

Women's Working Behavior and Household Division of Labor During the two Waves of COVID-19 in Italy

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Abstract

Using survey data collected in November 2020 from a representative sample of Italian working women, we analyze the effects of the second wave of COVID-19 on working arrangements, housework and childcare. By comparing our results to findings from similar data collected in April 2020 on the same sample, we explore whether and how the intra-family allocation of work and household duties changed since the first wave of the pandemic. We find that the increased gender gap in the household division of labor during the first wave of COVID-19 pandemic persisted during the second wave. We show that the brunt of domestic chores and childcare remains on women even after accounting for different working arrangements. In fact, the amount of time women spend on housework, childcare, and home schooling is unaffected by their partners' working arrangements. By contrast, men contribute fewer hours to housework and home schooling when their partners are at home. Even when working-from-home and/or non-working men devote more hours to domestic activities, the additional time spent at home does not seem to lead to a reallocation of couples' roles in housework and childcare. Our empirical results also show that educational attainment plays a role and that women with higher levels of education express less concern about potential loss of earnings or pension coverage.

Keywords: COVID-19, Work arrangements, Housework, Childcare, Home schooling

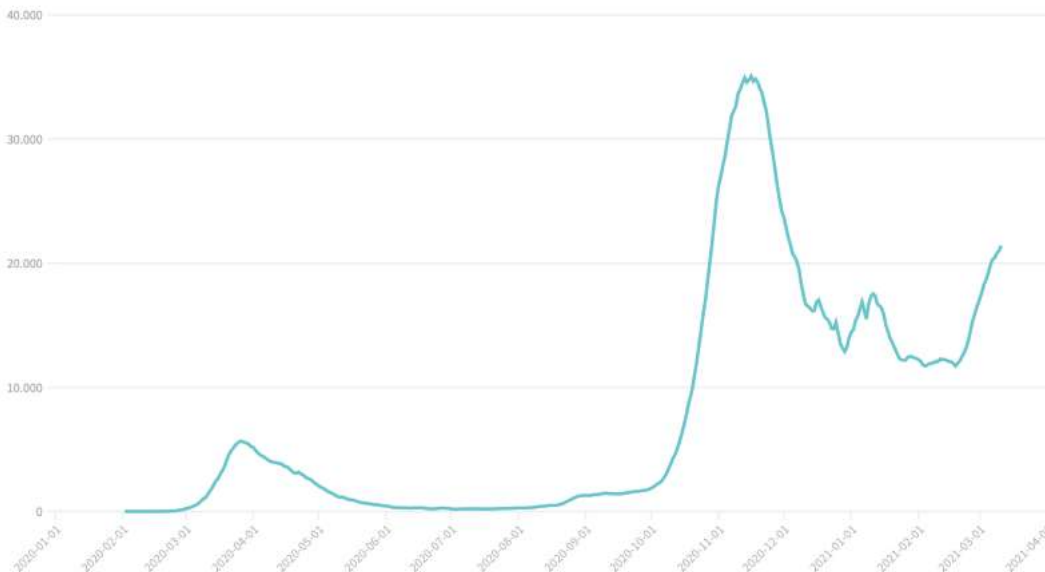
J.E.L: J13, J16, J21

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1. Introduction

The current COVID-19 crisis has affected the lives of millions of people around the world, with detrimental effects on their economic, health and educational outcomes. Italy was the first European country to report coronavirus cases and still has one of the highest rates of infection and fatality. At the time of this writing, Italy has seen two main waves of the pandemic. The first was marked by school closures starting on February 25, 2020, and triggered a strict lockdown between March 9 and May 3 as the central government and regions raced to curb the spread of the virus. This was Europe's toughest lockdown and longest closure of schools¹. The COVID-19 infection rate slowed significantly over the summer months, but surged again in October as a second wave of the virus spread rapidly throughout the country. The lack of restrictive measures had caused a significant increase in the infection rate and by mid-November, 2020, the number of reported cases was six times higher than in first wave. Graph 1 shows the difference between the two waves.

Graph 1. Number of COVID-19 cases.



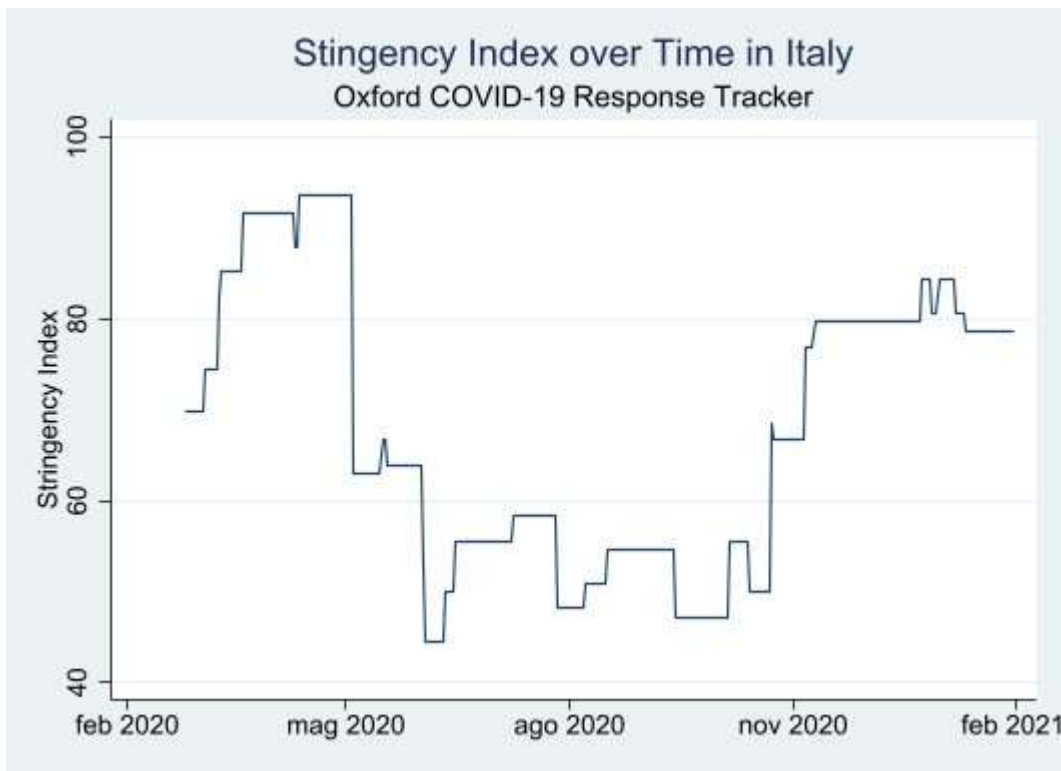
Source: World data Oxford Martin Oxford.

