99	0.92	1.07
Alone	1.06	1.02	1.10	0.57	0.55	0.60	0.73	0.71	0.76	0.98	0.94	1.02	1.00	0.95	1.04
Children at home															
None	1.00	0.96	1.04	0.57	0.55	0.60	0.73	0.70	0.76	0.94	0.90	0.98	0.92	0.87	0.97
0–11 years	1.11	1.02	1.21	0.58	0.53	0.63	0.78	0.72	0.85	1.13	1.03	1.23	1.17	1.07	1.27
12–17 years	1.08	0.97	1.19	0.56	0.50	0.62	0.65	0.59	0.72	0.85	0.77	0.94	0.87	0.78	0.97
0–11and12–17yrs	1.08	0.92	1.27	0.69	0.58	0.81	0.81	0.69	0.95	1.02	0.87	1.19	0.93	0.80	1.09
Work location															
TLW	0.99	0.94	1.03	0.63	0.60	0.66	0.83	0.80	0.87	1.07	1.02	1.12	1.02	0.97	1.07
Non-TLW	1.12	1.07	1.17	0.53	0.50	0.55	0.67	0.64	0.70	0.91	0.87	0.96	0.98	0.92	1.03
Area of residence															
Countryside	1.02	0.90	1.17	0.52	0.45	0.60	0.74	0.65	0.84	0.98	0.85	1.12	1.02	0.88	1.18
Small town	1.11	1.04	1.18	0.54	0.51	0.57	0.70	0.66	0.74	0.95	0.89	1.02	0.97	0.91	1.05
M/L town	1.07	1.01	1.14	0.57	0.54	0.61	0.76	0.71	0.81	0.95	0.89	1.02	0.97	0.90	1.04
City	1.01	0.96	1.06	0.61	0.58	0.64	0.75	0.71	0.79	1.02	0.96	1.07	1.01	0.96	1.07
Geo regions															
North	1.45	0.37	5.71	0.94	0.26	3.40	1.10	0.31	3.89	0.23	0.03	1.84	0.66	0.14	3.17
East	1.06	1.01	1.11	0.62	0.59	0.65	0.71	0.67	0.74	0.92	0.87	0.97	0.97	0.91	1.03
West	0.87	0.81	0.93	0.54	0.50	0.58	0.74	0.69	0.80	1.02	0.95	1.10	1.00	0.92	1.09
South	1.17	1.10	1.24	0.52	0.49	0.56	0.75	0.71	0.80	1.02	0.97	1.08	1.02	0.96	1.08

TLW – teleworking

M/L town – Medium-Large town

CI – Confidence interval

Table A7. Odds ratios and 95% confidence intervals for the effect of primary school closure on work-life balance overall, stratified and respondent's gender, age group, education, living arrangements, children in the household, work location, area of residence and country's geographical regions, and by outcome, EU 2020–2022

