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Impact of the Covid-19 Pandemic on Gender Gaps in Paid and Unpaid Work Time: Findings from a Field Survey in Turkey[1]

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Abstract

This paper makes use of a unique survey conducted under Covid-19 pandemic lockdown conditions in Turkey including a series of questions on paid and unpaid work. The findings show that the pandemic has aggravated the gender disparities through overworked females and underworked males. While men's participation in unpaid work increased substantially, particularly for men who switched to working from home and decreased their employment hours, the increase for women is relatively more further widening the gender gap in unpaid work. There is a narrowing down of the gender gap in paid work due to relatively less employment disruption for women and a relatively higher decrease in men's paid work. The combination of these two factors results in an increase in the total workload of employed women to levels that are hard to sustain a decent work-life balance. One in every two employed women reports difficulty in coping with their workload under pandemic conditions versus one in every four men. The differences of unpaid work amongst women by education and employment status narrowed down reflecting how purchasing power became somewhat irrelevant under the pandemic measures, which constrained access to market substitutes for household production. These findings unveil simultaneously the fragility of the work-life balance conditions faced by employed women and a window of opportunity created by men's increased participation in unpaid work. Policy interventions such as flexible employment for men, regulated (lower) full-time workplace hours and improved access to care services are key to gender equality and improving household resilience in dealing with shocks.

JEL Codes: J16, J22, O53

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I. Introduction

Emerging assessments of the gendered economic impact of the Covid-19 pandemic focus on two distinct areas: household production and unpaid work versus market production, employment and paid work (ILO, UNICEF and UN Women 2020; UN Women 2020). Under the lockdown measures, while the overall paid work hours decreased, the demands on unpaid work increased due to a variety of factors such as school closures, limited access to market substitutes to household produced goods and services such as domestic workers, child or elderly care workers, restaurant produced foods, increasing hygiene requirements and health care needs. Yet both the magnitude of the changes in the paid and unpaid workload and its gender distribution are not known. Some country level estimates with pre-pandemic time-use data estimate approximately a one-third increase in the unpaid workload and show that for women in employment, the total weekly work hours reach levels which are hard to sustain a decent work-life balance (Ilkkaracan, Ipek and Aylin Bayar 2020). If so, this is likely to have negative spillover effects on women's labor supply beyond the pandemic induced shocks to labor demand.

Alison Andrew et.al. (2020) presents the first study of changes in gendered time-use patterns based on survey data under pandemic lockdown measures. Based on a field survey of parents with small children conducted in April-May 2020 in the U.K., they report a substantial increase in the time squeeze of parents including fathers whose childcare time has registered a substantial increase under the containment measures. The time squeeze is particularly tight for mothers not only due to the increase in unpaid work hours but also work intensification (multi-tasking and interrupted work patterns); and there is a widening of the gender difference in paid work due to higher rate of employment disruption for mothers. A study analyzing time-use data from India also finds a substantial increase in men's unpaid work under the pandemic, despite women shouldering the bulk of the increase in demand for care (Ashwini Deshpande 2020).

This paper makes use of a unique dataset from a survey conducted under pandemic lockdown conditions in Turkey in May 2020 (The Life Style Survey LSS conducted by KONDA, an independent survey company) including a series of questions on time-use, paid and unpaid work. To the best of our knowledge, this is one of the few field surveys to date to measure quantitatively the changes in paid and unpaid work time under pandemic lockdown conditions (other than the UK survey and India surveys mentioned above).[2] We

[2] There are a few surveys reporting the changes in paid/unpaid work time by share of women/men experiencing an increase/decrease, but not the quantitative change measured in hours or frequency as the U.K., Indian and Turkish surveys mentioned above. See for example UN Women. (2020), Unlocking the lockdown: The Gendered Effects of COVID-19 on achieving the SDGs in Asia and the Pacific. https://data.unwomen.org/sites/default/files/documents/COVID19/Unlocking_the_lockdown_UNWomen_2020.pdf

take advantage of the fact that the April 2018 LSS also included time-use questions in order to explore the changes induced by the Covid-19 lockdown. We explore the direction and relative magnitude of the changes in women's and men's paid, unpaid and total work time under-the-pandemic and how these vary depending on changes in the labor market status and employment conditions (work from home versus continue to work at the workplace) as well as demographic and household characteristics.

Past research shows that changes in time use patterns induced by various types of shocks, for example to macro conditions (economic or health shocks), micro individual conditions (mothers taking time off for childcare), or policy changes (enactment of paternity leave policies), may have lasting effects on the gender division of labor (see Section II). The Covid-19 pandemic entails simultaneously a health and an economic shock. The unprecedented containment measures create an environment enabling and enforcing changes in time allocation by men and also by upper-income (more educated and employed) women, distinguishing it from previous shocks. Beyond exploring the changes in gender gaps in paid and unpaid work time, we also explore the extent to which stay-at-home measures brought about a change in men's participation in household production and the disparities amongst women.

The pandemic may provoke an enduring impact depending partly on policy response, deepening or narrowing the gender economic gaps in the longer run. An early diagnosis of these pandemic economic effects through time-use data helps to identify the likely threats as well as the potential opportunities for positive change, and undertake the necessary policy interventions.

II. The Impact of Economic and Health Shocks on Gender Gaps in Time-Use: Contextualizing the Case of the Covid-19 Pandemic

Gender discrepancies in time-use are observed across the world, though with great variation, shaped by demographic and household characteristics as well as societal and institutional contexts (ILO 2018; Dominique Anxo, et.al. 2011). The gender division of labor is conditional on, in particular the design of employment and paid working time systems, family policies and the welfare state, influencing the gendered patterns of time allocation and facilitating the extent of the gender economic gaps.

Economic or health shocks have been shown to trigger changes in time allocation by women and men and the consequent gender gaps in paid and unpaid work time. As economic shocks increase unemployment and/or decrease labor force participation, the availability of excess time facilitates substitution of unpaid work time (as well as self-care, leisure and other time) for paid work time. Economic shocks also trigger gendered time effects through employment changes, such as the substitution of women's paid work time

(and income) for men's paid work time (and income) to the extent that male employment is hit worse than female depending on the gender composition of labor markets and also on the female added worker effect.

The impact of economic shocks on gender disparities in time-use, depend on the directions and relative magnitudes of these various substitution effects. For example, in the 2007-09 recession in the U.S.A., different studies find that the gender disparity in both paid and unpaid work hours narrowed down initially as mothers substituted paid work for unpaid work and fathers' paid work hours declined and unpaid care work increased (Gunseli Berik and Ebru Kongar 2013). However over the longer run, the compensating changes in men's unpaid work was too small to promote a meaningful reduction in the unpaid work gap (Heidi Hartmann, Ashley English, and Jeffrey Hayes 2010) and in the jobless recovery period it was not possible to sustain some of the initial gains, closing the window of opportunity created by the crisis (Gunseli Berik and Ebru Kongar 2013).

