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The Paid and Unpaid Working Life Expectancy at 50 in Europe

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The Paid and Unpaid Working Life Expectancy at 50 in Europe

Abstract

Objectives: Amid growing concerns about the economic implications of population aging and the sustainability of older adults' working life, unpaid family care work receives less attention despite its direct relevance to population aging. This paper systematically compares the paid and unpaid working life expectancy at age 50 to understand the overlap and trade-off between paid and unpaid work among older European adults.

Method: Using data from the Survey of Health and Retirement in Europe (SHARE) with the Sullivan method, the paper presents gender differences across 17 countries in life expectancy at age 50 at various paid (employment) and unpaid (caregiving) role configurations.

Results: When work is defined to include unpaid family caregiving, women and men have similar working life expectancies at age 50, in contrast to prior research. However, its paid and unpaid components are gendered. The results also show that at age 50, women are expected to spend similar number of years providing grandchild care and ADL/IADL care and that most of these years take place after retirement.

Discussion: The results highlight that the gendered tension between paid and unpaid work persists into older adulthood and needs to be accounted for in working life expectancy measures. The results also underscore the gendered implications of population aging and unpaid work in older adulthood for retirement age policies and strategies for promoting gender equality in later life.

Key words: Caregiving, Employment, Life course, Gender

One major concern about population aging is how to sustain older adults' "working life," i.e., how long they are economically active. To understand trends and patterns in the working life, scholars often use a Working Life Expectancy (WLE) measure to estimate the number of years older adults are expected to be employed after age 50 (Dudel & Myrskylä, 2017; Loichinger & Weber, 2016). Understanding trends in WLE is valuable for anticipating future economic needs and resources at the national level. It is particularly vital in countries where old-age entitlements are based on workers' contributions over the life course. However, the current WLE measure overlooks unpaid care work, which is often provided by women, directly related to their employment opportunities, and not counted towards pensions.

Incorporating unpaid care work in WLE research is warranted because although older women today work longer than in the past (Goldin & Katz, 2018), their WLE continues to be lower than men's in most countries (Dudel & Myrskylä, 2017; Loichinger & Weber, 2016). Unpaid care work is also crucial for understanding the economic implications of population aging. Current discourse about population aging focuses on the potential added exposure to elderly care. However, increasing longevity and delayed fertility have lengthened the period of "shared lives" across generations, which has important consequences for the duration of time that older adults, especially women, are exposed to multiple care responsibilities (Bengtson, 2001; Leopold & Skopek, 2015; Margolis, 2016; Margolis & Wright, 2017). Therefore, focusing exclusively on paid work to understand older adults' WLE underestimate women's work and limits our understanding of the gendered consequences of population aging.

This paper describes the paid and unpaid components of older adults' WLE in Europe. Broadening the definition of work beyond paid employment highlights the duration of life that older adults are exposed to "work," which does not end with retirement. Moreover, incorporating unpaid care work into WLE, goes beyond the study of individual characteristics

that determine care provision and situates unpaid care work at the population level (Moen & DePasquale, 2017). Furthermore, the cross-national comparative approach complements the study of (paid) WLE and facilitates conceptualizing unpaid care work across diverse social and demographic contexts (Moen & DePasquale, 2017).

Background

The gender gap in WLE at 50 raises the question of whether older women should be "encouraged" to stay in paid work for several more years, especially because they live longer than men (Bettio et al., 2012; Chawla et al., 2007). During the economic recession of 2008, several European countries opted for pension reforms that included increasing and equating retirement age (Bettio et al., 2012). However, this debate overlooks older women's unpaid family care work, which they provide for their families before and after retirement.

Existing research on the relationship between caregiving responsibilities and retirement timing often focus on its gendered nature, individual-level determinants, and cross-national variations (Schmid et al., 2012). Yet, the question of how long older adults are exposed to different caregiving roles in general throughout older adulthood and especially after retirement remains open. Recently, Ophir and Polos (2021) estimated that adults spend over half of their adult life providing unpaid family care work. This paper builds upon and extends their research by further investigating how long women and men provide different types of care and how many of these years overlap with employment or continue after retirement.

Existing research on older adults' unpaid care work often focuses on one type of care. However, to understand WLE holistically, a comprehensive account of unpaid care work is necessary. There are two types of unpaid family care work that are relevant in older adulthood. First, grandchild care is becoming a major component of older adulthood (Hank &

Buber, 2009) by affecting retirement (Van Bavel & De Winter, 2013) and facilitating working-age mothers' participation in the labor force (Bordone et al., 2017). Moreover, increasing longevity and delayed fertility have lengthened the duration of grandparenthood (Leopold & Skopek, 2015; Margolis, 2016; Margolis & Verdery, 2019), hence lengthening the exposure to childcare.

Another form of familial care responsibility involves assisting with activities such as bathing and feeding (ADL) or helping with errands and chores (IADL). Scholars have expressed concern about the added burden of this type of care work that will be carried by family members due to population aging (Chawla et al., 2007). Studies often focus on this form of care work from an intergenerational perspective, i.e., caring for older parents (Albertini et al., 2007), while others focus on spousal care (Glauber, 2017). Spousal care might be a smaller component of care in older adulthood amid rising grey divorces (Brown & Lin, 2012; Munnell et al., 2017). However, with increasing longevity and morbidity, providing ADL/IADL can span various relationships and years, which warrants measuring ADL/IADL provision more broadly.

The tension between paid and unpaid work extends beyond childbearing years. Although grandparenthood and ADL/IADL care overlap with employment, women are more likely to retire earlier when they take on these care responsibilities (Carr et al., 2018; Crespo & Mira, 2014; Dentinger & Clarkberg, 2002; Lumsdaine & Vermeer, 2015). However, it is unclear how many years older women are expected to be in both paid and unpaid work—i.e. as caregivers while employed—and how many years they will provide unpaid care work after they retire.

This paper describes the gendered paid and unpaid WLE across European countries with different demographic and social characteristics. Demographically, European countries are aging, but longevity and the level and timing of fertility vary across the region, exposing

women and men to different care responsibilities at different ages. Socially, countries vary in their familial norms and the expectations between family members (Reher, 1998). More importantly, countries differ in how their social policies facilitate gender equality and support different care needs in the population (Bettio & Plantenga, 2004). Care regimes range from very generous wherein family members supplement care often at low intensity (e.g., Scandinavian countries) to very limited, thus requiring family members to carry the bulk of intense family care (e.g., southern and eastern European countries). Some countries offer mid-range provisions to support family members as primary caregivers. It is beyond the scope of this paper to identify the unique contribution of demographic and social forces in shaping patterns of paid and unpaid WLE. However, these forces are likely to shape cross-national variation, the extent to which the WLE is gendered, and the components and intensity of care.

