Gender Gaps in Time Use: Pan-European Evidence from School Closures during COVID-19

We study the impact of school closures during the COVID-19 pandemic on the allocation of paid and unpaid work within households. We use panel data from 27 EU countries and isolate the impact of school closures by comparing parents and non-parents. In the full sample, we find suggestive evidence of a widening gender gap in time use. When we focus on parents, we find that mothers strongly respond to school closures, spending less time on chores and more time on work and leisure. We see no significant response among fathers. These effects are stronger in countries with high gender equality.

Keywords: COVID-19, gender gaps, household production, paid work, time-use
JEL Codes: D13, J13, J16, J22, J30

1 Introduction

The COVID-19 pandemic has reignited the public discourse about gender roles in work and family life, particularly in light of the lockdowns and school closures that have reshaped daily life. The widespread shift to remote work, along with the closure of schools and daycare centres, has created a caregiving crisis for many families (Jack and Oster, 2023). Evidence suggests that women have been particularly affected, as they are more likely to work in jobs that cannot be performed from home and have taken on the primary caregiver role during the pandemic (Hupkau and Petrongolo, 2020). This situation has resulted in the term she-cession describing the disproportionate economic impact of the pandemic on women (Alon et al., 2022, Goldin, 2021). The impact of the COVID-19 pandemic on women's labour force participation has been widely discussed in the media, resulting in claims that the pandemic has "catapulted women back to the 1960s" (Topping, 2020).

A growing literature has exploited the disruptive nature of the pandemic to study the impact of lockdowns and other non-pharmaceutical interventions on households, in particular the distribution of tasks and chores between men and women. Analyses of data gathered during the early stage of the pandemic find strong differential labour market effects, whereby women's employment was hit harder than men's (e.g. Collins et al., 2021, Amuedo-Dorantes et al., 2023). Similar results have been found for the distribution of household chores: women were found to bear a heavier burden of the increased demand for household production in terms of childcare and housework (e.g. Adams-Prassl et al., 2020, Albanesi and Kim, 2021, Oreffice and Quintana-Domeque, 2021, Zamarro and Prados, 2021, Farre et al., 2022, Andrew et al., 2022, Augustine and Prickett, 2022). Whereas some of these studies document rather drastic widening of gender gaps in the early stages of the pandemic, the evidence from work spanning the entire pandemic is less clear-cut. Studies that analyse data from later stages of the pandemic find a greater involvement of fathers in childcare and housework and, in general, a more egalitarian division of paid and unpaid work between men and women (Biroli et al., 2021, Mangiavacchi et al., 2021, Jessen et al., 2022, Boll et al., 2023). The magnitude of the effects differs across countries. In some countries, non-pharmaceutical interventions such as lockdowns and school closures led to substantial shifts in the distribution of housework, childcare and paid work between men and women, whereas in other countries these effects are absent or less pronounced.

In this paper, we provide new evidence about the impact of non-pharmaceutical interventions on gender gaps in paid and unpaid work. Our data span nearly two years of the COVID-19 pandemic and cover all 27 EU Member States. We concentrate on the effect of school closures, an important yet controversial policy measure aimed at curtailing the spread of the virus, on the time allocation of men and women during the pandemic. Our main data source is the *Living, Working, and COVID-19* (LWC) online survey, conducted by Eurofound. This survey offers several advantages over surveys that were used in most studies in the aforementioned literature. The survey rounds analysed in this paper were carried out between March 2020 and May 2022, a considerably longer period compared to surveys in many other studies, which were fielded only at the start of the pandemic in the spring of 2020. Moreover, the range of countries covered allows us to analyse heterogeneous effects across countries with different social norms. The survey comprises questions on time use in paid work, housework, unpaid caregiving, leisure, education, and training. A further advantage of the LWC data is its panel component: a subset of the respondents were surveyed in up to four rounds. This feature allows us to circumvent an important empirical problem, namely that the demographic composition of respondents may have changed over the course of the pandemic, for example, because parents had little time to answer surveys while balancing paid work, childcare and housework. We match this data with daily information on non-pharmaceutical health interventions from the European Centre for Disease Control (ECDC).

We begin by documenting several interesting stylised facts about time use during the COVID-19 pandemic. First, women spend on average 4.5 hours per week less on paid work and 6.7 hours more on unpaid childcare and housework than men. The descriptive evidence also shows that during periods of school closures, most people work less on average and spend more time on childcare and housework. These effects are more pronounced for women than for men.

In our main analysis, we estimate the effect of school closures on time use. Overall, our results point to small differential responses among women and men. When we consider the cross-sectional data, we find small and statistically insignificant effects throughout. The effects based on panel data and regressions with individual fixed effects are considerably larger, suggesting that the cross-sectional results may be contaminated by unobserved differences between people who answer the survey in periods when schools are open and closed. The panel data confirm the finding from the previous literature, namely that women spend less time on paid work and more time on childcare and housework, whereas the opposite is true for men. Although these effects are larger compared to those based on cross-sectional data, they are economically small and in most cases statistically insignificant.

Our main estimates mask considerable heterogeneity. Previous research has shown that nonpharmaceutical interventions changed the time allocation within households and that gender norms are an important explanation for why the responses to school closures may be more pronounced in some countries than in others (Albanesi and Kim, 2021, Boring and Moroni, 2023). Motivated by these findings, we perform separate estimations for men and women and for people in countries with high vs. low gender equality. We measure gender equality through a country's average gender wage gap. This analysis yields some interesting and at times unexpected patterns.

As the impact of school closure on adults' time-use is expected to operate through children spending more time at home, we analyse the differential time-use outcomes for parents and nonparents. As expected, the two groups react very differently to school closures: whereas non-parents spend more time on paid work and housework and less on leisure, parents spend on average the same time on work, more time on leisure and less time on chores (housework and childcare). This result is surprising given that parents were mostly the sole caregivers for children during school closures. One potential explanation is that during school closures, parents spend more quality time with their children, which they classify as leisure rather than as childcare.

We also find evidence for differential time-use impacts between men and women, although the effects are more nuanced than the ones documented in earlier literature. Our results indicate that during school closures, men substantially increased the share of time spent on paid work, regardless of whether they are parents or not. Women with children spent a similar share of time on paid work regardless of whether schools were open or closed. They spent significantly less time on chores, less time on leisure, and more time on other activities, such as care for the elderly, education and training, or volunteering. We find no such effects for men. This result indicates that women indeed changed how they spend their time in response to school closures. However, the changes were more subtle than a mere shift away from paid work and towards more time spent on childcare or housework. The gender differences in the impact of school closures on time use are mainly driven by countries with high gender equality. In countries with low gender equality, we find weak responses.

The remainder of the paper is structured as follows. In Section 2, we provide information on the institutional background of school closures during the pandemic and discuss potential mechanisms through which they affect parental time use. In Section 3, we present the main dataset and provide descriptive statistics. In Section 4, we present stylized facts about time use during periods when schools were open vs. closed and perform a regression analysis based on panel data. Section 5 concludes.

2 Background and Mechanisms

2.1 Background: School Closures during the COVID-19 Pandemic

Over the course of the surging and receding waves of infection that characterised the global COVID-19 pandemic, the European Union witnessed diverse and multifaceted approaches to school closure policies among its member countries. National-level responses were shaped by many factors, including the severity of infection rates, healthcare infrastructure, economic considerations, and guidance from health authorities such as the European Centre for Disease Prevention and Control (ECDC) (ECDC, 2021). The complexity of school closure policies across EU countries underscores the challenges in reconciling public health interventions with the socio-economic repercussions of educational disruptions.

