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ABSTRACT

The Gender Gap in Time Allocation in Europe

This article explores the gender gap in time allocation in Europe, offering up-to-date statistics and information on several factors that may help to explain these differences. Prior research has identified several factors affecting the time individuals devote to paid work, unpaid work, and child care, and the gender gaps in these activities, but most research refers to single countries, and general patterns are rarely explored. Cross-country evidence on gender gaps in paid work, unpaid work, and child care is offered, and explanations based on education, earnings, and household structure are presented, using data from the EUROSTAT and the Multinational Time Use Surveys. There are large cross-country differences in the gender gaps in paid work, unpaid work, and child care, which remain after controlling for socio-demographic characteristics, although the gender gap in paid work dissipates when the differential gendered relationship between socio-demographic characteristics and paid work is taken into account. This paper provides a comprehensive analysis of gender gaps in Europe, helping to focus recent debates on how to tackle inequality in Europe, and clarifying the factors that contribute to gender inequalities in the uses of time.

JEL Classification: D10, J16, J22

Keywords: paid work, unpaid work, gender gap, European countries, earnings, household structure

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1. Introduction

In this paper, we explore the gender gap in time allocation for European, offering up-to-date statistics and information on several factors that may help to explain these differences. Promoting equality between women and men has been a high priority for the European Union since its inception. The 1957 Treaty of Rome introduced the principle of equal pay for equal work. Since then, policies to promote gender equality and combat gender-based discrimination have been expanded and integrated into primary and secondary law, as well as into a vast range of non-legislative initiatives. Gender-specific laws and policies are complemented by gender mainstreaming, a requirement to incorporate a gender perspective into all policies and activities of the European Union and its member states.

Despite continued policy efforts, significant gender inequalities persist, and the European Commission's 2016-19 strategic engagement for gender equality remains highly relevant. Two of its five priority areas motivate this analysis of the gender gap in time allocation in European countries, which are, 1) increasing female labour-market participation and equal economic independence of women and men, and 2) reducing the gender pay, earnings, and pension gaps and thus fighting poverty among women. Assessing the extent of the unequal gender division of paid and unpaid labour, and investigating its sources, is key to monitoring progress in redressing gender inequalities and helps to identify priority areas for policy intervention.

Prior research into the determinants of time use patterns is abundant, dating back to Becker's seminal work on the allocation of time (Becker, 1965), perhaps boosted by research showing the importance of how individuals use their time in an analysis of the quality of life (Kahneman et al., 2004; Kahneman and Krueger, 2006; Folbre, 2009; Stiglitz, Sen and Fitoussi, 2009,2010). Research has focused on the analysis of several countries at the same time (Gershuny, 2000;2009; Gauthier, Smeeding and Furstenberg, 2004, Apps and Rees, 2005; Burda, Hamermesh and Weil, 2008; Fisher and Robinson, 2011; Gimenez-Nadal and Sevilla, 2012; Fang and McDaniel, 2016) but few have focused on all work activities (e.g., paid work, unpaid work, and child care) at the same time (Gershuny, 2000; 2009; Gauthier, Smeeding and Furstenberg, 2004; Gimenez-Nadal and Sevilla, 2012; Fang and McDaniel, 2016) . Cross-national research on this topic has shown that the differences between countries are great and that there are even differences between regions, and that the influence of determinants varies across countries. Thus, it

is valuable to group together multiple countries and study general patterns, with the aim of discerning general patterns and differential factors. With the analysis of a large group of European countries, this study makes an important contribution by examining cross-country differences in gender gaps in the uses of time, and reconciling prior findings about the factors that contribute to the narrowing of these gaps.

We use time use information from EUROSTAT, corresponding to the 2010 Harmonized European Time Use Survey (HETUS), and from the Multinational Time Use Survey (MTUS), to analyse the time devoted to paid work, unpaid work, and child care, by men and women in Europe. We first present the state of gender gaps in terms of paid work, unpaid work, and child care. We find that, while Nordic countries present the smallest gender gaps in both paid and unpaid work, Mediterranean countries present the largest gender gaps in these same activities. In all countries, males devote comparatively more time to paid work, and less time to unpaid work, than their female counterparts. In the case of child care time, we find that females devote comparatively more time to this activity than males, although here cross-country patterns cannot be determined.

Second, we analyze the driving forces behind patterns of the uses of time of men and women in Europe, where education, earnings, the number of children, and own marital status are posited as factors influencing the hours individuals devote to paid work, unpaid work, and child care. We find that age is positively related to the time devoted to paid work and negatively related to unpaid work and child care, that those working devote comparatively more time to market activities, and less time to unpaid work and child care, than those who do not work (e.g., unemployed, inactive, retired) in all countries, and these relationships are stronger for full-time workers than for part-time workers in paid work for all countries, and in Italy, Spain and the United Kingdom for unpaid work. University education is related to less time in unpaid work in Finland, Hungary, Italy, and Spain, while education is positively related to child care time in Hungary, Italy, and Spain,. Living in urban areas is related with less time in paid and unpaid work in Finland, Hungary and Spain, and more time in child care in Finland, Hungary, Italy and Spain. Being married is related to less time in paid work in Italy and Spain, more time in unpaid work in Finland, Hungary, Italy, and Spain, and more time in child care in all five analyzed countries. Furthermore, an increase in the number of household members is related to an increase in the time devoted to paid work in all five countries, while related to a decrease in the time devoted to child care.

Third, we explore to what extent gender gaps in time allocation are explained by gender differences in the relationships betweeen socio-demographic characteristics and the uses of time. We observe that, after considering the gender difference in relationships, the gender gap in paid work vanishes in the five countries, the gender gap in unpaid work vanishes in Finland and in Spain, and the gender gap in child care increases in all five countries. From this analysis, one can conclude that the gender difference in paid work in the five countries, and in unpaid work in Finland and Spain, is due to how the socio-demographic characteristics interact with the labor market, rather than other factors, such as institutional factors and/or gender roles. Thus, determining how socio-demographic characteristics relate to time allocation decisions is essential to understanding gender gaps in the uses of time.

The rest of the manuscript is organized as follows. Section 2 presents a review of the literature analyzing cross-country differences in the uses of time, gender gaps in time allocation, and factors driving the patterns of the uses of time. Section 3 describes the data used in this manuscript. Section 4 presents data on the current state of the gender gaps in time allocation in European countries, and Section 5 analyzes what socio-demographic factors contribute to the existing gender gaps. Section 6 sets out our main conclusions.

2. Literature review

Since the seminal paper of Becker (1965), many scholars have studied what determines how people allocate their time among different activities, including paid work (i.e., market work), unpaid work (i.e., housework) and child care. A complete review of all the analyses done for single countries and groups of countries would be very long and it is well beyond the scope of this manuscript. We aim to offer country-based, updated evidence on gender gaps in time allocation, what factors are related to the different uses of time, and how these factors can explain gender differentials in the uses of time.

Several theories have been proposed to explain male and female time allocation decisions. The specialization model (Becker, 1991), based on a unitary framework where the household is represented with a single utility function, argues that the main household earner, most often the husband, whose hourly wage is higher than that of the secondary earner in the household, most often the wife, should specialize in market work, while the

secondary earner should specialize in unpaid work. Alternatives to this are found in the social exchange models (Blood and Wolfe, 1960; Heer, 1963), cooperative bargaining models (Manser and Brown, 1980; McElroy and Horney, 1981), non-cooperative bargaining models (Leuthold, 1968; Bourguignon, 1984; Ulph, 1988; Chen and Woolley, 2001; Lundberg and Pollak, 1993,1996), and collective models (Chiappori, 1988,1992; Browning and Chiappori, 1998), that abandon the assumption of a single household utility, instead assuming that spouses have potentially conflicting interests and that they bargain over the distribution of time and resources within the marriage (see Himmelweit, Santos, Sevilla and Sofer (2013) for a review of these models).

Another strand of the literature has analyzed time allocation decisions of individuals for groups of countries, which includes Baxter (1997), Gershuny (2000;2009), Batalova and Cohen (2002); Fuwa (2004); Gauthier, Smeeding and Furnstenberg (2004), Apps and Rees (2005); Freeman and Schettkat (2005), Hook (2006;2010), Burda, Hamermesh and Weil (2008;2013), Fisher and Robinson (2011), Gimenez-Nadal and Sevilla (2012), Hook and Wolfe (2012,2013) and Fang and McDaniel (2016), among others. All these studies have consistently reported that there exist gender gaps in time allocation decisions, and while males devote more time to paid work activities, females devote more time to unpaid work and child care activities. Some of these analyses have also documented the existence of gender convergence in the uses of time, as females have increased the time devoted to paid work in relation to males, and males have relatively increased the time devoted to unpaid work and child care, despite that gender gaps in time allocation persist in most countries.

Other strands of the literature has analyzed the factors related to individual time allocation decisions. For instance, labor market factors, such as taxes (Prescott, 2004, Apps and Rees, 2005; Gelber and Mitchell, 2012; Ragan, 2013; Bick and Fuchs-Schünden, 2017; Duernecker and Herrendorf, 2018) may influence time allocation decisions, as differences in labor–income taxes may be helpful in understanding cross-country differences in time allocation decisions. Furthermore, earnings (Gupta, 2007), and job characteristics such as weekly work hours (Bianchi, Milkie, Sayer and Robinson, 2000; Coltrane, 2000; Lachance-Grzela & Bouchard, 2010; Bianchi, Sayer, Milkie and Robinson, 2012), work schedule predictability (Henly and Lambert, 2014), and non-standard work timing (Silver and Goldscheider, 1994; Fagan, 2001; Presser, 2003;

Hewitt, Baxter and Mieklejohn, 2012) are labor market factors related to individual time allocation decisions.