In this paper, I describe the duration of paid and unpaid WLE among European older adults by answering the following questions: 1) what is the WLE at 50 when including unpaid family care work? 2) how many years are European women and men age 50 expected to spend as workers and as unpaid caregivers, both separately and jointly? and 3) what are the components of caregiving years? I answer these questions by comparing women and men across 17 European countries using recent data from the Survey of Health and Retirement in Europe (SHARE) with the Sullivan method (Sullivan, 1971). This study is the first, to my knowledge, that systematically incorporates unpaid work in the study of WLE using a cross-national perspective.

Methods

Data

Calculating life expectancies using the Sullivan method requires two sources of data. First, country- and gender-specific life tables for the mortality schedules of each country. I use the

period life tables from the Human Mortality Database which includes person years lived and life expectancies. Second, cross-sectional survey data to create country- gender- and age-specific proportions of paid and unpaid work. I use the Survey of Health and Retirement in Europe (SHARE) which is a cross-national longitudinal survey that collects information on family and social networks, socioeconomic status, and health from individuals age 50 and older and their partners (Börsch-Supan et al., 2013). I use data from wave six which was collected in 2015 (Börsch-Supan, 2019). The total sample for the analysis includes 51,015 women and men from 17 European countries: Austria (n=2,651), Belgium (n=4,647), Croatia (n=1,845), Czech Republic (n=3,478), Denmark (n=2,905), Estonia (n=4,213), France (n=3,047), Germany (n=3,423), Greece (n=4,039), Italy (n=4,149), Luxemburg (n=1,331), Poland (n=1,316), Portugal (n=1,171), Slovenia (n=3,163), Spain (n=4,331), Sweden (n=2,971), and Switzerland (n=2,308).

SHARE data is well-suited for the purposes of this study because it focuses on older adults who are at the life stage when they make retirement decisions and when caregiving responsibilities are expected to peak again (Murphy et al., 2006; Vlachantoni et al., 2020). Second, its large nationally representative samples are appropriate for the Sullivan method's requirements. Finally, SHARE allows to measure family caregiving holistically regarding type, occurrence, direction, and intensity.

However, SHARE also has several limitations. SHARE asked about three caregiving activities (detailed below). Each SHARE respondent was asked about two of these activities. However, due to a skip pattern in the survey, the third activity – grandchild care – was only asked of the family respondent, i.e., the person SHARE designated to answer questions on behalf of the couple. Unlike other questions in SHARE, family respondents were not asked about grandchild care on behalf of the couple but rather individually. Therefore, I excluded the partners of family respondents in couples with grandchildren. I retained partners of family

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respondents who do not have grandchildren because it is reasonable to assume they do not participate in grandchild care. Consequently, I used 78% of the pooled SHARE survey sample in 2015 (this figure ranges from 70% in Portugal to 86% in Luxembourg). To address concerns that this exclusion might bias the care estimates, I compared the age-specific proportions for the two other caregiving indicators that SHARE asked all respondents. Results show that the 78% sample is very similar to the full sample (see Supplementary Appendix Figure A1). Hence, there is no reason to suspect that grandchild care data will bias the results.

Measures of unpaid work

SHARE asks participants about three forms of unpaid caregiving. First, respondents are asked whether in the past twelve months they have personally given any of the following care or practical help to anyone who is living outside their household: personal care (dressing, bathing, or getting in and out of bed etc.), practical help (assistance with transportation, shopping, and household chores), or assistance with paperwork and legal matters.

Respondents can report up to three people to whom they provided care and are asked to specify their relationship to each care recipient. I limit my analysis to care provided for family members only (i.e., partner, parents, grandparents, children, grandchildren, siblings, in-laws, and other relatives). Respondents are also asked how frequently they provided care to each recipient (“about daily,” “about every week,” “about every month”, or “less often”). If a respondent provided care to more than one family member, I assigned them with the highest caregiving frequency they provided.

Second, respondents are asked whether they provide “personal care, such as washing, getting out of bed, or dressing?” to anyone who is living with them in the household and what is their relationship to that person. I limit the analysis to care that is given to family members

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and assume that this care is provided daily because they co-reside with the recipient (Jang et al., 2012; Marks et al., 2002).

Third, respondents who have grandchildren are asked: “have you regularly or occasionally looked after your grandchildren without the presence of the parents”? Respondents who answer “yes” are asked how often they looked after their grandchildren (“about daily,” “about every week,” “about every month”, or “less often”).

To calculate the number of years in any caregiving role, I first need to classify participants as caregivers. This is challenging from a comparative perspective because research consistently shows that the likelihood and frequency of caregiving vary immensely across Europe (Albertini et al., 2007; Bordone et al., 2017; Brandt et al., 2009; Brandt & Deindl, 2013). Therefore, first I classify respondents as caregivers if they provide *any* type of care at *any* frequency. Then, I further distinguish between three levels of care: high intensity includes care that respondents provided daily or to someone in the household. Medium intensity includes caregiving that was provided weekly. Low intensity refers to care work that was provided less than weekly (Bordone et al., 2017; Haberkern et al., 2015).

Paid work

SHARE asks participants what is their “current employment situation,” to which respondents can answer: retired, employed or self-employed, unemployed, permanently sick or disabled, homemaker, or other. I consider people to be in paid work if they report that they are employed or self-employed. I do not distinguish between full-time and part-time employment because of the relatively small sample size (10% of the pooled SHARE sample works part-time, i.e., less than 35 hours per week) and to be consistent with prior WLE research. Missing values are classified as non-caregivers and have a very low prevalence ranging between 0.27% and 1.56% of the total pooled sample for the various paid and unpaid measures.

Analytical strategy

I use the Sullivan method (Sullivan, 1971) to calculate paid and unpaid WLE. The Sullivan method breaks down life expectancy into different states and is often used to estimate Healthy Life Expectancy (Jagger et al., 2014). Scholars have applied this method to calculate life expectancy for different states, for example, being a step-grandparent (Yahirun et al., 2018) or grandparent (Margolis & Wright, 2017). The Sullivan method has also been applied to calculate (paid) WLE at 50 (Loichinger & Weber, 2016).