Most of the EU member states initiated pre-emptive early school closures to reduce the transmission of SARS-CoV-2. Countries including Germany, France, Italy and Spain implemented nationwide school closures in March 2020 as part of their comprehensive lockdown strategies. However, some nations, like Sweden, adopted a different approach by keeping schools for younger children open with certain preventive measures in place. Concurrently, Denmark initiated prompt school closures in March 2020 but gradually reopened educational institutions, employing reduced class sizes and social distancing measures, along with a blend of online and in-person learning. Moreover, Belgium, Netherlands, and Ireland implemented nationwide school closures, with subsequent efforts focused on regionalised approaches to contain outbreaks. Similarly, Portugal, Greece, and Austria implemented widespread school closures but monitored the epidemiological situation closely to determine reopening strategies. The complexity of school closure policies across EU countries underscores the challenges in reconciling public health interventions with the socio-economic repercussions of educational disruptions. By April 2022, all the countries had reopened the schools, resulting in a marked variation in outbreak responses during the second and fourth waves.

Figure 1 summarises the extent of school closures in the 27 EU Member States over the period January 2020 – August 2022. Overall, there was a marked variation in school closures over the pandemic period. In March 2020, at the onset of the pandemic, almost all countries closed their schools. A second wave of school closures coincided with the second COVID-19 wave in winter 2020/21. After spring of 2021, school closures became less widespread, some school closures took place in early 2022. By April 2022, all EU countries had reopened schools. The grey areas on the graph indicate the time period of data collection for the various rounds of Eurofound's *Living, Working and COVID-19* survey.

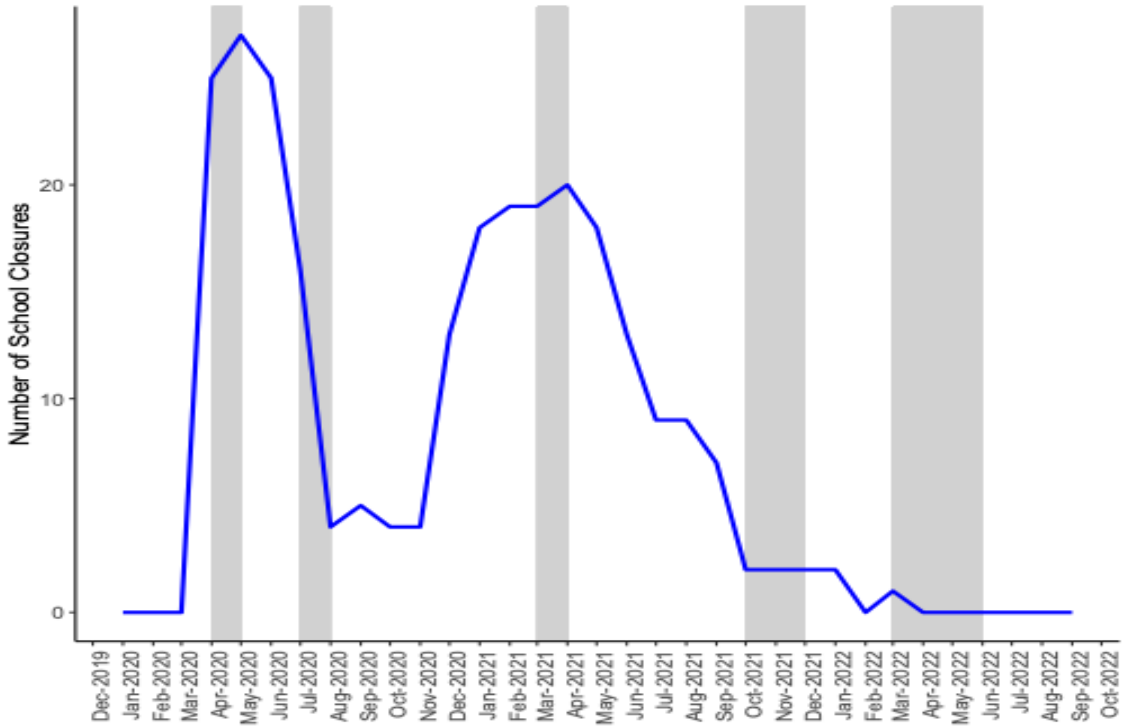


Figure 1 Number of EU member states implementing school closures

Notes: The line graph displays the number of EU member states that implemented schools closed during a given month between January 2020 and August 2022. The grey areas indicate the data collection periods of the four rounds (2-5) of Eurofound's 'Living, Working and COVID-19' survey.

2.2 Mechanisms: school closures' impact on adults' time use

The immediate benefit resulting from school closures during the COVID-19 pandemic was the curtailment of the spread of the virus as a result of social distancing. The suppression of the virus' spread provided scientists valuable time for the development of vaccines to combat the spread of the virus and the incidence of the illness. As well as the intended benefit, school closures have been theorised to impact the children in question, e.g. by affecting academic performance, health and well-being. In addition, the potential impact of school closures on the children's families' lives mainly comes in the form of reallocation of time use. The mechanism through which closures of school and childcare facilities may impact people's time use results from the children's need to spend more time at home, under adults' care and supervision, with the adults often also providing or supervising education for the children. As a result of the increased demand for parental provision of care and education for children in the home, parents may have had less time available to engage in alternative activities such as paid work, leisure, care for other family members, or physical exercise. The extent to which time reallocation was possible would have been contingent on the presence of another adult in the household, and in the case of parents engaged in paid work, on (both) parents' labour market status, the type of job (in particular, if remote work was possible, or if the job was deemed essential on the 'front line'), and the flexibility provided in the employment contract (e.g., allowing for reduced work hours).

Among parents, engagement in various activities, and the time allocated to these activities, are influenced not only by personal preferences and circumstances but also by social norms. Existing

gender inequalities are deeply grounded in social norms about women's and men's roles when it comes to issues such as labour market participation, unpaid work within the home, and leisure.

3 Data and Descriptive Statistics

3.1 Data

3.1.1 The Living, Working and COVID-19 Survey

To examine the effect of school closures on time use, we combine data from a pan-European panel survey with data on non-pharmaceutical interventions. Our main data source is the *Living, Working and COVID-19* (LWC) survey, administered by the European Foundation for the Improvement of Living and Working Conditions (Eurofound). The first round of the survey was launched in April 2020, during the first wave of the COVID-19 pandemic in Europe. To date, six survey rounds have been completed, the latest round having been fielded in 2023. We focus on the main intervention period of pandemic-related school closures, meaning that we analyse data collected up until the 5th survey round, fielded in May 2022. The time span of the data collection covers the entire acute phase of the pandemic, unlike the surveys used in most other studies.

The LWC survey elicits a large amount of information from the respondents, including demographics, attitudes toward society, physical and mental health, paid work and home life, as well as time-use. To avoid overburdening the participants, not all questions were asked in each round. The mean completion time for the survey ranged between 10 minutes (the first round) and 21 minutes (the fifth round). The survey covers all 27 EU Member States and was conducted online via the platform *SoSciSurvey*. The participants were recruited via uncontrolled convenience sampling, by publishing the link to the survey on social media, and through targeted advertisements that aimed to gain responses from under-represented groups. Over the five survey rounds, a total of 129,514 individual responses were recorded. The survey also includes a panel component: in each round, participants who completed the survey for the first time were invited to provide their email addresses in order to be re-contacted for follow-up surveys. Overall, 92,651 respondents participated in more than one survey round. A balanced panel is available for 3,872 respondents.

Many of the LWC survey questions have been used previously in the European Quality of Life Survey (EQLS) and the European Working Conditions Survey (EWCS), two long-running surveys administered by Eurofound. Because the survey is non-probabilistic, *a posteriori* weighting has been developed. Details on the weighting variables are provided in Appendix A.1. In all regressions, we apply the weights in order to reflect the socio-demographic composition of the European Union and its Member States.