Others have focused on how social norms affect time allocation decisions (Yoshinori, 1988; Burda, Hamermesh and Weil, 2008,2013; Seguino, 2007; Sevilla, 2010; Sevilla, Gimenez-Nadal and Fernandez, 2010; Campaña, Gimenez-Nadal and Molina, 2018), which can be reconciled with the fact that "gender ideology" affects such decisions (Bittman, England, Sayer and Robinson, 2003; Hook, 2006; Bianchi and Milkie, 2010; Bertrand, Kamenica and Pan, 2015). However, several studies show that context (for example, the employment situation) can supersede gender ideology and is key to a variety of care-giving and household behaviors (Haas, 1992; Gerson, 1993,1997; Gerstel and Gallagher, 1994; Risman, 1998; Hook, 2006).

The presence of a working partner may change the time-allocation decisions of individuals (Kalenkoski, Ribar and Stratton, 2005;2007), as it may alter the bargaining position of the individual (Chiappori, 1988, 1992; Lundberg and Pollak, 1996; Manser and Brown, 1980; McElroy and Horney, 1981). In fact, marital status is a significant determinant of female labour-force participation (Eurofound, 2016). Other factors affecting time allocation decisions include life-cycle events such as marriage/cohabitation, and parenthood (Connelly, 1992; Gupta, 1999; Kimmel and Connelly, 2007; Baxter, Hewitt and Haynes, 2008), which has been found to especially affect women's time spent on housework.

Education may be a key factor related to time allocation decisiones, since not only do labour market opportunities differ for different educational cohorts, but education mirrors the so-called "shadow price" or "opportunity cost" of time (Becker, 1965), which conventionally measures the implicit cost of an hour of unpaid work in terms of the hourly wage of the individual doing that hour of unpaid work. In recent decades, women have been outperforming men in terms of educational outcomes, and thus the foregone costs of doing unpaid work have risen for women, relative to men. This adds to the reasons why balancing work and family life has today become a priority, not only from the point of view of equality of opportunity for men and women in the labour market, but also due to the high costs in foregone economic output.

Education has been found to be related to the time devoted to child care, with highly educated parents devoting more time to child care than less educated parents (Laureau,

2003; Sayer, Bianchi and Robinson, 2004; Guryan, Hurst and Kearney, 2008; Ramey and Ramey, 2010; Kalil, Ryan and Corey, 2012; Hook and Wolfe, 2012; Gimenez-Nadal and Molina, 2013; Gracia, 2014; Esping-Andersen and Gracia, 2015; Dotti-Sani and Treas, 2016; Doepke and Zilibotti, 2017). This has many implications for children's outcomes (Leibowitz, 1974, 1977; Carneiro and Heckman, 2003; Plug, 2004; Cunha and Heckman, 2008; Hsin, 2009; Cunha, Heckman and Schennach, 2010; Furstenberg, 2011; Philips, 2011; Kalil, Ryan and Corey, 2012; Harding, Morris and Hughes, 2015). The presence of children and/or dependent adults may impose restrictions on both paid and unpaid work of men and women (Eurofound, 2012). In particular, the presence of children under the age of three has been found to have a sharp, negative impact on the probability of working for pay for women (Del Boca, Pasqua and Pronzato, 2007), although the effect disappears as children grow older and begin school (Cipollone, Pattachini and Vallanti, 2014). Additionally, prior studies have found mixed evidence of the effect of elder-care responsibilities on women's labour supply (Casado-Marin, García-Gómez and López-Nicolás, 2011; Crespo and Mira, 2014; Heitmueller and Michaud, 2006; Mazzotta, Bettio and Zigante, 2018).

One important factor reported to condition individual time allocation decisions is that of country context. Gracia, Garcia-Roman, Oinas and Anttila (2019) identify seven areas where cross-country differences may affect time allocation decisions, as follows: 1) welfare state solidarity, 2) family employment models, 3) work–family policies, 4) parenting ideologies, 5) leaving home norms, 6) individualism versus familism, and 7) socio-economic inequalities. The European context is formed by a set of countries with many different contexts, that can be grouped in six clusters: 1) social democratic/nordic, 2) conservative/corporativist, 3) liberal/anglo-saxon, 4) former USSR, 5) post-communist Europe, and 6) developing countries.

The social democratic/nordic model (Denmark, Norway, Iceland, Finland, and Sweden) is characterized by high taxes, a high degree of income redistribution, a high level of participation of women in the labour market, a high standard of living, and citizens with a high level of confidence in their public system. In the category of the conservative/corporativist model (Austria, Belgium, Germany, Greece, Italy, Malta, Cyprus, Turkey, Luxemburg, the Netherlands, Spain, and Portugal) there is a small subgroup formed by the countries of the South of Europe, which share certain common traits, although these are not sufficiently important for them to be considered as an

independent group. It is characterized by a low level of participation of women in the labour market, dependency on social contributions rather than taxes, moderate redistribution of income, and higher levels of unemployment, especially in the countries of the South of Europe. The anglo-saxon/liberal model (Switzerland, the United Kingdom, and Ireland) is characterized by a low level of total state spending, a high level of inequality, and a low level of expenditure on social protection.

The cluster of the former USSR (Belarus, Estonia, Latvia, Lithuania, and the Ukraine) is similar to the conservative model with respect to total state spending, although the greatest differences lie in the quality of life and level of confidence in the public system. In the cluster of post-communist Europe (Bulgaria, Croatia, Czech Republic, Hungary, Poland, and Slovakia) the quality of life is greater than in the previous group and the system is more egalitarian. On the other hand, more moderate levels of economic growth and inflation are presented than in countries associated with the previous group. Finally, the welfare state cluster in process of development relates to countries that are still in the process of maturing their welfare states (Georgia, Rumania, and Moldavia). Their programmes of state aid and indicators of quality of life are below those in the other clusters, with high levels of infant mortality and low life expectancies reflecting the difficult social situations found in these countries.

Cross-country differences in welfare characteristics represent a key factor in shaping time allocation decisions of individuals. A clear example lies in the time devoted to child care by parents. Public investments in children are typically implemented to provide equal provision to children, regardless of social background, or equal provision that favors children from advantaged backgrounds. Governments mostly invest in children through the provision of childcare and education (Folbre, 2008). In many OECD countries, children aged three to five years have nearly 100 percent rates of enrollment in early childhood education or childcare, although rates are not as high for children aged zero to two years (OECD, 2012). Fernandez-Crehuet, Gimenez-Nadal and Reyes-Recio (2016) show, for a set of European countries, the percentage of children under 3 in formal education, and the large cross-country differences in these rates. If parents are not provided with education of their children under 3, they will probably spend more time in child care activities than if covered by formal education, which will also probably affect their other uses of time. If they opt for private education, perhaps they will have to spend more time in paid work to cover the financial costs associated with private education of

their children. Hook (2006) shows that work regulations, work-family policies related to child care, and/or parental leave, and gender equality initiatives, all affect the gendered division of labor, and thus cross-country differences in these factors will also affect gender gaps in time allocation. Taxes and social norms also shape individual time allocations decisions, and thus cross-country differences in these factors may also shape gender gaps in time allocation.

3. Data

The analysis first draws on data from EUROSTAT's 2010 Harmonized European Time Use Survey (HETUS). In the last 20 years, European countries have conducted time use surveys, and in 2000 EUROSTAT issued, for the first time, methodological guidelines for "Harmonized European Time Use Surveys" (HETUS) to facilitate the data collection process. These HETUS 2000 guidelines were used in 15 European countries in order to have more harmonized data collection, more efficient data processing, and more synchronized data dissemination. Based on experiences of the first 2000 wave, European countries asked Eurostat in 2006 to update the HETUS guidelines. The purpose of the update was to achieve a greater degree of compatibility of concepts and a general simplification of the survey, and resulted in the publication of HETUS 2008 guidelines. Eighteen European countries that carried out a TUS in the HETUS wave of 2010 could thus rely on a stable methodological basis for their work.[1]

Information on time use patterns collected by the participating countries in HETUS are submitted, via their National Statistical Offices, to EUROSTAT, which then generates internationally comparable time use statistics.[2] The information provided by the National Statistical Offices are used here to analyze patterns of paid and unpaid work for the European population. Figures on the hours per day devoted to a range of activities are directly offered by EUROSTAT, and we gather and collect this information, comparing differences between men and women in the time devoted to both paid and unpaid work.

[1] A new version of the HETUS has been recently launched, to guide countries in the design of their own time use surveys for the third wave of the HETUS.

[2] It is agreed that the survey samples should be representative of the population in the respective countries. But it is obvious that national samples will not be uniform. Some countries will draw household or dwelling samples, while others will use the individual as sampling unit. All members of the sampled households , or other members of the sampled individuals' households, may or may not be included in the sample. Sample designs will differ between countries in other respects too.