Less stringent measures were implemented during the second wave in an attempt to reduce the spread of the growing epidemic.

¹ From March to May 2020, Italian school closures lasted 103 days as opposed to an average of about 50-55 days in other European countries.

As Graph 2 shows, the measures adopted during the first phase of the pandemic were much stricter relatively to the second. The nine metrics used to calculate the Stringency Index are: school closures; workplace closures; cancellation of public events; restrictions on public gatherings; closures of public transport; stay-at-home requirements; public information campaigns; restrictions on internal movements; and international travel controls (World in Data Oxford Martin, Oxford).

Graph 2. Stringency Index over time in Italy.



Source: Oxford Coronavirus Government Response Tracker (OxCGRT).

Social distancing measures adopted by most governments to fight the spread of the virus, especially those of remote work and school closures, have placed an additional burden on families. Several recent studies have investigated the consequences of the COVID-19 outbreak on female and male employment, and a few others have focused on its immediate effects on family work, and particularly on housework and childcare.

In our previous work (Del Boca et al., 2020), we used representative data collected during the first wave of the epidemic, i.e., April 2020, to show that most of the additional housework and childcare associated to COVID-19 fell on women, even though childcare activities were more equally shared within the couple than domestic chores. In this paper, we investigate how and to what extent family roles have changed in comparison to the first wave and to pre-COVID times.

In addition to analyzing the consequences of the first phase of COVID-19 on working arrangements, housework and childcare, we extend the time horizon of the study by investigating the new intra-family division of work and family work during the second wave of the pandemic (November 2020).

Our goal is to explore the link between different working arrangements and the household division of labor and understand whether family roles have changed compared to the first wave and pre-COVID times.

First, we evaluate whether the measures adopted in the second wave had a milder impact on working arrangements than the first wave, as expected, and whether the impact was greater on women. Then we investigate the effects of working arrangements due to COVID-19 on the number of hours spent on housework and childcare by women and their partners, as we hypothesize different impacts on the division of labor within the household depending on the working arrangements of women and their partners. In particular, we study whether the impact of COVID-19 on the household division of labor is related to the amount of time women and their partners have to spend at home due to the emergency restrictions. We also explore the determinants of women's feelings of economic insecurity regarding several dimensions: loss of earnings, job insecurity, investments and their expected levels of future pensions. Our results show that educational attainment is important and more relevant than having a partner in reducing women's feeling of insecurity.

2. The literature

Evidence from past economic crises suggests that recessions often affect men's and women's employment differently and that they have a greater negative effect on men (Rubery and Rafferty, 2013; Hoynes, Miller and Schaller, 2012). The 2008 financial crisis, for instance, led to much greater job losses in male-dominated sectors of the economy (notably construction and manufacturing), while women's working hours actually increased. As reported in recent studies (Hupkau and Petrongolo, 2020; Alon et al., 2020), the current recession is instead likely to have a similar impact on male and female employment, since the social measures implemented have affected sectors where both genders are employed (ILO, 2020). However, across much of the Western world, the economic shock from the pandemic has hit women even harder than men, as many of the jobs lost have been in service sectors with large female workforces, such as retail, restaurants and hospitality.

The current COVID-19 crisis is not just an economic crisis, but also a health and social one. The labor market is just one dimension of human work, and COVID-19 is also likely to have major

consequences on domestic work, due to the increase in housework and childcare demands resulting from the closing of schools and nurseries. Many working mothers are struggling to make it work, because of the need for at least one parent to stay home and mind the children (Queisser, Adema and Clarke, 2020). Preliminary evidence from Spain (Farré and Gonzalez, 2020), the UK (Sevilla and Smith, 2020), and Italy (Del Boca et al., 2020 and Mangiavacchi et al., 2020) shows that there was an initial shift towards a more equal distribution of household and childcare tasks between men and women during the first months of the pandemic, even though most of the extra work caused by the crisis fell to women. A comparative analysis of a novel data set including Italy, the UK, and the USA confirms these results (Biroli et al., 2020). D'Ambrosio et al. (2020) collected and analyzed a new data set of 1,700 cohabiting partners during 2020² to compare the impact of COVID-19 and the severity of measures adopted on the time allocation and well-being of couples in several European countries including Italy, Spain, France, Belgium, Germany, Luxembourg and Sweden. They found that in Italy, because of the longer school closures, the increase in women's childcare time has been much higher than in Spain or Germany, where the adopted measures did not appear to have exacerbated the gender gap within the family.

The disaggregation of household activities shows that, when both partners share more housework as a consequence of COVID-19, there are differences in tasks. Carlson et al. (2020) report that in terms of housework activities, men in the US contribute more to grocery shopping, and in terms of childcare activities, men spend more time playing with the children, while women are more involved in supervising their schooling.