Our main outcome is a respondent's self-reported time use. In different survey rounds, respondents were asked how many hours per week they spent on average, during the past month, on the following activities: 1) paid work; 2) caring for and/or educating children; 3) caring for elderly or disabled relatives; 4) food preparation, serving meals and washing dishes; 5) hours on cleaning and laundry; 6) gardening and home repairs; 7) shopping and transporting family members; 8) leisure; 9) volunteering and charitable activity; and 10) training and education. Respondents did not receive any further explanation about time use, such as the fact that a week has 168 hours or how to classify activities such as sleep.

Based on this information, we construct four main outcome variables. The first variable is *paid work*, which is the hours spent on paid work per week in the last month. The second variable *chores*, is derived by combining the information available on time spent in household production. This includes *housework* involving hours reported to have been spent on food preparation, serving meals, washing dishes, cleaning, laundry, gardening, house repairs, shopping and transporting family members as well as *childcare* involving the hours spent on unpaid childcare. We chose to construct

chores as a broad measure of housework and childcare because during lockdowns it was often not clear whether a particular minute or hour was spent on childcare, cooking or other household chores. The third variable is time spent on *leisure* activities. The outcome *any other activity* represents the residual of all activities that do not fall into one of the other categories.

In large parts of the analysis, we consider the outcomes to be the share of a person's total time they spend on a given category. For example, for a respondent whose total time use is 100 hours, of which 40 hours are spent on paid work, the outcome variable *Share of time spent on paid work* is 40%. We use shares rather than absolute numbers of hours because the total number of hours reported by respondents varies considerably across respondents and over time. By taking shares, we hold the total amount of time constant and ask whether school closures affected the distribution of time spent on different items.

One challenge with survey data is missing information. Respondents typically did not answer all questions. We address missing information as follows. Regarding time-use, we proceeded as follows: if a respondent reported positive values for some time-use variables but not others, we coded the missing values as zero. If a respondent did not answer any time-use questions, we dropped these individuals from the sample. If individual, time-invariant characteristics were missing in one or more rounds of the panel, we impute these values from the remaining rounds.

3.1.2 Data on School Closures

The European Centre for Disease Prevention and Control (ECDC) tracked, on a daily basis, all the non-pharmaceutical interventions and response measures in various countries in the *ECDC Country Response Database* (ECDC, 2022). To match the LWC data with the information on school closures from the ECDC database, we take the interview date and construct a dummy that equals one if schools were partially or fully closed for more than 14 out of the preceding 28 days and zero otherwise. We construct the measure this way because of the retrospective nature of the time-use questions. These ask about a person's typical time use in the past four weeks. We consider schools as closed if, for more than two out of the last four weeks, at least one school type was closed, i.e. daycare, primary and secondary. An alternative would be to construct an indicator of whether schools were closed on the interview day. However, this indicator would be misleading if, for example, schools were open for most of the past four weeks but closed on the day of the interview.

3.2 Estimation Sample and Descriptive Statistics

3.2.1 Estimation Sample

In the analysis, we use both the cross-sectional and the panel dimensions of the survey. To construct our estimation sample, we use survey rounds 2 to 5 (which include time-use information), resulting in a sample of 81,032 respondents. We further drop respondents with missing information and implausible values in the time-use variables, leaving 76,096 respondents. We further exclude observations where total time-use — the sum across all categories mentioned in Section 3.1.1 — is greater than 185 hours per week (7,943 panel observations). The rationale for this restriction is that a week has 168 hours in total. Because people may not necessarily know about the total number when they fill in the survey, we allow for an additional 10%, i.e. 185 hours.[1] Furthermore, we drop observations with time-use variables with unreasonably high values. For the outcomes *paid work*, *housework*, *volunteering*, *education and training*, we drop all observations with values greater than

[1] For respondents who provided time use information in more than one survey round, we apply this restriction to the average total time-use across all survey rounds for which this information is available. For example, if a person answers the questions twice and the total time use in Round 1 is 180 hours and in Round 2 is 200 hours, we take the mean (190) and exclude the respondent from the sample.

185 hours per week (407 respondents, 539 panel observations). We do not apply the same restrictions for *leisure*, *care and/or education of children*, and *care for elderly or disabled relatives*, as it is plausible — yet unlikely— that people spend more than 100 hours per week on these activities. Because our focus is on parents, we also drop respondents who are older than 64 years of age (14,048 respondents, 25,518 panel observations). With this age restriction, we focus on a group that is more likely to be parents than grandparents. Finally, we drop respondents with missing basic demographic information — age, gender, whether children live in the household, education, household type — and respondents who are singletons month-country strata, as these are excluded in the fixed effect estimation (46,755 respondents, 81,941 panel observations). In addition, we drop 608 observations with missing information on time variables as shares of total time use. After applying these restrictions, our estimation sample consists of 23,757 observations, and a sub-sample balanced panel consisting of 3,759 respondents who participated in all survey rounds (2 to 5).

3.2.2 Descriptive Statistics

Table 1 displays the descriptive statistics of the cross-sectional data and the balanced panel of the main estimation sample. For respondents who answered in multiple survey rounds, we take the first available answer to all demographic questions and report the average time use across all survey rounds. For time-use variables, we report the average number of hours and the shares across all four survey rounds. The demographic characteristics of respondents in the balanced panel are similar to those in the cross-section.

Overall, the average respondent is 48 years old. Women make up 61% of the respondents, 41% live in a household with children, and 60% live with a spouse or partner. *No children* means that no children are living in the same household. This category includes people with no children of their own as well as people whose children have moved out of the household or are not living there for other reasons. Two-thirds of respondents have tertiary education and about one-third have a secondary-level education. Relative to the population, certain groups are over-represented in the sample. Respondents are on average older, more educated, more likely to be women, and less likely to live in a household with children than the average adult in the EU. For this reason, we apply the survey weights discussed in Section 3.1.1.

The average respondent in our sample spent 26 hours per week on paid work. They also spent about 19 hours on household production, less than five hours on leisure and about 12 hours on the remaining items. The table also reports the shares of the total time spent on these activities.