This information is available at the country (macro) level and is presented as the average hours per day devoted to the reference activity (e.g., paid work, cooking, shopping…). The EUROSTAT data refer to the population aged between 20 and 74 years old.[3]

We focus our analysis on the time spent on paid work, unpaid work, and child care by both men and women in our chosen countries (see Table A1 in the Appendix for a description of the years and countries available). Paid work is defined as the time devoted to main job, second job, employment-related activities, and commuting, following the existing literature (Aguiar and Hurst, 2007; Gimenez-Nadal and Sevilla, 2012). We also follow Aguiar and Hurst (2007) and Gimenez-Nadal and Sevilla (2012) for the definition of unpaid work, which is the time devoted to household production, including cooking, ironing, shopping, and adult care. We analyze child care separately from unpaid work, as the underlying mechanisms and trends are different from those of unpaid work (Bianchi, Milkie, Sayer and Robinson, 2000: Robinson and Godbey, 1997). Table A2 in the Appendix shows the full list of activities included in paid work, unpaid work, and child care.

The data obtained from EUROSTAT refers to the time devoted to main or "primary" activities. When respondents fill in their diaries, they include information on both primary and secondary activities, with the former referring to the main activity and the latter to an additional activity (i.e., activities done simultaneously with main activities). This is important for our analysis, given that prior research has reported that women do multi-tasking (performing two or more activities simultaneously; Bianchi, Milkie, Sayer and Robinson, 2000; Sayer, 2007) much more often than do men (Kalenkoski and Foster, 2015; 2016). This may reflect women's greater involvement in unpaid work, on average, as some unpaid work can be easier to combine with other activities (such as cooking, watching television, and caring for children), than work performed outside the home. The consideration of simultaneous or "secondary" activities has been found to increase the total amount of time dedicated to household production (Kalenkoski and Foster, 2015) and is also important in gender comparisons, given that there may be gender differences

[3] To ensure that the data are representative of an average day in the life of the sampled populations, weights are used in the computation of time use statistics, according to the HETUS guidelines. Weights defined at the day level are used to ensure that all the days of the week are equally represented in the computation of average times. The results were harmonized by Statistics Finland with the financial support of Eurostat

in the ability to carry out, and in the need for, multi-tasking (Kalenkoski and Foster, 2016).

One issue that emerges when analysing the time devoted to child care is that the analysis of total time in child care as "main activity" underestimates the total time spent with children (Folbre and Yoon, 2007). The analysis based on main activities does not take into account that, in certain situations, while the diarist may not report child care as the main activity, he/she may, in fact, be supervising children. For instance, in an excursion to the zoo, the diarist could be reporting "going to the Zoo" as main activity, but the activity is done in the presence of children. Prior literature has found that, when analysing gender differences in child care time, such differences increase when both primary (i.e., child care as main activity) and non-primary child care (i.e., main activity not reported as child care, but done in the presence of children) are considered (Kalil, Ryan and Corey, 2012).

We also explore the Multinational Time Use Survey (MTUS), an ex-post harmonized, cross-time, cross-national, comparative time-use database, coordinated by the Centre for Time Use Research at the University of Oxford. It is constructed from national randomlysampled time-diary studies, with a common series of background variables, and total time spent in 41 activities (Gershuny, 2009). The MTUS provides information on individual time use, based on diary questionnaires in which individuals report their activities throughout the 24 hours of the day. The MTUS includes 41 activities, defined as the 'primary' or 'main' activity individuals were doing at the time of the interview. Thus, we are able to add up the time devoted to any activity of reference (e.g., paid work, leisure, watching TV) as 'primary' activity.

Despite that the MTUS does not include as many countries as does EUROSTAT, the benefit of the MTUS is that it allows us to develop a microeconomic (e.g., individual level) exploration of the factors affecting the uses of time. In this sense, apart from time use information, the MTUS includes a range of socio-demographic characteristics - such as the presence of children, marital status, employment status, and age. Thus, with the MTUS we can explore how socio-demographic characteristics contribute to the gender gap in paid work, unpaid work, and child care. (See Table A1 for the list of countries and years analyzed, and Table A3 in the Appendix for a description of the activities classified as paid work, unpaid work, and child care, following the definitions used for the

EUROSTAT data.) We also restrict the sample to individuals between 20 and 74 years old, following EUROSTAT's methodology.

4. The state of the gender gap in Europe

Figure 1 shows the average hours of paid work, unpaid work, and child care, by country and gender in the 2010s, using information from EUROSTAT (see Table A4 for a description of the figures used to elaborate Figure 1). We first find that men devote more time to paid work than do women in all countries, which is consistent with the higher participation rate of men in the labor market in comparison to women (EUROSTAT). Turkey (5.00 hours per day) and Austria (4.683 hours per day) present the highest values of paid work for men, while Belgium (2.967 hours per day) and Finland (3.000 hours per day) show the lowest time of paid work.[4] In the case of women, Turkey (1.467 hours) and Greece (1.733 hours) present the highest values of paid work, while Austria (2.800 hours) and Estonia (2.7873 hours) show the lowest time of paid work. Regarding the gende gap in paid work, defined as the average time devoted by men minus the average time devoted by women to the activity, we observe that the gap ranges from 3.533 and 2.250 hours per day in Turkey and Italy, to 0.667 and 0.733 hours per day in Estonia and Finland.

From this analysis, some patterns can be discerned. First, Finland (0.733 hours) and Norway (1.050 hours), traditionally classified as "Nordic" countries, present the lowest gaps in paid work, followed by the group of countries classified as "Continental" countries (Austria, Belgium, France, Germany, Luxembourg, and the Netherlands) and "Eastern Central European" countries (Estonia, Hungary, Poland, Romania, and Serbia). Specifically, the gender gap in paid work ranges from 0.983 hours (Belgium) to 1.617 hours (The Netherlands) in the group of Continental countries, while it ranges from 0.667 hours (Estonia) to 1.867 hours (Poland) in Eastern Central European countries. The United Kingdom, representing the group of "Anglo-saxon" countries, lies in the middle regarding the gender gap in paid work. Finally, "Mediterranean" countries (Greece, Italy, Spain and Turkey) present among the highest values of the gender gap in paid work,

[4] The time devoted to paid work can be low in comparison to other studies (Gimenez-Nadal and Sevilla, 2012). However, we must consider that the analysis focuses on individuals between 20 and 74 years old, which includes active and inactive individuals, the retired, and students. When we focus on the time devoted to paid work by full-time and part-time workers (Table A5 in the Appendix), the hours per day devoted to paid work are great (around 5-6 hours for full-time workers, and 3-4 hours per day for part-time workers).

which ranges from 1.367 hours in Spain to 3.533 hours in Turkey. All these positive gender gaps indicate that men devote comparatively more time to paid work than women.

Regarding the time devoted to unpaid work, we find that men devote less time to paid work than do women in all countries. Norway (2.500 hours) and Poland (2.450 hours) present the highest values of unpaid work for men, while Turkey (0.917 hours) and Italy (1.700 hours) show the lowest. In the case of women, Italy (4.867 hours) and Romania (4.733 hours) present the highest values of unpaid work, while Norway (3.450 hours) and the Netherlands (3.433 hours) show the lowest. Regarding the gender gap in unpaid work, defined as the average time devoted by men minus the average time devoted by women to the activity, we observe that it ranges from -0.950 and -1.217 hours per day in Norway and the Netherlands, to -3.167 and -3.717 hours per day in Italy and Turkey.

As in the case of paid work, the lowest gender gap in unpaid work is found in Finland (-0.95 hours) and Norway (-1.25 hours). In the group of "Continental" and "Eastern Central European" countries, the gender gap ranges from -1.517 and -1.217 hours in Estonia and the Netherlands, to -2.100 and -2617 hours in Austria and Romania. In the United Kingdom, the gender gap in unpaid work is around -1.500 hours per day. Finally, "Mediterranean" countries present the highest values of the gender gap in unpaid work, which range from -2.350 hours in Spain to -3.717 hours in Turkey. All these negative values of the gender gap indicate that men devote comparatively less time to unpaid work than do women.

Men devote less time to child care than do women in all countries. Spain (0.450 hours per day) and Poland (0.383 hours per day) present the highest values of child care for men, while Serbia (0.200 hours) and Turkey (0.183 hours) show the lowest. In the case of women, Spain (0.883 hours) and Poland (0.817 hours) present the highest values of child care, while Greece (0.367 hours) and the Netherlands (0.400 hours) show the lowest. Regarding the gender gap in unpaid work, defined as the average time devoted by men minus the average time devoted by women to the activity, we observe that it ranges from -0.133 hours per day in Greece and the Netherlands, to -0.600 and -0.433 hours per day in Turkey, Spain and Poland. Here, we cannot discern any meaningful pattern from the grouping of countries.

We now analyze the gender differences in the uses of time with the MTUS data. Table 1 shows the average time devoted to paid work, unpaid work, and child care by males and

females, and the gender difference in the uses of time, for our five countries. The sample is restricted to individuals between 20 and 74 years old, with complete information on socio-demographic characteristics. Males devote more time to paid work than do females, while females devote more time to unpaid work and child care than do males. In particular, males devote 0.743, 1.788, 2.425, 1.580 and 1.507 more hours per day to paid work than do their female counterparts in Finland, Hungary, Italy, Spain, and the United Kingdom, respectively. Females devote 0.893, 2.205, 3.188, 2.197 and 1.128 more hours per day to unpaid work, and 0.264, 0.383, 0.359, 0.403 and 0.436 more hours per day to child care, than do males in Finland, Hungary, Italy, Spain, and the United Kingdom.[5] The country with the smallest gender gap is Finland, while the countries with the largest gender gaps are Italy and Hungary for paid and unpaid work, and the United Kingdom and Spain for child care, which is consistent with the conclusions from the HETUS data.