After classifying respondents as caregivers and/or as employed, I aggregated the survey data to generate age-specific proportions of care, for example, by gender and country using 5-year interval age groups. Then I multiply the country-, gender-, age-specific proportions by the person-years lived (L_x) that are available in the period life tables. This generates the person-years lived as a caregiver (L_a^{care}). Then, I sum the person-years lived as a caregiver (T^{care}) and divide it by the number of people alive in the age interval (l_x). This results in e_{50}^{care} , the expected number of years one will live as a caregiver at age 50:

$$e_x^{care} = \frac{T^{care}}{l_x} = \frac{\sum_{a=x}^{\infty} L_a^{care}}{l_x}$$

I use this method to create one life expectancy measure with four mutually exclusive categories: 1) only employed, 2) only a caregiver, 3) employed and a caregiver, and 4) neither employed nor a caregiver. These four categories sum to the life expectancy at age 50. Then, I use the same method to break down these categories further by type of care and intensity.

The Sullivan method provides a synthetic cohort measure and assumes that the population is stationary, namely, that the age-specific mortality, care, and employment proportions will not change over time. If a population is stationary, people who turn 50 in the survey year are *expected* to go through a life course trajectory that is represented by the age distribution in the cross-sectional data. Synthetic cohort measures are useful because of their

ability to summarize cumulative states across the life course efficiently and intuitively which enables comparisons between and within groups with different aging structures.

Other demographers have used transition probabilities or increment-decrement life tables to calculate working life expectancy (Dudel et al., 2018; Dudel & Myrskylä, 2017; Leinonen et al., 2018). However, the Sullivan method is the best approach for the aims of the current study. First, though it is plausible that people over age 50 will transition from working to caregiving roles over time, studies show that these transitions are low (Gonzales et al., 2017). Second, using multi-state life tables methods require longitudinal data. Although SHARE is a panel survey, the time that elapses between waves is irregular, which makes it challenging to identify respondents' paid or unpaid roles at the beginning and end of each age interval. Furthermore, the identity of the family respondent changes over time which would significantly reduce the sample size and create long periods where a person's role as a caregiver will be missing. Moreover, although it is possible to reconstruct employment history, SHARE does not ask retrospective questions about beginning and end dates for unpaid family caregiving. Therefore, the Sullivan method is the most appropriate method to systematically compare paid and unpaid work life expectancy.

Third, if the transition rates between care and employment (and mortality) change gradually over time, the estimates based on the Sullivan method are similar to those based on transition probabilities (Imai & Soneji, 2007; Mathers & Robine, 1997). At the time of writing this paper, the COVID-19 pandemic is still ongoing and likely to have shortened the period life expectancy of older adults. Moreover, social distancing hindered older adults' ability to provide care. Future studies should compare post-pandemic estimates to the pre-pandemic benchmarks described in this paper to fully understand how COVID-19 has altered the working life of older adults in Europe.

Results

Prevalence of Paid and Unpaid Work in Older Adulthood

Figure 1 shows the age-specific proportions of employment and caregiving by gender, pooling all 17 countries. Panel A shows the proportion of women and men who are employed or providing any care at any intensity by age. The figure suggests there are no major differences in the prevalence of women and men who are active in paid or unpaid work. Panel B shows the age-specific proportions for employment and care work separately by gender and demonstrates the gendered life trajectory of paid and unpaid work in older adulthood. Women and men provide care to family members well into their elderly years. However, women's involvement in care is higher than men's and stable until age 65 followed by a decrease. Men are less involved in care work and show a similar pattern of decline, but at age 75, there is a gender reversal and men are slightly more likely to be involved in care. This reversal is consistent with other research using different data and is likely due to mortality selection (Glauber, 2017; Ophir & Polos, 2021; Patterson & Margolis, 2019). A massive decrease in employment occurs between age 55 and 65 as people retire.

Paid and Unpaid Working Life Expectancy

Figure 2 shows the total number of years that women and men across 17 European countries are expected to be employed and/or provide care at age 50 (point estimates and 95% confidence intervals are available in Supplementary Materials). There is little cross-national variation and very small gender gaps. Across the 17 European countries in the sample, women age 50 are expected to spend between 16 (Greece) and 23 (Sweden) years in any paid or unpaid role. Men age 50 are expected to spend between 13 (Poland) and 22 (Sweden) years in any paid or unpaid role. The gender gap is small across most countries and is about a year or less except for Estonia, Poland, Slovenia, and France, which have a gender gap of two

years or more. When the working life expectancy measure includes unpaid work, the gender gap is substantially reduced and, in many countries, “favors” women. This contrasts with the patterns of the (paid) WLE.

Table 1 further breaks down the total number of years in (un)paid role into four mutually exclusive categories of paid and unpaid work. Across all countries, women are expected to spend the greatest number of years exclusively being caregivers while not employed. Between 40% and 69% of women’s working life involves caregiving exclusively. Meaning, there is a significant portion of older women’s WLE that involves unpaid work in the form of caregiving for family members that takes place after retirement.

There is cross-national variation in the number of years women are expected to be in both roles. Countries that stand out are Spain and Greece, where the number of years employed while caregiving is lowest (1.9 years), followed by Portugal, Luxembourg, Croatia, and Italy, all with less than three years. This pattern suggests that there are barriers for older women to combine both paid and unpaid work in these countries. Shifting our focus to men, Table 1 shows more variation but that men also spend significant number of years post retirement providing care for their families. However, years in exclusive employment is the prominent form of working in men’s later life. In sum, breaking down the broadly defined WLE to mutually exclusive categories of paid and unpaid work shows that older women are expected to spend more years that involve caregiving while older men are expected to spend more years that involve employment.

Table 1 also shows the gender gap in the number of years women and men spend in each state. For ease of comparison across countries and roles, Figure 3 visualizes the women-to-men ratio of the estimates in Table 1. The horizontal line indicates equality. A ratio above the line indicates that women are expected to spend more years than men in a role and below the line indicates that men are expected to spend more years than women in a role.

The black circles represent the women-to-men ratio in the total number of years in (un)paid work and visualize the small gender gaps in Figure 2. However, the other shapes in the graph show clear gender segregation between paid and unpaid work years. The squares represent the women-to-men ratio of the number of years expected to be employed and not participating in caregiving. Across all countries, men age 50 are expected to spend more years in this role than women. In contrast, the triangles estimate the women-to-men ratio of the number of years being employed while caregiving. In most countries, except for Denmark, Luxembourg, Portugal, and Croatia, women are expected to spend more years being caregivers while being employed. The diamonds represent the women-to-men ratio of the number of years spent exclusively in a caregiving role. The results suggest that in all countries, without exception, women are expected to spend more years exclusively caregiving. In other words, although the duration of the working life is similar, its components follow a clear gender segregation between paid and unpaid work.