Table 1: Descriptive Statistics

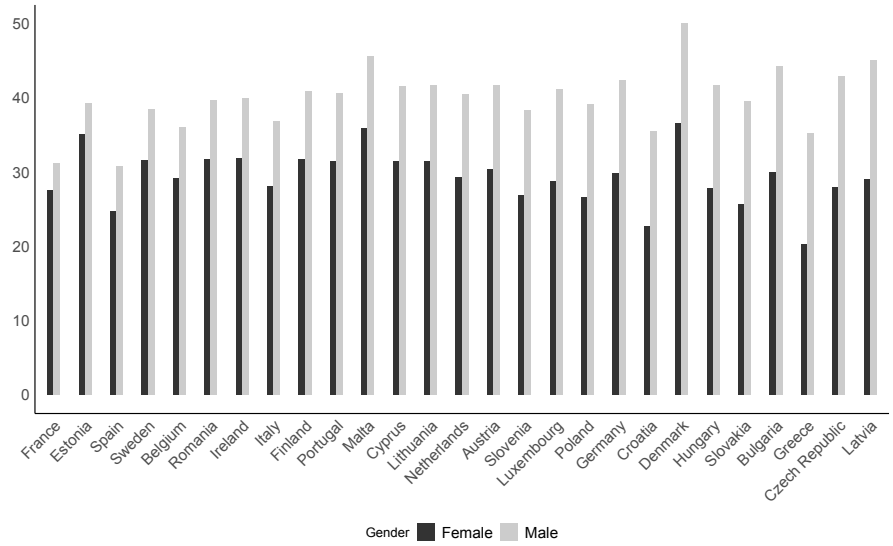
	Full Sample					Balanced Panel				
	Mean	SD	Min	Max	N	Mean	SD	Min	Max	N
Age	48.32	12.01	18.00	80.00	23,757	49.41	11.90	18.00	71.00	3,759
Women	0.61	0.49	0.00	1.00	23,757	0.67	0.47	0.00	1.00	3,759
Children in household	0.41	0.49	0.00	1.00	23,757	0.39	0.49	0.00	1.00	3,759
Lives with spouse	0.61	0.49	0.00	1.00	23,757	0.63	0.48	0.00	1.00	3,759
Education										
Primary	0.02	0.16	0.00	1.00	23,757	0.04	0.19	0.00	1.00	3,759
Secondary	0.32	0.47	0.00	1.00	23,757	0.29	0.45	0.00	1.00	3,759
Tertiary	0.66	0.47	0.00	1.00	23,757	0.68	0.47	0.00	1.00	3,759
Family status										
Single, no children	0.28	0.45	0.00	1.00	23,757	0.25	0.43	0.00	1.00	3,759
Single parent	0.11	0.32	0.00	1.00	23,757	0.12	0.32	0.00	1.00	3,759
Couple, no children	0.31	0.46	0.00	1.00	23,757	0.35	0.48	0.00	1.00	3,759
Couple with children	0.30	0.46	0.00	1.00	23,757	0.28	0.45	0.00	1.00	3,759
Time use data (hours per week)										
Paid work	26.49	20.00	0.00	100.00	23,757	27.17	18.35	0.00	73.75	3,759
Chores (childcare & housework)	19.24	19.66	0.00	185.00	23,757	18.14	16.03	0.00	116.25	3,759
Leisure	4.88	6.49	0.00	150.00	23,757	5.10	5.33	0.00	59.00	3,759
Other	12.01	13.54	0.00	160.00	23,757	12.17	11.85	0.00	93.50	3,759
Time use data (shares)										
Paid work	42.18	34.51	0.00	100.00	23,757	44.13	34.38	0.00	100.00	3,759
Chores (childcare & housework)	33.99	29.57	0.00	100.00	23,757	31.71	28.67	0.00	100.00	3,759
Leisure	10.56	16.63	0.00	100.00	23,757	11.18	17.14	0.00	100.00	3,759
Other	13.27	21.37	0.00	100.00	23,757	12.98	21.38	0.00	100.00	3,759

Notes: This table displays the descriptive statistics for the full sample and balanced panel. Each respondent is represented once. For the time-use variables, we report each respondent's panel average. For all other variables, we report the characteristics in the first available survey round. The total number of hours is taken to be a maximum of 185 hours per week. These data are not weighted.

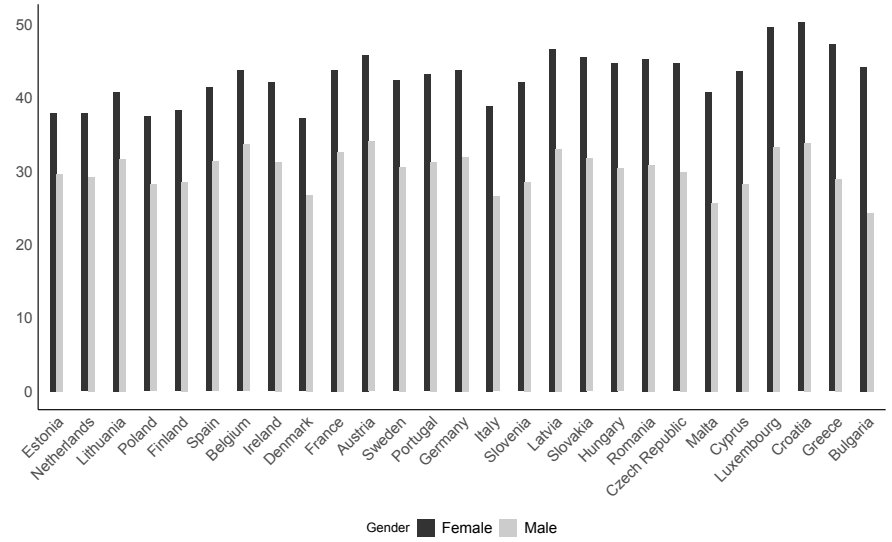
4 School Closures and Gender Gaps in Time-Use: Results

4.1 Descriptive Patterns

Before turning to the estimation results, we discuss descriptive patterns of time use for different groups during school closures and times when schools were open. Figures 2a and 2b show the average gender differences in the share of time spent on paid work and household chores, respectively. Each bar represents the share of an average woman's or man's weekly time spent on a particular activity. In all countries, women spend a smaller share of their time on paid work than men and a larger share of their time on household chores. The gender gaps in both variables range from near equality in time spent on paid work in France to women in Bulgaria spending twice the share of total time, compared to men, on household chores. These statistics suggest that social norms and attitudes towards gender roles might influence the time allocation of men and women. This has been shown in past literature which finds a disproportionate burden of household production on women (e.g. Bianchi et al., 2012, Fleche et al., 2020, Hook, 2010, Horne et al., 2018, Mandel et al., 2020).



(a) Share of time spent on paid work by gender



(b) Share of time spent on chores by gender

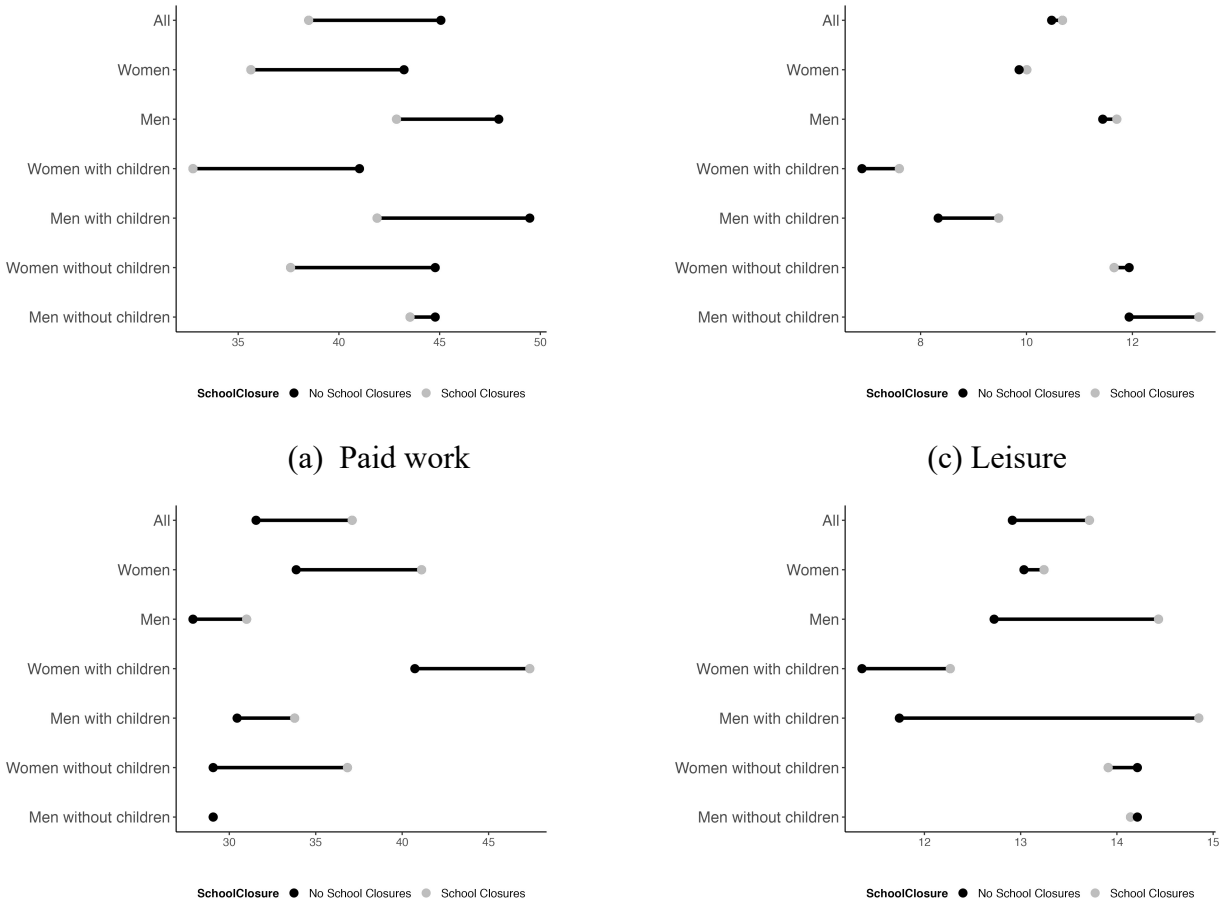
Figure 2: Share of time (per cent) spent on paid work and chores in the EU, by gender

Notes: This graph displays the share of time spent on paid work and household production by men and women in the EU on average, sorted by the absolute difference of weighted means between men and women.