5. The role of demographics in the uses of time

We first analyze how socio-demographic characteristics of individuals are related to how men and women in Europe use their time. The existing research has documented that factors such as age, education, and marital status are related to the hours of paid work, unpaid work, and child care (Gershuny, 2000; Kalenkoski, Ribar and Stratton, 2005; Aguiar and Hurst, 2007; Guryan, Hurst and Kearney, 2008; Connelly and Kimmel, 2009;2010; Ramey & Ramey, 2010; Gimenez-Nadal and Sevilla, 2012; Gimenez-Nadal and Molina, 2013). Furthermore, men and women in Europe differ in their socio-demographic characteristics (e.g., education, employment status) and so differences in socio-demographic characteristics between men and women may explain the gender gaps in the uses of time. We now explore to what extent socio-demographic characteristics are related to the uses of time, and the role that gender differences in socio-demographic characteristics play in explaining the gender differentials in the uses of time.

We use data drawn from the Multinational Time Use Survey (MTUS), and analyze Finland (2009), Hungary (2009), Italy (2008), Spain (2008) and the United Kingdom (2014). We estimate, for each country, Ordinary Least Squares (OLS) linear regressions of the time devoted to paid work, unpaid work, and child care. OLS models are normally

[5] All gender gaps are statistically significant at the 99% confidence level, based on a t-type test of equal means.

considered the most suitable econometric specifications for data drawn from time use diaries (Frazis and Stewart, 2012; Gershuny, 2012) although prior evidence has shown that results using both OLS and Tobit models lead to almost identical conclusions (Gimenez-Nadal and Molina, 2013). For the sake of simplicity, we estimate the following OLS model:

$$T_{ij} = \alpha + \beta Male_{ij} + \gamma X_{ij} + \mu Day_{ij} + \delta Month_{ij} + \varepsilon_{ij} \quad (1)$$

where T_{ij} represents the time devoted to the reference activity (paid work, unpaid work, child care) by individual "i" in country "j", and $Male_{ij}$ is the variable indicating the gender (ref.: female) of individual "i" in country "j".

The vector X_{ij} includes the following individual and household characteristics: age, education, employment status, full-time employment, living in urban area, married, cohabiting, household size, number of children under 18 in the household, whether the individual is a single parent, whether the partner (if any) is employed, and unemployment status. The variables employment status, full-time employment, living in urban area, married, cohabiting, the individual is a single parent, partner's (if any) employment status, and unemployment status are defined as dichotomous variables. Education is controlled using two dichotomous variables for secondary education (high school) and tertiary education (more than high school). Age, household size, and the number of children under 18 in the household are continuous variables. We also include dummy variables to scale the day of the week and the month of the survey.

Columns (1), (3), (5), (7) and (9) of Tables 3, 4, and 5 show the results of estimating Equation (1) for the time devoted to paid work, unpaid work, and child care, respectively. We find that, after controlling for the socio-demographic characteristics of individuals, the variable that controls for the gender of the individual is still statistically significant and of the expected sign, and thus differences in observable socio-demographic characteristics between males and females in the analyzed countries cannot explain the gender gaps in paid work, unpaid work, and child care. We find that for paid work, the variable of gender is positive and statistically significant in the five countries, indicating that after controlling for differences in the observable socio-demographic characteristics, males still devote more time to paid work than do females. The highest values of the coefficients of the variable correspond to Hungary and the United Kingdom, while the lowest value corresponds to Finland. The opposite is found for unpaid work and child

care, as the coefficients for male gender are negative and statistically significant in the five countries. The lowest values of the variables correspond to Finland and the United Kingdom for unpaid work, and Finland and Italy for child care, while the highest values correspond to Hungary and Italy for unpaid work, and Hungary and Spain for child care.

From this analysis, other conclusions can be drawn. Age is positively related to the time devoted to paid work, while negatively related to unpaid work and child care. This is consistent with the life cycle of individuals (Apps and Rees, 2005). Those working devote comparatively more time to market activities, and less time to unpaid work and child care, than those who do not work (the unemployed, inactive, retired) in all countries. Thus, labour market participation increases the time devoted to paid work, and decreases the time devoted to unpaid work and child care. These relationships are stronger for full-time workers than for part-time workers in paid work for all countries, given that the coefficient of full-time status is of the same sign as the coefficient indicating whether respondents work, or not.

Regarding education, we observe that in comparison with primary education, secondary education is related top less time in paid work in Italy, and university education is related to less time in paid work in Hungary. Secondary education is related to less time in unpaid work in Italy and more time in Spain, while University education is related to less time in unpaid work in Finland, Hungary, Italy, and Spain. Education is positively related to child care time in Hungary, Italy, and Spain, as the coefficients for the dummy controlling for university education is positive and statistically significant at standard levels in these countries. Living in urban areas is related to less time in paid and unpaid work in Finland, Hungary, and Spain, and more time in child care in Finland, Hungary, Italy, and Spain.

Regarding household characteristics, being married is related to less time in paid work in Italy and Spain, more time in unpaid work in Finland, Hungary, Italy, and Spain, and more time in child care in all five countries. Furthermore, cohabiting leads to differences in the time devoted to paid work, unpaid work, and child care in certain countries, compared to married individuals, which is perhaps related to differences in the type of commitment between the two forms of civic status. Regarding household size, we observe that an increase in the number of household members is related to an increase in the time devoted to paid work in the five analyzed countries, while related to a decrease in the time devoted to child care in all five countries. In the case of unpaid work, a larger household

is related to less time devoted to this activity in Spain and Italy. The presence of children is negatively related to the time devoted to paid work and positively related to the time devoted to both paid work and child care. Being a single parent is related to less time in paid work and more time in unpaid work in Italy, and more time in child care in Finland, Italy, and the United Kingdom.

Regarding the employment status of partners, for those who are married or cohabiting, having an employed partner is related to less time in paid work in Italy, more time in housework in Hungary, Italy, and Spain, and more time in child care in the same three countries.

Netting out the gender correlates of socio-demographic characteristics

With the previous analyses, we conclude that males devote more time to paid work, while females devote more time to both unpaid work and child care, even after controlling for the differences between males and females in their socio-demographic characteristics (age, education, household composition, among others). Thus, when we compare males and females of the same characteristics, males devote more time to paid work and females devote more time to unpaid work and child care. But in the previous analyses, we have not considered that the socio-demographic characteristics of one comparable male and another comparable female may not have the same relationship with their uses of time. For instance, the presence of children may affect the time devoted to paid work to a greater extent for females than for males, and thus gender differences in the time devoted to paid work may be due to gender differences in how socio-demographic factors affect their uses of time, rather than gender differences in socio-demographic characteristics.

Thus, we now estimate a model with interactions between the gender variable and all the socio-demographic characteristics controlled for in our regressions. We estimate the following OLS model:

$$T_{ij} = \alpha + \beta Male_{ij} + \gamma X_{ij} + \phi Male_{ij} * X_{ij} + \mu Day_{ij} + \delta Month_{ij} + \varepsilon_{ij} \quad (1)$$

where T_{ij} represents the time devoted to the reference activity (paid work, unpaid work, child care) by individual "i" in country "j", $Male_{ij}$ is the variable indicating the gender (ref.: female) of individual "i" in country "j", and $Male_{ij} * X_{ij}$ is the interaction between the gender variable and the vector of socio-demographic characteristics.

Results for paid work, unpaid work, and child care are shown in Columns (2), (4), (6), (8) and (10) of Tables 2, 3 and 4, respectively. When we take into account differences in the relationship between the time devoted to paid work and the socio-demographic characteristics, we observe that the gender gap in paid work dissapears, as the coefficients for gender are not statistically significant in the five countries. In the case of unpaid work, we observe that the gender gap in the time devoted to this activity vanishes in the case of Finland and Spain, and decreases in the rest of the countries, while the gender gap in child care increases in the 5 countries in comparison to previous estimates. In Sum, we find that, when we net out gender differences in the uses of time from the differential effects of socio-demographics characteristics on time use, the gender gap in paid work dissapears and the gender gap in unpaid work decreases, while the gender gap in child care increases.

6. Conclusions

The findings presented here establish that the shares of paid and unpaid work of European men and women remain very unequal in the 2010s. The most egalitarian country, in terms of paid and unpaid work balance by gender, among those examined here, is Norway, while Italy is the most unequal country. We find that age is positively related to the time devoted to paid work and negatively related to unpaid work and child care; those working devote comparatively more time to market activities, and less time to unpaid work and child care, than those who do not work (unemployed, inactive, retired) in all countries, and these relationships are stronger for full-time workers than for part-time workers. University education is related to less time in unpaid work in Finland, Hungary, Italy, and Spain, while education is positively related to child care time in Hungary, Italy, and Spain. We observe that after considering the gender difference of the effect of socio-demographic characteristics on the uses of time, the gender gap in paid work vanishes, while the gender gap in unpaid work decreases or disappears, while the gender gap in child care increases in the five countries.