In the long run, the stringent measures adopted impose large economic costs by curtailing labor demand as well as supply. Albanesi and King (2021) analyzed the US data during and after the pandemic and concluded that the adverse impact of the pandemic on employment, unemployment and non-participation rates has mostly impacted women, particularly mothers. Both labor demand factors, such women's disproportionate representation in service occupations most vulnerable to the pandemic, and labor supply factors, like closures of childcare centers and in-person schools, have contributed to this outcome. Béland et al. (2020) and Gupta et al. (2020) analyze the US case and show that significant short-term employment effects characterize states that implemented stricter stay-at-home orders. On the other hand, the length of school closures over time is also likely to negatively affect the labor supply of mothers and fathers. Amuedo Dorantes et al. (2020) show that

² <https://humanities.uni.lu/virtual-faculty/how-do-different-confinement-measures-affect-people-across-europe>

school closures have reduced the number of weekly working hours more significantly among mothers.

In this paper, we focus on Italy, which provides an important context for this analysis. In fact, Italy has traditionally been characterized by a large gender gap both in the labor market and within the family.³ This situation has been exacerbated by the pandemic. In 2020, female labor participation rates have declined from 50% to 48.6% (vs. an average of 62% in the rest of the European Union). Moreover, the number of inactive women has increased dramatically: three out of four women in Italy do not participate in the labor market.

Our contribution to the existing literature is related to the novelty of our data set which allows comparison of women's and their partners' contribution to the labor market, to housework, and to childcare during the first two waves of the COVID-19 pandemic in Italy.

3. Data and descriptive statistics

In this paper, we analyze data collected in November 2020, i.e., during the second wave of COVID-19 in Italy, from a representative sample of Italian women who were in employment before the COVID-19 outbreak.⁴ We then compare our results to findings from similar data collected in April 2020, during the first wave.

Our sample is made up of 699 Italian women who were working before the COVID-19 emergency, and Table 1 reports the descriptive statistics. The average age in our sample is 45 and almost half (46%) of respondents have a university degree. More than half (55%) of those interviewed live in the northern regions, with 55% of them living with their children, and 72% with a partner.

³The Harmonised European Time Use Survey statistics (HETUS) data shows that there are particular patterns of how women and men use their time: women are, on average, more involved in household and care activities than men. Women perform more food management, cleaning, ironing and laundry tasks, while men are more involved in construction and gardening. While men and women both participate in childcare, it seems that women are relatively more involved in physical care, supervision and accompanying their children, while men seem to participate relatively more in teaching, playing and talking with their children https://ec.europa.eu/eurostat/statistics-explained/index.php?title=How_do_women_and_men_use_their_time_-_statistics&oldid=463738

⁴ The survey was administered by Episteme, a professional survey company, with CAWI (computer-assisted web interviewing) interviews in November 2020. For additional information on the survey, also see Del Boca et al. (2020). In particular we started from a national representative sample of 1,249 working women (aged 25-64) in Italy who were surveyed in April 2019, July 2019, March 2020 and November 2020.

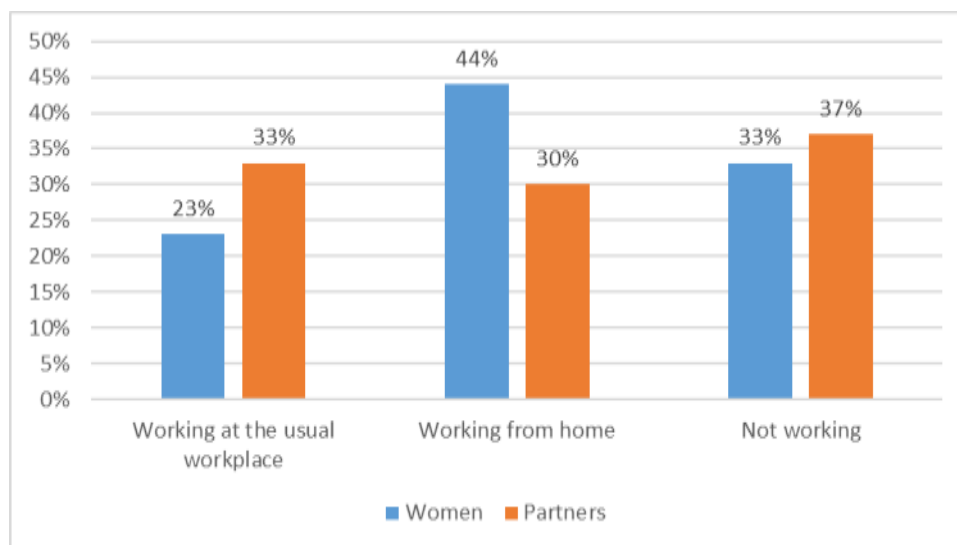
Table 1. Descriptive statistics.

	<i>Mean</i>	<i>Std. Dev.</i>	<i>Min</i>	<i>Max</i>
Age	44.96	9.50	26	65
Has a college degree	0.46	0.50	0	1
North	0.55	0.50	0	1
Center	0.20	0.40	0	1
South	0.25	0.43	0	1
Has children	0.55	0.50	0	1
Has a partner	0.72	0.45	0	1
Working at the usual workplace	0.58	0.49	0	1
Working from home	0.24	0.43	0	1
Not working or other	0.18	0.38	0	1

Note: The sample is made up of 699 observations.

Looking at working arrangements, we notice that the majority (58%) of women who had jobs before the COVID-19 emergency are working at their usual workplace during the second wave of the pandemic. However, almost one fourth (24%) are working from home and 18% of them are not working at all.⁵ These percentages are different from those found in the data collected in April 2020, during the first wave of COVID-19. In Figure 1 and Figure 2 we show the working arrangements of women and their partners during the first and the second waves, respectively.