Variables	Job worried			Job Household tired			Job-Family time			Family-Job concentration			Family-Job Time		
	Coeff.	CI-L	CI-S	Coeff.	CI-L	CI-S	Coeff.	CI-L	CI-S	Coeff.	CI-L	CI-S	Coeff.	CI-L	CI-S
Global															
Overall	1.08	1.04	1.11	0.59	0.57	0.61	0.73	0.70	0.75	0.97	0.94	1.01	0.98	0.94	1.02
Gender															
Male	1.11	1.05	1.17	0.65	0.62	0.69	0.78	0.74	0.82	1.06	1.00	1.12	1.08	1.01	1.15
Female	1.09	1.05	1.13	0.55	0.52	0.57	0.73	0.70	0.76	1.00	0.96	1.04	1.01	0.97	1.06
Age group															
18–34 years	0.95	0.88	1.02	0.49	0.45	0.54	0.69	0.64	0.75	1.09	1.01	1.19	1.12	1.02	1.23
35–49 years	1.07	1.02	1.13	0.58	0.55	0.61	0.74	0.70	0.78	1.07	1.01	1.13	1.11	1.05	1.17
50–64 years	1.17	1.12	1.23	0.61	0.58	0.65	0.75	0.72	0.79	0.93	0.88	0.98	0.90	0.85	0.96
65+ years	1.15	0.95	1.39	0.77	0.63	0.93	0.97	0.80	1.18	1.16	0.92	1.47	1.20	0.92	1.55
Education															
Primary	1.25	0.98	1.58	0.60	0.47	0.77	0.66	0.52	0.84	0.78	0.60	1.00	0.81	0.60	1.08
Secondary	1.17	1.10	1.24	0.62	0.58	0.66	0.72	0.67	0.76	0.96	0.90	1.02	0.96	0.89	1.03
Tertiary	1.08	1.04	1.12	0.60	0.57	0.62	0.78	0.75	0.81	1.07	1.03	1.11	1.08	1.04	1.13
Living arrangements															
With partner	1.05	1.00	1.12	0.59	0.55	0.62	0.76	0.72	0.81	1.05	0.98	1.11	1.02	0.95	1.10
Alone	1.11	1.07	1.16	0.58	0.56	0.61	0.74	0.71	0.77	1.01	0.97	1.05	1.04	1.00	1.09
Children at home															
None	1.06	1.02	1.11	0.59	0.57	0.62	0.73	0.70	0.76	0.96	0.92	1.00	0.96	0.91	1.01
0–11 years	1.09	1.00	1.18	0.58	0.53	0.63	0.82	0.75	0.89	1.19	1.09	1.29	1.20	1.10	1.30
12–17 years	1.14	1.03	1.26	0.59	0.53	0.65	0.67	0.61	0.74	0.90	0.81	1.00	0.88	0.78	0.98
0–11 and 12–17ys	1.16	0.99	1.36	0.66	0.56	0.79	0.77	0.66	0.91	1.00	0.86	1.17	0.99	0.85	1.16
Work location															
TLW	1.03	0.98	1.08	0.64	0.61	0.67	0.86	0.82	0.90	1.13	1.07	1.18	1.08	1.02	1.13
Non-TLW	1.15	1.11	1.21	0.54	0.52	0.57	0.66	0.63	0.69	0.93	0.89	0.97	0.99	0.94	1.04
Area of residence															
Countryside	1.06	0.93	1.22	0.55	0.48	0.64	0.72	0.63	0.83	1.01	0.88	1.16	0.97	0.83	1.13
Small town	1.18	1.11	1.25	0.55	0.52	0.59	0.71	0.67	0.76	0.96	0.90	1.03	1.00	0.93	1.07
M/L town	1.11	1.05	1.18	0.59	0.56	0.63	0.75	0.70	0.79	1.01	0.94	1.07	1.04	0.96	1.11
City	1.04	0.99	1.09	0.61	0.58	0.64	0.77	0.73	0.81	1.06	1.01	1.12	1.06	1.00	1.13
Geo regions															
North	1.25	1.12	1.39	0.68	0.61	0.75	0.82	0.74	0.91	1.14	1.02	1.28	1.17	1.03	1.33
East	1.07	1.02	1.12	0.62	0.59	0.65	0.71	0.67	0.74	0.92	0.87	0.97	0.98	0.92	1.04
West	0.83	0.76	0.90	0.52	0.48	0.57	0.74	0.68	0.81	1.06	0.97	1.17	1.03	0.93	1.14
South	1.18	1.11	1.25	0.52	0.49	0.55	0.74	0.70	0.79	1.03	0.97	1.09	1.04	0.98	1.11

TLW – teleworking

M/L town – Medium-Large town

CI – Confidence interval

Table A8. Odds ratios and 95% confidence intervals for the effect of secondary school closure on work-life balance overall, stratified by gender, age group, education, living arrangements, children in the household, work location, area of residence (area type) and geographical regions and by outcome, EU, 2020–2022