Components of Caregiving Years

Table 2 breaks down the years of caregiving by employment status and intensity level. For limitations of space, this section presents results for six countries representing different care regimes (Bettio & Plantenga, 2004). Results for the other 11 countries are available in the Supplementary Materials. Table 2 shows that there are cross-national variations in the intensity and type of the predominant care activity, but also differences in the overlap with employment. Providing grandchild care is as prominent as providing IADL/ADL care among women and men. Although there are cross-national variations, women and men are expected to spend similar number of years providing grandchild care and IADL/ADL. However, it is important to note that this measure underestimates the number of years that people are

expected to provide multiple forms of care because the measure prioritizes the highest intensity form of care (this issue is further discussed below).

For women and men across most countries, the years spent providing grandchild care occur mostly after retirement, regardless of intensity level. Although there are many years of providing IADL/ADL after retirement, some of these years coincide with employment, especially for men. Moreover, the gender gap in grandchild care is larger than the gender gap in IADL/ADL care in most of the countries. This could be because women retire earlier than men which exposes them to more demanding grandchild care that takes place in early childhood.

The cross-national variations in the intensity of care work aligns with existing research on welfare regimes. Even though Swedish women and men spent most years in total (un)paid work, the majority of their caregiving years are low intensity; this echoes Sweden's generous welfare regime wherein family caregiving is supplementary. In contrast, in Greece, Italy, and Poland, where women and men had relatively lower total working life expectancy, women provide mostly care at medium- and high-level of intensity. This pattern aligns with the "familialistic" welfare regime, wherein families carry the main and most intensive caregiving responsibilities. In France, the pattern is mixed, while grandchild care is provided at low-level intensity, IADL/ADL is provided mostly at a medium-high level intensity, even when it does not overlap with employment. The pattern wherein Scandinavian and northern European countries exhibit higher number of total years at low intensity and southern European countries have fewer years of care with high intensity is supported by past research (Albertini et al., 2007; Ophir & Polos, 2021).

Among men, however, the cross-national variations in intensity are less straight forward. In Italy and Poland, men are expected to spend most of their caregiving years

providing care at medium-high level intensity, but in the other countries years of care are somewhat evenly distributed across varying levels of intensity.

Discussion

One growing concern about population aging is whether and how to lengthen older adults' WLE. Moreover, because women live longer than men but have shorter working lives, increasing or equating men's and women's retirement age is a matter of gender equality debates. Some European countries have already taken this approach following the economic crisis of 2008 (Bettio et al., 2012). The discussion of retirement age is essential, especially in aging countries where old-age entitlements and pension benefits are directly linked to employment. However, the results presented in this paper highlight potential caveats and challenges to delaying retirement age in general, and particularly for women.

In contrast to previous research, this study shows that when the WLE measure at age 50 includes unpaid family care work, the gender gap is small and, in many countries, "favors" women; after age 50, men and women are expected to work for a similar number of years. However, its paid and unpaid components are gendered. Breaking down WLE into mutually exclusive categories of paid and unpaid work showed that older women are expected to spend more years that involve unpaid caregiving, mostly after retirement. Older adults, particularly women, continue to work after exiting paid work by providing unpaid care for their families. These patterns suggest that decisions about lengthening working life and strategies aiming for gender equality in pensions and retirement age should explicitly measure and account for older women's unpaid family care work.

The results show women are expected to spend few years participating in both paid and unpaid work, which underscores that the tension between employment and caregiving persists beyond childbearing years (Lumsdaine & Vermeer, 2015). The centrality of

grandchild care also highlights the counterintuitive consequences of population aging for older adults' care participation. The concern about the "added burden of care" often pertains to a larger older population that will require informal care (IADL/ADL) amid fertility decline. However, the results show that childcare is just as a central component of older women's working life, which is why an intergenerational perspective is essential for work-family policies and retirement age debates (Saraceno & Keck, 2008). Additional investment in unpaid care work in older adulthood, which conflicts with paid work and does not count towards pension benefits, could exacerbate gender equality later in life and expose older women to additional economic disadvantages.

There are several limitations to the current analysis. First, the results underestimate the number of years people are expected to provide multiple forms of care. The current measurement prioritizes the type of care that people provided at the highest intensity due to the Sullivan method analytical strategy. Therefore, the estimates in Table 2 are limited to the number of years that people are expected to provide multiple forms of care at the same highest intensity. The results do not suggest that people spend few years providing multiple types of care. Moreover, unpaid care work in this analysis does not include other highly gendered forms of familial care, such as emotional support.

Second, this analysis does not account for the heterogeneity among women and men within countries, namely the different challenges that older women in different social strata might have in combining paid and unpaid work and the implications for their retirement timing and pension benefits. Future research should investigate the within-country variance in paid and unpaid WLE of older adults.

Nonetheless, this study contributes to the working life literature by incorporating unpaid work and provides the first systematic analysis of older adults' paid and unpaid WLE in Europe. It also extends previous work about the duration of caregiving life by using recent

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data and breaking down caregiving years by type of care. Measuring employment and care as life expectancies enables researchers to move beyond the study of individual determinants of care provision (Moen & DePasquale, 2017). The results shed light on the duration of life that older adults are exposed to paid and unpaid labor and offers future venues of research about the gendered implications of population aging.

References

- Albertini, M., Kohli, M., & Vogel, C. (2007). Intergenerational transfers of time and money in European families: Common patterns — different regimes? *Journal of European Social Policy*, 17(4), 319–334. <https://doi.org/10.1177/0958928707081068>
- Bengtson, V. L. (2001). Beyond the Nuclear Family: The Increasing Importance of Multigenerational Bonds. *Journal of Marriage and Family*, 63, 1–16. <https://doi.org/10.1111/j.1741-3737.2001.00001.x>
- Bettio, F., Corsi, M., D'Ippoliti, C., Lyberaki, A., Samek Lodovici, M., & Verashchagina, A. (2012). *The impact of the economic crisis on the situation of women and men and on gender equality policies Synthesis report Justice The impact of the economic crisis on the situation of women and men and on gender equality policies*. European Commission. <https://op.europa.eu/en/publication-detail/-/publication/06e6b06c-a71c-4b90-a90e-96e0c5a35bd6>
- Bettio, F., & Plantenga, J. (2004). Comparing Care Regimes in Europe. *Feminist Economics*, 10(1), 85–113. <https://doi.org/10.1080/1354570042000198245>
- Bordone, V., Arpino, B., & Aassve, A. (2017). Patterns of grandparental child care across Europe: The role of the policy context and working mothers' need. *Ageing and Society*, 37(4), 845–873. <https://doi.org/10.1017/S0144686X1600009X>
- Börsch-Supan, A. (2019). *Survey of Health, Ageing and Retirement in Europe (SHARE) Wave 6*. Release version: 7.1.0. SHARE-ERIC. Data set. DOI: 10.6103/SHARE.w6.710
- Börsch-Supan, A., Brandt, M., Hunkler, C., Kneip, T., Korbmacher, J., Malter, F., Schaan, B., Stuck, S., & Zuber, S. (2013). Data Resource Profile: The Survey of Health, Ageing and Retirement in Europe (SHARE). *International Journal of Epidemiology*, 42(4), 992–1001. <https://doi.org/10.1093/ije/dyt088>
- Brandt, M., & Deindl, C. (2013). Intergenerational Transfers to Adult Children in Europe: Do Social Policies Matter? *Journal of Marriage and Family*, 75(1), 235–251. <https://doi.org/10.1111/j.1741-3737.2012.01028.x>