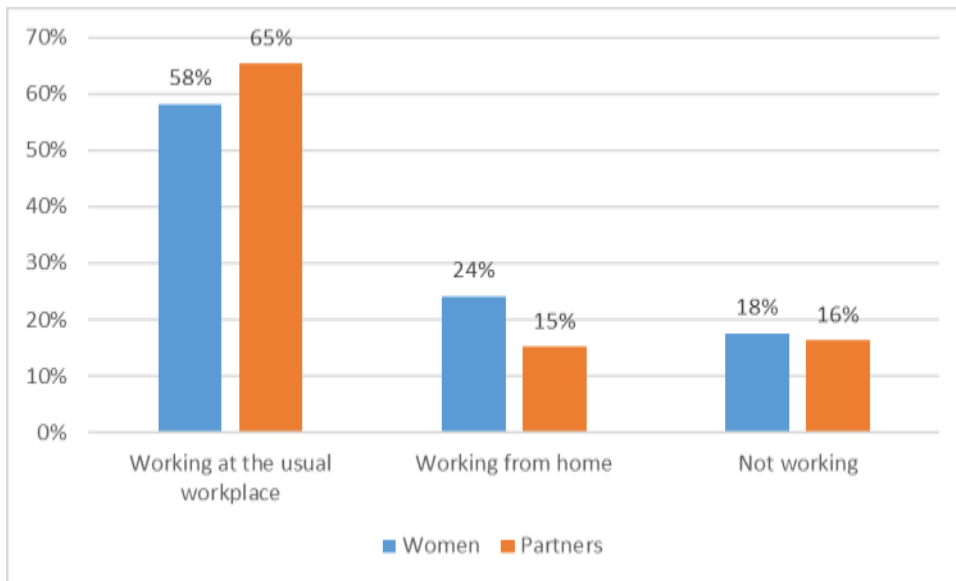
Figure 1. Working arrangements during the first wave of COVID-19.



Note: Percentage of working women and their partners by working arrangement in April 2020.

⁵ “Not working” includes being on paid or unpaid leave, on payroll subsidies, fired, resigned, retired, or other.

Figure 2. Working arrangements during the second wave of COVID-19.

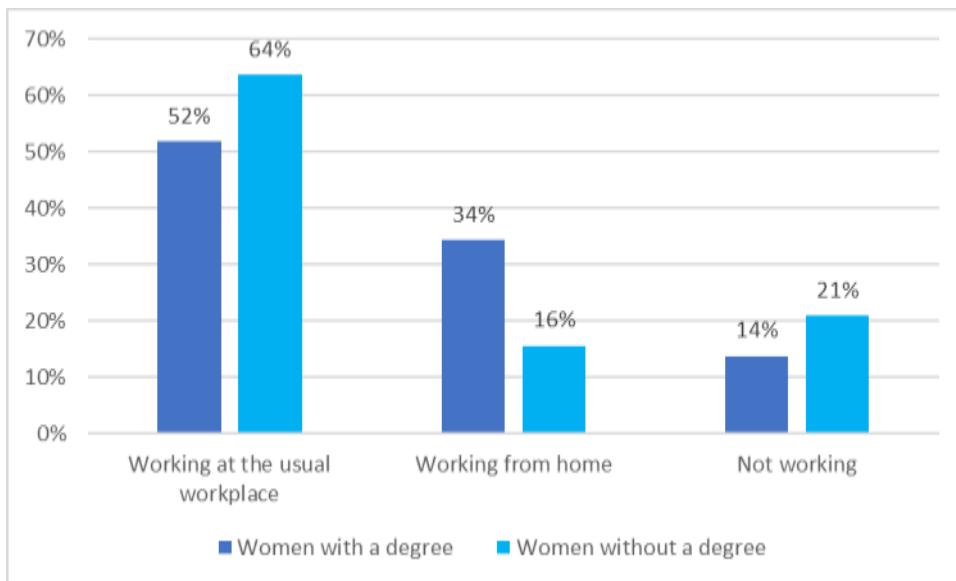


Note: Percentage of working women and their partners by working arrangement in November 2020.

As a consequence of less restrictive measures implemented in the second wave, many more individuals are working at their usual place in November 2020. However, the share of individuals either working from home or not working 9 months after the outbreak of COVID-19 is much lower compared to the very first months of the pandemic. In terms of gender differences, while the proportion of individuals not working was higher among men in the first wave (37% of men vs. 33% of women), this is not the case in the second wave (16% of men vs. 18% of women). As in the previous wave, more men remained at their usual workplace than women in November 2020 (65% of men vs. 58% of women), while more women worked from home (24% of women vs. 15% of their partners).

Since the consequences of COVID-19 on working arrangements may differ significantly according to educational attainment, in Figure 3 we disaggregate women between those who have a university degree and those who do not. It appears that women without a degree are more likely to continue working at their usual workplace, which may be due to the fact that they are more likely to be employed in jobs that can be only done in person, such as cashiers, waitresses, hairdressers, beauticians, etc. Conversely, the opposite holds for women with higher levels of education, who are twice as likely to work from home (34% vs. 16%), since they are likely employed in sectors that allow telecommuting (school, offices etc.). A higher number of women with lower levels of education are still not working during the second wave of COVID-19 (21% vs. 14%). This is consistent with the fact that these women are more likely to work in jobs with more limited labor protections.