Variables	Job worried			Job Household tired			Job-Family time			Family-Job concentration			Family-Job Time		
	Coeff	CI-L	CI-S	Coeff	CI-L	CI-S	Coeff	CI-L	CI-S	Coeff	CI-L	CI-S	Coeff	CI-L	CI-S
Global															
Overall	1.07	1.04	1.10	0.59	0.57	0.61	0.73	0.70	0.75	0.96	0.93	1.00	0.98	0.94	1.02
Gender															
Male	1.10	1.05	1.16	0.64	0.61	0.68	0.77	0.73	0.81	1.05	0.99	1.11	1.08	1.02	1.15
Female	1.08	1.04	1.12	0.56	0.53	0.58	0.74	0.71	0.77	1.00	0.96	1.04	1.02	0.97	1.06
Age group															
18–34 years	0.98	0.91	1.05	0.50	0.46	0.54	0.69	0.64	0.75	1.08	0.99	1.17	1.14	1.04	1.25
35–49 years	1.07	1.02	1.13	0.57	0.54	0.60	0.73	0.70	0.77	1.09	1.03	1.14	1.13	1.07	1.19
50–64 years	1.15	1.10	1.20	0.62	0.59	0.65	0.76	0.73	0.80	0.93	0.88	0.97	0.92	0.87	0.97
65+ years	1.07	0.91	1.28	0.79	0.67	0.94	0.96	0.81	1.14	1.08	0.87	1.33	1.00	0.78	1.28
Education															
Primary	1.24	0.98	1.56	0.68	0.53	0.86	0.64	0.51	0.81	0.73	0.57	0.94	0.82	0.61	1.10
Secondary	1.16	1.10	1.23	0.62	0.58	0.66	0.73	0.69	0.77	0.95	0.90	1.01	0.97	0.90	1.05
Tertiary	1.07	1.03	1.11	0.59	0.57	0.62	0.77	0.74	0.80	1.06	1.02	1.10	1.08	1.04	1.12
Living arrangements															
With partner	1.06	1.01	1.12	0.59	0.56	0.63	0.78	0.74	0.82	1.03	0.97	1.09	1.02	0.96	1.10
Alone	1.10	1.06	1.14	0.58	0.56	0.61	0.73	0.71	0.76	1.01	0.97	1.05	1.05	1.00	1.09
Children at home															
None	1.05	1.01	1.09	0.60	0.57	0.62	0.73	0.70	0.76	0.94	0.90	0.98	0.93	0.88	0.98
0–11 years	1.08	1.00	1.17	0.59	0.54	0.65	0.81	0.74	0.88	1.18	1.08	1.28	1.26	1.16	1.37
12–17 years	1.10	1.00	1.22	0.58	0.52	0.64	0.67	0.61	0.74	0.94	0.85	1.04	0.91	0.82	1.02
0–11 and 12–17ys	1.29	1.10	1.51	0.66	0.55	0.77	0.84	0.71	0.98	1.16	1.00	1.36	1.07	0.91	1.25
Work location															
TLW	1.03	0.98	1.08	0.65	0.62	0.68	0.86	0.82	0.90	1.13	1.08	1.18	1.09	1.04	1.15
Non-TLW	1.14	1.10	1.19	0.54	0.52	0.57	0.67	0.64	0.70	0.92	0.88	0.96	0.99	0.94	1.04
Area of residence															
Countryside	1.11	0.98	1.26	0.58	0.51	0.67	0.81	0.72	0.92	1.01	0.88	1.15	1.02	0.89	1.18
Small town	1.20	1.13	1.28	0.57	0.53	0.60	0.73	0.69	0.77	0.96	0.90	1.02	1.03	0.96	1.11
M/L town	1.09	1.03	1.16	0.60	0.57	0.64	0.74	0.70	0.78	1.00	0.94	1.06	1.04	0.97	1.11
City	1.02	0.97	1.07	0.60	0.57	0.63	0.75	0.72	0.79	1.06	1.01	1.11	1.04	0.99	1.10
Geo regions															
North	1.09	1.01	1.17	0.72	0.66	0.78	0.80	0.74	0.86	1.05	0.96	1.14	1.09	0.99	1.19
East	1.02	0.98	1.07	0.61	0.58	0.64	0.70	0.67	0.73	0.91	0.86	0.96	0.98	0.92	1.04
West	1.01	0.93	1.11	0.49	0.45	0.54	0.76	0.69	0.83	1.12	1.02	1.23	1.09	0.98	1.21
South	1.19	1.12	1.26	0.53	0.49	0.56	0.75	0.71	0.79	1.04	0.99	1.11	1.05	0.99	1.12

TLW – teleworking

M/L town – Medium-Large town

CI – Confidence interval

Table A9. Odds ratios and 95% confidence intervals for the effect of teleworking on work-life balance overall, stratified by gender, age group, education, living arrangements, children in the household, work location, area of residence (area type) and geographical regions and by outcome, EU 2020–2022