- Brandt, M., Haberkern, K., & Szydlik, M. (2009). Intergenerational Help and Care in Europe. *European Sociological Review*, 25(5), 585–601. <https://doi.org/10.1093/esr/jcn076>
- Brown, S. L., & Lin, I.-F. (2012). The Gray Divorce Revolution: Rising Divorce Among Middle-Aged and Older Adults, 1990-2010. *The Journals of Gerontology Series B: Psychological Sciences and Social Sciences*, 67(6), 731–741. <https://doi.org/10.1093/geronb/gbs089>
- Carr, E., Murray, E. T., Zaninotto, P., Cadar, D., Head, J., Stansfeld, S., & Stafford, M. (2018). The Association Between Informal Caregiving and Exit From Employment Among Older Workers: Prospective Findings From the UK Household Longitudinal Study. *The Journals of Gerontology Series B: Psychological Sciences and Social Sciences*, 73(7), 1253–1262. <https://doi.org/10.1093/geronb/gbw156>
- Chawla, M., Betcherman, G., & Banerji, A. (2007). *From Red to Gray: The “Third Transition” of Aging Populations in Eastern Europe and the Former Soviet Union*. World Bank.
- Crespo, L., & Mira, P. (2014). Caregiving to Elderly Parents and Employment Status of European Mature Women. *Review of Economics and Statistics*, 96(4), 693–709. https://doi.org/10.1162/REST_a_00426
- Dentinger, E., & Clarkberg, M. (2002). Informal Caregiving and Retirement Timing among Men and Women: Gender and Caregiving Relationships in Late Midlife. *Journal of Family Issues*, 23(7), 857–879. <https://doi.org/10.1177/019251302236598>
- Dudel, C., López Gómez, M. A., Benavides, F. G., & Myrskylä, M. (2018). The Length of Working Life in Spain: Levels, Recent Trends, and the Impact of the Financial Crisis. *European Journal of Population*, 34(5), 769–791. <https://doi.org/10.1007/s10680-017-9458-9>
- Dudel, C., & Myrskylä, M. (2017). Working Life Expectancy at Age 50 in the United States and the Impact of the Great Recession. *Demography*, 54(6), 2101–2123. <https://doi.org/10.1007/s13524-017-0619-6>
- Glauber, R. (2017). Gender Differences in Spousal Care Across the Later Life Course. *Research on Aging*, 39(8), 934–959. <https://doi.org/10.1177/0164027516644503>
- Goldin, C., & Katz, L. F. (2018). *Women Working Longer: Increased Employment at Older Ages*. In *Women Working Longer*. University of Chicago Press.

- Gonzales, E., Lee, Y., & Brown, C. (2017). Back to Work? Not Everyone. Examining the Longitudinal Relationships Between Informal Caregiving and Paid Work After Formal Retirement. *The Journals of Gerontology Series B: Psychological Sciences and Social Sciences*, 72(3), 532–539. <https://doi.org/10.1093/geronb/gbv095>
- Haberkern, K., Schmid, T., & Szydlik, M. (2015). Gender differences in intergenerational care in European welfare states. *Ageing and Society*, 35(2), 298–320. <https://doi.org/10.1017/S0144686X13000639>
- Hank, K., & Buber, I. (2009). Grandparents Caring for their Grandchildren: Findings From the 2004 Survey of Health, Ageing, and Retirement in Europe. *Journal of Family Issues*, 30(1), 53–73. <https://doi.org/10.1177/0192513X08322627>
- Human Mortality Database. (2021). University of California, Berkeley (USA), and Max Planck Institute for Demographic Research (Germany). Available at www.mortality.org (data downloaded on May 23, 2019)
- Imai, K., & Soneji, S. (2007). On the Estimation of Disability-Free Life Expectancy: Sullivan's Method and Its Extension. *Journal of the American Statistical Association*, 102(480), 1199–1211. <https://doi.org/10.1198/016214507000000040>
- Jagger, C., Oyen, H. V., & Robine, J.-M. (2014). *Health Expectancy Calculation by the Sullivan Method: A Practical Guide. 4th Edition.*
- Jang, S.-N., Avendano, M., & Kawachi, I. (2012). Informal Caregiving Patterns in Korea and European Countries: A Cross-National Comparison. *Asian Nursing Research*, 6(1), 19–26. <https://doi.org/10.1016/j.anr.2012.02.002>
- Leinonen, T., Martikainen, P., & Myrskylä, M. (2018). Working Life and Retirement Expectancies at Age 50 by Social Class: Period and Cohort Trends and Projections for Finland. *The Journals of Gerontology: Series B*, 73(2), 302–313. <https://doi.org/10.1093/geronb/gbv104>
- Leopold, T., & Skopek, J. (2015). The Demography of Grandparenthood: An International Profile. *Social Forces*, 94(2), 801–832. <https://doi.org/10.1093/sf/sov066>
- Loichinger, E., & Weber, D. (2016). Trends in Working Life Expectancy in Europe. *Journal of Aging and Health*, 28(7), 1194–1213. <https://doi.org/10.1177/0898264316656509>