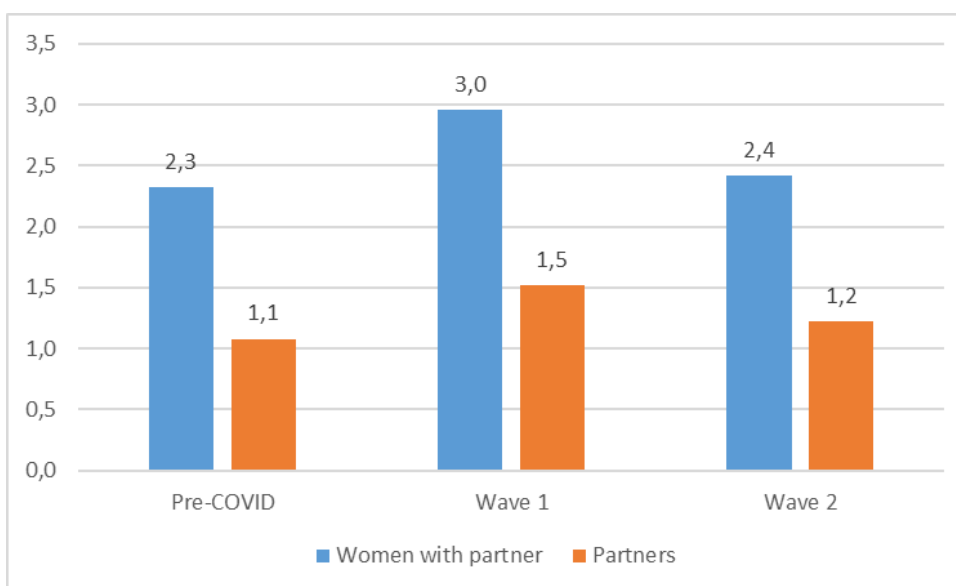
Figure 3. Working arrangements during the second wave of COVID-19 by educational status.



Note: Percentage of working women by working arrangement and educational status in November 2020.

Not only has COVID-19 affected working arrangements in the labor market, but it has also had major consequences on family work. Figure 4 shows the distribution of the daily hours of housework⁶ spent by working women and their partners before the emergency during the first and second waves of COVID-19. While the women and their partners both dedicate less time to housework during the second wave than in the first, women always spend more time than men on household chores (Fig.4).

Figure 4. Hours of housework before the emergency, during the first wave, and during the second wave of COVID-19.

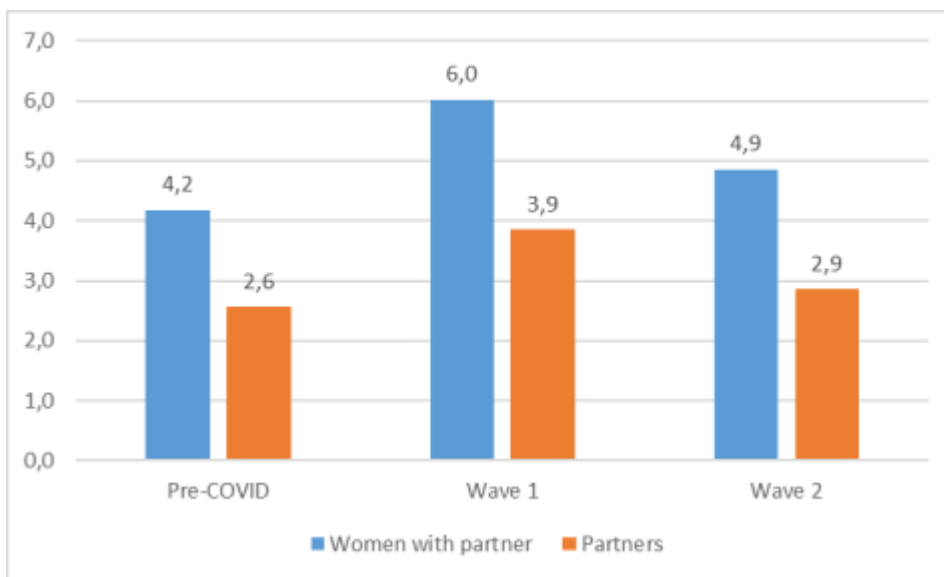


Note: The sample is made up women cohabiting with a partner.

⁶ The question about housework includes examples, e.g., cleaning and cooking.

A similar trend emerges for childcare when comparing the number of hours spent before the emergency, during the first and the second waves of COVID-19. Figures 5 and 6 show the daily hours devoted to childcare, and home schooling in particular, by working women and their partners. Our data show that both women and men spend less time taking care of their children during wave 2 than during wave 1. Women spend many more hours per day on childcare, and the gap not only increased during the emergency (from 1.6 to 2.2 hours per day), but never returned to pre-COVID levels. During the second wave, mothers spend an average of two more hours than fathers taking care of their children. In other words, the gap in domestic activities widened during the first wave of the COVID-19 pandemic and has persisted during the second wave, notwithstanding the milder containment measures implemented.

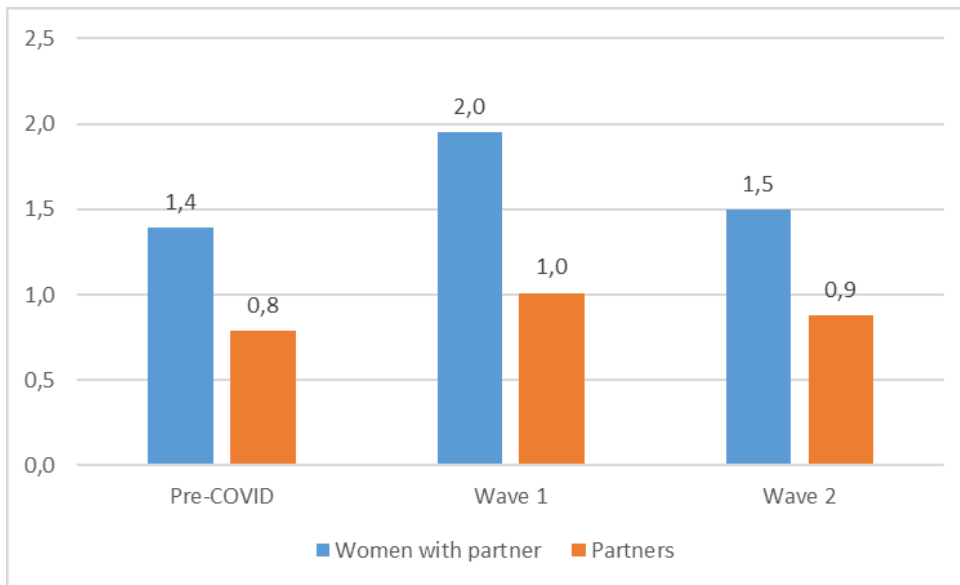
Figure 5. Hours of childcare before the emergency, during the first wave, and during the second wave of COVID-19.