Variables	Job worried			Job Household tired			Job-Family time			Family-Job concentration			Family-Job Time		
	Coeff.	CI-L	CI-S	Coeff.	CI-L	CI-S	Coeff.	CI-L	CI-S	Coeff.	CI-L	CI-S	Coeff.	CI-L	CI-S
Global															
Overall	1.02	0.99	1.05	0.90	0.88	0.93	0.95	0.93	0.98	1.08	1.05	1.11	1.01	0.97	1.04
Gender															
Male	1.05	1.01	1.10	0.91	0.87	0.95	0.92	0.88	0.96	1.07	1.02	1.12	1.07	1.02	1.13
Female	1.00	0.96	1.03	0.86	0.83	0.89	0.95	0.92	0.98	1.06	1.02	1.09	0.99	0.95	1.03
Age group															
18–34 years	0.96	0.90	1.02	0.83	0.77	0.89	0.89	0.84	0.95	1.04	0.97	1.12	1.01	0.94	1.09
35–49 years	1.05	1.01	1.10	0.87	0.83	0.91	0.97	0.93	1.02	1.10	1.05	1.15	1.05	1.00	1.10
50–64 years	1.03	0.99	1.07	0.89	0.86	0.93	0.94	0.90	0.98	1.03	0.99	1.08	0.98	0.93	1.03
65+ years	0.79	0.68	0.91	0.97	0.84	1.13	0.89	0.76	1.04	0.88	0.73	1.07	0.84	0.67	1.04
Education															
Primary	0.90	0.74	1.10	0.83	0.68	1.02	0.86	0.71	1.04	0.99	0.80	1.21	0.84	0.66	1.07
Secondary	1.02	0.98	1.08	0.84	0.80	0.89	0.89	0.85	0.93	1.05	1.00	1.11	0.95	0.89	1.01
Tertiary	1.02	0.99	1.06	0.91	0.88	0.94	0.99	0.96	1.02	1.08	1.05	1.12	1.06	1.02	1.10
Living arrangements															
With partner	0.97	0.93	1.02	0.84	0.80	0.88	0.91	0.87	0.95	1.05	1.00	1.11	0.99	0.93	1.05
Alone	1.04	1.01	1.07	0.90	0.87	0.93	0.96	0.93	0.99	1.06	1.03	1.10	1.03	0.99	1.06
Children at home															
None	1.00	0.97	1.03	0.88	0.85	0.91	0.92	0.89	0.95	1.04	1.00	1.08	0.97	0.93	1.01
0–11 years	1.02	0.95	1.10	0.94	0.87	1.02	1.05	0.98	1.14	1.17	1.08	1.26	1.09	1.01	1.17
12–17 years	1.17	1.07	1.28	0.94	0.86	1.03	1.02	0.93	1.11	1.16	1.06	1.27	1.02	0.93	1.13
0–11 and 12–17ys	1.08	0.94	1.24	1.03	0.89	1.19	1.09	0.95	1.26	1.08	0.94	1.24	0.99	0.86	1.14
Work location															
TLW	1.01	0.97	1.05	0.90	0.87	0.94	0.98	0.95	1.02	1.08	1.04	1.12	1.04	1.00	1.09
Non-TLW	1.02	0.98	1.06	0.86	0.82	0.89	0.91	0.87	0.94	1.04	1.00	1.08	0.98	0.94	1.03
Area of residence															
Countryside	0.98	0.88	1.09	0.79	0.70	0.88	0.93	0.83	1.03	0.99	0.89	1.11	0.95	0.84	1.08
Small town	1.01	0.96	1.06	0.87	0.82	0.92	0.91	0.87	0.96	1.04	0.99	1.10	1.03	0.97	1.09
M/L town	1.00	0.95	1.05	0.89	0.85	0.94	0.94	0.90	0.99	1.03	0.98	1.09	0.99	0.93	1.06
City	1.03	0.99	1.08	0.90	0.86	0.94	0.97	0.93	1.01	1.09	1.04	1.14	1.03	0.98	1.08
Geo regions															
North	0.74	0.70	0.79	0.74	0.69	0.79	0.79	0.74	0.84	0.82	0.76	0.89	0.77	0.71	0.84
East	0.97	0.93	1.01	0.91	0.87	0.95	0.97	0.93	1.02	1.18	1.12	1.24	1.06	1.01	1.12
West	1.06	1.00	1.12	0.94	0.88	1.00	0.97	0.91	1.03	1.02	0.96	1.09	1.02	0.96	1.10
South	1.21	1.13	1.28	0.88	0.83	0.94	0.92	0.87	0.98	1.01	0.95	1.07	1.11	1.04	1.18

TLW – teleworking

M/L town – Medium-Large town

CI – Confidence interval

**European Centre for Disease
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