The sparse empirical evidence on the impact of economic crises in developing countries highlights major disparities in the allocation of extra work burden for women. In the Indonesian financial crisis of 1997, the share of women in market work in urban areas increased by 2.8 percent; however, the rise in the ratio of women doing both market and unpaid work was considerably larger (10.1 percent). The share of men doing market work declined while those in unpaid work increased, although the impact was quite modest compared to that of women (Elizabeth Frankenberg, Duncan Thomas, and Kathleen Beegle 1999). Similarly, in the Philippines, following the 2008–09 crisis, the likelihood of employment declined for both men and women while increases in employment as unpaid family workers were biased toward women (Yana van der Meulen Rodgers and Nidhiya Menon 2012).

In a similar vein, Kaya-Bahce and Memis (2013) estimate that in Turkey, where the economic crisis hit in 2008-2009, the pre-existing gender gap in unpaid work was reinforced while the gender gap in paid work decreased due to a combination of higher male unemployment and the added worker response by women, and women's total workload increased relative to men.

Health shocks create a more predictable homogenous impact on gendered time use patterns, by exerting new demand on women's unpaid work for health care. To the extent that there is substitution of unpaid care work time for paid work time, the health shocks widen the gender disparities in time-use (see Anesu Makina for the case of HIV in sub-Saharan Africa, Julia Smith 2019 for the Ebola outbreak in West Africa; Sara Davies and Belinda Bennett 2016 also for Zika in S. America). Health shocks can also result in gender education gaps for adolescent girls and boys by enforcing substitution of girls' unpaid work

time for education time (Marcella Alsan, Anlu Xing, Paul Wise, Gary L. Darmstadt, Eran Bendavid 2017; Belinda Archibong and Francis Annan. 2017).

The Covid-19 pandemic has started out as a health crisis but simultaneously triggered an economic crisis through the lock-down and stay-at-home measures. This marks two important differences of the current shock from the earlier economic and health shocks in terms of the potential effects on gendered time-use patterns. First, there is an unprecedented increase in demand for unpaid work that goes beyond healthcare and spreads across all households independent of whether any members have fallen ill. Under containment measures, all households' access to public services (such as schools and hospitals) and market substitutes for domestic production became limited, rendering purchasing power somewhat irrelevant. Some feminist social scientists in fact have predicted that the Covid-19 containment measures led to the collapse of 'the illusion of the modern woman' whose main function in household production as a 'coordinator' has been replaced by an 'implementing role' wiping out the relative privileges of upper-income, career women (Duvar Daily, 30 April 2020).

Second, the widespread practices of furloughs and transition to work-from-home both for men and women is a first time experience, akin to a social experiment. It is different from the case of increasing unemployment under economic crises in the way that it ascertains not only men's improved availability of time but also (enforced) presence in the home. While the Covid-19 pandemic threatens to widen gender economic gaps though the unprecedented increase in demand for unpaid work plus possibly hurting women's employment more (by hitting the service sectors and informal employment where women concentrate), it also carries the potential to narrow the gender gaps by creating an environment conducive to promoting men's participation in unpaid work and unstreotyping gender roles (UN Women 2020).

These differences motivate us to question empirically two particular aspects of this shock (the Covid-19 pandemic and related containment measures) beyond gender gaps in paid and unpaid work time. Related to the first aspect, we question the extent to which the general lack of access to market substitutes has transformed the disparities in unpaid (and paid) work time normally observed amongst women by socioeconomic and employment status. In other words, did the pandemic prove the concept of the modern woman to be an illusion? We also question as related to the second aspect, the extent to which the new circumstances of men's presence around the household has promoted their contribution to unpaid work.

The Turkish context provides an appropriate one for exploration of these questions. Turkey already has the second widest gender gap in unpaid work time in the OECD (after Japan)

with women on average performing 4.5 times more unpaid work than men. As an extension of this, it has also the lowest female employment rate at 32.2% versus an OECD average of 61.3% of working age female population in 2019.[3] There are also wide disparities amongst women by education level with university educated women's employment rate at more than double of women with less than high school education; and a difference of unpaid work time by more than an hour a day.[4] In the context of policy debates, the need for work-life balance policies and access to social care services has been widely acknowledged as a panacea for eliminating the gender economic gaps (KEIG 2013; Ipek Ilkkaracan et.al. 2020). Yet in the context of economic and political instability and a socially conservative government, interventions in the care economy have been limited to low-cost interventions promoting gender roles such as cash transfers to women for home care or extended maternity leave and flexible work for women.

III. Data and Methodology

The LSS is conducted on a monthly basis by KONDA since 2010 in Turkey (KONDA). The survey includes a series of questions on opinions on the main public agenda items of that month, attitudes defining life styles and political voting preferences. While a number of standard questions are repeated in each survey, there are also rotational questions that pertain to the arising agenda items of the month. The May 2018 survey included for the first time a time-use question based on the recall method, where the respondents were asked to reveal their activities of 24 hours on a typical weekday in the previous week (see Appendix). In March and April 2020, the rotational questions were on the Covid-19 pandemic. As a result of a mutual agreement with the authors in April 2020, KONDA agreed to repeat the time-use question in their May 2020 survey and also introduce a few new questions on changes in employment, paid and unpaid work (see Appendix I).[5]

The sample includes 2,407 individuals in May 2020 and 5,793 individuals in April 2018 (15+ years of ages) throughout Turkey.[6] Table A1 in Appendix II presents summary

[3] On time-use by gender in the OECD see https://stats.oecd.org/Index.aspx?DataSetCode=TIME_USE; on employment rates by gender see: https://data.oecd.org/emp/employment-rate.htm.

[4] For employment rates by gender and education see Turkish Statistical Institute at: http://www.tuik.gov.tr/PreTablo.do?alt_id=1007; for time-use by gender and education, see: http://www.tuik.gov.tr/PreTablo.do?alt_id=1009

[5] Inclusion of questions in the survey on paid and unpaid work was sponsored by the UNDP Turkey Country Office. The time-use question was kept the same as in 2018 to ensure comparability, and seven new questions were added on changes in employment status, paid and unpaid work hours.

[6] Turkey was under a stay at home order until end of May but with gradual easing of restrictions during the week and a complete lockdown on weekends and national holidays. May 18-19 is a national holiday so the survey will be conducted under a complete lockdown; yet the TUS questions takes the previous week (week of May 11) as the reference point. So the question will be answered with respect to a weekday where some people might have gone to their workplaces, but where many workplaces and public spaces are still closed

statistics of both samples based on age groups, education, household types as well as t-statistics for sample differences. The respondents are predominantly individuals over 18 years and living in couple households with kids (households with 3-5 people), which represents modal household structure in Turkey. Statistics on labor market status reflects the significant gender gap in Turkey (Table A1). In May 2018, the share of women in employment is about 22% for women and 62% for men (the employment share declined substantially both for women and men under the pandemic as discussed under findings); 50% of women are housewives. Our additional questions on the pandemic impact reveal how women and men experience the change in their employment status and workload differently.

We explore the changes in paid and unpaid work time of women and men and the gender gaps by different categories of changes in employment status with the pandemic, namely, stopped working at a job, started working from home, continued to work at the workplace as before, was never in employment pre- or during the pandemic, started employment after the pandemic. The variation in time allocations at the intersections of employment status and gender is of particular interest because as distinct from a regular economic recession, we question whether there has been a behavioral change in particular of men due to stay-at-home measures and work-from-home practices. The hours of time refer to the number of hour-long slots in which individuals reported doing a given activity on a weekday.[7]

We undertake a Tobit estimation to explore the variations among individuals conditional on demographic and household characteristics and employment status. As is known, the predominant approach to analyze changes in time use patterns is to use Tobit estimation models given the left-truncated limitation in time use data. Hence here we use Tobit empirical specification to analyze the effect of different demographic and household characteristics on unpaid work time, whether and how these effects change from 2018 to 2020.