Note: The sample is made up of women with children cohabiting with a partner.

Figure 6 shows the hours dedicated to childcare by both partners and confirms the trend observed for housework. Women and their partners dedicate less time to the education of their children during the second wave than during the first, but women still spend more time than men on home schooling. In fact, as of November 2020, women spend an hour and a half per day on home schooling, while their partners spend less than one hour, confirming previous results (Carlson 2020).

Figure 6. Hours of home schooling before the emergency, during the first wave, and during the second wave of COVID-19



Note: The sample is made up of women with children cohabiting with a partner.

4. Empirical analysis.

In the previous section, we provided an overview of how the second wave of COVID-19 affected the working arrangements and family workload of working women and their partners, comparing the results to the pre-COVID period and the early months of the pandemic. Now we turn to the question of how the intra-family equilibrium of work and household work changed over the longer term by analyzing the amount of time women and men spent on housework and childcare in relation to their working arrangements. In Table 2, we show the hours of housework and childcare during the second wave of COVID-19 according to all the possible combinations of working arrangements between women and their partners.

The first panel of Table 2 shows that women do a disproportionate amount of the housework, spending significantly more hours on unpaid domestic work than their partners in almost all possible combinations of working arrangements. The biggest discrepancy (1.81 hours) occurs when men keep working at the usual place while women work from home. However, in the reverse scenario, where women keep working at the usual place and men work from home, women still devote more time to housework than men (2.92 vs. 1.40 hours per day). Even in symmetric situations, i.e., when working arrangements are the same for both partners, the bulk of household chores is borne by women. The second panel of Table 2 reports similar findings for childcare. In 6 out of 9 combinations of working arrangements between women and their partners, women spend significantly more time taking care

of their children. The largest differences in time devoted to childcare are reported when men keep working at the usual place while women work from home or do not work. In contrast, men never spend significantly more time on childcare than their spouses. In symmetric situations, women still shoulder the burden. In fact, when both partners work at their usual workplace, women spend on average 1.41 more hours on childcare, or up to 1.83 more hours when both partners work from home.

Table 2. Hours of housework and childcare during the second wave of COVID-19.

Panel a) Men and women’s hours of housework during the second wave of COVID-19 by working arrangement.

	Partners working at the usual workplace	Partners working from home	Partners not working
women working at the usual workplace	Women 2.31 Partners 1.17 Difference 1.14*** N=241	Women 2.92 Partners 1.40 Difference 1.52*** N=25	Women 2.35 Partners 1.52 Difference 0.84** N=31
women working from home	Women 2.56 Partners 0.75 Difference 1.81*** N=57	Women 2.82 Partners 1.43 Difference 1.39*** N=44	Women 1.91 Partners 1.30 Difference 0.61** N=23
women not working	Women 2.53 Partners 1.04 Difference 1.49*** N=47	Women 1 Partners 3.37 Difference -2.37 N=8	Women 2.68 Partners 1.43 Difference 1.25*** N=28

Note: The sample is made up of women cohabiting with a partner (N=504).

Panel b) Men and women’s hours of childcare during the second wave of COVID-19 by working arrangement.

	Partners working at the usual workplace	Partners working from home	Partners not working
women working at the usual workplace	Women 3.59 Partners 2.18 Difference 1.41*** N=162	Women 4.56 Partners 3.44 Difference 1.12** N=16	Women 3,3 Partners 3,4 Difference -0,1 N=20
women working from home	Women 5.85 Partners 2.92 Difference 2.92*** N=39	Women 5.86 Partners 4.03 Difference 1.83*** N=29	Women 5 Partners 4.46 Difference 0.54 N=13
women not working	Women 8.90 Partners 2.86 Difference 6.03*** N=29	Women 13.2 Partners 6.4 Difference 6.8 N=5	Women 5.58 Partners 3.63 Difference 0.98* N=19

Note: The sample is made up of women with children cohabiting with a partner(N=332).

4.1 Household allocation of time.

To better understand what determines the amount of time partners spend on domestic responsibilities, we now estimate a set of multivariate regressions using linear probability models. In Tables 3 and 4 we show the individual and family characteristics associated with the hours spent by working women and their partners on housework, childcare and home schooling.

Table 3. Multivariate regression model of hours spent on housework by women and their partners during the second wave of COVID-19.

	(1) Hours spent on housework by women	(2) Hours spent on housework by partners
Woman's age	0.009 (0.008)	-0.022*** (0.008)
Woman having a degree	-0.125 (0.155)	-0.042 (0.156)
Woman having children	0.444*** (0.155)	0.173 (0.156)
Centre	-0.015 (0.196)	0.158 (0.198)
South	0.899*** (0.177)	0.294* (0.178)
Woman working from home	0.070 (0.189)	-0.363* (0.191)
Woman not working	0.125 (0.210)	0.013 (0.212)
Partner working from home	0.288 (0.221)	0.697*** (0.223)
Partner not working	-0.190 (0.213)	0.467** (0.215)
Constant	1.497*** (0.397)	1.928*** (0.401)
Observations	504	504
R-squared	0.082	0.045

Note: Coefficient estimates from OLS regressions. The sample is made up of women cohabiting with a partner. The baseline category for working arrangements is "working at the usual workplace." The average time spent by women on housework is 2.42 hours and the average spent on housework by men is 1.22. Standard errors in parentheses. *** p<0.01, ** p<0.05, * p<0.1