- Lumsdaine, R. L., & Vermeer, S. J. C. (2015). Retirement Timing of Women and the Role of Care Responsibilities for Grandchildren. *Demography*, 52(2), 433–454.
<https://doi.org/10.1007/s13524-015-0382-5>
- Margolis, R. (2016). The Changing Demography of Grandparenthood: Changing Demography of Grandparenthood. *Journal of Marriage and Family*, 78(3), 610–622.
<https://doi.org/10.1111/jomf.12286>
- Margolis, R., & Verdery, A. M. (2019). A Cohort Perspective on the Demography of Grandparenthood: Past, Present, and Future Changes in Race and Sex Disparities in the United States. *Demography*, 56(4), 1495–1518. <https://doi.org/10.1007/s13524-019-00795-1>
- Margolis, R., & Wright, L. (2017). Healthy Grandparenthood: How Long Is It, and How Has It Changed? *Demography*, 54(6), 2073–2099. <https://doi.org/10.1007/s13524-017-0620-0>
- Marks, N. F., Lambert, J. D., & Choi, H. (2002). Transitions to Caregiving, Gender, and Psychological Well-Being: A Prospective U.S. National Study. *Journal of Marriage and Family*, 64(3), 657–667. <https://doi.org/10.1111/j.1741-3737.2002.00657.x>
- Mathers, C. D., & Robine, J. M. (1997). How good is Sullivan’s method for monitoring changes in population health expectancies? *Journal of Epidemiology & Community Health*, 51(1), 80–86.
<https://doi.org/10.1136/jech.51.1.80>
- Moen, P., & DePasquale, N. (2017). Family care work: A policy-relevant research agenda. *International Journal of Care and Caring*, 1(1), 45–62.
<https://doi.org/10.1332/239788217X14866284542346>
- Munnell, A. H., Sanzenbacher, G. T., & King, S. E. (2017). Do women still spend most of their lives married? *Age*, 72(71.8), 59–8.
- Murphy, M., Martikainen, P., & Pennec, S. (2006). Demographic change and the supply of potential family supporters in Britain, Finland and France in the period 1911–2050/Changements démographiques et disponibilité des soutiens familiaux en Grande-Bretagne, en Finlande et en France entre 1911 et 2050. *European Journal of Population / Revue Européenne de Démographie*, 22(3), 219–240. <https://doi.org/10.1007/s10680-006-9003-8>

- Ophir, A., & Polos, J. (2021). Care Life Expectancy: Gender and Unpaid Work in the Context of Population Aging. *Population Research and Policy Review*. <https://doi.org/10.1007/s11113-021-09640-z>
- Patterson, S. E., & Margolis, R. (2019). The Demography of Multigenerational Caregiving: A Critical Aspect of the Gendered Life Course. *Socius: Sociological Research for a Dynamic World*, 5, 237802311986273. <https://doi.org/10.1177/2378023119862737>
- Reher, D. S. (1998). Family Ties in Western Europe: Persistent Contrasts. *Population and Development Review*, 24(2), 203–234. <https://www.jstor.org/stable/2807972>
- Saraceno, C., & Keck, W. (2008). *The institutional framework of intergenerational family obligations in Europe*. Wissenschaftszentrum Berlin für Sozialforschung Social Science Research Center Berlin.
- Schmid, T., Brandt, M., & Haberkern, K. (2012). Gendered support to older parents: Do welfare states matter? *European Journal of Ageing*, 9(1), 39–50. <https://doi.org/10.1007/s10433-011-0197-1>
- Sullivan, D. F. (1971). A Single Index of Mortality and Morbidity. *HSMHA Health Reports*, 86(4), 347. <https://doi.org/10.2307/4594169>
- Van Bavel, J., & De Winter, T. (2013). Becoming a Grandparent and Early Retirement in Europe. *European Sociological Review*, 29(6), 1295–1308. <https://doi.org/10.1093/esr/jct005>
- Vlachantoni, A., Evandrou, M., Falkingham, J., & Gomez-Leon, M. (2020). Caught in the middle in mid-life: Provision of care across multiple generations. *Ageing and Society*, 40(7), 1490–1510. <https://doi.org/10.1017/S0144686X19000047>
- Yahirun, J. J., Park, S. S., & Seltzer, J. A. (2018). Step-grandparenthood in the United States. *The Journals of Gerontology: Series B*, 73(6), 1055–1065. <https://doi.org/10.1093/geronb/gbx164>

Table 1. Paid and Unpaid Working Life Expectancy at Age 50, by Country and Gender (In Years)

| Country | Women | | | | | Men | | | | |
|----------------|------------------------------|-----------------|---------------------------------|------------------|---------------------------|------------------------------|-----------------|---------------------------------|------------------|---------------------------|
| | Total years in (un)paid role | <i>Employed</i> | <i>Employed & Caregiver</i> | <i>Caregiver</i> | Years in no (un)paid role | Total years in (un)paid role | <i>Employed</i> | <i>Employed & Caregiver</i> | <i>Caregiver</i> | Years in no (un)paid role |
| Sweden | 22.7 | 4.7 | 8.4 | 9.7 | 12.3 | 22.3 | 6.6 | 7.1 | 8.6 | 9.7 |
| Denmark | 22.2 | 3.5 | 7.6 | 11.1 | 11.6 | 20.9 | 5.2 | 8.0 | 7.7 | 9.5 |
| France | 21.0 | 3.9 | 4.8 | 12.3 | 15.4 | 19.1 | 4.2 | 4.3 | 10.6 | 12.2 |
| Switzerland | 20.6 | 6.9 | 5.7 | 8.0 | 15.3 | 20.8 | 10.3 | 4.1 | 6.4 | 11.5 |
| Belgium | 20.3 | 3.0 | 4.8 | 12.4 | 14.2 | 19.0 | 5.0 | 4.4 | 9.5 | 11.5 |
| Czech Republic | 19.7 | 2.5 | 5.8 | 11.4 | 12.9 | 18.3 | 4.6 | 4.7 | 9.0 | 9.4 |
| Germany | 19.4 | 4.6 | 5.7 | 9.1 | 14.8 | 18.2 | 6.0 | 4.8 | 7.4 | 11.8 |
| Estonia | 19.0 | 4.8 | 6.8 | 7.4 | 14.3 | 15.1 | 6.0 | 4.2 | 4.9 | 11.2 |
| Slovenia | 18.3 | 3.0 | 3.4 | 11.8 | 16.4 | 16.1 | 4.2 | 3.1 | 8.7 | 13.6 |
| Portugal | 18.2 | 3.4 | 2.3 | 12.5 | 16.9 | 17.1 | 6.0 | 2.8 | 8.3 | 13.0 |
| Austria | 17.9 | 3.7 | 3.9 | 10.4 | 16.8 | 16.7 | 5.0 | 3.8 | 7.8 | 13.8 |
| Luxembourg | 17.6 | 4.4 | 2.4 | 10.8 | 18.0 | 16.5 | 5.7 | 2.6 | 8.1 | 14.4 |
| Italy | 16.9 | 4.2 | 2.7 | 10.0 | 19.2 | 16.6 | 7.9 | 2.3 | 6.5 | 15.4 |
| Spain | 16.3 | 5.7 | 1.9 | 8.7 | 20.1 | 15.8 | 7.6 | 1.7 | 6.4 | 15.6 |
| Croatia | 15.9 | 2.6 | 2.6 | 10.8 | 15.9 | 14.5 | 4.1 | 2.8 | 7.7 | 12.1 |
| Poland | 15.6 | 3.3 | 3.2 | 9.1 | 17.1 | 13.1 | 5.5 | 2.1 | 5.5 | 13.4 |
| Greece | 15.5 | 3.5 | 1.9 | 10.1 | 19.5 | 15.7 | 7.3 | 2.7 | 5.7 | 14.9 |
| Mean (EU17) | 18.7 | 4.0 | 4.3 | 10.3 | 15.9 | 17.4 | 6.0 | 3.9 | 7.6 | 12.5 |

Note: in descending order by women's total years in (un)paid work.