Our empirical specification can be presented by the following equations where:

$$y_{ji}^{*} = \beta_j' x_i + \varepsilon_{ji} \qquad (1)$$

down.

[7] The time-use question employs the recall method in one-hour slots (asking respondents to report on how they spent the 24 hour slots on a typical weekday in the previous week). As these are wider than the 10-minute intervals used in the most detailed time-use surveys (such as the 2014-15 Time Use Survey by Turkstat, it is not possible to determine precisely *how long* respondents spent on a particular activity and the results might overstate the actual time spent on a particular activity. The case of reporting multiple activities during the hour, however, was rather limited. See Appendix 1 for more details.

where y_{ji}* is the latent variable representing time allocated to activity j by individual i. x_i is a vector of explanatory variables. β_j is a vector of parameters and ε_j is the error term. The observed time allocation (y_{ji}) variables are related to the corresponding latent time allocation variables by

$$y_{ji} = y_{ji}^* \text{ if } y_{ji}^* > 0. \qquad y_{ji} = 0 \text{ otherwise} \qquad (2)$$

For the empirical analysis, we pooled the data collected in 2018 and 2020, adjusting their sampling weights. There have been some changes in the coding used in the survey along the period of analysis. In order to ensure compatibility, variables included in estimations checked and recoded. The separate estimations employ a year dummy for 2020 along with all the control variables as well as interaction terms of all the independent variables of interest (education, income, marital status, employment status and household composition) with the year dummy for 2020. We also undertake a cross-section estimation with 2020 data, where we are able to explore the effects of different forms of employment status (working from home versus working at the workplace) and the change in spouse's unpaid work time.[8]

Our results are summarized in the following section.

IV. Findings

In response to a series of questions on the pandemic effects on their time use (see Appendix II, Table A2), 67% of the women respond that the time they have to dedicate to unpaid work has increased versus 41% of men. The rate is similar for women with small children at 67% but higher for men with small children at 47%. Interestingly there is a perfect congruence in the responses to this question on the respondent's own unpaid work time and another question on the impact of the pandemic on the respondent's partner's unpaid work time: 37% of all women (40% of women with small children) state their partners' unpaid work time has increased while 63% of all men (68% of men with small children) state their partners' unpaid work time has increased. One in every two women (50%) reports that they find their total (paid and unpaid workload) hard to deal with vs. about a quarter of men (26%). The rates are higher for women and men with small children (53% vs. 34%) and women and men in employment (59% vs. 28%).

When questioned about the reasons for the change in their unpaid workload, 27% of all women and 51% of women with small children state that school closures have increased

[8] This is captured through a question to the respondent as to whether her/his spouse's unpaid work time has increased, decreased or remained the same under the pandemic lockdown conditions.

their unpaid work time. The corresponding figures for men are 13% (all men) and 34% (men with small children). The most important factor that has contributed to the increase in the workload both for women and men is complying with hygiene requirements under the pandemic; 52% of women vs. 37% of men. This shows that women have shouldered the bulk of domestic workload for ensuring that the household has met the hygiene requirements. Similarly the disruption of eating or ordering from outside has imposed more time pressures on women (21%) than men (15%), as did the disruptions in purchase of domestic services (11% of women vs. 6% of men).

The mean duration of time spent on paid and unpaid work time by women and men in 2018 and 2020 and the gender gaps are presented in Tables 1 and 2. There was a significant rise in unpaid work time while paid work time declined both for women and men in Turkey. Women's unpaid work hrs almost doubled rising from 2.85 to 4.49 hrs/day. In relative terms the increase in men's unpaid work was even higher as it more than quadrupled from 0.27 to 1.13 hrs/day; however in absolute terms men's unpaid work still remained much lower than women's under the pandemic. Overall the gender gap in unpaid work time increased from 2.58 hrs/day pre-pandemic to 3.36 hrs/day under the pandemic (Table 2).

<Tables 1 and 2 around here>

There was substantial disruption in workplace employment and change in paid work time under the pandemic. Accordingly, 11.4% of the total female sample and 20.3% of the total male sample stopped working for pay with the pandemic.[9] The share of employed women and men in the total sample were 22% and 62% respectively in the pre-pandemic April 2018 survey versus 16% and 50% respectively during the pandemic.[10] Of the non-employed, 13% of women and 34% of men reported having lost their jobs with the pandemic. Of the total women sample who were in employment under the pandemic, 53% continued working at the workplace without disruption; while 38% switched to working at their jobs from home; 9% entered new employment post-pandemic. As for men in employment under the pandemic, 57% continued employment at the workplace without disruption; 33% switched to working from home; 10% entered new employment post-pandemic.

In line with the relatively larger employment loss for men, the decrease in their paid work time from 5,06 hrs/day pre-pandemic to 3,31 hrs/day with the pandemic, is observed at a

[9] When job loss is measured as a share of employed pre-pandemic,, it is relatively higher for women. 31% of employed women pre-pandemic and 18% of employed men pre-pandemic stopped working for pay with the pandemic (see Table A1).

[10] Employment statistics from the Household Labor Force Survey by the Turkish Statistical Institute show that the employment rates for men declined from 65.7% in 2018 to 60.2% in February 2020 and 57.4% in May 2020. The same figures for women are 29.4% (annual 2018) and 26.3% (February 2020) and 25.8% (May 2020).

much higher level than for women, from 1.6 hrs/day pre-pandemic 0.99 hrs/day with the pandemic (Table 1). This resulted in a narrowing down of the gender gap in paid work time from -3.46 hrs/day from the pre-pandemic period to -2.32 hrs/day under the pandemic (Table 2).

These changes in unpaid and paid work time lead to changes in total work. We observe a rise in women's total work burden during the pandemic period by 1.03 hrs/day, yet for men total work time declined by 0.89 hrs/day. Hence the gender gap in total work increased substantially turning from a negative difference (0.88 hrs/day more total work for men) to a positive difference (1.04 hrs /day more total work for women) (Table 2).

Focusing in on the impact of the pandemic on time allocation employment status, we observe that women who remain in employment under pandemic conditions now spend more hours in paid work (increasing from 6.09 hrs/day pre-pandemic to 6.50 hrs/day under the pandemic). By contrast, employed men perform fewer hours of paid work (decreasing from 5.06 hrs/day pre-pandemic to 3.31 hrs/day under the pandemic). Thus gender gap in paid work for employed women and men narrowed down from -1.37 hrs/day to -0.29 hrs/day. [11] This represents a 78% reduction in the paid work gap amongst employed women and men, substantially more than the decrease in the overall gender gap in paid work (33% from -3.46 hrs/day to -2.32 hrs/day), which was also triggered by job losses. Employed women's unpaid work hours increased by 1.17 hrs/day, from 1.52 to 2.69 versus a 0.75 hrs/day increase among employed men. The increase in *employed* women and men's unpaid work is an outcome specific to Covid-19 measures. It sets the current shock apart from effects of economic recessions where increases in (men's) unpaid work are triggered for most part by job loss and unemployment. The gender gap in total work for employed women and men increased substantially turning from almost parity (0.06 hrs/day more total work for employed men pre-pandemic) to a gender gap where employed women perform almost one-and-a-half more total work than employed men.