The empirical results reported in Table 3 show that women spend time on housework no matter what their working arrangement; this contrasts with what we observed in the first wave of COVID-19, when women working at their usual workplace were less likely to do housework (Del Boca et al., 2020). Having children and living in the South of Italy increase women's probability of working more hours by approximately 1.3 hours. The driver of the extra time spent on domestic chores thus seems to be more culturally rooted than ruled by working necessity. The asymmetry between partners'

genders can be seen by comparing the two columns in Table 3, which shows that working arrangements do affect the amount of time members of a couple spend on housework. The second column of Table 3 shows that men spend more hours on housework if they are working from home or not working. Also, while women's housework is not affected by their partners' working arrangement, it seems that men are less likely to spend time on household tasks when their partners are working from home. Finally, while in the first column we notice that women spend more time on housework when there are children in the household, this does not hold true for men.

Instead, the amount of time each partner devoted to childcare was more similar. As can be seen in the first two columns in Table 4, there is a symmetric effect on children's care when one of the partners is absent from home. Both fathers and mothers spend more time with their children if they work from home or do not work. Working-from-home mothers devote 1.6 more hours to the care of their children than mothers not at home and working-from-home fathers devote 1.30 more hours to the care of their children than fathers not at home. Also, non-working mothers spend almost 4 more hours on childcare than women who keep working at their regular workplace, and non-working fathers spend an hour and half more on childcare than men who keep working at their regular workplace.⁷

As for home schooling (the last two columns in Table 4), the working arrangements of either member in the couple have no effect on how many hours the woman devotes to her children. Men, instead, seem to "take advantage" of their partner staying home and spend approximately half an hour less on helping their children with schoolwork if their partner works from home or does not work at all. Column 4 in Table 4 focuses specifically on the home-schooling component of childcare and shows that men spend more hours assisting with home schooling when they are not working (last column of Table 4). In contrast with the previous wave, the educational attainment of the mother is not a significant predictor of childcare.

⁷ Mangiavacchi et al. (2020) report that the contribution of fathers to childcare and home schooling affects children's outcomes in a positive and significant way. This is a very important result, especially during a period of school closures in which children's educational outcomes are reduced and inequality among children is growing (Moroni et al., 2020).

Table 4. Multivariate regression model of hours spent on childcare and home schooling by women and their partners during the second wave of COVID-19.

	(1) Hours spent on childcare by women	(2) Hours spent on childcare by partners	(3) Hours spent on home schooling by women	(4) Hours spent on home schooling by partners
Woman's age	-0.205*** (0.032)	-0.128*** (0.025)	-0.051*** (0.012)	-0.040*** (0.010)
Woman having a degree	0.560 (0.568)	0.451 (0.452)	0.068 (0.205)	0.167 (0.173)
Centre	-0.301 (0.727)	-0.537 (0.579)	-0.188 (0.263)	-0.133 (0.221)
South	0.937 (0.643)	0.919* (0.512)	0.315 (0.232)	0.083 (0.196)
Woman working from home	1.601** (0.696)	0.437 (0.554)	-0.157 (0.252)	-0.356* (0.212)
Woman not working	3.951*** (0.793)	0.215 (0.631)	0.041 (0.287)	-0.425* (0.241)
Partner working from home	0.685 (0.824)	1.262* (0.656)	0.344 (0.298)	0.394 (0.251)
Partner not working	-0.616 (0.792)	1.558** (0.630)	0.314 (0.286)	0.535** (0.241)
Constant	12.692*** (1.546)	7.747*** (1.231)	3.673*** (0.559)	2.637*** (0.471)
Observations	332	332	332	332
R-squared	0.216	0.122	0.072	0.071

Note: Coefficient estimates from OLS regressions. The sample is made up of women with children cohabiting with a partner. The baseline category for working arrangements is "working at the usual workplace." Home schooling is included in childcare. The average hours spent on childcare by women are 4.86 and the average hours spent on childcare by men are 2.86; the average hours spent on home schooling by women are 1.50 and the average hours spent on home schooling by men are 0.88. Standard errors in parentheses. *** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$

To conclude, we found that the amount of time spent on housework, childcare, and home schooling by women does not depend on their partners' working arrangements. Instead, men devote less time to housework and home schooling when their spouses are at home. Hence, the extra family work due to COVID-19 is a burden mainly borne by women, regardless of the time men spend at home. Even though working-from-home and non-working fathers spend more hours on family work, the increased time spent at home does not seem to lead to a reallocation of couples' roles in housework chores and childcare. Thus, our results do not support the hypothesis of a potential change in the role of partners as a consequence of the pandemic.

4.2 Women's Work, Housework and Feelings of Insecurity

Lastly, we analyze women's feelings of economic insecurity about expected future outcomes. As other studies have shown, COVID-19 has not only impacted labor markets, housework and childcare, but also emotions and feelings of anxiety. D'Ambrosio et al. (2020) compared several countries during 2020 and found that women are more likely than men to have experienced increased anxiety and fear after the onset of the pandemic. In order to analyze these aspects, in Table 5 we use as dependent variables four dummies indicating whether the respondent reported that she is concerned (1) about losing her job/closing her business, (2) about earning less money, (3) that the return on her investments will decrease, (4) that she will have a lower pension when retired, given potential gaps in employment. Women not working during the second wave of COVID-19 are those most concerned about losing their jobs, closing their businesses, or earning less money in the future. However, women with higher levels of education feel less insecure about their future, meaning that they are in a better position to cope with the current and future situation.

Table 5. Multivariate regression model of being concerned about the future during the second wave of COVID-19.