Figure 3 displays the average time-use during times when schools were open vs. closed for different groups. Each ”dumbbell” reports the share of total time spent on a given activity during periods when schools were closed (grey dots) vs. open (black dots). Several interesting patterns emerge. During periods of school closures, all groups reduced the share of time spent on paid work, although the reduction was more pronounced among women than among men. The smallest reduction in the share of time spent on paid work was among men without children, whereas women with and without children saw larger reductions, and these reactions were similar among women with and without children. All groups except men without children increased the share of time spent on household chores during school closures. The increase in the share of time spent on chores was larger

for women than for men. When it comes to leisure, all groups except women without children report a larger share of leisure time spent during periods of school closures. The increase in the share of leisure time was larger among men than among women. Panel d) shows an interesting difference between parents and non-parents, with parents spending less time on other non-leisure activities whereas non-parents spend a considerably larger share of their time on these items. As this time-use category includes education and training, as well as voluntary and charitable activities (as well as care for elderly and disabled relatives) it is plausible that non-parents engaged to a greater extent in such activities during the more severe stages of the pandemic, when many workplaces were closed and activities curtailed.

Overall, the descriptive patterns point to two dividing lines, namely between men and women, and between parents and non-parents. The difference in responses between men and women appears to be considerably stronger than the difference between parents and non-parents. For example, during school closures, women show stronger reductions than men in time spent on paid work, stronger increases in time spent on household chores, and smaller increases in the time spent on other non-leisure activities. Men without children show very little change in their behaviour, except for an increase in their self-reported leisure time.



(a) Paid work

(c) Leisure

(b) Chores

(d) Other

Figure 3: time-use when schools are open and closed

Notes: These graphs display the mean self-reported share (per cent) of total time spent on specific activities for respondents in our analysis sample, during school closures and periods when schools were not closed. The indicator "school closures" equals one if schools were closed on more than 14 out of the last 28 days and zero otherwise.

4.2 Empirical strategy

After documenting gender differences in time use and responses to school closures that differ by gender, we perform a more systematic analysis based on linear regression. Regressions allow us to control for predetermined characteristics and condition on country fixed effects, thus allowing us to compare respondents residing in the same country with similar characteristics who were surveyed during periods when schools were open vs. closed. Controlling for observable characteristics is particularly important if different demographic groups answered the survey at different times, for example, if people with children were less inclined to respond during school closures. The inclusion of control variables ensures that the results are not driven by the different demographics of respondents, but rather reflect the actual differences in time-use that are due to school closures. Another advantage of regressions is that we can exploit the panel structure of the survey. For 3,759 respondents who have answered the survey more than once, we can run regressions within individual-level fixed effects, allowing us to assess how the same person reacts to school closures.

We estimate versions of the following regression:

$$\mathrm{y_{i(c)t}} = \beta_0 + \beta_1 \mathrm{SC_{c(i)t}} + \boldsymbol{X_{i(c)t}}'\boldsymbol{\gamma} + \delta_{\mathrm{c}} + \delta_{\mathrm{t}} + \varepsilon_{\mathrm{i(c)t}} \quad (1)$$

The outcome variable is the share (in per cent) of time in a typical week in a given category spent by person *i* who lives in country *c* during survey round *t*. The regressor of interest is $SC_{c(i)t}$, a binary indicator that equals unity if schools were closed in person *i*'s country of residence on the majority of days in the month before time *t* and zero otherwise. The vector of control variables, $\boldsymbol{X_{i(c)t}}$, includes dummies for five-year age groups, dummies for education levels, marital status and whether children are present in the household. The country fixed effects δ_c absorb average differences in time-use and right-hand side variables across countries. The survey round fixed effects δ_t absorb any overall trend across survey rounds.

The coefficient of interest, β_1, measures the average difference in time use between periods when schools are open vs closed within the same country. In specifications with control variables, it measures these average differences conditional on the control variables, that is, conditional on having similar demographic characteristics.

The error term $\varepsilon_{i(c)t}$ summarizes all the determinants of time use that are not captured by the variables and fixed effects on the right-hand side. Our full sample contains multiple observations of respondents who participated in the panel survey. To account for serial correlation within respondents, we cluster the standard errors at the individual level. In some specifications, we cluster the standard errors at the country level to allow for a correlation in the error terms across people living in the same country.

For β_1 to have a causal interpretation, school closures have to satisfy the conditional independence assumption (CIA), that is, they must be uncorrelated with other determinants of time-use, conditional on control variables and fixed effects. One clear violation of this assumption is that school closures are highly correlated with other non-pharmaceutical interventions such as lockdowns. Given the concurrent nature of non-pharmaceutical interventions, β_1 should be interpreted first and foremost as the effect of non-pharmaceutical interventions in general on time use. In some specifications, we compare people with and without children, which gets us closer to the effect of

school closures because, presumably, both groups are affected by lockdowns and other non-pharmaceutical restrictions, although only parents are directly affected by school closures.

Another challenge for causal identification is that people with different characteristics may answer the survey during periods with and without school closures. For example, parents could be less likely to answer a survey when schools are closed and their children are at home. To address this challenge, we use the panel data, which allows us to estimate within-person effects, that is, the effect of school closures on time use within the same person. When we use the panel data, we replace the country fixed effects δ_c with individual fixed effects δ_i in Equation (1).

4.3 Estimation Results

4.3.1 Gender Gaps in Time Use

We begin by estimating average gender gaps in time use. The results, displayed in Table 2, show the average gaps in time use between men and women measured in hours (Columns 1-4) and share of total time (Columns 5-8), respectively. Each coefficient is the result of a separate regression, a version of Equation (1) whereby the regressor $SC_{c(i)t}$ is replaced with an indicator that equals one if a person is a woman, and zero otherwise. In Columns (1) and (5), we only condition on month fixed effects to absorb general time trends throughout the pandemic. In the remaining columns, we introduce control variables and country fixed effects.

On average, women spend around 4.5 hours less per week on paid work, 6.7 hours more on chores and 0.6 hours less on leisure. These gaps translate into women spending 7.7 percentage points less of their total time on paid work, 10.4 percentage points more on household chores, and 2 percentage points less on leisure. There appears to be no economically significant gap in other time use (Panel D). The coefficients are stable across cohorts, which suggests that the inclusion of control variables does not have a strong influence on the estimation results. This result is important because it alleviates the concern that gender gaps in time use are related to differences in other demographic characteristics rather than gender differences.