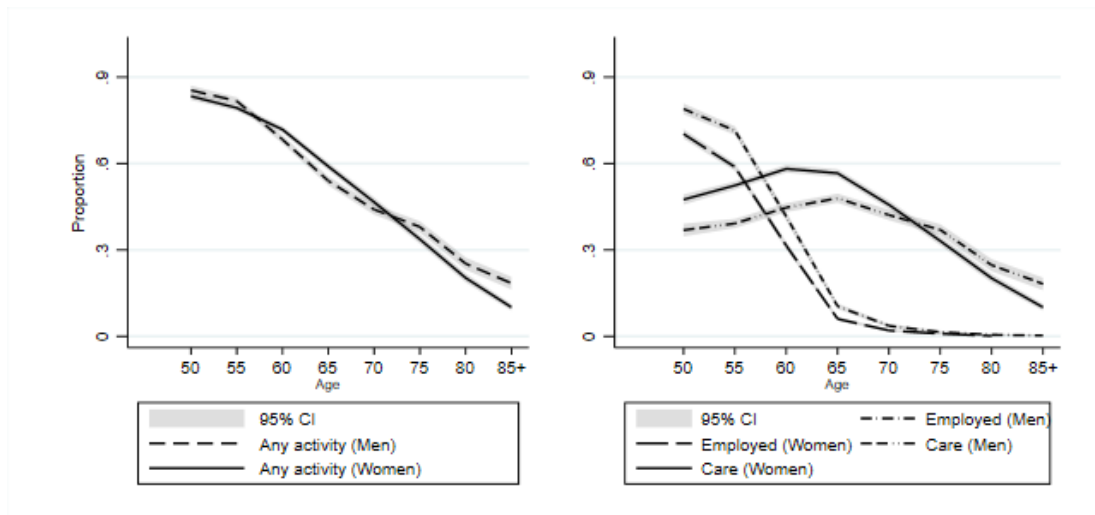
Source: SHARE 2015.

Table 2. Components of Unpaid Years by Employment Status and Gender, Selected Countries

| Country | Activity and intensity configuration | Women | | | Men | | |
|-----------|--------------------------------------|-----------------|------------|------------|-----------------|------------|------------|
| | | Grandchild care | IADL/ADL | Multiple | Grandchild care | IADL/ADL | Multiple |
| Germany | Employed; high/medium | 0.7 | 2.5 | 0.3 | 0.3 | 1.6 | 0.1 |
| | Employed; low | 0.7 | 1.2 | 0.3 | 0.6 | 2.1 | 0.2 |
| | Just care; high/medium | 2.7 | 3.1 | 0.4 | 1.8 | 2.3 | 0.2 |
| | Just care; low | 1.7 | 0.9 | 0.3 | 1.3 | 1.4 | 0.4 |
| | Total | 5.9 | 7.7 | 1.3 | 4.0 | 7.4 | 0.9 |
| Sweden | Employed; high/medium | 0.9 | 1.8 | 0.1 | 0.5 | 1.7 | 0.2 |
| | Employed; low | 1.5 | 2.8 | 1.4 | 1.3 | 2.4 | 1.0 |
| | Just care; high/medium | 2.0 | 1.6 | 0.3 | 1.2 | 1.5 | 0.3 |
| | Just care; low | 3.9 | 1.1 | 0.8 | 3.0 | 1.4 | 1.2 |
| | Total | 8.2 | 7.2 | 2.6 | 6.1 | 7.0 | 2.6 |
| Greece | Employed; high/medium | 0.3 | 0.7 | 0.0 | 0.3 | 1.2 | 0.0 |
| | Employed; low | 0.1 | 0.6 | 0.1 | 0.3 | 1.0 | 0.0 |
| | Just care; high/medium | 3.3 | 3.1 | 0.7 | 1.7 | 1.6 | 0.2 |
| | Just care; low | 1.7 | 1.1 | 0.3 | 1.0 | 1.0 | 0.1 |
| | Total | 5.4 | 5.5 | 1.0 | 3.2 | 4.8 | 0.3 |
| Poland | Employed; high/medium | 1.0 | 1.2 | 0.1 | 0.7 | 0.4 | 0.1 |
| | Employed; low | 0.6 | 0.2 | 0.1 | 0.4 | 0.5 | 0.0 |
| | Just care; high/medium | 4.0 | 2.2 | 0.5 | 2.0 | 1.7 | 0.3 |
| | Just care; low | 1.9 | 0.4 | 0.1 | 1.2 | 0.2 | 0.1 |
| | Total | 7.4 | 4.0 | 0.8 | 4.3 | 2.8 | 0.4 |
| Italy | Employed; high/medium | 0.4 | 1.5 | 0.1 | 0.2 | 1.3 | 0.0 |
| | Employed; low | 0.1 | 0.5 | 0.0 | 0.0 | 0.7 | 0.0 |
| | Just care; high/medium | 4.1 | 3.8 | 0.6 | 2.9 | 2.2 | 0.3 |
| | Just care; low | 0.8 | 0.5 | 0.1 | 0.6 | 0.4 | 0.1 |
| | Total | 5.4 | 6.4 | 0.9 | 3.7 | 4.6 | 0.4 |
| France | Employed; high/medium | 0.7 | 1.3 | 0.1 | 0.3 | 1.4 | 0.1 |
| | Employed; low | 1.0 | 1.2 | 0.5 | 0.6 | 1.7 | 0.2 |
| | Just care; high/medium | 3.1 | 3.1 | 0.4 | 1.9 | 2.6 | 0.4 |
| | Just care; low | 3.8 | 1.3 | 0.7 | 3.4 | 1.3 | 1.0 |
| | Total | 8.6 | 6.8 | 1.7 | 6.2 | 7.0 | 1.6 |
| Mean EU17 | Employed; high/medium | 0.8 | 1.6 | 0.2 | 0.4 | 1.3 | 0.1 |
| | Employed; low | 0.6 | 0.9 | 0.3 | 0.5 | 1.3 | 0.2 |
| | Just care; high/medium | 3.3 | 3.1 | 0.5 | 2.2 | 2.1 | 0.2 |
| | Just care; low | 2.2 | 0.8 | 0.4 | 1.7 | 0.9 | 0.4 |
| | Total | 6.9 | 6.4 | 1.4 | 4.8 | 5.7 | 0.9 |