	(1) Job loss	(2) Earning less money	(3) Lower return on investments	(4) Lower pension levels
Woman's age	-0.007*** (0.002)	-0.005*** (0.002)	-0.000 (0.002)	-0.000 (0.002)
Woman having a degree	-0.100** (0.039)	-0.078** (0.037)	0.026 (0.039)	-0.078** (0.037)
Woman having a partner	0.032 (0.044)	-0.052 (0.042)	-0.029 (0.044)	-0.074* (0.043)
Women having children	-0.005 (0.040)	0.041 (0.038)	0.052 (0.040)	0.069* (0.039)
Center	0.005 (0.049)	-0.044 (0.046)	-0.070 (0.049)	-0.055 (0.047)
South	0.053 (0.045)	0.082* (0.042)	0.016 (0.045)	0.014 (0.043)
Woman working from home	-0.031 (0.046)	-0.030 (0.043)	0.010 (0.046)	-0.032 (0.044)
Woman not working	0.213*** (0.050)	0.109** (0.047)	0.042 (0.051)	0.064 (0.049)
Constant	0.747*** (0.102)	0.932*** (0.096)	0.591*** (0.102)	0.722*** (0.098)
Observations	699	699	699	699
R-squared	0.058	0.037	0.008	0.022

Note: Coefficient estimates from OLS regressions. The baseline category for working arrangements is "working at the usual workplace." Mean values of the dependent variables from column (1) to (4) are 0.47, 0.68, 0.60, and 0.66, respectively. Standard errors in parentheses. *** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$

We also investigate how working arrangements, together with other individual characteristics, affect women’s dissatisfaction with their current situation. In Table 6, we use as dependent variables four dummies indicating whether the respondent reported that she is currently dissatisfied with her household income, health status, partner, or life in general. The results show that women not working several months after the outbreak of COVID-19 are more likely to feel dissatisfaction in all of the above-mentioned areas. Once again, women with higher levels of education (university graduates) are less likely to be dissatisfied with their income and life in general.

Table 6. Multivariate regression model of being dissatisfied during the second wave of COVID-19.

	(1) Dissatisfied with household income	(2) Dissatisfied with health status	(3) Dissatisfied about the partner	(4) Dissatisfied about life in general
Woman’s age	0.002 (0.002)	0.002 (0.002)	0.003* (0.002)	0.001 (0.002)
Woman having a degree	-0.109*** (0.039)	-0.006 (0.031)	-0.042 (0.035)	-0.097*** (0.036)
Woman having a partner	-0.089** (0.044)	-0.035 (0.036)		-0.161*** (0.041)
Women having children	0.015 (0.040)	0.005 (0.033)	0.048 (0.035)	-0.051 (0.037)
Center	0.101** (0.048)	0.037 (0.039)	0.004 (0.045)	0.053 (0.045)
South	0.074* (0.044)	0.026 (0.036)	-0.013 (0.040)	0.043 (0.041)
Woman working from home	-0.096** (0.046)	-0.026 (0.037)	0.064 (0.041)	0.008 (0.042)
Woman not working	0.178*** (0.050)	0.073* (0.041)	0.107** (0.047)	0.161*** (0.046)
Constant	0.436*** (0.102)	0.118 (0.083)	-0.026 (0.091)	0.417*** (0.094)
Observations	699	699	504	699
R-squared	0.064	0.012	0.025	0.066

Note: Coefficient estimates from OLS regressions. The baseline category for working arrangements is “working at the usual workplace.” Mean values of the dependent variables from column (1) to (4) are 0.47, 0.19, 0.17, and 0.31, respectively. Standard errors in parentheses. *** p<0.01, ** p<0.05, * p<0.1

5. Concluding Remarks

In our previous work (Del Boca et al., 2020), we examined the consequences that the first wave of COVID-19 and the lockdown adopted by the Italian government had on working arrangements, housework and childcare. In this paper, we use data from a new survey administered in November 2020 to analyze the new intra-family allocation of work and the household division of labor during the second wave, and compare it with the first.

As discussed in the introduction, despite the expanding spread of the virus, the measures adopted in the second wave of COVID-19 were less restrictive than during the first wave and therefore had less of an impact on working arrangements. Nonetheless, the second wave had a significant impact on household allocation of time. Even though both women and their partners spent less time on housework during the second wave than the first, women continued to spend more time than men on housework and childcare.

The discrepancy in the number of hours spent by women and men on childcare not only widened during the emergency but continues to persist, with women spending an average of 2 more hours per day than men, a greater difference than in pre-COVID times. Hence, the gap in household care related activities, which was exacerbated by the outbreak of the COVID pandemic, shows no sign of closing, despite the introduction of milder containment measures during the second wave.

We found that the household division of labor is highly skewed against women even after accounting for different working arrangements. Our data shows that the time spent on housework, childcare, and home schooling by women does not depend on their partners' working arrangements. Instead, men devote less time to housework and home schooling when their spouses are at home. Hence, the extra family work due to COVID-19 is a burden mainly borne by women, regardless of the time men spend at home. Even if working-from-home and non-working fathers spend more hours on family work, the increased time spent at home does not seem to lead to a reallocation of couples' roles in housework and family care. Thus, our results do not support the hypothesis of a potential change in the role of partners within the household after the pandemic. The growth in the burden of housework and childcare on working women after several months of COVID 19 due to the restrictive measures and school closures are likely to have negative impact not only on women's employment rates but also on their labor supply. In fact, non-participation rates have increased more significantly among women than among men.

COVID-19 is therefore having a long-lasting impact on women. All the dynamics highlighted above, and particularly the increased insecurity for women in the labor market and the rise in female inactivity, may be widening the gender pension gap too.

From a policy perspective it is also important to stress that the COVID-19 pandemic is substantially affecting subjective well-being, with women being increasingly concerned about losing their jobs, having to close their businesses, and earning less money in the future. However, women with higher levels of education are less concerned about future outcomes than their less educated counterparts, exacerbating the gap of satisfaction related to higher standards of living.

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