It is well stablished that the unequal sharing of household tasks by gender undermines women's participation in the labour market, and is also largely responsible for the predominance of women among part-time workers (European Parliament, 2009). Overall, the employment rate of working age women, aged 20-64, lags about 10 percentage points behind that of men in the same age group, in the EU-28, in the mid-2010s. In particular, in 2016, over 10% of women aged 25-49, versus only 0.6% of men aged 25-49, were

inactive in the labour market in order to stay home and provide care for others (Eurostat, 2018). While full-time employment is the most common situation for both men and women in Europe in the 2010s, a larger proportion of women is found among part-time workers. On average, 3 of every 10 women were employed part-time in the 2010s in the EU-28, versus fewer than 1 of every 10 men. These inequalities in employment patterns and hours worked by gender contribute to explain the persistent gender gap in earnings and pensions (Bettio, Tinios and Betti, 2013; Bettio and Verashchagina, 2009; Boll, Leppin, Rossen and Wolf, 2016, European Commission, 2018; Hirschmann, 2015).

Since housework responsibilities appear to heavily influence the labour market outcomes of women, the unequal sharing by gender of the unpaid workload is one of the main drivers of gender inequalities in the labour market. In the context of the recent "New Start" initiative of the European Pillar for Social Rights, aimed at improving the work-life balance, we examine the extent of any inequalities in paid and unpaid work among the full-time employed population. The consequences can be significant, not only for equality of opportunity by gender at home and in the labour market, but also in terms of foregone economic productivity and growth (Cavalcanti and Tavares, 2016; Hsie, Hurst, Jones and Klenow, 2013).

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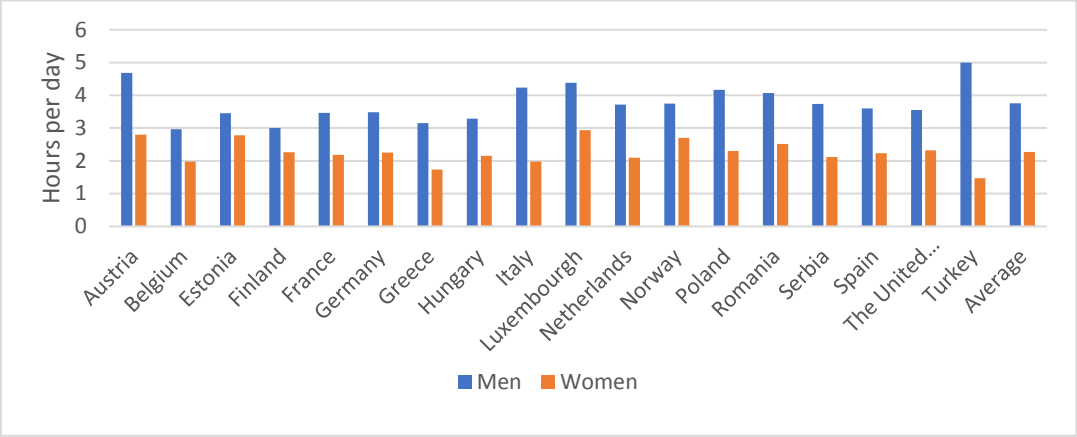
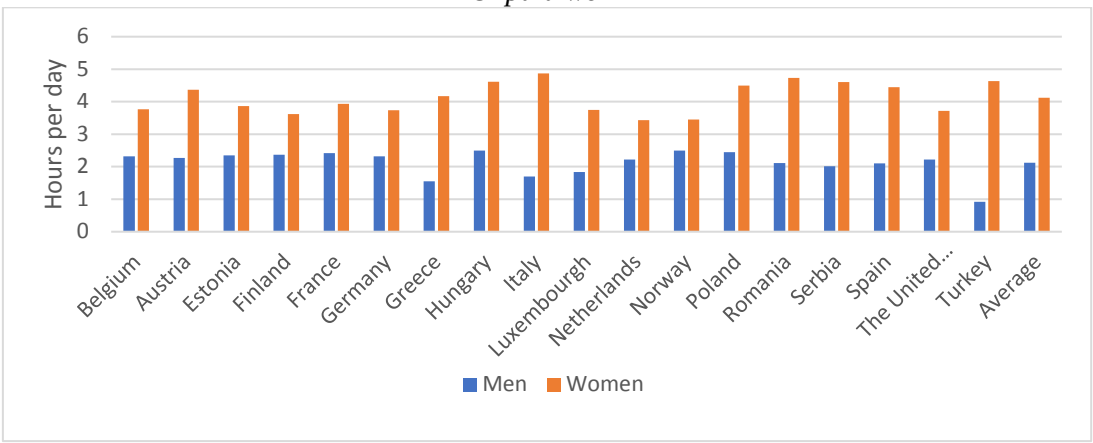
Figure 1. Paid and unpaid work hours (HETUS)

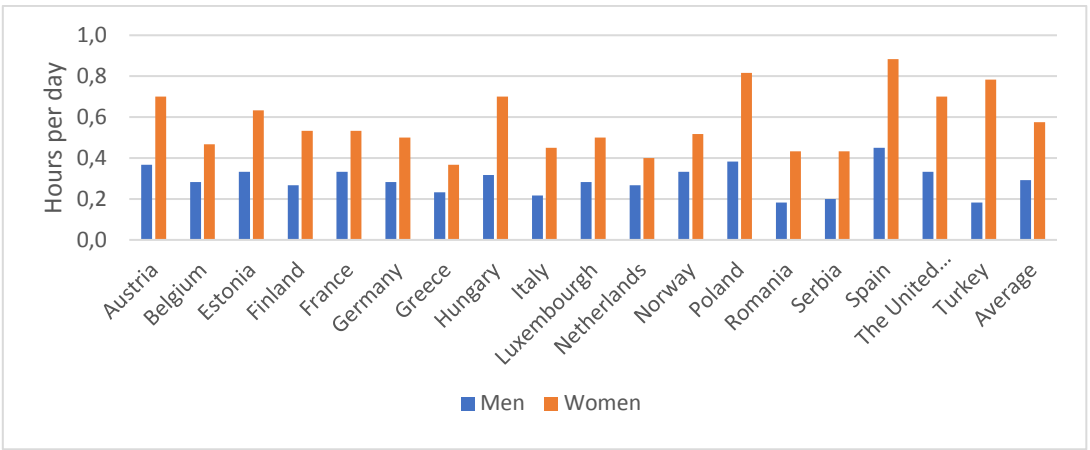
Paid work



Unpaid work



Child care



Note: The Sample (Eurostat HETUS) has been restricted to countries with available data for the 2010 wave of HETUS, and includes men and women between 20 and 74 years old. Paid work, unpaid work, and child care time are measured in hours per day. Child care time is defined in hours per day, and takes value 0 for individuals not engaging in this activity. See table A3 in the Appendix for a description of the activities included in each time use category.

Table 1. Time devoted to paid work, unpaid work and child care (MTUS)

	Paid work			Unpaid work			Child care		
MTUS	Men	Women	Diff.	Men	Women	Diff.	Men	Women	Diff.
Finland (n=5,846)	4.998	4.255	0.743***	1.942	2.835	-0.893***	0.276	0.541	-0.264***
	(4.35)	(3.76)		(1.96)	(2.03)		(0.81)	(1.41)	
Hungary (n=7,153)	6.206	4.418	1.788***	1.764	3.968	-2.205***	0.342	0.724	-0.383***
	(4.42)	(3.73)		(1.92)	(2.35)		(0.90)	(1.59)	
Italy (n=29,849)	6.805	4.380	2.425***	1.226	4.414	-3.188***	0.279	0.638	-0.359***
	(4.52)	(3.64)		(1.63)	(2.76)		(0.79)	(1.40)	
Spain (n=14,623)	6.000	4.419	1.580***	1.511	3.708	-2.197***	0.476	0.878	-0.403***
	(4.62)	(3.78)		(1.90)	(2.54)		(1.15)	(1.71)	
The United Kingdom (n=10,364)	5.850	4.343	1.507***	1.602	2.730	-1.128***	0.365	0.802	-0.436***
	(4.46)	(3.82)		(1.72)	(1.99)		(0.93)	(1.60)	

Note: Standard deviations in parenthesis. The sample has been restricted to Finland (2009), Hungary (2009), Italy (2008), Spain (2008) and the United Kingdom (2014) and includes men and women between 20 and 74 years old. Paid work, unpaid work, and child care time are measured in hours per day. Child care time is defined in hours per day, and takes value 0 for individuals not engaging in this activity. See table A3 in the Appendix for a description of the activities included in each time use category. *Diff* is measured as the time devoted by men to the activity minus the time devoted by women. *** indicates that the difference in the time devoted by men and women to the reference activity is statistically significant at the 99% level of significance, based on a t-type test of equal means.