We observe two striking aspects of the gendered impact of the pandemic on time allocation of women and men in employment. First, is the intensification of overall work load for women who continue their employment uninterrupted at the workplace during the pandemic. They have the highest total work hours of all groups at over 10.09 hrs/day; working 8 hrs on average at the workplace and performing 2.17 hrs of unpaid work at home. Women who switched to working from home with the pandemic have the second

[11] We note that in response to a separate control question on the change in employment hours due to pandemic impact, women and men who continue to be in employment report about a 20% and 18% decrease respectively in their weekly employment hours, which is consistent with the decrease we find in the daily work hours of employed women and men in response to the time-use question.

highest total work hours (8.65 hrs/day), this is higher even than the total work hours of men who continue in employment at the workplace during the pandemic (8.36 hrs/day).

The second striking observation is the variation in the increase of men's unpaid work time by changes in employment status. As already mentioned above, overall men's unpaid work time increased more than four-fold from a very low of 0.27 hrs/day pre-pandemic to a much higher but still low 1.13 hrs/day with the pandemic. For employed men we observe similar increase in pre- and post-pandemic unpaid work hours (from a slightly lower 0.21 hrs/day pre-pandemic to 0.96 hrs/day with pandemic.). However, there is a noteworthy difference between the unpaid work performed by employed men who switched to working from home (1.18 hrs/day) vs. those who continue to work at the workplace (0.72 hrs/day). Employed men who switched to working from home have lower paid work hours (6.25 hrs/day) than men who continue working at the workplace (7.64 hrs/day). This provides some evidence that 'access to time and flexible work' (working from home and reducing paid work hours) facilitates men's increased participation in unpaid domestic work.

The econometric estimation results presented in Tables 3 and 4 provide insights into the relative magnitude of the impact of the Covid-19 pandemic and associated containment measures on unpaid work time conditional on different factors including demographic (age, education, marital status) and household characteristics (number of children by age, household type and income), and employment status. Table 3 presents the results of estimations with pooled (2018 and 2020 pre- and pandemic) data using a year dummy for the pandemic as well as its interaction terms with the different explanatory variables; with a different estimation for each interaction term (for the full results of the different model estimations, see Appendix II, Tables A3 and A4). The coefficients should be interpreted as hrs/day deviations from 2018, conditional on demographics and household characteristics. Table 4 presents the results of two separate cross-section estimations with 2020 and 2018 data.

The main variable of interest is the pandemic year dummy in the pooled estimation. There is a statistically significant and substantial effect of the pandemic on both women's and men's unpaid work time (Table 3). Controlling for various demographic and household characteristics as well as employment status, we find that the pandemic has increased women's unpaid work time by almost 2 hrs a day. The marginal effect on men's unpaid work time is less than women's at 1.15 hrs/day but still substantial.

Table 3 presents the association of unpaid work time with the other demographic, household characteristics and employment status using interaction variables with the 2020 year dummy. The marginal effects of these variables on unpaid work time should be interpreted as the combined effect on unpaid work time due the particular interaction of

each variable with pandemic conditions. For example, looking at the association of unpaid work time with marital status, we find that being married adds an additional increase in men's unpaid work time by 0.24 hrs/day in 2020 compared to single men controlling for other demographic and household characteristics.

The findings on the effect of education for women are contrary to findings by prior studies where the mean duration of unpaid work time decreases with higher educational level for women. Under the pandemic, educational attainment does not seem to play its usual role. This can be interpreted as the narrowing down of the gaps between women with higher purchasing power with the disruption of access to market substitutes for household production. The finding provides a quantitative confirmation of the equalizing effect of the pandemic containment measures by enforcing also women with higher education and purchasing power to undertake unpaid work (i.e. the collapse of 'the illusion of the modern woman' mentioned above). Results based on separate cross-section estimations of the 2018 and 2020 data further supports this finding (Table 4). In the estimation of 2018 data, we find that the mean duration of unpaid work time decreases with higher educational level for women (highschool) and men (university); but that the education coefficients are statistically insignificant for 2020.

The statistically significant positive coefficients on the two upper income groups are also consistent with the findings on education. Contrary to the usual finding that unpaid work load decreases with income, we find a positive correlation for the highest income groups. The women and men in these top income groups experience a rise in their unpaid workload under the pandemic conditions compared to their high-income counterparts in 2018.

<Tables 3 and 4 around here>

The pandemic related marginal effect of marriage on women is not statistically significant in this pooled regression; indicating probably the fact that the increase in demand for unpaid work under the lockdown conditions has also exerted pressures on single women. Yet the cross-section estimations presented in Table 4 below, show that the unpaid work gap between single and married women is wider in 2020 than in 2018.

Being employed has a positive marginal effect on unpaid work time both for women and men. An employed woman is likely to perform 0.59 hrs/day more unpaid work compared to single counterparts under pandemic conditions. The marginal effect for men is 0.25 hrs/day. The cross-section estimations in Table 4 similarly show how being employed turns from a negative and statistically significant association to a statistically insignificant association to unpaid work. Hence the privileges that come with employment and earnings (i.e. refraining from unpaid work) have also been wiped out under the pandemic

containment measures. This further complements our findings on education and the household income.

Having small children (of all age groups) in the household increases unpaid work time for both women and men. Given school closures, we find that the marginal effect of school age children is higher than of pre-school children. Pre-school enrolment rates in Turkey is very low, hence it is expected that the pandemic measures have a relatively lower impact for younger children. Having 6-9 year olds increases women's unpaid work by 0.94 hrs/day, and 1.55 hrs/day for 10-14 year olds as compared to 2018. The marginal effects for men are also substantial although lower than women, at 0.50 hrs/day and 0.98 hrs/day respectively.

Table 4 further presents the results on two more variables of interest present in the 2020 survey: namely, if the employed has transitioned to working from home or continues to work at the workplace; and whether there has been an increase in spouse's unpaid work time. Confirming our observations from Table 1 on the variation of mean duration of men's unpaid work time by type of employment, we find that after controlling for all other factors, 'work-from-home' has a positive marginal effect on men's unpaid work time by 0.9 hrs/day. The marginal effect for women working from home is higher at 1.14 hrs/day.

For women who reported an increase in spouse's contribution to household work under the pandemic, we do not find a statistically significant impact on their own unpaid work time contrary to our expectations. This maybe because the households where husbands increased unpaid work faced additional burdens on care time due to the presence of an ill/disabled/elderly person or some other factor that we are unable to observe in the data. For women who reported an decrease in spouse's contribution to household work under the pandemic, we find a statistically significant negative association; the marginal increase in women's unpaid work is 1.25 hrs/day.