Table 2: Gender Gaps in Time Use

	hrs/week				share of total time use			
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
A. Paid work								
Women	-4.594***	-4.594***	-4.252***	-4.252***	-7.776***	-7.776***	-7.109***	-7.109***
	(0.996)	(0.996)	(0.965)	(0.965)	(1.588)	(1.588)	(1.548)	(1.548)
B. Chores								
Women	6.953***	6.953***	6.929***	6.929***	10.395***	10.395***	10.630***	10.630***
	(0.959)	(0.959)	(0.951)	(0.951)	(1.142)	(1.142)	(1.135)	(1.135)
C. Leisure								
Women	-0.606	-0.606	-0.727**	-0.727**	-1.651*	-1.651*	-1.959**	-1.959**
	(0.379)	(0.379)	(0.370)	(0.370)	(0.875)	(0.875)	(0.831)	(0.831)
D. Other time use								
Women	0.515	0.515	0.106	0.106	-0.969	-0.969	-1.562	-1.562
	(0.721)	(0.721)	(0.686)	(0.686)	(1.172)	(1.172)	(1.123)	(1.123)
Country FE	No	No	Yes	Yes	No	No	Yes	Yes
Month FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Individual FE	No	No	No	No	No	No	No	No
Ind. controls	No	Yes	No	Yes	No	Yes	No	Yes
N	23,757	23,757	23,757	23,757	23,757	23,757	23,757	23,757

Notes: This table displays the estimates from regressions of time use variables on the female dummy and controls and fixed effects listed at the bottom. Month fixed effects refer to unique month-year combinations. The dataset in Columns (1)-(4) provides the results for time-use variables in terms of hours per week while Columns (5)-(8) provide the results in terms of share of total time use. The standard errors are clustered at the panel level. Significance levels: $^{*}p < 0.1$, $^{**}p < 0.05$, $^{***}p < 0.01$.

4.3.2 School Closures and Time-use

In Table 3, we consider the average difference in time use during times when schools are closed vs. open. Each coefficient is the result of a separate regression of a person's share of total time spent on a given category on an indicator for school closures and all the controls and fixed effects described in Section 4.2. Each column displays the results for the subgroups shown at the top. Most coefficients in Columns (1)-(5) are statistically insignificant. This result is interesting because the raw gaps in time use between periods with and without school closures shown in Figure 3 are sizeable. However, once we control for demographic characteristics and country fixed effects, the gaps become considerably smaller. One explanation could be that different types of people answer the survey during periods of school closures. For example, the reduction in the coefficient size is consistent with people who have more free time being more likely to answer the survey during periods of school closures.

Taken at face value, the results in Table 3 suggest that, on aggregate, people did not adjust their time use in a significant manner in response to school closures. Some groups increased the share of time spent on paid work whereas others decreased it. All groups report a lower share of time spent on chores, although this reduction is more pronounced among men than among women. Overall, however, the point estimates are small — the largest change is 2.6 percentage points — and statistically insignificant.

Table 3: Impact of School Closures on Time Use

	All	Women	Men	With children	Without children
	(1)	(2)	(3)	(4)	(5)
A. Paid Work					
School Closure	0.461	-1.308	1.400	0.818	-0.104
	(1.705)	(2.137)	(2.500)	(2.462)	(2.304)
B. Chores					
School Closure	-1.662	-0.109	-2.612	-1.985	-0.832
	(1.402)	(1.964)	(1.740)	(2.140)	(1.756)
C. Leisure					
School Closure	0.647	0.355	0.996	2.170	-0.741
	(1.198)	(1.276)	(1.836)	(1.571)	(1.641)
D. Other Time Use					
School Closure	0.554	1.061	0.216	-1.002	1.677
	(1.345)	(1.706)	(1.955)	(1.990)	(1.786)
N	23,757	14,434	9,323	9,775	13,982

Notes: This table displays the estimates from regressions of time use variables on a school closure dummy, individual controls including total time use and fixed effects for country and month using weighted data. Month fixed effects refer to unique month-year combinations. The standard errors are clustered at the individual level. Significance levels: $^{*}p < 0.1$, $^{**}p < 0.05$, $^{***}p < 0.01$.

To further address the challenge of omitted variables, we estimate panel regressions with individual and month fixed effects and a control for total time use. The results, shown in Table 4, confirm some of the cross-sectional results but present different results for some groups and outcomes. Column (1) suggests that, overall during times of school closures, people increased the share of time spent on paid work and household chores and reduced the share spent on leisure and other items. However, this average effect masks some interesting heterogeneity. Women on average reduced the share of time spent on paid work and increased the share spent on chores, whereas for men the opposite holds. Men increased the share of time spent on paid work by close to 5 percentage points and reduced the share of chores by one percentage point. In contrast, we find no consistent pattern between people with and without children.

The fact that the panel estimates in Table 4 are larger than the cross-sectional estimates in Table 3 suggests that the cross-sectional estimates may be biased by unobserved heterogeneity between people who answer during periods when schools are open and closed. The panel regressions eliminate any average differences between respondents that could affect the results and instead only exploit variation within respondents. For this reason, we consider the panel estimation much more trustworthy.

Table 4: Impact of School Closures on Time Use – Panel Estimates

	All	Women	Men	With children	Without children
	(1)	(2)	(3)	(4)	(5)
A. Paid Work					
School Closure	1.112	-3.168	4.846**	2.444	0.905
	(2.543)	(4.658)	(2.306)	(2.196)	(3.429)
B. Chores					
School Closure	0.610	2.503	-0.944	-2.186	1.682
	(2.450)	(4.681)	(2.255)	(2.797)	(3.116)
C. Leisure					
School Closure	-1.353	-0.623	-2.734	0.158	-1.675
	(1.498)	(1.806)	(1.999)	(2.280)	(1.894)
D. Other Time Use					
School Closure	-0.369	1.287	-1.168	-0.415	-0.912
	(1.553)	(2.686)	(1.558)	(2.662)	(1.979)
N	3,757	2,528	1,227	1,478	2,279

Notes: This table displays the estimates from regressions of time use variables on a school closure dummy, individual controls including total time use and fixed effects for country and month using weighted data. Month fixed effects refer to unique month-year combinations. The standard errors are clustered at the individual level. Significance levels: $^{*}p < 0.1$, $^{**}p < 0.05$, $^{***}p < 0.01$.

4.3.3 Heterogeneous effects: parental status and gender norms

After showing that the responses to school closures differ between men and women, we assess whether the responses differ across countries with different gender norms and between respondents with and without children. As a marker for gender norms, we use the gender wage gap in 2019 reported by the OECD (OECD, 2019) — see Appendix A.2 for details. We classify countries as having a high gender equality if their gender wage gap is above the median and as having a low gender wage gap if it is below the median.

We estimate the following interaction model:

$$\mathrm{y}_{\mathrm{i(c)t}} = \beta_0 + \beta_1 \mathrm{SC}_{\mathrm{c(i)t}} \times \mathrm{kids}_{\mathrm{i(ct)}} + \beta_2 \mathrm{SC}_{\mathrm{c(i)t}} + \boldsymbol{X}_{\boldsymbol{i(c)t}}{}'\boldsymbol{\gamma} + \delta_{\mathrm{c}} + \delta_{\mathrm{t}} + \varepsilon_{\mathrm{i(c)t}} \qquad (2)$$

The variable $kids_{i(ct)}$ is a binary indicator that equals unity if a respondent has children in the household and zero otherwise. We do not include this variable as a separate regressor because it does not vary at the individual level over the sample period. Our coefficient of interest is β_1, which measures the difference in the response to school closures between respondents with and without children in the household. We estimate this model separately for men and women and respondents in countries with high vs. low gender equality.

The results are shown in Table 5. Each panel shows the coefficients β_2 $(SC_{c(i)t})$ and β_1 $(SC_{c(i)t} \times kids_{i(ct)})$ from Equation (2) for the subsamples indicated at the top. The outcome variables are the shares of total time spent on a particular item. All regressions include controls for individual characteristics, month fixed effects and country fixed effects. In Columns (1)-(3), we consider the entire balanced panel.