Table 2. Time devoted to paid work (MTUS)

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
Paid work	**Finland**		**Hungary**		**Italy**		**Spain**		**The United Kingdom**	
Male	0.615***	0.758	1.103***	0.415	0.911***	0.249	0.675***	-0.230	1.035***	0.770
	(0.086)	(0.658)	(0.076)	(0.467)	(0.037)	(0.227)	(0.051)	(0.332)	(0.070)	(0.539)
Age	-0.013***	-0.010*	-0.016***	-0.021***	-0.032***	-0.034***	-0.022***	-0.028***	-0.022***	-0.016***
	(0.004)	(0.006)	(0.003)	(0.004)	(0.002)	(0.002)	(0.002)	(0.003)	(0.003)	(0.004)
Age*Male	-	-0.008	-	0.002	-	-0.002	-	0.007	-	-0.016***
	-	(0.008)	-	(0.007)	-	(0.003)	-	(0.005)	-	(0.006)
Working	2.972***	1.301***	3.902***	0.628***	3.284***	1.525***	3.663***	1.907***	2.868***	1.542***
	(0.157)	(0.188)	(0.138)	(0.197)	(0.070)	(0.081)	(0.106)	(0.125)	(0.099)	(0.114)
Working*Male	-	-0.893***	-	-0.016	-	0.052	-	-0.983***	-	-1.015***
	-	(0.279)	-	(0.268)	-	(0.153)	-	(0.220)	-	(0.175)
Working full-time	0.902***	2.338***	0.630***	3.648***	1.795***	3.074***	1.769***	3.163***	1.240***	2.340***
	(0.139)	(0.210)	(0.134)	(0.197)	(0.067)	(0.081)	(0.102)	(0.128)	(0.086)	(0.124)
Working full-time*Male	-	1.310***	-	0.401	-	0.734***	-	1.546***	-	1.308***
	-	(0.316)	-	(0.278)	-	(0.159)	-	(0.229)	-	(0.206)
Secondary education	-0.044	-0.059	-0.076	-0.249**	-0.097**	-0.008	0.031	-0.022	0.057	-0.201
	(0.129)	(0.182)	(0.092)	(0.123)	(0.039)	(0.057)	(0.072)	(0.103)	(0.170)	(0.271)
Secondary education*Male	-	-0.073	-	0.439**	-	-0.138*	-	0.104	-	0.506
	-	(0.260)	-	(0.185)	-	(0.078)	-	(0.144)	-	(0.348)
Tertiary education	-0.028	0.179	-0.396***	-0.296**	-0.058	-0.061	-0.022	0.067	0.287*	0.257
	(0.132)	(0.185)	(0.103)	(0.135)	(0.057)	(0.082)	(0.066)	(0.096)	(0.166)	(0.268)
Tertiary education*Male	-	-0.414	-	-0.178	-	0.058	-	-0.184	-	0.063
	-	(0.263)	-	(0.208)	-	(0.115)	-	(0.132)	-	(0.341)
Urban area	-0.285***	0.070	-0.339***	-0.271**	-0.051	-0.021	-0.180***	-0.097	-	-
	(0.110)	(0.151)	(0.083)	(0.112)	(0.034)	(0.048)	(0.053)	(0.076)	-	-
Urban area*Male	-	-0.704***	-	-0.153	-	-0.035	-	-0.171	-	-
	-	(0.219)	-	(0.166)	-	(0.068)	-	(0.106)	-	-
Married	-0.096	0.086	0.020	-0.189	-0.121**	-0.465***	-0.324***	-0.491***	-0.027	-0.213
	(0.135)	(0.186)	(0.103)	(0.132)	(0.055)	(0.080)	(0.072)	(0.101)	(0.111)	(0.151)
Married*Male	-	-0.270	-	0.510**	-	0.648***	-	0.322**	-	0.423*
	-	(0.271)	-	(0.216)	-	(0.112)	-	(0.145)	-	(0.224)
Cohabiting	0.046	-0.015	-	-	0.098	0.320**	0.214**	0.004	-0.263***	0.074
	(0.134)	(0.182)	-	-	(0.095)	(0.135)	(0.105)	(0.152)	(0.098)	(0.134)
Cohabiting*Male	-	0.178	-	-	-	-0.498***	-	0.342	-	-0.774***
	-	(0.265)	-	-	-	(0.189)	-	(0.210)	-	(0.196)
Hhld size.	0.270***	0.106	0.099***	0.120**	0.193***	0.242***	0.209***	0.214***	0.280***	0.290***

	(0.070)	(0.097)	(0.037)	(0.050)	(0.017)	(0.025)	(0.025)	(0.036)	(0.041)	(0.055)
Hhld size*Male	-	0.327**	-	-0.042	-	-0.101***	-	0.001	-	-0.037
	-	(0.140)	-	(0.075)	-	(0.034)	-	(0.050)	-	(0.082)
Number of children	-0.211***	-0.201*	-0.187***	-0.408***	-0.205***	-0.423***	-0.261***	-0.428***	-0.514***	-0.686***
	(0.081)	(0.113)	(0.056)	(0.077)	(0.027)	(0.038)	(0.038)	(0.054)	(0.052)	(0.071)
Number of children*Male	-	-0.019	-	0.407***	-	0.360***	-	0.284***	-	0.376***
	-	(0.162)	-	(0.116)	-	(0.055)	-	(0.076)	-	(0.106)
Single parent	-0.230	0.019	-	-	-0.380***	-0.534***	-0.149	0.019	-0.178	0.039
	(0.335)	(0.372)	-	-	(0.093)	(0.104)	(0.190)	(0.211)	(0.186)	(0.209)
Single parent*Male	-	-0.215	-	-	-	0.561**	-	-1.221**	-	-0.631
	-	(1.005)	-	-	-	(0.253)	-	(0.528)	-	(0.526)
Employed partner	-	-	-0.104	-0.124	-0.386***	-0.449***	-0.065	-0.123	-	-0.075
	-	-	(0.102)	(0.149)	(0.048)	(0.074)	(0.064)	(0.096)	-	(0.130)
Employed partner*Male	-	-	-	0.151	-	0.322***	-	0.202	-	0.157
	-	-	-	(0.207)	-	(0.098)	-	(0.129)	-	(0.183)
Unemployed	-0.570***	-0.289	-0.523***	-0.532***	-0.171*	-0.273**	-0.281***	-0.140	-0.117	-0.234
	(0.212)	(0.298)	(0.149)	(0.206)	(0.095)	(0.125)	(0.083)	(0.117)	(0.204)	(0.288)
Unemployed*Male	-	-0.554	-	0.006	-	0.269	-	-0.275*	-	0.250
	-	(0.422)	-	(0.301)	-	(0.190)	-	(0.166)	-	(0.407)
Constant	0.084	0.048	3.842***	4.334***	0.940***	1.364***	0.657***	1.227***	0.362	0.612
	(0.373)	(0.482)	(0.276)	(0.344)	(0.132)	(0.173)	(0.180)	(0.249)	(0.295)	(0.404)
Observations	5,833	5,833	7,153	7,153	29,849	29,849	14,586	14,586	10,364	10,364
R-squared	0.378	0.385	0.437	0.442	0.537	0.543	0.535	0.540	0.340	0.349

Note: Standard deviations in parenthesis. The sample has been restricted to Finland (2009), Hungary (2009), Italy (2008), Spain (2008) and the United Kingdom (2014) and includes men and women between 20 and 74 years old. Paid work is measured in hours per day. See table A3 in the Appendix for a description of the activities included as paid work. *** p<0.01, ** p<0.05, * p<0.1.

Table 3. Time devoted to unpaid work (MTUS)

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
Unpaid work	**Finland**		**Hungary**		**Italy**		**Spain**		**The United Kingdom**	
Male	-0.896***	-0.084	-2.050***	-0.572*	-2.623***	-1.108***	-1.943***	-0.027	-1.015***	-0.610**
	(0.051)	(0.388)	(0.049)	(0.299)	(0.025)	(0.146)	(0.036)	(0.228)	(0.036)	(0.277)
Age	0.024***	0.031***	0.019***	0.029***	0.025***	0.041***	0.023***	0.042***	0.028***	0.032***
	(0.002)	(0.003)	(0.002)	(0.003)	(0.001)	(0.001)	(0.002)	(0.002)	(0.002)	(0.002)
Age*Male	-	-0.014***	-	-0.011***	-	-0.019***	-	-0.032***	-	-0.005
	-	(0.005)	-	(0.004)	-	(0.002)	-	(0.003)	-	(0.003)
Working	-0.527***	-0.240**	-1.162***	0.094	-1.229***	-0.627***	-0.808***	-0.806***	-0.568***	-0.521***
	(0.092)	(0.111)	(0.089)	(0.126)	(0.047)	(0.052)	(0.075)	(0.086)	(0.051)	(0.059)
Working*Male	-	0.202	-	-0.077	-	0.382***	-	0.606***	-	0.405***
	-	(0.164)	-	(0.171)	-	(0.098)	-	(0.151)	-	(0.090)
Working full-time	-0.115	-0.553***	0.038	-1.190***	-0.341***	-1.341***	-0.517***	-0.807***	-0.373***	-0.559***
	(0.082)	(0.124)	(0.087)	(0.126)	(0.045)	(0.052)	(0.072)	(0.088)	(0.044)	(0.064)
Working full-time*Male	-	0.161	-	0.171	-	0.710***	-	0.168	-	0.063
	-	(0.186)	-	(0.178)	-	(0.103)	-	(0.157)	-	(0.106)
Secondary education	-0.091	-0.007	0.026	-0.049	-0.301***	-0.453***	0.117**	0.063	0.139	0.230*
	(0.076)	(0.107)	(0.060)	(0.079)	(0.027)	(0.037)	(0.051)	(0.071)	(0.088)	(0.139)
Secondary education*Male	-	-0.224	-	0.158	-	0.483***	-	0.118	-	-0.268
	-	(0.153)	-	(0.119)	-	(0.050)	-	(0.099)	-	(0.179)
Tertiary education	-0.192**	-0.151	-0.138**	-0.322***	-0.599***	-0.811***	-0.156***	-0.460***	0.137	0.066
	(0.078)	(0.109)	(0.066)	(0.087)	(0.039)	(0.053)	(0.046)	(0.066)	(0.086)	(0.138)
Tertiary education*Male	-	-0.087	-	0.442***	-	0.781***	-	0.761***	-	0.105
	-	(0.155)	-	(0.133)	-	(0.074)	-	(0.090)	-	(0.175)
Urban area	-0.279***	-0.414***	-0.156***	-0.184**	0.016	-0.144***	-0.108***	-0.206***	-	-
	(0.065)	(0.089)	(0.054)	(0.072)	(0.023)	(0.031)	(0.037)	(0.052)	-	-
Urban area*Male	-	0.292**	-	0.085	-	0.315***	-	0.199***	-	-
	-	(0.129)	-	(0.107)	-	(0.044)	-	(0.073)	-	-
Married	0.339***	0.382***	0.188***	0.726***	0.489***	1.405***	0.288***	0.684***	0.074	0.140*
	(0.079)	(0.109)	(0.067)	(0.085)	(0.037)	(0.052)	(0.050)	(0.069)	(0.057)	(0.078)
Married*Male	-	-0.021	-	-1.342***	-	-1.705***	-	-0.765***	-	-0.150
	-	(0.160)	-	(0.139)	-	(0.072)	-	(0.100)	-	(0.115)
Cohabiting	-0.014	0.032	-	-	-0.384***	-0.688***	0.000	-0.039	0.033	-0.043