V. Conclusions

Our findings based on a unique pandemic time-use survey in Turkey reveal a number of interesting findings. The pandemic has triggered a substantial increase in the unpaid work both for women and men, but more for women widening the gender gap. Women overall have been subject to relatively lower employment disruptions than men, predominantly because women's employment rate pre-pandemic was substantially lower than men's reflecting the wide gender employment gap in Turkey. Nevertheless, for those who continues in employment under the pandemic, the mean paid work hours for employed

women increased while the reverse was true for employed men. Hence there was a substantial narrowing down of the gender gap in paid work. The combination has resulted in widening of the gender gap in the total workload.

The situation is particularly dire for women who continue being in employment during the pandemic, who are experiencing a double intensification of both paid and unpaid work hours. It is important to note that given the limitations of the survey we are able to evaluate only quantitative but not qualitative changes in work time. It is likely that the work intensity in unpaid tasks has also increased through multitasking, such as minding the children while actively engaging in another activity.The work-life balance conditions, which were already fragile for employed women in Turkey pre-pandemic, have further deteriorated with the pandemic, aggravating the time constraints on women's labor supply.

On the other hand, the pandemic seems to have the unpaid work disparities amongst women by education or employment status through increasing care work of educated and employed women closer to their less educated and non-employed counterparts. This is indicative of purchasing power not being able to provide the usual privileges under the pandemic lockdown measures as access to market substitutes for household production became limited due to safety concerns.

Another interesting finding is that the pandemic has triggered an important increase in men's unpaid work in a very short time period, facilitated by their decreasing employment hours and switching to work from home. This points to work-life balance policies that enable men's participation in household production, such care leave, flexible (home-based) work and regulated (lower) workplace hours, have the potential to facilitate a more equitable distribution.

The combination of the patterns we identified above may mark a historic moment of transformation towards a genuine appreciation of the importance of women's unpaid and underpaid care work by men in general, as well as by the more privileged women and men. This presents a window of opportunity for more equitable sharing of care work between women and men, and between the domestic and public spheres. The pandemic impact on the gendered patterns of time use could aggravate and become more rigid, unless addressed now with specific measures without any delay. Family-friendly policies and practices, which give parents access to care leave, flexible work and services can make a critical difference (ILO, UNICEF, UN Women 2020). The bailout and stimulus packages need to reflect a recognition of the care economy and its interactions with the market. This historic moment provides us with a basis on which to build the advocacy efforts for comprehensive care policies. This is important not only for gender equality but also for improving the resilience of household coping mechanisms under external shocks.

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Table 1: Change in Paid and Unpaid Work Time by Gender under Covid-19 Lockdown Measures - Turkey, May 2020 and April 2018 (hrs/day)

	DURING THE PANDEMIC *(May 2020)* *(change from pre-pandemic)*				**PRE-PANDEMIC** *(April 2018)*			
	Sample share	**Paid Work**	**Unpaid Work**	**Total Work**	**Sample share**	**Paid Work**	**Unpaid Work**	**Total Work**
WOMEN		**0.99** *-0.61*	**4.49** *1.64*	**5.48** *1.03*		**1.6**	**2.85**	**4.45**
Employed	16%	6.50 *0.41*	2.69 *1.17*	9.19 *1.58*	22 %	6.09	1.52	7.61
1.Pre- and during-pandemic working at workplace	53%	7.92	2.17	10.09				
2.Pre- and during employed now working (partly) from home	38%	5.48	3.17	8.65				
3.Not in employment pre-pandemic now employed	9%	2.32	3.77	6.09				
Non-employed		0.24 *-1.91*	4.73 *3.61*	4.97 *1.70*	78 %	0.34	3.24	3.58
4.Neither pre- nor during-pandemic	87%	0.17	4.74	4.91				
5.Was in employment pre-pandemic but not during pandemic	13%	0.61	4.53	5.14				
MEN		**3.31** *-1.75*	**1.13** *0.86*	**4.44** *-0.89*		**5.06**	**0.27**	**5.33**
Employed	50%	6.79 *-0.67*	0.96 *0.75*	7.75 *0.08*	62 %	7.46	0.21	7.67
1.Pre- and during-pandemic working at workplace	57%	7.64	0.72	8.36				
2.Pre- and during employed now working (partly) from home	33 %	6.25	1.18	7.43				

3.Not in employment pre-pandemic now employed	10 %	3.75	1.56	5.31				
Non-employed		0.97 *-0.29*	1.25 *0.87*	2.22 *0.58*	38 %	1,26	0,38	1,64
4.Neither pre- nor during-pandemic	66 %	0.34	1.28	1.62				
5.Was in employment pre-pandemic but not during pandemic	34 %	2.14	1.18	3.32				

*Paid work time is higher than zero for the non-employed due to job search activities (77% are retired/housewife/student, the remaining are unemployed).

Table 2: Change in Gender Gaps in Paid and Unpaid Work Time under Covid-19 Lockdown Measures - Turkey, May 2020 and April 2018 (hrs/day)

GENDER GAP (GGAP) ALL Hrs Spent by Women-Hrs Spent by Men	GGAP-2020			GGAP-2018		
	Paid	**Unpaid**	**Total**	**Paid**	**Unpaid**	**Total**
ALL	-2.32	3.36	1.04	-3.46	2.58	-0.88
Employed	-0.29	1.73	1.44	-1.37	1.31	-0.06
Pre- and during-pandemic employed, working at workplace	0.28	1.45	1.73			
Pre- and during-pandemic employed, working from home (at least partly)	-0.77	1.99	1.22			
Not in employment pre-pandemic, but employed during pandemic	-1.43	2.21	0.78			
Non-employed	-0.73*	3.48	2.75	-0.92*	2.86	1.94
Neither pre- nor during-pandemic	-0.17*	3.46	3.29			
Was in employment pre- pandemic but not during pandemic	-1.53*	3.35	1.82			

*Paid work time is higher than zero for the non-employed is due to respondent's answer to the question employed/not is not employed (77% are retired/housewife/student, the remaining are unemployed).

Table 3: Estimation Results of Daily Unpaid Work Time by Gender with Interaction Variables– Pooled Sample (2018 and 2020)

Pooled Sample (2018 and 2020)	**Women**	**Women** (Marginal Effects)	**Men**	**Men** (Marginal Effects)
Dependent: Daily Unpaid Work Time				
Pooled Estimation with:				
Year Dummy 2020 (no interaction variables)	2.483***	1.94	5.479***	1.15
	(0.122)		(0.247)	
Pooled Estimation with interaction variable 2020 year dummy and:				
Educational attainment (Base: Less than high school)				
High School	0.418	0.33	0.612	0.13
	(0.268)		(0.463)	
University	0.506	0.40	-0.158	-0.03
	(0.340)		(0.518)	
Marital Status (Base: Single)				
Married	-0.385	-0.30	1.164***	0.24
	(0.280)		(0.438)	
Widow/Separated	-1.386***	-1.08	0.136	0.03
	(0.440)		(1.036)	
Employment Status (Base: Non-employed)				
Employed	0.751**	0.59	1.178***	0.25
	(0.298)		(0.425)	
Non-employed with positive paid work hrs	1.466***	1.15	0.950	0.20