Column (1) points to significant differences in the responses between people with and without children. During periods of school closures, people without children increase the share of time spent

on paid work by about 1.7 percentage points, increase the share of time spent on chores by 2.5 percentage points and reduce the share of time spent on leisure by around three percentage points. Only the coefficient of leisure is statistically significant at the 10%-level. The coefficients of the interaction terms point to significant differences between parents and non-parents. Compared to non-parents, parents spend considerably less time on chores during school closures, and considerably more time on leisure. This result may appear surprising given that parents were the prime caregivers while schools were closed. One explanation could be that parents do not view every hour they spend with their child as childcare but rather as quality time and, thus, as leisure.

Columns (2) and (3) show some significant differences between countries with high vs. low gender equality. In countries with high gender equality, parents respond to school closures by working significantly less than non-parents; in countries with low gender equality, we find suggestive evidence that they work relatively more. The effects on chores, leisure, and other time use also differ between both types of countries. In countries with low gender equality, the gap between parents and non-parents widens mostly in leisure — parents increase the share of time spent on leisure by around 7 percentage points relative to non-parents. In countries with high gender equality, the relative effects on chores as well as leisure are smaller, but parents spend significantly more time on other items such as care for the elderly or education.

In Columns (4) and (7), we consider separate effects for women and men, respectively. Some differences in the responses to school closures are evident. Men, be they parents or not, spend a larger share of their time on paid work — around 5 percentage points. The results also suggest that women spend less time on work; the reduction in the time spent working is twice as large for parents than for non-parents. However, the effects on women's paid work are not statistically significant. When it comes to other categories, the responses of women to school closures tend to be stronger than those of men. For example, women with children spend a considerably higher share of their time on *other time use*, whereas for men we see insignificant effects. During school closures, women without children spend more time on chores, whereas women with children spend less. Among men, both groups spend less time on chores, although the effects are not statistically significant.

The responses of men and women appear to be more pronounced in countries with high gender equality. It is in those countries that women with children spend considerably more time on *other time-use* such as care for the elderly, education or exercise, and less time on chores. In countries with low gender equality, we find much smaller, and in most cases statistically insignificant, effects.

In Appendix B.1, we perform the same analysis with the cross-sectional data based on regressions with country and month fixed effects. The coefficients mostly have the same sign although the magnitude is somewhat smaller.

In summary, the results in Table 5 reveal some interesting differences in the responses to school closures. The coefficients of *SC* can be seen as benchmark effects, as these represent the effects of non-parents, who were not directly affected by school closures. Not unsurprisingly, parents and non-parents respond very differently to school closures. However, there is also a significant difference in the responses between men and women. Unlike the literature looking at the distribution of paid and unpaid work within households at the start of the pandemic, we do not find that women increased the time spent on chores. Our results point to a different response, namely that they spend more time on leisure and on other activities such as caring for the elderly, volunteering, education, and exercise. Taken together, these results show that school closures did lead to a substantial shift in how women spend their time the pattern is more nuanced than the simple formula "women do more chores and work less."

The differences between countries with high and low gender equality also suggest that the responses depend on gender norms. Perhaps interestingly, the responses among women with children were considerably stronger in countries with high gender equality. In those countries, women with children tended to spend less time on paid work and more time on other items. In countries with low

gender equality, we find considerably smaller, and mostly statistically insignificant, effects. One explanation for this difference in effects may be the initial conditions. In countries with low gender equality, women spent less time on paid work and more on other activities even before the pandemic. From this baseline, it is difficult to work even less and spend even more time on chores. In contrast, in countries with high gender equality, women have more scope for changing their time allocation. Our results suggest that they indeed changed how much time they spent on paid work versus other activities.

Table 5: Heterogeneous Effects

	Full dataset			**Women**			**Men**		
	All	High GEI	Low GEI	All	High GEI	Low GEI	All	High GEI	Low GEI
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
A. Paid Work									
SC	1.696	7.006***	-4.707	-2.188	5.724**	-11.419	5.139*	8.432**	0.809
	(3.185)	(2.575)	(5.728)	(5.792)	(2.808)	(9.904)	(2.673)	(4.206)	(3.063)
SC x kids	-1.477	-3.805	1.562	-2.452	-6.008*	1.498	-0.768	-2.167	-0.734
	(2.422)	(2.358)	(4.067)	(3.760)	(3.634)	(5.056)	(2.700)	(3.566)	(4.477)
B. Chores									
SC	2.596	0.640	4.010	5.816	0.847	9.952	-0.458	0.225	-1.570
	(3.112)	(2.751)	(5.346)	(5.759)	(3.522)	(9.888)	(2.756)	(3.994)	(3.260)
SC x kids	-5.020*	-3.994	-5.777	-8.291*	-6.900*	-5.315	-1.271	0.475	-3.537
	(2.948)	(3.215)	(4.766)	(4.240)	(3.685)	(5.029)	(3.687)	(5.357)	(5.167)
C. Leisure									
SC	-2.972*	-5.597**	-0.333	-2.310	-3.115	-1.117	-4.192**	-8.290**	0.102
	(1.564)	(2.534)	(2.003)	(2.144)	(3.617)	(2.921)	(2.083)	(3.209)	(2.183)
SC x kids	4.093**	2.942	6.496**	4.223	3.784	2.595	3.814	1.758	9.280**
	(2.076)	(3.036)	(3.109)	(2.727)	(4.567)	(2.429)	(3.060)	(4.362)	(4.304)
D. Other Time Use									
SC	-1.320	-2.050	1.030	-1.318	-3.456	2.585	-0.490	-0.366	0.659
	(1.692)	(1.848)	(2.664)	(2.879)	(2.962)	(4.816)	(1.817)	(2.273)	(2.268)
SC x kids	2.405	4.858**	-2.281	6.519**	9.125***	1.223	-1.774	-0.066	-5.009
	(1.888)	(2.372)	(2.775)	(2.619)	(3.350)	(3.201)	(2.434)	(3.245)	(3.919)
N	3,757	1,916	1,827	2,528	1,280	1,239	1,227	636	588

Notes: This table displays the estimates from regressions of shares of total time use on the full interactions between the dummies for school closure and children, and the individual controls, month fixed effect and country fixed effects for the weighted panel data. Here 'SC' refers to school closures. Month fixed effects refer to unique month-year combinations. The dataset in Columns (1)-(3) includes all respondents from the main estimation sample. The dataset in Columns (4)-(6) only contains respondents who are female. The dataset in Columns (7) - (9) only includes respondents who are male. The standard errors are clustered at the individual level. The labels High GEI and Low GEI refer to countries with above- and below-average gender wage gaps, respectively. Significance levels: $^{*}p < 0.1$, $^{**}p < 0.05$, $^{***}p < 0.01$.

5 Conclusion

In this paper, we study whether school closures during the COVID-19 pandemic led to a change in the time allocation of men and women. We combine daily data on school closures across the EU with data from Eurofound's 'Living, Working and COVID-19' online survey, which includes respondents from the 27 EU Member States, surveyed up to four times during a two-year period between 2020 and 2022 that spans the acute phase of the pandemic. The survey data includes information on people's time use in various categories. An important feature of the survey is a panel component, which allows us to compare the time-use of the same people during times when schools are open and closed. To separate the effect of school closures from the impact of other non-pharmaceutical interventions, we compare respondents with and without children. The logic behind this comparison is that everyone is affected by lockdowns and other pandemic-related restrictions that are likely to impact time use, whereas only parents are directly affected by school closures.