	(0.078)	(0.107)	-	-	(0.064)	(0.087)	(0.074)	(0.105)	(0.051)	(0.069)
Cohabiting*Male	-	-0.079	-	-	-	0.805***	-	0.117	-	0.203**
	-	(0.156)	-	-	-	(0.122)	-	(0.144)	-	(0.101)
Hhld size.	-0.002	0.070	0.032	0.098***	-0.090***	0.023	-0.054***	0.111***	-0.035*	-0.010
	(0.041)	(0.057)	(0.024)	(0.032)	(0.012)	(0.016)	(0.018)	(0.025)	(0.021)	(0.028)
Hhld size*Male	-	-0.164**	-	-0.164***	-	-0.183***	-	-0.303***	-	-0.057
	-	(0.082)	-	(0.048)	-	(0.022)	-	(0.034)	-	(0.042)
Number of children	0.166***	0.172***	0.033	0.087*	0.087***	0.050**	0.096***	0.002	0.232***	0.298***
	(0.047)	(0.066)	(0.036)	(0.049)	(0.018)	(0.025)	(0.027)	(0.037)	(0.027)	(0.036)
Number of children*Male	-	-0.002	-	0.042	-	0.089**	-	0.172***	-	-0.160***
	-	(0.095)	-	(0.074)	-	(0.035)	-	(0.052)	-	(0.054)
Single parent	0.338*	0.391*	-	-	0.650***	1.237***	0.018	0.518***	0.146	0.085
	(0.197)	(0.219)	-	-	(0.063)	(0.067)	(0.134)	(0.145)	(0.096)	(0.108)
Single parent*Male	-	0.201	-	-	-	-0.812***	-	-0.703*	-	0.292
	-	(0.592)	-	-	-	(0.163)	-	(0.363)	-	(0.271)
Employed partner	-	-	0.356***	0.168*	0.767***	0.745***	0.427***	0.435***	-	0.265***
	-	-	(0.066)	(0.096)	(0.032)	(0.048)	(0.045)	(0.066)	-	(0.067)
Employed partner*Male	-	-	-	0.400***	-	-0.273***	-	-0.099	-	-0.138
	-	-	-	(0.133)	-	(0.063)	-	(0.089)	-	(0.094)
Unemployed	0.273**	0.232	0.634***	0.663***	-0.083	0.176**	0.340***	0.370***	-0.101	0.099
	(0.124)	(0.175)	(0.097)	(0.132)	(0.064)	(0.081)	(0.058)	(0.080)	(0.105)	(0.148)
Unemployed*Male	-	0.148	-	0.004	-	-0.152	-	0.214*	-	-0.265
	-	(0.249)	-	(0.193)	-	(0.123)	-	(0.114)	-	(0.210)
Constant	1.821***	1.402***	3.192***	2.287***	3.515***	2.159***	2.884***	1.630***	1.783***	1.523***
	(0.219)	(0.284)	(0.179)	(0.220)	(0.089)	(0.111)	(0.126)	(0.171)	(0.152)	(0.208)
Observations	5,833	5,833	7,153	7,153	29,849	29,849	14,586	14,586	10,364	10,364
R-squared	0.150	0.156	0.311	0.332	0.495	0.548	0.317	0.357	0.199	0.209

Note: Standard deviations in parenthesis. The sample has been restricted to Finland (2009), Hungary (2009), Italy (2008), Spain (2008) and the United Kingdom (2014) and includes men and women between 20 and 74 years old. Unpaid work is measured in hours per day. See table A3 in the Appendix for a description of the activities included in unpaid work. *** p<0.01, ** p<0.05, * p<0.1

Table 4. Time devoted to child care (MTUS)

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
Child care	**Finland**		**Hungary**		**Italy**		**Spain**		**The United Kingdom**	
Male	-0.218***	-1.328***	-0.311***	-1.170***	-0.195***	-0.826***	-0.305***	-0.889***	-0.291***	-1.267***
	(0.027)	(0.204)	(0.028)	(0.165)	(0.013)	(0.074)	(0.021)	(0.137)	(0.023)	(0.176)
Age	-0.023***	-0.030***	-0.018***	-0.021***	-0.012***	-0.016***	-0.016***	-0.019***	-0.022***	-0.029***
	(0.001)	(0.002)	(0.001)	(0.002)	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)
Age*Male	-	0.018***	-	0.013***	-	0.011***	-	0.007***	-	0.019***
	-	(0.003)	-	(0.002)	-	(0.001)	-	(0.002)	-	(0.002)
Working	-0.467***	0.057	-0.613***	-0.152**	-0.168***	-0.132***	-0.240***	-0.315***	-0.302***	-0.247***
	(0.049)	(0.058)	(0.050)	(0.070)	(0.023)	(0.027)	(0.044)	(0.052)	(0.033)	(0.037)
Working*Male	-	-0.044	-	0.136	-	0.052	-	0.240***	-	0.235***
	-	(0.087)	-	(0.095)	-	(0.050)	-	(0.091)	-	(0.057)
Working full-time	0.019	-0.703***	-0.125***	-0.835***	-0.197***	-0.268***	-0.258***	-0.313***	-0.203***	-0.318***
	(0.044)	(0.065)	(0.048)	(0.070)	(0.022)	(0.027)	(0.043)	(0.053)	(0.028)	(0.040)
Working full-time*Male	-	0.593***	-	0.706***	-	0.217***	-	0.123	-	0.159**
	-	(0.098)	-	(0.098)	-	(0.052)	-	(0.095)	-	(0.067)
Secondary education	-0.018	0.016	0.025	0.049	0.088***	0.098***	0.003	0.034	-0.068	-0.042
	(0.041)	(0.057)	(0.033)	(0.044)	(0.013)	(0.019)	(0.030)	(0.043)	(0.056)	(0.088)
Secondary education*Male	-	-0.004	-	-0.032	-	-0.024	-	-0.072	-	-0.024
	-	(0.081)	-	(0.065)	-	(0.026)	-	(0.059)	-	(0.114)
Tertiary education	0.045	0.037	0.265***	0.324***	0.189***	0.292***	0.143***	0.158***	0.025	0.044
	(0.041)	(0.057)	(0.037)	(0.048)	(0.019)	(0.027)	(0.027)	(0.040)	(0.055)	(0.087)
Tertiary education*Male	-	0.048	-	-0.154**	-	-0.221***	-	-0.051	-	-0.051
	-	(0.082)	-	(0.073)	-	(0.038)	-	(0.055)	-	(0.111)
Urban area	0.107***	0.153***	0.091***	0.115***	0.027**	0.021	0.011	-0.041	-	-
	(0.034)	(0.047)	(0.030)	(0.040)	(0.012)	(0.016)	(0.022)	(0.031)	-	-
Urban area*Male	-	-0.091	-	-0.051	-	0.014	-	0.124***	-	-
	-	(0.068)	-	(0.059)	-	(0.022)	-	(0.044)	-	-
Married	0.396***	0.420***	0.218***	0.127***	0.311***	0.459***	0.418***	0.401***	0.357***	0.422***
	(0.042)	(0.058)	(0.037)	(0.047)	(0.018)	(0.026)	(0.030)	(0.042)	(0.037)	(0.049)
Married*Male	-	-0.127	-	0.215***	-	-0.234***	-	0.033	-	-0.146**
	-	(0.084)	-	(0.076)	-	(0.037)	-	(0.060)	-	(0.073)
Cohabiting	-0.102**	-0.063	-	-	0.158***	0.300***	-0.137***	-0.138**	-0.223***	-0.282***
	(0.042)	(0.056)	-	-	(0.032)	(0.044)	(0.044)	(0.063)	(0.033)	(0.044)
Cohabiting*Male	-	-0.051	-		-	-0.225***	-	0.034	-	0.165**
	-	(0.082)	-		-	(0.062)	-	(0.087)	-	(0.064)