	(0.462)		(0.771)	
Income groups (Base: First income range)				
2nd income group	0.0312	0.02	1.345	0.28
	(0.735)		(1.455)	
3rd income group	0.382	0.30	1.565	0.33
	(0.659)		(1.260)	
4th income group	0.771	0.60	1.955	0.41
	(0.662)		(1.263)	
5th income group	1.289*	1.01	2.386*	0.50
	(0.681)		(1.285)	
6th income group	1.042	0.81	2.528*	0.53
	(0.765)		(1.356)	
Children by Age *X Year 2020*				
At least one small child (0-2 years) (=1 if Yes, =0 if No) X Year 2020	0.790***	0.61	2.135***	0.44
	(0.268)		(0.517)	
At least one small child (3-5 years) (=1 if Yes, =0 if No) X Year 2020	0.640***	0.49	3.344***	0.70
	(0.185)		(0.417)	
At least one child (6-9 years) (=1 if Yes, =0 if No) X Year 2020	1.217***	0.94	2.382***	0.50
	(0.181)		(0.374)	
At least one child (10-14 years) (=1 if Yes, =0 if No) X Year 2020	2.013***	1.55	4.721***	0.98
	(0.144)		(0.329)	
Controls for Age groups (3), Household size (3) and composition (5)	Yes		Yes	
Observations	3,628		3,786	
Uncensored observations	2,829		793	

Standard errors in parentheses, *** p<0.01, ** p<0.05, * p<0.1
For full results of the pooled estimations with year dummy and interaction variables see Appendix 2, Table A3 and A4.

Table 4: Cross-Section Estimation of Daily Unpaid Work Time (April 2018 and May 2020)

Dependent Variable: Daily Unpaid Work Time	**2020 Women**	**Men**	**2020 Marginal Effects Women**	**Men**	**2018 Women**	**Men**	**2018 Marginal Effects Women**	**Men**
	(1)	(2)	(3)	(4)	(3)	(4)		
Educational attainment (Base: Less than high school)								
High School	0.0875 (0.269)	0.429 (0.317)	0.08	0.18	-0.527*** (0.190)	-0.233 (0.244)	-0.50	-0.10
University	0.246 (0.359)	0.774** (0.381)	0.21	0.32	-0.347 (0.259)	0.750** (0.292)	-0.33	0.31
Marital Status (Base: Single)								
Married	2.233*** (0.535)	0.202 (0.856)	1.93	0.08	1.151* (0.595)	0.631 (0.751)	1.10	0.26
Separated/Widow(er)	0.710 (0.520)	-0.371 (0.912)	0.62	-0.15	2.625*** (0.268)	0.433 (0.374)	2.51	0.18
Employment Status (Base: Non-employed)								
Employed	-0.556 (0.392)	-0.259 (0.401)	-0.48	-0.11	-2.280*** (0.188)	-1.330*** (0.341)	-2.18	-0.54
Non-employed with positive paid work hrs	0.322 (0.432)	0.290 (0.545)	0.28	0.12	-1.257*** (0.265)	-0.795 (0.500)	-1.20	-0.32
Change in employment conditions (Base: continue to work at my workplace as before)								
Started working from home.	1.318**	2.202***	1.14	0.90				

	(0.660)	(0.661)		
Started working from home. partly at work. at other times.	1.640**	0.709	1.42	0.29
	(0.774)	(0.614)		
Started working from home with the epidemic. but now start working again at work	1.393	0.485	1.21	0.20
	(0.949)	(0.541)		
No response	2.731***	2.202***	2.37	0.63
	(0.505)	(0.661)		
Change in spouse's housework with the pandemic (Base: No Change)				
Increased	0.169	0.0671	0.15	0.03
	(0.257)	(0.340)		
Decreased	1.445*	0.526	1.25	0.22
	(0.781)	(0.995)		
No response	-0.890*	-0.428	-0.77	-0.17
	(0.464)	(0.785)		
Controls for Age groups (3), Household composition (5), size (3) and income groups (5)	Yes	Yes		Yes Yes
Constant	-0.747	-1.723		-1.229* -2.517**
	(1.155)	(1.512)		(0.694) (1.252)
Sigma	5.731***	6.587***		3.869*** 5.236***
	(0.133)	(0.246)		(0.0665) (0.239)
Observations	1122	1,096		2,506 2,690
Uncensored obs.#	972	448		1,857 345
Standard errors in parentheses				

*** p<0.01, ** p<0.05, * p<0.1

Appendix I - KONDA Life Styles Survey (April 2018 and May 2020)

Time-Use Question:
To the SURVEYOR: Ask the respondent to tell you about one of their usual day routines on a weekday, for example Tuesday or Wednesday in the past week. First ask them what time they woke up and then continue by asking them "Can you tell me what you did hour by hour what you did after you woke up?" At each step, urge on by saying "and then?".
Do not forget, some people are able to undertake different activities simultaneously. For example, watching TV while eating or surfing on the internet. To the extent possible, get the respondent to tell you about his/her day like telling a story and mark each activity in the relevant time slot. Finally at the end, ask them what time they went to sleep. You can mark more than one activity in the same time period.

Activity categories
1. Eating: Eating breakfast, lunch, dinner etc.
2. Transport/travel: Travelling back and forth to work, school or other
3. Work: Work for an income-generating activity or farm work
4. Education: School, studying, courses
5. House work: Cleaning, care of the household members, cooking, gardening, etc.
6. Shopping: Bazaar or market shopping, travelling for shopping
7. Religious activity: Daily prayers, reading the Quran, etc.
8. Entertainment/socializing: Visiting with neighbors, relatives, friend, going to the cinema, theater, walking around, etc.
9. Television: Watching TV, listening to the radio
10. Internet: Social media, online games, etc.
11. Other: Sports, voluntary activities, etc.
12. Sleep: Time dedicated to sleeping
13. No answer

Additional Questions included in the Covid-19 May 2020 Survey on paid and unpaid work:
- Whether there has been a change in the respondent's paid work status under the pandemic
- If the respondent has stopped working for pay, the reasons for it (laid off, workplace closed down, quit job for taking care of children/ill/house; etc.)
- If the respondent continues to work for pay, any changes therein (continue to work at the workplace as before, work from home, partly workplace partly home, etc.)
- Pre- and under pandemic work hrs at the respondent's job
- Whether there has been a change in the unpaid work hrs
- What are the sources of the change in the unpaid work hrs (school closures, limited access to domestic workers, limited access to market provided service such as on-line food orders, , increased workload due to elderly care, or due to ill care as services have been discontinued for most, etc.)
- Who are the household members that participate in housework during the pandemic
- Who are the household members that take on bulk of the unpaid work during the pandemic
- Whether there has been a change in the unpaid work hrs of one's partner (asked to married respondents only)

- How does the person feel about the total workload considering both paid and unpaid work (too much to deal with vs. able to handle)?

(The survey entails the other regular questions KONDA uses on social and lifestyle attitudes and voting preferences; total of 42 questions.)