Our results confirm the base findings from the previous literature while offering several new insights into the effects of the pandemic on men vs. women. The descriptive evidence shows that, during school closures, women spend more time on unpaid work such as housework and childcare and less on paid work, whereas the opposite is true for men. Similar results were found in a large number of studies that used survey data from the initial stages of the COVID-19 pandemic in March/April 2020. However, once we consider differences in the effect between parents and non-parents, a more nuanced picture emerges. School closures induce parents to spend a larger share of their time on leisure and a smaller share on chores, whereas the share of time spent on paid work remains approximately constant. Among parents, the responses to school closures differ considerably between fathers and mothers. Perhaps surprisingly, mothers spend less time on chores, less time on leisure, and considerably more time on other activities such as caring for the elderly, volunteering or education and training. We find no such effects for men. This result shows that women's time use did indeed change during the pandemic, although in more nuanced ways than indicated by the previous literature. Another interesting finding is that the differential effects on mothers vs. fathers are very pronounced in countries with relatively high gender equality and weak in countries with lower gender equality. This result points to the importance of initial conditions. If women have a low attachment to the workforce, to begin with, there is little need to spend additional hours on chores during school closures. What is concerning, however, is the effect in countries with higher gender equality, where we find strong responses in terms of time reallocation among women but not among men. This may mean that progressive gender norms during normal times do not prevent households from falling into more traditional gender roles during periods of disruption to the functioning of institutions such as those providing care and education to children.

For policymakers, these results highlight the importance of recognising the role of gendered social norms in societies. On the one hand, as the findings presented in this paper highlight, shocks such as the COVID-19 pandemic that disrupt support networks and services such as children's education and care can serve to shed light on the gendered divisions of tasks within families. With mothers generally assuming the majority of tasks related to household chores and caring duties, the school closures implemented during the pandemic caused a pronounced reallocation of time use among them, in particular among working mothers. On the other hand, the increase in telework — instigated by the necessity to ensure social distancing during the pandemic — can increase flexibility in paid work, potentially narrowing gender gaps by increasing women's labour market participation, and by allowing men to take on a more prominent role in the unpaid work carried out in the home. On the downside, the challenges presented by increased telework include the potential implications for work-life balance if a reallocation of time use runs in the direction of increased paid work being carried out by women, without the corresponding increase in time allocated to unpaid work among men. As the

pandemic experience highlights, is vital in this regard that there are adequate and accessible childcare supports in place that families can avail of.

Furthermore, our study provides a pan-European perspective, using variation in gender norms across countries, to highlight that countries with lower gender equality started moving towards a more egalitarian time allocation.

This work can be extended by analysing if there are any persistent or long-lasting effects in gendered time allocation among countries with varying social norms since COVID-19. It might be interesting to also analyse the effect of different industry types and tele-workability on time use.

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A Data Appendix

A.1 Details on Survey Weights

The survey data were weighted using the following variables: **Age crossed with gender**: 12 combinations: 18-24, 25-34, 35-44, 45-54, 55-64, 65+, male and female. People who answered ”in another way” to the question on gender were randomly allocated to male and female groups for weighting purposes. Targets for age and gender were 2020 Eurostat estimates by country for the population aged 18 years and over. **Urbanisation**: two categories: urban and rural, based on a respondent's own assessment collected in four urbanisation categories. For weighting, respondents with missing values were randomised into the categories. Targets for urbanisation were (weighted) estimates for self-defined urbanisation from the 2016 European Quality of Life Survey by country, using the same question, by age, gender and country. **Education**: two categories: tertiary and non-tertiary. For weighting, respondents with missing values were randomised into the two categories. Targets for education levels were results from the 2020 Labour Force Survey by age, gender and country. The limit for discrepancy for selecting variables was set at 0.05 (5%). The cap (maximum weight) started at 4 and was increased for each country in the function until convergence, minimum weight was set at 0.05. Extreme weights were trimmed. The resulting weights were grossed up to adult population size by country, then rescaled to have a mean of 1.

A.2 Data on Gender Wage Gaps

The primary data source for constructing the Gender Wage Gap Index was the OECD dataset on the gender wage gap for the year 2019. (OECD, 2019) This dataset provided comprehensive information on the gender wage disparities across various countries.

However, it was noted that the OECD dataset was missing data for three countries: Malta, Luxembourg, and Slovenia. To address this data gap, additional information was obtained from Eurostat. To reconcile the missing data, a correlation analysis was conducted between the OECD dataset and the Eurostat dataset. The correlation coefficient was found to be 0.676, indicating a moderate positive correlation between the two datasets. To assess the reliability of the imputed values, a thorough validation process was conducted. This involved comparing the imputed gender wage gap values with any available alternative data sources and cross-referencing the results with other relevant socio-economic indicators to ensure internal consistency.

B Additional Results

B.1 Heterogeneous Effects with Cross-sectional Data

In Table 5 in the main text, we present heterogeneous effects based on panel data. In Table B1 we present the equivalent results based on the cross-sectional data and regressions with country and month fixed effects. By and large, we find similar effects, namely that, during school closures, parents significantly reduced the amount of time spent on chores. Here we find significant positive effects on the share of time spent on leisure. Unlike in Table B1, we find no effects of school closures on *other time use*. We consider the panel results more trustworthy because the panel data allow us to track the same people over time. With cross-sectional data, we face the problem that the demographic profiles of respondents change during school closures, and this pattern may bias the estimates.

Table B1: Heterogeneous Effects

	Full dataset			Women			Men		
	All	High gei	Low gei	All	High gei	Low gei	All	High gei	Low gei
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
A. Paid Work									
SC	1.094	1.949	-0.427	-2.217	-0.397	-4.904	3.199	3.373	1.546
	(1.935)	(2.089)	(3.361)	(2.382)	(2.813)	(3.991)	(2.855)	(2.897)	(4.678)
SC x kids	-1.768	-0.812	-3.170	1.013	0.962	0.717	-4.238	-2.545	-5.804
	(2.088)	(2.620)	(3.232)	(2.676)	(3.434)	(3.897)	(3.049)	(3.792)	(4.715)
B. Chores									
SC	0.159	0.386	-0.579	3.598*	1.661	6.326*	-2.568	-1.114	-4.381
	(1.590)	(1.730)	(2.707)	(2.181)	(2.222)	(3.800)	(2.055)	(2.401)	(3.228)
SC x kids	-3.316*	-4.626**	-1.448	-6.178***	-7.159***	-4.797	-0.013	-0.640	0.467
	(1.741)	(2.236)	(2.583)	(2.366)	(2.777)	(3.629)	(2.240)	(3.052)	(3.139)
C. Leisure									
SC	-1.116	-3.424**	2.065	-1.693	-2.509	-0.790	-0.308	-3.893**	4.147
	(1.270)	(1.360)	(2.176)	(1.330)	(1.809)	(1.981)	(1.966)	(1.890)	(3.258)
SC x kids	3.694***	3.425**	4.122**	3.866***	4.658**	3.301**	3.005	1.393	5.541*
	(1.207)	(1.512)	(1.862)	(1.358)	(2.076)	(1.547)	(1.860)	(2.028)	(3.012)
D. Other Time Use									
SC	-0.137	1.089	-1.059	0.312	1.245	-0.633	-0.324	1.633	-1.311
	(1.453)	(1.509)	(2.543)	(1.721)	(2.004)	(2.899)	(2.112)	(1.900)	(3.708)
SC x kids	1.389	2.012	0.495	1.299	1.540	0.780	1.246	1.792	-0.203
	(1.476)	(2.068)	(2.021)	(1.831)	(2.750)	(2.114)	(2.114)	(2.655)	(3.094)
N	23,757	13,656	10,101	14,434	8,026	6,408	9,323	5,630	3,693

Notes: This table displays the estimates from regressions of shares of total time use variables on full interactions between the dummies for school closure and children, and the individual controls, month fixed effect and country fixed effects for the cross-sectional data. Month fixed effects refer to unique month-year combinations. The dataset in Columns (1)-(3) includes all respondents from the main estimation sample. The dataset in Columns (4)-(6) only contains respondents who are female. The dataset in Columns (7) - (9) only includes respondents who are male. The standard errors are clustered at the individual level. Country weights have also been added to the model. Significance levels: $^{*}p < 0.1$, $^{**}p < 0.05$, $^{***}p < 0.01$.