Hhld size.	-0.139***	-0.159***	-0.057***	-0.058***	-0.136***	-0.199***	-0.188***	-0.247***	-0.173***	-0.213***
	(0.022)	(0.030)	(0.013)	(0.018)	(0.006)	(0.008)	(0.011)	(0.015)	(0.014)	(0.018)
Hhld size*Male	-	0.058	-	0.013	-	0.130***	-	0.106***	-	0.103***
	-	(0.043)	-	(0.026)	-	(0.011)	-	(0.021)	-	(0.027)
Number of children	0.512***	0.619***	0.683***	0.840***	0.623***	0.901***	0.819***	1.070***	0.696***	0.876***
	(0.025)	(0.035)	(0.020)	(0.027)	(0.009)	(0.013)	(0.016)	(0.022)	(0.017)	(0.023)
Number of children*Male	-	-0.262***	-	-0.445***	-	-0.551***	-	-0.504***	-	-0.431***
	-	(0.050)	-	(0.041)	-	(0.018)	-	(0.031)	-	(0.035)
Single parent	0.544***	0.479***	-	-	0.431***	0.448***	0.119	0.002	0.162***	0.026
	(0.105)	(0.115)	-	-	(0.031)	(0.034)	(0.079)	(0.087)	(0.062)	(0.068)
Single parent*Male	-	-0.391	-		-	-0.222***	-	-0.440**	-	-0.053
	-	(0.312)	-		-	(0.083)	-	(0.219)	-	(0.172)
Employed partner	-	-	0.236***	0.402***	0.210***	0.095***	0.181***	0.182***	-	0.172***
	-	-	(0.037)	(0.053)	(0.016)	(0.024)	(0.027)	(0.040)	-	(0.042)
Employed partner*Male	-	-	-	-0.535***	-	0.028	-	-0.086	-	-0.097
	-		-	(0.073)	-	(0.032)	-	(0.054)	-	(0.060)
Unemployed	-0.341***	-0.562***	-0.376***	-0.597***	-0.161***	-0.239***	0.048	0.087*	-0.292***	-0.327***
	(0.066)	(0.092)	(0.054)	(0.073)	(0.032)	(0.041)	(0.035)	(0.048)	(0.067)	(0.094)
Unemployed*Male	-	0.582***	-	0.701***	-	0.229***	-	0.010	-	0.210
	-	(0.131)	-	(0.106)	-	(0.063)	-	(0.069)	-	(0.133)
Constant	1.765***	2.154***	1.669***	1.835***	0.990***	1.154***	1.403***	1.642***	1.818***	2.116***
	(0.117)	(0.149)	(0.100)	(0.122)	(0.044)	(0.057)	(0.075)	(0.103)	(0.098)	(0.132)
Observations	5,833	5,833	7,153	7,153	29,849	29,849	14,586	14,586	10,364	10,364
R-squared	0.267	0.290	0.298	0.334	0.285	0.321	0.305	0.326	0.307	0.336

Note: Standard deviations in parenthesis. The sample has been restricted to Finland (2009), Hungary (2009), Italy (2008), Spain (2008) and the United Kingdom (2014) and includes men and women between 20 and 74 years old. Child care time is defined in hours per day. See table A3 in the Appendix for a description of the activities included as child care. *** p<0.01, ** p<0.05, * p<0.1.

APPENDIX A

Table A1. Analyzed countries from HETUS and MTUS

	HETUS	MTUS
Austria	2009	-
Belgium	2013	-
Estonia	2009	-
Finland	2009	2009
France	2009	-
Germany	2012	-
Greece	2011	-
Hungary	2009	2009
Italy	2008	2008
Luxembourg	2014	-
Netherlands	2010	-
Norway	2010	-
Poland	2013	-
Romania	2010	-
Serbia	2010	-
Spain	2008	2008
The United Kingdom	2014	2014
Turkey	2010	-

Source: Own elaboration from EUROSTAT and MTUS.

Table A2. Definition of paid work, unpaid work and child care (HETUS)

Time use category	Activities
Paid work	Employment; related activities and travel as part of/during main and second job; Main and second job and related travel; Activities related to employment and unspecified employment; Study; School and university except homework; Homework; Free time study; Travel to/from work
Unpaid work	Household and family care: Food management except dish washing; Dish washing; Cleaning dwelling; Household upkeep except cleaning dwelling; Laundry; Ironing; Handicraft and producing textiles and other care for textiles; Gardening; other pet care; Tending domestic animals; Caring for pets; Walking the dog; Construction and repairs ; Shopping and services; Household management and help family member; Travel related to shopping and services; Travel related to other household purposes
Child care	Childcare, except teaching, reading and talking; Teaching, reading and talking with child; Transporting a child

Source: Own elaboration froM HETUS.

Table A3. Definition of paid work, unpaid work and child care (MTUS)

Time use category	**Activities**
Paid work	Paid work-main job (not at home); paid work at home; Second or other job not at home; travel as a part of work; Other time at workplace; Look for work; Regular schooling, education; Homework; Leisure and other education or training; Travel to/from work
Unpaid work	Food preparation, cooking; Set table, wash/put away dishes; Cleaning; Laundry, ironing, clothing repair; Maintain home/vehicle, including collec; Other domestic work; Purchase goods; Consume personal care services; Consume other services; Pet care (not walk dog); Adult care; Shop, person/hhld care travel
Child care	Physical, medical child care; Teach, help with homework; Read to, talk or play with child; Supervise, accompany, other child care; Child/adult care travel

Source: Own elaboration from the MTUS.

Table A4. Paid work, unpaid work, and child care hours

	Paid work			Unpaid work			Childcare		
	Men	Women	Diff.	Men	Women	Diff.	Men	Women	Diff.
Austria	4.683	2.800	1.883	2.267	4.367	-2.100	0.367	0.700	-0.333
Belgium	2.967	1.983	0.983	2.317	3.767	-1.450	0.283	0.467	-0.183
Estonia	3.450	2.783	0.667	2.350	3.867	-1.517	0.333	0.633	-0.300
Finland	3.000	2.267	0.733	2.367	3.617	-1.250	0.267	0.533	-0.267
France	3.467	2.183	1.283	2.417	3.933	-1.517	0.333	0.533	-0.200
Germany	3.483	2.250	1.233	2.317	3.733	-1.417	0.283	0.500	-0.217
Greece	3.150	1.733	1.417	1.550	4.167	-2.617	0.233	0.367	-0.133
Hungary	3.283	2.150	1.133	2.500	4.617	-2.117	0.317	0.700	-0.383
Italy	4.233	1.983	2.250	1.700	4.867	-3.167	0.217	0.450	-0.233
Luxembourg	4.383	2.933	1.450	1.833	3.750	-1.917	0.283	0.500	-0.217
Netherlands	3.717	2.100	1.617	2.217	3.433	-1.217	0.267	0.400	-0.133
Norway	3.750	2.700	1.050	2.500	3.450	-0.950	0.333	0.517	-0.183
Poland	4.167	2.300	1.867	2.450	4.500	-2.050	0.383	0.817	-0.433
Romania	4.067	2.517	1.550	2.117	4.733	-2.617	0.183	0.433	-0.250
Serbia	3.733	2.117	1.617	2.017	4.600	-2.583	0.200	0.433	-0.233
Spain	3.600	2.233	1.367	2.100	4.450	-2.350	0.450	0.883	-0.433
The United Kingdom	3.550	2.317	1.233	2.217	3.717	-1.500	0.333	0.700	-0.367
Turkey	5.000	1.467	3.533	0.917	4.633	-3.717	0.183	0.783	-0.600

Note: The sample (Eurostat HETUS) has been restricted to countries with available data for the 2010 wave of HETUS, and includes men and women. Paid work, unpaid work, and child care time are measured in hours per day. Child care time is defined in hours per day, and takes value 0 for individuals not engaging in this activity. See Table A2 in the Appendix for a description of the activities included in paid work, unpaid work, and child care time. *Diff* is measured as the time devoted by men to the activity minus the time devoted by women.

Table A5. Paid work for full-time and part-time workers

	Full-time workers		Part-time workers	
	Men	**Women**	**Men**	**Women**
Austria	7.117	6.400	4.200	4.400
Belgium	6.000	5.083	4.033	3.550
Estonia	6.150	5.867	3.867	3.850
Finland	5.950	5.150	3.867	3.183
France	6.150	5.450	5.183	4.050
Germany	5.650	4.967	3.567	3.317
Greece	7.383	6.467	5.033	3.883
Hungary	6.033	5.317	4.583	3.867
Italy	7.417	6.317	5.283	4.317
Netherlands	6.067	5.183	3.933	3.350
Norway	5.467	4.933	4.233	3.583
Poland	6.667	5.350	4.800	3.933
Romania	6.717	5.967	6.100	4.500
Serbia	7.167	5.967	3.583	3.233
Spain	6.983	6.300	4.900	4.167
The United Kingdom	5.983	5.383	4.167	3.467

Note: The Sample (Eurostat HETUS) has been restricted to countries with available data for the 2010 wave of HETUS, and includes men and women in full-time or part-time employment. Paid work, unpaid work, and child care time are measured in hours per day. Child care time is defined in hours per day, and takes value 0 for individuals not engaging in this activity. See Table A2 in the Appendix for a description of the activities included in paid work, unpaid work, and child care time.