Appendix II – Summary Statistics and Select Survey Results on Time-Use under Pandemic Lockdown Measures

Table A1-1. Summary Statistics (April 2018 and May 2020)

		2018			
2018 TUS and PANDEMIC-TUS-TURKEY		**Women**	**Men**	**All**	**Women**
Sample	**Obs. #**	2,813	2,974	5,787	1,221
Age groups	15 - 17 years	3%	6%	4%	4%
	18 - 32 years	32%	32%	32%	33%
	33 - 48 years	35%	31%	33%	35%
	49+ years	30%	32%	31%	28%
Educational Attainment	Less than high school	62%	48%	55%	53%
	High School	25%	33%	29%	29%
	University	13%	19%	16%	18%
Household Type	Couple without kids	15%	16%	16%	8%
	Couple with kids	61%	61%	61%	72%
	3 generation extended families	13%	11%	12%	9%
	Other extended families	4%	3%	3%	6%
	Other households	1%	2%	2%	2%
	Single adult households	6%	6%	6%	3%
Household Size	1 - 2 person	21%	20%	21%	13%
	3-5 people	63%	63%	63%	63%
	6-8 people	14%	14%	14%	22%
	9 or more	2%	2%	2%	2%
Labour force status	Employed, white collar	9%	21%	15%	7%
	Employed, worker, artisan, farmer	13%	41%	27%	9%
	Retired	7%	17%	12%	5%
	Housewife	53%	1%	26%	50%
	Student	11%	13%	12%	19%
	Unemployed	6%	8%	7%	10%
Employed/Nonemployed	Employed	22%	61%	42%	16%
	Non-employed	78%	39%	58%	84%
Life style (own defined)	Modern	28%	31%	29%	29%
	Traditional conservative	44%	46%	45%	43%
	Religious conservative	28%	23%	25%	29%

Reasons for employment disruption	All		31%
	I got laid off		26%
	I left for leave without pay		25%
	I left for leave with pay		5%
	I quit myself because I was afraid of the risk of disease.		10%
	I quit myself because I had to take care of a child / elderly / patient at home.		2%
	I had my own workplace and closed because things stopped / orders stopped.		1%
	I worked freelance, I stopped working because my own work was stopped.		11%
	Other		19%
If there has been a change in your employment status due to the outbreak, which of the following best expresses th			
	I continue to work at my workplace as before.		51%
	I started working from home.		26%
	I started working from home, partly at work, at other times.		14%
	We started working from home with the epidemic, but now start working again at work		9%
Has there been a change in your time for housework under epidemic conditions, in what direction?			
	Increased		67%
	No change		31%
	Decreased		2%
Which ones cause you to spend more time on housework?			
	Childcare with the closing of schools		27%
	Housework normally done by cleaner / carer / assistant, etc.		11%

	Support / care for elderly people over 65 or older (including those who do not live in households)	7%
	To support and care for sick at home and / or stop receiving health care from outside	2%
	We cut out / cut home order / home order	21%
	To comply with the hygiene conditions required by the outbreak (hand washing, washing the home entrants)	52%
	Other	10%
(For those who are married) Has the time your spouse devoted to housework changed with the outbreak?		
	Increased	37%
	No change	61%
	Decreased	2%
What do you think about your total workload inside and outside the home?		
	I find it hard	50%
	There is no problem with my workload, I am happy with my situation.	50%
In general who is doing the housework? During the pandemic who is doing?		
	Spouse	11%
	Mother	57%
	Father	0%
	Child	14%
	Sibling	4%
	Grandmother	0%
	Mother in law	0%
	Grandchild	1%
	Other relatives	6%
	Single	5%

Table A1-2: T-statistics for 2018 and 2020 samples

		2018			
2018 TUS and PANDEMIC-TUS-TURKEY		**Women**	**Men**	**Diff. t-test**	**Women**
Sample	**Obs. #**	2,813	2,974	5,787	1,221
Age groups	15 - 17 years	3%	6%	5.17***	4%
	18 - 32 years	32%	32%	0.58	33%
	33 - 48 years	35%	31%	-3.10***	35%
	49+ years	30%	32%	1.49	28%
Educational Attainment	Less than high school	62%	48%	-10.80***	53%
	High School	25%	33%	7.13***	29%
	University	13%	19%	5.55***	18%
Employed/Nonemployed	Employed	22%	61%	-33.82***	16%
	Non-employed	78%	39%	33.86***	84%

Table A2: Covid-19 Pandemic Effects on Unpaid Work (May 2020)

	Women	**Men**
Has there been a change in your time for housework under epidemic conditions, in what direction?		
Increased	67%	41%
No change	31%	57%
Decreased	2%	2%
Main reason for the increase:		
Childcare with the closing of schools	27%	13%
Housework normally done by cleaner / carer / assistant, etc.	11%	6%
Support / care for elderly people over 65 or older (including those who do not live in households)	7%	5%
To support and care for sick at home and / or stop receiving health care from outside	2%	1%
We cut out / cut home order / home order	21%	15%
To comply with the hygiene conditions required by the outbreak (hand washing, washing the home entrants)	52%	37%
Other	10%	14%
(For those who are married) Has the time your spouse devoted to housework changed with the outbreak?		
Increased	37%	63%
No change	61%	34%
Decreased	2%	2%

What do you think about your total workload inside and outside the home?		
It is too much, I find it hard to deal with.	50%	26%
There is no problem with my workload.	50%	74%

Households with small children (0-5 years)	**Women**	**Men**
Has there been a change in your time for housework under epidemic conditions, in what direction?		
Increased	67%	47%
No change	31%	51%
Decreased	2%	3%
Main reason for the increase:		
Childcare with the closing of schools	51%	34%
Housework normally done by cleaner / carer / assistant, etc.	10%	7%
Support / care for elderly people over 65 or older (including those who do not live in households)	2%	2%
To support and care for sick at home and / or stop receiving health care from outside	1%	0%
We cut out / cut home order / home order	15%	10%
To comply with the hygiene conditions required by the outbreak (hand washing, washing the home entrants)	45%	39%
Other	6%	8%
(For those who are married) Has the time your spouse devoted to housework changed with the outbreak?		
Increased	40%	68%
No change	57%	32%
Decreased	3%	1%
What do you think about your total workload inside and outside the home?		
It is too much, I find it hard to deal with.	53%	34%
There is no problem with my workload.	47%	66%

Employed	**Women**	**Men**
Has there been a change in your time for housework under epidemic conditions, in what direction?		
Increased	62%	40%
No change	34%	58%
Decreased	5%	2%
Main reason for the increase:		
Childcare with the closing of schools	21%	19%
Housework normally done by cleaner / carer / assistant, etc.	12%	7%

Support / care for elderly people over 65 or older (including those who do not live in households)	6%	4%
To support and care for sick at home and / or stop receiving health care from outside	2%	1%
We cut out / cut home order / home order	31%	14%
To comply with the hygiene conditions required by the outbreak (hand washing, washing the home entrants)	48%	39%
Other	12%	13%
(For those who are married) Has the time your spouse devoted to housework changed with the outbreak?		
Increased	36%	70%
No change	61%	29%
Decreased	3%	2%
What do you think about your total workload inside and outside the home?		
It is too much, I find it hard to deal with.	59%	28%
There is no problem with my workload.	41%	72%

Table A3: Estimation of Daily Unpaid Work Time by Gender – Pooled Sample (2018 and 2020) with Pandemic Year Dummy