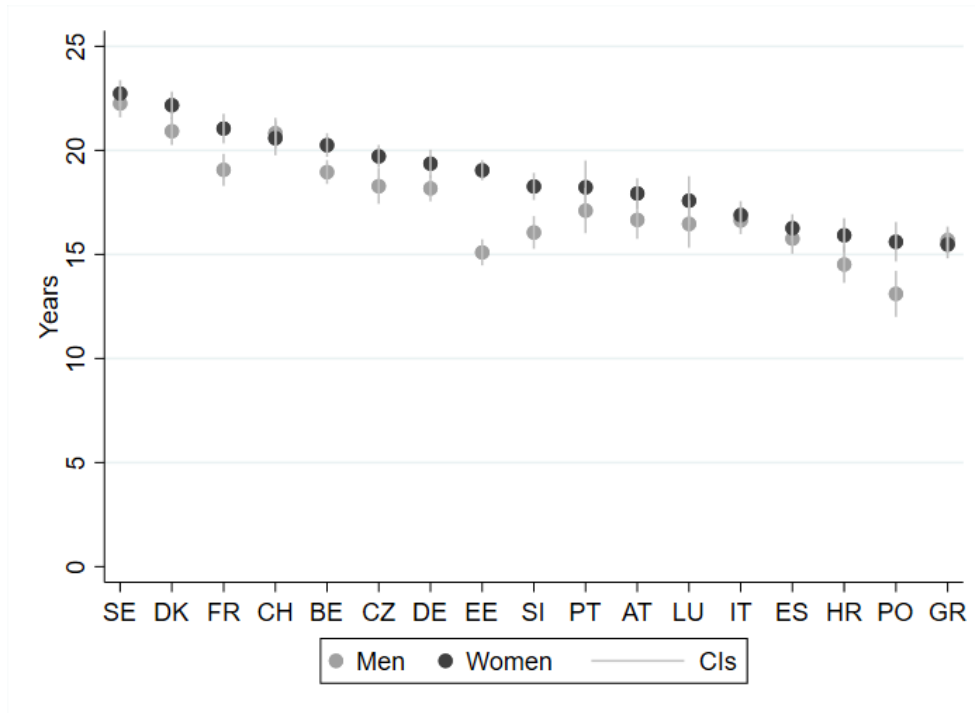
Source: SHARE 2015

Figure 1. Age-specific Proportions of Employment and Caregiving by Gender



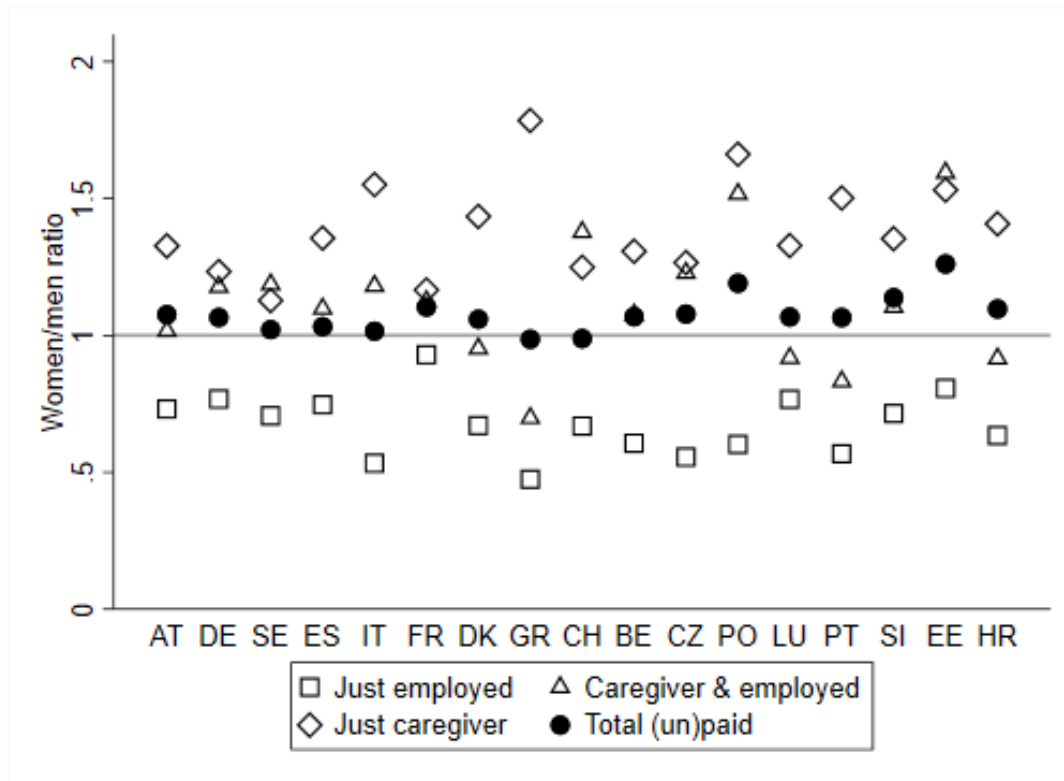
Source: SHARE 2015. 17 countries pooled.

Figure 2. Working Life Expectancy at Age 50 (Paid and Unpaid), by Gender and Country



AT=Austria, BE=Belgium, CH=Switzerland, CZ= Czech Republic, DE=Germany, DK=Denmark, EE=Estonia, ES=Spain, FR=France, GR=Greece, HR=Croatia, IT=Italy, LU=Luxemburg, PO=Poland, PT=Portugal, SE=Sweden, SI=Slovenia
 Source: SHARE 2015.

Figure 3. Women-to-men Ratio of Paid and Unpaid Working Life Expectancy Components at age 50



AT=Austria, BE=Belgium, CH=Switzerland, CZ= Czech Republic, DE=Germany, DK=Denmark, EE=Estonia, ES=Spain, FR=France, GR=Greece, HR=Croatia, IT=Italy, LU=Luxemburg, PO=Poland, PT=Portugal, SE=Sweden, SI=Slovenia.

Source: SHARE 2015.