Pooled Sample (2018 and 2020)	**Women**	**Women** (Marginal Effects)	**Men**	**Men** (Marginal Effects)
Dependent: Daily Unpaid Work Time				
Year Dummy 2020	2.483***	1,94	5.479***	1,15
	(0.122)		(0.247)	
Age groups (Base: 15 - 17 years)				
18 - 32 years	1.518***	1,18	-0.0179	0,00
	(0.367)		(0.601)	
33 - 48 years	2.089***	1,63	0.996	0,21
	(0.393)		(0.673)	
49+ years	1.487***	1,16	1.619**	0,34
	(0.405)		(0.685)	
Educational attainment (Base: Less than high school)				

High School	-0.158	-0,12	0.0424	0,01
	(0.156)		(0.238)	
University	-0.0342	-0,03	0.805***	0,17
	(0.210)		(0.279)	
Marital Status (Base: Single)				
Married	3.174***	2,47	0.594	0,12
	(0.213)		(0.397)	
Widow/Separated	1.528***	1,19	-0.0859	-0,02
	(0.293)		(0.619)	
Household type (Base: Single adult household)				
Couple without kids	0.0316	0,02	-1.969***	-0,41
	(0.386)		(0.559)	
Couple with kids	0.416	0,32	-1.360**	-0,28
	(0.392)		(0.601)	
3 generation extended families	0.384	0,30	-0.988	-0,21
	(0.425)		(0.677)	
Other extended families	-0.0865	-0,07	-1.617**	-0,34
	(0.466)		(0.794)	
Other non-relative households	0.940	0,73	0.639	0,13
	(0.610)		(0.721)	
Household Size (Base: 1-2 people)				
3-5 people	-0.301	-0,23	-1.327***	-0,28
	(0.254)		(0.444)	
6-8 people	-0.0488	-0,04	-1.626***	-0,34
	(0.295)		(0.521)	
9 or more	0.728	0,57	-1.608*	-0,34
	(0.518)		(0.878)	
Children by age groups				
At least one small child (0-2 years) (=1 if Yes, =0 if No)	0.524**	0,41	0.374	0,08
	(0.215)		(0.380)	

At least one small child (3-5 years) (=1 if Yes, =0 if No)	-0.0567	-0,04	0.664**	0,14
	(0.176)		(0.314)	
At least one child (6-14 years) (=1 if Yes, =0 if No)	-0.139	-0,11	0.214	0,04
	(0.138)		(0.240)	
Employment Status (Base: Non-employed)				
Employed	-2.159***	-1,68	-1.114***	-0,23
	(0.162)		(0.237)	
Non-employed with positive paid work hrs	-0.602***	-0,47	-0.313	-0,07
	(0.232)		(0.379)	
Income groups (Base: First income range)				
2nd income group	-0.0118	-0,01	-0.0599	-0,01
	(0.360)		(0.640)	
3rd income group	-0.0109	-0,01	0.234	0,05
	(0.328)		(0.580)	
4th income group	-0.180	-0,14	0.359	0,08
	(0.332)		(0.578)	
5th income group	-0.134	-0,10	0.207	0,04
	(0.347)		(0.602)	
6th income group	-0.450	-0,35	0.478	0,10
	(0.397)		(0.647)	
Constant	-0.755		-7.498***	
	(0.893)		(1.753)	
Sigma	3.395***		6.192***	
	(0.0444)		(0.178)	
Observations	3,628		3,786	
Uncencored obs	2,829		793	

Standard errors in parentheses
*** p<0.01, ** p<0.05, * p<0.1

Table A4-1: Coefficients for Interacted Variables with Year Dummy- Pooled Cross-Section Estimation of Daily Unpaid Work Time

	Women	Men	Women	Men	Women	Men
Year 2020	2.301*** (0.154)	5.321*** (0.326)	2.880*** (0.244)	4.716*** (0.380)	2.106*** (0.619)	4.455*** (0.796)
Household type (Base: Single adult household)						
Couple without kids X Year 2020					-0.542 (0.712)	1.288 (0.942)
Couple with kids X Year 2020					0.463 (0.635)	1.056 (0.831)
3 generation extended families X Year 2020					0.746 (0.703)	1.110 (1.001)
Other extended families X Year 2020					0.150 (0.829)	0.752 (1.341)
Other non-relative households X Year 2020					0.841 (1.171)	0.985 (1.347)
Educational attainment (Base: Less than high school)						
High School X Year 2020	0.418 (0.268)	0.612 (0.463)				
University X Year 2020	0.506 (0.340)	-0.158 (0.518)				
Marital Status (Base: Single)						
Married X Year 2020			-0.385 (0.280)	1.164*** (0.438)		
Separated X Year 2020			-1.386*** (0.440)	0.136 (1.036)		

Constant	-1.211** (0.502)	-6.803*** (0.868)	-1.574*** (0.523)	-6.444*** (0.871)	-1.239** (0.595)	-4.405*** (0.970)
Observations	3,628	3,786	3,628	3,786	3,628	3,786
Sigma	4.692*** (0.0646)	6.191*** (0.178)	4.689*** (0.0646)	6.187*** (0.178)	4.680*** (0.0644)	6.192*** (0.178)

Note: Age groups, educational attainment, household type, household size, employment status and income group dummies are all added and controlled in above estimations. All results are available upon request.

Standard errors in parentheses

*** p<0.01, ** p<0.05, * p<0.1

Table A4-2: Coefficients for Interacted Variables with Year Dummy- Pooled Cross-Section Estimation of Daily Unpaid Work Time

	Women	Men	Women	Men	Women	Men
Year 2020	2.002*** (0.289)	5.290*** (0.438)	2.247*** (0.138)	4.766*** (0.346)	1.810*** (0.628)	3.565*** (1.212)
Household Size (Base: 1-2 people)						
3-5 people X Year 2020	0.516 (0.322)	0.460 (0.494)				
6-8 people X Year 2020	0.811** (0.398)	-0.753 (0.655)				
9 or more X Year 2020	0.534 (0.916)	1.072 (1.554)				
Employment Status (Base: Non-employed)						
Employed X Year 2020			0.751** (0.298)	1.178*** (0.425)		

Non-employed with positive paid work hrs X Year 2020			1.466*** (0.462)	0.950 (0.771)		
Income groups (Base: First income group)						
2nd income group X Year 2020					0.0312 (0.735)	1.345 (1.455)
3rd income group X Year 2020					0.382 (0.659)	1.565 (1.260)
4th income group X Year 2020					0.771 (0.662)	1.955 (1.263)
5th income group X Year 2020					1.289* (0.681)	2.386** (1.285)
6th income group X Year 2020					1.042 (0.765)	2.528* (1.356)
Constant	-1.099** (0.512)	-6.739*** (0.890)	-1.165** (0.500)	-6.453*** (0.867)	-0.867 (0.624)	-5.399*** (1.235)
Observations	3,628	3,786	3,628	3,786	3,628	3,786
Sigma	4.689*** (0.0646)	6.184*** (0.178)	4.686*** (0.0645)	6.194*** (0.178)	4.686*** (0.0645)	6.181*** (0.178)

Note: Age groups, educational attainment, household type, household size, employment status and income group dummies are all added and controlled in above estimations. All results are available upon request.

Standard errors in parentheses

*** p<0.01, ** p<0.05, * p<0.1